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Volume V, 1962-63

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LEADERS
IN
AMERICAN SCIENCE

An Illustrated Biographical Directory of Eminent Leaders in Research, Industrial, Governmental, and Educational Scientific Fields in the United States and Canada

ROBERT C. COOK, B.S., M.A., ED.D. (Columbia), Fellow, A.A.A.S.
Editor-in-Chief

MRS. MARGIE MCLEAN MCDUFF
Associate Editor

Fifth Edition (Vol. V, 1962-63)

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ROBERT C. COOK, *Editor*

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PREFACE

This is the Fifth volume of a biennial series, LEADERS IN AMERICAN SCIENCE. The purpose of this series is to keep-up-to-date a carefully selected list of scientists in the United States and Canada, in the form of biographical sketches, photographs, and short references.

We have endeavored to make this list selective and, at the same time, to some degree, inclusive. For reasons stated below, we do not claim to fully cover the field of Science in the United States. Some people we wanted simply would not reply to our letters. Government scientists are exceedingly hard to reach.

Our help in compiling this volume came from varied sources. First, we secured thousands of recommendations from those included in previous volumes. Second, we asked the president of each accredited college and university in the United States and Canada to recommend outstanding teachers and research workers. Third, we had extended correspondence with members of the National Academy of Science and with scientific associations regarding recommendations. Fourth, we gave some attention to science news, both in the daily press and in scientific professional journals.

Unfortunately, just getting recommendations of competent people was not enough. The task of getting biographical data from the desired people was exceedingly difficult. Scientists are very busy people. As a class, they are not publicity conscious and are reluctant to give out information.

Our files are bulging with biographical data of LEADERS IN AMERICAN SCIENCE. Obviously, we could not compile and print all of the thousands of sketches which were submitted. In many cases, where it was impossible to use the sketch, we used a short reference. In instances where the person is eminent and we were unable to secure biographical data, a one-line reference is used.

One very interesting feature of Volume V is the inclusion of the biographical sketch and picture of Gillis Patrick Flanagan of Bellaire, Texas. Mr. Flanagan is only eighteen years old and will graduate from high school next June. At this young age he has been nationally acclaimed as an inventor and scientific genius. We are going to follow his career with much interest.

Personally, we feel that the pictures add a great deal to the volume. In the series WHO'S WHO IN AMERICAN EDUCATION, we now have the photographs of over 40,000 educators. It is not a sign of vanity to use a photograph along with a biographical sketch. The respected *Who's Who in Canada* has used photographs for years. Newspapers and magazines purchase LEADERS IN AMERICAN SCIENCE in order to have a ready source of pictures.

LEADERS IN AMERICAN SCIENCE is being published in December of 1962. The data included is reasonably up-to-date through September, 1962. We shall welcome letters, recommendations, and all constructive criticisms. We especially want help on the problem of listing the thousands of outstanding scientists employed in industry and governmental services.

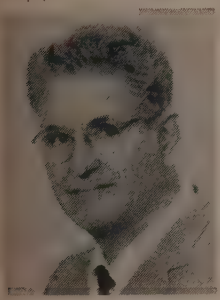
Our thanks go to the hundreds of men and women who have been very helpful to us with recommendations and suggestions. Our associate editor, Mrs. Margie M. McDuff is due a great deal of credit for the work on this volume. She has six editorial assistants who also are deserving of credit: Mrs. Edna Bryant, Mrs. Frances Garrett, Miss Beverly Shoemake, Miss Mary Miller, Mrs. Betty Sadovsky and Mrs. Mary Vaughan.

ROBERT C. COOK, *Editor*

AALL, Christian Hiorth (Dr.), V-P, Dir., Smelting and Refining, Amco Div., Am. Metal Climax, Inc., 1270 Ave. of the Americas, New York 20, N.Y. Home Add.: North Rd., Princeton, N.J. ELECTRIC SMELTING FURNACES; COPPER; PHOSPHORUS; CALCIUM CARBIDE. b. Oslo, Norway, April 14, 1913. s. Cato and Ida (Hiorth) A. Edn.: Dr. Ing., Inst. Electrochem., France, 1938; Dr. Etat, Grenoble Univ., 1939. m. Ruth Bergengren, July 8, 1939. c.: Cecilia; Elizabeth; Pamela; Christian. Exp.: Chem. Rsch., Soc. Electrochem., N. D. de Briancon, France, 1935-36; Chem. Proc., Norsk Aluminum Co., Norway, 1939; Plant Supt., Odda Smelteverk, Norway, 1939-42; Chem. Rsch., Christiana Spigerverk, Norway, 1942-43; Consultant, Imp. Chem. Ind., U. K., 1943-45; Consultant, Monsanto Chemical Co., Ala., 1946-47; Chem. Rsch., Monsanto Chemical Co., Tenn., 1948-50; Asst. Rsch. Dir., Monsanto Chemical Co., Ala., 1950-53; Development Dir., Monsanto Chemical Co., Mo., 1953-56; Rsch. Dir., Am. Metal Climax, Inc., N.Y.C., 1956-58; Mgr. of Copper Smelting and Refining Operations, ibid., 1958-59; V-P, Dir., Smelting and Refining, Amco Div., ibid., 1959—. Mem.: Chem. Soc.; Electrochem. Soc.; Soc. Chem. Indust.; Mining Club; Mining and Metallurgical Soc.; Norsk Ing. Forening; Assn. Ing. Electrochem. France. Author: Contribution a l'etude du carbure de calcium industrial, 1938. Contbr. to: Industrial and Engrng. Chem.; Chemical Products; Chem. and Industry; Le Four Electrique; Comptes Rendus; Teknisk Ukeblad. War Rec.: Norwegian Army, 1943-46. Gen. Int.: Castner Gold Medal, Great Britain, 1950.

ABBOT, Charles Greeley (Mr.), Rsch. Assoc., Smithsonian Inst., Washington, D. C. Home Add.: 4409 Beechwood Rd., Hyattsville, Md. SOLAR RADIATION AND WEATHER. b. Wilton, N. H., May 31, 1872. s. Harris and Caroline Ann (Greeley) A. Edn.: B.Sc., Mass. Inst. of Tech., 1894; M.Sci., ibid., 1895. Hon. Deg.: D.Sc., Melbourne, Aus., 1914; Case Inst., 1930; Geo. Wash. Univ., 1937; LL.D., Toronto Can., 1933. m. 1st Lillian E. Moore, Oct., 1897. m. 2nd Virginia A. Andes, June, 1954. Exp.: Asst. Astrophysical Obs., Smithsonian Inst., Wash., D. C., 1895-06; Dir., Astrophysical Obs., ibid., 1906-44; Asst. Secy., Smithsonian Inst., 1918-28; Secy., ibid., 1928-44; Rsch. Assoc., ibid., 1944—. Hon. Pos.: Home Secy., Natl. Acad. Sci.; Pres., Wash. Philos. Soc.; Pres., Comos Club. Mem.: Natl. Acad. of Sci.; Am. Philos. Soc.; Am. Astron. Soc.; Am. Phys. Soc.; Cosmos Club. Author: Six Volumes Annals Smithsonian Astrophysical Obs.. Areas of Rsch.: Sun's Radiation, its relation to Weather and to Power.

ABBOTT, Cyril Edward (Ph.D.), Asst. Prof., Biol., Univ. of Tampa, Tampa, Fla. PSYCHOLOGY AND AESTHESIOLOGY. b. Feb. 1, 1902, Elgin, Ill. s. Edward Hiram and Ethelyn Mary (Wells) A. Edn.: B.A., Univ. of Wis., 1925; M.S., Kans. State Coll., 1928; Ph.D., Ohio State Univ., 1937. m. Georgia Mary Smith, June 21, 1935. Exp.: Prof. of Biol., New England Coll., Hennikey, N. H., 1954-58; Hd. Biol., Ga. Southwestern Coll., Americus, Ga., 1958-61; Hd. Biol., Piedmont Coll., Demorest, Ga., 1961-62; Asst. Prof. of Biol., Univ. of Tampa, 1962—. Mem.: Entomol. Soc. of Am.; Ecol. Soc. of Am.; Div. Animal Behavior; A.A.A.S.; A.A.U.P.; Internatl. Soc. Study Soc. Insects. Author: Basic Biology, 1940; The Senses of Insects, 1937; The Physiology of Blowflies, 1952. Contbr. to: Annals



of the Entomol. Soc.; Jour. Ornothol. Union; Wilson Bull.; Entomological Am.; Audubon Magazine. Areas of Rsch.: Insect Physiology and Ecology as Related to Behavior; Cellular Physiology.

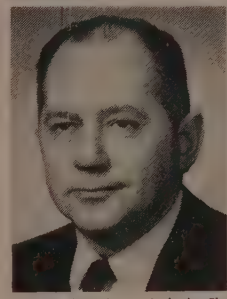
ABBOTT, Mabel Kester (Mrs.), Vice Chmn., Home Econs. in Homemaking, American Home Economics Assn., 1115 George Rd., Meadowbrook, Pa. HOME ECONOMICS. b. Phila., Pa., June 13, 1920. d. Charles L. Kester and Ethel Thomas (Walton) K. Edn.: B.S., Home Econs., Drexel Inst. of Tech., 1941. m. Arthur C. Abbott, Sept. 1, 1942. c.: Adelle Carol; Arthur Cobb, Jr. Exp.: Home Econt., Great Atlantic and Pacific Tea Co., Phila., Pa., 1941-42; Home Econ. Tchr., Phila. Bd. of Edn., Phila., Pa., 1942; Subst. Tchr., Lower Moreland H. S., Huntingdon Valley, Pa., 1962—; Vice Chmn., Home Econs. in Homemaking, 1960-62. Hon. Pos.: Chmn., Southeastern Pa. Homemakers Grp., Edn., Local Women's Club. Mem.: Am. Home Econs. Assn.; Pa. Home Econs. Assn.; Am. Assn. Univ. Women. Contbr. to: Jour. of Home

Econs. Gen. Int.: Received Special "Homemaker" Award, Phila. Fashion Grp.; Conducted Sect. Meetings at A.H.E.A. Convention. Areas of Rsch.: Child Care; Home Economics.

ABELL, Max Flavel (Ph.D.), Assoc. Prof. of Agri. Econ., Ext. Econ. in Farm Mgmt., Emer., Morrill Hall, Univ. of N.H., Durham, N.H. FARM ORGANIZATION AND MANAGEMENT. b. Oct. 13, 1888, Solvay, N.Y. s. Flavel Lavius and Annie Rose (Palmer) A. Edn.: B.Sc., Cornell Univ., 1914; Ph.D., ibid., 1924. m. Helen Virginia Bennett, June 16, 1921. c.: Richard Palmer; Paul Irving; Robert Lionel, and Jane Shirley. Exp.: Grad. Asst. in Field Crops, Ohio State Univ., Columbus, Ohio, 1914-15; Grad. Asst., Farm Crops, Cornell Univ., Ithaca, N.Y., 1915-17; Instr., Farm Mgmt. and Field Crops, Conn. Agril. Coll., 1917-18; Asst. Prof. of Agron., ibid., 1919; Asst. Prof. of Farm Mgmt., Mass. Agril. Coll., 1920-26; Asst. Prof. of Agril. Econ., Asst. Econ., Agril. Econ., Asst. Ext. Econ., Univ. of

N.H., Durham, N.H., 1926-49; Assoc. Prof. of Agril. Econ., Ext. Econ. in Farm Mgmt., ibid., 1949—. Mem.: Acad. of Pol. Sci.; Dir., New Hamp. Council on World Affairs; Natl. Geographic Soc.; Am. Farm Econ. Assn.; Farm Appraiser, V.A., Farm Bus., Consult., N.H. State Bankers Assn. Special Int.: Pasture Improvement and Mgmt. Farm Budg. and Remodeling; Farm Organization and Mgmt. Finances, Records and Income Tax for Farmers.

ABERE, Joseph Francis (Ph.D.), Proj. Mgr., Chem. Div., Minnesota Mining and Mfg. Co., 367 Grove St., St. Paul, Minn. Home Add.: 2053 Floral Dr., White Bear Lake, Minn. POLYMERS. b. Brooklyn, N.Y., March 30, 1920. s. Louis Charles and Amelia (Bacigalupo) A. Edn.: B.S., Queens Coll., 1940; M.S., Polytech. Inst. of Brooklyn, 1943; Ph.D., ibid., 1948. m. Grace Lawlor, Dec. 26, 1943. c.: Linda; Dennis; Christine; Cynthia; Katherine; Mary Jeanne; Douglas. Exp.: Fellow, Queens Coll., 1941-42; Tutor in Chem., ibid., 1942-43; Instr. in Chem., ibid., 1943, 1944-47; Rsch. Chem., 1948-54; Sect. Hd., Colloid & Applied Rsch., 1954-56; Proj. Mgr., 1956-62; Assoc. Mgr. Rsch., 1962—, 3M Co., St. Paul, Minn. Mem.: Am. Inst. of Chem. Engr.; Am. Chem. Soc.; Am. Chem. Soc. Rubber Sec.; Am. Inst. of Chem.;



Am. Rocket Soc.; Indusl. Chem. Forum; Sigma Xi; Phi Lambda Upsilon. Author: "College Chemistry" (2 Vols., First and Second Semesters), Arco Press (1948 and 1949). Contbr. to: J. Chem. Phys.; Ann. of the N.Y. Acad. of Scis.; J. of Polymer Sci.; J. Appl. Chem.; J. Phys. Chem. Serv. Rec.: U.S. Navy, 1944-46. Gen. Int.: Student Medal Awd., Am. Inst. of Chem., 1941. Areas of Rsch.: Kinetics of Polymerization, Fluorine Containing Polymers; Surface Chemistry, Imine Chem.

ABERLE, David Friend (Ph.D.), Prof. and Chmn., Anthropol., Brandeis Univ., Waltham 54, Mass. Home Add.: 106 Sumner Street, Newton Centre 59, Mass. ANTHROPOLOGY. b. St. Paul, Minn., November 23, 1918. s. David Winfield and Lisette (Friend) A. Edn.: A.B., Harvard Univ., 1940; Ph.D., Columbia Univ., 1950. m. E. Kathleen Gough, Sept. 4, 1955. c.: Stephen Daniel. Exp.: Instr., Dept. of Social Relations, Harvard Univ., 1947-50; Rsch. Fellow in Mental Health, Schl. of Pub. Health, ibid., 1948-50; Visiting Assoc. Prof., Page Schl., Johns Hopkins Univ., 1950-52; Assoc. Prof., Depts. of Sociol. and Anthropol., Univ. of Mich., 1952-58; Prof., Depts. of Sociol. and Anthropol., ibid., 1958-60; Simon Visit. Prof. and Hon. Rsch. Assoc., Dept. of Social Anthropol., Manchester Univ., Manchester, Eng., 1960-61; Prof. and Chmn., Dept. of Anthropol., Brandeis Univ., 1961—. Hon. Pos.: Fellow, Center for Adv. Study in the Behavioral Scis., Stanford, Calif., 1955-56. Mem.: Am. Anthropol. Assn., Fellow; Am. Sociol. Soc., Fellow; Am. Ethnol. Soc.; Soc. for Applied Anthropol.; Royal Anthropol. Inst. of Gt. Britain and Ireland; A.A.U.P.; Phi Beta Kappa. Author: The Psychosocial Analysis of a Hopi Life-History, 1951; The Kinship System of the Kalmuk Mongols, 1953; Navaho and Ute Peyotism: A Chronological and Distributional Study, 1957. Contbr. to: Am. Anthropologist; Am. Sociol. Rev.; Southwestrn Jour. of Anthropol. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Comparative Social Organization, Religion (especially Nativistic Movements), S.W. American Indians, Culture Change.

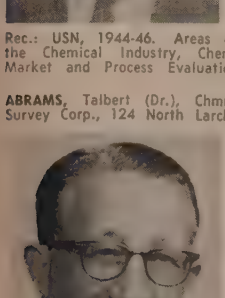
ABOUHALKAH, T. A. (Mr.), Chief Storage Reservoir Engr., Liberal, Kans. Home Add.: Liberal, Kans. PETROLEUM RESERVOIR ENGINEERING—UNDERGROUND STORAGE OF NATURAL GAS. b. Tripoli, Lebanon, May 31, 1929. s. Ali and Fatimeh (Jahjaah) A. Edn.: B.A., The Univ. of Tex., 1954; B.Sc., ibid., 1954. m. Susan Hanke, 1954. c.: Yael; Cynthia; Yusha. Exp.: Petrol. Engr., Railroad Comn. of Tex., Pampa, Tex., 1954-55; Design Engr., Cabot Engrng. Co., ibid., 1955-56; Petrol. Engr., Panhandle Eastern Pipeline Co., Liberal, Kans., 1956-61; Chief Storage Reservoir Engr., Panhandle Eastern Pipeline Co., 1961—. Mem.: Soc. of Petrol. Engrs. of A.I.M.E.; Liberal Geol. Soc.; Can. Mathl. Cong.; Am. Mathl. Soc.; Acacia. Areas of Rsch.: Electric Log Interpretation; Estimation of Oil and Gas Reserves; Evaluation of Acreage; Economic Studies; Reservoir Characteristics and Mechanics; Well Completion Recommendation; Supervision and Di-

rection of Tests on Wells to be Used for Injection and Withdrawal of Gas in and from Storage Fields; Preparation of Charts, Graphs and the Likes for Predicting Storage Reservoir Behavior, Injection and Withdrawal Schedules; Also, Fluid Flow in Porous Media.

ABORN, Robert Hollenbeck (Sc.D.), Consultant, Dir. (Ret.), Edgar C. Bain Lab. for Fundamental Rsch., U.S. Steel Corp., Monroeville, Pa. Home Add.: 2407 Mt. Royal Blvd., Glenshaw, Pa. METALLURGICAL RESEARCH, PARTICULARLY STEEL. b. Battle Creek, Mich., Jan. 9, 1897. s. Robert Westgate and Minerva Drury (Hollenbeck) A. Edn.: A.B., Grinnell Coll., 1918; S.B., Mass. Inst. of Tech., 1920; Sc.D., ibid., 1925. Hon. Deg.: Sc.D., Grinnell Coll., 1958. m. Alice Lemon, Sept. 14, 1922. c.: Robert; Faith. Exp.: Staff X-ray Rsch., Rsch. Lab., App. Chem., Mass. Inst. Tech., 1925-27; Instr. in Metallurgy, Harvard Univ., 1928-29; Rsch. Metallurgist, U.S. Steel Corp., Rsch. Lab., 1930-38; Supvr., Phys. Met., ibid., 1939-45; Asst. Dir., ibid., 1946-54; Dir., ibid., 1955; Dir., Edgar C. Bain Lab. for Fundamental Rsch., ibid., 1956-62. Hon. Pos.: Trustee and Chmn. of Publications Comm., Am. Soc. for Metals; Chmn. of Tech. Publications Comm., Am. Inst. Mining, Met. and Petroleum Engrs. Mem.: A.A.A.S.; N.Y. Acad. Scis.; Am. Inst. of Mining, Metallurgical and Petrol. Engrs.; Am. Soc. Mech. Engrs.; Electrochem. Soc.; Faraday Soc.; Phi Beta Kappa. Contbr. to: Trans., A.I.M.E.; Trans., Am. Electrochem. Soc.; Trans., A.S.M.; Proc. Natl. Acad. Sci.; Jour. Am. Welding Soc.; Jour. Phys. Chem.; Ind. Engrng. Chem.; Nature; Proc. Am. Soc. Testing Materials; Jour. Soc. Automotive Engrs. Serv. Rec.: Chem. Warfare Serv., 1918. Gen. Int.: Recd. Lincoln Gold Medal, Am. Welding Soc.; Rsch. for Office Scientific Rsch. and Develop., U.S.A., 1941-45. Areas of Rsch.: Metal Rsch., Metallurgy of Stainless Steels, Metallurgy of Welding, Transformation of Austenite.

ABRAHAMS, Allen E. (Ph.D.), Mgr. of Commercial Development, Witco Chemical Co., New York, N. Y. Home Add.: 31 Engleside St., Cresskill, N. J. CHEMICAL ENGINEER AND ECONOMIST. b. Ithaca, N. Y., Nov. 6, 1926. s. Howard P. and Florence (Blostein) A. Edn.: B.S., Univ. of Md., 1949; M.S., Stevens Inst. of Tech., 1954; Ph.D., N. Y. Univ., 1960. m. Elaine Sieber, Feb., 1949. c.: Paul, Bruce. Exp.: Dir. of Engrng., Natl. Ammonia Company, Phila., Pa., 1955-60; Asst. Prof. Bus. Admin., Oregon State Univ., Corvallis, Ore., 1960-61; Mgr. Commercial Devel., Witco Chem. Co., New York, N. Y., 1961—. Mem.: Am. Chem. Soc.; Am. Econ. Assn.; Am. Marketing Assn.; A.A.A.S.; Chem. Industry Assn. Contbr. to: Am. Chem. Soc.; Div. of Chem. Marketing and Econ.; Symposia Series. Serv. Rec.: USN, 1944-46. Areas of Rsch.: Specialist Economics of the Chemical Industry, Chemical Industry History, Chemical Market and Process Evaluation.

ABRAMS, Talbert (Dr.), Chmn., Bd. of Dirs., Abrams Aerial Survey Corp., 124 North Larch St., Lansing, Mich. Home Add.: 1310 Cambridge Rd., Lansing, Mich. PHOTOGRAMMETRIC ENGINEERING. b. Tekonsha, Mich., Aug. 17, 1895. s. William Blodgett and Sarah Elizabeth (Bruner) A. Hon. Degs.: D.Sc., Mich. Coll. of Mining and Tech., 1952; D. Engr., Mich. State Univ., 1961. m. Leota Fry, Jan. 15, 1923. Exp.: Pres., Abrams Instrument Corp., Lansing, Mich., 1937-61; Pres., Abrams Aerial Survey Corp., 1923-58; Chmn., Bd. of Dirs., ibid., 1958—. Hon. Pos.: Past Pres., Am. Soc. of Photogrammetry; Dir., Am. Congress on Surveying and Mapping; Mem., Atomic Energy Com., Natl. Assn. of Mfgrs.; Pres., Talbert and Leota Abrams Fdtn.; Pres., Aerial Explorers Corp.; Pres., Airlandia, Inc.; Dir., Bank of Lansing, Lansing, Mich. Mem.: Hon. Mem., Mich. Soc. of Prof. Engrs.; Mich. Engrng. Soc.; Am. Soc. of Photogrammetry; Am. Soc. of Civil Engrs.; Chi Epsilon; Pi Tau Sigma Tau Beta Pi; Rotary. Author: The Essential of Aerial Surveying and Photo Interpretation. Serv. Rec.: U. S. Marine Corps, 1917-19; U. S. Army Air Corps, (R.), 1923-35. Gen. Int.: Prominent Citizens Award, City of Lansing, 1959; Community Serv. Award-Greater Lansing C. of C., 1962; Inventor of Abrams Contour Finder, Abrams Stratoplane, "The Explorer", Abrams Combat Gun Camera, Abrams Stereoscopes, Abrams Anti-Fogging Device for Gun Sights. Areas of Rsch.: Photogrammetric research, aerial surveying and mapping and associated fields of research.



ABRAMS, William Bernard (M.D.), Dir., Clin. Pharmacol., Hoffman-La Roche, Nutley, N.J. Home Add.: 416 N. Ridgewood Ave., So. Orange, N.J. CLINICAL PHARMACOLOGY. b. Atlantic City, N.J., July 15, 1922. s. Joseph S. and Zelda (Coleman) A. Edn.: B.S., Rutgers Univ., 1944; M.D., Jefferson Med. Coll., 1947. m. Berenda Weinberg, March 4, 1945. c.: James C.; Andrew P.; J. Todd; Julie Ann. Exp.: Instr. in Bacteriol., Jefferson Med. Coll., Phila., Pa., 1948-49; Fellow in Ped. Rsch., The Children's Hosp. of Phila., Univ. of Pa., Phila., Pa., 1949-50; Fellow in Cardiol., Phila. Gen. Hosp., Phila., Pa., 1950-51; Chf. of Cardiol., U.S. Army Hosp., Fort Campbell, Ky., 1951-53; Res. in Med., St. Louis Univ., St. Louis, Mo., 1953-54; Ward Phys., Dept. of Med., V.A. Hosp., E. Orange, N.J., 1953-58; Priv. Pract., N.J., 1955-59; Asst. Med. Dir., Hoffmann-La Roche, Inc., Nutley, N.J., 1959; Dir., Dept. of Clin. Pharmacol., Newark Beth Israel Hosp., Newark, N.J., 1959—; Dir., Dept. of Clin. Pharmacol., Hoffmann-La Roche, Inc., Nutley, N.J., 1961—. Hon. Pos.: Bd. of Trustees and Exec. Comm., Essex Co. Heart Assn. Mem.: Am. Theraps. Soc.; Fellow, Am. Coll. of Phys.; Alpha Omega Alpha; Phi Delta Epsilon. Contbr. to: Circulation; Jour. Infect. Diseases; Am. Heart Jour.; Am. Jour. Med. Sci.; A.M.A. Arch. Int. Med.; Dis. of the Chest; N.Y. Sta. Jour. Med.; Am. Jour. Cardiol.; Clin. Pharm. and Theraps. Serv. Rec.: U.S. Army, 1943-46; 1951-53, U.S. Army. Gen. Int.: Introduction and Direction of a Special Treatment Unit for Clinical Pharmacology at the Newark Beth Israel Hosp., Newark, N.J. Areas of Rsch.: Clinical Pharmacology Specialized Knowledge in the Fields of Monoamine Oxidase Inhibitors and Psychotherapeutic Agents.

ACHESON, Louis Kruzan, Jr. (Ph.D.), Senior Scientist, Hughes Aircraft Co., Culver City, Calif. Home Add.: 5858 Babbitt Ave., Encino, Calif. PHYSICS, SYSTEMS ANALYSIS. b. Brazil, Ind., Apr. 2, 1926. s. Louis K. and Ruth (Morrison) A. Edn.: B.S., Case Inst. of Tech., 1946; Ph.D., Mass. Inst. of Tech., 1950. m. Hyla Cook, July, 1958. c.: Mary Ruth. Exp.: Scientist, Hughes Aircraft, Culver City, Calif., 1950-58; Scientist, Inst. for Defense Analyses, Wash., D. C., 1958-59; Sr. Scientist, Hughes Aircraft, Culver City, Calif., 1959—. Mem.: Am. Phys. Soc.; Am. Geophys. Union; A.A.A.S.; Sigma Xi; Tau Beta Pi; Eta Kappa Nu; Theta Tau. Contbr. to: Physical Review. Areas of Rsch.: Ballistic Missile Defense Systems; Interceptor Fire Control Systems.

ACKER, Sidney Harold (Mr.), Prof., Head, Mechanical Engrng. Dept., Vanderbilt Univ., Nashville, Tenn. Home Add.: 2601 Essex Pl., Nashville 12, Tenn. MECHANICAL ENGINEERING. b. Minneapolis, Minn., Dec. 12, 1898. s. Fred Alvin and Anna Patria (Ness) A. Edn.: B.S., Univ. of Minn., 1923; M.E., ibid., 1929. m. Jeanette Kirchner Forsythe, Sept. 14, 1926. c. Mrs. Jean E. Wright; William Fred. Exp.: Asst. Dynamometer Car Operator, Northern Pacific Railway, St. Paul, Minn., 1923-26; Asst. Engr. of Tests, St. Louis-San Francisco Railway, Springfield Mo., 1926-30; Engr. of Tests, St. Louis-San Francisco Railway, 1930-35; Instr., Vanderbilt Univ., 1935-37; Asst. Prof., ibid., 1937-40; Assoc. Prof., ibid., 1940-48; Prof., Acting Head, Mechanical Engrng. Dept., ibid., 1948; Prof., Head, Mechanical Engrng. Dept., ibid., 1949—. Hon. Pos.: Past Chmn., Nashville Sub-Sect., Am. Soc. of Mechanical Engrs.; Engrng. Schl. Faculty Repr. on Vanderbilt Univ. Senate; Past Pres., Vanderbilt Faculty Club; Dir., Nashville Engrng. Assn.; Past Chmn., Mechanical Engrng. Div., Southeastern Sect., Am. Soc. for Engrng. Edn. Mem.: Tenn. Acad. of Sci.; Tau Beta Pi; Pi Tau Sigma. Serv. Rec.: U. S. Army Pvt., 1917-19, 1942-46 Maj.-Lt. Col., 1946-50 Lt. Col. (T. C. Res.), 1950-59 Col. Areas of Rsch.: Railway Mechanical Engineering, Power, Air Conditioning.

ACKERLIND, Erik (Dr.), Consultant, P.O. Box 780, Arcadia, Calif. ELECTRONIC ENGINEERING. b. July 9, 1910, N.Y.C. s. Carl U. and Esther (Wastfelt) A. Edn.: B.E.E., Poly. Inst. of Brooklyn, 1928-32; M.S. in E.E., Columbia Univ., 1932-34; Dr. E.E., Poly. Inst. of Brooklyn, 1934-37. m. Florence R. Jason of Santa Monica, Calif., June 11, 1944. d. John Jason and Esther Jason. c.: Edmund. Exp.: Rsch. Fellow, Poly. Inst. of Brooklyn, 1934-37; Elec. Engr., Hazeltine Service Corp., Little Neck, N.Y., 1939-41; Sub-Section Hd., Naval Rsch. Lab., Washington, D.C., 1941-46; Section Hd., Northrop Aircraft, Inc., Hawthorne, Calif., 1946-49; Instr., Dept. of Math., Univ. of Calif., Los Angeles, Calif., 1948-49; Hd., Computer Development Group, Calif. Inst. of Tech., Pasadena, Calif., 1949-51; Tech. Dir., Ackerlind Corp., Lomita, Calif., 1951-53; Mgr., Systems Engrng., Radio Corp. of Am., Los Angeles, Calif., 1953-57; Consult., Ca[illegible] 1957—; Assoc. Prof. Engrng., Sacramento St. Coll., 1957-59

Mem.: Am. Assn. Univ. Profs.; A.A.A.S.; Assn. for Symbolic Logic; A.I.E.E.; I.R.E.; Assn. for Computing Machinery; Soc. for Indusl. and Applied Math.; Oprns. Rsch. Soc. of Am.; Oprnl. Rsch. Soc. (Eng.); Inst. of Mgmt. Sci.; Arotorga (Eng.); Eta Kappa Nu; Sigma Xi. Contbr. to: Trans. of Electrochem. Soc.; Trans. of the Prof. Gr. on Information Theory, Inst. of Radio Engrs. Ph.D. Dissertation: Dielectric Investigations of Films of Shellac Varnish. Travel: Europe; N. Am. Gen. Int.: Granted Six U.S. Patents. Hobbies: Carpentry; Chess. Listed in: Am. Men of Sci.; Who's Who in Engrng.; Who's Who in the West; Who's Who in Commerce and Indus.; Who's Who in World Avn.; Who's Who in Am. Edn.; Internatl. Yearbook; Statesmen's Who's Who (Eng.). Spec. Int.: Systems Engrng.

ACKERMAN, Aaron Leon (D.D.S.), Orthodontist, 123 Quimby St., Westfield, N.J. Home Add.: 963 Park Ave., Elizabeth, N.J. ORTHODONTIST. b. Dec. 6, 1902, Millville, N.J. s. S. Bernhardt T. and Bertha A. Edn.: D.D.S., Univ. of Pa., 1920-24; Dewey Schl. Orthodontia, 1932; M.P.H., Columbia Univ., 1946; Columbia Univ. Schl. of Pub. Health Edn., 1947. m. Elizabeth Ossre of Morristown, N.J., June 11, 1935. c.: Albert Bernard; James Lowell; Susan. Exp.: Spec. Lectr. Dentistry, Coll. Dental and Oral Surg., Columbia Univ., Post-Grad. Schl. Orthodontia; Clin. Asst., Coll. Dental and Oral Surg., Columbia Univ. Com. Co-Chm., Unmet Needs Com. Edn., Pub. Schl., Elizabeth, N.J.; Edn. Com. C. of C., Legislative Com.; Chmn. Pub. Health Com. C. of C.; Chmn. Pub. Health Com. Social Agencies; Pub. Health

Authority, Union Coun. Boy Scouts of Am.; Liaison Officer, Health and Safety Com., Am. Red Cross; Health Com., N.J. Welfare Coun.; Agri. Adv. Bd., Union Co. Dental Soc., Auditing Com., N.J. State Dental Soc.; Fin. Com., 1943-44; Edn'l. Com., A.P.H.A.; Ambassador for Fund Raising, Columbia Univ.; Chmn. Program Com., Child Study Group, Victor Mravalag Schl., 1943; The Pingry Schl. Fund Dr., 1949; Co-Chmn., Dental Div. Community Chest, 1942-43; Chmn., Seventh Annual Music Festival, Elizabeth Pub. Schls.; Chmn., Plaque Award Com., Am. Bus. Club for Elizabeth's Outstanding Citizen; Chmn. Harvest Show Com., Victor Mravalag Schl., 1942-43; Elizabeth Defense Co., Disaster Serv., 1942-45; U. S. Victory Bond Drive Com., 1942; Chmn. Publicity Com., Elizabeth Victory Garden Campaign Com.; Chmn. Food for Fitness Program, World War II. Mem.: Diplomate, Am. Bd. of Orthodontics; Union Co. Dental Soc.; N. J. Soc. for Promotion of Dentists for Children; N. J. State Dental Soc.; Am. Dental Assn.; Northeastern Soc. of Orthodontists; Am. Pub. Health Assn.; Am. Soc. Promotion of Dentists for Children; Alpha Omega; 32° Mason and Shriner; Elmora Assn.; Elizabeth Garden Club C. of C.; Am. Red Cross; Boy Scouts of Am. Union Council; Univ. Pa. Gen. Alumni Soc.; Suburban Pa. Club of N. J.; Federated Columbia Univ. Alumni Assn.; Columbia Alumni Assn. of Union Co.; U. Co. Dental Study Club, 1941-44; Pub. Health Assn. of N. Y. C.; N. J. Health and Sanitary Assn.; A.A.A.S.; Men's Faculty Club of Columbia Univ.; Sewaren Motor Boat and Yacht Club; Am. Acad. of Polit. and Social Sci.; Fellow, N. J. Acad. of Med.; Fellow, Am. Pub. Health Assn.; Fellow of the Am. Assn. for the Adv. of Sci.; Royal Soc. of Health; Chmn. Rsch. Comm., Middle Atlantic Soc., 1957; Convention Planning Com., Middle Atlantic Soc., 1959-60; Rsch. Fellow, Cephalmetrics, Univ. of Pa. Grad. Schl. of Med.; Rsch. Assoc., Phila. Children's Hosp. Contbr. to: Paper Read Before Alpha Omega on Orthodontics, 1933; Provisional Group of Jr. League on Com. Health Problems, 1946; Clinic Before N. J. State Dental Soc. on Orthodontics, 1934; Second Dist. Dental Soc. N. Y. C. Listed in: Who's Who in Edn.; Who's Who in the East; Am. Dental Leaders. Gen. Int.: Lectured: Eighth Reunion of Spanish Soc. of Orthodontists at Seville; Paper will be published in Spanish Orthodontic Jour., and state of Israel Dental Jour.

ACKERMAN, Joseph (Ph.D.), Managing Dir., Farm Fdtn., 600 S. Michigan Ave., Chicago 5, Ill. Home Add.: 399 Poplar Ave., Elmhurst, Ill. AGRICULTURAL ECONOMICS. b. Morton, Ill., July 20, 1904. s. John C. and Elizabeth (Welk) A. Edn.: B.S., Univ. of Ill., 1929; M.S., ibid., 1930; Ph.D., ibid., 1938. m. Elizabeth Jane Engstrand, Aug. 30, 1930. c.: Elizabeth Ann; John Welk; Sara Jane; Allan J. Exp.: Farm Mgr., Citizens Natl. Bank, Decatur, Ill., 1930-31; Farm Mgr. and Rural Appraiser, Decatur, Ill., Farm Mgmt., Inc., 1933-34; Ext. Work in Farm Mgmt., Univ. of Ill., 1931; 1932-33; 1934-39; Farm Fdtn., Chicago, Land Tenure Specialist, 1939-41; Asst. Dir., ibid., 1942; Assoc. Managing Dir., ibid., 1942-54; Managing Dir., ibid., 1955–. Hon. Pos.: Pres., Am. Country Life Assn., 1946-48;

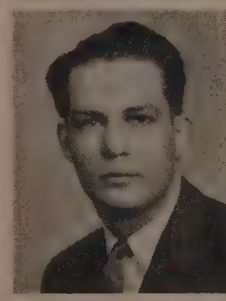
Vice-Pres., 1949-50, Pres., Am. Farm Econ. Assn., 1954-55; Secy.-Treas., Am. Soc. of Farm Mgrs. and Rural Appraisers, 1939-44; Secy.-Treas., Internatl. Assn. of Agric. Economists, 1958-64; Natl. Pres., Farm House Fraternity, 1948-52; Pres., Ill. Assn. of Schl. Boards, 1958-60; Dir., Natl. Schl. Boards Assn.; 1960–. Fellow: A.A.A.S. Mem.: Phi Eta Sigma; Alpha Zeta; Gamma Sigma Delta; Phi Delta Gamma; Assoc. Mem., Sigma Xi. Co-author: Town and Country Churches and Family Farming, 1956. Editor: Farm and Rural Life After the War, 1944. Co-editor: Family Farm Policy, 1947; Agrarian Reform and Moral Responsibility, 1949. Contbr. to: Am. Farm Econ. Jour.; Jour. Am. Soc. of Farm Mgrs. and Rural Appraisers. Areas of Rsch.: General Agric. Economics; Farm Mgmt.; Land Economics; Agril. Finance; Rural Appraising.

ACKERMAN, Nathan Ward (M.D.), Psychiatrist, 43 East 78 St., N. Y. City 21, N. Y. Home Add.: 124 East 84 St., N. Y. City, N. Y. FAMILY PSYCHOTHEAPY. b. Russia, 1908. s. David and Bertha (Green) A. Edn.: B.A., Columbia Univ., 1929; M.D., Coll. of Physicians and Surgeons, 1933. m. Gwendolyn Hill, 1937. c.: Jean; Deborah. Exp.: Clin. Prof. of Psychiatry, Columbia Univ., 1945–; Lectr., N. Y. Schl. of Soc. Work, 1946–; Dir. of Profl. Program, The Family Inst., N. Y. City, 1961–. Hon. Pos.: Com. on Spec. Studies, N. Y. Acad. of Med.; Family Health Com., N. Y. Acad. of Med.; Ph.D. Com., Columbia Univ.; Trustee, Acad. of Psychoanalysis; Past Councillor, Am. Psychopathology Assn. Mem.: A.M.A.; Am. Psychoanalytic Assn.; Assn. for Psychoanalytic Med.; Am. Orthopsychiatric Assn.; N. Y. Soc. for Clin. Psychiatry; N. Y. Acad. of Med.; Acad. of Child Psychiatry. Author: The Psychodynamics of Family Life, 1958. Contbr. to: Family Process; Am. Jour. of Psychiatry; Am. Jour. Psychoanalysis; Am. Jour. of Orthopsychiatry; Psychiatry; Internatl. Jour. of Sociometry; Internatl. Jour. Social Psychiatry; Internatl. Jour. of Gp. Psychotherapy. Gen. Int.: Research. Areas of Rsch.: Child Psychotherapy films, Therapy of the Whole Family; Family Diagnosis and Family Psychotherapy, Studies of Family Dynamics and Family Change; Studies in Prejudice (American Jewish Committee); Child Psychotherapy; Social Issues, Prejudice, War.

ADAIR, Lucille Gertrude (Miss), Hd. of Biol. Dept., Victoria Coll., Victoria, Tex. Home Add.: 2005 Coll. Drive, Victoria, Tex. BIOLOGY. b. Waco, Tex., Sept. 4, 1919. d. Arthur Whitfield and Anna May (Nesmith) A. Edn.: B.A., Mary Hardin-Baylor Coll., 1943; M.S., S.M.U., 1952; Grad. work—Oregon St. Coll. and Florida St. Univ.; N. C. St. Coll. Exp.: Tchr., Bloomington High Schl., Bloomington, Tex., 1943-44; Math. Tchr., Victoria Jr. High Schl., Victoria, Tex., 1944-46; Biol. Instr., Patti Welder High Schl. and Victoria Jr. Coll., 1946-49; Biol. Instr., Victoria Coll., Victoria, Tex., 1949–. Hon. Pos.: Former Mem. of Collegiate Comm. and Mem. Comm. of the Tex. Acad. of Sci.; Chmn., Biol. Sec., Tex. Jr. Coll. Tchrs. Assn. Mem.: Fellow, Tex. Acad. of Sci.; Natl. Assn. of Biol. Tchrs.; A.A.A.S.;

Am. Inst. of Biological Sci.; Tex. Jr. Coll. Tchrs. Assn. Social and Hon. Frat.: Pi Gamma Mu; Daughters of the Republic of Tex. Gen. Int.: Natl. Sci. Fdtn. Grants for Summer Study, Ore. State Coll., 1958; Fla. State Univ., 1959; N. C. State Coll., 1961. Listed in: Who's Who in Tex.

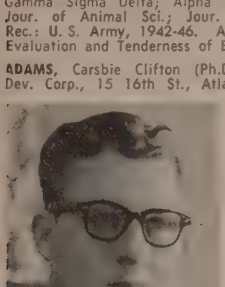
ADAMCIK, Joe Alfred (Ph.D.), Assoc. Prof. of Chem., Tex. Technological Coll., Lubbock, Tex. Home Add.: 4604B Boston Ave., Lubbock, Tex. ORGANIC CHEMISTRY. b. Taylor, Tex., June 28, 1930. s. Joseph John and Pearle Mae (Offield) A. Edn.: B.S., Chem., Univ. of Tex., 1951; M.A., Chem., ibid., 1954; Ph.D., Organic Chem., Univ. of Ill., 1958. Exp.: Asst. Prof. of Chem., Tex. Technological Coll., 1957-61; Assoc. Prof., ibid., 1961–. Mem.: Am. Chem. Soc.; Chem. Soc. London; Am. Assn. for the Adv. of Sci. Hon. Frat.: Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. of the Am. Chem. Soc. Serv. Rec.: U.S.N. Areas of Rsch.: Synthetic Methods in Organic Chemistry.



ADAMS, Charles Henry (Mr.), Asst. Prof., Univ. of Nebr., Lincoln, Nebr. Home Add.: 1410 Idylwild Dr., Lincoln 3, Nebr. ANIMAL HUSBANDRY, MEATS. b. Burdick, Kans., Nov. 7, 1918. s. Henry and Bertha (Westbrook) A. Edn.: B.S., Kans. State Univ., 1941; M.S., ibid., 1942. m. Eula Mae Peters, Apr. 29, 1943. Exp.: Nutrition Officer, U. S. Air Force, New Guinea, 1944-45; Asst. Instr., Kans. State Univ., 1946-47; Asst. Prof., Univ. of Nebr., 1947–. Hon. Pos.: Chmn., Reciprocal Meat Conf., 1959. Mem.:

Am. Soc. of Animal Sci.; Am. Assn. Adv. Sci.; Sigma Xi; Gamma Sigma Delta; Alpha Gamma Rho; Rotary. Contbr. to: Jour. of Animal Sci.; Jour. of Am. Vet. Med. Assn. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Meat Rsch., Carcass Evaluation and Tenderness of Beef.

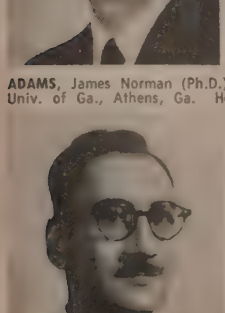
ADAMS, Carsbie Clifton (Ph.D.), Pres., National Research and Dev. Corp., 15 16th St., Atlanta, Ga. Home Add.: 170 Robin Hood Rd., Atlanta, Ga. BIOLOGICAL SCIENCES. b. Gainesville, Ga., Sept. 23, 1922. s. Vernon C. and Cozetta (Buffington) A. Edn.: B.S., Sou. Coll. of Pharm., 1942; M.A., Esquela Interamericana, 1954; Ph.D., Universidad Interamericana, 1955. Hon. Degree: Ph.D., Atlanta Christian Coll., 1954. m. Anita Coyne, 1952. Exp.: Owner and Administrator, Peachtree Sanitarium, Atlanta, Ga., 1947-57; Pres., Natl. Rsch. and Dev. Corp., ibid., 1957—. Hon. Pos.: Natl. Regent, Pi Epsilon Rho; Past Pres., Alumni Assn. of Sou. Coll. of Pharmacy; Ga. Campaign Chmn., Ga. Multiple Sclerosis Soc., 1954, 1955. Mem.: Aerospace Med. Assn.; Coun., Mem., Pan Am. Med. Assn.; Am. Rocket Soc.; Fellow, British Interplanetary Soc.; Am. Astronautical Soc.; Natl. Rocket Club, Wash., D. C.; Pi Epsilon Rho; Kappa Psi; Civitan; Ansley Golf Club; The River Club, London; Plantation Club. Author: The Cure, 1950; Space Flight, 1958. Co-Author: Careers in Astronautics and Rocketry, 1962. Contbr. to: Missiles and Rockets; Ground Support Equipment Mag. Gen. Int.: Awarded Certificate of Achievement by the Natl. Writer's Club; Selected Most Famous Alumnus of Year, 1953 by Sou. Coll. of Pharmacy. Areas of Rsch.: Human Factors Research; Nutrition.



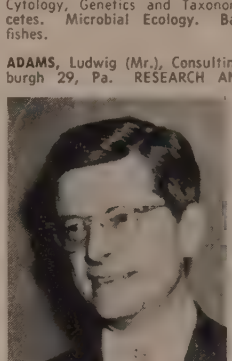
ADAMS, Clifford L. (Mr.), Prof. and Chmn. Physics Dept., Norfolk Coll. of William and Mary, Norfolk, Va. Home Add.: 2768 Greendale Ave., Norfolk 18, Va. PHYSICS: ATOMIC PHYSICS AND PHYSICS EDUCATION. b. Knox County, Ind., Jan. 28, 1915. s. George W. and Estelle (Baldwin) A. Edn.: B.S., Ind. State Tchrs. Coll., 1940; M.S., Mo. Schl. of Mines, 1950. m. Lillian Ratliff, Dec., 1943. c.: Terry Lynne; Gerri Lea. Exp.: Asst. to Assoc. Prof., U. S. Naval Acad., Annapolis, Md., 1951-56; Assoc. Prof., Northeast La. State Coll., Monroe, La., 1956-58; Chmn. and Prof., Norfolk Coll. of William and Mary, Norfolk, Va., 1958—. Hon. Pos.: Norfolk Planning Comn.; Past Pres., Adv. Bd. of Norfolk Fed. of Civic Leagues. Mem.: A.A.A.S.; A.A.U.P.; Am. Assn. of Physics Tchrs.; Va. Acad. of Sci.; Natl. Geographic Soc.; Phi Kappa Phi; Sigma Xi; Sigma Pi Sigma. Author: Laboratory Manual for General Physics, 1956 and 1959. Areas of Rsch.: Atomic Physics, Physics Education; Dynamic Mechanical Constants of Plastics.

ADAMS, James Leroy (Mr.), Staff Asst., Southwestern Bell Telephone Co., 1010 Pine, St. Louis, Mo. Home Add.: 524 S. Lawndale, Kans. City 23, Mo. PHYSICS. b. Houston, Tex., May 4, 1941. s. Harlie Radford and Margaret Myrtle (Follis) A. Edn.: B.S., Southwest Mo. State Coll., 1962. Exp.: Staff Asst., Southwestern Bell Tel. Co., St. Louis, Mo., 1962—. Hon. Pos.: Pres., local chapt., Kappa Mu Epsilon. Mem.: Math. Assn. of Am. Gen. Int.: Awarded Fulbright Grant in Mathematics for study at the University of Groningen, Groningen, The Netherlands, 1962-63.

ADAMS, James Norman (Ph.D.), Rsch. Assoc., Dept. of Bacteriol., Univ. of Ga., Athens, Ga. Home Add.: Box 4105 Campus Stn., Athens, Ga. BACTERIOLOGY. b. Brooklyn, N. Y., Nov. 4, 1932. s. James Thomas and Anna G. (Feldzaman) A. Edn.: B.Sc., Univ. of Ky., 1954; Ph.D., Univ. of Ga., 1961. m. Margie B. McDaniel, Sept. 6, 1955. c.: Bruce Edward; Leah Eileen. Exp.: Tchng. Asst., Univ. of Ky., Lexington, Ky., 1954-55; Rsch. Asst., Okla. State Univ., Stillwater, Okla., 1955-56; Rsch. Bacteriologist, Dugway Proving Grounds, Dugway, Utah, 1957-59; Rsch. Asst., Univ. of Ga., Athens, Ga., 1959-61; Rsch. Assoc., ibid., 1961—. Mem.: Am. Soc. for Microbiol.; Am. Killifish Assn.; Sigma Xi; Phi Sigma; Phi Kappa Phi. Contbr. to: Bacteriol. Proceedings; Jour. of Bacteriol.; Jour. of General Microbiol.; Antibiotics and Chemotherapy; Aquarium Jour. Serv. Rec.: A.U.S., 1957-59. Assoc. Editor: Aquarium Journal. Areas of Rsch.: Cytology, Genetics and Taxonomy of the Fragmenting Actinomycetes. Microbial Ecology. Bacterial and fungal infections of fishes.



ADAMS, Ludwig (Mr.), Consulting Engr., 205 Thompson Dr., Pittsburgh 29, Pa. RESEARCH AND DEVELOPMENT (STEEL STRUCTURES AND CONSTRUCTION EQUIPMENT). b. N. Y. City, Aug. 12, 1916. s. Ludwig and Sophie (Zelenske) A. Edn.: B.S.C.E., N. Y. Univ., 1936; M.C.E., Rensselaer Poly. Inst., 1937. m. Alberta Anne Howard, June 28, 1941. c.: Alberta Anne; Ludwig Howard. Exp.: Aerodynamicist, Cleveland Altitude Wind Tunnel, Pittsburgh-Des Moines Co., Pittsburgh, Pa., 1937-42; Industrial Fellow, Mellon Inst. of Industrial Rsch., Pittsburgh, Pa., 1942-46; Rsch. Coordinator and Staff Engr., Pittsburgh-Des Moines Steel Co., ibid., 1946-57; Staff Assoc., Blaw-Knox Co., Dev. and Rsch., ibid., 1957-60; Staff Mem., Blaw-Knox Co., Construction Eqp. Div., Mattoon, Ill., 1960; Consulting Engr., Pittsburgh, Pa., 1960—; Asst. Chf. Engr. (Cryogenics) of the Pittsburgh-Des Moines Co. and Vice Pres. & Dir. of the Va. Erection Corp., 1961—. Hon. Pos.: Past Chmn., Pittsburgh Sect., Am. Welding Soc.; Past Chmn., Pittsburgh Sect., Am. Soc. Refrigerating Engrs.; Past Chmn., Pittsburgh Nuclear Activities Coun. Mem.: Fellow, A.A.A.S.; Pa. Acad. of Sci.; A.S.T.M.; A.S.C.E., Fellow; A.S.H.R.A.E., Fellow; A.S.M.E.; A.W.S.; Sigma Xi; Sigma Pi Sigma; Tau Beta Pi; Iota Alpha; Sigma Beta Sigma; Kiwanis. Contbrng. Author: Steel Structures Painting Manual. Contbr. to: Civil Engrng.; Refrigerating Engrng.; Proc., A.S.C.E.; Trans., A.I.Ch.E. Gen. Int.: Pressure-Enthalpy Diagram for Dry Air at Low Pressures and Temperatures. Areas of Rsch.: Cryogenics; Wind Tunnels; Liquefaction and Storage of Gases; Welding; Corrosion Protection; Product Development.



ADAMS, Philip Edwin (D.M.D.), Orthodontist, 170 Marlborough St., Boston, Mass. ORTHODONTICS. b. New Sharon, Me., July 1, 1896. s. Edwin Thomas and Rena Ethel (House) A. Edn.: D.M.D., Tufts Coll. Dental Schl., 1918. m. Ethel Marie Sanford, 1938. c.: Cynthia Robey. Exp.: General Practice of Dentistry, Boston, Mass., 1919-29; Visiting Instr., Tufts Coll. Dental Schl., Dept. of Orthodontics, Tufts Coll., Boston, Mass., 1919-24; Instr., ibid., 1924-32; Asst. Prof. to Prof. and Hd. of Dept., 1932-52; Prof. Emeritus, ibid., 1952—; Special Lectr. in Orthodontics, ibid., 1952—; Visiting Prof., Clin. Orth., Boston Univ. Schl. of Med., 1960—. Hon. Pos.: Pres., Am. Dent. Assn., 1949-50; Fellow, Internatl. Coll. of Dents., 1935; Pres., Internatl. Coll. of Dents. at Large, 1956; Fellow, Am. Coll. of Dents., 1937; Pres., Am. Assn. of Orthodontists, 1956; Diplomate, Am. Bd. of Orthodontists, 1951; Am. Assn. for the Adv. of Sci., Mem., 1948, Fellow, 1954. Contbr. to: Am. Jour. of Orthodontics. Gen. Int.: Gave 100 Speeches as President-elect and Pres. of Am. Dental Assn. all over the United States, 1949-50. Areas of Rsch.: Orthodontics.

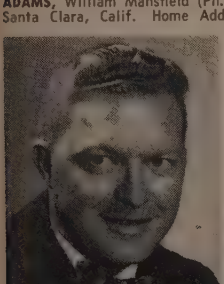
ADAMS, Oscar Stewart (Ph.D.), Mgr., Operations Analysis Dept., Lockheed-Georgia Co., Marietta, Ga. Home Add.: 2121 Ponce de Leon Ave., N.E., Atlanta 7, Ga. EXPERIMENTAL PSYCHOLOGY. b. Reynolds, Ga., Aug. 1, 1925. s. Louis R. and Eve (Stewart) A. Edn.: B.A., Emory Univ., 1948; M.A., ibid., 1949; Ph.D., Ohio State Univ., 1952. m. Frances Jernigan, Oct., 1956. c.: Frances J.; Laurie C. Exp.: Rsch. Assoc., Ohio State Univ., Columbus, Ohio, 1952-53; Asst. Prof., Emory Univ., Atlanta, Ga., 1953-55; Mgr., Lockheed-Georgia Co., Marietta, Ga., 1955—. Mem.: Am., Midwestern, Southeastern and Ga. Psychol. Assn.; A.A.A.S.; Aerospace Med. Assn.; Human Factors Soc.; Sou. Soc. for Philos. and Psychol.; Delta Tau Delta; Sigma Xi. Contbr. to: Jour. of Exptl. Psychol.; Am. Jour. of Psychol.; Jour. of Gen. Psychol.; Perceptual and Motor Skills. Serv. Rec.: AUS, 1943-46. Areas of Rsch.: Man-Machine Systems Analysis; Prolonged Human Performance as a Function of the Work-Rest Schedule.

ADAMS, Roger (Ph.D.), Prof. Emeritus of Chem., Univ. of Ill., Urbana, Ill. Home Add.: 603 W. Michigan Ave., Urbana, Ill. ORGANIC CHEMISTRY. b. Boston, Mass., Jan. 2, 1889. s. Austin Winslow and Lydia (Curtis) A. Edn.: B.A., Harvard Univ., 1909; M.A., ibid., 1910; Ph.D., ibid., 1912. Hon. Deg.: Sc.D., Brooklyn Poly. Inst., 1935; Sc.D., Northwestern Univ., 1942; Sc.D., Univ. of Rochester, 1943; Sc.D., Harvard Univ., 1945; Sc.D., Univ. of Pa., 1947; Sc.D., Yale Univ., 1948; LL.D., Univ. of Mich., 1954; Sc.D., Drexel Inst. of Tech., 1955; Sc.D., Univ. of Ill., 1957; Sc.D., Bridgeport Univ., 1960. m. Lucile Wheeler, Aug., 1918. c.: Lucile. Exp.: Instr., Harvard Univ., Cambridge, Mass., 1913-16; Asst. Prof., Univ. of Ill., Urbana, Ill., 1916-18; Prof., ibid., 1919-26; Prof. and Hd. of Dept. of Chem. and Chem. Engrg., ibid., 1926-54; Rsch. Prof., ibid., 1954-57; Prof. Emer., ibid., 1957—. Hon. Pos.: Pres., Franklin D. Roosevelt Sci. Advisory Bd., 1934-35; Mem., Bd. of Dirs., Natl. Sci. Fdtn., 1954-60; Mem., Bd. of Trustees, Sloan-Kettering Inst. for Cancer Rsch., Com. on Sci. Rsch., 1954—. Mem.: Am. Acad. of Arts and Sci.; Am. Inst. of Chemists; German Chem. Soc.; Sigma Xi; Phi Beta Kappa; Alpha Chi Sigma; Alpha Tau Omega; and others Co-Author: Laboratory Experiments in Organic Chemistry, 1928, 1933, 1939, 1949. Contbr. to: Organic Syntheses; Organic Reactions; Jour. Am. Chem. Soc.

ADAMS, Thomas C. (Ph.D.), Economist, Pacific N.W. Forest and Range Expt. Sta., U. S. Forest Service, Portland, Ore. Home Add.: 7640 S.E. 28th Ave., Portland, Ore. FOREST ECONOMICS. b. San Francisco, Calif., Nov. 4, 1918. s. Frank and Amy Belle (Hill) A. Edn.: A.B., Univ. of Calif., Berkeley, 1940; B.S., ibid., 1940; M.A., Univ. of Mich., 1951; Ph.D., ibid., 1952. m. Laura Mae Kopp, 1957. c.: Anne; Sally Jean. Exp.: Forest Economist, U. S. Forest Service, Portland, Ore.. 1951-54; Asst. Prof., Ore. State Univ., 1955-57; Forest Economist, U. S. Forest Serv., Portland, Ore., 1957—. Hon. Pos.: Secy., Portland Chapt., Soc. of Am. Foresters. Mem.: Am. Statistical Assn.; Am. Econ. Assn.; Am. Farm Econ. Assn. Contbr. to: Am. Econ. Rev.; Land Economics. Service Rec.: U.S.N.R., 1940-45. Areas of Rsch.: Forest Economics.

ADAMS, William Errett (Lt.), U.S.A.F. Rsch. and Development. Home Add.: 1503 Metropolitan Ave., Bronx 62, N. Y. NUCLEAR PHYSICS. b. Texarkana, Ark., May 21, 1940. s. Oscar Errett and Mary Louise (Miles) A. Edn.: B.S., Queens Coll., City Univ. of N. Y., 1962. m. Eleanor Ruth Wait, Sept., 1961. Exp.: Lt., U.S.A.F. Rsch. and Devel., 1962—. Mem.: A.A.A.S.; Am. Physical Soc.; Alpha Lambda Kappa; Arnold Air Soc. Serv. Rec.: U.S.A.F., 1962—.

ADAMS, William Mansfield (Ph.D.), Pres., Planetary Sciences, Inc., Santa Clara, Calif. Home Add.: 3905 Stanford Way, Livermore, Calif. SEISMOLOGY. b. Kissimme, Fla., Feb. 19, 1932. s. Shirah Devoy and Olive Colburn (Goding) A. Edn.: B.A., Univ. of Chicago, 1951; B.A., Univ. of Calif., 1953; M.S., St. Louis Univ., 1955; Ph.D., ibid., 1957. m. Roberta Kay Blackwell, Feb. 19, 1955. c.: William Mansfield, Jr.; Jonathan Blackwell; Christopher Daniel. Exp.: Computer, Western Geophysical, West Texas, N. M., 1955; Tech. Officer, Dominion Observatory, Ottawa, Can., 1956; Seismologist, Geotechnical Corp., Laramie, Wyo., 1957-59; Physicist, Univ. of Calif., 1959-61; Deputy Tech. Dir., ibid., 1960-61; Pres., Planetary Sciences, Inc., Santa Clara, Calif., 1962—. Hon. Pos.: Honor Scholarship, Univ. of Chicago, 1949; Gulf Fellowship, St. Louis Univ., 1955; Fulbright Grant, Italy, 1956-57; Editor, Bull. of the Seismological Soc. of Am. Mem.: Am. Geophysical Union; Soc. of Exploration Geophysicists; European Assn. of Exploration Geophysicists; Seismological Soc. of Am.; Fellow, Geol. Soc. of Am.; Sigma Xi. Contbr. to: Trans. of Am. Geophys. Union; Jour. of Geophys. Rsch.; Geofisica Pura e Applicata; Bull. of the Seismol. Soc. of Am.; Geophysics; Rend. dell'Accademia Scienze Fische e Mathematishe della Societa Nazionale de Scienze; Lettere ed Arti in Napoli. Areas of Rsch.: Earthquake and Explosive Mechanisms; Direct Exploration of Interior of Earth; Data Transmittal, Processing, and Interpretation.



ADAMSON, Richard Henry (Ph.D.), Commissioned Officer, U. S. Pub. Hlth. Serv., Natl. Inst. of Hlth., Bethesda, Md. Home Add.: 5519 30th Pl., N.W., Chevy Chase, Md.. b. Council Bluffs, Ia., Aug. 9, 1937. s. Holger Nels and Mary Carolyn (Dengle). Edn.: B.A., Drake Univ., 1957; M.S., State Univ. of Iowa, 1959; Ph.D., State Univ. of Iowa, 1961. Exp.: Rsch. Asst., Coll. of Med., State Univ. of Ia., 1957-58; Fellow, Dept. of Pharmacol., Coll. of Med., State Univ. of Ia., 1958-61; Comm. Officer, U. S. Public Health Service, Natl. Insts. of Health, 1961—. Mem.: Gamma Alpha; Iowa Acad. of Sci.; N. Y. Acad. of Sci.; Sigma Xi; A.A.A.S. Contbr. to: Sci.; Proc. of Soc. of Exptl. Biol. and Med.; Jour. Pharmacol. and Exptl. Therapeutics; Fed. Proceedings; Cancer Rsch. Areas of Rsch.: Drug-Enzymes; Cancer Chemotherapy; Antibiotics; Antibiotic Toxicity; Drug Metabol.

ADDICOTT, Fredrick T(aylor) (Ph.D.), Prof. of Agronomy, Univ. of Calif., Davis, Calif. Home Add.: 821 Cherry Lane, Davis, Calif. PLANT PHYSIOLOGY (ABSCISSION, PLANT HORMONES). b. Oakland, Calif., Nov. 16, 1912. s. James E. and Ottilia K. A. Edn.: A.B., Stanford Univ., 1934; Ph.D., Calif. Inst. of Tech., 1939. m. Alice Baldwin, Aug. 11, 1935. c.: Donald J.; Jean A.; John F.; David B. Exp.: Instr., Asst. Prof., Santa Barbara Coll., 1939-46; Assoc. Physiologist, Special Guayule Rsch. Project, Salinas, Calif., 1943-44; Asst. Prof., Assoc. Prof., Prof. Bot., Univ. Calif., Los Angeles, 1946-60; Prof. Agron., Univ. Calif., Davis, 1961—. Mem.: A.A.A.S.; Bot. Soc. Amer.; Amer. Soc. Plant Physiol.; Sigma Xi; Am. Soc. Hort. Soc.; Japanese Soc. Plant Physiol. Contbr. to: Sci.; Plant Physiol.; Amer. Jour. of Botany. Areas of Rsch.; Abscission; Defoliation; Plant Hormones.

ADEY, William Ross (M.D.), Prof. of Anatomy and Physiol., Schl. of Medicine, Univ. of Calif. at Los Angeles 24, Calif. Home Add.: 7127 Dume Dr., Malibu, Calif. NEUROPHYSIOLOGY—STUDIES OF BRAIN MECHANISMS IN LEARNING, AND APPLICATIONS OF COMPUTER SCIENCE TO BRAIN RESEARCH. b. Australia, Jan. 31, 1922. s. William James and Constance Margaret (Weston) A. Edn.: M.B. and B.S., Schl. of Med., Univ. of Adelaide, Australia, 1943; M.D., Schl. of Med., Univ. of Adelaide, 1949. m. Alwynne Sydney Morris, June 24, 1944. c.: David John; Susan Ruth; Geoffrey Robert. Exp.: Reader in Anatomy, Schl. of Medicine, Univ. of Adelaide, Australia, 1951-53; Asst. Prof., Schl. of Med., Univ. of Calif., Los Angeles, Calif., 1953-54; Sr. Lectr., Schl. of Med., Univ. of Melbourne, Australia, 1955-57; Prof. of Anatomy and Physiol., Schl. of Med., Univ. of Calif., Los Angeles, Calif., 1957—. Hon. Pos.: Mem., Computer Rsch. Comm., Natl. Inst. Health; Mem., Space Sci. Bd., Natl. Acad. Sci., Wash.; Mem., Scientific Adv. Bd., U. S. Air Force; Consultant, Natl. Aeronautics and Space Admin. Mem.: Am. Physiol. Soc.; Am. Assn. of Anatomists; Inst. of Radio Engrs.; Anatomical Soc. of Great Britain and Ireland; A.A.A.S. Contbrng. Author: Handbook of Physiology, 1958. Contbr. to: Am. Jour. Physiol.; A.M.A. Arch. Neurol. Jour.; Jour. Comp. Neurol.; Jour. Neurol. Neurosurg. Psychiat. Exper. Neurol.; Jour. Anatomy; Clin. Neurophysiol. Internatl. Arch. Neurobiol.; Trans. Biomed. Electr. of Inst. Radio Engr.; Jour. Pharmacol. Exper. Therap.; Feder. Proc. Serv. Rec.: Royal Australian Navy, 1945-46. Gen. Int.: Royal Soc. of London and Nuffield Found. Fellow in Med., 1956. Areas of Rsch.: Electrophysiology and Biomedical Engineering; Studies of Brain Mechanisms in Learning and Behavioral Processes; Studies of Brain Mechanisms in Space Flight.

ADELSON, Edward T. (M.D.), Instr., Cornell Univ. Med. Coll., New York, N. Y. Home Add.: 55 East 86th St., New York, 28, N. Y. PSYCHIATRY. b. New York, N. J., June 25, 1915. s. Morris and Rose (Topf) A. Edn.: A.B., Cornell Univ., 1936; M.D., ibid., 1940. m. Becky Mackinofsky, 1948. c.: Marcia; Jonathan. Exp.: Fellow, N. Y. Univ. Coll. Med., 1944-44; Instr., Cornell Univ. Med. Coll., 1960—. Mem.: Am. Psychiatric Assn.; Am. Orthopsych. Assn.; A.A.A.S.; Acad. of Psychoanalysis; Diplomate Am. Bd. of Psychiatry and Neurology. Contbr. to: Jour. of Am. Psych. Assn. Areas of Rsch.: Creativity in Scientists.

ADISMAN, I. Kenneth (D.D.S.), Dentist, 100 Central Park S., New York, N. Y. Home Add.: 19 West 55th St., N. Y. 19, N. Y. PROSTHODONTIST. b. N. Y., N. Y., Aug. 3, 1919. s. Joseph and Frances (Gertz) A. Edn.: D.D.S., Univ. of Buffalo, 1940; M.S., N. Y. Univ. Coll. of Dent., 1960. m. Joan Sugarman, June 27, 1957. c.: Kathryn; Leslie. Exp.: Asst. Prof., N. Y. Univ. Coll. of Dent., N. Y., 1953—; Chief of Prosthetics, Mt. Sinai Hosp., N. Y., N. Y., 1952—. Hon. Pos.: Mem. of Cleft Palate Advisory Com., N. Y.; Mem., Com. on Admissions, N. Y. Univ. Coll. of Dentistry. Mem.: N. Y. Acad. of Scis.; The Scientific Rsch. Soc. of Am.; The Soc. for Dental Rsch. Contbrng. Author: Oral Physiology, 1960; Dental Clinics of North America, 1962. Contbr. to: Jour. of Prosthetic Dentistry; Internatl Dental Jour.; N. Y. Jour. of Dentistry. Serv. Rec.: U. S. Army Dental Corps, 1942-46. Areas of Rsch.: Maxillo-Facial and Cleft Palate Prosthodontics.

ADLER, John Hans (Ph.D.), Dir., Econ. Devel. Inst., affiliated with Internatl. Bank for Reconstruction and Development (World Bank), 1818 H St., N.W., Wash., D. C. Home Add.: 5107 Fairglen Lane, Chevy Chase, Md. ECONOMICS. b. Tachov, Czechoslovakia, Nov. 16, 1912. s. August and Lilly (Beck) A. Edn.: Dr. Jur., German Univ. of Prague, Czech., 1937; M.A., Yale Univ., 1940; Ph.D., ibid., 1946. m. Vilma Rabi, Sept. 12, 1939. c.: Catherine Mary; Marcia Victoria. Exp.: Rsch. Asst. and Instr., Yale Univ., 1941-42; Instr., Oberlin Coll., 1942-44; Economist, Federal Reserve Bd., 1944-45; Dep. Chf., Finance Div., Allied Comm. for Austria (U.S.), 1945-47; Economist, Federal Reserve Bank of N. Y., 1947-50; Economist, Internatl. Bank for Reconstruction and Development, Wash., D. C., 1950-57; Economic Adviser, ibid., 1957-61; Dir., Econ. Devel. Inst., 1962—. Mem.: Am. Econ. Assn.; Internatl. Inst. of Public Finance; Soc. for Internatl. Devel.; Edgemoor Club. Co-Author: Public Finance of a Developing Country—El Salvador, 1950; Public Finance and Economic Development in Guatemala, 1952; The Pattern of United States Import Trade Since 1923—Some New Index Series and Their Application, 1952. Contbr. to: Am. Econ. Rev.; Quar. Jour. of Econs.; Jour. of Pol. Economy; Rev. of Econs. and Statistics; Trimestre; Indian Jour. of Econs.; Kyklos. Areas of Rsch.: Problems of Economic Development; International Trade and Payments.

ADLER, Harry Frank (M.D.), 274 W. Ware Blvd., San Antonio, Tex. b. July 26, 1914, Chicago, Ill. s. Frank and Celia (Johnson) A. Edn.: A.A., Univ. of Chicago, 1935; B.S., 1937; M.S., 1938; Northwestern Univ.; Ph.D., 1941; M.B., 1944; M.D., 1945; ibid. m. Laura A. Steinbach of Converse, Tex., 1947. d. Joe and Clara Steinbach. c.: Phyllis Anne; Max Frank. Exp.: Lab. Asst. and Grad. Service Scholar, Univ. of Chicago, 1938; Fellow and Instr. in Physiol., Northwestern Univ., Med. Schl., 1941; Chf. Dept. Physiol., U.S.A.F. Schl. of Aviation Med., 1946; Dir., Med. Sci. Div., ibid., 1950-51; Private Practice, 1951—. Mem.: Sigma Xi; A.A.A.S.; Am. Physiol. Soc.; Soc. Exp. Biol. and Med.; Aero-Med. Assn.; A.M.A.; Ill. State Acad. of Sci. Contbr. to: Med. Jours. Ph.D. Dissertation: Effect of Drugs on Colon Motility. War Rec.: Aviation Med. Examiner, Aviation Physiol., Flight Surgeon, U.S.A.F. Listed in: A.M.S.

ADOMIAN, George (Ph.D.), Sr. Staff Physicist, Hughes Aircraft Co., Culver City, Calif. Home Add.: 6344 W. 85 Pl., Los Angeles 45, Calif. THEORETICAL PHYSICS. b. Buffalo, N. Y., Mar. 21, 1922. s. Haig and Rose (Harootunian) A. Edn.: B.S., Univ. of Mich., 1944; M.S., ibid., 1948; Ph.D., Univ. of Calif., 1961. m. Corinne Hodgson, Dec. 23, 1956. c.: Haig; Diane. Exp.: Instr., Wayne State Univ., 1951-52; Rsch. Assoc., Univ. of Mich., 1952-53; Sr. Staff Physicist, Rsch. and Develop. Div., Hughes Aircraft Co., Culver City, Calif., 1953—. Mem.: Am. Physical Soc.; Inst. of Radio Engrs.; A.A.A.S.; Sigma Xi; Sigma Pi Sigma; Tau Beta Pi; Eta Kappa Nu; N. Y. Acad. of Scis. Author: Linear Stochastic Operations, 1961. Contbr. to: Proc. Inst. of Radio Engrs.; Rev. of Modern Phys.; Jour. of Math. Phys.; Bull. Am. Phys. Soc. Serv. Rec.: U.S.N.R., 1944-46. Gen. Int.: Hughes Doctoral Fellow; Mich. Alumni Scholar; Donovan Scholar. Areas of Rsch.: Stochastic Processes and Stochastic Operators in Physics. Weapons and Space Systems Analysis and Planning.

AGOGINO, George A. (D.S.S.), Assoc. Prof., Baylor Univ., Waco, Texas. PALEO-INDIAN RESEARCH WITH MINOR INTERESTS IN PHYSICAL ANTHROPOLOGY AND FOLKLORE (FOLK MUSIC). b. W. Palm Beach, Fla., Nov. 18, 1920. s. Andrew and Beulah (Brooke) A. Edn.: B.A., Univ. of N. Mex., 1949; M.A., ibid., 1951; D.S.S., Syracuse Univ., 1958; Post Doctoral Fellow, Harvard Univ.; Hon. Doc., Rome (Italy) Inst. of Arts and Scis. m. Mercedes Merner of San Francisco, Calif., Dec. 31. 1951. d. Mr. and Mrs. Herbert Merner. c.: Alice; Karen. Exp.: Museum Asst., Univ. of N. Mex. Museum, 1947-48; Grad. Asst., Univ. of N. Mex., 1948-50; Anthropol. Librn., ibid., 1950-51; Asst. Prof., Soc. Studies, Nasson Coll., 1954-56; Instr. in Anthropol., Syracuse Univ., 1956-58; Asst. Prof. in Anthropol. and Acting Dir. of the Univ. Museum, State Univ. of S. Dak., 1958-59; Asst. Prof., Anthropol., Univ. of Wyo., 1959-61; Assoc. Prof., Baylor Univ., 1962—. Hon. Pos.: Advisor, Syracuse Univ. Anthropol. Club, 1956-58; Editor, W. H. Over Museum News, 1958-59; Paleo Indian Editor "Science of Man"; Paleo Indian Editor, La Conquesta (Italy); Mem. of Edtrl. Bd., "Instituto-Inter-Americano"; Charter Assoc., Current Anthropol., 1959. Mem.: Sigma Xi; Alpha Kappa Delta; Soc. for Am. Archaeol.; A.A.U.P.; Soc. of Gypsy Lore; N. J. Archaeol. Soc.; Eastern State Archaeol. Fed.; S. Dak. State Archaeol. Commn.; Am. Assn. of Phys. Anthropol.; Fellow, Instituto Inter-Americano; Fellow of Royal Anthropol. Soc. of Great Britain and Ireland. Contbr. to: N. Mex. Alumnus Mag.; N. J. Archaeol. Soc. Newsletter; The Tex. Jour. of Sci.; El Palacio; Am. Antiquity; Am. Anthropolst.; Jour. of Gypsy Lore; Alpha Kappa Deltan; Central States Archaeol. Jour.; W. H. Over Museum News; N. Y. State Folklore Quart.; Iowa Archaeol. Jour.; N. Dak. Hist.; Masterkey; Sci. of Man; Current Anthropol.; S. W. Jour. of Anthropol.; Natl. Geog. Mag. D.S.S. Dissertation: Recent Archaeological Developments Involving Preceramic Cultures in the Middle Rio Grande. Serv. Rec.: U. S. Army Signal Corps, 1942-46. Travel: Mex.; Can.; New Caledonia; Australia; New Guinea; Luzon; Leyte; Japan. Gen. Int.: Major Rsch. Paleo-Indian in the New World. Rsch. Grants: Western Fdtn., Inc., 1954; Wenner-Gren Fdtn. in Anthropol., 1958, '59, '60 and '61; Am. Philo. Soc. Grant, 1959, '60 and '61, '62; Natl. Geographic Soc., 1960 and '61; Am. Acad. of Arts and Sci., 1960 and '61; Sigma Xi, 1962. Sites discovered in Ia. and N. Mex. radiocarbon dated from 2180 years to 10,850 years old. Evidence of one of oldest grain foods used by man (6880 yrs.). First Paleo-Indian site in Iowa (8430 yrs.); First Charcoal Folsom date (10,780 yrs.); first Agate Basin date (9350 yrs.). Developed first Highway Salvage Program in S. Dak. and in the Northern Plains. Hobbies: Hunting; Fishing; Mt. Climbing; Folklore.

AFRIAT, Sydney Naphtali (D.Phil.), Assoc. Prof. Econs., Rice Univ., Houston, Tex. and Consult., Econometric Rsch. Program, Princeton Univ. Home Add.: 2349 Sunset Blvd., Houston 5, Tex. MATHEMATICS, MATHEMATICAL ECONOMICS, STATISTICS. b. London, England, July 19, 1925. s. Messaoud Naphtali and Bertha (Anahory) A. Edn.: M.A., Pembroke Coll., Cambridge, 1950; D.Phil., The Queen's Coll., Oxford, 1953. Exp.: Jr. Scient. Off., Natl. Phys. Lab., 1945-46; Scient. Officer, Admiralty Rsch. Lab., 1949-50; Rsch. Staff of Dept. of Appl. Econs., Cambridge, 1953-56; Rsch. Fellow and Lectr., The Hebrew Univ., Jerusalem, Israel, 1956-58; Rsch. Assoc., Dept. of Econs., Princeton Univ., 1958-62. Mem.: Fellow, Cambridge Philos. Soc.; Am. Mathl. Soc.; Economet. Soc. Contbr. to: Quart. Jour. Math. Oxford; Proc. Cambridge Phil. Soc.; Publ. Math. Debrecan; Proc. Rsch. Coun., Israel; Math. Gazette. Areas of Rsch.: Matrix Theory, Consumer and Index-Number Theory, Multivariate Statistical Analysis, Mathematical Economics.

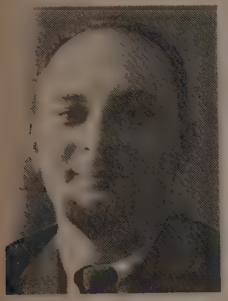
AFT, Harvey (Ph.D.), Asst. Prof. Forest Products Chem., Forest Rsch. Lab., Ore. State Univ., Corvallis, Ore. Home Add.: 1915 Philomath Rd., Corvallis, Ore. ORGANIC CHEMISTRY. b. Chicago, Ill., June 17, 1929. s. Sam and Pearl (Mandel) A. (dec.). Edn.: B.A., Univ. of Southern Calif., 1950; M.S., Univ. of Puget Sound, 1952; Ph.D., Ore. State Univ., 1962. m. Lorna Rose Bryant, Sept. 12, 1953. c.: Wendy Lynda; Theresse Sheryl; Robert Dean; Adam Bryant. Exp.: Chem., Walter Reed Inst., Wash., D. C., 1955-56; Asst. Prof., Forest Res. Lab., Ore. State Univ., 1957—. Mem.: Am. Chem. Soc.; Chem. Soc. (London); A.A.A.S.; Plant Phenolics Group of North Am.; Sigma Xi; Phi Beta Kappa; Phi Kappa Phi; Phi Sigma; Phi Lambda Upsilon. Contbr. to: Jour. of Organic Chem.; Jour. of Food Sci.; Forest Products Jour. Serv. Rec.: A.U.S., 1955-56. Areas of Rsch.: Forest Products Chem.; Bark Extractives; Food Antioxidants; Plant Phenolics.

AGNEW, Leslie Robert Corbet (M.D.), Prof. and Chmn. Dept. of Hist. of Med., Univ. of Kans. Med. Center, Kansas City 3, Kans. HISTORY OF MEDICINE. FORMERLY EXPERIMENTAL PATHOLOGY AND NUTRITION. b. Newcastle-on-Tyne, England, Nov. 18, 1923. s. Robert Vernon and Jane Constance (Corbet) A. Edn.: M.B., Ch.B., Univ. of Glasgow, Scotland, 1946; M.D., ibid., 1950; M.A., Harvard Univ., 1957. Exp.: Pathologist, Rowett Inst., Aberdeenshire, Scotland, 1947-50; Rsch. Fellow, Am. Cancer Soc., Yale Univ. Schl. of Med., New Haven, Conn., 1951-52; Rsch. Assoc. Prof. Path., Univ. of Fla., Gainesville, Fla., 1952-54; Rsch. Assoc., Harvard Schl. Pub. Health, Boston, Mass., 1954-56; Tutor in Pre-Med. Studies, Lowell House, Harvard Coll., 1955-57; Prof. and Chmn. Dept. of Hist. of Med., Univ. of Kans. Med. Center, Kans. City, Kans., 1957—. Hon. Pos.: Mem. of Coun. of Am. Assn. for the Hist. of Med.; Consultant, Natl. Assn. on Standard Med. Voc. Mem.: Hist. of Sci. Soc.; Am. Assn. for Hist. of Med.; Sigma Xi; N. Y. Acad. Sci.; A.A.A.S.; British Med. Assn.; Nutrition Soc.; Soc. for Endocrinology; Pathol. Soc. of Great Britain and Ireland; Phi Beta Pi. Co-Author: Nutrition in Medical Progress, 1956. Contbr. to: Bull. of Hist. of Med.; Isis; Jour. of Hist. of Med.; British Jour. of Nutrition; The Lancet; Jour. of Med. Edn.; Cancer Rsch.; Proc. Soc. Exper. Biol. Med.; Nature. Gen. Int.: Harvard Univ. English Dept. William Harris Arnold and Gertrude Weld Arnold Essay Prize, 1956-57; Trent Memorial Lectr., Duke Univ., 1962. Areas of Rsch.: History of Medicine; Experimental Pathology and Nutrition.

AGRESTA, Joseph (Ph.D.), Physicist, Union Carbide Corp., Eastview, N. Y. Home Add.: 78 Joyce Rd., Hartsdale, N. Y. THEORETICAL PHYSICS. b. Long Island City, N. Y., June 13, 1929. s. Joseph S. and Carmela (Mazziotta) A. Edn.: B.E.E., Cooper

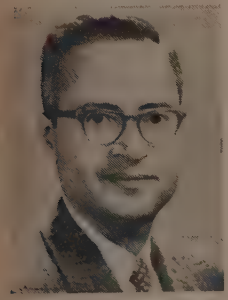
Union Coll., 1950; M.S., N. Y. Univ., 1952; Ph.D., ibid., 1958. m. Aurelie Bergin, Feb., 1953. c.: Joseph Aurelie; Thomas; Paul; William. Exp.: Grad. Asst., N. Y. Univ., N. Y., 1950-52; Rsch. Asst., ibid., 1952-53; Physicist, Curtiss-Wright Corp., Clifton, N. J., 1953-56; Rsch. Assoc., N. Y. Univ., N. Y., 1956-58; Lecturer, City Coll. of N. Y., N. Y., 1958—; Adj. Asst. Prof., N. Y. Univ., 1959—; Physicist, United Nuclear Corp., White Plains, N. Y., 1958-62; Physicist, Union Carbide Corp., Eastview, N. Y., 1962—. Mem. Am. Association of Physics Teachers; Plains, N. Y., 1958-62. Mem.: Am. Assn. of Physics Tchrs.; Am. Nuclear Soc.; N. Y. Acad. of Sci.; Tau Beta Pi; Sigma Xi. Contbr. to: Nuclear Sci. and Engrng.; Tran. of Am. Nuclear Soc. Areas of Rsch.: Nuclear Reactor Theory; Computing Machine Methods.

AGUIAR, Adam M. (Ph.D.), Asst. Prof. of Chem.. Fairleigh Dickinson Univ., Madison Ave., Madison N. J. Home Add.: Apt. 6C2, 114 Franklin St., Morristown, N. J.



ORGANIC CHEMISTRY. b. Newark, N. J., August 11, 1929. s. Joaquim and Emilia (Nunes) A. Edn.: B.S., Fairleigh Dickinson Univ., 1955; M.A., Columbia Univ., 1957; Ph.D., ibid., 1960. m. Edith Knopf, June 28, 1953. Exp.: Chemist, Otto B. May, Inc., Newark, N. J., 1947-55; Tchng. Asst., Columbia Univ., 1955-57, 1958-59; Asst. Prof. of Chem., Fairleigh Dickinson Univ., 1959—. Mem.: Amer. Chem. Soc.; Amer. Assn. Adv. of Sci.; N. Y. Acad. Sci.; Br. Chem. Soc.; Amer. Rocket Soc.; Sigma Xi; Phi Lambda Upsilon. Gen. Int.: Predoctoral Fellowship, Union Carbide and Carbon, Columbia Univ., 1957-58; Postdoctoral Fellowship, Natl. Insts. of Health, Columbia Univ., 1959. Areas of Rsch.; Aromaticity in Heterocyclic Pentacovalent Organic Compounds; Phosphanion Chemistry; Allylic Halogenation of Tertiary Phosphines.

AHUJA, Yog R. (Ph.D.), Instr., Dept. of Natural Sci., Loyola Univ., Chicago 11, Ill. Home Add.: 1318 E. Hyde Park Blvd., Chicago 15, Ill.



GENETICS. b. May 6, 1930, Bannu. s. Hardas S. and Bhagwanti (Khera) A. Edn.: B.Sc., Univ. of Delhi, 1950; Associateship, Indian Agric. Res. Inst., 1952; Ph.D., Univ. of Calif., 1960. m. Gloria M. Nishida, April 6, 1960. c.: Nina. Exp.: Res. Asst., Indian Agric. Res. Inst., New Delhi, 1952-55; Post-Doc., Dept. of Human Genetics, Univ. of Mich., Ann Arbor, 1959-60; Instr., Dept. of Natural Sci., Loyola Univ., Chicago, Ill., 1960—. Mem.: Am. Soc. Human Genetics; AAAS; AIBS; Sigma Xi. Contbr. to: Ind. Jour. Genet. and Pl. Breed; Jour. de Genetique Humanine. Areas of Rsch.: Human Genetics.

AIKEN, William Hamblen (Ph.D.), V. Pres., of Rsch. and Devel., Union Bag-Camp Paper Corp., 233 Broadway, New York, N. Y. Home Add.: 87 Brookstone Dr., Princeton, N. J. CHEMISTRY. b. Salado, Tex., May 24, 1916. s. Carl H. and Anna (Hamblen) A. Edn.: B.S., Tex. A. and M. Coll., 1938; M.S., Inst. of Paper Chem., 1940; Ph.D., ibid., 1942. m. Rosemary Polk, Aug., 1942. c.: Rosemary J.; Wm. H., Jr. Exp.: Asst. Mgr. Chem. Div., Goodyear Tires Rubber Co., Akron, Ohio, 1946-52; Tech. Dir., Gardner Board and Carton Co., Middleton, Ohio, 1952-59; Vice Pres., Rsch., Personal Products Corp., Milltown, N. J., 1959-61; Dir., Rsch. and Devl., Union Bag-Camp Paper Corp., New York, N. Y., 1961-62. Mem.: Am. Chem. Soc.; A.A.A.S.; T.A.P.P.I.; Sigma Xi. Contbr. to: Jour. of Polymer Sci. Serv. Rec.: AUS, 1942-46. Areas of Rsch.: Pulp and Paper, Packaging..

AINSLIE, John Durham (M.D.), Assoc. Prof., Dept. of Psychiatry, Coll. of Med., Univ. of Fla., Gainesville, Fla. Home Add.: 1400 N.W. 36th Way, Gainesville, Fla.

PSYCHIATRY. b. Guatemala, May 22, 1924. s. Charles Albert and Ruth Horton (McConnell) A. Edn.: B.A., Univ. of Calif., 1944; M.D., ibid., 1946. m. Helen Kathleen Eells, Oct. 21, 1944. c.: Kirk Durham; Kent McConnell. Exp.: Chief of Admissions, Deputy Chief Rehab., USPHS, Lexington, Ky., 1956-57; Deputy Chief, V.A. Mental Hyg. Clinic, Miami, Fla., 1957-58; Asst. Prof., Univ. of Fla., Coll. of Med., 1958-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Chmn., Mental Health Comm., Alachua Co. Med. Soc.; Chmn., Follow-up Comm., Fla. Psychiatric Soc. Mem.: Am. Psychiatric Assn., Fellow; N. Y. Acad. of Sci.; Am. Assn. Univ. Prof.; Fed. Am. Soc. Expmtl. Biol. Contbr. to Jour. Expmtl. Med.; Am. Jour. Hyg.; Fed. Procs.; Proc. Soc. Expmtl. Biol. and Med.; Jour. Lab. and Clin. Med.; Jour. Immunol.; J.A.M.A.; Jour. Fla. Med. Assn. Serv. Rec.: U.S.N.R., 1944-46; Sr. Surgeon, U.S.P.H.S., 1951-57. Areas of Rsch.: Virology; Immunology; Epidemiology; Psychiatry; Psychotherapy; Psychopharmacology.

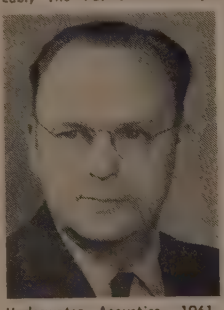
AITKEN, Hugh George Jeffrey (Ph.D.), Prof. of Econs., Univ. of Calif., Riverside, Calif. Home Add.: 4086 Chapman Place, Riverside, Calif. ECONOMIC HISTORY. b. Deal, England, Oct. 12, 1922. s. George Jeffrey and Ellen Miriam (Hughes) A. Edn.: M.A., St. Andrews Univ., 1947; M.A., Univ. of Toronto, 1948; Ph.D., Harvard Univ., 1951. m. Janice Hunter, July 9, 1955. c.: Ellen Bradshaw. Exp.: Rsch. Fellow, Harvard Univ., 1951-55; Asst. Prof. to Prof., Econs., Univ. of Calif., Riverside, 1955—. Mem.: Econ. Hist. Assn.; Econ. Hist. Soc.; Am. Econ. Assn.; Can. Polit. Sci. Assn. Author: The Welland Canal Company, 1954; Taylorism at Watertown Arsenal, 1960; American Capital and Canadian Resources, 1961. Contbr. to: Jour. of Econ. Hist.; Canadian Jour. of Econ. and Polit. Sci.; Bus. Hist. Rev. Serv. Rec.: Royal Air Force, 1942-46. Areas of Rsch.: Canadian Economic History; Economic History of North America; Business History.

AKAMINE, Ernest Kisei (Mr.), Assoc. Plant Physiologist, Univ. of Hawaii, Honolulu, Hawaii. Home Add.: 2255 Hulali Place, Honolulu 17, Hawaii. PLANT PHYSIOLOGY. b. Hilo Hawaii, May 10, 1912. s. Ryoki and Maka (Akamine) A. Edn.: B.S., Univ. of Hawaii, 1935; M.S., ibid., 1941. m. Toki Nakasone, June 11, 1938. c.: Carol Linden, Faye Ruth, Harry Ernest. Exp.: Asst. in Agri., Univ. of Hawaii, 1935-36; Asst. in Agron., Univ. of Hawaii, 1936-38; Asst. in Plant Physiol., ibid., 1938-42; Assoc., ibid., 1942-44; Jr. Plant Physiologist, ibid., 1944-52; Asst. Plant Physiologist, ibid., 1952-62; Assoc. Plant Physiologist, Univ. of Hawaii, 1962—. Mem.: Amer. Soc. of Plant Physiologists; A.A.A.S.; A.A.A.S. Fellow; Botanical Soc. of Amer.; Amer. Soc. for Horticultural Sci.; Hawaiian Botanical Soc.; Hawaiian Acad. of Sci.; Sigma Xi; Alpha Zeta; Bishop Museum Assn. Contbr. to: Proc. of the Amer. Soc. for Horticultural Sci.; Plant Physiology; Bull. of the Amer. Orchid Soc.; Botanical Gazette; Pacific Sci.; Sci.; Amer. Jour. of Botany; Jour. of Amer. Soc. of Agronomy. Gen. Int.: 25 Year Serv. Award by Univ. of Hawaii, 1961. Areas of Rsch.: Commodity Shipment, Post-Harvest Physiology.

ALBEE, George Wilson (Ph.D.), Prof. of Psychol., Western Reserve Univ, Cleveland 6, Ohio. Home Add.: 2541 Arlington Rd., Cleveland Heights 18, Ohio. ABNORMAL PSYCHOLOGY AND PROFESSIONAL MANPOWER. b. St. Marys, Pa., Dec. 20, 1921. s. George W. and Maude (Allen) A. Edn.: B.A., Bethany Coll., 1943; M.S., Univ. of Pittsburgh, 1947; Ph.D., ibid., 1949. m. Constance Impallaria, 1955. c.: Alexander; Luke; Maude; Sarah. Exp.: Rsch. Psychologist, Western Psychiatric Inst., Pittsburgh, Pa., 1949-51; Asst. Exec. Secy., Am. Psychol. Assn., Wash., D. C., 1951-53; Fulbright Prof., Helsinki Univ., Finland, 1953-54; Dir., Task Force on Manpower, Joint Comm. on Mental Illness, Cambridge, Mass., 1957-59; Prof., Western Res. Univ., Cleveland, Ohio, 1954—; Chmn., Dept. of Psychol., ibid., 1957-60. Mem.: Am. Psychol. Assn.; Ohio Psych. Assn.; Eastern Psychol. Assn.; Beta Theta Pi; Psi Chi. Author: Mental Health Manpower, 1959. Contbr. to: Jour. Abnormal and Soc. Psychol.; Jour. Consulting Psychol. Serv. Rec.: U.S.A.F. Areas of Rsch.: Intelligence in Schizophrenia; Professional Manpower Problems.

ALBER, Grover Boettner (Mr.), Sci. Tchr., Hally Schl., 2585 Grove, Detroit, Mich. Home Add.: 13193 Ohio, Detroit 38, Mich. SCIENCE EDUCATION. b. Detroit, Mich., Apr. 20, 1928. s. Grover Frank and Selma (Boettner) A. Edn.: B.A., Wayne State Univ., 1951; M.Ed., ibid., 1959. Exp.: Sci. Tchr., Ruthuff Schl., Detroit, 1955-57; Sci. Tchr., Holcomb Schl., 1957-60; Sci. Tchr., Hally Schl., 1960—. Mem.: A.A.A.S.; Natl. Sci. Tchr. Assn.; Soil Conservation Soc. of Am.; Assn. for Supvn. and Curriculum Development; Natl. Edn. Assn.; Central Assn. of Sci. and Math. Tchrs. Contbr. to: Metropolitan Detroit Sci. Rev. Serv. Rec.: U.S.A. Areas of Rsch.: Conservation Edn.

ALBERS, Vernon Martin (Ph.D.), Chief Scientist, Ordnance Rsch. Lab., The Pa. State Univ., University Park, Pa. Home Add.: 931 McKee St., State College, Pa.



PHYSICS. b. Dundas, Minn., May 6, 1902. s. Frederick A. and Viola (Partch) A. Edn.: B.A., Carlton Coll., 1923; M.A., Univ. of Ill., 1925; Ph.D., ibid., 1928. m. Elizabeth Newman, Sept. 18, 1929. c.: Mrs. Alvin Heller; Mrs. Rufus Benton; Vernon M., Jr. (dec.). Exp.: Head of Physics Dept., Eastern Ky. State Tchrs. Coll., 1928-29; Fellow, Natl. Rsch. Coun., Princeton Univ., 1929-30; Rsch. Physicists, Kettering Fdtn., Antioch Coll., 1930-43; Rsch. Assoc., Harvard Underwater Sound Lab., Harvard Univ., 1943-45; Prof. of Engrng. Rsch., Ord. Rsch. Lab., The Pa. State Univ., 1945—; Chf. Scientist, ibid., 1954—. Hon. Pos.: Chmn., NATO Inst. in Underwater Acoustics, 1961. Mem.: Am. Phys. Soc., Fellow; N. Y. Acad. of Scis.; Acoustical Soc. of Am., Fellow; Sigma Xi; Gamma Alpha; Torch Club. Author: Underwater Acoustics Handbook, 1960. Contbr. to: Phys. Rev.; Jour. of Chem. Physics; Jour., Optical Soc. of Am.; Rev. of Scientific Instruments; Plant Physiology. Areas of Rsch.: Underwater Acoustics.

ALBERT, Archie Arand (D.M.D.), Dentist, 3 Exchange St., Pawtucket, R. I. Home Add.: 82 Freeman Parkway, Providence, R. I.

GENERAL DENTISTRY. b. Chelsea, Mass., Aug. 20, 1898. s. Isaac and Rebecca (Finkelstein) A. Edn.: D.M.D., Harvard Dental Schl., 1921. m. Lillian Walder, July 2, 1932. Exp.: Chf., Dental Serv., Miriam Hosp., Providence, 1961—; Dentist, Pawtucket, R. I., 1961—. Hon. Pos.: Mem., Adv. Comm. for Aged, Sta. of R. I., 1961-1964; Bd. of Dental Examiners; Past Pres., N. England Sect., Amer. Coll. of Dents., Fellow; Past Pres., R. I. Sta. Dent. Soc. Mem.: Amer. Dent. Assn.; Fellow, Amer. Acad. of Sci.; Fellow, Amer. Acad. of Dent. Med.; Amer. Assn. for the Adv. of Sci.; Assn. of Amer. Indust. Dents.; Alpha Omega; Amer. Dent. Soc.; Mem. Royal Soc. of Hlth., England; Amer. Assn. of Dent. Examnrs. Listed in: W. W. in the East; Internatl. Blue Book; W. W. Industrial Dentistry.

ALBERT, Charles Elwood (LL.D.), Hd., Dept. Phys. and Engrng., Davis and Elkins Coll., Elkins, W. Va. b. Pen Argyl, Pa., Jan. 10, 1883. s. Urbanus and Sarah (Jones) A. Edn.: C.E., Lafayette Coll., 1908. Hon. Deg.: LL.D., Lafayette Coll.; LL.D., Southwestern at Memphis. m. Jeanne Marstiller of Elkins, W. Va., Sept. 1, 1915. d. Charles and Agnes Marstiller. c.: Charles; Jeanne. Exp.: Pub. Schl. Tchr., Pa., 1901-11; Prof. Math., Davis and Elkins Coll., 1911-13; Instr. Engrng., Mechanics, Pa. State Univ., 1913-16; Civil Engr., Camden, N. J. Iron Works, 1916-20; Instr. Mechanics, Drexel Inst., Philadelphia, Pa., 1920-22; Asst. Trng. Officer, U. S. Vet. Bureau, 1920-22; Dean, Acting Pres., Pres., Prof., Davis and Elkins Coll., 1922—. Hon. Pos.: Commnr., Gen. Assembly Presbyterian Church, 1938; Pres., W. Va. Acad. of Sci., 1935. Mem.: W. Va. Soc. of Professional Engrs.; Registered Civil Engr., W. Va.; Alpha Tau Omega. Gen. Int.: Pres., Randolph Co. Bd. of Edn., 1933-39. Listed in: Who's Who in Amer.

ALBERT, Orrin Wilson (Ph.D.), Emer. Prof. of Math., Univ. of Redlands, Redlands, Calif. Home Add.: 1712 Lasuen Rd., Santa Barbara, Calif.

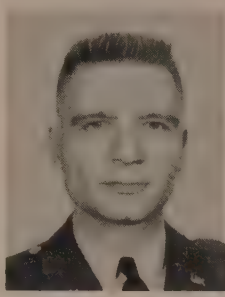
MATHEMATICS (GEOMETRY). b. Mt. Pleasant, Pa., March 24, 1889. s. James M. and Lydia (Miller) A. Edn.: B.A., Otterbein Coll., 1909; M.A., Columbia Univ., 1911; Ph.D., Univ. of Wash., 1931. m. Ora Shaw, Aug. 22, 1914. c.: Donald E.; Orrin W., Jr. Exp.: Instr., Math., H.S., Mt. Pleasant, Pa., 1909-10; Instr., Univ. of Pittsburgh, 1911-14; Instr., Purdue Univ., 1914-16; Instr. and Asst. Prof., Grinnell Coll., 1917-23; Prof., Univ. of Redlands, 1923-54. Hon. Pos.: Chmn., S. Calif. Sect. Math. Assn. of Amer., 1933-34, 1940-41. Mem.: Amer. Assn. Adv. Sci.; Amer. Math. Soc.; Math. Assn. of Amer.; Amer. Men of Sci.; Sigma Xi; Delta Alpha; Kiwanis. Contbr. to: Amer. Jour. of Math. Ph.D. Dissertation: Relations Between the Projective and Metric Differential Geometries of Surfaces.

ALBERT, Paul Andre (Sc.D.), Supervising Engr., Westinghouse Rsch. Lab., Pittsburgh 35, Pa. Home Add.: 130 Milliken Ave., Pittsburgh 35, Pa.

PHYSICAL METALLURGY. b. Van Buren, Me., Apr. 14, 1926. s. Dr. Armand and Marie (Lussier) A. Edn.: B.S., Univ. of Me., 1949; M.S., N. Y. Univ., 1954; Engr. Sc.D., ibid., 1956. m. Jeanne Kachmar, June 27, 1955. c.: John Paul; Madeleine Jeanne; Peter Andrew; Charles Joseph. Exp.: Rsch. Asst., Rsch. Div., N. Y. Univ., 1950-55; Engr., Materials Engrng. Dept., Westinghouse Elec. Corp., 1955-56; Supervising Engr., Westinghouse Research Labs., 1956—. Mem.: A.I.M.E.; A.S.M.; Inst. of Metals; A.A.A.S.; N.Y.A.S.; Sigma Xi. Contbr. to: A.I.M.E. Trans.; J.A.P. Serv. Rec.: U.S.A.F. Areas of Rsch.: Magnetic Materials; Physical Metallurgy; Ceramics.

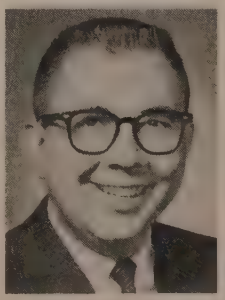
ALBINAK, Marvin Joseph (Ph.D.), Rsch. Chemist, Appl. Rsch. Inorg. Sect., Owens-Ill. Techn. Ctr., Toledo 7, Ohio. Home Add.: 2670 Meadowwood Dr., Toledo 6, Ohio. INORGANIC CHEMISTRY. b. Detroit, Mich., June 21, 1928. s. Alfred S. and Katherine (Smulson) A. Edn.: A.B., Univ. of Detroit, 1949; M.S., ibid., 1952; Ph.D., Wayne State Univ., 1959. m. Gloria Galamb, Aug. 26, 1961. c.: Stephen Joseph. Exp.: Rsch. Chem., Ethyl Corp., Ferndale, Mich., 1952-54; Asst. Prof., Univ. of Detroit, 1954-61; Sr. Rsch. Scient., Electric Autolite Co., Toledo, Ohio, 1961-62; Rsch. Chemist, Owens-Ill., Inc., 1962—. Hon. Pos.: Secy., Detroit Sect., Am. Chem. Soc.; Vice Chmn., Inorg. and Phys. Chemists Grp. of Detroit. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Engrng. Soc. of Detroit; Am. Ceramic Soc.; Soc. for Glass Techn.; Sigma Xi; Phi Lambda Upsilon; Alpha Sigma Nu. Contbr. to: Jour. of Org. Chem.; Can. Jour. of Chem. Areas of Rsch.: Coordination Compounds, Metallo-Organics, Fuel Cells, Glass.

ALBERTSON, John Newman, Jr. (Capt., Med. Serv. Corps), Chief, Clinical Pathol. Sec. and Consultant Bacteriologist, Valley Forge General Hospital, Phoenixville, Pa.



SEROLOGY (SYPHILIS SEROLOGY WITH TREPONEMAL ANTIGENS, INFECTIOUS MONONUCLEOSIS SEROLOGY, RHEUMATOID ARTHRITIS SEROLOGY, IMMUNOHEMATOLOGY). b. New Haven, Conn., Jan. 18, 1933. s. John Newman and Catherine Marie (Davis) A. Edn.: B.A., Univ. of Conn., 1954. m. Mary Anne Healey, Jan. 29, 1955. c.: Laura; Kurt; Paul; Eric; Nina. Exp.: U. S. Army, varied assignments within 11th Airborne Div., Ft. Campbell, Ky., 1954-56; U. S. Army, Commanding Officer, 127th Dispensary, Munich, Germany, 1956-57; U. S. Army, Asst. Chief, Dept. of Immunol. and Serol., USAREUR Med. Lab., Landstuhl, Germany, 1957-59; U. S. Army, Consultant Bacteriologist, Valley Forge General Hospital, Phoenixville, Pa., 1959-60; U. S. Army Chief, Clinical Pathol. Section and Consultant Bacteriologist, Valley Forge General Hospital, Phoenixville, Pa., 1960—. Hon. Pos.: Consultant, European Command, in Serol. and Immunol., 1957-59; Participant, Co-operative Study on Treponema Pallidum Immobilization Test and Other Treponemal Tests, World Health Organization, 1957-59; Chmn., Military Bacteriological Symposium, Soc. of Am. Bacteriologists, 1960. Mem.: N. Y. Acad. of Sci.; Am. Soc. for Microbiol.; A.A.A.S. Serv. Rec.: U. S. Army. Areas of Rsch.: Serology with Treponemal Antigens, Tuberculosis Bacteriology.

ALBRIGHT, Gifford Harry (Mr.), Assoc. Prof. of Architect. Engrng., Pa. State Univ., Univ. Park, Pa. Home Add.: P.O. Box 675, State Coll., Pa.



BUILDING SCIENCES AND ARCHITECTURAL ENGINEERING. b. Pottsville, Pa., Feb. 14, 1931. s. Harry C. and Grace (Reinhart) A. Edn.: B. Arch E., The Pa. State Univ., 1953; S.M., Mass. Inst. of Tech., 1955. Exp.: Rsch. Asst., Mass. Inst. of Techn., Cambridge, Mass., 1953-55; Spec., U. S. Navy Bur. of Yards and Docks, Wash., D. C., 1955-58; Assoc. Prof., Pa. State Univ., 1958—. Hon. Pos.: Chmn., Archit. Engrng. Div., Am. Soc. for Engrng. Edn. Mem.: Am. Assn. Adv. Sci.; Bldg. Rsch. Inst.; Soc. of Am. Milit. Engrs.; Am. Concrete Inst.; Sigma Xi; Am. Soc. of Civil Engrs.; Tau Beta Pi; Scarab; Assn. of Coll. Schls. of Archit.; Am. Soc. for Engrng. Edn.; Triangle Frat. Author: Planning Atomic Shelters: A Guidebook for Architects and Engineers, 1961. Contbr. to: Jour. of Engrng. Edn. Serv. Rec.: U. S. Navy, 1955-58. Gen. Int.: Am. Inst. of Archits. Award, Pa. State Univ.; Alpha Rho Chi Medal, Pa. State; Grad. Fellowship, Mass. Inst. of Tech. Areas of Rsch.: Specialist and Consultant in Building Science Research Relative to Nuclear Defense, Including Structural Radiation, Blast Protection, and Envoronmental Control.

ALBRIGHT, Lyle Frederick (Ph.D.), Prof. of Chem. Engrng., Purdue Univ., Lafayette, Ind. Home Add.: RFD #1, Lafayette, Indiana.

CHEMICAL ENGINEERING. b. Bay City, Mich., May 3, 1921. s. William E. and Isabella (Sidebotham) A. Edn.: B.S.E., Univ. of Mich., 1943; M.S., ibid., 1944; Ph.D., ibid., 1950. m. Jeanette Van Belle, 1950. c.: Christine; Diane. Exp.: Lab. Technician, Dow Chem. Co., Midland, Mich., 1939-41; Chem. Engr., E. I. du-Pont de Nemours and Co., Manhattan Project, Richland, Wash., 1944-46; Chem. Engr., Colgate-Palmolive Co., Jersey City, N. J., 1950-51; Asst. and Assoc. Prof., Univ. of Okla., 1951-55; Assoc. to Full Prof., Purdue Univ., 1955—. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc; Am Oil Chemists' Soc; Am Gas Assn; Combustion Inst.; Tau Beta Pi; Sigma Xi; Phi Lambda Upsilon; Omega Chi Epsilon; Internatl Brotherhood of Magicians. Contbr. to: Industrial and Engrng. Chem.; A.I.Ch.E. Jour.; Jour., Am. Oil Chemists Soc.; ASHRAE Jour. Gen. Int.: Awarded Shreve Prize, 1960. Areas of Rsch.: Application of Chemical Engrng to Organic Chemistry particularly hydrogenation, oxidation, nitration, alkylation, and polymerization; Combustion; Molten Salt applications; Fuel cells; Inorganic technology (particularly fertilizer technology); and Thermodynamics.

ALCORN, Douglas Earle (M.D.), Staff, Veterans Hosp., 745 Yates St., Victoria, B. C., Can. PSYCHIATRY. b. Victoria, B. C., Can., Nov. 1, 1906. s. Duncan R. and Addie (Olmstead) A. Edn.: M.D., C.M., McGill Univ., 1931. m. Doreen Evelyn Lougheed, Jan. 30, 1942. Exp.: Interne, Royal Victoria Hosp., 1931-32; Staff, Boston Psychopathic Hosp., 1932-33; Staff, Provincial Mental Hosp., Essondale, B. C., Can., 1933; Staff, Iowa Psychopathic Hosp., 1934; Staff, Lennox Hill Hosp., N. Y., N. Y., 1935; Staff, Harvard Neurol. Inst., 1935-36; Staff, Maudesley Hosp., London, England, 1937-38; Staff, Royal Jubilee Hosp., 1938; Staff, Veterans Hosp., Victoria, B. C., Can., 1947—. Mem.: Fellow, Amer. Psychiatric Assn.; North Pacific Soc. of Neurol. and Psychiatry; Amer. Acad. of Forensic Soc.; Amer. Geriatrics Soc.; Victoria Med. Soc.; Canadian Med. Assn.; Canadian Neurol. Soc.; Canadian Psychiatric Assn.; F.A.A.A.S. Contbr. to: British Jour. Med. Psychol. Serv. Rec.: Major, R.C.A.M.C., 1941-46. Special Int.: Architecture from Psychological Side, Medico-legal, Sexual Deviations.

ALDER, Henry Ludwig (Ph.D.), Assoc. Prof. of Math., Univ. of Calif., Davis, Calif. Home Add.: 644 Sunset Court, Davis, Calif. MATHEMATICS. b. Duisburg, Germany, Mar. 26, 1922. s. Ludwig and Otti (Gottschalk) A. Edn.: A.B., Univ of Calif., Berkeley, 1942; Ph.D., ibid., 1947. Exp.: Instr., Univ. of Calif., Berkeley, 1947-48; Instr., Univ. of Calif., Davis, 1948-49; Asst. Prof., ibid., 1949-55; Assoc. Prof., ibid., 1955—. Hon Pos: Pres, Mu Alpha Theta, Natl. H.S. and Jr. Coll. Math. Club; Chmn., Northern Calif. Sect., Math. Assn. of Am.; Sec., Math. Assn. of Am. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Inst. of Math Statistics; Pi Mu Epsilon; Sigma Xi. Co-author: Introduction to Probability and Statistics, 1960. Contbr. to: Bull., Am. Math. Soc.; Pacific Jour. of Math.; The Am. Math. Monthly; Math. Mag.; Am. Jour. of Veterinary Rsch.; Jour. of Ednl. Rsch. Serv. Rec.: U S Army Air Force, 1944-45. Areas of Rsch.: Number Theory; Probability and Statistics.

ALEXANDER, (Mr.), Owner, George Alexander Tech. Consulting Serv., Waltham, Mass. Home Add.: 38 Dartmouth St., Waltham, Mass. ORGANO-COATINGS AND FERRO-MAGNETISM. b. Cracow, Poland, Nov. 2, 1926. s. Zygmunt Lobodzinski and Emilia (Zmuda-Rastica) A. Edn.: B.S., St. Inst. of Tech., Cracow, 1945. m. Dolores Janette, Sept. 18, 1954. Exp.: R and D Chem. Engr., Pitney Bowes, Inc., Stamford, Conn., 1958-59; R and D Chem. Engr., Audio Devices, Inc., ibid., 1959-61; Chief Chemist, Computron, Inc., Waltham, Mass., 1961-62; Owner, Geo. Alexander Tech. Consulting Serv., 1962—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Alpha Chi Sigma. Serv. Rec.: Polish Underground Army, 1943-45; British Army, 1945-47; U. S. Army, 1950-53. Areas of Rsch.: Extensive Rsch. and Development Work in the Magnetic Recording Media. Rsch. Studies of Organo-Coatings, Binders, and Printing Inks.

ALDRIN, Edwin Eugene (D.Sc.), Aerospace Consultant, 180 Walnut St., Montclair, N. J. Home Add.: 180 Walnut St., Montclair, N. J. AEROSPACE DEVELOPMENT ESPECIALLY OPERATIONAL. b. Worcester, Mass., Apr. 12, 1896. s. Carl J. and Anna (Nelson) A. Edn.: A.B., Clark Univ., 1915; M.S., Mass. Inst. of Technol., 1917; D.Sc., ibid., 1927. m. Marion Moon, Mar. 22, 1924. c.: Mrs. Madeline A. Crowell; Mrs. Fay A. Potter; Edwin E., Jr. Exp.: Avia. Mgr., Standard Oil Co. of N. J., N.Y.C., 1928-38; Mgr., Newark Airport, Newark, N. J., 1940-42; Avia. Mgr., Atlas Supply Co., Newark, N. J., 1946-53; Aerospace Consultant, Montclair, N. J., 1953—. Hon. Pos.: Chrmn., N. J. St. Avia. Comm.; Chrmn., Exec. Comm., A.S.M.E. Avia. Div. Mem.: Fellow, I.A.S.; A.A.A.S.; Assoc. Fellow, Royal Aeron. Soc.; A.S.M.E.; Amer. Rocket Soc.; S.A.E.; Sigma Xi; Kappa Phi; Montclair Rotary Club; Wings & MIT Clubs; Army & Navy Club, Wash. Co-author: The Airplane Engine, 1922; Aerodynamics and the Airplane, 1924; Metallurgy and the Airplane, 1926. Contbr. to: Aeron. Engr. Rev.; Mechanical Engrng. Serv. Rec.: Expert Consult., Secy. of War, 1940-Ferry Cmd., 1917-56, Coast Artillery, Air Corps, Reg. and Res., to Col. U.S.A.F. Ret.; Organizer, Air Serv. Engrng. Schl., McCook Field, Ohio, 1919; Aide, Gen. Wm. Mitchell, P.I. and Siam, 1923-24; Cmdr. Atlas Sky Merchant Fly. Showcase, World-Wide Flights, 1947-49. Areas of Rsch.: Control and Performance Manned Vehicles.

ALEXANDER, Raymond Arthur (M.D.), Chief Surgeon, Medical Associates Clinic, Medical Associates Bldg., Doctors Park, Mt. Vernon, Ill. Home Add.: 2208 Olive St., Mt. Vernon, Ill. SURGERY. b. Williamson Co., Ill., Oct. 11, 1923. s. Ryburn Arthur and Mae (Harper) A. Edn.: B.S., Univ. of Southern Ill., 1944; M.D., Univ. of Ill., 1946. m. Leona Timm, Nov. 24, 1945. c.: Kathy Lee; Carol Ann; Michael Arthur; Linda Sue; David Ray. Exp.: Chief of Surgery, Good Samaritan Hospital, Mt. Vernon, Ill., 1955—; Surgical Staff, St. Marys Hosp., Centralia, Ill., 1960—; Chf. of Surgery Clinic, Medical Assoc., Doctors Park, Mt. Vernon, Ill., 1961—. Hon. Pos.: Area Dir., Amer. Cancer Soc., 1953-56. Mem.: Internatl. Coll. Surg.; Amer. Soc. Abd. Surg.; Amer. Frac. Assoc.; Int. Acad. Proc.; Amer Med. Writers Assoc.; Chemeka; Kappa Phi Kappa. Contbr. to: Jour. of Abdominal Surgery; Serv. Rec.: USNMC, 1945-49. Areas of Rsch.: Surgical Technique, Diagnosis and Treatment of Cancer.

ALEXANDER, Stewart F. (M.D.), Internist, Cardiologist. Home Add.: 1C8 Pascack Rd., Park Ridge, N. J. INTERNAL MEDICINE, CARDIOLOGY. b. Park Ridge, N. J., Aug. 30, 1914. s. Samuel and Francoise (Klein) A. Edn.: B.A., Dartmouth Coll., 1934; M.D., Columbia Univ., 1937; Am. Bd. of Internal Med., 1946. m. Bernice Wilbur, Apr. 29, 1944. c.: Diane; Judith. Exp.: Intern, House Staff, Bellevue Hosp., N.Y.C., 1937-40; Asst. Visiting Physician, ibid., 1940-52; Clin. Instr., N. Y. Univ. Coll. of Med., 1940-52; Instr., Columbia Univ. Coll. of Physicians and Surgeons, 1946—; Physician, Vanderbilt Clin., Columbia Presbyterian Med. Ctr., 1946—; Dir. of Internal Med., Bergen Pines Hosp., 1958—; Attending in Med., Hackensack Hosp., Hackensack, N. J., 1946—; Consultant in Med., V. A. Hosp., East Orange, N. J., 1954—. Hon. Pos.: Advisory Coun. on Disability Benefits, Dept. of Labor and Indus., St. of N. J., 1949-53; Past Pres., Park Ridge Rotary Club. Mem.: Am. Coll. of Physicians, Fellow; Am. Coll. of Cardiol., Fellow; Am. Coll. of Angiol., Fellow; N. J. Diabetes Soc.; A.M.A.; A.A.A.S.; Med. Soc. of N.J.; N. J. Acad. of Med.; N. J. Acad. of Sci.; Elks. Contbr. to: Jour. of the A.M.A.; N. Y. St Jour of Med; Jour. of Med. Soc. of N. J.; The Milit. Surgeon; Amer. Jour. of Surgery. Serv. Rec.: U. S. Army, 1940-45. Areas of Rsch.: Cardiol.

ALEXANDER, Theron (Ph.D.), Assoc. Prof., Psychology, Pediatrics, Coll. of Med., State Univ. of Iowa, Iowa City, Iowa. Home Add.: 1680 Ridge Rd., Iowa City, Iowa. DEVELOPMENTAL AND CLINICAL PSYCHOLOGY. b. Springfield, Tenn., Aug. 31, 1913. s. Theron and Mary (Jones) A. Edn.: B.A., Maryville Coll., 1935; M.A., Univ. of Tenn., 1939; Ph.D., Univ. of Chicago, 1949. m. Marie Bailey, 1936. c.: Thomas Theron; Mary Elsie. Exp.: Asst. Prof., Psychol., Fla. St. Univ., 1949-54; Dir., Guid. Clinic, Panama City, Fla., 1954-57. Hon. Pos.: Mem. Rsch. Counc., Fla. State Univ., 1950-53; Exec. Counc., Fla. Psychol. Assn., 1951-54. Mem.: Am. Psychol. Assn., Fellow; Soc. for Rsch. in Child Development, Fellow; Iowa State Psychol. Assn.; Am. Assn. for the Adv. of Sci. Contbr. to: Monographs for Soc. for Rsch. in Child Development; Jour. of Clinical Psychol.; Behavioral Sci.; Child Development. Serv. Rec.: U. S. Navy, W. W. II. Areas of Rsch.: Development behavior, psychoneurology, perceptual processes, Behavior due to cultural differences.

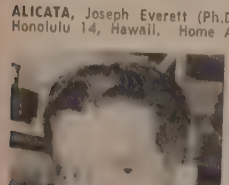
ALEXIS, Lucian Victor, Sr. (Mr.), Dir., The Schl. of Post Modern Physics, 1234 N. Claiborne Ave., New Orleans, La. Home Add.: 4634 Willow St., New Orleans 15, La. SUB-ATOMIC PHYSICS. b. New Orleans, La., July 8, 1887. s. Louis Victor and Alice (Saucier) A. Edn.: Attended The Phillips Exeter Acad., 1914;

Harvard Coll., 1918. m. Rita Holt, April 3, 1918. c.: Lucien V., Jr. Exp.: U. S. Postal Clerk, New Orleans, La., 1907-13; Social worker, Trenton, N. J., 1920-23; Prin., H. S., New Orleans, La., 1923-54; Dir., The Schl. of Post Modern Sci., ibid., 1954–. Mem.: The Amer. Phys. Soc., Div. of Electronic Physics, The Amer. Phys. Soc.; Amer Assn. Adv. Sci. Author: Fundamentals in Physics and in Chemistry, 1929; The Thermo-Electric Formula (X Y Z), 1930; Radiations Their Loci of Travel and Their Loci of Origin, 1936, The Co-Origin of Gravity and Cosmic Rays, 1936 Serv. Rec.: U. S. Army, 1917-19. Gen. Int.: Pres., Supreme Industrial Life Ins. Co., New Orleans, La. Areas of Rsch.: Sub Atomic Physics.

ALEXOPOULOS, Constantine John (Ph.D.), Prof. of Botany, Univ. of Texas, Austin, Tex. MYCOLOGY. b. Chicago, Ill., Mar. 17, 1907. s. John C. and Chrysoula (Panagopoulou) A. Edn.: B.S., Univ. of Ill, 1927; MS., ibid., 1928; Ph.D., ibid., 1932. m. Juliet C. Dowdy, Aug., 1939. Exp.: Instr. of Botany, Univ. of Ill., 1934-35, Instr. to Assoc. Prof. of Biol., Kent State Univ., 1935-43; Field Technician, U. S. Govt. RFC, Rubber Devel. Program, Amazon Valley, Brazil, 1943-44; Agri. Rehabilitation Officer and Deputy Dir., Div. of Agri and Fisheries, Greece Mission UNRRA, 1944-47; Assoc. Prof. to Prof. of Botany, Mich. State Univ., 1947-56; Prof. and Hd., Dept. of Botany, Univ. of Ia., 1956-62; Prof. of Botany, Univ. of Tex., 1962 . Hon. Pos.: Vice Pres., Ohio Acad. of Sci., 1943; Chmn., Botany, Mich. Acad. of Sci.; 1954; Chmn., Botany, Ia. Acad. of Sci., 1960; Secy.-Treas., Mycological Soc. of Am., 1954-56; Vice Pres., Mycol. Soc. of Am., 1957; Pres. Elect., ibid., 1958; Pres., ibid., 1959. Mem.: Mycol. Soc. of Am.; Botanical Soc. of Am.; Brit. Mycol. Soc.; Torrey Botanical Club.; Am. Soc. of Plant Taxonomists; Am. Soc. Microbiol.; AAAS; Sigma Xi; Kiwanis. Author Introductory Mycology, 1952-62. Co-Author: Laboratory Manual for Introductory Mycology, 1952-62. Contbr. to: Am. Jour. of Botany; Mycologia; Am. Midland Naturalist; Botanical Review. Areas of Rsch.: Morphology, Lab. Culture, and Taxonomy of Myxomycetes.

ALFANO, Blaise Francis (M.D.), Exec. Secy., Am. Soc. of Abdominal Surgeons, 663 Main St., Melrose 76, Mass. SURGERY. b. Boston, Mass., Sept. 14, 1923. s. Frank and Frances (Palopoli) A. Edn.: A.B., Harvard Univ., 1946; M.D., Tufts Univ. Med. Schl., 1950. m. Virginia Forte, Sept. 19, 1953. c.: Blaise, Jr.; Katheryn E.; Mark; Stephen; Paul. Exp.: Exec. Secy., Am. Soc. of Abdominal Surgeons, Melrose, Mass., 1959 . Mem.: A.M.A.; Mass. Med. Soc.; Med Soc. Exec. Assn.; Am. Med. Writers Assn.; A.A.A.S.; Inst. for Advancement of Med. Communications; Am. Coll. of Gastroenterol.; Am. Coll. of Applied Nutrition; Am. Soc. of Abdominal Surgeons; Natl Assn. of Med. and Allied Jours.; Phi Beta Pi; Am. Bd. of Abdominal Surgery; Kiwanis. Contbr. to: Jour. of Abdominal Surgery; Jour. of Applied Nutrition. Serv. Rec.: U.S.N.R., 1944-46. Gen. Int.: Special Distinguished Serv. Award, Am Soc. of Abdominal Surgeons, 1962. Areas of Rsch.: Methods of Improved Surgical Education and Communications.

ALICATA, Joseph Everett (Ph.D.), Parasitologist, Univ. of Hawaii, Honolulu 14, Hawaii. Home Add.: 2130 Hunnewell St., Honolulu 14, Hawaii. PARASITOLOGY. b. Carlentini, Italy, Nov. 5, 1904. s. Antonio and Concetta (Vaccaro) A. Edn.: A.B., Grand Island Coll., 1927; A.M., Northwestern Univ., 1928; Ph.D., George Wash. Univ., 1934. m. 1st, Hannah L. Davis, Jan. 23, 1929; 2nd, Earleen E. Moyer, June 30, 1958. c.: Betty Mae; William D. Exp.: Jr. Zoologist, U. S. Dept. Agric., Wash., D. C., 1928-35; Parasitologist, Univ. of Hawaii, Agric. Expt. Sta., 1935– . Mem.: Sigma Xi; Phi Kappa Phi; Amer. Soc. of Parasitologists; Amer. Soc. of Tropical Med. and Hygiene; A.A.A.S.; Wash. Acad. of Sci. Contbr. to: Jour. of Parasitology; Amer. Jour. Tropical Med. Hygiene; Sci.; Jour. Wash. Acad. of Sci.; Amer. Jour. Veterinary Rsch.; Jour. Amer. Veterinary Med. Assn.; Poultry Sci.; Pacific Sci.; Hawaii Med. Jour.; Canad. Jour. Zool.; U. S. Dept. of Agriculture. Areas of Rsch.: Morphology and Life History of Helminths; Chemotherapy; Control of Livestock Parasites; Epidemiology of Typhus and Leptospirosis; Effects of Radiation on Trichinae; Cause and Distribution of Parasitic Meningo-Encephalitis of Man in the Pacific.



ALLAN, Frank Nathaniel (M.D.), Assoc. Clin. Prof., Med., Boston Univ., Boston, Mass. Home Add.: 44 Barnstable Rd., West Newton 65, Mass. INTERNAL MEDICINE INCLUDING METABOLIC DISORDERS, AND ENDOCRINOLOGY. b. Proton, Ontario, Can., Dec. 26, 1899. s. George and Margaret (Ewing) A. Edn.: M.B., Univ. of Toronto, Can., 1922; B.Sc., Med., ibid., 1924; M.D., ibid., 1928. m. Lillian Christie, Sept., 1934. c.: Margaret Christie. Exp.: Fellow, Dept. of Physiol., Univ. of Toronto, Can., 1922-25; Intern, Toronto Gen. Hosp., Toronto, Can., 1924-25; Fellow in Med., Mayo Clinic, Rochester, Minn., 1925-26; Mem. of Staff, ibid., 1927-32; Instr. in Med., Univ. of Minn., 1928-32; Co-Dir., to Exec. Dir., Med. Dept., Lahey Clinic, Boston, Mass., 1932-62; Assoc. Clin. Prof., Med., Boston Univ., 1962–. Hon. Pos.: Mem., Admin. Bd., New England Deaconess Hosp.; Clin. Consultant, Boston City Hosp.; Chmn. of Program Comm., Fifth Internatl Cong. of Internal Med., Mem., U. S. Pharmacopoeial Conv., 1960 Mem.: Fellow, Am Coll of Phys., Mem. Am. Diabetes Assn., A.A.A.S.; New England Diabetes Assn., Greater Boston Diabetes Soc., Endocrine Soc., Central Soc. for Clin. Rsch., Am. Soc. for Exptl. Pathol.; Am. Soc. for Clinic Investigation; Am. Med. Assn.; Mass. Med. Soc.; Alpha Omega Alpha; Sigma Xi. Contbr. to: Editorial Bd., New England Jour. of Med.; Jour. of Am. Diabetes Assn.

ALLEN, Albert Binkley (Mr.), Mgr., Product Rsch. and Development Dept., The Coca-Cola Co., P.O. Drawer 1734, Atlanta 1, Ga. Home Add.: 1159 Harrogate Lane, N.E., Atlanta 19, Ga. ORGANIC CHEMICALS USED IN CARBONATED BEVERAGE INDUSTRY. b. Nashville, Tenn., Aug. 3, 1911. s. John Otis and Lucy (Mayberry) A. Edn.: B.S., Auburn Univ., 1932; M.S., ibid., 1933. m. Sarah Griffin, Sept. 5, 1939. c. Margaret; Griffin. Exp.: Chemist, Ala. Dept. Agric., Montgomery, Ala., 1937-40; Chemist, Coca-Cola Ltd., Johannesburg, S. Africa, 1946-49; Mgr., Qual. Cont., The Coca-Cola Export Corporation, New York, N. Y., 1949-61, Mgr., Prod. Res. and Dev. Dept., The Coca-Cola Co., Atlanta, Ga., 1961 . Hon. Pos.: Chmn., Piedmont Chapt., Amer. Inst. of Chemists. Mem.: Amer. Chem. Soc.; Amer. Inst. of Chem. Engrs.; A.A.A.S.; Phi Lambda Upsilon. Author: Differentiation of Natural and Synthetic Caffeine. Contbr. to: Jour. of Agri. and Food. Chem. Serv. Rec.: U.S.A.F., 1940-45. Areas of Rsch.: Alkaloids, carbohydrates, and flavors.

ALLEN, Frank (LL.D), Prof. Emeritus of Physics, Univ. of Manitoba, Winnipeg, Can. BIOPHYSICS. b. Meductic, N. B., Can., Feb. 6, 1874. s. John Salter and Charlotte (Newcomb. A. Edn.: B.A., Univ. of New Brunswick, 1895; M.A., ibid., 1897; M.A., Cornell Univ., 1900; Ph.D., ibid., 1902. Hon. Deg.: LL.D., Univ. of Manitoba, 1924; LL.D., Univ. of New Brunswick, 1945. m. Sadie E. Harper, Sept., 1903. c.: Lillian Beatrice; John Frank; William Alexander. Exp.: Instr. in Physics, Cornell Univ., Ithaca, N. Y., 1902-04; Prof. of Physics and Hd., Dept., Univ. of Manitoba, Winnipeg, Can., 1904-44; Emeritus, ibid., 1944 . Mem.: Royal Soc. of Can.; Optical Soc. of Amer. Contbr. to: Quarterly Jour. of Exptl. Physiol.; Brit. Jour. of Psychol.; Phys. Rev.; Jour. of Optical Soc. of Amer.; Can. Jour. of Rsch.; Jour. of Gen. Physiol.; Acta Opthalmologica. Awards: Alumni Gold Medal-Classics, Univ. of New Brunswick, 1895; Tory Gold Medal, Rsch. Royal Soc. Can., 1944. Special Int.: The Responses of the Senses to Stimulation; The Post-Contraction of Muscles; Glandular Responses.

ALLEN, Henry Grady (Mr.), Process Chemist, Solvay Process Div., Allied Chemical Corp., P.O. Box 271, Baton Rouge, La. Home Add.: 3136 Madison Ave., Baton Rouge, La. ANALITICAL CHEMISTRY AND PLANT PROBLEMS IN THE AMMONIA-SODA PROCESS. b. Lucedale, Miss., Aug. 2, 1911. s.Charles Hamilton and Winnie (Mcleod) W. Edn.: B.S., Miss. St. Univ., with honors, 1934; M.S., L.S.U., 1938. m. Letha May Pearson, April 15, 1938. c.: Mrs. Mary Lillian Gilbert, III; Sara Louise; Charles Henry. Exp.: Prin., Sci., Math. Tchr., Athletic Coach, Tchula, Miss., H.S., 1934-41; Analytical Chem., Allied Chem. Corp., Baton Rouge, La., 1941-48; Analytical Chemist Leader, ibid., 1948-51; Asst. Lab. Supvr., ibid., 1951-59; Process Chemist, ibid., 1959– . Hon. Pos.: Chmn., Baton Rouge Sec., Amer. Chemical Soc., 1958; Vice Pres., Baton Rouge Council of Engrng. and Scientific Soc., 1960-61; Pres., ibid., 1961-62; Sec., Baton Rouge Sect., A.C.S., 1948; Chmn.-Elect, ibid., 1957; Exec. Comm., ibid., 1960; Chmn., Chemical Progress Week in the Baton Rouge Area, 1957; Elder in First Presbyterian Church; Asst. Scoutmaster, Troop 75; Vice Pres., Exec. Coun. of the L.S.U. Coll. of Chem. and Phys. Alumni Assn., 1961-62. Mem.: Amer. Chemical Soc.; Amer. Assn. for the Adv. of Sci.; Baton Rouge Council of Engrng. and Scientific Soc.; Natl. Social Register; Kappa Mu Epsilon; Gamma Theta Epsilon; Rotary Club. Serv. Rec.: U. S. Army. Areas of Rsch.: Analytical Chemistry and the Ammonia-Soda Process for Manufacture of Na_2CO_3 and NaOH.

ALLEN, Herbert Clifton, Jr. (M.D.), Dir., Dept. of Nuclear Med., Labs., 6411 S. Main St., Priv. Pract., Nuclear Med., 100 Hermann Prof. Bldg., Dir., Dept. Nuclear Med., Hermann Hosp., Houston 25, Tex. Home Add.: 4010 Martinshire Dr., Houston 25, Tex. NUCLEAR MEDICINE; ENDOCRINOLOGY; INTERNAL MEDICINE. b. Richmond, Va., Jan. 7, 1917. s. Herbert Clifton and Josephine (Myers) A. Edn.: B.S., Univ. of Richmond, 1937; M.D., Med Coll. of Va., 1941 m. Elizabeth Hunt, Feb. 1, 1949. c.: Dana Lee; Debra Lynn; Herbert C., III; Steven Hunt; Cynthia Jo; Julie Myers. Exp.: Rotating Intern, Philadelphia Gen. Hosp., Pa., 1941-42; Resident in Pathol., Pa. Hosp., 1945-46; Resident in Med., Med. Coll. of Va. Hosp., 1947-48; Asst Chief, Radioisotope Section Dept of Med. and Surg., V. A. Wash., D. C., 1948, Chief, Metabolic Serv. and Asst. Dir., Radioisotope Unit, Birmingham, V. A. Hosp., Van Nuys, Calif., 1948-49, Asst. Dir., Radioisotope Unit, Wadsworth V. A. Hosp., Los Angeles, Calif., 1949-51, Dir., Radioisotope Unit, V. A. Hosp.,

Houston, Tex., 1951-55; Acting Dir., Radioisotope Unit, ibid., 1955-57; Dir., Radioisotope Dept., Methodist Hosp., 1952-60; Dir., Dept. of Nuclear Med., Hermann Hosp., 1956—. Hon. Pos.: Chmn., Comm. on Nuclear Med., Tex. Med. Assn., 1957—; Pres., Southwestern Soc. of Nuclear Med., 1958-59; Chmn., Harris County Med. Soc., Advisory Comm. on Radiation Med., 1959—; Secy., Tex. Rad. Adv. Control Bd., 1961—; Secy., Houston Thyroid Club, 1960—; Exec. Bd. Mem., Harris Co. Tex. Med. Soc., 1962-65; Mem. of Bd. of Trustees, Soc. of Nuclear Med., 1959—; Vice Pres., ibid., 1961-62. Mem.: Houston Soc. of Internal Med.; Tex. Med. Assn.; Houston Thyroid Club; The Amer. Thyroid Assn.; Amer. Med. Assn.; Central Soc. for Clinical Rsch.; Soc. of Nuclear Med.; Dir. Atomic Energy Indusl. Labs. of the Southwest; Alpha Omega Alpha; Sigma Xi; Omicron Delta Kappa; C. of C., Houston, Tex. Contbrng. Author: Radioisotopes in Medicine, 1953. Contbr. to: Radiol.; Proceedings of Soc. of Exptl. Biol. and Med.; Jour. of Clin. Endocrinol. and Metabolism; Jour. of the Amer. Vet. Med. Assn; Southwestern Med. Jour.; Surgical Forum; Medical Records and Annals; Tex. State Jour. of Med.; Biochemica et Biophysica Acta; Transactions of Second Natl. Cancer Conf.; Proceedings of the Second Radioisotope Conf.; Nucleonics; Amer. Surg.; Jour. of Nuclr. Med.; Amer. Practr. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Practice Limited to Nuclear Medicine; Benign and Malignant Diseases of Thyroid; Instrument Design and Development in Nucleonics, Especially for Brain Tumor Localization and Research in Radio Nuclide Therapy of Prostatic Diseases.

ALLEN, Ivey, Jr. (Ph.D.), Sr. Rsch. Assoc., Union Carbide Plastics, So. Bound Brook, N. J. Home Add.: Long Hill Road, Neshanic, RD #1, N. J. POLYMER CHEMISTRY. b. Louisburg, N. C., April 29, 1906. s. Ivey and Mary (Davis) A. Edn.: B.A., Duke Univ., 1926; Ph.D., ibid., 1929. m. Lucy McNail, 1935. c.: Gerald; Mary; Lucinda. Exp.: Chemist, Bakelite Corp., Bloomfield, N. J., 1929-52; Supt. Rsch., Div. Bakelite Corp Union Carbide, Bloomfield, N. J., 1952-56; Rsch. Coordinator, Union Carbide Plastics, N. Y. C., 1956-58; Sr. Rsch., ibid., So. Bound Brook, N. J., 1958—. Mem.: Amer. Chem. Soc.; A.A.A.S.; Amer. Concrete Inst. Contbr. to: Amer. Chem. Soc. Jour. Areas of Rsch.: Chemistry of Organic Polymers; Organic Modifiers for Cement.

ALLEN, J Frances (Ph.D.), Assoc. Program Director for Systematic Biol., Natl. Sci. Found., Wash. 25, D. C. Home Add.: 5702 Queens Chapel Rd., W. Hyattsville, Md. ZOOLOGY. b. Arkville, Del. County, N. Y., April 14, 1916. d. J. W. Allen and Mattie Jo (Linkous) A. Edn.: B.S., St. Tchrs. Coll., Radford, Va., 1938; M.S., Univ. of Md., 1948; Ph.D., ibid., 1952. Exp.: Grad. Fellow, Dept. Zool., Univ. of Md., 1938-39; H.S. Tchr., Pulaski, Va., 1939-41; and summers, 1940-41; H. S. Tchr., Carthage, N. Y., 1941-42; H. S. Tchr., Gary, W. Va., 1942-45; H. S. Tchr., Delmar, N. Y., 1945-47; Asst. Prof., Radford Coll., summers, 1942, 1945, 1946; Biol. Examiner, N. Y. State Edn. Dept., Albany, N. Y., summer, 1947; Grad. Asst., Dept. of Zool., Univ. of Md., 1947-48; Rsch. Asst., ibid., summer, 1948;

Instr., ibid., 1948-55; Asst. Prof., ibid., 1955-58; Prof. Asst. to Prog. Dir. for Systematic Biol., Natl. Sci. Fdtn., 1958-61; Assoc. Prog. Dir. for Systematic Biol., Natl. Sci. Fdtn., Wash. 25, D. C., 1961—. Mem.: Amer. Assn. Adv. Sci.; Natl. Shell Fisheries Assn.; Amer. Malacol. Union.; Soc. of Systematic Zool.; Amer. Soc. Icthyol. and Herpetol.; Amer. Microscopical Soc.; Va. Acad. Sci.; Biol. Soc. of Wash.; Natl. Sci. Fdtn., Phila.; Amer. Soc. of Zool.; U. S. Naval Inst.; A.I.B.S.; Amer. Fisheries Soc.; Assn. S.E. Biol.; Kappa Delta Pi; Pi Gamma Mu; Chi Beta Phi; Sigma Xi; Sigma Delta Epsilon; Prince Georges Sci. Fair Assn. Contbr. to: The Nautilus; Trans. Amer. Microscopical Soc.; Systematic Zool.; Herpetologica. Areas of Rsch.: Fishery Biology; Shellfish; Gastropod Ecology and Distribution; Taxonomy of Gastropods; Aquatic Biology.

ALLEN, James Harrill (M.D.), Prof. and Chmn., Dept. of Ophthalmology, 1430 Tulane Ave., New Orleans 12, La. Home Add.: 9104 Quince St., New Orleans 18, La. OPTHALMOLOGY AND OCULAR MICROBIOLOGY. b. Chattanooga, Tenn., Jan. 31, 1906. s. George H. and Mary (Harrill) A. Edn.: B.A., Univ. of Tenn., 1926; M.D., Univ. of Mich., 1930; M.S., Univ. of Iowa, 1938. m. Ruth Sanford, Aug. 17, 1934. c.: Mary Helen; George Sanford; John Robert. Exp.: Interne and Resident, Univ. of Iowa, 1930-36; Instr. to Prof., Univ. of Iowa Med. Schl., 1936-50; Prof., Tulane Univ., Med. Schl., 1950—; Chmn., Dept. of Ophthalmol., Tulane, Univ., 1953— Hon. Pos.: Sec.-Treas., Assn. for Rsch. in Ophthalmol., 1947-54; Chmn., Assn. for Rsch. in Ophthalmol., 1960; Asst. Sect., Pan Amer. Assn. of Ophthalmol., 1950—. Mem.: Orleans Parish Med. Soc.; New Orleans Grad. Med. Assembly; New Orleans Acad. of Ophthalmol.; La. State Med. Soc.; La. Eye, Ear, Nose and Throat Soc.; La.-Miss. Otolaryngol.-Ophthalmol. Soc.; N. Y. Acad. of Scis.; Sou. Med. Assn.; Amer. Acad. of Ophthal. and Otolaryngol.; Amer. Ophthalmol.; Pan Amer. Assn. of Opthalmol.; Aero Med. Assn.; Assn. of Milit. Surgeons; Soc. of Amer. Bacteriolst.; Amer. Assn. Adv. of Sci.; Ophthalmol. Path. Club; World Med. Assn.; Gamma Rho; Theta Kappa Psi; Galens; Sigma Xi; Rotary Club. Author: Strabismus, Ophthalmic Symposium I, 1950; Strabismus, Ophthalmic Symposium II, 1958. Contbr. to: Amer. Jour. of Ophthalmology; Arch. of Ophthalmology; Jour. Amer. Med. Assn. Serv. Rec.: U.S.A.F., 1942-46; Consultant in Ophthalmology to Surgeon Gen., U.S.A.F., 1951-58. Gen. Int.: Beverly Myers Nelson Award, 1958. Areas of Rsch.: Ophthalmology and Ocular Microbiology.

ALLEN, John Rybolt (Ph.D.), Prof. of Chem., Union Coll., Barbourville, Ky. Home Add.: Apt. 101, 40 Plaza Sq., St. Louis 3, Mo. BIOCHEMISTRY. b. Indianapolis, Ind., Sept. 14, 1926. s. Arnold G. and Bertha Francis (Rybolt) A. Edn.: A.B., Ball State Tchrs. Coll., 1945; Ph.D., Univ. of Ill., 1954—. m. Patricia Joan Kirchherr, 1953. Exp.: Rsch. Assoc., Northwestern Univ. Medical Schl., 1953-56; Rsch. Asst. in Medicine, Instr. in Biochem., Baylor Med. Schl., 1956-57; Rsch. Instr. in Med. and Instr. in Biochem., ibid., 1957-58; Asst. Prof. of Biochem. Rsch. in Med., Baylor Univ. Coll. of Med., 1958-59; Sr. Scientist, Warner Lambert Rsch. Inst., Morris Plains, N. J., 1959-60; Rsch. Assoc., Physiol. Chem., Wash. Univ. Dental Schl., 1960-62; Prof. of Chem., Union Coll., 1962—. Mem.: Am. Assn. Adv.

of Sci.; A.C.S.; Alpha Chi Sigma; Phi Lambda Upsilon; Sigma Xi; Sigma Zeta; Mason; Assoc. Mem., internatl. Assn. Dental Rsch. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Fed. Proc.; Metabolism Clinical and Exptl.; Archives of Biochemistry and Bio-Physics; Jour. Neurochem. Areas of Rsch.: Vitamin E Deficiency. Lipid Metabolism and Lipid Isolation and Structure Proof, Enzyme Assays.

ALLEN, Merton (Mr.), Proj. Engr., General Electric Co., General Engrng. Lab., Schenectady, N. Y. Home Add.: 2307 Dean St., Schenectady, N. Y. CHEMICAL ENGINEERING. b. Bronx, N. Y., Sept. 30, 1929. s. David and Cecilia (Rehfeld) A. Edn.: B.Ch.E., N. Y. Univ., 1951; M.Ch.E., Villanova Univ., 1957. m. Barbara Goldstein, Nov. 22, 1950. c. David R.; Richard L.; Randy M. Exp.: Development Proj. Engr., Internatl. Resistance Co., Phila., Pa., 1953-56; Proj. Engr., Gen. Elec. Co., General Engr. Lab., Schenectady, N.Y., 1956—. Mem.: A.I.Ch.E.; A.C.S.; A.A.A.S.; A.A.-C.E.; Scabbard and Blade. Contbr. to: Insulation; Chem. Engrng.; ASME Presentation Summary; Chem. Abstracts. Serv. Rec.: 1st Lt., U. S. Army, C.E., 1951-53. Areas of Rsch.: Mixing; Spray-drying; Size Separation; Flow Visualization; Process Design; Electrohydraulic Processing.

ALLEN, Mildred (Ph.D.), Prof. of Phys. (Emer.), Mt. Holyoke Coll., S. Hadley, Mass. Home Add.: 41 Woodbridge Ter., S. Hadley, Mass. PHYSICS. b. Sharon, Mass, March 25, 1894. d. C. Frank and Caroline (Hadley) A. Edn.: A.B., Vassar Coll., 1916; A.M., Clark Univ., 1917; Ph.D., ibid., 1922. Exp.: Instr., Phys., Mt. Holyoke Coll., 1918-20; Instr., Phys., Wellesley Coll., 1922-23; Instr. Phys., Mt. Holyoke Coll., 1923-24; Asst. Prof. Phys., ibid., 1924-26; Rsch. Fellow Phys., Bartol Rsch. Found., 1927-30; Instr., Phys., Oberlin Coll., 1930-31; Assoc. Prof. Phys., Mt. Holyoke Coll., 1933-47; Prof. (Emer.),, ibid., 1947-59. Hon. Pos.: Secy.-Treas., Chmn., N. Eng. Sec., Amer. Phys. Soc., Exec. Comm., Amer. Assoc. Phys. Tchrs.; Chmn. Phys. Dept. Mem.: A.A.A.S.; Amer. Meteorolog. Soc.; Opt. Soc. of Amer.; Phi Beta Kappa; Sigma Xi. Contbr. to: Proc. Amer. Phil. Soc.; Proc. Natl. Acad. Sci.; Jour. Franklin Inst.; Phys. Rev.; Amer. Jour. Phys.; Phys. To-day; Sci. Areas of Rsch.: Tension Coefficients of Resistance of Single Metal Crystals.

ALLEN, Philip James (Ph.D.), Prof. of Sociol., Chamn., Mary Wash. Coll. of The Univ. of Va., Fredericksburg, Va. Home Add.: 6 Nelson St., Ferry Farms, Fredericksburg, Va. SOCIOLOGY. b. April 14, 1914. s. Samuel and Sandra (Grange) A. Edn.: A.B., Ohio Northern Univ., 1937; M.A., Northwestern Univ., 1940; B.D., Garrett, 1940; Ph.D., Amer. Univ., 1954. m. Dorothy Margaret Wiley, 1940. c.: Kenneth Ray; Keith Roy. Exp.: Asst. to Editor of the Library of Living Philosophers, Northwestern Univ., 1940-41; Minister, Methodist Church, Camden, Ohio, 1941-43; Asst. Prof. of Sociol., Univ. of Chattanooga, 1946-47; Prof. of Sociol. & Chmn. Dept., Mary Wash. Coll., Univ. of Va., 1947—. Mem.: Amer. Sociol. Soc.; Population Assn. of Amer.; Soc. for the Study of Soc. Problems; Natl. Council of Family Relations; Southern Sociol. Soc.; Amer. Assn. of Univ. Profs.; Nation Soc. Sci. Honor Soc.; Pi Gamma Mu. Contbr. to: Amer. Sociol. Rev.; Soc. Problems; Soc. Sci. Editor: The Amer. Sociol. Forum. Serv. Rec.: U. S. A. F., 1943-46. Areas of Rsch.: Social Mobility; Child Development; Sociology of Occupations; Sociology of Religions.

ALLEN, Philip Wymer (Mr.), Meteorologist in Chg., Weather Bur. Rsch. Sta., 2753 S. Highland Ave., Las Vegas, Nev. Home Add.: 817 Lacy Lane, Las Vegas, Nev. METEOROLOGY, WEATHER PREDICTION, AIR POLLUTION, NUCLEAR RADIATION AND FALLOUT. b. Russell, Lucas Co., Ia., Aug. 3, 1918. s. Aylmer J. and Mabel (Werts) A. Edn.: B.S., Parson's Coll., 1940. m. Jean Luers, May

1946. c.: Douglas P.; Deborah A. Exp.: Meteorologist, U. S. Weather Bur., N.Y.C., 1946-49; Rsch. Meteorologist, U. S. Weather Bur., Washington, D. C., 1949-56; Leading Analyst, Natl. Weather Analysis Ctr., Suitland, Md., 1953-56; Meteorologist in Chg., Weather Bur. Rsch. Sta., Las Vegas, Nev., 1956—; Chf., Weather Prediction Unit, Nev. Test Organization, 1957-59; Chf., Weather and Radiation Prediction Unit, Nevada Test Site, 1959—. Hon. Pos.: Test Mgrs. Advisory Panel, Nev. Test Site. Mem.: Am. Meteorological Soc.; Am. Geophys. Union; Phi Kappa Phi. Contbr. to: Monthly Weather Rev. Serv. Rec.: U. S. Army Air Force, 1941-46. Gen. Int.: U. S. Dept. of Commerce Silver Medal Award, 1961. Areas of Rsch.: Air Motion and Transport Phenomena; Nuclear Radiation and Fallout; Diffusion; Weather Prediction.

ALLEN, Rex Wayne (Mr.), Parasitologist, U. S. Dept. of Agric., Animal Disease and Parasite Rsch. Div., Box 518, Univ. Park, N. Mex. Home Add.: Box 87, Mesilla Park, N. Mex. ZOOLOGY, PARASITOLOGY-HELMINTH PARASITES OF DOMESTIC ANIMALS. b. Brocton, Ill., Oct. 16, 1908. s. Ivan William and Essie Belle (Manaugh) A. Edn.: S.B., Univ. of Chicago, 1938; S.M., ibid., 1947. m. Lois Irene Cheney, June 11, 1933. c.: John William; Judith Lynn. Exp.: Parasitologist, U. S. Dept. of Agric., Animal Disease Div., Beltsville, Md., 1940-43; Parasitologist, ibid., Chicago, Ill., 1943-48; Parasitologist, ibid., University Park, N. Mex., 1948—. Hon. Pos.; Chmn., Fellowship Comm., Southwestern Rocky Mt., Div. AAAS. Mem.: Sigma Xi; Amer. Soc. of Parasitologists; Helminthological Soc. of Wash.;

AAAS; Wildlife Disease Assn., Soc. of Systematic Zoology; Phi Sigma Epsilon; Sigma Phi. Contbr. to: Jour. of Parasitology; Proc. of Helminthological Soc. of Wash.; Amer. Jour. of Vet. Rsch. Gen. Int.: Supervised and conducted original rsch. which throws light on the identity and intensity of parasitism in wild and domestic ruminants in the Southwest. Areas of Rsch.: Internal parasites of poultry and wild and domestic ruminants. Identification, biology, and control of parasites of ruminants.

ALLEN, Richard Ballantine (Ph.D.) Assoc. Prof., Univ. of Hartford, P. O. Box 1948, Hartford 1, Conn. Home Add.: 116 Maple Ave., Windsor, Conn. PHYSICS, SOLID STATE. b. Springfield, Mass., Sept. 18, 1922. s. Horace Eugene and Mary Frances (Ballantine) A. Edn.: A.B., Dartmouth Coll., 1947; M.A., Harvard Univ., 1949; Ph.D., Brown Univ., 1955. m. Ann Irene Kilbride, 1952. c.: Brian Kilbride. Exp.: Asst. Prof., Worcester Polytechnic Inst., 1955-58; Sr. Scientist, Minneapolis-Honeywell, Boston, Mass., 1959-60; Asst. Prof., Univ. of Hartford, 1960-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Physical Soc.; A.A.P.T.; Sigma Xi. Contbr. to: Jour. of Applied Physics. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Exptl. Solid State: Surface Physics, Solid State Diffusion, Semiconductor Devices.

ALLEN, Roy Morris (Mr.), Consulting Scientist, 120 Personette Ave., Verona, N. J. METALLURGY AND ALL MICROSCOPICAL SCIENCES. b. Coleville, Pa., Feb. 12, 1882. s. William Letchworth and Mollie (White) A. Edn.: Licensed Professional Engr., Univ. of State of N. Y., 1924. Hon. Degree: D.S., Wheaton Coll., 1942. m. Gertrude May Child, June 14, 1910. c.: Paul C.; David W.; Howard T.; Florence L. Exp.: Engrng. Dept. W. E. Co. (Now Bell Telephone Co.) Various Supervising Positions, 1909-25; Private Consulting Work, 1925—; Consultant, Amer. Car and Foundry Co., 1925-31; Catalin Corp., Auto-Ordinance Corp., 1941-45; Andover Motors, Andover-Kent, Remington-Rand, and many others. Hon. Pos.: Pres., N. Y. Microscopical Soc., 1917-20; Honorary Life Mem., Amer. Foundrymen's Soc. Mem.: N. Y. Acad.

of Sci.; A.A.A.S.; N. Y. Microscopical Soc.; Amer. Scientific Affiliation; A.I.M.E., Past Mem.; Am. Soc. for Testing Materials, Past Mem.; etc. Author: The Microscope, 1940, (New edition in press); Photomicrography, 1941, 2nd edition, 1958; The Microscope in Elementary Cast Iron Metallurgy, Amer. Foundrymen's Assn., 1939; Practical Refractometry, 1954. Gen. Int.: Many Patents, the majority of which are assigned to the Western Electric Co., or the Amer. Telephone and Telegraph Co.; Received the Ashby Award from the N. Y. Microscopical Soc. in 1961 for outstanding achievements in microscopical work. Areas of Rsch.: Microscopical and Photomicroscopical Work in Metallurgy; Biology; Cancer Research; etc.

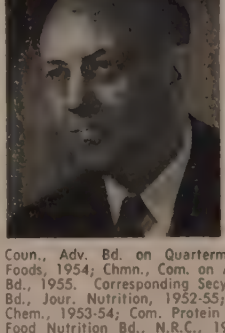
ALLEN, William, Jr. (Mr.), Sr. Rsch. Scientist, Minneapolis-Honeywell Reg. Co., Seattle Devel. Labs., 5303 Shilshole Ave. N.W., Seattle 7, Wash. Home Add.: 1070 16th Place So., Edmonds, Wash. OCEANOGRAPHIC AND GEOPHYSICAL RESEARCH. b. Chicago, Ill., July 17, 1924. s. William and Catherine (Harrison) A. Edn.: Geol. Engr., Colo. Schl. of Mines, 1947. m. Katherine Yarnell, 1947. c.: Susan M.; Mary K.; Barbara D.; Exp.: Geologist, Aero Serv. Corp., Phila., Pa., 1947-48; Geophysicist, New Park Mining Co., Keetley, Utah, 1948; Sr. Geophysicist, Phelps Dodge Corp., Douglas, Ariz., 1948-58; Assoc. Engr., Univ. of Calif., La Jolla, 1958-62; Sr. Rsch. Scientist, Minneapolis-Honeywell Reg. Co., Seattle, Wash., 1962—. Mem.: A.G.U.; Soc. of Exploration Geophysicists; IRE; Tau Beta Pi; Beta Theta Pi; Mason. Contbr. to: Trans. AIME. Areas of Rsch.: Geophysical Prospecting for Minerals; Physical Oceanography.

ALLEY, Charles Enos (Mr.), Engr., General Metals Corp., 10777 Van Owen St., Burbank, Calif. Home Add.: 10641 Cantara St., Sun Valley, Calif. AIRCRAFT AND MISSILE HYDRAULIC CONTROLS. b. Meridian, Miss., Nov. 4, 1915. s. Charles E., Sr. and Maude (Crew) A. Edn.: B.S., Univ. of Southwestern La., 1938. m. Vivian Schmid, 1953. c.: Cheryl; Sondra; Floyce. Exp.: Tool and Die Maker, Burbank, Calif., 1940-43; Instr. of Apprentices in San Fernando Valley Area, 1943-46; Chem. Engr., Japan, 1946-51; Exec. Secy.-Treas., Naylor Engr. and Rsch. Corp., Santa Barbara, Calif., 1951-53; Engr., Adel Precision Products Div., General Metals Corp., Burbank, Calif., 1953—. Mem.: Astronomical Soc. of the Pacific; Amer. Chem. Soc.; A.S.T.M.E.; A.A.A.S. Areas of Rsch.: Adult Education.

ALLIS, William Phelps (D.Sc), Prof. of Physics, Mass. Inst. of Technol., Cambridge, Mass. Home Add.: 33 Reservoir St., Cambridge 38, Mass. PLASMA PHYSICS. b. Menton, France, Nov. 15, 1901. s. Edward Phelps and Amedine (Sgrena) A. Edn.: B.S., Mass. Inst. of Technol., 1923; M.S., ibid., 1924; D.Sc., Universite de Nancy, France, 1925. m. Nancy Olive Morison, June 11, 1935. c.: Amedine; Edward Morison; John Cotton. Exp.: Rsch. Assoc., Mass. Inst. of Technol., 1925-34; Asst. Prof., ibid., 1934-40; Assoc. Prof., ibid., 1940-50; Prof., ibid., 1950—; Visiting Lectr. on Appl. Sci. at Harvard Univ., Spring, 1955; Visit. Lect., Univ. of Tex., Spring, 1960. Hon. Pos.: Chmn., Gaseous Electonics Conf.; Vice Pres., Am. Acad. of Arts & Scis.; Asst. Secy. Gen. of Scientific Affairs of NATO, June 1962—.

Mem.: A.A.A.S.; Am. Physical Soc.; Am. Assn. of Physics Tchrs.; Sigma Xi; The Physical Soc. of London. Author: Nuclear Fusion, 1960. Co-author: Thermodynamics and Statistical Mechanics, 1952; Free and Guided Waves in Anisotropic Plasmas, 1962. Contbr. to: The Physical Rev.; Handbuch der Physik. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Electrical Discharges in Gases and Plasma Physics.

ALLISON, James Boyd, Jr. (Ph.D.), Prof. of Physiol. and Biochem. Dir., Bur. of Biol. Rsch., Dir., Rsch. Coun., Rutgers Univ., New Brunswick, N. J. BIOCHEMISTRY. b. Jan. 28, 1901. Punxsutawney, Pa. s. James Boyd and Elizabeth (Robinson) A. Edn.: B.S., Pa. St., 1923; Ph.D., Ia. St., 1927. m. Dorothy Helen Lewis of Punxsutawney, Pa., Dec. 31, 1926. d. Mr. and Mrs. Linus M. Lewis. c.: Majory Ann, Dorothy Jean. Exp.: Asst. in Chem., Ia. St. Coll., 1923-26; Industrial Fellow, 1926-27; Instr., Biochem., Rutgers Univ., 1927-29; Asst. Prof., 1929-41, ibid.; Assoc. Prof., 1941-45; Prof. of Physiol. and Biochem., 1945—; Dir. of Bur. of Biological Rsch., Rutgers Univ., 1944—; Dir. Rsch. Coun., ibid., 1959—; Lectr. in Physiol., Coll. Physicians and Surgeons, Columbia Univ., 1943-45. Hon. Pos.: Natl. Research



Coun., Adv. Bd. on Quartermaster Rsch. and Devel., Com. on Foods, 1954; Chmn., Com. on Amino Acids of Foods and Nutrition Bd., 1955. Corresponding Secy., N. Y. Acad. Sci., 1951; Editorial Bd., Jour. Nutrition, 1952-55; Chmn., N. J. Chapter, Am. Inst. Chem., 1953-54; Com. Protein Requirements, F.A.O., 1955; Mem., Food Nutrition Bd., N.R.C., 1956; Tech. Adv. Com. Instituto de Nutricien de Centro America y Panama, 1956-58. Mem.: Coun. Food and Nutrition, A.M.A., 1961; Pres., N. Y. Acad. Sci., 1962; Treas., Am. Inst. of Nutrition, 1959-62; Am. Chemical Soc.; A.A.A.S.; Soc. Exptl. Biol. and Med.; N. Y. Acad. of Sci.; Am. Inst. of Chem.; Am. Soc. Biol. Chem.; Am. Inst. Nutr.; Alpha Zeta; Phi Lambda Upsilon; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Phi Beta Kappa; Univ. Outing Club; Rotary. Contbr. to: Jour. Am. Chem. Soc.; Am. Jour. Physiol.; Jour. Gen. Physiol.; Jour. Biochem.; Jour. Nutr.; Proc. Soc. Exp. Biol. Med. Ph.D. Dissertation: The Toxicity of Hydrogen Cyanide. Listed In: A.M.S.; Who's Who in N.J.; Who's Who in the East; Who's Who in Am.

ALLUISI, Earl A(rthur) (Ph.D.), Assoc. Scientist, Hu. Fac. Rsch. Dept., Opns. Rsch. Div., Lockheed-Georgia Co., Marietta, Ga. Home Add.: 2016 Clairmont Terr., N.E., Atlanta 6, Ga. ENGINEERING PSYCHOLOGY. b. Richmond, Va., June 11, 1927. s. Humbert P. and Elizabeth Mary (Dini) A. Edn.: B.S., Coll. of William and Mary, 1949; M.A., Ohio State Univ., 1950; Ph.D., ibid., 1954. m. Mary Jane Boyle, Dec. 16, 1954. c.: John Carroll; Jean Elizabeth; Paul David Julian. Exp.: Rsch. Psycholst., Psychol. Br., Army Med. Rsch. Lab., Ft. Knox, Ky., 1951-52; Visit. Instr., Psychol. Dept., Coll. of Wm. and Mary, Va., sums., 1953, '54; Rsch. Assoc. & Lectr., Rsch. Fdtn. & Psychol. Dept., Ohio St. Univ., 1954-57; Hd., Environmental Factors Sect., Expmtl. Psychol. Dept., U. S. Army Med Rsch. Lab., Ft. Knox, Ky., 1957-58; Sr. Engrng. Psychol., Lockheed Missile Systems Div., Palo Alto, Calif., 1958; Sr. Psychol. and Hd., Engineering Psychol., Stanford Res. Inst., Menlo Park, Calif., 1958-59; Asst. Prof. to Assoc. Prof. of Psychology, Emory Univ., Atlanta 22, Ga., 1959-61; Assoc. Scientist, Hu. Fac. Rsch. Dept., Lockheed-Georgia Co., Marietta, Ga., 1961 ; Lectr. Ga. Inst. of Technol., 1961–. Hon. Pos.: Univ. Fellow, Ohio State Univ., 1953-54. Mem.: Amer. Assn. Adv. Sci.; Am. Psychol. Assn.; Psychometric Soc.; S.S.P.P.; Ga. Psychol. Assn.; Southeastern Psychol. Assn.; A.A.U.P.; Soc. of Engrng. Psychol.; Psychonomic Soc.; Phi Beta Kappa; Sigma Xi; Psi Chi; Alpha Psi Delta; Sigma Pi; Civitan. Contbr. to: Jour. of Exptl. Psychol.; Jour. Applied Psychol.; Psychol. Rev.; Wright Air Dev. Center Tech. Reports and Tech. Notes; U. S. Army Med. Rsch. Lab. Reports; Psychol Reports; Sci.; Perceptual and Motor Skills. Serv. Rec.: U. S. Army, 1944-47; 1950-52; 1957-58; U. S. Army Reserve, Med. Service Corps. Gen. Int.: Studies of Symbolic Coding of Information, and the Presentation of Information to Operators in Complex Man-machine Systems. Areas of Rsch.: Engineering Psychology; Research Methodology and Statistics; Perception; and Information Handling.

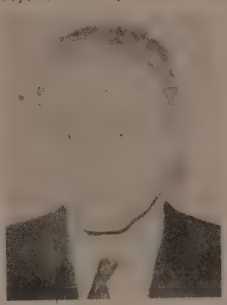
ALLUISI, Mary Jane (Ph.D.), Audiologist, Veterans Admin. Regional Office, Atlanta, Ga. Home Add.: 2016 Clairmont Terrace, N.E., Atlanta 6, Ga. AUDIOLOGY, SPEECH SCIENCE. b. Braddock, Pa., Sept. 8, 1927. d. Charles Carroll and Madeleine (Ryan) Boyle. Edn.: B.A., Univ. of Pittsburgh, 1949; M.A., ibid., 1951; Ph.D., Ohio State Univ., 1956. m. Earl Arthur Alluisi, 1954. c.: John Carroll; Jean Elizabeth; Paul David Julian. Exp.: Lectr. Univ. of Pitts., Pa., 1949-51; Fellow in Audiology, Ohio State Univ., Columbus, Ohio, 1952-55; Audiologist, V. A. Regnl. Office, Atlanta, Ga., 1960 . Mem.: Am. Speech Assn.; Ga. Speech and Hearing Assn. Areas of Rsch.: Audiology and Speech Science.

ALPERIN, Morton (Ph.D.), Pres., Tam Electronics, Inc., Pasadena, Calif. Home Add.: 4409 Cornishon Ave., La Canada, Calif. b. N. Y. City, June 19, 1918. s. Simon and Evelyn (Rose) A. Edn.: Ph.D., Calif. Inst. of Tech., 1950. m. (Div.). c.: Terry Michael; James Jeffrey. Exp.: Aero. Rsch. Engr., Wright Field, A.A.F., Dayton, Ohio, 1939-44; Asst. to Chmn., U.S.A.F. Scientific Advisory Bd., 1944-45; Rsch. Engr. and Grad. Asst., Jet Propulsion Lab. and Calif. Inst. of Tech., 1945-51; Chief, Western Div., Office of Scientific Rsch., Air Rsch. and Devel. Command, 1951-55; Dir. of Advanced Studies, A.F.O.S.R., Air Rsch. and Devel. Command, ibid., 1955-59; Consultant: Aerojet-Genl. Corp., Office of Naval Rsch. and Others, 1959-60; Pres., Space Systems and Ind. Automation, Inc., Burbank, Calif., 1959-60; Consultant, La Canada, Calif., 1960-61; Pres., Tam Electronics, Inc., 1961–. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; British Interplanetary Soc.; Am. Rocket Soc.; Inst. of Aeronautical Scis.; Sigma Xi; Vistas in Astronautics, 1958; Rev. 1959;Advanced Propulsion Systems, 1959. Contbr. to: Highlights of Annual AFOSR; Inst. of Aeronautical Sci.; Astronautics Symposium; Aero Space Engrng. Gen. Int.: Responsible for First Known Effort to Obtain Scientific Information Regarding the Space Environment (Project Far Side); Creation of First Known Inhabited Space Simulation Facility. Area of Rsch.: Space Tech.; Propulsion; Life Support.

ALT, Frederick (Dr.), Chief, Instrument Engr. and Dev. Branch, Natl. Inst. of Health, Bethesda, Md. Home Add.: 5000 Keokuk St., Wash. 16, D. C. BIOMEDICAL INSTRUMENTATION. b. Vienna, Austria, March 6, 1912. s. Joseph and Else (Schreier) A. Edn.: Dr. of Law and Economics, Univ. of Vienna, 1934; B.S.E.E., Cooper Union, 1949. m. Hansi Schwarz, May 18, 1941. Exp.: Chf,. Instrument Engrng. and Dev. Branch, Natl. Inst. of Health, Bethesda, Md., 1959–; Chf., Electrical Engr., Holmes & Narver, Inc., Los Angeles, Calif., 1951-58; Electrical Engr., Electro Construction Corp., Los Angeles, Calif., 1950-51; Electrical Engr., Gibbs and Hill, Ins., N. Y., N. Y., 1947-49. Mem.: Instrument Soc. of Am.; A.A.A.S.; Am. Soc. for Engrng. Edn.; Professional Group on Biomedical Electronics, Inst. of Radio Engrs. Serv. Rec.: U. S. Army. Gen. Int.: Registered Professional Engr., State of Calif. Areas of Rsch.: Biomedical Instrumentation; Control and Automation Systems; Communication and Alarm Systems; Cathodic Protection.

ALPERT, Meyer, (M.D.), Asst. Attending Radiologist, Presbyterian Hosp., New York City, N. Y. Home Add.: 80 Avondale Rd., Yonkers, N. Y. RADIOLOGY. b. New York, N. Y., Dec. 5, 1921. s. Samuel and Anna (Dunetz) A. Edn.: B.S., Coll. of City of N. Y., 1942; M.D., Middlesex Med. Schl., 1945. m. Caroline Spalter, 1951. c.: Robert; Linda; Mark; David. Exp.: Instr., Coll. of Phys. and Surgeons, Columbia Univ., New York, N. Y., 1954-60; Assoc., ibid., 1960-61; Asst. Prof., ibid., 1961-62; Asst. Attending Radiologist, Presby. Hosp., N.Y.C., 1962–. Mem.: Am. Soc. for Adv. of Sci.; N. Y. Roentgen Ray Soc. Contbr. to: Jour. of Can. Assn. of Radiologists; Am. Jour. of Roentgenology; Arch. of Dermatology; Jour. of Am. Med. Assn.; Oral Surgery; Oral Med. and Oral Pathol. Service Rec.: AUS, 1951-53. Areas of Rsch.: Radiology of Bone and Joint Diseases; Arteriography of Bone and Soft Tissue Tumors; Discography; Sarcoid.

ALTSHULER, Kenneth Z. (M.D.), Sr. Rsch. Scientist, N. Y. St. Psychiatric Inst., 722 W. 168th St., New York City, N. Y. Home Add.: 261 Audubon Rd., Englewood, N. J. PSYCHIATRY MEDICAL GENETICS, PSYCHOANALYSIS. b. Paterson, N. J., April 11, 1929. s. Jacob and Altie (Friedman) A. Edn.: B.A., Cornell Univ., 1948; M.D., Univ. of Buffalo, 1952; Certification in Psychoanalysis, Columbia Univ., 1962. m. Gloria Siegel, 1952. c.: Steven; Lori; Dara. Exp.: Asst., Psychiatry, Columbia Univ., 1958-59; Instr., Psychiatry, ibid., 1959–; Research Assoc., Home for Aged and Infirm Hebrews, 1961–; Psychiatrist, Office of Consultant to the Governor of N. Y. on Services for the Aged, Queens Village, N. Y., 1959–. Mem.: N. Y. Acad. of Science.; A.A.A.S.; Am. Soc. Human Genetics; Am. Psychiatric Assn.; A.M.A.; N. Y. Soc. for Clinical Psychiatry. Contbr. to: Eugenics Quart.; Jour. Nervous and Mental Disease; Am. Ach. Gen. Psychiatry; Am. Jour. Psychotherapy; Psychiatric Quart.; Am. Annals of the Deaf. Service Rec.: U.S.N.R., 1953-55. Gen. Int.: Thornton Wilson Award in Genetic or Preventive Psychiatry, 1961. Areas of Rsch.: Psychiatric Med. Genetics; Psychoanalysis, Deafness, Geriatric Psychiatry.



ALVAREZ-CARREGAL, Enrique Jose (M.D.), (Ph.D.), Post Doctoral Rsch. Fellow, Inst. Med. Rsch. of Huntington Mem. Hosp., 734 Fairmount Ave., Pasadena 2, Calif. Home Add.: 1800 State St., So. Pasadena, Calif. PHYSIOLOGY, NEUROPHYSIOLOGY. b. Padron, Coruna, Spain, July 2, 1932. s. Enrique Alvarez and Manuela (Carregal Varela) A. Edn.: M.D., Univ. of Santiago, Spain, 1954; Ph.D., ibid., 1960. m. Joan Markson, Jan., 1960. Exp.: Asst. Prof. Physiol., Univ. of Santiago, Santiago, Spain, 1954-56; Rsch. Fellow, Inst. Farmacol. Espa. Fund. Marques de Urquijo, Madrid, Spain, 1957-59; Rsch. Dept. Biofisica, C.I.B., C.S.I.C., Madrid, Spain, 1959-60; Postdocl. Rsch. Fellow, Inst. Med. Rsch. of Huntington Mem. Hosp., Pasadena, Calif., 1960–. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Sociedad espanola de Ciencias Fisiologicas. Contbr. to: Jour. of Neurophysiol.; Am. Jour. of Physiol.; Jour. of Neurosurgery. Areas of Rsch.: Sensory perception; Pain; Teaching of Neurophysiology.

AMAROSE, Anthony Philip (Ph.D.), Research Assoc., Cancer Res. Inst., New England Deaconess Hosp., Boston, Mass. Home Add.: 31 River St., Oneonta, N. Y. CYTOLOGY; CYTOPATHOLOGY; RADIOBIOLOGY. b. Oneonta, N. Y., Mar. 17, 1932. s. Andrew and Rose (Minerose) A. Edn.: B.S., Fordham Coll., 1953; M.S., Fordham Univ., 1957; Ph.D., ibid., 1959. Exp.: Instr., Marymount Coll., Tarrytown, N. Y., 1957-59; Res. Fellow, Argonne Natl. Lab., Argonne, Ill., 1959-61; Res. Assoc., Cancer Res. Inst., New England Deaconess Hosp., Boston, Mass., 1961–. Mem.: N. Y. Acad. of Sci.; Sigma Xi; A.A.A.S.; Am. Soc. for Cell Biol. Serv. Rec.: AUS, 1953-55. Areas of Rsch.: Chromosomal syndrome patterns; morphology and physiology of isolated lampbrush chromosomes; Electron microscopy—morphology of cell; Leukocyte Cultures for Chromosomal Analyses.

AMBROSE, Kenneth Eugene (M.D.), Physician, General Practice, 219 Euclid Ave., Monmouth, Ill. Home Add.: 119 So. 10th St., Monmouth, Ill. MEDICINE. b. Mahomet, Ill., Nov. 14, 1925. s. Curtis Emory and Lela Julia (Rickwood) A. Edn.: M.D., Duke Univ., 1949. m. Genevieve Rose Goldsmith, 1956. c.: Susanna; Rebecca; Carol. Exp.: Interne, Wayne Co. Gen. Hosp. and Infirmary, Eloise, Mich., 1949-50; Asst. Surgeon, U. S. Public Health Serv., Wash., D. C., 1951-54; Pvt. Med. Practice, Rockport, Ind., 1955; Asst. Surg. and Surgeon, U. S. P.H.S. Hosp., Carville, La., 1956-58; Pvt. Med. Practice, Monmouth, Ill., 1959–. Hon. Pos.: Chmn., Warren Co. Heart Unit; Pres., Monmouth Hosp. Med. Staff. Mem.: Monmouth Med. Club; Warren Co. Med. Soc.; Ill. State Med. Soc.; A.M.A.; A.A.A.S.; Civil Aviation Med. Assn.; Aerospace Med. Assn.; Am. Pub. Health Assn.; Internatl. Leprosy Assn.; Ill. Acad. of Sci.; Ill. Pub. Health Assn.; Am. Heart Assn. Serv. Rec.: U.S.N., 1943-45. Areas of Rsch.: Special Interests; Tuberculosis; Leprosy; Heart Disease; Aviation Medicine.

AMELUNXEN, Remi Edward (Ph.D.), Postdoctorate Fellow, U. S. Pub. Health Serv., Kansas Univ. Med. Center, Kansas City, Kans. Home Add.: 8120 Dearborn Dr., Prairie Village, Kans. MEDICAL MICROBIOLOGY. b. Kansas City, Mo., Jan. 27, 1928. s. Gerald H. and Maria C. (Den Haerynck) A. Edn.: B.S., Rockhurst Coll., 1949; M.A., Univ. of Kans., 1957; Ph.D., ibid., 1959. Exp.: Chemist, Ethyl Corp., Kansas City, Mo., 1949-54; Grad. Student and Instr., Kans. Univ. Med. Center, 1954-59; Postdoc. Fellow, U.S.P.H.S., ibid., 1959—. Mem.: Am. Soc. for Microbiol.; Sigma Xi; Kans. Univ. and Rockhurst Coll. Alumni Assns. Contbr. to: Jour. of Bacteriol.; Medicina Experimentalis; Biochem.; Biochem. Jour.; Jour. of Biol. Chem. Areas of Rsch.: Virology and Enzyme Chemistry.

AMICK, James Albert (Ph.D.), Rsch. Chemist, RCA Labs., Princeton, N. J. Home Add.: 20 Maple St., Princeton, N. J. PHYSICAL CHEMISTRY. b. Lawrence, Mass., Feb. 18, 1928. s. Chester Albert and Marcella (Hoover) A. Edn.: A.B., Princeton Univ., 1949; M.A., Chem., ibid., 1951; Ph.D., Phys. Chem., ibid., 1952. m. Nancy Scott, Sept. 9, 1961. Exp.: Rsch. Chemist, Brookhaven Natl. Labs., Upton, N. Y., 1949-50; Rsch. Chemist, RCA Labs., Princeton, N. J., 1953—; Rsch. Chemist, RCA Labs., Zurich, Switzerland, 1956-57; Rsch. Chemist, RCA Labs., N. J., 1957—. Hon. Pos.: Ethyl Corp. Fellowship, 1951-52, Princeton; Secy., Princeton Sect., ACS, 1952-53; Post-Doctoral Fellowship at Princeton, 1952-53. Mem.: Am. Chem. Soc.; Crystallographic Assn.; Am. Assn. for the Adv. of Sci.; N. Y. Soc. of Electron Microscopists; Sigma Xi; Alpha Chi Sigma. Contbrng., Photoelectronics. Contbr. to: Jour. App. Phys.; R.C.A. Rev.; Jour. Electrochem. Soc. Areas of Rsch.: Physical Analytical Techniques; Electrophotography; Stabilization of Semiconductor Surfaces; Growth of Semiconductor Thin Films.

AMMONS, Nellie Perrel (Ph.D.), Prof. of Biology, Emeritus, W. Va. Univ., Morgantown, W. Va. BOTANY. b. Rices Landing, Pa., May 23, 1889. d. John M. and Minerva (Moredock) A. Edn.: Ph.D., Univ. of Pittsburgh, 1937. Exp.: Biol. Tchr., Fairmont Eastside H. S., W. Va., 1918-20; Instr. in Bot., W. Va. Univ., Morgantown, W. Va., 1920-37; Asst. Prof. of Botany, ibid., 1937-45; Assoc. Prof. of Botany, ibid., 1945-53; Prof. of Biology, ibid., 1953-59. Hon. Pos.: Pres., W. Va. Acad. of Sci. Mem.: Fellow, Am. Assn. Adv. Sci.; Botanical Soc. of Am.; W. Va. Acad. of Sci.; Sigma Xi; Phi Epsilon Phi; Southern Appalachian Botanical Club. Author: Liverworts of W. Va., 1940; Shrubs of W. Va., 1950. Co-author: Woody Plants in Winter, 1958. Contbr. to: Am. Midland Naturalist; Castanea; The Bryologist. Special Int.: Bryophytes and Plant Anatomy.

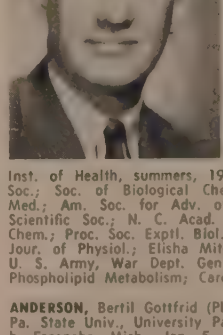
ANCKER, Clinton James, Jr. (Ph.D.), Hd., Math. and Operations Rsch. Staff, System Devel. Corp., 2500 Colorado, Santa Monica, Calif. Home Add.: 23908 Malibu Knolls Rd., Malibu, Calif. OPERATIONS RESEARCH; ENGINEERING MECHANICS. b. Cedar Falls, Ia., June 21, 1919. s. Clinton James and Fern (Lalan) A. Edn.: B.S., Purdue Univ., 1940; M.S., Univ. of Calif., Berkeley, 1949; M.E., ibid., 1950; Ph.D., Stanford Univ., 1955. m. Margaret Rees, April 11, 1947. c.: Clinton J., III; Evan Randolph; Megan Lalan; Scott Rees. Exp.: Asst. Prof., Univ. of Calif., Berkeley, 1947-55; Operations Analyst, Operations Rsch. Office, Johns Hopkins Univ., 1955-56; Sr. Engr., Booz-Allen Applied Rsch., Inc., Chicago, Ill., 1956-58; Mgr., Analco Services Co., ibid., 1958-59; Head, Math. and Operations Rsch. Staff, System Devel. Corp., Santa Monica, Calif., 1959—. Mem.: Am. Soc. of Mech. Engrs.; Soc. for Industrial and Applied Math.; Operations Rsch. Soc. of Am.; Tau Beta Pi; Sigma Xi; Pi Tau Sigma; Delta Chi. Contbr. to: Trans., ASME (Jour. of Applied Mechanics); Trans, IRE (ANE); Operations Rsch.; Proc. Military Operations Symposia; Jour. of Industrial Engrng. Serv. Rec.: U. S. Army, 1941-46; U.S.A.R., 1946—; Areas of Rsch.: Engineering Mechanics (particularly Theory of Elasticity); Operations Research (Queuing Theory, Stochastic Duels, Inventory Control, etc.).

ANDERMAN, George Gibbs (Ph.D.), Consulting Geologist, 704 Patterson Bldg., Denver, Colo. Home Add.: 428 Lafayette St., Denver, Colo. GEOLOGY. b. Albuquerque, N. Mex., Oct. 17, 1926. s. George R. and Maud (Radney) A. Edn.: B.A., Princeton Univ., 1950; Ph.D., ibid., 1955. m. Joan Evans, April 10, 1953. c.: Ellen; George Taylor. Exp.: Geologist, The Ohio Oil Co., Evanston, Wyo., 1952-54; Geologist, Gulf Oil Corp., Casper, Wyo., & Denver, Colo., 1954-56; Consulting Geologist, Denver, Colo., 1957—. Mem.: A.A.P.G.; G.S.A.; A.G.U.; Phi Beta Kappa; Sigma Xi. Contbr. to: Geologic Books. Serv. Rec.: Army of U. S., 1944-47. Areas of Rsch.: Stratigraphy and Structure.

ANDERSON, Attell Baldwin (Mr.), Mem. of Tech. Staff, Bell Telephone Labs., Whippany, N. J. PHYSIOLOGICAL ACOUSTICS; SERVO ELECTRONICS. b. Brooklyn, N. Y., July 25, 1913. s. Axel Leonard and Bertha E. (Olson) A. Edn.: B.A., N. Y. Univ., 1940. m. Ruth T. Johnson, June 22, 1946. c.: Martin Leonard; Attell Theodore. Exp.: Mem. of Technical Staff, Bell Telephone Labs., Whippany, N. J., 1940—. Mem.: Ist. of Radio Engrs.; Am. Rocket Soc.; Soc. of Motion Picture and Television Engrs.; Acoustical Soc. of Am.; Pi Mu Epsilon; Sigma Pi Sigma; Psi Chi. Contbr. to: Jour. Soc. of Motion Picture Engrs.; Jour. Acoustical Soc. of Am. Special Int.: Studies of Physiol. Acoustics; Design of Electronic Circuits and for Electronic Fire Control Equipment.

ANDERSON, Bernard August (Ph.D.), Prof. of Speech, Dir., Speech and Hearing Clinic, Dept. of Speech and Drama, Univ. of Nev., Reno, Nev. Home Add.: 975 Bowman Dr., Reno, Nev. SPEECH PATHOLOGY. b. Thornton, Wash., Aug. 23, 1909. s. Martin L. and Minnie L. (Martensen) A., (both dec.). Edn.: Elem. Dipl., Central Wash. Tchrs. Coll., 1930; B.A., Univ. of Wash., 1933; 5-yr. Sec. Dipl., ibid., 1937; Ph.D., Univ. of Wis., 1949. m. Marcella Marie Neverman, Sept. 5, 1942. c.: Bernard Jeffrey; Robert Weston; Mary Marcella; Kim Lawrence; Lee Martin; Jon Alan; Vincent Jay; Laura Margaret. Exp.: Acting Dir., Speech and Hearing Clinic, Univ. of Okla., 1939-40; Clinical Asst., Univ. of Wis., 1940-41; Instr., Univ. of Ind., 1946-48; Assoc. Prof., Dept. of Speech, Univ. of Utah, 1949-57; Prof. of Speech; Dir., Speech and Hearing Clinic, Univ. of Nev., 1958—. Hon. Pos.: Consultant, Speech and Hearing Disorders, Soc. Crippled Children & Adults; Co-Founder, Nev. Speech and Hearing Assn.; Consultant on Speech and Hearing Disorders, Shriner's Hosp. for Crippled Children; Chmn., Speech Sci., Univ. of Utah, Dept. of Speech and Theater Arts. Mem.: Western Speech Assn.; Nev. Speech and Hearing Assn.; Phi Mu Alpha; Phi Kappa Phi. Contbr. to: Quart. Jour. of Speech; Jour. of Speech and Hearing Disorders. Serv. Rec.: U. S. Army Air Corps, 1942-46, Capt. Gen. Int.: Recipient, Zeta Phi Eta Award in Speech, Univ. of Wash., 1937. Areas of Rsch.: Endoscopic Photography of the Human Larynx; Disorders of Speech and Hearing.

ANDERSON, Carl Elmore (Ph.D.), Prof. of Biochemistry and Nutrition and Asst. Dean, Schl. of Medicine, Univ. of N. C., Chapel Hill, N. C. Home Add.: Kings Mill Rd., Chapel Hill, N. C. BIOCHEMISTRY. NUTRITION, PHOSPHOLIPID METABOLISM. b. So. Manchester, Conn., July 14, 1906. s. Carl J. B. and Agnes (Edlund) A. Edn.: B.S., Univ. of Conn., 1935; Ph.D., Univ. of N. C., 1942. m. LaVerne A. Larsen, Sept. 7, 1940. c.: Carl William; Douglas Edlund; Lois Margaret. Exp.: Rsch. Assoc., Wayne Univ. Schl. of Med., 1938-40; Fels Fellow, Univ. of N. C. Schl. of Med., 1940-42; Asst. Prof. of Biochemistry, Vanderbilt Univ., 1946-50; Assoc. Prof., Biological Chem. and Nutrition, Univ. of N. C., 1950-58; Prof. of Biochemistry and Asst. Dean, 1958—. Hon. Pos.: Visiting Scientist, Natl. Inst. of Health, summers, 1960 and 1961. Mem.: Am. Chem. Soc.; Soc. of Biological Chemists; Soc. for Exptl. Biol. and Med.; Am. Soc. for Adv. of Sci.; Sigma Xi; Elisha Mitchell Scientific Soc.; N. C. Acad. of Sci. Contbr. to: Jour. Biolog. Chem.; Proc. Soc. Exptl. Biol. and Med.; N. C. Med. Jour.; Am. Jour. of Physiol.; Elisha Mitchell Scientific Journal. War Rec.: U. S. Army, War Dept. Gen. Staff, 1942-46. Areas of Rsch.: Phospholipid Metabolism; Cardio-vascular Disease; Nutrition.



ANDERSON, Bertil Gottfrid (Ph.D.), Prof. of Zool. and Hd. Dept., Pa. State Univ., University Park, Pa. ZOOLOGICAL PHYSIOLOGY. b. Escanaba, Mich., Jan. 5, 1904. s. August B. and Anna M. (Johnson) A. Edn.: A.B., Augustana Coll., 1926; M.S., State Univ. of Iowa, 1929; Ph.D., ibid., 1930. m. Lorraine D. Ossian, June 9, 1931. c.: Louise; John; James. Exp.: Instr. in Biol., West. Reserve Univ., 1930-38; Asst. Prof. of Biol., ibid., 1938-41; Rsch. Assoc., Franz Theodore Stone Lab., Ohio State Univ., 1941-42; Instr. in Zool., W. Va. Univ., 1942-43; Asst. Prof., ibid., 1943-45; Assoc. Prof., ibid., 1945-49; Prof., ibid., 1949-53; Prof. of Zool. and Hd. Dept. of Zool. and Entomol., Pa. St. Univ., University Park, Pa., 1953—. Mem.: A.A.A.S.; W. Va. Acad. of Sci.; Pa. Acad. Sci.; Entomological Soc. of Am.; Am.

oc. Naturalists; Am. Soc. of Limnology and Oceanography; Am. isheries Soc.; Aquatic Life Advisory Com., Ohio River Valley Water Sanitation Comm.; Com. on Toxicity, Federation of Sewage Works Assn.; Gamma Alpha; Sigma Xi; Phi Sigma; Gamma Sigma Delta. Contbr. to: Ohio Jour. Sci.; Am. Naturalist; Physiol. Zool.; Sewage and Indusl. Wastes; Trans. Am. Fisheries Soc.; Growth; Sci.; Sci. Edn.; Ecology; formerly Assoc. Editor, Transactions of the Am. Fisheries Soc. Special Int.: Biol. of the Cladocera; Toxicity of Indusl, Wastes; Indusl. Pollution.

ANDERSON, Dean Albert (Ph.D.), Prof. of Microbiol., Head, Dept. of Microbiol. and Public Health, Los Angeles State Coll., Los Angeles, Calif. b. Pleasant Grove, Utah, Sept. 27, 1905. BACTERIAL PHYSIOLOGY. s. Albert and Annie Caroline (Radmall) A. Edn.: B.S., Brigham Young Univ., 1929; M.S., Ia. St. Coll., 1930; Ph.D., iid., 1932. m. Elva Brown of Pleasant Grove, Utah, May 26, 1927. d. Walter C. and Maude K. Brown. c.: LaDeane; Gordon Knight. Exp.: Tchng. Fellow, Ia. St. Coll., 1929-30; Rsch. Fellow, ibid., 1930-33; Hd., Dept. of Bacteriol., Weber Coll., Ogden, Utah, 1933-41; Ogden City Bacteriol., 1934-35; Rsch. Assoc., Intermtn. Forest and Range Exp. Sta., summers, 1936-38; Asst. Prof. of Bacteriol. and Agron., Brigham Young Univ., 1941-43; Assoc. Prof., 1943—; Rsch. Assoc., Stanford Univ., 1948 (on leave); Major, U.S.A., 1943-46; Prof. of Microbiol., Chmn., Div. of Nat. Sci., Los Angeles State Coll., 1950-56; Head, Dept. Biol. Sci., ibid., 1956-59; Head, Dept. Microbiol. and Pub. Health, 1959—. Hon. Pos.: Chmn., Applied Biol. Sci. Setc., Utah Acad. of Sci., 1942; Fellow, A.A.A.S., 1943; Sec., Lab., Sect., Utah Pub. Health Assn., 1940-42; Dir., Utah Pub. Health Assn., 1947; Sec., ibid., 1949; Mem. of House of Delegates, Utah Edn. Assn., 1938-39; Sec., 1947 and Pres., 1948-49, Intermtn. Br. Soc. of Am. Bact., Southern Calif. Branch, Soc. of Am. Bact., Secy. 1957, Vice-Pres., 1958, Pres., ibid., 1959; Writer, B.S.C.S., 1960. Mem.: A.A.A.S.; Am. Pub. Health Assn.; Soc. for Gen. Microbiol.; Royal Soc. Health; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Phi Lambda Upsilon. Contbr. to: Soil Sci.; Jour. of Bacteriol.; Centrallblatt fur Bakteriologie. Ph.D. Dissertation: The Production of Gums by Certain Species of Rhizobium. Hobbies: Book Collecting; Photography. Special Int.: Pub. Health Bacteriology; Bacterial Viruses; General Microbiology.

ANDERSON, Donald Rex (Ph.D.), Head, Exper. Radiobiology Sec., Radiobiology Branch, School of Aerospace Med., Brooks AFB, Tex. Home Add.: 3715 Invicta Dr., San Antonio 18, Tex. RADIOBIOLOGY. b. Ephraim, Utah, June 10, 1916. s. Dr. John R. and Mrs. Camillie (Sorensen) A. Edn.: B.A., Univ. of Utah, 1952; M.A., iid., 1954; Ph.D., ibid., 1956. m. Mary Alice Currier, Sept., 1960. c.: Pamela Lynn; Robert; Nancy; Scot Rex. Exp.: Rsch. Fellow, Schl. of Aviation Med., Randolph AFB, Tex., 1955-56; Biochem. Chf., Radiobiol. Lab., Balcones Rsch. Ctr., Austin, Tex., 1956-60; Hd. Exper. Radiobiol., Schl. of Aerospace Med., Brooks AFB, Tex., 1960—. Mem.: A.A.A.S.; Sigma Xi; Radiation Rsch. Soc.; N. Y. Acad. of Sci. Contbr. to: Radiation Rsch.; Biochemical Jour.; Arch. of Biochemistry and Biophysics. Serv. Rec.: USAFR, 1940-46. Areas of Rsch.: Radiobiology; Enzyme Inactivation; Chemical Protection; Bone Marrow Therapy; Biochemistry of Body Fluids.

ANDERSON, Earl Jennings (Ph.D.), Hd., Pest Control Sect., Pineapple Research Inst., Honolulu, Hawaii. Home Add.: 1083 Hunakai St., Honolulu 16, Hawaii. PLANT PATHOLOGY, DISEASES OF PLANT ROOTS. b. Roy, Wash., June 8, 1908. s. Albert and Henrikka (Jensen) A. Edn.: B.S., Wash. State Univ., 1932; M.S., ibid., 1934; Ph.D., Univ. of Md., 1937. m. Marion Preston, 1934. c.: David Preston. Exp.: Instr., N. Dak. Sta. Coll., Fargo, N. Dak., 1938-39; Assoc. Pathologist, Pineapple Rsch. Inst., Hawaii, 1939-43; Chmn. Plant Path. Dept., Wash. State Univ., Pullman, Wash., 1943-45; Pathologist, Pineapple Rsch. Inst., Honolulu, Hawaii, 1945-50; Hd. Pathology Dept., ibid., 1950-61; Hd., Pest Control, Sec, ibid., 1961—. Mem.: AAAS; Am. Phytopathological Soc.; Hawaiian Botanical Soc.; Sigma Xi. Contbr. to: Phytopathology. Areas of Rsch.: Diseases of Roots Caused by Pythiaceous Fungi and Nematodes.

ANDERSON, Edward Everett (Ph.D.), Proj. Leader and Sr. Food Technol., Flavor Lab., Arthur D. Little, Inc., Cambridge, Mass. Home Add.: 47 Winthrop Rd., Lexington 73, Mass. b. Peabody, Mass., Dec. 20, 1919. s. Lewis Leonard and Flora Wills (Orchad) A. Edn.: B.S. in Bact., Mass. State Coll., 1941; M.S., ibid., 1942; Ph.D., Univ. of Mass., 1949. m. Elva Marie Foerster Anderson of Springfield, Mass., June 12, 1948. d. William and Dorothy Foerster. c.: Gail Anne; Noel Edward; Dulce Marie; Gary Peter. Exp.: Fed. Food Insp., 1942-44 in the War Food Admin.; Tchng. Fellow, Univ. of Mass., 1947-48; Asst. Rsch. Prof., Univ. of Mass., 1948-54; Assoc. Rsch. Prof., ibid., 1954-56; Food Technol., Arthur D. Little, Inc., 1956—. Mem.: Sigma Xi; Am. Chem. Soc.; Am. Assn. Adv. Sci.; Inst. of Food Technolsts.; Fellow, Am. Pub. Hlth. Assn.; Royal Soc. of Hlth.; N. Y. Acad. of Scis.; Phi Tau Sigma; Sigma Alpha Epsilon. Contbr. to: Food Rsch. Food Eng.; Food Technol. Ph.D. Dissertation: The Influence of Food Ingredients on the Thermal Resistance of the Acid Food Spoilage Organism Bacillus Thermoacidurans. War Rec.: 1944-46, Lt. in the U.S. Naval Res. Travel: Japan; Philippines (with the Navy). Hobbies: Golf; Tennis; Philately. Listed in: A.M.S.; W. W. in the East. Special Int.: (1) Sensory and objective methods of quality evaluation and improvement of existing processed and frozen foods; (2) Development of new food products; (3) Technological factors associated with flavor and packaging problems in foods; (4) Thermal destruction characteristics of food spoilage organisms and enzymes; (5) Bacteriological and enzymatic aspects of fresh and fermented cucumber pickles, (6) Administration and evaluation of R and D programs.

ANDERSON, Fredric Dale (Mr.), Nuclear Engr. Div. of Licensing and Regulation, U. S. Atomic Enrg. Comm., Wash. 25, D. C. Home Add.: 1001 E. Montgomery Ave., Rockville, Md. RADIATION PHYSICS. b. Laporte, Ind., June 10, 1931. s. George William and Mabel Edna (Schraeder) A. Edn.: B.S., Purdue Univ., 1953; M.S., N. C. St. Coll., 1957. Exp.: Instr., Teaching Fellowship, N. C. State Coll., 1953-55; Lt., U. S. Public Health Serv., Cincinnati, Ohio, 1955-57; Sr. Rsch. Engr., Atomics Internatl., Canoga Park, Calif., 1957-61; Nuclear Engr., U. S. Atomic Enrg. Comm., 1961—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Nuclear Soc.; Am. Inst. of Physics; Sigma Pi Sigma; Hlth. Phys. Soc. Contbr. to: NAA-SR-4714; NAA-SR-5482; NAA-SR-3260. Service Rec.: U.S.P.H.S. Radiological Training Group, 1955-57. Areas of Rsch.: Radiation Shielding; Radiation Hazards Analysis; Radiological Health Physics; Radiological Instrumentation; Radiological Hazards of Space Reactors.

ANDERSON, Gordon V. (Ph.D.), Dir., Testing and Counseling Ctr. and Prof. of Edn. Psychol., The Univ. of Tex., Austin, Tex. Home Add.: 2508 Galewood Pl., Austin 3, Tex. PSYCHOLOGY. b. Wausa, Nebr., Apr. 6, 1910. s. Carl A. and Olga E. (Monteen) A. Edn.: A.B., Augustana Coll., 1932; M.A., Univ. of Nebr., 1940; Ph.D., Univ. of Minn., 1945. m. Atha Grothe, Nov. 28, 1935. c.: Roger Kent; Sally Maree. Exp.: Dir., Student Counsing. Bur., Univ. of Minn., Mpls., Minn., 1943-45; Asst. Prof., Dept. of Psychol., Northwestern Univ., Evanston, Ill., 1945-47; Dir. and Prof., Testing and Counsing. Ctr., The Univ. of Tex., 1947—. Mem.: Am. Psychol. Assn.; Am. Personnel and Guid. Assn.; Southwestern Psychol. Assn.; Natl. Coun. on Measurement in Edn.; Sigma Xi; Phi Delta Kappa. Author: Educational Measurement, Co-Author, 1951. Contbrng Author: Encyclop. of Vocational Guidance. Contbr. to: Rev. of Edni. Rsch.; Edni. and Psychol. Measurement. Areas of Rsch.: Counseling and Role Theory; Aptitude Test Construction.

ANDERSON, Jay Oscar (Ph.D.), Prof. of Poultry Husbandry, Poultry Dept., Utah State Univ., Logan, Utah. Home Add.: 483 West 1st. North, Logan, Utah. POULTRY NUTRITION. b. Brigham, Utah, Dec. 5, 1921. s. Oscar C. and Ruth (Petersen) A. Edn.: B.S., Utah State Univ., 1943; M.S., Univ. of Md., 1948; Ph.D., ibid., 1950. m. Neida Elaine Huber, Jan., 1944. c.: Wayne J.; Raymond C.; Russell K.; Elaine; Dale H.; Keith J. Exp.: Grad. Asst., Poultry Dept., Univ. of Md., College Park, Md., 1946-50; Chemist, Rsch. Div., Merck and Co., Rahway, N. J., 1950-51; Asst. to Prof. of Poultry Husb., Utah State Univ., Logan, Utah, 1951—. Mem.: Poultry Sci. Assn.; Am. Inst. of Nutrition; N. Y. Acad. of Sci.; A.A.A.S.; World Poultry Sci. Assn.; Phi Kappa Phi; Sigma Xi. Contbr. to: Poultry Sci.; Jour. of Nutrition; Proc. of Soc. for Exp. Biol. and Med. Service Rec.: AUS, 1943-46. Areas of Rsch.: Proteins and Amino Acids in Poultry Nutrition; Use of Enzymes in High Barley Poultry Feeds.

ANDERSON, Milton Henry, Jr. (M.D.), Med. Superintendent, Evansville, Indiana State Hosp., Evansville, Ind. Home Add.: Woodmere, Evansville, Ind. PSYCHIATRY. b. Omaha, Nebr., July 31, 1919. s. Dr. Milton H. and Emma Faye (Anderson) A. Edn.: A.B., Univ. of Omaha, 1940; M.D., Univ. Nebr. Coll. Med., 1943. m. (dec.). c.: Gregory Cushing; Milton H., III; H. Clark; Eric A. Exp.: Intern., L. I. Coll. Med., N. Y., 1943-44; Resident, Lenox Hill Hosp., N. Y., 1944-45; Bishop Clarkson, Omaha, 1947-48; Fellow, Bennett Found., 1947-48; Clin. Dir., Hastings, Nebr., St. Hosp., 1948-51; Asst. Supt., ibid., 1950-51; Med Supt., Kansas State Hosp., 1951-53; Medical Supt., Evansville State Hosp., Ind., 1953—. Hon. Pos.: Lecturer, Univ. Kans. Schl. Med., Psychiatry, 1951-53; Consultant, V.A. Hosp., Nebr. and Kans., Neurol. and Psychiatry, 1948-53. Mem.: A.M.A.; F.A.P.A.; C.N.P.A.; A.E.S.; A.R.N.M.D.; E.E.G. Soc.; A.O.A.; A.A.A.S.; A.G.P.A.; Am. Bd. Neurology and Psychiatry; Am. Bd. Mental Hosp. Administrators; Sigma Chi; Phi Rho Sigma; Shrine; Rotary. Service Rec.: U. S. Army, Capt., 1945-47. Areas of Rsch.: Endocrine Changes in Schizophrenia; Mileu Therapy.

ANDERSON, Jewell Douglas (M.D.), Rsch. Assoc., Univ. of Mex. Faculty of Med., Mexico City, D. F.; Physician, Sanatorio Lucerna, Mexico City, D. F., Mex. Home Add.: 818 Robinson Ave., Jack-

sonville 9, Fla. Mail Add.: c/o Am. Embassy, Mexico City, D. F., Mex. CHEMISTRY; MEDICINE; PATHOLOGY. b. Jacksonville 9, Fla., Oct. 21, 1927. s. Rev. Major Lewis and Minnie Louise (Anthony) A. Edn.: A.A., Fla. Normal and Industrial Coll., 1947; B.S., Fla. A. and M. Univ., 1949; M.T., Am. Med. Tech. Inst., 1952; M.D., Univ. of Mex., 1962. Exp.: Instr. of Chem., Edward Waters Coll., 1949; Biochemist and Dir. of the Hosp. Clin. Lab., U. S. Air Force Med. Corps, 1949-52; Dir., Chem. Rsch., Dugway Proving Grounds, Utah, 1956-57; Rsch. Assoc., Dept. of Anatomy, Univ. of Puebla, Mex., 1957; Clin. Chemist, Bio Sci. Lab., Los Angeles, Calif., 1957-58; Rsch. Assoc., Univ. of Mex., 1958-59; Endocrinological Rsch. Chemist, Childrens Hosp., Seattle, Wash., 1960; Rsch. Assoc., Univ. of Mex., Physician Sanatorio Lucerna, Mex. City, Mex., 1961—. Hon. Pos.: Secy.-Treas., The Minnie L. Anthony-Anderson Foundation, Jacksonville, Fla. Mem.: Fed. of Am. Soc. of Exptl. Biol.; Conf. Bd. of Assn. Rsch. Counc.; N. Y. Acad. of Sci.; Am. Men of Sci.; A.A.A.S. Author: Spanish Syllabus, 1960; Las Adherencias, 1962; Equalities and Inequalities Based on a Midsagittal Section of the Body, 1952; Physiology, Pathology, Diagnosis and Treatment of Constrictive Pericarditis, 1962; Esparatrichosis, 1962. Contbr. to: Jour. of Am. Am. Med. Technologists. Serv. Rec.: Lt., U.S.A.F., 1949-52. Areas of Rsch.: Endocrinology; Pathological Adhesions; Inflammations; Anatomy.

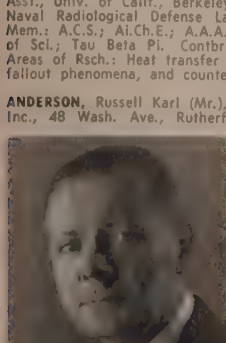
ANDERSON, Nancy S. (Ph.D.), Asst. Prof., Univ. of Md., College Park, Md. Home Add.: 4705 Fordham Rd., College Park, Md. PSYCHOLOGY, EXPERIMENTAL AND STATISTICS. b. Akron, Ohio, Aug. 15, 1930. s. Edmond R. and Sagrid (Pihlblad) A. Edn.: B.A., Univ. of Colo., 1952; M.A., Ohio State Univ., 1953; Ph.D., ibid., 1956. Exp.: Asst. Prof., Univ. of Md., 1959—; Assoc. to Staff Psychologist, IBM Rsch. Center, Yorktown Hts., N. Y., 1956-59; Rsch. Assoc., Ohio State Univ., 1955-56; Psychologist, USN Electronics Lab., San Diego, 1955; Tchng. Asst., Dept. of Psy., Ohio St. Univ., 1954-55; Rsch. Asst., ibid., 1953-54. Hon. Pos.: Secy., Admin. Comm., PGHFE of IRE; Md. Psychological Assn.; Secy., Sigma Xi. Mem.: A.A.A.S.; A.A.U.P.; Psychonomic Soc.; Psychometric Soc.; Am. Psycho.l Assn.; Am. Statistical Assn.; IRE. Contbr. to: Jour. Exp. Psy. Areas of Rsch.: Engineering Psychology; Statistical Methods; Computer Applications in Social Sciences.

ANDERSON, Robert Hunt (Ph.D.), Assoc. Prof., Western Mich. Univ., Kalamazoo, Mich. Home Add.: 1803 Whites Rd., Kalamazoo, Mich. PHYSICAL CHEMISTRY.

b. Kansas City, Kans., Oct. 20, 1924. s. R. G. and E. F. (Hunt) A. Edn.: A.B., Baker Univ., 1946; M.A., Columbia Univ., 1948; Ph.D., ibid., 1954. m. Yoko Omura, Feb. 5, 1950. c.: Tomio; Dale Wayne; Kenneth Kenji; Linda Sue; Joseph Hunt. Exp.: Instr., Bloomfield Coll., 1951-56; Asst. Rsch. Specialist, Rutgers Univ., 1956-57; Assoc. Prof., Western Mich. Univ., 1957—. Mem.: Am. Chem. Soc.; Am. Assn. for Adv. of Sci.; Sigma Xi; Soc. for Social Responsibility in Sci.; Phi Lambda Upsilon. Contbr. to: Corrosion; Sci.; Jour. of Physical Chem. Areas of Research: Neutron Spectroscopy; Phase Rule; Embrittlement of Metals.

ANDERSON, Robert Neil (Mr.), Chemical Engr., Naval Radiological Defense Lab., San Francisco, Calif. Home Add.: 278 Juanita Way, San Francisco, Calif. CHEMICAL ENGINEERING. b. San Jose, Calif., Nov. 8, 1933. s. Neil Albert and Millicent Rosalie (Severtson) A. Edn.: B.S., Univ. of San Francisco, 1956; B.S., Univ. of Calif., 1958; M.S., ibid., 1959. Exp.: Chemist, Arabian Am. Oil Co., Dhahran Saudi Arabia, summer, 1954-55; Rsch. Asst., Univ. of Calif., Berkeley, Calif., 1958-59; Chemical Engr., Naval Radiological Defense Lab., San Francisco, Calif., 1959—. Mem.: A.C.S.; Ai.Ch.E.; A.A.A.S.; Calif. Sec. A.C.S.; Calif. Acad. of Sci.; Tau Beta Pi. Contbr. to: Industrial and Engrg. Chem. Areas of Rsch.: Heat transfer with ultrasonic vibrations; Nuclear fallout phenomena, and countermeasures.

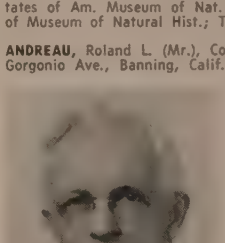
ANDERSON, Russell Karl (Mr.), Pres., R. K. Anderson Associates, Inc., 48 Wash. Ave., Rutherford, N. J. INDUSTRIAL HYGIENE AND SAFETY CONSULTANT. b. Brooklyn, N. Y., Jan. 5, 1909. s. Carl John and Marie (Jenson) A. m. Hilda Bartles, Jan. 24, 1934. c.: Barbara Jean; Dorothy Marie; Russell Karl, Jr. Exp.: Safety and Ind. Hyg., Gen. Engrng. and Mgmt. Corp., N. Y. C., 1928-29; Safety and Ind. Hyg., William Stake and Co., Inc., N.Y.C., 1929-32; Safety and Ind. Hyg., Richard L. Roberts, Inc., N.Y.C., 1932-36; Safety and Ind. Hyg., Clarence E. Cooper and Co., Inc., N.Y.C., 1936-40; Safety and Ind. Hyg., Joseph J. Garibaldi Organization, Hoboken, N. J., 1940-45; Pres., R. K. Anderson Associates, Inc., 1945—. Hon. Pos.: Consult. to Bd. of Hlth., Borough of Rutherford, N. J., 1961—; Guest Lectr., Fairleigh



Dickinson Univ.; Mem. of Tchng. Fac., Mgmt. Prog. Inst. of Mgmt. and Labor Rel., Rutgers Univ., 1960—; Chmn., Professionalization Comm., N. J. Chapt., Am. Soc. of Safety Engrs., 1957-58; Chmn., Health and Safety Comm., Borough of Rutherford, N. J., 1959—; Chmn., Health and Safety Comm., ibid., 1959-62; Dir., Civil Defense and Disaster Control, ibid., 1962—. Mem.: A.P.H.S.; Am. Indust. Hyg. Assn.; Air Pollution Control Assn.; N. J. Pub. Health Assn.; Am. Assn. Contamination Control; A.S.A.S.; Soc. Packaging and Handling Engrs.; Am. Soc. Safety Engrs.; Vets. of Safety. Areas of Rsch.: Loss Prevention in Industry—Fields of Industrial Hygiene, Air Pollution, Accident Prevention, and the Packaging and Transportation of Hazardous Materials; Noise Hazards in Industry.

ANDERSON, Sydney (Ph.D.), Asst. Curator, American Museum of Natural Hist., N. Y. 24, N. Y. Home Add.: 98 Wainwright Ave., Closter, N. J. MAMMALOGY. b. Topeka, Kans., Jan. 11, 1927. s. Robert Grant and Evelyn Fern (Hunt) A. Edn.: B.A., Univ. of Kans., 1950; M.A., ibid., 1952; Ph.D., ibid., 1959. m. R. Justine Klusmire, 1951. c.: Evelyn Lee; Charles Sydney; Laura Lynnette. Exp.: Asst. Curator and Instr., Univ. of Kans., 1955-60; Asst. Curator, Am. Museum of Natur. Hist., N.Y.C., 1960—. Mem.: Am. Soc. of Mammalogists; Ecol. Soc.; Southwestern Assn. of Naturalists; AAAS; Sigma Xi; Phi Sigma; The Wildlife Soc. Contbr. to: Jour. of Mammalogy; Southwestern Naturalist; Novitates of Am. Museum of Nat. Hist.; Univ. of Kans. Publications of Museum of Natural Hist.; Trans. of Kans. Acad. of Sci.

ANDREAU, Roland L. (Mr.), Consultant. Home Add.: 937 N. San Gorgonio Ave., Banning, Calif. ORGANIC AND PHARMACEUTICAL CHEMISTRY. b. Paris, France, June 18, 1879. s. Louis and Anne-Marie (Huet) A. Edn.: Ch.E., Univ. of Paris, 1900. m. Isabelle Mary Farr, Feb. 12, 1907. Exp.: Pharmacie Centrale de France, Paris, 1900-04; Rsch., Parke Davis & Co., Detroit, 1904-10; Rsch., Rose City Chem. Co., 1910-15; Rsch. Dir., Du Pont Co., 1916-21; Gen. Mgr., Hance Bros. & White, Pharm. Chem., 1922-30; Consult., 1930—. Mem.: Am. Chem. Soc.; Life Mem., Am. Pharm. Assn.; Fr. Chem. Soc.; Fellow, A.A.A.S.; Kiwanis. Contbr. to: Chem. Engr.; Chem. and Engrng. News. Gen. Int.: Creator of Synthetic Camphor Industry in the U.S.A. from Am. Materials, 1917. Areas of Rsch.: General Chemical and Pharmaceutical; Construction of Plants; Scientific Research, Management.



ANDREE, Richard Vernon (Ph.D.), Prof. of Math., Chmn. of Dept. of Math. and Astronomy, Univ. of Okla., Norman, Okla. Home Add.: 627 E. Boyd St., Norman, Okla. MATHEMATICS. b. Minneapolis, Minn., Dec. 16, 1919. s. Richard A. and Marguerite (Eigner) A. Edn.: B.S., Univ. of Chicago, 1942; Ph.M., Univ. of Wis., 1945; Ph.D., ibid., 1949. m. Josephine Peet, Dec. 15, 1944. c.: David; Peter; Suzanne; Jean. Exp.: Asst. Prof. of Math., Univ. of Okla., 1949-54; Assoc. Prof. of Math., ibid., 1954-60; Prof., 1961—. Visit. Assoc. Prof., Carnegie Found. Grant, Haverford Coll., 1955-56, (on leave from Univ. of Okla.); Visit. Prof., Okla. A. and M., 1956-57. (On leave from Univ. of Okla.); Lectr. at Sev. N.S.F. Insts. for Math. Tchrs., 1955—; Act. Dir., Univ. of Okla. Sci. Comp. Lab., 1958. Hon. Pos.: Secy.-Treas. Genl. Pi Mu Epsilon; Secy.-Treas., Okla. Sect., Math. Assn. of Am.; Founder and Ed., Okla. Univ. Math. Letter; Math. Ed., The Dryden Press; Assoc. Ed., Am. Math. Monthly; (Fellow), A.A.A.S.; Founder, Natl. High Schl. and Junior Coll. Math. Club, Mu Alpha Theta. Mem.: Am. Assn. Adv. of Sci.; M.A.A.; A.M.S.; N.C.T.M.; Sigma Xi; Pi Mu Epsilon. Author: Summer Conference Note for Math. Tchr., 1954, '55, '57; Selections from Mod. Abstract Algebra, 1958; Boolean Algebra, 1956; Calculus for Secd. Schl. Tchrs., 1957; Programming the IBM 650 Computer, 1958. Co-author: Fundamentals of Coll. Math., 1954; Mod. Trigonometry, 1955. Contbr. to: Am. Math. Monthly; Bull. A.M.S.; Proc. A.M.S.; Psycholog. Revs.; Psycholog. Bull.; Pi Mu Epsilon Jour.; Several Radio and TV Talks; Math. Mag.; Math. Tchr.; Scripta Mathematica. Areas of Rsch.: P-adic Numbers; Matrix Theory; Modern Abstract Alegbra; Computer Mathematics; Divergent Sequences; Numerical Analysis; Group Theory.

ANDRESEN, Richard Harold (M.D.), Physician and Surgeon, 715 Lake St., Oak Park, Ill. Home Add.: 941 Bonnie Brae, River Forest, Ill. OBSTETRICS AND GYNECOLOGY, EXPERIMENTAL PATHOLOGY. b. Chicago, Ill., Oct. 6, 1918. s. Karl O. and Martha (Guibransen) A. Edn.: B.S., Northwestern Univ., 1940; M.D., ibid., 1943. m. May H. Long, Sept., 1946. c.: Kristine; Richard, Jr.; Gloria Beth. Exp.: Assoc. Attending Obs. and Gyn., St. Luke's Presby. Hosp., Chicago, Ill., 1958—; Assoc. Prof. of Obs. and Gyns., Univ. of Ill., Coll. of Med., Ill., 1960—. Mem.: Am. Soc. of Exptl. Path.; Central Soc. for Clin. Rsch.; Fellow, Am. Gynecol. Soc.; Sigma Xi; Alpha Chi Sigma; Chicago Path. Soc.; Chicago Gynecol. Soc.; Am. Coll. of Surgeons; Am. Coll. Obs. and Gynecol.; A.A.A.S.; N. Y. Acad. of Sci.; Nu Sigma Nu.

Contbr. to: Arch. of Pathol.; Jour. of Exptl. Med.; Lab. and Clin. Med.; Am. Jour. of Obs. and Gynecol.; Nature; Fed. Proc.; Surgical Forum. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Experimental Pathology.

ANDRESS, William Ira (Mr.), Patent Attorney, Monsanto Chemical Co., 800 N. Lindbergh, St. Louis 66, Mo. Home Add.: 538 Parkwood Ave., Kirkwood, Mo. CHEMISTRY—INORGANIC AND ORGANIC. b. Tulsa, Okla., Dec. 28, 1925. s. James Gordon Bennett and Edith Angeline (Long) A. Edn.: B.S., Kans. State Coll., 1954; M.S., ibid., 1955; LL.B., Georgetown Univ., Law Center, 1959. m. Rosa Lee Hardee, Mar., 1949. c.: Janice; Paul; Peter; Anna; Rebecca; Mark. Exp.: Chem. Lab. Analyst, Spencer Chem. Co., Military, Kans., 1955-56; Chemist, Patent Examiner, U. S. Patent Office, Wash., D. C., 1955-60; Pattent Att'y., Monsanto Chem. Co., St. Louis, Mo., 1960—. Mem.: A.C.S.; A.A.A.S.; U. S. Pat. Off. Soc.; Am. Pat. Law Assn.; Am. Bar Assn.; Patent, Trademark and Copyright Sect.; Ohio State Bar Assn. Service Rec.: AUS, 1944-46. Areas of Rsch.: Condensation Reactions of Carbon Monoxide and Aromatic Hydrocarbons.

ANDREW, Warren (M.D.), Prof. of Anat., Ind. Univ., Indianapolis, Ind. MEDICINE. b. July 19, 1910, Portland, Ore. s. John and Alice (Lucke) A. Edn.: B.A., Carleton Coll., 1932; M.S., Brown Univ., 1933; Ph.D., Yale, 1934; Univ. of Ill., 1936; M.D., Baylor Univ., 1943. m. Nancy Valerie Miellmier of Akron, Ohio, Aug. 18, 1936. d. Fred and Anna Miellmier. c.: Linda Nancy. Exp.: Univ. of Ga., Med. Schl., Tchng. Fellow, Instr., 1936-39; Baylor Med. Coll., Instr. in Anat., 1939-41; Asst. Prof., 1941-43; Assoc. Prof., Southwestern Med. Coll., 1943-46; Prof. of Histol., 1946-47; Prof. of Anat., Chmn. Dept. George Washington Univ., 1947-52; Visiting Prof., Univ. of Montevideo, Uruguay, 1945-46; Visiting Prof., Washington Univ., 1948-49; Prof. of Anat., Bowman Gray Schl. of Med.; Prof. of Anat., Chmn. Dept. Ind. Univ. Mem.: Phi Beta Kappa; A.A.A.S.; Sigma Xi; Anatomists; Zoologists; Gerontologists (Coun. Mem., 1950-53; 1957—) (Program Chmn., 1958 Meeting); Ind. Com. on Aging and the Aged, 1959; Secy., Ind. State Anatomical Bd., 1961—. Author: Many Med. Publications; Textbook of Comparative Histology; Monograph, Cellular Changes with Age. Ph.D. Dissertation: The Nissl Substance of the Purkinje Cell in the Mouse and Rat from Birth to Senility. Travel: Mex.; Bahamas; Panama; Guatemala; Uruguay; France; Italy; England; Japan; India; Pakistan. Gen. Int.: Young Man of the Year, Distinguished Serv. Medal, Dallas Jr. C. of C. Hobbies: Lang.; Hiking; Nature Study. Listed in: A.M.S.; Who Knows—and What; W.W.A.

ANDREWS, John Machunka (M.D.), Exec. Dept. Physical Med. and Rehab., Calif. Coll. of Med., 1721 Griffin Ave., Los Angeles 31, Calif. b. Schenectady, N. Y., Aug. 6, 1907. s. John Machunka and Julia (Koscak) A. Edn.: D.O., Coll. of Osteopathic Physicians and Surgeons, 1933; M.D., Calif. Coll. of Med., 1962. m. Grace Elvina Hagen of Landa, N. Dak., 1934. d. Mr. and Mrs. M. H. Hagen. c.: John Morton; Nancy Jane. Exp.: Instr. History Taking, Manipulative Technic, Physical Examination and Hist. of Med., Coll. of Osteopathic Phys. and Surgeons, Los Angeles, Calif., 1947-49; Assoc. Prof., Dept. of Osteopathic Therapeutics and Dir. of Clin. Practice, ibid., 1949-50; Exec. Dept. of Physical Med. and Rehab., Director Rehab. Center, Prof. Dept. Physical Med. and Rehab., ibid., 1953—; Exec. Sr., Attending Staff, Los Angeles Co. Osteopathic Hosp., Dept. of Physical Med. and Rehab., 1953—. Hon. Pos.: Chmn., Supervisory Com., Osteopathic Credit Union, 1953-55; Lectr., So. Calif. Coun. of Camera Clubs; Los Angeles City Schls., Adult Edn.; Pres.-Elect, Natl. Rehab. Assn. of Sou. Calif., 1962-63. Mem.: Am. Med. Writers Assn.; A.A.A.S.; Citizens' Com. on Rehab. Serv., 1955, '56; Calif. Med. Assn.; Sigma Sigma Phi; Alpha Phi Omega. Contbr. to: Jour. of the Am. Osteopathic Assn.; Osteopathic Mag.; Clinical Osteopathy. Hobby: Photography. Listed in: A.M.S.; Who's Who in Am. Edn.; W. W. in the West.

ANDREWS, Justin Meredith (Sc.D.), Dir., Natl. Inst. of Allergy and Infectious Diseases, Natl. Inst. of Health, Bethesda 14, Md. Home Add.: 8 North Dr., Bethesda 14, Md. MALARIOLOGY-PARASITOLOGY. b. Providence, R. I., Aug. 28, 1902. s. Clark Willett and Annie Frances (Bliven) A. Tucker. Edn.: Ph.B., Brown Univ., 1923; Sc.D., Johns Hopkins Univ., 1926; LL.D., ibid., 1951 (Hon.). m. Jean Grant, April, 1957. c.: Donald Clark; Theodore Henry; Richard W. Grant (stepson). Exp.: Instr., Assoc. Prof., Prof., Protozool., Johns Hopkins Univ., Baltimore, Md., 1926-38; Dir., Div. of Malaria and Hookworm Serv., Ga. Dept. of Pub. Health, Atlanta, Ga., 1938-42; Maj. to Colonel, Sanitary Corps, U.S.A., N. African and Pacific T. O., 1942-46; Dir., Profl. Functions, Office of Malaria Control in War Areas, USPHS, Atlanta, Ga., 1945; Dep. Officer in Chg. to Officer in Chg., Communicable Dis. Ctr., U.S.P.H.S., Atlanta, Ga., 1946-52; Asst. Surg. Genl. Assoc. Chf. for Program, Bur. of State Serv., ibid., Wash., D. C., 1952-57; Dir. Natl. Inst. of Allergy and Infec. Dis., Natl. Inst. of Health, U. S. Pub. Health Serv., Bethesda, Md., 1957—. Hon. Pos.: Bd. of Dirs., Gorgas Mem. Inst.; Bd. of Trustees, Allergy Found. of Am.; Aid Expert Adv. Panel on Malaria; Mem. Comm. on Enteric Infections, Armed Forces Epidemiol. Bd.; Am. Soc. of Parasitol.; WHO Expert Advisory Panel on Malaria. Mem.: Am. Epidemiol. Soc.; Am. Soc. of Trop. Med. and Hyg.; Fellow, A.A.A.S.; Assn. of Milit. Surgeons; Helminthol. Soc. of Wash.; Fellow, Am. Pub. Health Assn.; Fellow, Am. Acad. of Microbiol.; Trop. Med. Assn. of Wash.; Sigma Xi; Phi Sigma. Author: Problems and Methods of Research in Protozoology, 1930. Contbr. to: Jour. of Parasitol.; Science; Am. Jour. of Trop. Med. and Hyg. Serv. Rec.: A.U.S., 1942-46. Gen Int.: Received Legion of Merit, 1944 for contbrn. to malaria control in N. Africa and Italy; Chmn., U. S. Delegation to 6th Internatl. Congresses of Tropical Med. and Malaria, 1958; Chmn., Meeting of WHO Scientific Group on Malaria Rsch., Geneva, Switzerland, 1959; Joseph Augustin Le Prince Award, Am. Soc. of Trop. Med. and Hyg., 1960. Areas of Rsch.: Malariology, Parasitology, Public Health Problems.

ANDREWS, Myron Floyd (D.V.M.), Asst. Vetn., and Asst. Prof., N. D. State Univ., Fargo, N. D. Home Add.: 2914 Edgemont St., No., Fargo, N. D. VETERINARY MEDICINE. b. Huron, S. Dak., Dec. 8, 1924. s. Myron Thompson and Elsie Adeline (Dobratz) A. Edn.: A.B., Stanford Univ., 1950; D.V.M., Univ. of Calif., 1958. m.: Avon Anderson, Sept. 15, 1948. c.: Laurie Andrews; Rebecca. Exp.: Fisheries Rsch. Biologist, Chesapeake Shellfish Investigators, U.S.F.W.S., Annapolis, Md., 1951-52; Sr. Lab. Technician, Dept. of Surgery, UCLA Schl. of Med., 1952-54; Asst. Veterinarian and Asst. Prof., Dept. of Veterinary Sci., N. Dak. Agric. Coll., 1958-60; Dir., Norwich Pharmacal Co., 1960; Asst. Vet. and Asst. Prof., N. Dak. State Univ., 1961—. Mem.: Am. Veterinary Med. Assn.; Am. Assn. for the Adv. of Sci.; Wildlife Disease Assn. Contbr. to: Veterinary Med.; Jour. Am. Vetn. Med. Assn.; Am. Jour. of Vetn. Rsch.; Proc. N. Dak. Acad. of Sci. Serv. Rec.: U.S.N. Areas of Rsch.: Veterinary Medicine, Veterinary Parasitology; Toxicology; Clinical Research.

ANDRUSHKIW, Joseph Wasyl (Ph.D.), Prof. of Math, Seton Hall Univ., 628 So. 20th St., Newark, N. J. MATHEMATICS. b. Horodok, Ukraine, Mar. 21, 1906. s. Basilius and Apollonia (Jachowski) A. Edn.: M.S., Univ. of J. Casimirus in Lwiw, 1930; M.Ed., ibid., 1932; Ph.D., Ukranian Free Univ. of Munich, Germany, 1946; Dr. Habil, ibid., 1947. m. Sophie Kulchycky, 1932. c.: Bohdan; Roman. Exp.: Staff, State Tchrs. Coll., Kenty, Poland, 1930-35; State Gymnasium and Lyceum, ibid., 1936-39; Instr. in Math., Univ. of Lwiw, 1939-40; Prof. of Math., then Dir. of Coll., Ukrainian Tchrs. Coll., 1945-48; Asst. Prof. of Math., Ukrainian Free Univ. in Munich, 1947-49; Asst. then Assoc. Prof. and Prof. of Math., Seton Hall Univ., South Orange, N. J., 1949—. Hon. Pos.: Exec. Vice-Pres. of Shevchenko Sci. Soc. Mem.: Shevchenko Sci. Soc.; Scientific Soc., N. Y.; Amer. Math. Soc.; Math. Assn. of Amer.; Societe Mathematique de France; Indian Math. Society; N. Y. Acad. of Sci. Contbr. to: Bull. Amer. Math. Soc.; Proc. Shevchenko Soc. Math. Magazine; Amer. Math. Monthly. Special Int.: Algebra; Theory of Functions; Infinite series.

ANDY, Orlando Joseph (M.D.), Chief and Prof., Neurosurgery, Univ. of Miss. Med. Center, Jackson, Miss. Home Add.: 3815 Rebecca Court, Jackson, Miss. NEUROSURGERY. b. New Britain, Connecticut, Jan. 21, 1920. s. Jack and Josephine (Berlani) A. Edn.: B.S., Ohio Univ., Athens, Ohio, 1943; M.D., Univ. Rochester, N. Y., 1945. m. Louise Murphy, June 11, 1960. Exp.: Attending Surgeon, Johns Hopkins Hosp., 1954-55; Instr., Neurological Surg., ibid., 1953-55; Attending Neurosurgeon, V. A. Hosp., Perry Point, Md., 1954-55; Asst. Prof. and Chmn., Div. Neurosurgery, Univ. Miss. Med. Center, Jackson, Miss., 1955-56; Prof. and Chmn., Dept. Neurosurgery, ibid., 1956; Attending Neurosurgeon, V. A. Hosp., Jackson, Miss., 1955—. Mem.: Am. Coll. Surgeons; Am. Bd. Neurological Surg.; Am. Med. Assn.; Eastern E.E.G. Assn.; Am. Epilepsy Soc.; Am. Fed. Clin. Rsch.; Neurosurgical Soc. Am.; Southern Neurosurgical Soc.; Caribbean Neurosurgical Soc.; Congress Neurological Surgeons; Southern E.E.G. Assn.; Am. Acad. Cerebral Palsy; Harvey Cushing Soc.; Am. E.E.G. Soc.; Phi Beta Kappa; Sigma Xi; Jackson Chamber Comm. Contbr. to: Electroencephalography and Clinical Neurophysiology; Jour. Neuropathology and Expmtl. Neurology; Am. Jour. Physiology; Neurol; Jour. Comp. Neurology; Jour. Neurophysiology. Serv. Rec.: Camtain, U.S.A.M.A., V.A. Hosp., 1946-48. Areas of Rsch.: Neurophysiology.

ANGEL, Grover L(aMarr) (Ed.D.), Dean of the College Genl. Studies and Prof. of Edn., Geo. Wash. Univ., Wash., D. C. Home Add.: 10108 Green For. Dr., Hillandale Forest, Silver Sprg., Md. and Mars Hill, N. C.; Summer: Scientists' Cliffs, Port Republic, Calvert Co., Md. SCIENTIFIC PERSONNEL SPECIALIST. b. July 2, 1909, Mars Hill, N. C. s. Samuel Whittington and Sue (Gardner) A. Edn.: A.B., High Point Coll., 1929; M.A., Geo. Wash. Univ., 1946; Ed.D., 1952; Spec. Stud., Univ. of N. C., summer, 1930; Northwestern Univ., summer, 1950. m. Mary Nell English, Mars Hill, N. C., Dec. 27, 1937. c.: Carolyn Sue. Exp.: Tchr., H. S., Denton, N. C., 1929-31; Tchr., H. S., Spring Creek, N. C., 1931-35; Tchr., H. S., Beech Glen, N. C., 1935-37; Hd. Eng. Dept., H. S., Marshall, N. C., 1937-39; Prin., H. S., Hot Springs, N. C., 1939-42; Newspaper Corres., The Asheville (N. C.) Citizen-Times, 1931-42; Spec. Investigator, Dun & Bradstreet, Inc., Wash., D. C., 1942-43; Mgr., ibid., 1943-45; Consultant, Office of Naval Rsch., Navy Dept., 1946; Employment Adviser and Repr., Sci. Pers. Div., Navy Dept., and Naval Rsch. Lab., Wash., D. C., 1946-47; Rsch. Assoc., Amer. Coun. on Edn., Wash., D. C., 1947-50; Asst. to the Dean, Coll. of Gen. Studies, Geo. Wash. Univ., Wash., D. C., 1950-51; Asst. Dir., Off-Campus Div., 1951-53; Dir., 1954-56; Asst. Dean, 1956-57; Dean, 1957—; Lectr. in Edn., 1951-55; Assoc. Prof. Lectr. in Edn., 1955-57; Assoc. Prof. of Edn., 1957-59; Prof. of Edn., ibid., 1959—. Mem.: A.A.U.P.; N.E.A.; N.C.E.A.; A.A.A.S.; Amer. Ednl. Rsch. Assn.; Natl. Vocl. Guid. Assn.; Soc. for Adv. of Mgmt.; Soc. for Pers. Admin.; Phi Delta Kappa; Epsilon Eta Phi; Federal Schoolmen's Club; Jr. Order of United Amer. Mechanics; Navy Labs. Adv. Com. on Scientific Pers.; Meth. Ch.; Red Cross; Y.M.C.A.; Natl. Cystic Fibrosis Rsch. Fdtn., Pres., Wash., D. C., Chapter, 1959-61; Regional Pres., ibid., 1960-62; Natl. Trustee, 1962—; Winner, High Point Coll. Alumnus of the Year Award, 1957. Author: Poetry in Contemporary Am. Writers, 1937-38; Tchr. Application Forms, 1946; The Mgmt. of Internal Schl. Finance, 1952. Travel: Can.; U. S. Hobbies: Oil Painting; Poetry; Journalism. Listed in: W. W. in Am.; Who Knows—and What; W. W. in the S. and S.W.; W. W. in the East; Who's Who in Am. Edn.; A.M.S.; Internatl. World Who's Who; Internatl. Blue Book; Trustee, Pres. and Deans of Amer. Colls. and Univs. Special Int.: Scientific Personnel Rsch.; Ednl. Rsch.; Ednl. Admin.

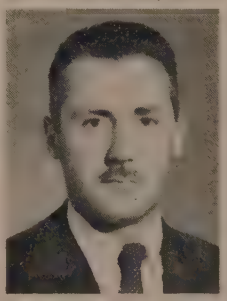
ANGELL, James Kennedy (Ph.D.), Supervisory Meteorologist, U. S. Weather Bureau, Washington, D. C. Home Add.: 3412 Old Dominion Blvd., Alexandria, Va. METEOROLOGIST (SYNOPTIC). b. Ann Arbor, Mich., Nov. 2, 1923. s. Robert Cooley and Esther (Kennedy) A. Edn.: B.A., Univ. of Mich., 1945; M.A., Univ. of Calif., Los Angeles, 1948; Ph.D., ibid., 1956. m. Margaret McCaffrey, Aug. 13, 1952. c.: John Caffrey; Jane Cooley; Robert Daly; James Burrill. Exp.: Tchng. Asst., Univ. of Calif., Los Angeles, 1950-53; Rsch. Asst., ibid., 1953-56; Meteorologist, U. S. Weather Bureau, Washington, D. C., 1956—. Mem.: Am. Meteorol. Soc.; Royal Meteorol. Soc.; Am. Geophys. Union; Sigma Xi. Contbr. to: Advances in Geophysics; Jour. of Atmospheric Scis.; Monthly Weather Rev.; Jour. of Geophys. Rsch. Serv. Rec.: U. S. Army Air Corps, 1943. Areas of Rsch.: Use of Constant Level Balloons in Meteorology.

ANGELUSCHEFF, Zhivko Dimitroff (M.D.), Hd., Hearing and Speech Center, City Hosp., Elmhurst, N. Y. Home Add.: 120 E. 86th St., N. Y. 28, N. Y. PHYSICIAN, OTOLARYNGOLOGY. b. Muglish, Bulgaria, Jan. 15, 1897. s. Dimitri and Lalka (Beslova) A. Edn.: B.S., Univ. of Sofia, 1919; M.D., Univ. of Berlin, 1925. m. Dr. Helen Georgieva, 1925. Exp.: E.N.T. Res., Berlin, Rud. Virchow Hosp., 1925-27; Assoc. Surgeon, E.N.T., Dept., Municipal Hosp., Berlin Neukoelln, 1928-32; Dir., E.N.T., ibid., 1932-33; Assoc. Attend. Surg., Geofroy St. Hillair Hosp., Paris, 1933-39; Res. E.N.T. Dept., City Hosp., N. Y., 1942-44; Assoc. Surgeon, E.N.T. Visit. Staff, ibid., 1944-50; Surgeon, E.N.T., Visiting Staff, Manhattan Eye, Ear and Throat Hosp., 1952-62; Hd., Hearing, Speech Center, City Hosp., Elmhurst, N. Y., 1957-60. Hon. Pos.: Pres., Macedonia Hosp., Comm. for Am. Hosp. at Med. Faculty, Univ. Scopje, Yugoslavia. Mem.: Acad. of Med.; N. Y. Acad. Sci.; N. Y. Med. Soc.; A.M.A.; Am. Inst. Physics; Am. Acoustical Soc.; A.A.A.S.; French Acoustical Soc.; World Hlth. Organization; Am. Comm. for Yugoslav Relief. Contbr. to: Noise Enzymes and Hearing; La Chimie de l'ouie; Otosclerosis; Biohimija Sluha; Laerm and Schwehoerigkeit; Acta Otolaryngologica; Annales Medicales; Arch. Otolaryngology; Revue de Laryngologie; Rev. Medicale Mac.; Prac. Oto-Rhino-Laryngologica; Zeitschr. fuer Aerztl. Fortbildung; Zeitschft Laryngologise-Rhinologie-Otologie; Priroda; Medicinski Arhiv. Areas of Rsch.: Hearing and Deafness.

ANGINO, Ernest Edward (Ph.D.), Asst. Prof., Marine Geochem., Dept. of Oceanography & Meteorol., Tex. A. & M. Coll., College Station, Tex. GEOCHEMISTRY, ANTRACTIC GEOLOGY. b. Winsted, Conn., Feb. 16, 1932. s. Alfred and Filomena (Serluco) A. Edn.: B.S., Lehigh Univ., Pa., 1954; M.S., Univ. of Kans., 1958; Ph.D., ibid., 1961. m. Margaret M. Lachat, June 26, 1954. c.: Cheryl Ann. Exp.: Rsch. Assoc., Univ. of Kans., 1959-61; Instr., ibid., 1961-62; Asst. Prof., Tex. A. & M. Coll., 1962—. Mem.: Am. Assn. Adv. Scis.; Am. Soc. of Limnol. and Oceanography; Am. Geophoys. Union; Geochem. Soc.; Sigma Xi; Alpha Sigma Phi; Sigma Gamma Epsilon. Contbr. to: AEC Technical Information Series; Bull. Geol. Soc. of Am.; Jour. Geophys. Rsch.; Jour. Chem. Physics; Jour. Am. Ceramic Soc.; Jour. Geol.; Science; Polar Record; Kans. Acad. of Sci.; Compass; Bull., Elettrotecnico Instituto Nazionale. Serv. Rec.: U. S. Army, 1955-57. Areas of Rsch.: Geochemistry of Saline Waters, Antarctic Geology and Geochemistry, Thermoluminescence, Geochemistry of Recent Sediments.

ANGLIN, Robert Alton (Ph.D.), Prof. Sociol., W. Va. State Coll., Institute, W. Va. b. Evansville, Ind., Oct. 3, 1910. s. James and Florence (Carter) A. Edn.: A.B., Evansville Coll., 1940; M.S., Ind. Univ., 1943; Ph.D., ibid., 1948. m. Marian Bell of Evansville, Ind., Jan. 31, 1932. d. Henry and Bessie Bell. Exp.: Dist. Organizer for U.A.W.-C.I.O., 1933-34; Liaison Officer, Chrysler Corp., Evansville, Ind., 1935-37; Personnel Officer, ibid., 1938-40; Grad. Asst., Ind. Univ., 1947-48; Prof., A. M. and N. Coll., Pine Bluff, Ark., 1948-50; Prof., W. Va. State Coll., Inst., W. Va., 1950-62. Hon. Pos.: Chmn. Soc. Sci Sect., W. Va. Acad. of Sci. Mem.: A.A.A.S.; Amer. Sociol. Soc.; Amer. Edn. Assn.; N.E.A.; W. Va. State Tchrs. Assn.; Amer. Tchrs. Assn.; Natl. Assn. for the Adv. of Colored People. Author: A Sociol. Analysis of a Pressure Group, 1948. Ph.D. Dissertation: See Author. Contbr. to: Proceedings of the West Virginia Acad. of Sci.; Quarterly Rev. of Higher Education; Jour. of Social Sci. Teachers; Basic Coll. Quarterly. Areas of Rsch.: Social Anthropol.; Soc. Institutions. Travel: Can.; Mex. Hobbies: Baseball; Horse Racing. Listed in: Who's Who in Am. Edn.; Am. Men of Science; Who's Who in Colored America.

ANTONELLI, Luiz Kuster (Ed.D.), Hd., Dept. of Social Sci. and Communication Skills, 304 E. 67th St., New York 21, N. Y. Home Add.: 49 W. 76th St., New York 23, N. Y. HUMAN RELATIONS AND GUIDANCE. b. San Francisco de Assis, Brazil, Feb. 27, 1918. s. Pedro P. and Almerinda (Kuster) A. Edn.: State Tchrs. Coll., Cruz Alta, Brazil, 1937; Grad. studies, Univ. of Chile, Santiago, 1947, and Univ. of Denver, U.S.A., 1951; Univ. of Rio Grande do Sul, Brazil, 1949; M.A., Columbia Univ., 1953; Ed.D., ibid., 1961. m. Rosalba Hyppolito, 1954. Exp.: Supt., St. of R. G. Sul, Porto Alegre, Brazil, 1954-56; Dir., State Tchrs. Coll., Cachoeira, Brazil, 1943-50; Prof. of Psychol., Inst. of Edn., Porto Alegre, Brazil, 1954-56; Dir., Inter Am. Ctr., Pan American Union, Rubio, Venezuela, 1956-58; Counselor, Brooklyn Coll., 1960-61; Hd. Dept. of S.S. and C.S., Voorhees Tech. Inst., N. Y., 1961—. Hon. Pos.: Hon. Chmn., Campaign Against Juvenile Delinquency, St. of Tachira, Venezuela. Mem.: Am. Anthropological Assn.; Am. Sociological Soc.; A.A.A.S.; N.E.A.; Am. Coll. Personnel Assn.; Am. Personnel and Guid. Assn.; Kappa Delta Pi; Phi Delta Kappa. Contbr. to: Revista do Ensino; Porto Alegre; Brazil. Serv. Rec.: Brazilian Army, 1938. Areas of Rsch.: Guidance, and Sociology of Edn.



APKER, LeRoy (Ph.D.), Physicist, General Elec. Rsch. Lab., Schnectady, N. Y. Home Add.: Edinburg, N. Y. PHYSICS. b. June 11, 1915, Rochester, N. Y. s. Russell and Sarah (Leroy) A. Edn.: A.B., Univ. of Rochester, 1937; Ph.D., ibid., 1941. m. Jean Dickey, Dec. 27, 1950. Exp.: Rsch. Assoc., Section Mgr., General Physics Dept., General Elec. Rsch. Lab., Schenectady, N. Y., 1950. Mem.: Amer. Physical Soc.; Amer. Assn. for the Advancement of Science; Sigma Xi; Phi Beta Kappa. Contbr. to: Physical Review. Areas of Rsch.: Semiconductors; Photoelectricity.

APONTE, Gonzalo Enrique (M.D.), Asst. Prof. of Path., Jefferson Med. Coll., Philadelphia, Pa. Home Add.: 1500 Pine St., Philadelphia, Pa. PATHOLOGY. b. Puerto Rico, July 15, 1929. s. Gonzalo and Lalita (Socorro) A. Edn.: B.S., Georgetown Univ., 1948; M.D., Jefferson Med. Coll., 1952. Exp.: Intern and Res. in Path., Jefferson Med. Coll. and Hosp., 1952-57; Instr. in Path. and Fellow, Natl. Cancer Inst., 1955-57; Chf. of Labs., U. S. Naval Hosp., Guam, 1957-59; Pathologist, Guam Mem. Hosp., 1957-59; Deputy Med. Examiner, Gov. of Guam, 1957-59; Asst. Prof. of Path., Jefferson Med. Coll., 1959—; Rsch. Collaborator, Brookhaven Natl. Lab., 1960—. Hon. Pos.: Coordinator of Oncologic Tchng., Jefferson Med. Coll., 1961—; Mem., Ednl. Council

or Foreign Medical Grads., Natl. Bd. of Med. Exams., 1961—; Exec. Comm., Alumni Assn. of Jefferson Med. Coll., 1961—; Certified in Clinical Pathol. by Am. Bd. of Pathol., 1961 (certification in Pathologic Anatomy, 1958). Mem.: Am. Assn. Adv. Sci.; N. Y. Acad. Scis.; Coll. Am. Path.; Am. Sos. Clin. Path.; Assn. Clin. Scientists; Am. Assn. Blood Banks; Phil. Path. Soc.; N. J. Soc. Clin. Path.; Diplomate Natl. Bd. Med. Examiners; Alpha Omega Alpha; Theta Kappa Psi; Assn. of U. N., Puerto Rico Chapt. Asst. Editor: Fourth Internatl. Congress of Hematology, 1952. Contbr. to: Am. Jour. Clin. Path.; Ann. Int. Med.; Surgery; Am. Jour. of Obstetrics and Gynecology; Jour. Thoracic Surgery; Annals Otology, Rhinology and Otolaryngology; Radiation Rsch.; J. S. Armed Forces Med. Jour.; Archives of Neurology; Jour. Bone and Joint Surgery. Serv. Rec.: U.S.N., 1957-59. Gen. Int.: Selected Markle Scholar in Medical Scis., 1960. Areas of Rsch.: Oncology, Surgical Pathology, Radiation Carcinogenesis.

APP, Frank (Ph.D.), Consultant, R.D. 1, Bridgeton, N. J. AGRICULTURE ECONOMICS, MANAGEMENT, AGRONOMY AND SOIL MANAGEMENT. b. Buffalo Roads, Pa., 1886. s. Francis S. and Sarah (Miller) A. Edn.: B.S., Penn. State, 1911; Ph.D., Cornell Univ., 1918. m. Helen Minch, 1918. c.: Jean; Helen; Sarah; Frank; Alva. Exp.: Asst., Agron., Penn. Agric. Exp., Pa., 1911; Asst. Prof., Agron. and Asst. Agron., N. H. Univ., 1912-14; Chief Div. Agron. and Farm Mgt., Rutgers Univ., 1914-24; Prof. Agron. and Econ., ibid., 1914-24; Managing Dir., Minch Bros., Bridgeton, N. J., 1924-29; Gen. Mgr., Seabrook Farms, Bridgeton, N. J., 1929-36; Dir. of Rsch. and Consultant, Bridgeton, N. J., 1936—. Hon. Pos.: Past Pres., N. J. Farm Bureau; Bd. of Mgrs., N. J. Agric. Exptl. Station; Bd. of Visitors, Rutgers Univ. Mem.: Amer. Soc. of Agron.; Hort. Soc. of Amer.; Sigma Xi; Gamma Sigma Delta; Phi Kappa Phi; Alpha Gamma Phi; Lambda Chi; Fellow, A.A.A.S. Author: Farm Economics, 1924. Contbr. to: Amer. Soc. of Agron.; Pioneer Agri. Econ. and Mgt., Marketing Perishables, Quick Freezing. Gen. Int.: Citation, N. J. State Bd. of Agric. for Distinguished Service to Agriculture, 1951; Named Veg. Man of the Year by Am. Veg. Growers Assn., 1954; Citation, N. J. Hort. Soc., for Outstanding Service to Horticultural Industry; Citation and Gold Medallion, N. J. Agric. Soc., 1961. Areas of Rsch.: Agri. Econ.; Soil Mgt. and Fertility Standards for particular crops. Commercial use of Soil Analysis for Growing Crops. Appraisal of Agricultural Functions and Organization.

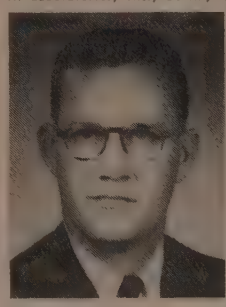
APPLE, Martin Allen (Mr.), Rsch. and Tchng. Asst., Univ. of Minn. Med. Center, Minneapolis 14, Minn. Mailing Add.: c/o 2053 Dayton Ave., St. Paul 4, Minn. BIOCHEMICAL MICROBIOLOGY. b. Duluth, Minn., Sept. 17, 1938. s. Samual B. and Sylvia (Mintz) A. Edn.: AL.A., Univ. of Minn., 1958; B.A., ibid., 1959; M.S., ibid., 1962. m. Grace Canfield, 1960. c.: Deborah D. Exp.: Rsch. Asst., Univ. of Minn., Minneapolis 14, Minn., 1958-60; Tchng. and Rsch. Asst., ibid., 1960—; Predoct. Fellow, Univ. of Calif., San Francisco, Calif., 1962—. Mem.: A.A.A.S.; Am. Inst. Biol. Sci.; Soc. Ind. Microbiol.; Am. Soc. Microbiol.; Phi Beta Kappa; Psi Chi. Areas of Rsch.: Enzyme Induction, Mech. of Transmission of Genetic Information for Protein Synthesis, Mech. of Action of Anti-Leukemic drugs.

APPLEBY, Ralph Carson (D.D.S.), Prof. and Hd. Prosthetic Dentistry, State Univ. of Ia., Iowa City, Ia. Home Add.: 106 7th Ave., N., Iowa City, Ia. PROSTHETIC DENTISTRY-COMPLETE AND REMOVABLE DENTURE PROSTHESIS. b. Eldon, Ia., Nov. 16, 1919. s. Clarence E. and Doris V. (Carson) A. Edn.: B.S., State Univ. of Ia., 1941; D.D.S., ibid., 1951; M.S., ibid., 1953. m. Beryl K. Moss, July, 1945. c.: Drew Carson; Gary Meredith. Exp.: Adm. Officer, American Embassy, London, England, 1945-46; Instr., Coll. of Dentistry, State Univ. of Ia., Iowa City, Ia., 1951-54; Asst. Prof. to Prof., ibid., 1954—. Hon. Pos.: Sect. Vice Chmn. and Chmn., Conf. Session on Complete Denture Prosthesis of the Am. Assn. of Dental Schls. Mem.: Am. Dental Assn.; Am. Acad. of Maxillo-Facial Prosthesis; Am. Prosthodontia Soc.; Univ. Dist. Dental Soc.; Internatl. Assn. of Dental Rsch.; A.A.A.S.; Delta Upsilon; Omicron Kappa Upsilon. Author: Outline for Construction of Complete Dentures, 1959; Outline for Construction of Partial Dentures, 1959. Contbr. to: Jour. of Prosthetic Dent.; Jour. of Ia. State Dental Soc.; Jour. of Dental Rsch. Serv. Rec.: A.U.S., 1941-45. Areas of Rsch.: Vertical Dimension, Complete and Removable Partial Denture Prosthesis.

APPLEMAN, Herbert Stanley (Mr.), Consultant, Atmospheric and Space Physics, Hq. Air Weather Service, Scott A.F.B., Ill. Home

Add.: 10 Harmon Dr., Lebanon, Ill. ATMOSPHERIC PHYSICS, SPACE PHYSICS. b. St. Louis, Mo., April 24, 1917. s. Milo D. and Emma C. (Faust) A. Edn.: B.S., Univ. of Ill., 1940; M.S., Univ. of Chicago, 1947. m. Jane Barber, April 1949. c.: John; James; David; Donald. Exp.: Rsch. Meteorologist, U. S. Weather Bureau Thunderstorm Project, Chicago, Ill., 1948-49; Chf., Special Techniques Branch, Hq. Air Wea. Serv., Andrews A.F.B., Washington, D. C., 1949-56; Chf., Evaluation and Develop., Div. Hq. 2nd Wea. Wing, Rhein-Main Air Base, Frankfurt, Germany, 1956-58; Consult., Hq. Air Weather Service, Scott A.F.B., Ill., 1958—. Hon. Pos.: Mem., Am. Meteorological Soc. Committee on Cloud Physics; Profl. Mem., Am. Meteorol. Soc. Mem.: Am. Geophysical Union. Contbrng. Author: The Atmosphere, 1957. Author: Occurrence and Forecasting of Cirrostratus Clouds, 1961. Contbr. to: Bull., Am. Meteorological Soc.; Jour. of Geophysical Rsch.; Jour. of Applied Meteorol.; Jour. of Environmental Scis.; Nubila; Inst. of Aerospace Scis. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Cloud Physics; Weather Modification; Problems Affecting Aircraft and Space Flight.

APPLETON, George Sanders (Ph.D.), Vice Pres., Dir. of Labs., L & M Laboratories, Inc., Berlin, Md. Home Add.: Tony Tank Manor, Salisbury, Md. MICROBIOLOGY, VIROLOGY, IMMUNOLOGY. b. Bowling Green, Ky., July 2, 1927. s. Charles Alexander and Mary Gladys (Duckett) A. Edn.: B.A., Univ. of Tenn., 1951; M.S., ibid., 1955; Ph.D. Cand., Univ. of Wis., 1962. m. Betty Louise Powell, May 21, 1949. c.: Diane Leigh; George Sanders, Jr.; John Michael. Exp.: Rsch. Asst., Univ. of Tenn., Knoxville, Tenn., 1951-52; Control Mgr., Am. Sci. Labs., Inc., Madison, Wis., 1952-53; Dir. of Lab., ibid., 1955-60; Lab. Dir. and Mgr., Animal Health Prod., Amer. Sci. Labs., Inc., Madison, Wis., 1960—. Mem.: Am. Soc. for Microbiol.; A.A.A.S.; U. S. Livestock Sanitary Assn.; Animal Care Panel; Vet. Biological Licensees Assn.; Lambda Chi Alpha; Lions Internatl.; Jr. C. of C. Contbr. to: Am. Jour. of Vet. Rsch.; Jour. Am. Vet. Med. Assn.; 61st Annual Proceedings U. S. Livestock Sanitary Assn.; Applied Microbiol. Areas of Rsch.: Clostridum botulinum, mfg. of vaccines, toxidods, etc. for animal industry, animal virology.



APPLETON, James Lamar, Jr. (Capt.), Corps of Engrs., U. S. Army, Wash. 25, D. C. Home Add.: 1264 Parkwood Dr., Navato, Calif. CIVIL ENGINEERING. b. Montevallo, Ala., Sept. 21, 1929. s. James Lamar and Marie (Sewell) A. Edn.: B.S., U. S. Milit. Acad., 1953; M.S., Calif. Inst. of Technol., 1957. m. Carol Louise Hanson, June 2, 1953. c.: Erica; Thomas Hayne; Lauren Jane; James Lamar, III. Exp.: Officer, Corps of Engrs., 1953—. Mem.: Am. Geophys. Union; Am. Soc. of Civil Engrs.; Natl. Geogr. Soc.; Soc. of Am. Milit. Engrs. Serv. Rec.: U. S. Army, 1953—.

APPLEY, Mortimer Herbert (Ph.D.), Prof. and Chmn., Dept. of Psychol., York Univ., Toronto, Ontario. Home Add.: 19 Strathgowan Cresc., Toronto 12, Ont., Can. EXPERIMENTAL PSYCHOLOGY. b. N.Y.C., Nov. 21, 1921. s. Benjamin and Min (Albert) A. Edn.: B.S., City Coll. of N. Y., 1942; M.A., Univ. of Denver, 1946; Ph.D., Univ. of Mich., 1950. m. Dee Gordon, June 5, 1942. c.: Richard; John. Exp.: Instr., Univ. of Denver, 1945-47; Instr., Univ. of Mich., 1947-49; Asst. Prof., Psychol., Wesleyan Univ., Conn., 1949-52; Prof. and Chmn., Dept. of Psychol., Conn. Coll., 1952-60; Prof. and Chmn., Dept. of Psychol., Sou. Ill. Univ., 1960-62; Prof. and Chmn., Dept. of Psychol., York Univ., 1962—. Hon. Pos.: Pres., Conn. State Psychol. Soc., 1953-54. Mem.: Am. Assn. Adv. Sci.; Am. Psychol. Assn.; Am. Psychosomatic Soc.; N. Y. Acad. of Sci.; Am. Assn. Univ. Profs.; Psychonomic Soc.; Soc. for Psychophysiol. Rsch.; Sigma Xi; Psi Chi; Phi Sigma. Contbr. to: Psychophysiological Aspects of Space Flight, Flaherty, (Ed.), 1961; Am. Psychologist; Jour. of Abnormal and Social Psychol.; Jour. of Comparative and Physiol. Psychol.; Contemporary Psychol.; Jour. of Clin. Psychol.; Psychological Reports; Am. Jour. of Psychol. Serv. Rec.: USAAF, 1942-45. Gen. Int.: Sci. Faculty Fellow, Natl. Sci. Fdtn., 1959, 1960. Areas of Rsch.: Motivation and Stress; Psycho-Endocrinology; Learning Theory.

ARAUJO, Oscar Eduardo (Ph.D.), Assoc. Prof. Pharmacy, Ohio Northern Univ., Ada, Ohio. Home Add.: 709 S. Gilbert, Ada, Ohio. PHYSICAL PHARMACY. b. Porto Alegre, Brazil, June 2, 1927. s. Olavo and Marguerite (Parr) Araujo. Edn.: B.S., Purdue Univ., 1954; M.S., ibid., 1955; Ph.D., ibid., 1957. m. Betty Lou Duncan of Herrin, Ill., Sept. 30, 1950. d. Dr. and Mrs. Clyde Duncan. Exp.: Grad. Asst., Purdue Univ., 1954-55; Fellow, Purdue Rsch. Found., 1955-57; Asst. Prof., Pharm., Ohio Northern Univ., 1957—. Mem.: A.A.C.P.; A.Ph.A.; Sigma Xi; Phi Lambda Upsilon; Rho Chi; Am. Bowling Cong.; A.A.A.S. Contbr. to: Amer. Pharm. Assn.; Areas of Rsch.: Physical Pharmacy.

ARCHDEACON, Bruce Burdette (Mr.), Sci. Tchr., Shelby High Schl., Shelby, Ohio. Home Add.: R.D. #2, Shelby, Ohio. PHYSICS. b. Martinsville, Ohio, Oct. 4, 1907. s. George H. and Bertha (Cashman) A. Edn.: B.S. and B.S. in Ed., Wilmington Coll., 1930; M.Sci., Ohio State Univ., 1939. m. Dorothy Wolf, June, 1934. c.: Bruce B., Jr.; Carl Franklin. Exp.: Tchr., Felicity H. S., Ohio, 1930-32; Prin., New Vienna H. S., Ohio, 1932-40; Prin., Pickerington, Ohio, H. S., 1940-41; Physics Tchr., Shelby H. S., Ohio, 1941-43; Instr. of Physics, Ohio Wesleyan Univ., 1943-45; Physics Tchr., Shelby H. S., Ohio, 1945—. Hon. Pos.: Chmn. Bd. Dirs., Shelby Y.M.C.A., 1953-60; Radiological Coordinator, Rich-

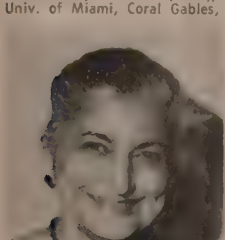
land Co. Civil Defense. Mem.: Sigma Xi; A.A.A.S. Contbr. to: Physical Review. Areas of Rsch.: Physics Spectroscopy.

ARBITMAN, Dr. Herman D. (Ph.D.), Pres., Personnel Serv., Osborn Bldg., Cleveland 15, Ohio. Home Add.: 693 Birch Dr., Euclid 32, Ohio. PSYCHOLOGY. b. Cleveland, Ohio, Feb. 8, 1925. s. Eddie (dec.) and Tillie (Weisberg) A. Edn.: B.A., Western Reserve Univ., 1945; M.A., ibid., 1946; Ph.D., Cornell Univ., 1949. m. Dena D. Cohen, May 20, 1945. c.: Judith Martha; Deborah Beth; Ava Susan. Exp.: Psychologist and Electroencephalographer, The Trng. Schl., Vineland, N. J., 1949-53; Exec. Dir. and Supvr., Cuyahoga Co., Coun. for the Retarded Child, Cleveland, Ohio, 1953-56; Natl. Dir. Sales Employment, Curtis Industries, Inc., Cleveland, 1956-61; Private Psychol. Practice, ibid., 1953—. Mem.: Amer. Psychol. Assn.; Amer. Assn. Adv. Sci.; Cleveland Soc. Neurol. and Psychiatry; Personnel Psychology Assn., Northern Ohio; Cleveland Personnel Assn.; Ohio Psychol. Assn.; Sigma Xi; Phi Epsilon Pi; Rotary. Contbr. to: Psychol. Abstracts; The Trng. Schl. Bull. Areas of Rsch.: Industrial Psychology, Sales Employment, Marriage Counseling, Mental Retardation.

ARCOS, Joseph Charles (D.Sc.), Assoc. Prof. of Med. and Biochemistry, Tulane Univ., New Orleans, La. Home Add.: 6321 Laurel St., New Orleans, La. EXPERIMENTAL ONCOLOGY, BIOPHYSICAL CHEMISTRY. b. Nagykanizsa, Hungary, Aug. 22, 1921. Edn.: L.Chem., Univ. of Cluj, Romania, 1944-47; Ch.E., Conservatoire Natl. des Arts et Metiers, Paris, Fr., 1947-50; D.Sc., Univ. of Paris, Fr., 1949-51. Married. Exp.: Asst. Dir., Jouan Co., Paris, Fr., 1952-53; Project Assoc., McArdle Mem. Lab., Univ. of Wis. Med. Schl., Madison, Wis., 1953-57; Asst. Rsch. Prof., Cancer Rsch. Lab., Univ. of Fla., Gainesville, Fla., 1957-60; Assoc. Prof., U.S.P.H.S. Hospital Rsch. Lab., Tulane Univ. Med. Schl., New Orleans, La., 1960—. Mem.: Am. Chem. Soc.; Am. Assn. for Cancer Rsch.; The Biophysical Soc.; Soc. Exptl. Biol. and Med.; Sigma Xi; A.A.A.S. Contbr. to: Jour. Biophys. Biochem. Cytol.; Biochim. Biophys. Acta; Brit. Jour. Cancer; Bull. Cancer; Jour. Biol. Chem.; Jour. Am. Chem. Soc.; Jour. Org. Chem.; Arzneimittelforschung (Drug Rsch.); Progress in Drug Rsch.; Bull. Soc. Chim. Fr.; Bull. Soc. Chim. Belgium; Nature; Experientia; Naturwissenschaften. Areas of Rsch.: Endoplasmic Membrane alterations in carcinogenesis; Structure-activity relationships and molecular geometry of carcinogens; Mitochondrial metabolic pathways in the dilated heart; Conformational changes in biological macromolecules.

ARCOS, Martha (D.Sc.), Rsch. Assoc., Dept. Obstetrics and Gynecology, Coll. Phys. and Surgeons, Columbia Univ., New York, N. Y. Home Add.: 1458 Drayton Lane, Philadelphia 51, Pa. BIOORGANIC CHEMISTRY, EXPERIMENTAL ONCOLOGY. b. Berlin, Germany, July 17, 1921. Edn.: L.Sc., Univ. of Paris, Fr., 1950; D.Sc., ibid., 1958. Exp.: Rsch. Asst., Dept. Pharmacol., Univ. of Wis., Madison, Wis., 1955-57; Instr., Dept. Chem., Univ. of Fla., Gainesville, Fla., 1957-58; Post. Doct. Rsch. Fellow, ibid., 1958-60; Assoc., Dept. Biochem. and Med., Univ. of Pa., G. I. Rsch. Lab., Phila., Pa., 1960-62. Mem.: Am. Chem. Soc.; A.A.A.S. Contbr. to: Review Gen. Sci., Fr.; Review Fermentations Belgium; Nature; Progress in Drug Rsch.; Bull. Soc. Chim. Belges, Comptes rendus Acad. Sci. Fr. Areas of Rsch.: Structure and spectral properties of cinnoline derivatives. Molecular geometry and structure-activity relationships of carcinogens. Endoplasmic membrane alterations in carcinogenesis. Mechanism of phagocytosis. Urinary and Blood chemical changes in peptic ulcer formation.

ARMAGHAN, Veronica (D.Sc.), Rsch. Asst. Prof. of Cancer Rsch., Univ. of Miami, Coral Gables, Fla. Home Add.: 6430 S.W. 42nd Terrace, Miami 55, Fla. BIOLOGY. b. Turkey, Aug. 26, 1902. d. Rev. Haroutune and Mariam (Garabedian) A. Edn.: B.A., Yankton Coll., 1927; D.Sc., Johns Hopkins Univ., Schl. of Hyg. and Pub. Health, 1937. Exp.: Lab. Techn., N. Y. State Health Dept. and Private Clin. Lab., 1927-35; Assoc. Bacteriologist, Md. State Health Dept., Baltimore, Md., 1940-45; Trng. Fellowship, Natl. Cancer Inst., Bethesda, Md., 1945-48; Cancer Cytologist, Md. State Health Dept., Baltimore, Md., 1948-50; Tchng. Grant from NCI, W. Va. Univ. Med. Schl., Morgantown, W. Va., 1950-52; Rsch. Asst. Prof. of Cancer Rsch., Univ. of Miami, 1954. Mem.: A.A.A.S.; N. Y. Acad. of Scis.; Fla. Acad. of Scis. Areas of Rsch.: Cancer Research. Specially interested in the Origin of Life and the Theory of Evolution.



ARGUS, Mary Frances (Ph.D.), Assoc. Prof., Dept. of Med., (Biochemistry), Tulane Univ., New Orleans 18, La. Business Add.: Rsch. Lab., U. S. Public Health Serv. Hosp., 210 State St., New Orleans 18, La. Home Add.: 6321 Laurel St., New Orleans 18, La. BIOCHEMISTRY. b. Ironton, Ohio, July 16, 1924. d. Charles J. and Bertha (Winter) A. Edn.: B.S., Coll. of Mount St. Joseph-on-the-Ohio, 1945; M.S., Univ. of Cincinnati, 1947; Ph.D., Univ. of Fla., 1952. Exp.: Instr., Marygrove Coll Mich., 1947-49; Asst. Rsch. Prof., Cancer Rsch. Lab., Univ. of Fla., 1952-56; Assoc. Rsch. Prof., ibid., 1956-60; Assoc. Prof., Med. and Biochem., Tulane Univ., 1960—. Mem.: Sigma Xi; Am. Assn. for Cancer Rsch.; Am. Chem. Soc.; Iota Sigma Pi; Am. Soc. for Pharmacol. and Exptl. Therapeutics; Soc. Exptl. Biol. and Med. Contbr. to: Jour. of Organic Chem.; Jour. Am. Chem. Soc.; Cancer Rsch.; Jour. Natl. Cancer Inst.; Brit. Jour. of Cancer; Biochem. Pharmacol.; Jour. Am. Pharmaceutical Assn.; Am. Jour. of Physiol.; Radiation Rsch.; Nature; Experientia and Proc., Soc. of Exptl. Biol. and Med. Areas of Rsch.: Chemical Carcinogenesis; Drug Metabolism; Effect of Stress Phenomena on Phagocytosis; Carcinogen Induced Conformational Changes in Macromolecules.

ARMITAGE, Horace Morton (Mr.), Entomological Consultant, 1616 Fernside Blvd., Alameda, Calif. APPLIED AGRICULTURAL ENTOMOLOGY. b. Butte, Mont., Sept. 28, 1890. s. Albert M. and Margaret E. (Roberts) A. m. Adah B. Monroe, Nov. 12, 1913. c.: Mary Virginia Niellsen, Jane Christine Street. Exp.: Field Insect Pest Control Supvr., Corona Lemon Co., Corona, Calif.; San Diego Land Corp., Chula Vista, Calif., 1909-13; Deputy and Agricul. Comm., San Diego, Calif., 1913-18; Assoc. Chf., St. Insectary, Calif. Dept. Agric., Alhambra, Calif., 1918-21; Entomol., Biol., Control, Univ. of Calif., 1921-23; Supvr., Biol. Cont., Citrus Pests, Los Angeles Co., 1923-31; Assoc. Chf., Bur. Plant Quar., Calif. Dept. Agri., 1931-43; Chf., ibid., 1943-55; Retired, ibid., 1955. Hon. Pos.: Pres., Pac. Coast Entomol. Soc., 1935; Chmn., Pac. Br., Ent. Soc. Amer., 1949; Pres., Entomol Soc. Amer., 1957. Contbr. to: Pan-Pac. Entomol.; Jour. Amer. Assn. of Entomol.; Jour. Entomol. Soc. of Amer.; U. S. Dept. Agri.; Monthly Bull. Calif. Dept. Agri.; Calif. Citrograph; Pac. Rural Press. Areas of Rsch.: Biological Control, Insects; Insect Pest Survey; Insect Eradication Procedures Against Incipient Infestations; State-Federal Plant Quarantine Enforcement.

ARMSTRONG, George Miller (Ph.D.), Emeritus Prof., Bot. and Bacteriol., Clemson Coll., Clemson, S. C. Home Add.: 200 Martin St., Clemson, S. C. PLANT PATHOLOGY. b. Appleton, S. C., Nov. 13, 1893. s. John B. and Elizabeth (Miller) A. Edn.: B.S., Clemson A. & M. Coll., 1914; M.A., Univ. of Wis., 1917; Ph.D., Washington Univ., 1921. m. Joanne Karrer, June, 1922. c.: George M., Jr.; Glenn K. Exp.: Rsch. Asst., S. C. Experimental Sta., 1914-15; Tchng. Asst., Univ. of Wis., 1915-17; Instr., Bot., Clemson Coll., 1917-18; Ext. Path., St. of Ala., 1918-19; Lackland Fellow, Washington Univ., 1919-21; Nematode Investigator, U.S.D.A., Brooksville, Fla., summers, 1921-23; Asst. Prof., Bot., Washington Univ., 1921-23; Hd., Div. Boll Weevil Control, S. C. Exptl. Sta., Florence, 1924-28; Hd., Dept. Bot. and Bacteriol., Clemson Coll., 1928-56; Prof., Bot., Bacteriol. (emer.), ibid., 1956-59. Hon. Pos.: Chmn., Cotton Disease Coun., 1935; Chmn., So. Sect., Amer. Phytopath. Soc., 1938; Chmn., Tobacco Workers Conf., 1954; Pres., S. C. Acad. Sci., 1956. Mem.: A.A.A.S.; Amer. Soc. of Plant Physiol.; Bot. Soc. of Amer.; Phi Kappa Phi; Alpha Zeta; Sigma Xi; Rotary. Contbr. to: Annals Mo. Bot. Garden; Jour. Agril. Rsch.; Plant Physiol.; Phytopathology; Plant Disease Reporter; Proc. Seventh Internatl. Bot. Cong.; S. C. Exptl. Sta. Bull. Areas of Rsch.: Cotton Diseases; Fusarium wilt fungi and host relationships.

ARMSBY, Henry H(orton) (D.Sc.), Chf., for Engrng. Edn., U. S. Office of Edn., Wash., D. C. b. State Coll., Pa., Mar. 12, 1891. s. Henry Prentiss and Lucy Atwood (Harding) A. Edn.: B.S., Pa. State Univ., 1911; C.E., ibid., 1916. Hon. Deg.: D.Engrng., Newark Coll. of Engrng., 1955; D.Sc., Lowell Tech. Inst., 1956. m. Mary Ruth Bundy, June 22, 1937. c.: Robert Henry; Richard Edward. Exp.: Dftg. Rm. and Shop Insp., Amer. Bridge Co., 1911; Tchr., Pa. State Coll., 1911; Maint. of Way Dept., Pa. R.R., 1912-14; Instr., Wis. Mining Schl., 1915-17; Instr., Asst. Prof. and Assoc. Prof., C.E., Mo. Schl. of Mines, 1917-21; Student Adv., Assoc. Prof., C.E., ibid., 1921-22; Registrar and Stud. Adv., 1922-41; Field Coordinator, Engrng., Sci. and Mgt. War Trng., U. S. Office of Edn., Wash., D. C., 1941-46; Specialist Assoc. Chf., and Chf., Engrng. Edn., ibid., 1946—. Hon. Pos.: Mem., A.S.E.E. Manpower Comm., 1946—; Comm. on Enrollment Statistics, 1949—; Comm. on Relations Between Cooperative Schls. and Fed. Govt., 1948—; Adv. Comm. of Div. of Relations With Industry, 1952—; Representative of Soc. on Adv. Bd. of Future Scientists of Amer. Found., 1953—; Comm. on Rsch. on the Edn. of Engrs., 1959—; Representative of U. S. Office of Edn. on ODM-OCDM Comm. on Specialized Personnel, 1952—; Pres., Mo. Sect., A.S.E.E., 1937-38; Secy., 1932-33; Chmn., Natl. Capital Area Sect., A.S.E.E.,

1948-50; Mem., Natl. Council, A.S.E.E., 1937-41, 1947-48, 1952-63; Vice Pres., 1949-51; Chmn., Comm. on Sec. Schls., 1943-48; Chmn., Comm. on Atomic Energy Edn., 1950-53; Chmn., Comm. on Constitution and By-Laws, 1951-53; Repr. of Soc. of Engrng. Manpower Commn., 1950—; Comm. on Improvement of Engrng. Tchng., 1950-52; Comm. on Improvement of Soc. Function, 1952-56; Liaison from Dept. of Health, Edn. and Welfare to Pres. Comm. on Scientists and Engrs., 1956-58; Rep. of U. S. Engrng. Socs. to Conf. of Repts. from Engrng. Soc. of Western Europe and U. S., 1957—. Mem.: Tau Beta Pi; Phi Kappa Phi; Sigma Nu. Author: Engrng., Sci., Mgt. War Trng. Final Report, 1947; A Survey of Cooperative Engrng. Edn., 1949; Cooperative Edn. in the U. S., 1954; 1955. Contbr. to: Jour. Engrng.; Jour. of Amer. Assn. of Collegiate Registrars; Jour. of Higher Edn.; Industry and Power; Military Engrng. Listed in: Who's Who in Amer. Edn.; A.M.S.; Who's Who in Engrng.

ARNETT, Raymond Lee (Ph.D.), Rsch. Assoc., Rsch. Dept., Phillips Petroleum Co., Bartlesville, Okla. Home Add.: P. O. Box 306, Bartlesville, Okla. CHEMICAL PHYSICS, HIGH POLYMER PHYSICS. b. Rootstown, Ohio, Dec. 28, 1914. s. Chester A. and Bertha (Baldwin) A. Edn.: B.S., Kent State Univ., 1936; Ph.D., Univ. of Minn., 1949. m. Marguerite Fuller, Oct. 13, 1939. c.: Sandra Lee; Torma. Exp.: Chemist, Arthur D. Little, Inc., Cambridge, Mass., 1939-40; Chemist, Reichhold Chem., Inc., Elizabeth, N. J., 1940-44; Interior Ballistician, Allegany Ballistics Lab., Cumberland, Md., 1944-46; Supvr., Am. Petroleum Inst., Rsch. Proj. 44, Carnegie Inst., Pittsburgh, Pa., 1949-52; Mgr., Chem. Physics Sec., Rsch. Dept., Phillips Pet. Co., Bartlesville, Okla., 1952-61; Rsch. Assoc., Rsch. Dept., Phillips Pet. 6, ibid., 1961—. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Am. Assn. for Adv. of Sci.; Gamma Alpha; Sigma Xi. Author: Data on the Properties of Hydrocarbons, 1953. Contbr. to: Jour. Chem. Phys.; Jour. Polymer Sci. Areas of Rsch.: Molecular Dynamics, Polymer Rheology.

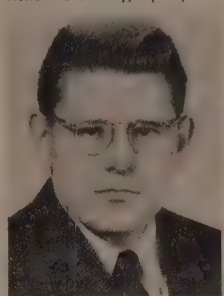
ARNOLD, Hubert Andrew (Ph.D.), Assoc. Prof. of Math., Univ. of Calif., Davis, Calif. Home Add.: 533 "E" St., Davis, Calif. MATHEMATICS: NUMERICAL ANALYSIS AND TOPOLOGY. b. Chicago, Ill., Nov. 15, 1912. s. Dr. Charles Harrison and Irma Carlotta (Sears) A. Edn.: A.B., Univ. of Nebr., 1933; Ph.D., Calif. Inst. of Technol., 1939. Exp.: Instr., Univ of Minn, 1939-40; Instr, Princeton Univ., 1941-42; Asst. Prof. to Assoc. Prof., Univ. of Calif., 1948—. Mem.: Sigma Xi; Phi Beta Kappa; N. Y. Acad. of Scis.; Am. Math. Soc.; Math. Assn. of Am.; Cooper Ornithological Soc.; Beta Theta Pi; Sons of the Am. Revolution. Serv. Rec.: U. S. Naval Reserve, 1942-46, Lt. Cmdr. Areas of Rsch.: Topology; Numerical Analysis.

ARNOLD, John William (Mr.), Field Engineer, Westfield, N. J. Home Add.: 623 East Broad St., Westfield, N. J. COMMUNICATION ENGINEERING. b. Paulding, Ohio, Sept. 13, 1899. s. Joseph D. S. and Kate (Dotterer) A. Edn.: B.A., Univ. of Illinois, 1921; M.A., ibid., 1923. m. Dorothy McSparran, 1924. Exp.: Engineer, Western Union Telegraph Co., N. Y., 1923-41; Engineer, Internatl. Telephone and Telegraph Corp., 1946-50; Engineer, Lockheed Electronics Co., New Jersey, 1953—. Mem.: Inst. of Radio Engineers; A.A.A.S.; Radio Club of Am.; Phi Beta Kappa; Sigma Xi. Contbr. to: Proceedings of the Inst. of Radio Engineers. Serv. Rec.: A.U.S., 1941-46. Areas of Rsch.: Ocean cable and land wire telegraph transmission. Inductive interference mitigation and equipment. Telephone Power apparatus and ringing plant equipment development. Light route microwave radio relay equipment evaluation.

ARNOTT, Howard Joseph (Ph.D.), Asst. Prof., Northwestern Univ, Evanston, Ill Home Add.: 3333 Payne St., Evanston, Ill. PLANT MORPHOLOGY AND ANATOMY. b. Los Angeles, Calif., Mar. 9, 1928. s. Andrew H. and Evelyn L. (Donnelly) A. Edn.: B.A., Univ. of Southern Calif., 1952; M.S., ibid., 1953; Ph.D., Univ. of Calif., 1958. m. Wanda Jean Cross on Jan. 28, 1950. c.: John Joseph; Catherine Jean. Exp.: Teaching Asst., Univ. of Calif., Berkeley, Calif., 1955-58; Asst. Prof., Northwestern Univ., Evanston, Ill., 1958—. Mem.: A.A.A.S.; A.I.B.S.; Calif. Bot. Soc.; Bot. Soc. of Am.; Sigma Xi; Am. Microscopical Soc. Contbr. to: Am. Jour. of Bot.; Trans. Am. Micro. Soc.; Nature; Turtox News; Univ. of Calif. Publ. in Bot. Serv. Rec.: U.S.N., 1946-48. Areas of Research: Plant embryology; Morphology and Anatomy of **Yucca**; Venation of Seedplants, especially **Ginkgo**.

ARNOLD, Paul J. (D.Sc.), Hd. of Div. of Sci. and Math., State Coll., Jacksonville, Ala. BIOLOGY. b. Wheatley, Ky., July 1, 1896. s. James T. and Kate (Allnutt) A. m. Sallie Ford Moore of Georgetown, Ky., Sept. 2, 1919. c.: James Hugh (deceased), William Thomas. Edn.: B.S., Georgetown Coll., 1918; M.A., George Peabody Coll. for Tchrs., 1929; D.Sc., Georgetown Coll., 1953; Vice-Pres., Psi Chapter, Pi Delta Kappa, 1936-37; Graduate Study, George Peabody Coll., 1935-37; Tchrs. Coll., Columbia Univ., 1945; Tchng. Fellowship, Peabody Coll., 1937. Exp.: Supt. of Augusta Pub. Schls., 1921-25; Supt. of Williamstown Pub. Schls., 1925-29; Tchr. of Sci., S. T. Coll., Ala., 1929-32; Prof. of Biol., State Coll., 1933-46; Head of Div. Sci. and Math., ibid., 1946—. Mem.: Pi Delta Kappa; Fellow, A.A.A.S.; Ala. Acad. of Sci.; S.A.S.I.; N.S.T.A.; N.E.A. Special Int.: Tchr. of Sci.

ARONSON, Seymour (Ph.D.), Physical Chemist, Brookhaven National Laboratory, Upton, N. Y. Home Add.: 380 S. Ocean Ave., Patchogue, N. Y. PHYSICAL CHEMISTRY. b. New Britain, Conn., Jan. 23, 1929. s. Joseph Harry and Ida (Isaacson) A. Edn.: B.A., Yeshiva Coll., 1950; Ph.D., (Phys. Chem.), Polytech. Inst. of Brooklyn, 1955; M.S. (Math.), Univ. of Pittsburgh, 1959. m. Judith Ralston, July 14, 1957. c.: Debrah, Susan. Exp.: Research Chemist, Bettis Atomic Power Lab., Pittsburgh, Pa., 1954-61. Rsch. Chemist, Brookhaven Natl. Lab., Upton, N. Y., 1961—. Mem.: Am. Chem. Soc.; N. Y. Acad. of Sciencies; Sigma Xi. Contbr. to: Jour. of Chem. Physics; Jour. of Inorganic and Nuclear Chem.; Jour. of the Electrochemical Soc. Areas of Rsch.: Physical Chemical Properties of Solids; Thermodynamic and electrical properties of Nonstoichiometric Oxides; Electrical Properties of Graphite; Diffusion in Solids; Oxidation Kinetics.



ARTERBERRY, John Douglas (M.D.), Instr. in Pharmacology, Schl. of Med., Univ. of So. Calif., Los Angeles 33, Calif. Home Add.: 1701 El Molino Ave., San Marino, Calif. PHARMACOLOGY AND TOXICOLOGY. b. Los Angeles, Calif., Jan. 12, 1929. s. Herman L. and Imogene (Moore) A. Edn.: B.A., Pomona Coll., 1950; M.S., Univ. of So. Calif., 1956; M.D., Univ. of Chicago, 1956. m. Martha Kinyon, June, 1957. c.: Martha Elizabeth. Exp.: Med. Toxicologist, U. S. Pub. Health Serv., Wenatchee, Wash., 1958-59; Rsch. Fellow in Pharm., U.S.P.H.S. Postdoctoral Fellow, Univ. of So. Calif., Los Angeles, Calif., 1959—; Instr., Univ. of So. Calif., Los Angeles, Calif., 1960—. Mem.: Am. Chem. Soc.; A.A.A.S.; Nu Sigma Nu; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Am. Med. Assn. Pub.; Am. Chem. Soc. Jour. Serv. Rec.: U.S.N.R., 1947-54. Areas of Rsch.: Endocrine Pharmacology; Connective Tissue Diseases; Organic Synthesis.

ARTHER, Richard Oberlin, (Mr.), Dir., Scientific Lie Detection, Inc., Suite 1109 57 W. 57th St., N. Y. 19, N. Y. Home Add.: 2608 Newkirk Ave., N. Bergen, N. J. LIE DETECTION AND INTERROGATION. b. Pittsburgh, Pa., May 20, 1928. s. William C. and Florence (Oberlin) A. Edn.: B.S., Mich. St. Univ., 1951; M.A., Columbia Univ. Tchrs. Coll., 1960. m. Mary Esther Wuensch, Sept. 12, 1951. c.: Catherine Alice; Linda Diane. Exp.: Dir., John E. Reid & Assocs., N. Y. C., 1953-58; Chf. Instr., Natl. Training Ct. of Lie Detection, N. Y. C., 1958—; Dir., Scientific Lie Detection, N. Y. C., 1958—. Mem.: Am. Acad. of Forensic Scis.; A.A.A.S.; Acacia; Phi Kappa Phi. Author: Interrogation for Investigators, 1959. Contbr. to: Jour. of Criminal Law; Criminol. and Police Sci.; Law and Order. Areas of Rsch.: Lie Detection and Interrogation.

ARTHUR, John Morris (Ph.D.), Retired Secy. and Biochemist, Boyce Thompson Inst. for Plant Rsch., Inc., Yonkers, N. Y. Home Add.: 414 N. Main St., Paris, Ill. PLANT PHYSIOLOGY, BIOCHEMISTRY. b. Paris, Ill., Nov. 12, 1893. s. Daniel Arthur and Charity (Morris) A. Edn.: B.S., Univ. of Chicago, 1919; Ph.D., ibid., 1926. m. Ruth Mallory, 1918. c.: Ruth Ann; Martha L.; Joan L. Exp.: Asst. Plant Physiol., Iowa State Coll., 1916-17; Asst. Physiologist, Exptl. Station, Md., 1917-18; Asst. Plant Physiol., Chicago, Ill., 1919-21; Biochemist, Boyce Thompson Inst., ibid., 1921-59; Secy., ibid., 1942-59. Mem.: A.A.A.S.; Botany Soc. of Amer.; Hort. Soc.; Torrey Bot. Club; N. Y. Acad. of Sci.; Optical Soc. of Amer.; Amer. Chem. Soc.; Sigma Xi. Author: Biological Effects of Radiation, 1936. Contbr. to: Boyce Thompson Inst. War Record: A.E.F., 1918-19. Areas of Rsch.: Lighting and Temperature Control in Green Houses, Plant Production Under Lights, Insecticides.

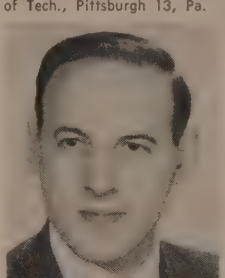
ARTISS, Kenneth Leslie (M.D.), Chief, Dept. of Psychiatry, Div. of Neuro-Psychiatry, Walter Reed Army Inst. of Rsch., Wash. 12, D. C. Home Add.: 1246 Van Buren St., N.W., Washington 12, D. C. PSYCHIATRY: THERAPEUTIC METHODS ANALYSIS. b. Winnipeg, Can., May 1, 1913. s. Aubrey and Ida Florence (Armstrong) A. Edn.: M.D., Univ. of Sou. Calif., 1947. m. Carola Jaeschke, Sept., 1953. c.: Frederick Leslie. Exp.: Chief, P Sect., 98 GH, Munich, Germany, 1947-51; Resident Psych., Letterman Army Hosp., San Francisco, 1951-53; Asst. Ch. P & N, Valley Forge Army Hosp., Pa., 1954-56; Rsch. Psychiatrist, Walter Reed Army Inst. Rsch., 1956-60; Chief, Dept. of Psychiatry, Div. of Neuro-Psychiatry, ibid., 1960—. Hon. Pos.: Consultant, Residency Trng., Dept. Neuropsychiatry, Walter Reed Gen. Hosp. Mem.: A.M.A.; Am. Psychiatric Assn., Fellow; Wash. Psychiatric Assn.; A.A.A.S.; N. Y. Acad. Sci.; Nu Sigma Nu. Author: The Symptom As Communication in Schizophrenia, 1959; Milieu Therapy, 1961. Contbr. to: Symposium on Social and Preventive Psychiatry. Serv. Rec.: U. S. Army, 1943—. Areas of Rsch.: Psychotherapy, Individual and Group as Applied to the Schizophrenic Syndrome. Factors Relevant to Change in Psychotherapy. Milieu Therapy.

ASHDOWN, Donald (Ph.D.), Prof. of Entomol., Tex. Technol. Coll., Lubbock, Tex. Home Add.: 2512 23rd St., Lubbock, Texas. ENTOMOLOGY; AGRICULTURAL CHEMICALS; HORTICULTURE. b. Bountiful, Utah, Apr. 11, 1918. s. Franklin D. and Alfretta (Boulton) A. Edn.: B.S., Utah State Univ., 1942; Ph.D., Cornell Univ., 1948. m. Theresa Hill, June 28, 1941. c.: Franklin Donald; Kathleen; Mary Christine; Karen Louise; Thomas Hill; Deborah Sue; Theresa Marie. Exp.: Rsch. Asst., Cornell Univ., 1942-48; Assoc. Prof., Okla. St. Univ., 1948-52; Dir., Green Bug Rsch. and Prof. of Entomology, Texas Technol., 1952—. Hon. Pos.: Chmn., Agri. Rsch. Comm.; Chmn., Faculty Tenure and Privilege Comm. Mem.: Sigma Xi; Phi Kappa Phi; Delta Phi. Contbr. to: Rsch. in Jour. of Econ. Entomol.; Phytopathol. Tech. Bulls. Serv. Rec.: U. S. Navy, 1944-45. Gen. Int.: Awarded Family of the Year for Lubbock, 1958. Areas of Rsch.: Insecticidal Hazards; Use on West Texas Crops.

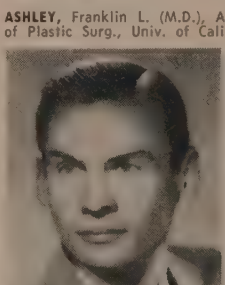
ASHKENAZY, Moses (M.D.), Neurosurgeon, 910 Medical Towers, Houston 25, Tex. Home Add.: 4059 Durness Way, Houston 25, Tex. NEUROSURGEON. b. Montreal Quebec, Can., Nov. 18, 1915. s. Hyman and Rebecca (Zexer) A. Edn.: B.Sc., McGill Univ., Montreal Quebec, Can., 1936; M.D., ibid., 1939. m. Victoria Irene Morris, June 11, 1946. c.: Gary Lee; Gail; Ronald Mark. Exp.: Intern, Jewish Hosp., Brooklyn, N. Y., 1939-40; Resident in Surgical Pathology, Newark Beth Israel Hosp., Newark, N. J., 1941-42; Resident, Surgery, Michael Reese Hosp., Chicago, Ill., 1942-43; Resident, Neurosurgery, V.A. Hosp., Hines, Ill., 1946-50; Chief Neuros., Veterans Admin. Hosp., Houston, Tex., 1950-52; Active Staff, Hospitals of Houston, Tex., 1952—; Asst. Prof. of Neurosurg., Baylor Univ. Coll. of Med., ibid., 1950—. Hon. Pos.: Courtesy Staff, Pasadena Gen. Hosp., Tex. Meth. Hosp. Mem.: Natl. Med. Assn.; Am. Assn. for Cancer Rsch., S.W. Sect.; Sou. EEG Soc.; Am. Bd. of Neurol. Surgeons; Am. Acad. of Neurol.; A.A.A.S.; Interurban Neurosurg. Soc.; Harris Co. Med. Soc.; Tex. Med. Assn.; Am. Geriatrics Soc.; Southern Neurosurg. Soc.; Montreal Neurol. Inst., Fellow; Sigma Xi; Tex. Soc. of Athletic Team Physicians; Pan-Pacific Surg. Assn.; Harvey Cushing Soc.; Am. Coll. of Surgeons, and many others. Author: Diagnosis and Treatment of Bizarre Head and Facial Pains, 1962; Migraine—A Diagnostic Dilemma? Or Waste-Basket Syndrome, 1961. Contbrng. Author: Treatment of Cancer and Allied Diseases, 1951. Contbr. to: Tex. Radiol. Soc.; Houston Neurol. Soc.; Tex. Surgical Soc.; Am. Acad. of Neurol.; Tex. Neuro-Psychiatric Assn.; New Orleans Surg. Soc.; South Tex. Postgrad. Med. Assembly; Western Surg. Soc.; Jour. Lab. Clin. Med.; Jour. Neurosurg. Serv. Rec.: U. S. Army, 1943-46.

ASHLEY, Holt (Sc.D.), Prof. of Aeronautics and Astronautics, Rm. 33-412, Mass. Inst. of Tech., 77 Mass. Ave., Cambridge 39, Mass. Home Add.: 7 Blanchard Rd., Cambridge, Mass. AEROELASTICITY AND AERODYNAMICS. b. San Francisco, Calif., Jan. 10, 1923. s. Col. Harold H. and Mrs. Anne (Oates) A. Edn.: B.S., Univ. of Chicago, 1944; M.S., Mass. Inst. of Tech., 1946, Sc.D. ibid., 1951. m. Frances Mabel Day, Feb., 1947. Exp.: Rsch. Asst., Mass. Inst. of Tech., 1946-47; Instr., ibid., 1947-48; Asst. Prof. to Assoc. Prof., ibid., 1948-60; Prof., ibid., 1960—. Mem.: Am. Meteorol. Soc.; Am. Rocket Soc.; Inst. of Aero-Space Scis.; Am. Acad. of Arts and Sci.; Phi Beta Kappa; Sigma Xi, Tau Beta Pi. Author: Aeroelasticity, 1955; Thickness and Boundary Layer Effects, 1962; Fundamentals of Aeroelasticity, 1962. Contbr. to: Jour. of Aeronautical Sci.; Jour. of Applied Math. and Physics; Jour. of Applied Mechanics; Jour. of Ship Rsch.; Technology Rev. Serv. Rec.: AUS, 1943-46. Gen. Int.: 1952 Received M.I.T.'s Goodwin Medal; 1956 chosen one of the Ten Outstanding Men of Year in Boston by J.C.C.; 1962 Awarded Silver Beaver Award for Distinguished Service to American Youth. Areas of Rsch.: Prevention of Destructive Vibrations, Knowns as Flutter, in Missiles, Aircraft and Submarines.

ASHKIN, Julius (Ph.D.), Chmn., Dept. of Physics, Carnegie Inst. of Tech., Pittsburgh 13, Pa. Home Add.: 5136 Beeler St., Pittsburgh 17, Pa. ELEMENTARY PARTICLE PHYSICS. b. Brooklyn, N. Y., Aug. 23, 1920. s. Isadore and Anna (Fishman) A. Edn.: A.B., Columbia Univ., 1940; A.M., ibid., 1941; Ph.D., ibid., 1943. m. Claire Ruderman, Sept. 1, 1946. c.: Beth; Laura. Exp.: Rsch. Assoc., Univ. of Chicago, 1942-43; Staff Mem., Los Alamos Scientific Lab., Los Alamos, New Mex., 1943-45; Asst. Prof., Univ. of Rochester, N. Y., 1946-50; Asst. Prof., Carnegie Inst. of Tech., Pa., 1950-55; Assoc. Prof., ibid., 1955-58; Prof., ibid., 1958—. Mem.: Am. Phys. Soc.; Am. Assn. of Physics Tchrs.; Am. Assn. Adv. of Sci.; Phi Beta Kappa. Contbr. to: Phys. Rev.; Nuovo Cimento. Areas of Rsch.: Interaction of Pi-Mesons with Protons. Rare Decay Modes of Pi and Mu-Mesons.



ASHLEY, Franklin L. (M.D.), Assoc. Prof. of Surgery, Chief, Div. of Plastic Surg., Univ. of Calif. Med. Center, Los Angeles, Calif. Home Add.: 2210 Santa Monica Blvd., Santa Monica, Calif. PLASTIC SURGERY. b. St. Petersburg, Fla., May 27, 1915. s. Robert Simeon and Annie Belle (Coleman) A. Edn.: B.S., Northwestern Univ., 1937; M.S., ibid., 1940; M.D., ibid., 1941. Hon. Deg.: Centennial Merit Award, Northwestern Univ., 1959. Exp.: Resident in Otolaryngology, Cornell New York Hosp., N. Y., N. Y., 1946-47; Instr. in Surg., Cornell Univ. Med. Coll., 1946-47; Resident in Otolaryngology and Gen. Surg., U. S. Naval Hosp., Long Beach, Calif., 1947-50; Resident in General Surg., U.S.V.A. Hosp., Bronx, N. Y., 1951-53; Resident in Gen. Surg., ibid., Los Angeles, Calif., 1950-51; Am. Cancer Soc. Fellow in Surg., Francis Delafield Hosp., Columbia Presbyterian Med. Center, New York City, N. Y., 1953-54; Asst. Prof. of Surg., Univ. of Calif. Med. Center, 1952-55; Asst. Clin. Prof. of Surg. in Charge of Plastic Surg., ibid., 1955-59; Assoc. Prof. of Surg., Chief, Div. of Plastic Surg., ibid., 1959—. Mem.: Am. Assn. of Plastic Surg.; Am. Med. Assn.; Am. Med. Writers Assn.; Am. Soc. for Cleft Palate Rehabilitation; Am. Soc. of Plastic and Reconstructive Surg.; Am. Soc. for Surg. and the Hand; Bay Dist. Surg. Soc.; Calif. Med. Assn.; Los Angeles Surg. Soc.; Plastic Surg. Rsch. Coun.; Pan Pacific Surg. Soc.; N. Y. Acad. of Sci.; Delta Kappa Epsilon; Nu Sigma Nu; Soc. of Hd. & Neck Surgeons. Author: Fluid and Electrolyte Therapy, 1954; Burns and Plastic Repair, 1960; Tumors of the Maxilla, 1962. Contbr. to: Plastic & Reconst. Surg.; Anns. of Surg.; Surg., Gyn. & Obs.; Surg.; Am. Jour. of Surg.; A.C.S. Forum. Serv. Rec.: U. S. Navy, 1942-50. Areas of Rsch.: Surgery of the Hand, and Head and Neck Tumors; Homotransplantation of Tissues; Cleft Palate Rehabilitation.



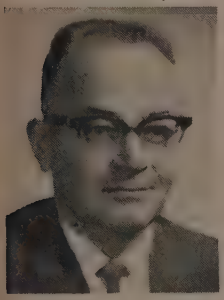
ASSADOURIAN, Fred (Ph.D.), Leader, R.C.A., 52 Woodcliff Ave., N. Bergen, N. J. b. Panderma, Turkey, Apr. 13, 1915. s. Garabed and Isabel (Der Stepanian) A. Edn.: B.S., Univ. Coll., N. Y. Univ., 1935; M.S., Grad. Schl., ibid., 1936; Ph.D., ibid., 1940. m. Ann Mendikian of Flushing, Long Island, Oct. 16, 1954. d. Aram and Rose Mendikian. c.: Gary Aram; Brian Haig. Exp.: Instr. of Math., Coll. of Engrng., N. Y. Univ., 1937-42; Assoc. Prof., Tex. Tech. Coll., 1942-44; Rsch. Engr., Westinghouse Rsch Labs., Inc., 1944-46; Development Engr., Fed. Telecommunication Labs., Inc., 1946-51; Sr. Project Engr. in Chg. of a Theory and Rsch. Group, ibid., 1951-56; Sr. Engr., R.C.A., 1956-60; Leader, Technical Staff, 1960—; also Mem. of Math. Dept., Brooklyn Polytech. Inst., 1950-57. Mem.: Am. Math. Soc.; Inst. of Radio Engrs.; Phi Beta Kappa. Contbr. to: Issue of Duke Math. Jour., I.R.E. Proceedings, and Electrical Communications. Ph.D. Dissertation: Intransitive Abelian Almost-Translation Groups of Almost-Periodic Functions. Hobbies: Music; Bridge. Listed in: A.M.S.

ASSUR, Andrew (Dr.), Chf., Appl. Rsch. Br., USA Cold Regions Rsch. and Engrng. Lab., Hanover, N. H. Home Add.: 48 Rip Rd., Hanover, N. H. PHYSICS (MECHANICS), GEOPHYSICS. b. Piatigorsk, Cancasus, June 18, 1918. s. Vladimir and Nina (Delektorski) A. Edn.: Dr., rer. Nat. (D.Sc.), Hamburg Univ., 1951. m. Sophia E. Bumbier, 1947. c.: Agnes; Irene; Ellen; Cornelia. Exp.: Asst. Civ. Engr., Hydrological Inst., Riga, Latvia, 1940-44; Scient. Empl., German Maritime Inst., Hamburg, Germany, 1944-46; Analyst, Am. Meteorol. Soc., Wash., D. C., 1952-54; Physt., Sr. Techn. Advr., Chf., Appl. Rsch., Rsch. Establishment and Cold Region Lab., Rsch. Eng., 1954—. Mem.: Am. Geophys. Union. Contbr. to: SIPRE AND CRREL Rsch. Repts.; Hydraulics; Vehicle Soil Interaction; Papers for Army Sci. Confs. Gen. Int.: Award for Outstanding Scient. Achievement; Dist. Serv. Award, U. S. Navy, Civilian. Areas of Rsch.: Cold Regions Research, Sea Ice; Ice Mechanics.

ATHEY, Skipwith Wilmer (Ph.D.), Consultant and Dir. of Rsch., ABL Inc., P.O. Box 11372, Palo Alto, Calif. Home Add.: 445 Golden Oak Dr., Portola Valley, Calif. ELECTRONIC ENGINEERING. b. Baltimore, Md., Mar. 14, 1917. s. Caleb Noble and Helen Skipwith (Wilmer) A. Edn.: B.S., Yale Univ., 1938; E.E., Stanford Univ., 1943; Ph.D., ibid., 1947. m. Paula Catherine Kanner, Dec. 16, 1946. c.: Helen Hamilton; Margaret Catherine; Delia Wilmer. Exp.: Instr. and Actg. Asst. Prof., Elec. Engr., Stanford Univ., 1942-44; Hd., Motion Picture Dept., Radio Rsch. Lab., Harvard Univ., 1944-45; Actg. Asst. Prof., Elec. Engr., Stanford Univ., 1946-47; Asst. Prof., Elec. Engr. and Speech and Drama, ibid., 1947-48; Project Engr., Columbia Broadcasting System, N. Y. City, 1948-50; Asst. Prof., Elec. Engr. and Speech and Drama, Stanford Univ., 1950-51; Staff Mem., General Precision Lab., Pleasantville, N. Y., 1951-53; Sr. Staff Mem., ibid., 1953-56; Hd., Gen. Rsch. Dept., ibid., 1956-57; Assoc. Dir. for Rsch., Production Rsch. Corp., Thornwood, N. Y., 1957-58; Adv. Engr. Rsch. Div., Ampex Corp., Redwood City, Calif., 1958-59; Dir. of Rsch. Lab., ibid., 1959-61; Consultant, P.O. Box 11372, Palo Alto, Calif., 1961—; Vice Pres. and Dir. of Rsch., ABL Inc., Palo Alto, Calif., 1962—. Mem.: A.A.A.S.; Sigma Xi; Inst. of Radio Engrs.; Soc. of Motion Picture and TV Engrs.; Acoustical Soc. of Am.; Optical Soc. of Am. Contbr. to: Jour. of Soc. of Motion Picture and TV Engrs. Areas of Rsch.: Electro-optical systems, television and motion picture systems, recording processes, signal processing.

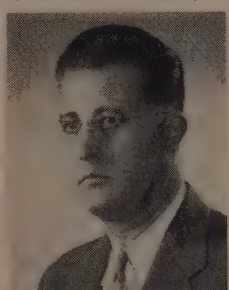
ATHREYA, Balasubramania Harihara (Mr.), Rsch. Fellow, The Children's Hosp., 1740 Bainbridge St., Philadelphia 46, Pa. Home Add.: Plot 47, Flat 14, Sion East, Bombay 22, India. METABOLIC DISORDERS IN CHILDREN. b. Ramnad, Madras State, India, July 7, 1933. s. S. Hariharan and Meenaxi (Hariharan) A. Edn.: B.M., B.S., Madras Med. Coll., India, 1951. Exp.: Resident in Pediatrics, Children's Hosp. of Phila., Pa., 1959-60; Resident in Pediatrics, Univ. of Chicago Clinics, Ill., 1960-61; Rsch. Fellow, Children's Hosp., Philadelphia, Pa., 1961—. Mem.: Assn. of Pediatricians of India; A.A.A.S.; Jr. C. of C. Gen. Int.: Write one-act plays. Areas of Rsch.: Neonatal Hypoglycemia and other disorders of Carbohydrate Metabolism.

ATKIN, Lawrence (Ph.D.), Dir. of Rsch., Standard Brands, Inc., The Fleischmann Labs., Betts Ave., Stamford, Conn. Home Add.: 248 Westchester Ave., Tuckahoe, N. Y. BIOCHEMISTRY. b. N. Y. C., Nov. 4, 1908. s. Joseph T. and Leona (Hausman) A. Edn.: B.S., Coll. of the City of N. Y., 1932; Ph.D., N. Y. Univ., 1941. m. Hilda Zuckerman, Oct. 29, 1932. c.: Susan; Lucille. Exp.: Rsch. Asst., Standard Brands, Inc., Bronx, N. Y., 1928-32; Rsch. Chemist, ibid., 1932-46; Rsch. Chemist, Wallerstein Labs., N.Y.C., 1946-48; Asst. to Dir. of Rsch., Standard Brands, Inc., Bronx, N. Y., 1948-50; Asst. to Vice Pres. of Rsch., ibid., Stamford, Conn., 1950-60; Dir. of Rsch., ibid., 1960—. Hon. Pos.: Chmn., Gordon Conf. on Food and Nutrition. Mem.: A.A.A.S.; A.C.S.; Am. Inst. Chemistry, Fellow; Am. Assn. Cereal Chem.; Soc. Biol. Chem.; Inst. Nutrition; Inst. Food Technol.; N. Y. Acad. of Scis., Fellow; Soc. Chem. Industry. Contbrng. Author: Enzymes and Their Role in Wheat Technology, 1946. Contbr. to: Arch. Biochem.; Cer. Chem.; Food Industries; Jour. Biol. Chem.; Jour. A.C.S.; Jour. Nutrition; Sci.; Proc. Food Conf. I.F.T.; Jour. Bact.; Ind. Engr. Chem. Anal. Edn. Areas of Rsch.: Biochem., Vitamins, Enzymes, Yeasts, Molds, Fermentation, Nutrition, Rsch. Mgmt.

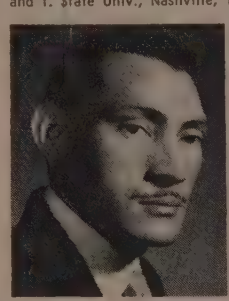


ATWOOD, Berney Lou (Mrs.), Rsch. Asst., Harvard Med. Schl., Boston, Mass. Home Add.: 35 Peterborough St., Boston 15, Mass. ENDOCRINOLOGY. b. N. Y., April 19, 1929. d. Alexander R. Golden and Victoria (Schachter) G. Edn.: A.B., Hunter Coll., N. Y., 1951; M.S., Kans. St. Univ., 1954. m. Dr. Paul F. Brande (dec.), June 7, 1954; m. 2nd: Roy W. Atwood, Apr. 28, 1962. Exp.: Rsch. Asst., C. D. Smith Pharmacol. Co., New Brunswick, N. J., 1955-58; Rsch. Assoc., Bureau of Rsch., Dept. of Institutions, Agencies of the State of N. J., 1958-59; Rsch. Asst., Dept. of Obstetrics and Gynecology, Harvard Medical School, Boston, Mass., 1960—. Mem.: Am. Assn. for the Adv. of Sci. Contbr. to: Trans. of the Kans. Acad. of Sci.; Fed. Procs. Areas of Rsch.: Physiology; Endocrinology; Biochemistry; Small Animal Surgery.

ATKINSON, Robert Leon (Ph.D.), Asst. Prof. of Poultry Sci., A. and M. Coll. of Texas, Coll. Sta., Texas. Home Add.: 3907 Nagle St., Bryan, Tex. POULTRY NUTRITION AND POULTRY GENETICS. b. Iowa Park, Tex., Feb. 14, 1914. s. James Robert and Ada (McClendon) A. Edn.: B.S., A. and M. Coll. of Tex., 1949; M.S., ibid., 1950; Ph.D., Univ. of Calif., 1958. m. Elda Mitchell, June 29, 1941. Exp.: Rsch. Assoc., A. and M. Coll. of Tex., 1950-54; Rsch. Asst., Univ. of Calif., 1954-55; Asst. Prof., A. and M. Coll. of Tex., 1955-56; Sr. Lab. Techn., Univ. of Calif., 1956-57; Asst. Prof., A. and M. Coll. of Tex., 1957—. Mem.: Sigma Xi; Poultry Sci. Assn.; A.A.A.S.; Am. Chem. Soc.; Am. Inst. of Nutrn. Contbr. to: Poultry Sci.; Jour. of Nutrn.; Proc. Soc. of Expti. Biol. and Med.; Jour. of Dairy Sci. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Nutritive Requirements of Poultry; Vitamin E and Unidentified Factors in Relation to Hatchability of Turkey Eggs; The Effect of X-rays on the Reproductive Performance of White Leghorn Males and the Effects on the Blood and other Tissues of this Animal; The Relation of Diet to Stress in Poultry.



AUBRY, Alfred Joseph (Mr.), Asst. Prof. of Sci. Edn., Tenn. A. and I. State Univ., Nashville, Tenn. Home Add.: 1525 21st Ave., N., Nashville 8, Tenn. SCIENCE EDUCATION, NATURAL SCIENCES (DEMONSTRATIONS IN SCIENCE; MATHEMATICS; TEACHER EDUCATION). b. New Orleans, La., Oct. 26, 1928. s. Alexis J., Sr., and Bertha (Abate) A. Edn.: B.S., Xavier Univ., 1951; M.S., Tenn. A. and I. State Univ., 1956; Cert. as Demolition Specialist, U. S. Specialists Schl., Ita Jima, Japan, 1951; 1953. m. Doris Ann Miller, Aug. 18, 1954. c.: Antoinette Marie; Alfred J., Jr.; S. Michael Anthony; Angela Dianne. Exp.: Instr. in Demolitions, U. S. Marine Corps Schls., 1953-54; Instr. in Sci. Edn., Tenn. A. and I. State Univ., 1956-57; Grad. Asst. in Sci. Edn., N. Y. Univ., 1957-58; Asst. Prof. in Sci. Edn., Tenn. A. and I. State Univ., 1958—. Hon. Pos.: Tenn. A. and I. State Univ. Alumni Membership Com.; Master's Thesis Com. Mem.: Am. Assn. Adv. Sci.; Central Assn. of Sci. and Math. Tchrs.; Natl. Sci. Tchrs. Assn.; Xavier and Tenn. A. and I. State Univs. Alumni Assn.; Knights of St. Peters Clavers. Author: Laboratory Activities for the Natural Sciences, 1959. Contbr. to: Schl. Sci. and Math.; The Faculty Jour., Tenn. A. and I. State Univ. Serv. Rec.: U. S. Marine Corps, 1951-54. Gen. Int.: Consultant, In-Service Tchr. Insts., Middle Tenn. and Tenn. Edn. Congress; Leader, Tenn. Acad. Tchr. Inst. of Sci., 1959. Areas of Rsch.: Science Education (Natural Sciences and Teaching of Science); Mathematics; Science Fairs; Demonstrations in Science.



AUCLAIR, Walter (Ph.D.), Asst. Prof., Dept. Biological Sci., Univ. of Cincinnati, Cincinnati 21, Ohio. Home Add.: 5902 Winton Rd., Cincinnati 32, Ohio. CELL BIOLOGY. b. Manchester, N. H., Sept. 13, 1933. s. Joseph and Flore (Houle) A. Edn.: B.A., Univ. of Connecticut, 1955; M.S., N. Y. Univ., 1958; Ph.D., ibid., 1960. m. Paula Machlett, Sept. 4, 1954. c.: Denise Elaine; Michelle Louise; Suzanne Marie. Exp.: Research Asst., N. Y. Univ., 1956-60; Post Doct., Res. Fellow, George Washington Schl. of Med., Washington, D. C., 1960-61; Asst. Prof., Dept. of Biological Sci., Univ. of Cincinnati, Ohio, 1961—. Mem.: Tissue Culture Assn.; Am. Soc. of Zoologists; A.I.B.S.; A.A.A.S.; N. Y. Acad. Sci.; Soc. General Physiologist; Sigma Xi; Beta Lambda Sigma; Delta Chi; Druids. Contbr. to: Expt. Cell Rsch.; Biol. Bull.; Jour. of Embryol. and Exptl. Morphology; Nature. Areas of Rsch.: Cell Physiology, Cytochemistry, Developmental Biology.

AUERBACH, Irving (Ph.D.), Staff Mem., Sandia Corp., Albuquerque, N. Mex. Home Add.: 1117-B Grand Ave., NE, Albuquerque, N. Mex. RADIAION EFFECTS IN POLYMERS; KINETICS AND MECHANISMS OF ORGANIC REACTIONS. b. Cleveland, Ohio, May 24, 1919. s. Jacob and Fannie (Rothman) A. Edn.: B.S., Ohio State Univ., 1942; Ph.D., ibid., 1948. Exp.: Rsch. Chemist, Cleveland Industrial Rsch., Cleveland, Ohio, 1948-51; Rsch. Chemist, Goodyear Tire & Rubber Co., Akron, Ohio, 1951-57; Staff Mem., Sandia Corp., Albuquerque, N. Mex., 1957—. Hon. Pos.: Pres., N. Mex. Acad. of Sci.; Edn. and Publicity Chmn., Akron and N. Mex. Am. Chem. Soc. Sections. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Polymer Sci.; Jour. Applied Radioisotopes; Analytical Chem.; Indus. and Engrng. Chem. Areas of Rsch.: Polymers; Effects of Radiation on Polymers.

aufm KAMPE, Hans Joachim (Dr.), Chief, Atmospheric Physics Br., U. S. Army Signal Rsch. and Devel. Lab., Fort Monmouth, N. J. Home Add.: RD #1, Colts Neck, N. J. ATMOSPHERIC PHYSICS. b. Essen, Germany, Dec. 10, 1912. s. Emil and Wally (Stein) a.K. Edn.: Dr. Ing., Tech. Univ., Darmstadt, Germany, 1941. m. Anne Bickenbach, April 28, 1945. c.: Welfhart; Helgi; Arnhild. Exp.: Sect. Chf., Deutsche Forschungsanstalt fuer Segelflug, Darmstadt Ainring, Germany, 1930-41; Br. Chf., ibid., 1941-45; Sect. Chief, Central Office of the N.W. German Weather Serv., Hamburg, Germany, 1946-48; Rsch. Physicist and Unit Chf., Atmospheric Physics Sect. in Met. Br., U. S. Army Sig. Rsch. and Devel. Lab., Ft. Monmouth, N. J., 1948-54; Chief, Atmospheric Physics Br., ibid., 1954. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; Natl. Geogr. Soc. Author: The Weather and Its Causes, in German, 1951. Contbr. to: Jour. of Meteor.; Weatherwise; Jour. of Geophys. Rsch.; Meterol. Rundschau. Gen. Int.: Principle promotor of Meteorologic Rocket network in the U. S. Areas of Rsch.: Atmospheric Physics.

AUGENSTEIN, Bruno Wilhelm (Mr.), Asst. Dir., Defense Rsch. and Engrng., Pentagon Bldg., Washington, D. C. Home Add.: 4507 N. 32nd Rd., Arlington, Va. PHYSICS, APPLIED MATH. b. Ellmendingen, Germany, Mar. 16, 1923. s. Wilhelm C. and Emma M. (Augenstein) A. Edn.: Sc.B., Brown Univ., 1943; M.S., Calif. Inst. of Tech., 1945. m. Kathleen Greenlaw, May 27, 1950. c.: Karen; Eric; Christopher. Exp.: Supvr., North Am. Av., Inglewood, Calif., 1946-48; Asst. Prof., Purdue Univ., Lafayette, Ind., 1948-49; Scientist, Rand Corp., Santa Monica, Calif., 1949-58; Sci. Advisor, Dir. Adv. Planning, Lockheed Missiles and Space Co., Sunnyvale, Calif., 1958-61; Asst. Dir., Defense Rsch. and Engrng., Pentagon Bldg., Washington, D. C., 1961—. Mem.: Am. Physical Soc.; Am. Rocket Soc.; Am. Nuclear Soc.; Am. Geophysical Union; Am. Assn. for Adv. of Sci.; Soc. of Sigma Xi; Am. Ordnance Assn.; Beta Theta Pi. Contbr. to: Phys. Rev.; Aero. Eng. Rev.; Jour. of Chem. Phys.; Trans. Am. Mech.; Jour. of Aero. Sci. Areas of Rsch.: Physics, Aeronautics, Astronautics, System Analysis.

AULL, George Hubert (Ph.D.), Hd., Dept. of Agri. Economics and Rural Sociology, Clemson Coll., Clemson Coll., S. C. Home Add.: 223 N. Clemson Ave., Clemson, S. C. AGRICULTURAL ECONOMICS. b. Pomaria, S. C., Oct. 16, 1899. s. John Calvin and Eugenia (Long) A. Edn.: B.S., Clemson Agri. Coll., 1919; M.S., Univ. of Va., 1928; Ph.D., Univ. of Wis., 1937. m. Cleo Dobson, June 17, 1922. c.: George Hubert, Jr.; Elizabeth Anne Aull Bowbeer. Exp.: Prof. of Agri., Supt. of Farms, Dist. A. and M. Schl., Statesboro, Ga., 1919-20; Prof. of Agri. and Sci., Marion, S. C., H. S., 1920-21; Asst. Dir. of Rsch., Clemson Coll., 1921-33; Hd. Dept. of Agri. Econ. and Rural Sociol., ibid., 1933—; Chf. Admin. Officer, U.S.D.A., Clemson, 1934-36 (on leave). Hon. Pos.: U. S. War Labor Bd.; Natl. Coun., N.P.A.; Cons. Farm Credit Admin.; Natl. Res. Bd.; Chmn., Bd. of Dirs., Charlotte Br., Fed. Reserve Bank of Richmond; Bd. of Trustees, Connie Maxwell Children's Home; Econ. Policy Com., U. S. C. of C.; Agri. Policy Com., Assn. Land Grant Colls.; Agri. Com., Natl. Rsch. Coun.; Pres., Am. Farm Econ. Assn.; Pres., Sou. Econ. Assn.; "Man of the Year" award, 1945; Governor's Appointee, S. C. Tax Study Commn.; ibid., State Edn. Survey Comm.; Dir., Tax Inst.; 1st Vice-Chmn., Bd. of Dirs., Blue Ridge Y.M.C.A. Assembly, Natl. Coun., Y.M.C.A. Mem.: Phi Kappa Phi; Rotary; Alpha Zeta; Gamma Alpha Mu; Torch Internatl.; A.A.A.S. (Fellow); Am. Econ. Assn.; Am. Polit. Sci. Assn.; Royal Soc. of Arts (Fellow); Am. Farm Econ. Assn.; Natl. Tax Assn.; Am. Acad. Polit. and Soc. Sci. Author: The Fiscal System of South Carolina; "King Cotton" in This Is the South; Economics of the Bible; History of S. C. Agri. Expt. Station; "Change in the Land of Cotton" in Land. Contbr. to: Jour. Farm Econs.; Southern Econ. Jour.; Land Econs.; Natl. Tax Mag. Areas of Rsch.: Taxation; Land Economics; Indusl. Growth; Marketing.

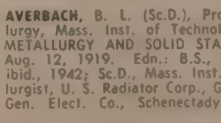
AUSTIN, Arthur Cecil (Mr.), Geophysical Supvr., The Ohio Oil Co., Casper, Wyo. Home Add.: P.O. Box 1309, Casper, Wyo. GEOPHYSICS—INTERPRETATION OF SEISMIC RECORDS IN OIL EXPLORATION; GEOLOGY—STRUCTURAL AND SUBSURFACE. b. Wayne, Pa., Feb. 27, 1909. s. William Arthur and Gertrude (Rufe) A. Edn.: Geol. Engr., Colo. Schl. of Mines, 1929; Grad. Student in Geol., Univ. of Chicago, 1933-35. m. Helen Fay Garner, Jan. 31, 1938. c.: Arlene Carol (dec.). Exp.: Geologist, Sinclair Oil and Gas Co., Okla. City, 1929-31; Engr. Trainee, Philadelphia and Reading Coal and Iron Co., Tower City, Pa., 1931-33; Lectr. and Asst. Mgr., Diamond Exhibits Corp., Chicago, 1933-35; Party Chf. and Supvr., Seismograph Serv. Corp., Tulsa, 1935-46; Geophysical Supvr., Ohio Oil Co., Tulsa, Okla. and Casper, Wyo., 1946—. Hon. Pos.: Vice-Pres., Casper Geophysical Soc., 1957-58; Pres., ibid., 1958-59; Editor, Tulsa Geol. Soc. Digest, 1955-56. Mem.: Am. Assn. Petro. Geol.; Soc. of Exploration Geophysicists; Tulsa Geol. Soc.; Geophysical Soc. of Tulsa; Wyo. Geol. Assn., Casper Geophysical Soc.; Am. Assn. Adv. Sci.; Seismological Soc. Am.; Kappa Sigma, Tau Beta Pi; Sigma Gamma Epsilon; Kappa Kappa Psi. Author: The Story of Diamonds, 1935. Areas of Rsch.: Geology, Geophysics, Seismology.

AUSTIN, Chester R. (Mr.), Mgr., Steel Plants Dev. Projects, Kaiser Engrs., Oakland, Calif. METALLURGY, CERAMIC ENGINEERING, CHEMICAL ENGINEERING. b. Bellefontaine, Ohio, July 3, 1907. s. Gideon L. and Julia (Faris) A. Edn.: B. Cer. Engrng., Ohio State Univ., 1928; M.Sc., ibid., 1929. Exp.: Rsch. Engr., Ohio State Univ., Engrng. Expt. Sta., Columbus, Ohio, 1929-32; Rsch. Engr., Battelle Memorial Inst., Columbus, Ohio, 1932-40; Asst. Supvr., Ceramic Dept., ibid., 1940-42; Supvr., ibid., 1942-48; Ceramic Engr., Koppers Co., Pittsburgh, Pa., 1948-50; Mgr., Development Sect., Rsch. Dept., ibid., 1950-54; Mgr., Steel Plants Dev. Kaiser Engrs., 1954-60; Mgr., Steel Plants Dev. Projects, 1960—. Mem.: A.I.M.E. British Iron and Steel Inst.; Am. Ceramic Soc.; Sigma Xi; Keramos; Masons. Contbr. to: Iron and Steel Engr.; Jour. Am. Ceramic Soc.; Brick and Clay Record; etc. Areas of Rsch.: Oxygen Steelmaking, Steelplant Design, Refractories, Enamels, Insulation, Glass, Whiteware, Structural Clay Products, Building Materials; Patents on oxygen steelmaking and ceramic industry.

AUSTIN, Mary (Lellah) (Ph.D.), Prof., Zool. Dept. (Ret'd.), Wellesley Coll., Wellesley, Mass., Rsch. Schlr., Zool. Dept., Ind. Univ. Bloomington, Ind. Home Add.: 506½ No. Ind. Ave., Bloomington, Ind. ZOOLOGY. b. Austinburg, Ohio, Apr. 12, 1896. d. Henry Lewis and Harriet B. (Phillips) A. Edn.: B.A., Wellesley Coll., 1920; M.A., ibid., 1922; Ph.D., Columbia Univ., 1927. Exp.: Lectr., Barnard Coll., N. Y. C., 1926-28; Instr., Wellesley Coll., Mass., 1928-31; Asst. Prof., ibid., 1931-40; Lectr., Isabella Thoburn Coll., Lucknow, India, 1931-32, 1935-36; Assoc. Prof., Wellesley Coll., Mass., 1940-52; Prof. (Ret'd.), ibid., 1952-61; Rsch. Schlr., Zool. Dept., Ind. Univ., 1962—. Mem.: Genetics Soc. of Am.; Am. Soc. of Human Genetics; Soc. of Protozools.; Am. Soc. of Zool.; Am. Soc. of Naturalists; Hist. of Sci. Soc.; N. Y. Acad. of Sci.; A.A.A.S.; Am. Inst. Biol. Sci.; Sigma Xi; Phi Beta Kappa. Contbr. to: Jour. Exptl. Zool.; Am. Naturalist; Physiol. Zool. Areas of Rsch.: Rsch. in Protozoan Physiol. and Genetics; Paramecium Aurelia, Various Aspects of Killer and Antigen Problems.

AUSTIN, William Mandeville (Ph.D.), Sr. Rsch. Scientist, Eastern Pa. Psychiatric Inst., Philadelphia, Pa. LINGUISTICS. b. Philadelphia, Jan. 31, 1914. s. William M. and Marcella (McCreary) A. Edn.: A.B., Princeton Univ., 1935; A.M., ibid., 1937; Ph.D., ibid., 1938. Exp.: Fellow, Yale Univ., 1940-42; Assoc. Prof., Johns Hopkins Univ., 1948-53; Assoc. Prof., Georgetown Univ., 1953-61. Hon. Pos.: Exec. Com., Linguistic Soc. of Am. Mem.: A.A.A.S.; Am. Oriental Soc.; Assn. for Asian Studies; Phi Beta Kappa. Author: A Mongol Reader, 1956. Contbr. to: Language; Studies in Linguistics; Jour. of the Am. Oriental Soc.; Gen. Linguistics. Areas of Rsch.: Indo-European, Mongolian, Rumanian; Mathematical Linguistics; Psycholinguistics.

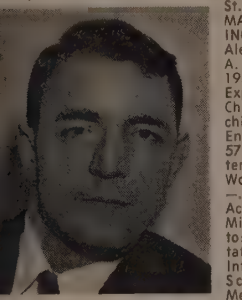
AUTREY, Kenneth Maxwell (Ph.D.), Hd. Prof., Dept. Dairy Husbandry, Auburn Univ., Auburn, Ala. DAIRY CATTLE NUTRITION. b. Nov. 11, 1917, Mansfield, La. s. Byron and Ina (Norris) A. Edn.: B.S., La. State Univ., 1938; M.S., Iowa State Univ., 1939; Ph.D., ibid., 1941. m. Vera Harrison of Wilkes-Barre, Pa., Aug. 29, 1942. d. H. W. and Mrs. Harrison. c.: Kenneth Maxwell; Janice Louise. Exp.: Asst. Prof. of Dairying, Univ. of Ga., 1941-44; Ensign, U.S.N.R., 1944-46; Assoc. Prof. of Dairying, Pa. State Coll., 1946; Hd. Prof., Dairy Sci., Auburn Univ., 1947—. Mem.: Sigma Xi, Chmn., 1950; A.D.S.A.; A.A.A.S.; Alpha Zeta; Gamma Sigma Delta; Blue Key; Lions Internatl. Contbr. to: Jour. Dairy Sci. Ph.D. Dissertation: The Physiol. and Econ. Efficiency of Rations Containing Different Amounts of Grain When Fed to Dairy Cattle. War Rec.: (see above). Travel: N. Am.; Hawaiian Islands; Philippines; China; Japan. Hobbies: Scouting; Color Photography. Listed in: A.M.S.; Who's Who. Special Int.: Nutrition and Animal Physiology.



AVERBACH, B. L. (Sc.D.), Prof. of Metallurgy, Dept. of Metallurgy, Mass. Inst. of Technol., Cambridge 39 Mass. PHYSICAL METALLURGY AND SOLID STATE PHYSICS. b. Rochester, N. Y., Aug. 12, 1919. Edn.: B.S., Rensselaer Poly. Inst., 1940; M.S., ibid., 1942; Sc.D., Mass. Inst. of Tech., 1947. Exp.: Chf. Metallurgist, U. S. Radiator Corp., Geneva, N. Y., 1943-45; Metallurgist, Gen. Elect. Co., Schenectady, N. Y., 1945-47; Asst. Prof. of

Metallurgy, Mass. Inst. of Tech., Cambridge Mass., 1947-53; Assoc. Prof., ibid., 1953-60; Prof., ibid., 1960—. Mem.: A.S.M.; A.I.M.E.; Am. Phys. Soc.; Iron and Steel Inst.; Inst. of Metals; Chi Phi. Contbr. to: Trans. Am. Soc. for Metals; Trans. A.I.M.E.; Jour. of Applied Physics; Phys. Rev.; Acta Metal. Special Int.: Phys. Metallurgy; X-ray Diffraction; Thermodynamics of Solid Solutions; Phase Transformations.

AVAKIAN, Emik Alexander (Mr.), Unit Leader, Data Communications, 445 Fairfield Ave., Stamford, Conn. Home Add.: 92 Juana St., Tuckahoe 7, N. Y. MATHEMATICS AND SYSTEMS ENGINEERING. b. Iran, Aug. 5, 1923. s. Alexander K. and G. (Alexander) A. Edn.: M.A., Columbia Univ., 1952; B.S., Eureka Coll., 1948. Exp.: Consultant, IBM, 1950-52; Chief Engr., Am. Dictating Machine Corp., 1952-56; Systems Engr., Teleregister Corp., 1956-57; Sr. Systems Engr., Teleregister Corp., 1957-59; Data Commu. Worker, Teleregister Corp., 1959—. Mem.: A.I.E.E.; Acm.; Am. Acad. of Neurol.; A.A.A.S.; Natl. Microfilm Assn.; I.R.E. Contbr. to: Chem. Leaflet; Am. Documentation; Special Libraries. Gen. Int.: Co-Inventor of Cryptic Grid Scrambling and Unscrambling Method and Apparatus; Developed Communication System for United Airlines Reservations System.



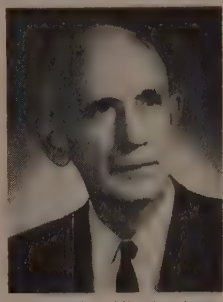
AVERBACH, Albert (Mr.), Lawyer, Author, Lecturer, 30 State St., Seneca Falls, N. Y.; 84 William St., N. Y. C.; 853 E. Willow St., Syracuse 3, N. Y. Home Add.: R.D. #6 (Sennett), Auburn, N. Y. MEDICAL-LEGAL. b. Bender, Bessarabia, Feb. 22, 1902. s. Matus and Eva (Kirchen) A. Edn.: LL.B., Albany Law Schl.-Union Univ., 1923. Exp.: Mem. of firm of Freshman and Averbach, Syracuse, N. Y., 1924-30; Averbach and Goldstein, Syracuse, N. Y., 1930-32; Priv. Pract., 1932-41, Syracuse, N. Y.; Averbach and Bonney, Seneca Falls, 1941-55; Mem., firm Gair, Averbach, Mahley & Hoffmann, Syracuse, S.F., N.Y.C.; Priv. Pract., Syracuse, Seneca Falls, N.Y.C., 1955—. Mem.: Soc. of Med. Jurisprudence; Am. Acad. of Forensic Scis.; Internatl. Bar Assn.; Am. Assn. for the Adv. of Sci.; Law Sci. Inst.

and Law Sci. Acad.; Internatl. Inst. of Arts and Sci., and Letters; Internatl. Acad. of Legal Med. and of Social Med.; Fed. Bar Assn. of N. Y.; Justinian Legal Scholarship Soc. Author: Handling Accident Cases, 1958-62; Handling Automobile Cases, 1962; Tort and Medical Yearbook, co-editor, 1961. Contbr. to: Conn. Med.; Insurance Law Jour.; The Practical Lawyer; Case and Comment; The Plaintiff's Advocate; Jour. of the Biol. Photographic Assn. Areas of Rsch.: Law Medicine and Forensic Medicine.

AVERILL, Edgar Waite (Ph.D.), Assoc. Prof. Math., Parsons Coll., Fairfield, Iowa. Home Add.: 1105 South B St., Fairfield, Iowa. STATISTICS. b. Syracuse, N. Y., Sept. 2, 1906. s. Earl Amos and Bertha Belle (Waite) A. Edn.: A.B., Cornell Univ., 1928; M.B.A., Harvard Univ., 1931; Ph.D., Univ. of Mich, 1962. m. Barbara Briggs, July, 1932. c.: Ann; Edgar W., Jr.; Jeffrey Briggs. Exp.: Statistician, Irving Trust Co., N.Y.C., 1931-36; Statistician, Investment Counsel, Inc., Detroit, Mich., 1936-41; CMP Auditor, War Prod. Bd., ibid., 1941-43; Supvr., Gen. Motors Corp., Pontiac, Mich., 1943-48; Owner, E. W. Averill & Co., ibid., 1948-60; Assoc. Prof., Parsons Coll., 1960—. Mem.: Am. Statis. Assn.; Am. Math. Soc.; Math. Assn. of Am.; Natl. Coun. of Tchrs. of Math.; A.A.U.P.; Pi Kappa Alpha; Chi Beta Phi; Phi Delta Kappa. Areas of Rsch.: Stock market statistics; Psychological statistics.

AVERY, Arthur Chester (Mr.), Tech. Dir., Food Sci. and Engrg. Div.; Naval Supply Rsch. and Development Facility; Naval Supply Center, Bayonne, N. J. Home Add.: 908 Sheridan Ave., Roselle, N. J. FOOD SCIENCE AND FOOD SERVICE RESEARCH. b. New London, Conn., May 4, 1915. s. Arthur Chester and Lillian (Hedges) A. Edn.: B.S., Mass. State Coll., 1937; M.S., Univ. of Mass., 1947. m. 1st. Ethel Neurer, Aug. 26, 1940. c.: Arthur Rollin; Carol Margaret; Paul Felix. m. 2nd. Nanette Robertson, June 10, 1961. Exp.: Lab. Tech., Food Tech. Dept., Univ. of Mass., Amherst, Mass., 1946-47; Fishery Prod. Technost., Philippine Fisheries Program, Manila, P.I., 1947-50; Tech. Dir., Food Sci. and Engrg., and U. S. Naval Supply Rsch. and Dev. Facility, Bayonne, N. J., 1950—. Hon. Pos.: Immediate Past Pres., Soc. for Adv. of Food Serv. Rsch.; Vice-Pres., Internatl. Soc. of Food Serv. Consultants. Mem.: Inst. of Food Tech.; Am. Assn. Adv. of Sci.; Food Serv. Executives Assn.; New Jersey Nutrition Coun.; Assn. for Retarded Children. Author: Fish Preservation, 1950; Cosmopolitan Fish Cookery for the Philippines, 1948. Contbr. to: Jour. of Am. Dietetic Assn.; Jour. of Am. Assn. on Mental Deficiency; Jour. of the Inst. of Food Technologists; The Philippine Jour. of Sci.; The Cornell Hotel and Restaurant Admin. Quarterly; Jour. of Am. Hospital Assn. Serv. Rec.: U. S. Army, 1937-46. Gen. Int.: Textbooks on Fish Utilization prepared for Philippine Gov., 1947-50; Weekly Column Philippine Newspapers, 1948-50. Areas of Rsch.: Institutions for Mentally Retarded; Civil Defense Feeding; Human Engineering; Hospital Food Service Facilities; Marine Feeding Operations; Food Science; Food Service Operations.

AVERY, Bennett Franklin (M.D.), Natl. Co-ord., Med. Edn. for Natl. Defense Prog., Bur. of Med. and Surg., Navy Dept., Wash. 25, D. C. Home Add.: 4615 Sedgwick St., N.W., Wash. 16, D. C. MEDICINE-MEDICAL EDUCATION. b. Vassar, Mich., Sept. 21, 1901. s. James Cordon and Lavancha Fidelia (Walker) A. Edn.: B.S., Univ. of Mich., 1923; M.D., ibid., 1925; M.S., ibid., 1926. m. Margaret Anne Scales, Sept. 2, 1923. c.: Gordon Bennett; John Scales. Exp.: Adj. Prof. to Prof., Am. Univ. of Beirut Med. Schl., Beirut, Lebanon, 1926-40; Chmn. of Preclin. Years, ibid., 1934-40; Dean, Boston Univ. Schl. of Med., Boston, Mass., 1940-44; Advisor to Imperial Iranian Ministry of Health, Tehran, Iran, 1944-49; Dir. of Publications Div., Bur. of Med. and Surg., Navy Dept., and Assoc. Dir., Armed Forces Med. Publication Agency, 1952-58; Natl. Co-ord., Med. Edn. for Natl. Defense Prog., Bur. of Med. and Surg., Navy Dept., 1958—. Hon. Pos.: Chmn. of the Med. Deans Screening Comm. for the First Serv. Command and First Naval Dist., 1942-44. Mem.: Sigma Xi; Soc. for Exptl. Biol. and Med.; Royal Soc. of Health, England; Am. Assn. for the Adv. of Sci.; Am. Pub. Health Assn.; Am. Med. Assn.; U. S. Naval Inst.; Assn. of Milit. Surgeons; Pi Kappa Alpha. Contbng. Author: A Guide to Practical Anatomy, 1928; Editor, The History of the Medical Department of the United States Navy in World War II, 1953; Editor, United States Armed Forces Med. Jour. and the Med. Technician's Bulletin, 1955-58, 1960. Contbr. to: Jour. of Biol. Chem.; Procs. of the Soc. for Exptl. Biol. and Med.; U. S. Armed Forces Med. Jour.; Encyclo. Britannica. Serv. Rec.: U. S. Navy, 1950. Areas of Rsch.: Medical Education; Public Health Administration; Blood and Brain Chemistry.



AVIS, Frederick R. (Mr.), Chmn., Sci. Dept., St. Mark's Schl., Southborough, Mass. SCIENCE TEACHING AND RESEARCH. b. New Britain, Conn., Sept. 23, 1911. s. Samuel W. and Harriette Mackintosh (Bell) A. Edn.: A.B., Brown Univ., 1935. m. Madelene Patterson, Aug. 14, 1937. c.: Frederick Patterson. Exp.: Rsch. Asst., Calco Chem. Co., Cold Spring Harbor, L. I., summer, 1935; Chmn., Biol. Dept., Worcester Acad., Mass., 1935-45; Chmn., Sci. Dept., ibid., 1941-45; Asst. Pathol., Mem. Hosp., Worcester, Mass., 1942-45; Tchr., "Introduction to Medical Sciences," to Cadet Nurses, Mem. Hosp. and to Medical Secretaries, Becker Jr. Coll., Worcester, 1942-45; Chmn., Sci. Dept., Thayer Acad., Mass., 1945-50; Chmn., Sci. Dept., St. Mark's Schl., 1950—; Co-founder and Dir., Precollegiate Rsch. Trng. Program, Jackson Mem. Lab., Bar Harbor, Me., 1949-54; Co-founder and Dir. of Precollegiate Sci. Summer Program, Worcester Found. for Exptl. Biol., Shrewsbury, Mass., 1955—. Hon. Pos.: Finance Officer for the Natl. Sci. Tchrs. Assn.; Bd. of Dirs., N.S.T.A.; Tech. Guid. Comm., Inst. of Lab. Animal Resources, 1958-61; Coordinator for Program of Future Scientists of Am.; Reviewer for Biol. Program, A.I.B.S.; Panel for Awarding Grants to Pre-collegiate Sci. Summer Schls., N.S.F.; Comm. of N.S.T.A. Collaborating with NCI on Educational Films; Mem., Corp., Harvard Apparatus Co.; Mem., Standing Comm., N.S.T.A. Mem.: Fellow, A.A.A.S.; Am. Gen. Assn.; Natl. Assn. for Biol. Tchrs.; Am. Inst. of Biol. Scis.; New England Assn. of Biol. Tchrs.; Natl. Sci. Tchrs. Assn.; Delta Upsilon. Author: About Mice and Man—An Introduction to Mammalian Biology, 1957, 1960. Contbr. to: Jour. Heredity; The Sci. Tchr.; Sci. Edn. News; Independent Schl. Bull.; Metropolitan Detroit Sci. Rev. Gen. Int.: Received N.S.T.A. Recognition Award, 1956 and 1959; Shattuck Schl. Centennial Award for Adv. of Secondary Edn., 1958; Elizabeth Thompson Award for Outstanding Sci. Tchng. in Secondary Schls. of New England, Am. Acad. of Arts and Scis., 1958; Special Citation for Outstanding Sci. Tchng., Brown Univ. Convocation, 1959; Special Citation for Tchng. Cadet Nurse Corps, U. S. Surgeon-General Parran, 1945. Areas of Rsch.: Experimental Animal Surgery Involving Organ Transplants; Effects of Anti-Cancer Drugs on Perfused Bovine Livers and Kidneys.

AWL, John H. (Mr.), Design Engr., Hiller Aircraft Corp., Palo Alto, Calif. Home Add.: 135 Riviera Dr.-531, Los Gatos, Calif. MECHANICAL ENGINEER. b. Passaic, N. J., Jan. 8, 1929. s. Herbert and Mary (Serena) Manuccia. Edn.: B.S., Univ. of Nev., 1951; M.S., Stanford Univ., 1958. Exp.: Assoc. Mem., Herbert Manuccia, Consulting Engineers & Associates, Washington, D. C., 1949—; Engr. Mgmt. Trainee, Pacific Gas & Electric Co., Hunters Point Power Plant, San Francisco, Calif., 1959; Jr. Engr., Vidya, Inc., Palo Alto, Calif., 1960; Mem., Tech. Staff, United Tech. Corp., Sunnyvale, Calif., 1960; Transportation Analyst, Exec. Dept., Bur. of Transportation Rsch., The Southern Pacific Co., San Francisco, Calif., 1960-61; Assoc. Rsch. Engr., Transport Div., Preliminary Design Sect., The Boeing Co., Renton, Wash., 1961; Design Engr., Hiller Aircraft Corp., Palo Alto, Calif., 1961—. Mem.: Am. Soc. for Engrng. Edn.; Am. Assn. Adv. Sci.; Wash. State Soc. of Profl. Engrs.; Calif. Acad. of Sci.; Stanford Alumni Assn.; Phi Sigma Kappa; Asst. Scoutmaster, Boy Scouts of Am. Serv. Rec.: U. S. Army, 1951-53; USNR, 1954—. Areas of Rsch.: Public Utilities and Transportation.

AYRE, James Ernest (M.D.), Natl. Med. & Scientific Dir., 6200 N.W. Miami Ct., Miami 50, Fla., 115 E. 69th St., N. Y. 21, N. Y. Home Add.: 365 Caribbean Rd., Key Biscayne, Fla. CANCER RESEARCH AND CYTOLOGY. b. Tilsonburg, Ont., Can., July 29, 1910. s. Rev. James Edward and Victoria May (Gibson) A. Edn.: M.D., Univ. of Alberta, 1936. m. Elizabeth Louise Hughes, 1958. c.: Jaime; Elizabeth; Mary Louise; Dawn; Laura. Exp.: Dir. of Cytol. and Assoc. of Gynecol., McGill Univ., Royal Victoria Hosp., Montreal, Can., 1941-51; Dir. of Cytol. Rsch. Lab., ibid., 1948-50; Dir., Cancer Inst., Miami, Fla., 1951-59; Natl. Med. & Scientific Dir., Cancer Cytol. Fd. of Am., Miami, Fla. and N.Y.C., 1959—. Hon. Pos.: Hon. Fellow, A.M.A.; Pres., 1st Pan Am. Cancer Cytol. Congress. Mem.: A.A.A.S.; N. Y. Acad. of Sci. Fellow; Phi Delta Theta. Author: Cancer Cytology of Uterus 1951. Contbr. to: Jour. A.M.A.; Jour. Gynec. & Obst.; Cancer Cytol.; Am. Jour. of Obst. and Gynecol. Areas of Rsch.: Cytol as a Method of Early Diagnosis of Cancer of the Cervix; In vented Gastric Brush, Throat and Lung Brush for Diagnosis o Cancer of Internal Organs; Etiology of Cancer of the Cervix.

AXELROD, Herbert Richard (Ph.D.), Publisher and Author, T.F.H Publications, Inc., 245 Cornelison Ave., Jersey City, N. J. Home

Adds.: 840 Pavonia Ave., Jersey City, N. J. ICHTHYOLOGY. b Bayonne, N. J., June 7, 1927. s Aaron and Edith (Gurwitz) A Edn.: B.S., N. Y. Univ., 1949 M.S., ibid., 1951; Ph.D., ibid. 1960. m. Evelyn Miller, July 3 1955. Exp.: Tchr., N. Y. Univ. 1949-55; Editor, T.F.H. Publica tions, Inc., 1955-58; Publisher ibid., 1958—. Mem.: Biometri Soc.; Pi Mu Epsilon; Am. Soc Herps. and Ichs.; N. Y. Zool. Soc., A.A.A.S. Author: Tropical Fish a a Hobby, 1952; Handbook o Tropical Aquarium Fishes, 1954 Encyclo. of Tropical Fish, 1956 Color Guide to Tropical Fish 1957; Saltwater Fishes, 1958 Tropical Fish in Your Home, 1959 Serv. Rec.: U. S. Army, 1944-47 1950-52. Area of Rsch.: Small Fishes.

ACHRACH, Samuel M.D., 44 West St., Worcester 9, Mass. Home Add.: 378 May St., Worcester 2, Mass. INTERNAL MEDICINE; RHEUMATIC DISEASES; GERONTOLOGY. b. N. Y., N. Y., June 14, 1911. s. Isaac and Esther (Kraemer) B. Edn.: A.B., Univ. of Maine, 1933; M.D., Tufts Coll. Schl. of Med., 1938. m. Lilyan Zelman, Oct. 23, 1938. c.: Barbara Anne; Robert Zelman; Benjamin Isaac; Elizabeth Zelda. Exp.: Pathol. Internship, The Rhode Island Hosp., 1938-39; Rotating Internship, The Mem. Hosp., Worcester, Mass., 1939-40; Private Practice, Internal Med., Worcester, Mass., 1946—; Mem. of House Staff, The Mem. Hosp., ibid., 1946—; Physician, Med. Sect., Adult Div., Belmont Hosp., ibid., 1950-57; Asst. Dir., Health Serv., The Mem. Hosp., ibid., 1949-52; Dir., Arthritis Clinic, ibid., 1950—; Lectr., Postgrad. Med. Inst., Mass. Med. Soc., Sect. on Arthritis, 1956. Hon. Pos.: Pres., New England Rheumatism Soc., 1956; Chmn., Com. on Aging, Worcester Community Coun., 1957—; Exec. Advisory Com. Mem., Union Health Act of Mass., 1949-52; Mem., Veterans Com., Mass. Med. Soc., 1948-49; Councilor, Mass. Med. Soc., Worcester Dist. Med. Soc., 1954-58. Mem.: The Lincoln Club of Boston; Am. Soc. of Med. Psychiatry; Am. Geriatrics Soc.; Am. Rheumatism Assn.; Am. Federation for Clin. Rsch.; Gerontological Soc.; Am. Soc. of Med. Psychiatry; A.M.A.; Mass. Med. Soc.; Worcester Dist. Med. Soc.; A.A.A.S.; Probus Club; The Econ. Club; Tau Epsilon Phi; Phi Lambda Kappa; Ill. State Hist. Soc. Contbr. to: Jour. of Am. Geriatrics Soc.; Jour. of Clin. Endocrinol.; Jour. of Am. Med. Assn. Serv. Rec.: World War II; U. S. Army and U. S. Air Force, 1940-45; U.S.A.R., 1945—. Areas of Rsch.: Arthritis.

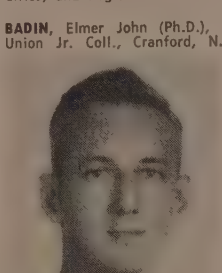
BADER, Richard G. (Ph.D.), Asst. Prog. Dir., Mathl. Phys. and Engrng. Scis., Natl. Sci. Found., Wash., D. C. Home Add.: 10425 Glen Rd., Potomac, Md. OCEANOGRAPHY · (MARINE GEOCHEMISTRY AND GEOLOGY). b. N. Y., N. Y., Aug. 1, 1919. s. Charles E. and Dorothy (Vogler) B. Edn.: B.S., Univ. of Me., 1948; S.B., Univ. of Chgo., 1949; M.S., ibid., 1950; Ph.D., ibid., 1952. m. Margaret McNair, Oct., 1942. c.: Janice; Lynn; Ilse. Exp.: Rsch. Asst., Univ. of Cgo., Cgo., Ill., 1951-52; Rsch. Asst. Bermuda Biol. Stan., St. Georges, Berumda, 1952; Rsch. Assoc., Univ. of Wash., Seattle, Wash., 1952-55; Assoc. Prof., A. and M. Coll. of Tex., Coll. Tex., 1955-60; Prof., ibid., 1960-61; Asst. Prog. Dir., Natl. Sci. Found., 1961—. Mem.: Am. Assoc. for the Adv. of Sci.; Am. Geol. Soc.; Am. Geophys. Union; Am. Chem. Soc.; Geochem. Soc.; N. Y. Acad. of Sci.; Tex. Acad. of Sci., Fellow; Sigma Xi; Internatl. Assn. of Sedimentol. Contbr. to: Jour. of Marine Rsch.; Sci.; Bull. of Geol. Soc. Am.; Geochimica et Cosmochimica Acta; Proc. Pac. Sci. Congress; Proc. Intern. Union; Geodesy and Geophys.; Deep Sea Rsch.; Proc. Gulf and Caribbean Inst. Serv. Rec.: U. S. Army Air Force, 1941-46. Areas of Rsch.: Organic Geochemistry; Sedimentation; Metal-Mineral Surface Reactions.

BADGER, Blanche Crisp (Ph.D.), Prof. of Math. and Chmn. of Math. Dept., Longwood Coll., Farmville, Va. Home Add.: Mountville, S. C. b. Mountville, S. C., Dec. 4, 1910. d. William Ellis and Maude (Hill) Crisp. Edn.: A.B., Winthrop Coll., 1931; M.A., Univ. of Tenn., 1932; Ph.D., George Peabody Coll., 1956. m. Wm. Vernon Badger of Parkersburg, W. Va., June 11, 1938. s. Mr. and Mrs. Frank E. Badger. Exp.: Inst. and Asst. Prof. of Math., Ball State Tchrs. Coll., 1936-38; Asst. and Assoc. Prof. of Math., Winthrop Coll., 1942-46; Part-time Math. Tchr., N. Mex. State Coll., 1946-47; Asst. Prof. of Math., McMurry Coll., 1947-48; Part-time Math. Tchr., Memphis State Coll., 1948-50; Instr. of Math., Fla. State Univ., 1950-53; Asst. Prof. of Math., Tenn. Poly. Inst., 1955-56; Assoc. Prof. and Chmn., Math. Dept., Longwood Coll., 1956-61; Prof. and Chmn., Math. Dept., Longwood Coll., 1961—. Mem.: Kappa Mu Epsilon; Delta Kappa Gamma; Natl. Coun. of Tchrs. of Math.; A.A.U.W ; W.S.C.S.; Woman's Club; V.E.A.; Red Cross; Math. Assn. of Am. Author: Microfilm of Dissertation, 1957. Contbr. to: Dissertation Abstracts; Peabody Reflector; Schl. Sci. and Math. Ph.D. Dissertation: An Analysis of the Evolving Evaluation Program in Elem. Geometry. Travel.: Can.: Mex. Listed in: Am. Men. of Sci.; W.W.A.E.

BACHUR, Nicholas Robert, Sr. (M.D., Ph.D.), Sr. Asst. Surgeon, U. S. Public Health Service, Heart Inst., National Inst. of Health, Bethesda, Md. Home Add.: 12702 Connecticut Ave., Wheaton, Maryland. BIOCHEMICAL MECHANISMS OF DISEASE, MEDICAL BIOCHEMISTRY, MECHANISMS OF ACTION OF PHARMACOLOGIC SUBSTANCES. b. Baltimore, Md., July 21, 1933. s. Julius and Marie (Kouneski) B. Edn.: A.B., Johns Hopkins Univ., 1954; Ph.D., Univ. of Md., 1961; M.D., ibid., 1961. m. Joan Palacky, 1952. c.: Nicholas R., Jr.; Suzanne M. Exp.: Rsch. Asst., McCollum-Pratt Instit., Johns Hopkins Univ., Baltimore, Md., 1952-55; Rsch. Fellow, Dept. of Pediatrics, Univ. of Md., 1955-57; Post Sophomore Med. Rsch. Fellow, Univ. of Md., 1957-60; Rsch. Fellow, ibid., 1960; Sr. Asst. Surgeon, U. S. Public Health Service, 1961—. Mem.: Alpha Omega Alpha; AAAS. Contbr. to: Jour. Am. Chem. Soc.; Bacteriol. Proceedings; Federation Proceedings.

BADGLEY, L. Durward, Dir. of Real Estate and Mortgage Rsch., Mutual Life Ins. Co., 1740 Broadway, N. Y. 19, N. Y. Home Add.: 40 Knollwood Rd., Short Hills, N. J. LAND ECONOMICS, REGIONAL SCIENCE, REAL ESTATE AND MORTGAGE MARKET ANALYSIS. b. Point Pleasant, N. J., May 7, 1898. s. LeRoy S. and Caroline (Headley) B. Edn.: Grad. work, The Am. Univ., D. C., 1936. m. Katherine Curtis, July 21, 1920. c.: Caroline B. Clark; John D. Exp.: Editor, The Real Estate Economist, East Orange, N. J., 1929-35; Lectr., Housing Economics, Amer. Univ., D. C., 1936-37; Sr. Economist, Fed. Housing Admin., D. C., 1939-42; Chf. Mkt. Analyst, ibid., 1939-42; Deputy Regional Repr., Natl. Housing Agency, 1942-45; Dir. of Real Estate and Mortgage Rsch., Mutual Life Ins. Co., N. Y., 1945—; Lectr., Am. Inst. of Banking on Mkt. Analysis and Appraising, 1948; Lectr., Housing and Related Subjects, Columbia Univ. Grad. Schl., 1949-58. Hon. Pos.: Chmn., Advisory Com. to Financial Census of Housing, Wash., D. C., 1948-57; Mem., Econ. Policy Com., Life Insurance Assn., N. Y., 1953-58; Consultant to Central Stat. Board, Wash., D. C., 1936-40; Pres., Internatl. Lambda Alpha. Mem.: Am. Econ. Assn.; Acad. of Political Sci.; The Econometric Soc.; Am. Acad. of Polit. and Social Sci.; Lambda Alpha. Co-author: The Housing Demand of the Workers in Manhattan, 1939. Contbrtng. author: Home Mortgage Banking, 1938. Contbr. to: Insured, Mortgage Portfolio; The Appraisal Jour.; Am. Stat. Assn. Serv. Rec.: U. S. Army, 1917-19. Areas of Rsch.: Land Economics and the Real Estate Cycle; Housing and Mortgage Market Analysis; Economic Background of Cities, and Regional Growth and Development.

BADIN, Elmer John (Ph.D.), Prof. and Deptl. Chmn. in Chem., Union Jr. Coll., Cranford, N. J. Home Add.: 200 Oak Lane, Cranford, N. J. ORGANIC CHEMISTRY (PHYSICAL ORGANIC CHEMISTRY). b. Canonsburg, Pa., Aug. 21, 1917. s. Matthew John and Susan (Fabian) B. Edn.: B.Ch.E., Cooper Union Inst. of Tech., 1942; M.A., Princeton Univ., 1944; Ph.D., ibid., 1945. Exp.: Rsch. Asst., Tide Water Assoc. Oil Co., Bayonne, N. J., 1936-42; Rsch. Assoc., Princeton Univ., Princeton, N. J., 1945-46; Instr., ibid., 1946-50; Dept. of Chem., Radiation Lab., Univ. of Calif., Berkeley, 4 mos., 1949; Rsch. Chemist, Celanese, Summit, N. J., 1956-59; Prof. and Deptl. Chmn., Union Jr. Coll., 1959—. Mem.: Mu Alpha Omicron; Tau Beta Pi; Sigma Xi; Am. Chem. Soc.; A.A.A.S. Contbrng. Author: Third Symposium on Combustion, Flame and Explosion, 1949. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Phys.; Jour. Physical Chem. Hobbies: Art; Painting. Gen. Int.: Robert Spice Fund, Chem. Award, Cooper Union, 1941; Class of 1860 Fellow in Exptl. Sci., Princeton, 1943-44; Naval Ordnance Development Award, Princeton, 1945. Areas of Rsch.: Chemical Reactivity in Organic Chemistry Connected with Acid Catalysis, Oxidation and Combustion, Photosynthesis and Polymerization.

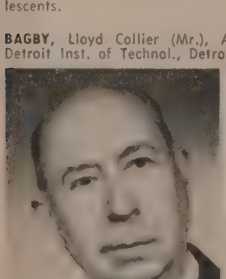


BAER, Donald Robert (Ph.D.), Div. Head, E. I. DuPont de Nemours, Wilmington, Del. Home Add.: 2002 Dogwood Lane, Foulk Woods, Wilmington 3, Del. ORGANIC CHEMISTRY. b. Paterson, N. J., Apr. 20, 1928. s. Walter A. and Alice (Boyle) B. Edn.: B.A., Cornell Univ., 1948; M.S., Univ. of Mich., 1950; Ph.D., ibid., 1952. m. Pearleen Poindexter, April 5, 1952. c.: Jeffrey; Susan; Barbara. Exp.: Tchng. Fellow, Univ. of Mich., Ann Arbor, Mich., 1948-51; Instr., ibid., 1951-52; Rsch. Chemist, E. I. DuPont de Nemours, Wilmington, Del., 1952-57; Rsch. Supvr., ibid., 1957-62; Div. Hd., ibid., 1962—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Assn. Textile Chemists and Colorists; Lambda Chi Alpha; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Organic Reactions; Ind. and Eng. Chem.; Jour. Am. Chem. Soc.; Jour. Org. Chem.; Patents. Areas of Rsch.: Dyes; Fluorine Chemicals; Reaction Mechanisms.

BAERWALD, Hans George (Ph.D.), Staff Mem., Sandia Corp., Albuquerque, N. Mex. Home Add.: 2732 Chama, N.E., Albuquerque, N. Mex. PIEZO-FERRO-, ANTI-FERROELECTRICITY; CIRCUIT THEORY. b. Breslau, Germany, Apr. 5, 1904. s. Martin B. and Elsa (Fraenkel) B. Edn.: Dipl. Engr., Breslau, Germany, 1928; Ph.D., ibid., 1930. m. Éva Lewy, 1932. c.: Ann Maureen. Exp.: Math Consultant, Brush Devel. Co., Clevite Corp., Cleveland, Ohio, 1939-56; Rsch. Consultant, Gen. Elect., Lamp Div. Rsch. Lab., ibid., 1957-58; Staff Mem., Sandia Corp., 1959—. Mem.: Fellow, Accoustical Soc. of Am.; Fellow, Inst. of Radio Engrs.; Mem., Am. Phys. Soc.; Am. Soc. for the Adv. of Sci. Contbr. to: Archiv fuer Electrotechnik; Tech. Phys. U.S.S.R.; Jour. of the Acoustical Soc. of Am.; Phys. Rev.; Instit. of Radio Engrs. Internatl. Convention Rec. Areas of Rsch.: Communications and Circuit Theory; Solid State Physics: Piezo-Ferro- and Anti-ferroelectricity; Acoustics: Electromechanical Transducers; Mathematical, Variational Methods, Elastic Vibrations.

BAGBY, James W., Jr. (Ph.D.), Psychologist, 563 Park Ave., New York 21, N. Y. Home Add.: 151 E. 80th St., N. Y. 21, N. Y. CLINICAL PSYCHOLOGY AND OR-THODOX PSYCHOANALYSIS. b. Waynesville, N. C., Feb. 27, 1912. s. James W. and Lucile A. (Shuford) B. Edn.: B.S., Tenn. State Coll., 1934; M.A., Duke Univ., 1937; Ph.D., Columbia Univ., 1955; Cert. in Psychoanalysis, Wash. Schl. of Psychiatry, 1952. m. Betty Jean Adair (Div.). Exp.: Tchr., Pub. Schls., Johnson City, Tenn., 1932-36; Tchr., Pub. Schl., Mont. Co., Md., 1937-41; Dir., Trng. and Personnel Rsch., Glen L. Martin Co., Baltimore, Md., and Omaha, Nebr., 1941-43; Asst. Dir., Rsch. and Trng., N. Y. State Div. of Vet. Affairs, N.Y.C., 1947-49; Rsch. Assoc., Princeton Univ., Dept. of Psychol., 1954-56; Rsch. Consult., Hillside Hosp., Queens, N. Y., 1956-58; Assoc. Psychol., The Roosevelt Hosp., N. Y., N. Y., 1956—; Private Practice, N. Y., N. Y., 1956—; Hon. Pos.: Mem., Bd. of Expert Examiners in Psychology for Fed. Civil Serv. Comm., 1948-53. Mem.: A.A.A.S. (Fellow); Am. Psychol. Assn.; Am. Orthopsychiatric Assn.; Coun. on Rsch. in Child Develop., N. Y. State Psychol. Assn.; N. Y. Acad. Sci.; Kappa Delta Pi; Pi Gamma Mu. Contbr. to: Psychological Monographs; Jour. of Abnormal and Soc. Psychol. Serv. Rec.: U. S. Navy, 1943-46, 1948-54. Areas of Rsch.: Visual Perception and Psychoanalysis Specialty; Psychotherapy with Emotionally Disturbed Gifted Adolescents.

BAGBY, Lloyd Collier (Mr.), Assoc. Prof., Head, Physics Dept., Detroit Inst. of Technol., Detroit, Mich. Home Add.: 62 Glendale Ave., Highland Park 3, Mich. PHYSICS AND ASTRONOMY AND MATHEMATICS. b. Marion, Kans., Apr. 20, 1895. s. John L. and Florence M. (Collier) B. Edn.: A.B., Washburn Univ., 1917; M.A., Kans. Univ., 1922. m. Mabel E. Robinson, Jan. 29, 1953. Exp.: Instr., Claremore H.S., Claremore, Okla., 1918; Instr., Culver Milit. Acad., Culver, Ind., 1919; Prin., Osage City H.S., Osage City, Kans., 1919-20; Prof., Hd., Math. Dept., Ottawa Univ., 1920-22; Instr., Univ. of Ill., 1922-24; Asst. Prof., Univ. of S. D., 1925-26; Prof., Linsly Inst. of Technol., 1926-36; Dean, Coll. of Engrng., ibid., 1936-41; Prof., Bethany Coll., 1941; Ednl. Dir., Hartung Aircraft Corp., Detroit, Mich., 1941-43; Ednl. Consultant, Jam Handy Organization, Detroit, Mich., 1943-44; Coordinator, Smith Hinchman & Grylls, Detroit, Mich., 1944; Proj. Dir., Conklin Industrial Serv., Detroit, Mich., 1944-46; Head, Dept. of Math. & Industrial Engrng., Lawrence Inst. of Technol., 1946-53; Industrial Engr., Giffels & Vallet, Detroit, Mich., 1953-54; Industrial Engr., Technical Assocs., Detroit, Mich., 1954-55; Chief, Industrial Engr., Burns & Roe., Detroit, Mich., 1955-57; Assoc. Prof., Detroit Inst. of Technol., 1957-61; Head, Physics Dept., ibid., 1961—. Mem.: Am. Mathematical Assn.; Am. Math. Soc.; Am. Assn. of Physics Tchrs.; Detroit Engrng. Soc.; The Industrial Math. Soc.; Mason; O.E.S.; W.S. of J.; Fact Finders Club. Author: A Bibliography of Sun Spots, 1922; Engineering Trigonometry, 1947; Complex Numbers, 1949. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Visual and Spectroscopic Binary Stars; Sun Spots; Astronomical Photography; Industrial Rsch. on the Mfgr. of Rock Products, Gypsum, Cement, Lime; Heavy Plant Layout.



BAGNO, Samuel Myer (Mr.), Chief Engr., Walter Kidde and C KUDA Div., Clifton, N. J. Home Add.: 18 Columbus Ave., Bel ville, N. J. THE GENERAL FIE OF ELECTRONIC APPLICATION b. N. Y. City, July 10, 1906. Myer A. and Rose (Feigenblum) Edn.: B.E.E., Polytech. Instit., Brooklyn, N.Y.C., 1928. m. Aran Kohn, 1936. Exp.: Chf. Engr., K man Elect. Co., Long Island Ci N.Y., 1936-46; Engrng. Inst Newark Coll. of Engrng., Newa N. J., 1942-43; Chf. Engr., Wal Kidde and Co., 1946—; Eve. Inst Fairleigh Dickinson Univ., Teane N. J., 1961—. Hon. Pos.: D Treas., Vice Pres., Chmn. of grng. Standards Comm. of Ult sonic Mfrs. Assn. Mem.: Fello IRE; Acoustical Soc. of Am.; A Instit. of Physics; Assn. for Adv. of Sci. Contbr. to: Ra Engrng.; Endocrinol.; Soc. Exptl. Biol. and Med.; Am. Jour. of Physiol.; Electronics; I.R Convention Rec.; Jour. Phys. and Biol.; Jour. Clinic Invest. G Int.: In 1960 received First and Only Plaque Presented for Tec Achievement by the Natl. Burglar and Fire Alarm Assn.; Hol of 40-50 U. S. Patents. Areas of Rsch.: The General Field Electronic Application to RF Instrumentation; Ultrasonics; In Red and Medical Electronics; The Economic Implication of Mathematical Theory of Communication.

BAHLERT, Agnes Ella (Miss), Prof. of Home Econs., Idaho St Coll., Pocatello, Idaho. Home Add.: 806 East Bonneville, Po tello, Idaho. NUTRITION-DIET ICS. b. Menominee Co., Mic Aug. 6, 1901. d. Hugh A Martha (Schwittay) B. (both de Edn.: Dipl., Stout Inst., 19 B.S., Univ. of Wis., 1933; M. ibid., 1936. Exp.: Dietetic tern., Walter Reed Genl. (or Arm Hosp., Wash., D. C., 1922-2 Voc. Homemaking Tchr., Sevas pol Cons. H.S., Sturgeon B Wis., 1933-35; Instr. in Foo Sec. Semester, Univ. of W 1936; Instr. and Supvr. of Ho Mgmt., House, Utah State Agr Coll., 1936-39; Asst. in Humani part-time Instr., Sec. Semest Univ. of Wis., 1941; Asst. & Assoc. Prof., Supvr. of Ho Mgmt. House, Utah State Agr Coll., 1941-43; Substituting Home Econ. Dept., Univ. of Wis., 1943-44; Assoc. Prof. and Sup of Home Mgmt. House, Utah St. Agric. Coll., 1944-45; Assoc. Pr and Hd. of Home Econs. Dept., Univ. of N. Dak., 1945-46; Gr Asst. in Edn., Univ. of Wis., 1946-47; Prof. and Head, Dept. Home Econs., Evansville Coll., 1947-51; Prof. and Head of Ho Econs. Dept., Idaho State Coll., 1951-59; Prof. of Home Econ ibid., 1959—. Hon. Pos.: Past Pres. and Dir., Idaho State C Fed. Credit Union; Past Pres., Idaho Dietetics Assn.; Car Guidance Chmn., Idaho Diet. Assn. Mem.: Am. Home Econ. Ass Am. Dietetics Assn.; A.A.U.W.; A.A.U.P.; The Natl. Coun. Family Relations; The Pacific NW Coun. on Family Relatio Am. Assn. Adv. of Sci.; Internatl. Fed. of Home Econs.; Lambda Theta; Omicron Nu; Phi Upsilon Omicron; I. S. C Faculty Women's Club; Home Econs. Club of Pocatello; Ida Acad. of Sci.; The Natl. Inst. of Social and Behavioral S Areas of Rsch.: Dietetics and Diet Therapy.

BAHNER, Carl Tabb (Ph.D.), Hd., Chem. Dept., Carson-Newm Coll., Jefferson City, Tenn. Home Add.: Swann Heights, Jeffer City, Tenn. CHEMISTRY. b. Conway, Ark., July 14, 1908. Gustavus Lunsford and Augusta Thomas (Moore) B. Edn.: B. Hendrix Coll., 1927; M.S., Univ. of Chicago, 1928; Th.M., Sou ern Bapt. Theol. Sem., 1931; Ph.D., Columbia Univ., 1936. Mary Catharine Garrott, Sept. 17, 1931. c.: Thomas Maxfie Mary Catharine Day; Frances Jane. Exp.: Instr., Union Un Jackson, Tenn., 1936-37; Prof., Carson-Newman Coll., 1937 Hon. Pos.: Pres., Tenn. Acad. of Sci.; Chmn., E. Tenn. Sect., A Chem. Soc.; Consultant, T.V.A., Carbide and Carbon Chem. Co Oak Ridge Inst. Nuclear Studies. Mem.: Am. Assn. for the A of Sci.; Am. Chem. Soc.; Am. Assn. for Cancer Rsch.; Sigma Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jo Org. Chem. Areas of Rsch.: Cancer Chemotherapy; Alipha Nitro Compounds and Heterocyclic Nitrogen Compounds.

BAHNSON, Agnew Hunter, Jr. (Mr.), Pres., The Bahnson C Winston-Salem, N. C. Home Add.: Reynolda Estates, Winst Salem, N. C. THEORETICAL AND EXPERIMENTAL PHYSICS. Winston-Salem, N. C., Aug. 30, 1915. s. Agnew Hunter Elizabeth (Hill) B. Edn.: A.B., Univ. of N. C., 1935. m. Kat rine King, July 5, 1941. c.: Karen; Hunter; Frank. Exp.: S cessively Apprentice, Sales Mgr., Vice Pres., The Bahnson C Winston-Salem, N. C., 1937-47; Pres. and Dir., ibid., 1947 Pres., ibid., 1950—; Pres., Bahnson Rsch., Inc., ibid., 196 Hon. Pos.: Pres., Instit. of Field Physics, Inc.; Chmn., N. Atomic Energy Advisory Comm.; Civilian Advisor World Rule Law Center; Gen. Chmn., Natl. Security Seminar, W-S, N. Mem.: Phi Beta Kappa; Newcomen Soc.; Internatl. Torch Cl S.A.E.; Rotary. Author: The Stars Are Too High, 1959. Ar of Rsch.: High Voltage Ionization Phenomena.

AIER, Harold Lewis (Ph.D.), Bacteriologist, Med. Investigation v., Ft. Detrick, Frederick, Md. Home Add.: 1203 Beechwood Dr., Frederick, Md. IMMUNOLOGY.

b. New Brunswick, N. J., Mar. 16, 1920. s. George and Blanche (Wood) B. Edn.: B.S., Rutgers Univ., 1943; Ph.D., ibid., 1951. m. Betty Christensen, Nov. 3, 1956. Exp.: Grad. Asst., Rutgers Univ., 1946-49; Instr., Zool., ibid., 1949-51; Mfr. of Photronreflectometer, New Brunswick, N. J., 1951-52; Chf., Drying Sec., Ft. Detrick, Md., 1952-56; Chf., Process and Design Br., 1956-59; Chf., Environmental Rsch. Br., Entomol. Div., 1959-60; Bacteriologist, Med. Investigation Div., ibid., 1960—. Mem.: A.A.A.S.; A.I.B.S.; Soc. of Am. Bacteriology; Soc. for Indusl. Microbiol.; U. S. Naval Inst.; Theobald Smith Soc.; Cobentz Soc.; Sigma Xi. Serv. cord.: U. S. Navy, 1943-46. Areas of Rsch.: Bioengineering; otoelectric Instruments; Serology; Precipitin Reaction.

AILEY, Alfred Marshall (D.Sc.), Dir., Denver Museum of Natural story, City Park, Denver 6, Colo. Home Add.: 4340 Montview vd., Denver 7, Colo. ORNITHOLOGY. b. Iowa City, Ia., Feb. , 1894. s. William H. and Molly Jellie B. Edn.: B.A., St. niv. of Ia., 1916; D.P.S., Univ. of Denver, 1954. Hon. Deg.: Sc., Norwich Univ., 1944. m. Muriel E. Eggenberg, June 16, 917. c.: Beth Elaine B. Murphy; Patricia Jean B. Witherspoon. p.: U. S. Biol. Survey, 1912-13; Naturalist, Curator of Birds d Mammals, La. St. Museum, New Orleans, La., 1916-19; presentative, U. S. Biol. Survey, 1919-21; Leader, Arctic ped., Colo., Mus. Natl. Hist., 1921-22; Curator, Denver Mus. tl. Hist., 1922-26; Zoologist, Field Mus. Natl. Hist., Abyssinian p., 1926-27; Dir., Chicago Acad. of Sciences, Chicago, Ill., 27-36; Dir., Denver Museum of Natural History, Denver, Colo., 36—. Mem.: Am. Ornithologists' Union, Fellow; A.A.A.S., Fel-w; Rotary Internatl. Author: Birds of Arctic Alaska, 1948; rds of New Zealand, 1955; Birds of Midway and Laysan ands, 1956; Subantarctic Campbell Island, 1962; Birds of lorado, 1962. Contbr. to: Auk; Condor; Natl. Geographic Mag.; ur. of Mammal.; Natural Hist.; Wilson's Bull.; Am. Forests fe; Country Life in Am.; Frontier; Pacific Discovery. Areas of ch.: Ornithological Fields and Photography of Natural History bjects.

AILEY, Clyde Harold (Ph.D.), Dean and Prof. (Emer.), Inst. of gric., Univ. of Minn., St. Paul 1, Minn. Home Add.: 2304 swell Ave., St. Paul 8, Minn. AGRICULTURAL BIOCHEMISTRY, OOD TECHNOLOGY). b. Mips., Minn., Apr. 15, 1887. s. orge W. and Sophie A. (McKenney) B. Edn.: B.S., N. D. ate Coll., 1913; M.S., Univ. of Minn., 1916; Ph.D., Univ. Md., 1921. Hon. Degs.: D.Sc., Hon. Causa, N. D. State ll., 1951. m. Anne L. Wilkins, June 20, 1910. c.: Mrs. Barbara Miller. Exp.: Sci. Asst., U. S. Dept. Agric., Fargo, N. D., 07-11; Instr. to Prof., Univ. of Minn., 1911-53; Dean and of., ibid., 1941-53. Hon. Pos.: Pres., Am. Assn. Cereal Chemists, 37-38; Chmn., Exptl. Sta. Sect., Assn. Land Grant Coll. and hivs., 1951-52. Mem.: Am. Assn. Cereal Chemists; Inst. of od Technol.; Am. Assn. for the Adv. of Sci.; Am. Chem. c.; Sigma Xi; Gamma Sigma Delta; Alpha Chi Sigma; Alpha ta; Gamma Alpha; Rotary. Author: Chemistry of Wheat our, 1924; Physical Tests of Flour Quality, 1940; Constituents Wheat and Wheat Products, 1944. Contbr. to: Cereal Chem.; ur. Indus. Engrng. Chem.; Jour. Biol. Chem.; Jour. Agric. ch.; Jour. Am. Chem. Soc.; Jour. Assn. of Agric. Chem. rv. Rec.: U. S. Army Food and Container Institute, 1943-53. n. Int.: Osborne Medal, Am. Assn. Cereal Chem., 1932; Nicholas ppert Medal, Inst. Food Tech., 1946; Neumann Medal, 1955; encer Medal, 1960; Gamma Sigma Delta Medal, 1954. Areas Rsch.: Cereal Technology.

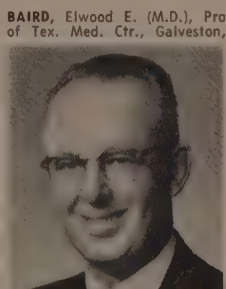
AILEY, Edwin Montgomery (Mr.), Pres., Creative Sci., Ridgewood, J. Home Add.: 194 W. Ridgewood Ave., Ridgewood, N. J. SEARCH AND INVENTION OF HOME APPLIANCES AND OF SCI-NTIFIC INSTRUMENTS FOR MEDICINE AND INDUSTRY. b. Beloit, is., Sept. 8, 1916. s. Edwin and Marion Yale (Shepard) B. n.: B.S., Beloit Coll., 1939; Grad. work at Univ. of Chicago d Univ. of Ariz. m. Frances Sherman, Aug. 13, 1941. c.: vid Yale; Mary Abigail; Stephen Fairchild. Exp.: Fellow, eward Obs., Univ. of Ariz., 1940-42; Staff Mem., Radiation b., Mass. inst. Tech., 1942-45; Physicist, Instrument Group, amford Rsch. Labs., Am. Cyanamid Co., Stamford, Conn., 1945-; Rsch. Dir., Industrial Gauges Corp. (dept. of Daystrom-eston), W. Englewood, N. J., 1956-58; Pres., Creative Sci., dgewood, N. J., 1958—. Hon. Pos.: Staff Assoc. in Astronomy, amford Museum, Conn. Mem.: I.S.A.; A.A.A.S.; I.R.E.; I.R.E. bgroups. Contbr. to: Popular Astronomy; Bull. of Johns Hop-ns Hosp.; Fed. Proc. Gen. Int.. Holder of patents in U. S. and n.; Pres. of Inventing Co. Areas of Rsch.: Uniting Different ientific Disciplines to Create New Instruments for Measurement d Control in Research and Processing of Chemicals, Foods, Minerals, Metals, Manufactured Goods; Astronomical Instruments; Home Appliances; Instruments for Medical Research and Diagnosis.

BAILLY, Florent Houlding (Mr.), Consultant, 941 Fallen Leaf Rd., Arcadia, Calif. GEOLOGY: GEOCHEMICAL, GEOPHYSICAL, STRUCTURAL. b. Caracas, Venezuela, Dec. 21, 1902. s. Gerard A. and Carrie (Houlding) B. Edn.: B.S., Calif. Inst. of Tech., 1927. m. Bertha Randall, Oct. 15, 1929. c.: Elizabeth Bonella; F. David; Leonor Wenona. Exp.: Engr., Geologist, Pantepec Oil Co., Venezuela, 1928-36; Chf. Engr. and Geologist, ibid., 1936-52; Pres., ibid., 1949-52; Owner, Petroleum Engrng. Assn., Calif., 1946—. Mem.: Am. Soc. Civil Engrs.; Am. Inst. of M. Engrng.; Am. Assn. Petro. Geol.; Am. Concrete Inst.; A.A.A.S. Contbr. to: Am. Assn. Petro. Geologists; Civil Engrng.; etc. Areas of Rsch.: Geophysics-Geochemistry; Structural Evolution of the Earth.

BAIN, Joe S., Jr. (Ph.D.), Prof. of Econ., Univ. of Calif., Berkeley, Calif. Home Add.: 560 Woodmont Ave., Berkeley, Calif. ECONOMICS (INDUSTRIAL ORGANIZATION AND ECONOMIC THEORY). b. Spokane, Wash., July 4, 1912. s. Joe S. and Frances (Snow) B. Edn.: A.B., U.C.L.A., 1935; M.A., Harvard, 1939; Ph.D., ibid., 1940. m. Beatrice Metcalf, 1937. c.: Jennifer; Joe S., III. Exp.: Instr., Harvard, 1936-39; Asst. Prof. Assoc. Prof., Univ. of Calif., 1939-49; Prof., ibid., 1949—. Mem.: Phi Beta Kappa; Am. Econ. Assn. Author: Econ. of the Pacific Coast Petroleum Industry, 3 vols., 1944-47; Pricing, Distribution, and Employment, 1948, rev., 1953; Barriers to New Competition, 1956; Industrial Organization, 1959. Contbr. to: Am. Econ. Rev.; Quart. Jour. of Econ.; Jour. of Polit. Econ.; Economica.

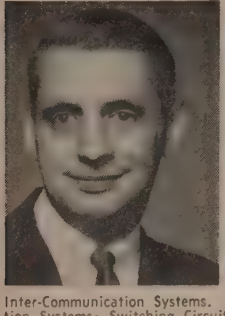
Areas of Rsch.: Industrial Organization and Public Policy: Price Theory; Public Water Resource Policy.

BAIRD, Elwood E. (M.D.), Prof. of Pathol., Clin. Pathols., Univ. of Tex. Med. Ctr., Galveston, Tex. Home Add.: 1114 Ave. E, Galveston, Tex. PATHOLOGY. b. Sherwood, Mich., Jan. 24, 1907. s. Frederick Charles and Mary Adele (Cass) B. Edn.: A.B., Battle Creek Coll., 1927; M.S., ibid., 1928; M.D., Northwestern Univ., Chicago, Ill., 1935. m. Jayne Henshaw, Sept. 29, 1942. c.: Frederick Montgomery; Dian; Robert Bruce; Thomas Edward. Exp.: Instr. in Bacteriol., Battle Creek Coll., Battle Creek, Mich., 1926-28; Instr. in Bacteriol., Tufts Med. Schl., Boston, Mass., 1930-32; Instr. to Asst. Prof., Clin. Pathol., Colo. Med. Schl., 1942-49; Prof. of Pathol., Univ. of Tex., Med. Branch, 1949—. Hon. Pos.: Acting Chmn., Dept. of Pathol., Univ. of Tex., Med. Br., 1955-57; Chmn., Bd. of Schls. of Med. Tech. of the Am. Soc. of Clin. Pathologists, 1960—. Mem.: Am. Med. Assn.; Am. Soc. of Clin. Pathol.; Coll. of Am. Pathols.; Southern Med. Assn.; Am. Assn. for the Adv. of Sci; Sigma Xi; Am Soc. of Tropical Med. and Hygiene; Phi Beta Pi. Contbr. to: Am. Jour. Clin. Pathol.; Jour. of Peds.; Aerospace Med.; Tex. Sta. Jour. of Med. Serv. Rec.: U. S. Army, 1938-42. Areas of Rsch.: Laboratory Technology and Medicine; Blood Electrolytes; Hematology.

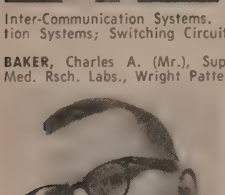


BAKALAR, Arthur B. (Mr.), Dir., Patent Div., Shell Devel. Co., Emeryville, Calif. Home Add.: 2730 Lyon St., San Francisco 23, Calif. CHEMICAL ENGINEERING. b. N.Y.C., May 1, 1905. s. Wm. and Gertrude (Goldberg) B. Edn.: B. Chem. Eng., Northeastern Univ., 1926; LL.B., Wash. Coll. of Law, 1929; M.P.L., ibid., 1929. m. Pauline Cushman, 1928. c.: Paula Ann. Exp.: Examiner, U. S. Patent Office, Wash., D. C., 1926-30; Patent Attorney, Shell Devel. Co., Emeryville, Calif., 1930-48; Assoc. Dir. Pat. Div., ibid., 1948-55; Dir. Pat. Div., ibid., 1955—. Hon. Pos.: Pres., S. F. Patent Law Assn., 1941; NAM-Pat. Comm., W. W. in the W. Mem.: AAAS; Am. Chem. Soc.; Am. Bar Assn.; Am. Pat. Law Assn.; S. F. Pat. Law Assn.; AIPPI; A. E. Pi; Nu Beta Epsilon; Commonwealth. Contbr. to: Sci.; Jour. Pat. Off. Soc. Gen. Int.: D. C. Bar, 1929; Ct. of Customs & Pat. Appls., 1929; Supreme Court Bar, 1937; Ninth Circuit Court of Appls., 1947. Areas of Rsch.: Corporate Patent Management; Interference Practice; Petrochemical and Petroleum Technology.

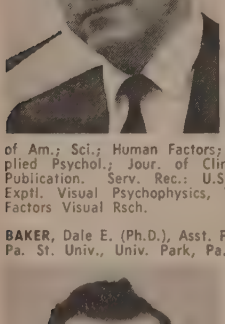
BAKER, Adolph Ario, Jr. (Mr.), Lead Engr., Gen. Dynamics, Telecommunications, 100 Carlson Rd., Rochester 3, N. Y. Home Add.: 17 Alexis St., Rochester 9, N. Y. ELECTRICAL ENGINEERING; COMMUNICATION SYSTEMS ENGINEERING. b. Butte, Mont., May 10, 1923. s. Adolph Ario, Sr. and Hazel Mae (Argall) B. Edn.: A.B., Pa. State Coll., 1948; Ed.M., Univ. of Rochester, 1954. m. Dorothy A. Colyer, June 5, 1948. c.: Nancy C.; Holly A.; Victor A.; Paul D.; John T. Exp.: Test Engr., Johns Hopkins Univ., App. Phys. Lab., Silver Spring, Md., 1945-46; Audio-Visual Dir., Am. Bapt. Assembly, Green Lake, Wis., 1948-50; Lead Engr., Gen. Dynamics Telecomm., Rochester, N. Y., 1951—. Mem.: AIEE; IRE; Am. Assn. for the Adv. of Sci. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Patents in Telephone and Inter-Communication Systems. Areas of Rsch.: Audio Communication Systems; Switching Circuits.



BAKER, Charles A. (Mr.), Supvr. Rsch., Psychologist, Aerospace Med. Rsch. Labs., Wright Patterson AFB, Ohio. Home Add.: 7022 Harshmanville Rd., Dayton 24, O. ENGINEERING PSYCHOLOGY. b. Elyria, Ohio, April 10, 1925. s. Clarence and Helen (Stone) B. Edn.: B.A., Ohio Wesleyan Univ., 1949; M.A., Univ. of N. Mex., 1951. m. Janet Bowen, 1948. c.: Deborah; Clifford. Exp.: Asst. Prof., Colo. A. & M. Coll., 1950-51; Rsch. Psychologist, Aerospace Med. Rsch. Labs., Wright Patterson AFB, Ohio, 1952-57; Supvry. Rsch., Psychologist, ibid., 1957—. Mem.: Am. Psychological Assn.; Optical Soc. of Am.; Psychonomics Soc.; A.A.A.S.; Midwestern Psychological Assn.; Human Factors Soc.; Phi Kappa Psi; Exec. Inn Philosophical Discussion Group. Contbr. to: Jour. of Exptl. Psychol.; Jour. of the Optical Soc. of Am.; Sci.; Human Factors; Proc. of the I.R.E.; Jour. of Applied Psychol.; Jour. of Clinical Psychol.; Natl. Rsch. Coun. Publication. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Exptl. Visual Psychophysics, Visual Perception, Applied Human Factors Visual Rsch.



BAKER, Dale E. (Ph.D.), Asst. Prof. Soil Tech., Dept. of Agronomy, Pa. St. Univ., Univ. Park, Pa. Home Add.: 1314 E. Coll. Ave., State Coll., Pa. SOIL CHEMISTRY. b. Marble Hill, Mo., May 5, 1930. s. William E. and Daisy A. (Wilkinson) B. Edn.: B.S., Univ. of Mo., 1957; M.S., ibid., 1958; Ph.D., ibid., 1960. m. Doris L. Scheper, Sept., 1949. c.: Carol Sue; Kenneth Lee. Exp.: Soil Conservationist, U.S.D.A. Soils Cons. Serv., Higginsville, Mo., 1955-58; Rsch. Agronomist, Univ. of Minn. Expmtl. Station, Duluth, Minn., 1960-61; Asst. Prof., Pa. St. Univ., 1961—. Mem.: Am. Soc. of Agronomy; Sigma Xi; Gamma Sigma Delta. Contbr. to: Soil Sci. Service Rec.: U. S. Marine Corps, 1951-53. Areas of Rsch.: Soil Chemistry and Plant Nutrition Relations.



BAKER, Chester Hamilton (Ph.D.), Senior Scientist, Human Factors Rsch., Inc., 1112 Crenshaw Blvd., Los Angeles 19, Calif. Home Add.: 821½ 6th St., Santa Monica, Calif. EXPERIMENTAL PSYCHOLOGY. b. Victoria, B. C., Can., May 13, 1919. s. Hugh and Anne (Hamilton) B. Edn.: B.A., Univ. of Brit. Columbia, 1947; M.A., Univ. of Toronto, 1948; Ph.D., ibid., 1951. m. Helen Margaret Armstrong, 1948. c.: Susan Margaret; Steven Armstrong. Exp.: Psychologist, Defense Rsch. Bd. of Can., 1948; Grantee, NRC, Canada, 1948-51; Psychologist, Royal Canadian Air Force, 1949-50; Lectr., Univ. of Toronto, 1949; Tchng. Fellow, ibid., 1951-53; Chief Applied Expmtl. Psychol., Defense Rsch. Bd. of Can., 1951-61; Exchange Scientist, Med. Rsch. Coun. of Great Britain (Cambridge), 1955-56; Dir., Human Engrng. Inst., McGill Univ., 1957—. Mem.: Am. Psychol. Assn.; Am. Assn. Adv. Sci.; Canadian Psychol. Assn., Psychonomic Soc.; N. Y. Acad. of Scis.; Phi Delta Theta. Co-author: Guide to Factors Affecting Radar Operator Efficiency, 1953; Man and Rad Displays, 1962. Contbr. to: British Jour. of Psychol.; Canadia Jour. of Psychol.; Occupational Psychol.; Jour. Appl. Psycho War Rec.: Canadian Army, 1941-46. Areas of Rsch.: Visio Visual Display of Information; Vigilance; Human Engineering.

BAKER, Edward G. (Ph.D.), Senior Rsch. Assoc., Esso Rsch. an Engrng. Co., Linden, N. J. Home Add.: 117 Berkshire D Berkeley Heights, N. J. PSYS CAL CHEMISTRY. b. Buffalo, N. Y Jan. 12, 1927. s. Cyril T. an Ruth (Davis) B. Edn.: B.S., Uni of Mich., 1948; Ph.D., Brow Univ., 1951. m. Constance Parke May 17, 1952. c.: Deborah; E ward, Jr. Exp.: Project Chemis Esso Rsch. and Engrng. Co Linden, N. J., 1957-59; Rsch. A soc., ibid., 1959-61; Sr. Rsc Assoc., ibid., 1961—. Hon. Pos Chmn. of Symposium on Cher Aspects of the Origin, Migratio and Accumulation of Oil, Spo sored by A.C.S., 1958. Mem.: Ar Chem. Soc.; Am. Assn. Adv. Sci.; Geochem. Soc.; Phi Be Kappa; Phi Lambda Upsilon; P Kappa Phi; Sigma Xi; Alpha C Sigma. Contbr. to: Science; Bu of Am. Assn. of Petroleum Geologists; Geochimica Et Co mochimica Acta; Proc. of the Natl. Rsch. Coun. Areas Rsch.: Origin and Migration of Oil; Solubility of Hydrocarbo in Water; Structure of Aqueous Hydrocarbon Solutions.

BAKER, James Gilbert (Ph.D.), Rsch. Assoc., Harvard Coll. Observ Cambridge 38, Mass. Home Add.: 7 Grove St., Winchester, Mas ASTRONOMY AND ASTROPHYSICS; ASTRONOMICAL OPTIC OPTICAL PHYSICS. b. Louisville, Ky., Nov. 11, 1914. s. Jes Blanton and Harriet May (Stallard) B. Edn.: A.B., Univ. Louisville, 1935; M.A., Harvard Univ., 1936; Ph.D., ibid., 194 Hon. Degs.: Sc.D., Univ. of Louisville, 1948. m. Elizabe Katherine Breitenstein, Jan. 1, 1938. c.: Kirby Alan; Denn Graham; Neal Kenton; Brenda Sue. Exp.: Rsch. Fellow, Harva Observ., 1942-46; Assoc. Prof., ibid., 1946-48; Rsch. Asso ibid., 1949-62; Rsch. Assoc., Lick Observ., Mount Hamilton, Cali 1948-60; Consultant, Indep., Winchester, Mass., 1947—; Rsc Assoc., Harvard Coll., Observ., 1962—. Hon. Pos.: Secy., Sign Xi, 1946-48; Pres., Gamma Alpha, 1939; Chmn., Recon. Pane USAF, 1953-55; Bd. Mem., Optical Soc., 1954-59; Pres. Elec 1959, Pres., 1960, Past Pres., 1961; Vice Pres., Interna Commn. for Optics, 1959-62; Councilor, Am. Acad., 1954-5 Mem.: Am. Astron. Soc.; Am. Assn. Adv. Sci.; Am. Math. Soc Optical Soc. of Am.; Am. Acad. of Arts and Scis.; AAVS Gamma Alpha; Sigma Xi. Co-Author: Telescopes and Accessorie 1945; Instruments, 1946; Fundamental Formulas of Physic 1953; Harvard Tercentenary Vol., 1936; Harvard Monograp 1947. Contbr. to: Astr. Jour.; Publ. of Am. Phil. Soc.; Astrophy Jour.; App. Optics Jour. Gen. Int.: Presidential Award of Mer 1947 for Wartime Work; USAF, Exceptl. Serv. Award, 195 Adolph Lomb Medal, 1942; Magellanic Medal, Am. Phil. So 1952. Areas of Rsch.: Problems of Transfer of Radiation Gaseous Nebulae and Spectroscopic Problems of Stellar Atmo spheres; Bulk of Prof. Work with Applications of Optical Princip to Specialized Projects and Instrumentation in Astronomy; Aer Reconnaissance; Physics; Medicine; Photography; Television; A plication of Optical Experience to Problems in Astrometry a Astrophysics.

BAKER, Laurence Holland (Ph.D.), Population Geneticist, Hy-Li Poultry Farms, Johnston, Ia. Home Add.: 4013 33rd St., D Moines 10, Ia. POPULATION GENETICS. b. Des Moines, Ia., Ja 23, 1933. s. Raymond F. and Mildred (Holland) B. Edn.: B.S Ia. St. Univ., 1954; Ph.D., Univ. of Minn., 1961. m. Norr Walters, Aug. 8, 1953. c.: Marcia Helen; Brian Joseph. Exp Population Geneticist, Hy-Line Poultry Farms, 1960—. Mem Biometrics Soc.; Institute of Mathl. Statistics; Assn. for Co puting Machinery; Genetics Soc. of Am.; Am. Statistical Assn Sigma Xi; Gamma Sigma Delta. Contbr. to: Genetics. Servi Rec.: U. S. Army, 1954-56.

BAKER, Louis Coombs Weller (Ph.D.), Prof. of Chem., Chm Dept. of Chem., Georgetown Univ., Wash. 7, D. C. Home Ad Dingley Dell, South Hero, Vt. INORGANIC CHEMISTRY. N. Y. C., Nov. 24, 1921. s. F. Godfrey and Marion (Weller) B. Edn.: A.B., Columbia Univ., 1943; M.S., Univ. Pa., 1947; Ph.D., ibid., 1950. Exp.: Asst. Instr. in Chem Towne Scientific Schl., Univ. of Pa., 1943-50; Co-Project Di Office of Production Rsch. and Development, Bound Brook, N. 1943-45; Instr. in Chem., Martin and Rittenhouse Colls., 1945-4 Instr. in Chem., Coll., Univ. of Pa., 1945-50; Assoc. in Chem Johnson Foundation, ibid., 1950-51; Asst. Prof., Boston Uni 1951-57; Assoc. Prof., Head, Inorganic Div., ibid., 1958-6 Prof. of Chem., Chmn., Chem. Dept., Georgetown Univ., 1962 Hon. Pos.: Guggenheim Fellow, 1961; Chmn., Natl. Comm. Review of Inorganic Papers, Division of Inorganic Chemistr Am. Chem. Soc.; Nominating Comm., ibid.; Gordon Confe ence Speaker; External Examiner for Ph.D., Univ. of Calcutt Chmn., Program Comm., Division of Inorganic Chem., Am. Che Soc. Mem.: Sigma Xi; A.A.U.P.; Assn. of New England Che Tchrs.; Alpha Chi Sigma; Country Dance Soc. Contbrng. Autho Advances in the Chemistry of the Coordination Compounds, 196 Religion: Quaker. Contbr. to: Jour. of A.C.S.; Analytical Chem Jour. of Physical Chem.; Acta Crystallographica. Areas of Rsch

eteropoly and Isopoly Electrolytes; Synthesis of Specialized ion-xchange Resins; Coordination Chemistry; Magnetochem.; High hermal Efficiency Engines; Tchng. Gen. Chem. and Advanced norganic Chem.

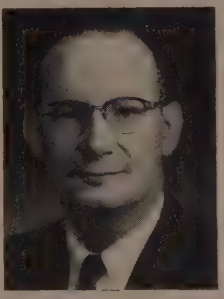
AKER, Merl (Ph.D.), Exec. Dir., Ky. Rsch. Fdtn., R. 301 Admin. ldg., Univ. of Ky., Lexington, Ky. Home Add.: 1728 Mooreland r., Lexington, Ky. MECHANICAL ENGINEERING. b. Cadiz, Ky., uly 11, 1924. s. Jessie F. and Argie (Coyle) B. Edn.: B.S.M.E., niv. of Ky., 1945; M.S.M.E., Purdue Univ., 1948; Ph.D., ibid., 952. m. Emily Wilson, Sept. 14, 1946. c.: Merl Wilson; Mari-yn Ruth. Exp.: Part-Time Instr., Purdue Univ., Lafayette, Ind., 946-48; Asst. Prof., Univ. of Ky., 1948-52; Assoc. Prof., ibid., 952-54; Prof. M.E., ibid., 1955—; Exec. Dir., Ky. Rsch. Fdtn., bid., 1953—; Co-Ordinator, ICA Contracts, ibid., 1956—; Exec. ir., Ky. Rsch. and Relations with Industry, ibid., 1957—. Hon. os.: Chmn. of Rsch. Div. of the Southeastern Sect. of ASEE; res. of Southeastern Sect. of ASEE; Assoc. Editor of the ASRE ata Book for 1955; Mem. of Indust. Devel. Comm., Ky. Chamber f Commerce, 1957—; Gen. Chmn. of 1961 ASEE Annual Meeting; hmn. of ASEE Internatl. Edn. Comm. Mem.: Am. Soc. of Refrig. ngrs.; Am. Soc. of Heating and Air Conditioning Engrs.; Am. ssn. of Univ. Profs., Past Mem.; Ky. Soc. of Prof. Engrs.; Ky. cad. of Sci.; Newcomen Soc. of No. Am.; Rotary Internatl.; MCA; Tau Beta Pi; Sigma Xi; Pi Tau Sigma; Sigma Pi Sigma; micron Delta Kappa; Vice Pres., Blue Grass Coun. of Boy Scouts f Am.; Chmn. of Univ. of Ky. YMCA Adv. Bd. Contbr. to: ngr. Exptl. Stan. Bulls.; A.S.H.V.A. Jour.; Procs. of Am. Power onf.; Ky. Acad of Sci Trans.; Food Technol.; Jour. of Heat ransfer. Serv. Rec.: U. S. Navy, 1945-46. Gen. Int.: Published B Articles in the Fields of Heat Transfer, Thermodynamics, Re-rig., Air Conditioning; Heat Pumps and Engr. Edn.; Received Pi au Sigma Gold Medal Award for Most Outstanding Contbrn. to Mech. Engrg. Areas of Rsch.: Heat Transfer; Refrigeration, Air conditioning; Heat Pumps, Engineering Education; Thermodynam-cs; Fluid Mechanics; Mechanical Engineering.

BAKER, Phillip Orton (D.O.), Physician and Surgeon, Baker Bldg., entralia, Mo. Home Add.: 112 S. Collier St., Centralia, Mo. RURAL GENERAL PRACTICE IN OSTEOPATHIC MEDICINE AND SURGERY. b. Arbela, Mo., June 6, 1903. s. Philip Morris and Daisy Emily (Barnes) B. Edn.: B.S., St. Tchrs. Coll., Kirksville, Mo., 1927; M.S., Columbia Univ., 1931; Registered Pharmacist, 1937; D.O., Coll. of Oseopathy and Surgery, Kirksville, Mo., 1942. m. Thelma Louise Osborne, 1945. c.: Emily Melissa. Exp.: Supt. of Schls., Pub. Schls., Weatherby, Mo., 1928-30; Detailman, The Upjohn Drug Co., Kalamazoo, Mich., 1932-34; Detailman, U. S. Standard Products, Woodworth, Wis., 1934-38; Physician and Sur-geon, Centralia, Mo., 1942—. Hon. Pos.: Received the Fellow Award, Am. Coll. General Practice, 1962; Mayor Pro Tem, Cen-tralia City Coun.; City Physician and Health Officer, Centralia, Mo.; Chf. of Staffs, Community Hosp., Moberly, Mo. Mem.: Am. Coll. Gen. Practitioners; Am. Osteopathic Assn.; Mo. Osteopathic Assn.; Central Mo. Osteopathic Soc.; Randolph Co., Boone Co. and Audrain Co. Osteopathic Soc.; Utah Osteopathic Assn.; Alpha Phi Omega; Delta Pi; Mason; Shrine; Eastern Star; White Shrine; Odd Fellows; Rebekah; Country Club; Kiwanis. Contbr. to: The Osteopath Jour.; Am. Jour. of Bacteriol.; Natl. Dairy Assn.

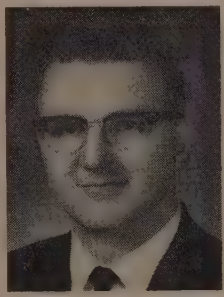
BAKER, Rollin Harold (Ph.D.), Dir., The Museum, Prof. of Zool. and of Fisheries and Wildlife, Mich. Sta. Univ., E. Lansing, Mich. Home Add.: 420 W. Grand River, E. Lansing, Mich. ZOOLOGY. b. Cordova, Ill., Nov. 11, 1916. s. Charles Laurence and Minnie Louise (Perkins) B. Edn.: B.A., Univ. of Tex., 1937; M.S.A. and M. Coll. of Tex., 1938; Ph.D., Univ. of Kans., 1948. m. Mary Elizabeth Waddell, Mar. 21, 1939. c.: Elizabeth Alice; Bruce Rollin; Byron Laurence. Exp.: Field Biol., Tex. Co-op. Wildlife Rsch. Sta., Coll. Sta., Tex., 1938-39; Wildlife Biol., Tex. Game and Fish Comm., Austin, Tex., 1939-43; Instr. to Assoc. Prof. of Zool., Univ. of Kans., 1948-55; Asst. Curator, Museum of Nat. Hist., ibid., 1948-55; Dir., The Museum and Prof. of Zool., Fish and Wildlife, Mich. Sta. Univ., 1955—. Mem.: Am. Soc. Mam-malogists; Am. Ornithols. Union; Wildlife Soc.; Soc. for Study of Evolution; Soc. Systematic Zool.; Brit. Ornithol. Union; Tau Kappa Epsilon; Sigma Xi; Phi Kappa Phi; Alpha Epsi'on Delta; Beta Beta Beta; Phi Sigma; Kiwanis Club. Contbr. to: Am. Soc. of Mammalogists. Serv. Rec.: U. S. Naval Reserve, 1943-46. Gen. Int.: Museum Expeditions. Areas of Rsch.: Mammalogy of North America.

BAKER, Dr. Walter Wolf, Assoc. Prof. Pharmacol. and Assoc. Prof., Psychiatry (Neuropharmacol.), Consultant in Neuropharma-cology, Jefferson Medical Coll., Philadelphia 7, Pa. Home Add.: 7638 Massey Way, Elkins Park 17, Pa. PHARMACOLOGY; NEURO-PHARMACOLOGY; AUTONOMIC PHARMACOLOGY. b. Philadelphia, Pa., October 29, 1924. s. Jack and Ethel R. (Brodsky) B. Edn.: B.S., Franklin and Marshall Coll., 1948; M.S., State Univ. of Iowa, 1950; Ph.D., Jefferson Med. Coll., 1953. m. Judith M. Goldman, Aug. 3, 1952. c.: Corinne Marcia; Andrew Wayne; Frederic Jay. Exp.: Admin. Asst., Wyeth Inst., 1950-51; Pre-doctoral Fellow, Natl. Life Ins. Med. Rsch. Fund, 1951-53; Instr. Pharmacol., Jefferson Med. Coll., 1953-56; Asst. Prof., Pharmacol., ibid., 1956-59; Assoc. Prof., Pharmacology, Ibid., 1959—; Assoc Prof., Psychiatry (Neuropharmacology), 1960—. Mem.: Soc. Biol. Psychiatry; Am. Psychopathology Soc.; Am. Soc. for Pharmacol. and Experimental Therap.; A.A.A.S.; Soc. Experimental Biol. and Med.; Sigma Xi; N. Y. Acad. Sci.; Phila. Physiol. Soc.; Am. Acad. Neurol.; Eastern Assn. Electroencephalog. Contbrng Author: Progress in Neurology and Psychiatry, 1958—. Contbr. to: Jour. Pharmacol. and Exptl. Therap.; Proc. Soc. Exptl. Biol. and Med.; EEG and Clin. Neurophysiol.; Arch. Internatl. Pharmacodyn. et Therap.; Circulation Res.; Federation Proc. War Record: U. S. Navy, 1943-46. Gen. Int.: Neuropharmacology; Central Tremor Mechanisms; Central Autonomic Dysfunctions. Areas of Rsch.: Neuropharmacology (Drugs on Spontaneous and Evoked Potentials of the Brain); Chemical Production of Tremors, Central Autonomic Dysfunctions; Psychopharmacology; Focal Seizures; Chemically-induced C.N.S. Dysfunctions.

BAKER, William Hudson (Ph.D.), Professor and Chmn. of Bot., Hd., Dept. of Biolog. Scis., Univ. of Idaho, Moscow, Idaho. Home Add.: 403 No. Blaine, Moscow, Ida. BOTANY. b. Portland, Ore., Dec. 16, 1911. s. William Thomas and Helen (Thornbury) B. Edn.: B.S., Ore. St. Coll., 1935; M.S., ibid., 1942; Ph.D., ibid., 1949. m. Molly Ann Cochran, Nov. 17, 1934. c.: James William. Exp.: Pub. Schl. Adminstr., Ore., 1935-43; Asst. in Bot., Ore. St. Coll., 1946-48; Asst. Prof. of Bot., Univ. of Idaho, 1948-53; Assoc. Prof., 1953-58; Prof., ibid., 1958—; Act. Chmn. of Bot., ibid., 1953-54; Chmn. of Bot., ibid., 1954—; Act. Hd., Dept. of Biolog. Sci., 1955-56; Hd. of the Dept. of Biolog. Sci., ibid., 1956—. Hon. Pos.: Program Chmn., Northwest Scientific Assn., 1953-56; Trustee, N. W. Scientific Assn., 1956-59; V.-P., 1961-62, Pres., Ida. Acad. of Sci., 1959-60; Pres., Ida. Chapt., Sigma Xi, 1955-56. Mem.: Am. Assn. of Univ. Profs.; N. Engl. Botany Club; Calif. Botany Soc.; Ida. Acad. of Sci.; N.W. Scientific Assn.; Am. Fern Soc.; Am. Soc. of Plant Taxonomists; Botanical Soc. of Am.; Internti. Soc. of Plant Taxonomists; Alpha Tau Omega; Phi Sigma; Sigma Xi; Kiwanis. A.A.A.S.; Calif. Acad. of Sci. Contbr. to: Am. Fern Jour.; Madrona; Leaflets of Western Bot.; Crater Lake Nature Notes; Northwest Sci.; Am. Midland Naturalist. War Record: U. S. Navy, 1943-46. Gen. Int.: Park Ranger, Naturalist, Crater Lake Natl. Park, 1949, 1950 (summers). Areas of Rsch.: Floristics and Plants Distribution; Flowering Plants of Northwestern Americ a; Grasses of Idaho.



BAKER, William Jesse (Mr.), Rsch. Serv. Assoc., Ortho. Rsch. Foundation, Raritan, N. J. Home Add.: R.D. No. 1, Box 404, Flemington, N. J. PHYSIOLOGY, BLOOD COAGULATION. b. E. Florenceville, N.B., Can., Dec. 25, 1932. s. Frank J. and Ellen J. (Pryor) B. Edn.: R.T., Canadian Soc. Lab. Technologists, 1951; B.Sc., Univ. of New Brunswick, 1957; M.S., Wayne St. Univ., 1960. m. Joyce E. Bevans, Aug. 8, 1953. c.: Susan J.; Nancy J.; Timothy W. Exp.: Staff, Dept. of Hlth. Lab., Prov. of New Brunswick, Can., 1950-57; Graduate Tchng. Fellow, Wayne St. Univ., 1957-59; Rsch. Fellow, ibid., Coll. of Medicine, 1959-60; Rsch. Serv. Assoc., Ortho Rsch. Foundation, Raritan, N. J., 1960—. Mem.: Can. Soc. of Lab. Technols.; Am. Assn. of Clin. Chems.; Am. Assn. of Blood Banks; A.A.A.S. Contbr. to: Thrombosis et Diathesis Hemorrhagica; The Physiologist; Fed. Proc.; Hemophilia and Other Hemorrhagic States. Areas of Rsch.: Protein Isolation and Characterization, Blood Coagulation Mechanisms.

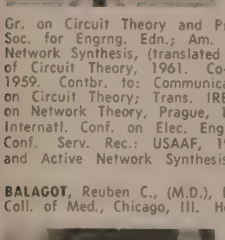


BAKKEN, Henry H. (Mr.), Prof., Agri. Econ., 312 Agricultural Hall, Univ. of Wis., Madison, Wis. Home Add.: 2218 Chadbourne Ave., Madison, Wis. b. Arena, Wis., Mar. 24, 1896. s. Halvor and Molla (Nelson) B. Edn.: B.A., Univ. of Wis., 1922; M.A., ibid., 1924. m. Clara K. Grimstad, Sept. 2, 1922. c.: James F.; David C.; Haakon R. Exp.: Asst., Dept. of Agri. Econ., Univ. of Wis., 1923-24; Asst. Prof., ibid., 1924-32; Assoc. Prof., ibid., 1932-53; Prof., ibid., 1953—; Prin. Econ., O.P.A., 1943-44; Price Chf., Allied Control Com., F.E.A., Rome, 1944-45; Econ. Consultant to G.H.Q., SCAP, Tokyo, Japan, 1946-47; Econ. Consultant, Univ. of Puerto Rico, Expmtl. Station, summer, 1953; Smith-Mundt Exchange Prof., Univ. of Chile, So. Am., 1957. Hon. Pos.: Attache, London and Oslo Embassies, 1945-46; Prof. Extraordinario, Univ. Catolica, Chile, 1957; Econ. Consultant, O.A.S., Honduras Agrarian Reform, 1961; Fulbright Exchange Prof., Finland, 1962-63. Mem.: American Association; Canadian Agricultural Econ. Soc.; Western Farm Econ. Assn.; Ygdrasil Lit. Soc.; Acacia; Mason. Author: Economics of Cooperative Marketing, 1937; Cooperation to the Finish, 1939; Theory of Markets and Marketing, 1953; Fluid Milk Marketing, 1956; Light and Power, 1959; Futures Trading in Agri. Products, 1960. Contbr. to: Jour. of Farm Econ.; Am. Econ. Rev.; Jour. of Land Econ. War Record: U. S. Army, 1917-19. Areas of Rsch.: Theory and Principles of Cooperation; Marketing of Agricultural Products; R.E.A. Organization and Opera-ti

BAKWIN, Harry (M.D.), Prof. of Clinical Pediatrics, N. Y. Univ. Coll. of Med., 550 First Ave., N. Y. 16, N. Y. Home Add.: 132 E. 71st St., N. Y. 21, N. Y. GROWTH AND DEVELOPMENT. b. Utica, N. Y., November 19, 1894. s. Simon and Emma (Nadel) B. Edn.: B.S., Columbia, Coll., 1915; M.D., Columbia Coll. Physicians and Surgeons, 1917. m. Ruth Morris, Feb. 2, 1925. c.: Edward Morris; Mrs. Patricia Selch; Mrs. Barbara Rosenthal; Michael. Exp.: Asst. Instr., Cornell Med. Coll., N. Y. City, 1919-24; Instr., Ped., Columbia Univ., N. Y. City, 1925-30; Asst. Prof., Ped., N. Y. Univ., ibid., 1930-40; Assoc. Prof., ibid., 1940-49; Prof. Clinical Ped., ibid., 1949—. Hon. Pos.: Pres., Am. Acad. of Peds., 1955-56; Editorial Bd., Jour. of Peds. Mem.: Am. Ped. Soc.; Am. Acad. of Peds.; Am. Assn. of the Adv. of Sci.; Am. Assn. Phys. Anthropol.; Soc. Exptl. Biol. and Med.; Harvey Soc.; N. Y. Acad. Sci., Fellow; Am. Soc. Human Genetics; Am. Pub. Health Assn., Fellow; A.M.A.; N. Y. Acad. Med.; Sigma Xi; Alpha Omega Alpha; Sociedad Antioquena de Pediatria, Hon. Mem.; Assn. Pediatrica de Guatemala, Hon. Mem.; Sociedad Venezolana de Puericultura y Pediatria, Hon. Mem.; Sociedad Argentina de Pediatria, Hon. Mem.; Hon. Mem., The South African Paediatric Assn.; Hon. Mem., Brazilian Pediatric Soc.; Hon. Mem., N. J. Soc. of Dentistry for Children. Author: Psychologic Care During Infancy and Childhood, 1942; Clinical Management of Behavior Disorders in Children, 1953, 1960. Contbr. to: Am. Jour. Dis. Child.; Jour. Pediat.; Human Biol.; N. Y. St. Jour. of Med.; Am. Jour. Obst. and Gyn.; New England Jour. of Med.; Ped. Clin. of N. Am.; Arch. Ped.; Am. Jour. Med. Sci.; Am. Jour. Physiol.; Jour. of A.M.A.; Jour. Clin. Invest.; Jour. Biol. Chem.; Proc. Soc. Exptl. Biol. and Med.; Acta Paedia. Service Rec.: U. S. Army, 1918-19. Areas of Rsch.: Physiology of Newborn; Growth and Development; Emotional Development.

BALABANIAN, Norman (Ph.D.), Prof. of Elect. Engrng., Syracuse Univ., Syracuse, N. Y. Home Add.: 134 Clarke St., Syracuse 10, N. Y. ELECTRICAL ENGINEERING, NETWORK THEORY. b. New London, Conn., Aug. 13, 1922. s. Adam and Elizabeth (Seklemian) B. Edn.: Sci. Dipl., Aleppo Coll., Aleppo, Syria, 1942; B.E.E., Syracuse Univ., 1949; M.E.E., ibid., 1951; Ph.D., ibid., 1954. m. Jean Tajerian, Aug., 1947. c.: Karen; Doris; Gary; Linda. Exp.: Instr., Syracuse Univ., 1949-54; Asst. Prof. of Elec. Engrng., ibid., 1954-57; Mem., Tech. Staff, Bell Tel. Labs., Murray Hill, N. J., 1956; Assoc. Prof. of Elect. Engrng., Syracuse Univ., 1957-61; Prof. of Elec. Engrng., ibid., 1961—; Consulting Engr., IBM Data Systems Div., Poughkeepsie, N. Y., 1962. Mem.: Sr. Mem., Inst. of Radio Engrs., Mem. Prof. Gr. on Circuit Theory and Prof. Gr. on Edn.; Sigma Xi; Am. Soc. for Engrng. Edn.; Am. Assn. Univ. Prof.; ACLU. Author: Network Synthesis, (translated into Russian), 1961; Fundamentals of Circuit Theory, 1961. Co-Author: Linear Network Analysis, 1959. Contbr. to: Communication and Electronics; Trans. IRE on Circuit Theory; Trans. IRE on Edn.; Proc. Internatl. Conf. on Network Theory, Prague, 1961; Proc. Sagamore Conf.; Proc. Internatl. Conf. on Elec. Engrng. Edn.; Proc. Natl. Electronics Conf. Serv. Rec.: USAAF, 1943-46. Areas of Rsch.: Passive and Active Network Synthesis.

BALAGOT, Reuben C., (M.D.), Prof. of Anesthesiol., Univ. of Ill., Coll. of Med., Chicago, Ill. Home Add.: 4264 N. Hazel, Chicago 13, Ill. ANESTHESIOLOGY. b. Manila, Philippines, July 28, 1920. s. Pedro G. and Ambrosia (Castillo) B. Edn.: B.S., Univ. of Philippines, 1941; M.D., Coll. of Med., ibid., 1944; Specialty Trng. in Anesthesiology, Rsch. Hosp., Univ. of Ill., Coll. of Med., 1949, 1950. m. Lourdes Ramirez, July 10, 1946. c.: Joseph; Edgar; Victoria; Ophelia Exp.: Quarantine Officer, Bureau of Quarantine, Philippines, 1946-48; Resident in Anesthesiol., Univ. of Ill., 1949-50; Research Fellow in Anesthesiology, ibid., 1950-52; Clinical Instr., Anesthesiology, ibid., 1952-54; Asst. Prof. and Asst. Head, Dept. of Anesthesiology, ibid., 1954-56; Assoc. Prof., Anesthesiology, ibid., 1956-60; Prof., ibid., 1960—. Hon. Pos.: Chmn., Dept. Anesthesiology, Grant Hosp., Chicago Survey Exam., Am. Bd. Anesthesiol., 1957; Jr. Exam., Am. Coll. Anesthesiol., 1957, '58; Dipl., Natl. Bd. Med. Exam. Mem.: N. Y. Acad. of Scis.; Am. Assn. Adv. Sci.; Ill. Soc. for Med. Rsch.; A.M.A.; Am. Soc. Anesthesiolst.; A.A.U.P.; Sigma Xi. Contbrng. Author: Mgmt. of Pain in Cancer, 1956; Surg. Physiology, 1957; Current Therapy, 1957; A.M.A. Scientific Exhibits, 1956. Contbr. to: A.M.A. Jour.; Anesthesiol.; Current Researches in Anesthesia and Analgesia; Canadian Jour. of Anesthesiology; Jour. Am. Dent. Assn.; Surg. Clinics North Am. War Record: U.S.A.R., World War II. Gen. Int.: Award, Cert. of Merit, A.M.A., 1956 for Exhibits on Anti-Foam Agents in Pulmonary Edema; Fellow, Am. Coll. of Anesthesiologist; Diplomate, Am. Bd. of Anesthesiologists. Areas of Rsch.: Pharmacology and Physiology of Anesthesia.



BALASSA, Leslie Ladislaus (Ph.D.), Pres., Barrington Industs., Inc., Providence, R. I. Home Add.: Creighton Lane, Scarborough, N. Y. CHEMISTRY; TEXTILE WET PROCESSING; PAINTS; PRINTING INKS; CELLULOSE; STARCH; CHEMICAL ENGINEERING, DESIGN OF CHEMICAL PROCESS EQUIPMENT. b. Bacsfoldvar, Yugoslavia, Sept. 6, 1903. s. Bela and Bella (Gross-Gyoery) B. Edn.: Ph.D., Univ. of Vienna, Austria, 1926. m. Alice M. Hussey, Dec. 1, 1933. c.: John P. Exp.: Chemist, Am. Smelting and Refining, San Luis Potosi, 1929-30; Rsch. Chem., E. I. du Pont de Nemours, Wilmington, Del., 1930-44; Rsch. Dir., U. S. Finishing Co., Providence, R. I., 1944-49; Exec. Vice-Pres., Aula Chems., Inc., Elizabeth, N. J., 1949-57; Mgr., Textile Pigm. Devel. Labs., Geigy Chem. Corp., Ardsley, N. Y., 1957-60; Consulting Chemist, Madison, N. J., 1949—; Pres., Barrington Indust., Inc., 1954—. Mem.: Am. Chem. Soc.; A. I. Ch.; Text. Rsch. Instit.; A.A.T.C.C.; Assn. of Consulting Chemists and Chem. Engrs.; Am. Assn. for the Adv. of Sci.; Chemist's Club. Author-Contbrng.: Man-Made Textile Encyclopedia, 1959. Contbr. to: Zeitschrift fuer Allgemeine und Inorganische Chemie; Ia. St. Coll. Jour. of Sci. Areas of Rsch.: Cellulose; Starch; Textile Finishing and Printing; Paints; Pigments; Emulsions; Surfactants; Drying Oils; Resins; Grinding and Homogenizing.

BALBINDER, Elias (Ph.D.), Postdoctoral Rsch. Fellow, Am. Cancer Soc., Dept. of Biol., Univ. of Calif., La Jolla, Calif. Home Add.: 706 Agate St., Pacific Beach, Calif. GENETICS OF BACTERIA. b. Warsaw, Poland, January 22, 1926. s. Aaron Lejba and Chaja Ressa (Kratka) B. Edn.: B.S., Univ. of Mich., 1949; Ph.D., Indiana Univ., 1957. m. Evelyn Weissman, Apr. 10, 1955. c.: Rachel Naomi; Sara Elizabeth. Exp.: Tchng. Asst., Dept. Zool., Ind. Univ., 1951-52; Rsch. Asst., ibid., 1952; Rsch. Assoc., ibid., 1955-56; Rsch. Assoc., Univ. of Penn., 1956-57; Instr., ibid., 1957; Rsch. Assoc., Carnegie Inst., Cold Spring Harbor, N. Y., 1957-60; Rsch. Assoc., Univ. of Calif., 1960. Mem.: Sigma Xi; Am. Assn. Adv. Sci.; Soc. of Gen. Microbiology; Genetics Soc. of Am.; Am. Soc. for Microbiol. Contbr. to: Genetics; Jour. for Gen. Microbiology; Nature. Areas of Rsch.: Genetic Control of Kappa in Paramecium; Antigen Transformation in Paramecium; Mutation and Recombination in Salmonella; Gene-Enzyme Relations.

BALDWIN, Ira Lawrence (Ph.D.), Special Asst. to Pres., Prof. of Bacteriol., Univ. of Wis., Madison, Wis. Home Add.: 1111 Dartmouth Rd., Madison, Wis. INDUSTRIAL AND SOIL MICROBIOLOGY. b. Oxford, Ind., Aug. 20, 1895. s. Thomas Atkinson and Eva (Mock) B. Edn.: B.S., Purdue Univ., 1919; M.S., ibid., 1921; Ph.D., Univ. of Wis., 1926. Hon. Deg.: D.Sc., Purdue Univ., 1945. m. Mary Eliza Lesh, Dec. 29, 1920 (dec.). c.: Helen B. Guptill; Frances Mary (dec.); Robert Lesh. m. (2) Ineva Rielly Meyer, Apr. 17, 1954. Exp.: Instr. and Asst. Prof. of Bacteriol., Purdue Univ., 1919-25; Agri. Expt. Sta. Serv., ibid., 1926; Asst. Prof., Univ. of Wis., 1927-29; Assoc. Prof., ibid., 1929-32; Asst. Dean, Coll. of Agric., ibid., 1932-42; Chmn., Dept. of Agric. Bacteriol., ibid., 1941-42; Dean, Grad. Schl., ibid., 1944-45; Dean, Coll. of Agric., ibid., 1945-48; Vice Pres., Acad. Affairs, ibid., 1948-58; Special Asst. to Pres., ibid., 1958 . Hon. Pos.: Pres., Soc. of Am. Bacteriologists; Chmn., Bd. of Govs., Am. Acad. of Microbiol. Mem.: Am. Soc. Agronomy; Wis. Acad. of Sci.; Ind. Acad. of Sci.; A.A.A.S.; Am. Phytopathol. Soc.; Am. Soc. Plant Physiol.; Sigma Xi; Alpha Zeta; Phi Lambda Upsilon; Phi Sigma. Serv. Rec.: U. S. Army, W.W. I. Areas of Rsch.: Industrial and Soil Microbiol.

BALDWIN, Richard William (Mr.), Asst. Farm Crops, Ore. St. Univ., Corvallis, Ore. Home Add.: 1032 N. 9th St., Corvallis, Ore. CHEMICAL WEED CONTROL AND PLANT PHYSIOLOGY. b. Kelowna, B. C., Can., Dec. 29, 1933. s. C. W. A. (dec.) and Mary W. Tempest (Spinks) B. Edn.: B.S.A., Univ. of B. C., 1956; M.S.A., ibid. 1960. m. Dorothy M. Hobbs, Aug. 22, 1958. c.: Peter R.; Jillane W.; Robert B. Exp.: Grad. Asst., Univ. of B. C., Vancouver, Can., 1959-60; Asst. in Farm Crops, Ore. St. Univ.,

1960—. Mem.: Weed Soc. of Am.; Am. Assn. for the Adv. of Sci.; Phi Sigma; Benton Lions Club. Contbr. to: Western Weed Control Conf. Areas of Rsch.: Weed Control and Plant Psysiology.

BALDWIN, Richard Donald (M.D.), Sr. Rsch. Investigator (Medical), Colgate Palmolive Biol. Rsch. Lab., New Brunswick, N. J. Home Add.: One Montgomery Rd., Montgomery Twp., N. J. BIO-MEDICAL RESEARCH. b. Montclair, N. J., May 24, 1931. s. Harry D. and Isabella (Shortreed) B. Edn.: B.S., Rutgers Coll., 1953; M.D., N. Y. Med. Coll., 1957. m. Barbara L. Hose, July 10, 1954. c.: Susan; Joyce; Laura; Richard, Jr. Exp.: Rsch. Co-Ord., Colgate Palmolive, 1962—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Med. Assn.; Beta Beta Beta; Mensa. Areas of Rsch.: Physical and Chemical Description of the Property of Vitality; Energy and Biologic Systems; Biological "Equations of State"; The Physical State of Intracellular Material; Abstract Systems in Biology; Instrumentation.

BALL, Roger Allen (D.V.M.), Rsch. Fellow, Univ. of Minn., Coll. of Vet. Med., St. Paul, Minn. Home Add.: 2401 Chilcombe Ave., St. Paul, Minn. COMPARATIVE PATHOLOGY. b. Maxwell, Iowa, Oct. 15, 1925. s. Alfred and Crescy (Downing) B. Edn.: D.-V.M., Iowa State Univ., 1954. Exp.: Vet. Pathology, State of Calif., 1954-57; Rsch. Fellow, Univ. of Minn., 1957—. Mem.: Am. Assn. for Adv. of Sci.; N. Y. Acad. of Sci.; Phi Zeta; Am. Vet. Med. Assn.; Assn. Avian Pathologists; U. S. Livestock Sanitary Assn.; Gamma Sigma Delta. Contbr. to: Jour., Am. Vet. Med. Assn.; Fed. Proc.; Proc. Soc. Exptl. Biol. and Med. Service Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Avian Pathology; Vascular Diseases of Animals; Exptl. Vascular Disease.

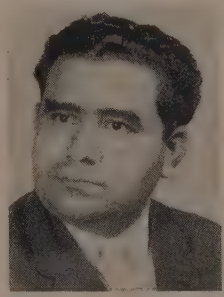
BALLOU, Donald Henry (Ph.D.), Prof. of Math., Middlebury Coll., 27 Weybridge St., Middlebury, Vt. MATHEMATICS. b. Chester Vt., Mar. 28, 1908. s. Henry L. and Carrie (Hubbard) B. Edn.: B.A., Yale, 1928; M.A., Harvard, 1931; Ph.D., ibid., 1934. m. Dorothy Pollard of Baltimore, Vt., Sept. 14, 1933. d. Mr. and Mrs. Walter E. Pollard. c.: Donald Pollard. Exp.: Lawrenceville Schl., Lawrenceville, N. J., 1928-29; Hampton Inst., Hampton, Va., 1929-30; Instr., Harvard Univ., 1933-34; Instr., Georgia Inst. of Technol., 1934-35; Asst. Prof., 1935-42; Asst. Prof., Middlebury Coll., 1942-47; Assoc. Prof., ibid., 1947-56; Prof., ibid., 1956—; Hd. of Dept., 1954—; Visiting Assoc. Prof. in Program of Internships in Genl. Edn., Yale Univ., 1951-52. Mem.: Am. Math. Society; Math. Assn. of Am.; Phi Beta Kappa. Co-author: Plane and Spherical Trigonometry; Analytic Geometry. Ph.D. Dissertation: A Class of Completely Monotonic Functions. Listed in: Am. Men of Sci.; W. W. in Am. Edn.; W. W. in the East.

BAMFORD, Sophia Boyd (M.D.), Cytologist, New England Ctr. Hosp., 171 Harrison Ave., Boston Mass. Home Add.: 6 Appleby Rd., Wellesley, Mass. EXFOLIATIVE CYTOLOGY, TISSUE CULTURE, HUMAN GENETICS. b. Tignall, Ga., Jan. 7, 1913. d. Emory Fortson and Rosa Lee (Wright) Boyd. Edn.: B.S., Univ. of Ga., 1932; M.S., ibid., 1933; M.D., Tufts Univ. Schl. of Med., 1961. m. Thomas Leslie Bamford, 1936. c,.: Sarah Sophia. Exp.: Biol. Instr., Middle Ga. Coll., 1933-34; Head, Sci. Dept., Grenada Coll. for Women, 1934-36; Cytologist, Med. Coll. of Ga., 1947-52; Asst. Obs. Gyn., 1958-61; Cytologist, New England Center Hosp., 1953—; Instr., Obs. Gyn., Tufts Univ. Schl. of Med., 1961—. Mem.: Am. Soc. of Cytology; Mass. Med. Soc.; Suffolk Co. Med. Soc.; Am. Med. Assn.; Am. Med. Woman's Assn.; Psi Chi; Phi Mu; Coll. Club of Boston. Author: Atlas of In Situ Cytology, 1962. Contbr. to: Jour. of A.M.A.; Inter-Soc. Cytology Coun. Proc.; Jour. of Urology; Jour. of Ga. Med. Soc. Areas of Rsch.: Exfoliative Cytology; Tissue Culture (Cancer); Human Genetics (Chromosomes).

BALSLEY, Howard Lloyd (Ph.D.), Hd. Dept. of Bus. and Econ. Rsch. and Prof. of Bus. Statistics, Schl. of Bus. Admin., La. Poly. Inst. Ruston, La. Home Add.: Robinette Dr., Ruston, La. ECONOMICS—STATISTICS. b. Chicago, Ill., Dec. 3, 1913. s. Elmer L. and Katie (McGlashing) B. Edn.: A.B., Ind. Univ., 1946; M.A., ibid., 1947; Ph.D., ibid., 1950. m. Irol Whitmore, Aug. 24, 1947. Exp.: Tchng. Fellow, Ind. Univ., 1946-47; Jr. Instr., Johns Hopkins Univ., 1947-48; Asst. Prof., Econ. Univ. of Utah, 1949-50; Dir., Schl. of Bus., Russell Sage Coll., 1950-52; Assoc. Prof., Econ., Washington and Lee Univ., 1952-54; Head of Dept. of Bus. and Econ. Rsch., Prof. of Bus. Statistics, La. Poly. Inst., 1954—. Mem.: A.E.A.; A.F.A.; A.S.A.; A.A.U.P.; L.T.A.; Phi Beta Kappa; Delta Sigma Pi. Co-author: Principles of Economics, 1953. Author: Readings in Economic Doctrines (2 vols.), 1961. Contbr. to: Ind. Mag. of Hist.; Western Pol. Quar. War Record: U. S. A.A.F., 1943-46. Areas of Rsch.: Statistics; Public Finance; General Economics.

BANASICK, John A., P. O. No. 1602, Balboa, Canal Zone. HIGH SCHOOL SCIENCE (BIOLOGY AND GENERAL SCIENCE). b. Scottdale, Pa., Feb. 27, 1928. s. Michael L. and Josephine (Pokabla) B. Edn.: B.S., W. Va. Univ., 1953; M.A., ibid., 1955; Grad. Work; Oak Ridge, Harvard, Yale, C.C.N.Y. Air Univ. (Mil.); Air Intell. Schl., Tex. Exp.: Sci. Tchr., East Huntingdon H. S., Alverton, Pa., 1955-57; Sci. Tchr., Sou. Regional H. S., Manahawkin, N. J., 1957-60; Tchr., Balboa H. S., Canal Zone, 1961—. Hon. Pos.: Pres., E. Huntington H. S. P.T.A., 1957; Chmn., Ocean Co. Sci. Workshop, S.R.H.S., 1958; Mem., Sci. Fair Comm., N. J. S.T.A., 1957-60. Mem.: Natl. Sci. Tchrs. Assn.; Am. Assn. Adv. Sci.; Am. Fed. of Tchr. Affl. AFL-CIO (Balboa Local No. 227). Service Rec.: U.S.A.F., 1946-49; U.S.A.F.R. (Captain), 1949-61. Gen. Int.: Outstanding Instr., Phila. Reserve Center, Pa., 1960; Winner in NSTA's Star Award, 1956 and 1960. Areas of Rsch.: The History of the Sciences.

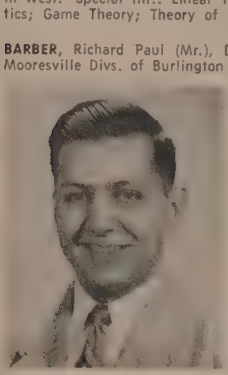
BANERJEE, Birendra Chandra (Ph.D.), Rsch. Assoc., Coll. of Mineral Industries, Pa. State Univ., University Park, Pa. Home Add.: 63 Subas Nagar Rd., Dumdum Cantonment, Calcutta 28, Ind. STUDIES OF STRUCTURE OF THIN FILMS BY ELECTRON DIFFRACTION AND ELECTRON MICROSCOPY; PHYSICO-CHEMICAL STUDIES OF SUBSTANCES IN THE SOLID AS WELL AS DISSOLVED STATE; ELECTRONIC INSTRUMENTATION. b. Calcutta, India, Feb. 1926. s. Girindra Chandra and Arun Banerjee. Edn.: B.Sc., Calcutta Univ., 1945; M.Sc., ibid., 1947; Ph.D., ibid., 1953. m. Hena Rani, May 12, 1954. c.: Sonali; Barnali. Exp.: Sr. Scientific Officer, Coun. of Scientific & Industrial Rsch., Old Mill Rd., New Delhi, India, 1954-59; Rsch. Assoc., Coll. of Mineral Industries, Pa. State Univ., 1959—. Mem.: Sigma Xi; I.A.C.S., Calcutta. Contbr. to: Jour. Electro-Chem. Soc.; Trans. of the Faraday Soc., London; Jour. of C.S.I.R., India; Jour. of Indian Chem. Soc.; Jour. of Applied Physics. Areas of Rsch.: Studies on Structures of Thin Films of Carbon. Electro-deposited Metals, Metal Powders, Semiconductors and Interaction of Metals with Carbon using X-Rays, Electron diffraction and Electron Microscopy and Infra red techniques. Physico-Chemical studies of substances in solid state as well as in solution.



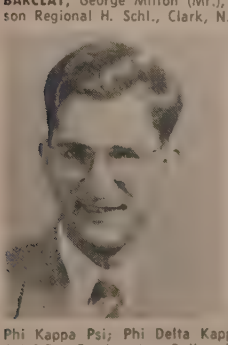
BANTA, James E. (M.D.), Senior Surgeon, U.S.P.H.S., Dept. H. E. & W., Wash. 25, D. C. Home Add.: 2107 Southwood Dr., Columbia, Mo. EPIDEMIOLOGIST, PHYSICIAN. b. Tucumcari, N. Mex., July 1, 1927. s. James E. and Edna May (Murnahan) B. Edn.: M.D., Marquette Univ., 1950; M.P.H., Johns Hopkins Univ., 1954. m. Dorothy Louise Hauck, June, 1950. c.: Susan Jennifer; Wendy Katherine. Exp.: U. S. Pub. Health Service, H. E. and W., Washington, D. C., 1961—. Mem.: N. Y. Acad. of Sci.; Am. Med. Assn.; Assn. Military Surgeons in U. S., Fellow; Am. Coll. of Preventive Medicine; Am. Public Health Assn.; Am. Assn. Adv. Sci.; Phi Sigma; Alpha Kappa Kappa. Contbr. to: Jour. Lab. and Clin. Med.; Am. Jour. of Hygiene; The Military Surgeon. Serv. Rec.: U. S. Navy, 1950-60; U. S. Public Health Service, Medical Officer, 1960—. Areas of Rsch.: Research in Micro-

biology and Epidemiologic Studies (Human Population Studies) of Acute Infectious and Chronic Disease (Especially Coronary Artery Disease).

BARANKIN, Edward William (Ph.D.), Prof. of Statistics, Univ. of Calif., Berkeley, Calif. Home Add.: 20 Highland Blvd., Berkeley 7, Calif. PURE AND APPLIED MATH., THEORY OF BEHAVIOR. b. Dec. 18, 1920, Phila., Pa. s. Myer and Esther (Grossman) B. Edn.: A.B., Princeton Univ., 1941; M.A., Univ. of Calif., 1942; Ph.D., ibid., 1946. m. Claire Chertcoff of Phila., Pa., June 22, 1941. d. Joseph and Esther Chertcoff. c.: Joseph Paul; Barry Alexander. Exp.: Asst. Physicist, Natl. Defense Rsch. Coun., Palmer Phys. Lab., Princeton, N. J., summer, 1941; Tchng. Asst., Math., Univ. of Calif., Berkeley, 1941-42; Physicist, Manhattan Project, Berkeley, Calif., and Oak Ridge, Tenn., 1942-45; Instr., Engr., Sci. and Mgt., War Trng. Council, Berk. and San Francisco; Rsch. Asst., Statistical Lab., Dept. of Math., Univ. of Calif., 1945; Tchng. Assoc. in Math., 1945-46; Asst. to Prof., Hermann Weyl. Inst. for Advanced Study, Princeton, 1946-47; Instr. in Math., Univ. of Calif., Berkeley, 1947-48; Asst. Prof., Math., 1948-52; Assoc. Prof., Math., 1952-55; Consultant to U.S.A.F. and Natl. Bur. of Standards, Wash., D. C. and Los Angeles, Calif., Summer, 1950; Consultant, RAND Corp., Santa Monica, 1951-52; Consultant, Logistics, Statistics Branches, Office of Naval Rsch., Summer, 1952, '53, to present; Rsch. Mathematician, Inst. for Numerical Analysis, Natl. Bur. of Standards, Los Angeles (on leave from Berkeley), 1952-53; Assoc. Prof., Statistics, 1955-59; Prof. Statistics, ibid., 1959—; Editorial Bd., "Management Science," 1955—; Statistical Consultant, Arthur D. Little, Inc., 1956—; Math. Consultant, Bell Telephone Labs., Inc., Summer, 1956; Guggenheim Fellow and Visit. Prof., Institut Henri Poincare, Universite de Paris, 1956-57; Professor of Statistics, 1959; Fulbright Research Scholar, Kyoto Univ., Japan, 1962-63. Mem.: Phi Beta Kappa; Sigma Xi; A.M.S.; Inst. of Math. Stat.; Econ. Soc.; Inst. of Mgmt. Scis. Author: Quantitative theory of human behavior; many papers. Ph.D. Dissertation: On Characteristic Values of Linear Transformations. War Rec.: See above. Hobbies: Tennis; Reading. Listed in: A.M.S.; W. W. in West. Special Int.: Linear Transformations; Probability; Statistics; Game Theory; Theory of Behavior.

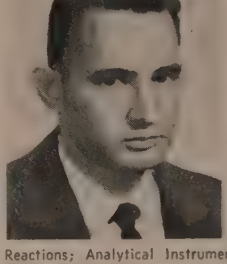


BARBER, Richard Paul (Mr.), Dir. of Chem. Rsch., Cramerton & Mooresville Divs. of Burlington Industries, Mooreville, N. C. Home Add.: 240 Glenwood Rd., Mooresville, N. C. ORGANIC CHEMISTRY, CELLULOSE MODIFICATION. b. New Bedford, Mass., April 12, 1928. s. Charles J. and Margaret C. (George B. Edn.: B.S., Bradford Durfee Tech. Inst., 1951; M.S., Inst. of Textile Technol., 1953; M.S., Coll. of Forestry, St. Univ. of N. Y., 1957. m. Martha Borden May, April 2, 1955. c.: Richard Paul, Jr. Exp.: Rsch. Asst., Inst. of Textile Technol., Charlottesville, Va., 1953-55; Rsch. Asst., Coll. of Forestry, Syracuse, N. Y., 1956-57; Rsch. Engr., Syracuse Univ., Rsch. Inst., 1958-59; Dir., Chem. Rsch., Cramerton & Mooresville Divs. of Burlington Industries, Mooresville, N. C., 1960—. Mem.: Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Epsilon Phi Pi; A.A.A.S.; A.A.-T.C.C.; A.C.S. Contbr. to: Textile Rsch. Jour.; Tappi; A.I.M.E. Areas of Rsch.: Chemical Modifications of Cellulose Fibers (Cotton).



BARCLAY, George Milton (Mr.), Sci. Co-Ordinator, Arthur L. Johnson Regional H. Schl., Clark, N. J. Home Add.: 211 Farragut Rd., N. Plainfield, N. J. BIOLOGY. b. Pittsburgh, Pa., Feb. 14, 1924. s. Milton R. and Grace (Shaw) B. Edn.: A.B., Gettysburg Coll., 1948; M.A., Columbia Univ., 1950. m. Helen Durstewitz, 1950. c.: Gwen; Beth; Ruth; George. Exp.: Gen. Sci. and Health Tchr., Woodmere H. Schl., Woodmere, L. I., N. Y., 1950-51; Gen. Sci. and Biol. Tchr., N. Plainfield H. Schl., N. Plainfield, N. J., 1951-57; Tchr., Biol., Jonathan Dayton Regional H. Schl., Springfield, N. J., 1957-59; Biol. Tchr., and Sci. Co-Ord., Arthur L. Johnson Reg. H. Schl., Clark, N. J., 1959—. Hon. Pos.: Mem. of Technical Staff, Bell Telephone Labs., Summer, 1959. Mem.: Natl Assn. of Biol. Tchrs.; N.S.T.A.; N.J.S.T.A.; A.A.A.S.; N.J.E.A.; Phi Kappa Psi; Phi Delta Kappa; Beta Beta Beta; F. & A. M.; A.A.S.R. Contbr. to: Bull. of N.J.S.T.A. Service Rec.: U. S. Army Air Force, 1943-46. Gen. Int.: Outstanding Tchr. of the Year, 1956, Awarded by Rutgers Univ. Engrng. Soc. Areas of Rsch.: Dir. N. Plainfield H. S. Science Fair; Union Co. Regional H. S. and Central N. J. Science Fairs.

BARD, Allen Joseph (Ph.D.), Asst. Prof. of Chem., The Univ. of Tex., Austin, Tex. Home Add.: 203 E. 33rd St., Austin, Te



ANALYTICAL CHEMISTRY; ELE TROCHEMISTRY. b. N. Y., De 18, 1933. s. John J. and Do (kosenberg) B. Edn.: B.S., T City Coll. of N. Y., 1955; A.M Harvard Univ., 1956; Ph.D., ibic 1958. m. Frances Joan Segal, Jun 1957. c.: Edward David; Sa Lynn. Exp.: Instr., Univ. of Tex 1958-60; Asst. Prof., ibid., 196 —. Mem.: Am. Chem. Soc.; Ar Assn. Adv. Sci.; Assn. of Ha vard Chemists; Phi Beta Kapp Sigma Pi Alpha. Contbr. t Analy. Chem.; Analytica Chimi Acta; Jour. of Electroanal Chem.; Jour. of Phys. Chem Jour. of the Am. Chem. Soc. Ge Int.: Listed in Am. Men of Sc Areas of Rsch.: Electroanalytic Chemistry; Kinetics of Electro Reactions; Analytical Instrumentation; Polarography; Coulometr Chronopotentiometry.

BARDIS, Panos Demetrios (Ph.D.), Assoc. Prof. of Sociol., T Univ. of Toledo, Toledo 6, Ohio. Home Add.: 2833 Goddard Ro Toledo 6, Ohio. HISTORY MATHEMATICS, SOCIOLOGY, ST TISTICS AND PSYCHOLOGY. Lefkohorion, Arcadia, Greece, Sep 24, 1924. s. Demetrios Geor and Kali Chris (Christopoulos) Edn.: B.A., magna cu laude Bethany Coll., 195 M.A., Notre Dame Univ., 195 Ph.D., Purdue Univ., 1955. Carol Elaine Kingery, June 1 1953. Exp.: Grad. Tchng. Asst Purdue Univ., Lafayette, Ind 1954-55; Instr., Sociol., Albi Coll., Albion, Mich., 1955-5 Asst. Prof. of Sociol., ibid., 195 58; Assoc. Prof. of Sociol., ibic 1958-59; Acting Hd., Sociol. Dept ibid., 1958-59; Assoc. Prof. Sociol., The Univ. of Toledo, 195 —; Ed., Soc. Sci., Toledo, Ohi

1959. Mem.: A.A.U.P.; Am. Sociol. Assn., Fellow; Natl. Coun. Family Relations; Ohio Valley Sociol. Soc.; Natl. Acad. of Econ and Pol. Sci., Bd. of Dirs., 1959—; Am. Assn. Adv. Sci., Fellow Alpha Kappa Delta; Pi Gamma Mu. Author: Ivan and Artemi 1957. Contbr. to: Schl. Sci. and Maths.; Rural Sociol.; Socio and Social Rsch.; Am. Sociol. Rev.; Sociol. Bull.; Marriage an Family Living; The Am. Editor; Ednl. Leadership; Jour. of Edn Sociol. Areas of Rsch.: History of Mathematics; Statistical Tec niques for the Measurement of Attitudes.

BARDSLEY, Charles Edward (Ph.D.), Assoc. Prof. of Agron. an Soils, Clemson Coll., Clemson, S. C. Home Add.: Forest Hil Pendleton, S. C. AGRONOM AND SOIL SCIENCE. b. Newpor R. I., Apr. 23, 1921. s. C. E dec., and Lila B. (Bardsley, dec B. Edn.: B.S., Univ. of R. I 1948; M.S., Miss. St. Univ., 195 Ph.D., ibid., 1959. m. Virgin Owen, Nov. 20, 1946. c.: Charl Edward, Jr. Exp.: Soil Conservat Soil Conservn. Serv., Clarksdal Miss., 1950-52; Soil Scientis Agric. Rsch. Serv., St. Coll., Miss 1952-61; Assoc. Prof. of Agron Assoc. Agronomist, Clemson Col 1961—. Mem.: Am. Soc. Agron.; Soil Sci. Soc. of Am Weed Soc. of Am. Contbr. t Agron. Jour.; Soil Sci. Soc. of Am Procs.; Agron.; Crops and Soil Serv. Rec.: U. S. Army Air Corp 1942-45. Areas of Rsch.: Sulfi

in Soils and Plants; Nitrogen Utilization by Crops; Herbicide R actions in Soils and Plants.

BARGER, Gerald Lee (Ph.D.), Dir., Natl. Weather Recs. Ctr., Ash ville, N. C. Home Add.: 17 Robinhood Rd., Asheville, N. AGRICULTURAL CLIMATOLOGY. b. Weldon, Ia., Feb. 21, 1916. Claude Lee and Hattie Viett (Mitchell) B. Edn.: A.B., Simps Coll., 1938; M.S., Iowa Sta. Univ., 1942; Ph.D., ibid., 194 M. Pub. Adm., Harvard Univ., 1961. m. Margery Louise Hitze Sept. 4, 1946. c.: Patricia Ann; Claudia Jean; Janet Elain Jeffrey Lee. Exp.: Agent, Soil Conservation Serv., USDA, Ame Ia., 1940-42; Central Area Climatol., U. S. Weather Bureau, ibid 1948-58; Deputy Dir., Natl. Weather Recs. Ctr., Asheville, N. C 1958-61; Dir., ibid., 1961—. Hon. Pos.: Past Chmn., Agric Meteorol. Comm. of the Am. Meteorol. Soc.; Councilor, Am Meteorol. Soc. Mem.: Am. Meteorol. Soc.; Am. Statl. Assn Am. Soc. of Agron.; Am. Assn. Adv. Sci., Fellow; Internat Soc. of Biometeorol.; Lambda Chi Alpha; Phi Kappa Phi; Gamm Sigma Delta; Epsilon Sigma; Sigma Xi. Contbrng. Author: Iow Water Resources, 1956; Co-Author, Bibliography of Agriculture Meteorology, 1962; Author: Weather Planning, 1959. Contbr. t Agron. Jour.; Iowa Sta. Coll. Rsch. Bull. Serv. Rec.: U.

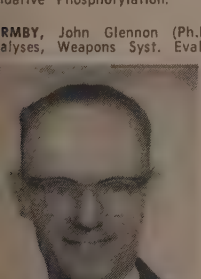
ny Air Force, 1942-46. Gen. Int.: One of the Founders of Current Series of Agricultural Meteorology Conferences. eas of Rsch.: Research in interrelations Among Soil Moisture; apotranspiration; Precipitation Probability; Plant Development.

RISH, Julian I. (M.D.), Psychiatrist, 11 Poplar Rd., Larchmont, Y. PSYCHIATRY AND PSYCHOANALYSIS. b. Sault Ste. Marie, ch., March 12, 1917. s. Max and Nancy (Barish) B. Edn.: A.B., iv. of Mich., 1938; M.D., ibid., 1941; M.S., ibid., 1948; Cer- cate in Psychoanalytic Medicine, Columbia Univ. Psychoanalytic nic, 1955. m. Judith Sophian, June 7, 1941. c.: Richard; ricia L. Exp.: Interne, Bridgeport Hosp., Bridgeport, Conn., 41-42; Resident in Psychiatry, Neuropsychiatric Inst., Univ. sp., Ann Arbor, Mich., 1946-48; Fellow in Psychiatry, Payne itney Clin., V.A. Mental Hygiene Clin., N.Y.C., 1948-49; Asst. d Instr. in Psychiatry, Cornell Univ. Med. Coll., 1948-56; Pre- tor in Psychiatry, Columbia Univ. Psychoanalytic Clin., State sp. Teaching Program, 1955-57; Asst. Prof. of Psychiatry, te Univ. of N. Y., 1956-58; Senior Director, Psychiatric eatment Ctr., N.Y.C., 1961—; Psychiatrist, 1946—. Mem.: Am. ychiatric Assn.; Am. and Internatl. Psychoanalytic Assns.; Am. of Psychiatry; Assn. for Psychoanalytic Med.; Am., N. Y. te, and Westchester County Med. Socs.; A.A.A.S. Contbr. to: ychiatric Quarterly. Service Rec.: U. S. Army.

RKULIS, Sam Steven (M.D.), Dir. of Microbiol. Rsch., CIBA arml. Co., 556 Morris Ave., Summit, N. J. Home Add.: 24 Clark St., Chatham, N. J. MI-

CROBIOLOGY AND BIOCHEMISTRY. b. Geneva, Ill., May 19, 1925. s. Steven E. and Georgia (Jiokaris) B. Edn.: B.S., Univ. of Chicago, 1944; M.D., ibid., 1947. m. Ingrid Lid, June 14, 1947. c.: Steven; Becky; Eric; Nina. Exp.: Instr., Western Res. Univ., Cleveland, Ohio, 1951-53; Asst. Prof. of Biochem., Univ. of Ill., Chicago, Ill., 1953-58; Rsch. Assoc., Psychiatry, ibid., 1958-59; Dir. of Microbiol. Rsch., CIBA Pharml. Co., Summit, N. J., 1959—. Hon. Pos.: Assoc. Mem., Streptococcal Comm., Armed Forces Epidemiology Board, 1954-58. Mem.: Sigma Xi; Am. Soc. for Microbiol.; N. Y. Acad. of Scis.; Alpha Kappa Kappa; Democratic Club of Chatham, J. Contbr. to: Jour. Bacteriol.; Jour. of Biol. Chem.; Bio- imica and Biophysica Acta; Annals of the N. Y. Acad. of Scis. rvice Rec.: U. S. Army, 1943-46. Gen. Int.: Theobald Smith ard, N. J. Branch of the Am. Soc. for Microbiol., 1961. Areas Rsch.: Biochemistry and Immunology of Group A Streptococcal ll Walls; Biochemical Pathways in E. Coli Grown on Two rbon Compounds; Amino Acid Synthesis in Perfused Cat Brain; idative Phosphorylation.

RMBY, John Glennon (Ph.D.), Engrng. Analyst, Instit. Def. alyses, Weapons Syst. Evaluation Group, 1710 H St., N.W., Wash., D. C. Home Add.: 5832 Danny's Pl., Alexandria, Va. AEROSPACE ENGINEERING AND MANAGEMENT. b. Lawrence, Mass., Oct. 22, 1922. s. John N. and Madge (Glennon) B. Edn.: A.B., Middlebury Coll., 1944; S.B., Mass. Inst. Tech., 1944; A.M., Geo. Wash. Univ., 1951; Ph.D., Am. Univ., 1957. m. Ellaveen Childress, 1955. c.: John Scott; Grant Childress. Exp.: Aero. Rsch. Scientist, Natl. Aero. and Space Agency, Langley AFB, Va., 1944-48; Aero. Rsch. Engr., Dept. Navy, Bureau Weapons, Wash., D. C., 1948-59; Engrng. Analyst, Inst. Defense Anal., Wpns. Syst. Eval. Grp., Wash., D. C., 1959—. Hon. Pos.: Pres., Pentagon MIT Club. Mem.: Inst. Aero. Scis., Assoc. llow; Instit. Management Scis.; Am. Soc. Public Adminis- tion; Instit. of Radio Eng-PGEM; Am. Assn. for the Adv. Sci.; Alpha Sigma Phi; Am. Univ. Grad. Hon. Soc. Con- rng. Author: Study of the Effects of Sweep on Flutter of ntilever Wings. Contbr. to: Aerospace Engrng. Areas of Rsch.: search and Development Management; Guided Missile Develop- ent; Operations Analysis.



RNES, Ervin Henry (Ph.D.), Asst. Prof., Dept. of Botany and ant Pathol., Mich. St. Univ., E. Lansing, Mich. Home Add.: 3 Spartan Ave., E. Lansing, Mich. PLANT PATHOLOGY, WITH RTICULAR INTEREST IN THE NATURE OF PARASITISM. b. Kan- kee, Ill., June 3, 1932. s. Wilbur L. and Ruth E. (Soper) B. n.: B.S., Mich. St. Univ., 1953; M.S., Purdue Univ., 1957; .D., ibid., 1959. m. Theresa E. De Vries, June 25, 1960. p.: Asst. Prof., Mich. St. Univ., 1959—. Hon. Pos.: Mem. of e Am. Phytopathol. Soc. Comm. on Plant Disease Losses. Mem.: m. Phytopathol. Soc.; Sigma Xi; Am. Assn. for the Adv. of Sci.; m. Soc. of Photogramm.; Am. Instit. of Biol. Scis.; Am. Assn. Univ. Profs. Contbr. to: Phytopathol.; Jour. of Bacteriol.; nadian Jour. of Microbiol. Service Rec.: U. S. Army, 1954-56. reas of Rsch.: Host-Parasite Interactions; Small Fruit Disease.

BARNES, Edgar Charles (Mr.), Manager of Radiation Protection, Westinghouse Electric Corp., P. O. Box 355, Pgh 30, Pa. Home Add.: 124 Maple Ave., Pgh. 18, Pa. INDUSTRIAL HYGIENE, RADIATION PROTECTION, SAFETY ENGINEERING. b. Franklin, Pa., Apr. 6, 1909. s. Claude E. and Clara B. (Gamble) B. Edn.: B.S., Pa. St. Univ., 1930. m. Eleanor F. Sykes, Aug. 19, 1931. c.: Eleanor E.; Robert C. Exp.: Engr., Westinghouse Electric Corp., E. Pgh., Pa., 1930-32; Industrial Hygiene Engr., ibid., 1932-49; Mgr., Ind. Hygiene, Bettis Atomic Power Lab., ibid., 1949-60; Mgr., Radiation Protection, ibid., 1960—. Hon. Pos.: Natl. Comm. on Rad. Prot., Mem. Exec. Comm.; Am. Standards Assn., Chmn., Sect. Comm. N2-Nuclear Standards; Am. Soc. of Safety Engrs. Western Pa. Chapter, Chmn., 1953; Am. Industrial Hygiene Assn., Pres., 1949. Mem.: Am. Industrial Hygiene Assn.; Am. Soc. of Safety Engrs., Fellow; Health Physics Soc.; Am. Assn. for the Advancement of Sci., Fellow; Eta Kappa Nu; Tau Beta Pi; Edgewood Community Club, Pres., 1958-60. Contbr. to: Jour. of Indust. Hygiene and Toxicol.; Health Physics Jour.; Rad. Hygiene Handbook; Analytical Chem. Gen. Int.: Westinghouse Order of Merit, 1944. Areas of Rsch.: Radiation Protection in Nuclear Energy Facilities; Industrial Hygiene and Safety Engineering.

BARNES, Hubert Lloyd (Ph.D.), Asst. Prof. of Geochem., Dept. of Geophys. and Geochem., Pa. Sta. Univ., Univ. Park, Pa. Home Add.: 213 E. Mitchell Ave., Sta. Coll., Pa. GEOCHEMISTRY OF HYDROTHERMAL PROCESSES ESPECIALLY THE FORMATION OF ORE DEPOSITS. b. Chelsea, Mass., July 20, 1928. s. George Lloyd and Mary (MacPherson) B. Edn.: B.Sc., Mass. Inst. of Tech., 1950; Ph.D., Columbia Univ., 1958. m. Mary Westergaard, Sept., 1950. c.: Roy Malcolm; Catherine Patricia. Exp.: Geologist, Peru Mining Co., Hanover, N. M., 1950-52; Lectr., Columbia Univ., N. Y., 1952-54; Tchng. Asst., ibid., 1954-55; Fellow, Geophys. Lab., Wash., D. C., 1956-60; Asst. Prof., Pa. Sta. Univ., Univ. Park, Pa., 1960—. Hon. Pos.: Nathaniel Lord Britton Scholar, Columbia Univ Mem.: Geol. Soc. of Am.; Geochem. Soc.; Am. Assn. for the Adv. of Sci.; Geol. Soc. Washington; Sigma Xi; Author: Uranium Prospecting, 1956. Contbr. to: Am. Jour. of Sci.; Econ. Geol.; Carnegie Instit. of Wash. Year Books; Bull. of the Geol. Soc. of Am. Areas of Rsch.: Geology and Thermodynamics of Ore Formation; Phase Equilibria and Aqueous Reactions of Metallic Sulfides; and Geochemical Distribution of Base Metals in Rocks.

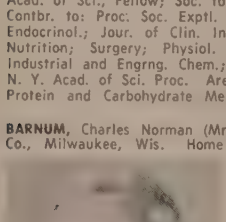
BARNES, Madeline Adele (Miss), Prof. of Biol., Amarillo Coll., Amarillo, Tex. Home Add.: 3625 Doris Dr., Amarillo, Tex. BIOLOGY, BOTANY, ZOOLOGY, BACTERIOLOGY. b. San Antonio, Tex., May 6, 1919. d. W. L. and Lydia Lee (O'Bannon) B. Edn.: B.S., B.A., Tex. Woman's Univ., 1941; M.A., N. Tex. St. Univ., 1944. Exp.: Tchr., W. Tex. St. Coll., 1942-46; Prof., Amarillo Coll., 1946—; Prof. of Biological Scis., Tex. Wesleyan Coll., Summer, 1955. Hon. Pos.: Chmn., Biol. Sect., Tex. Jr. Coll. Tchrs. Assn.; Chmn., Sci. Sect., Tex. St. Tchrs. Assn., Dist. IX. Mem.: Tri-Beta; Am. Assn. of Biol. Tchrs.; Am. Inst. of Biol. Scis.; Natl. Audubon Soc.; Tex. Panhandle Audubon Soc.; Sou. Assn. of Naturalists; Tex. Acad. of Sci.; Beta Sigma Phi; A.A.U.P.; A.A.U.W.; Y.W.C.A. Areas of Rsch.: Ecology.

BARNES, Melver Raymond (Mr.), Chemist, Dept. of Army, Dugway, Utah. Home Add.: P. O. Box 41, Dugway, Utah. CHEMISTRY. b. Rowan Co., N. C., Nov. 15, 1917. s. Oscar Lester and Sarah Albertine (Rowe) B. Edn.: A.B., Univ. of N. C., 1947. Exp.: Chemist, Pittsburgh Testing Labs., Greensboro, N. C., 1948-49; Chemist., N. C. State Highway and Public Works, Raleigh, N. C., 1949-51; Chemist, Dept. of the Army, Wash. Area, 1951-61; Chemist, Dept. of the Army, Dugway, Utah, 1961—. Mem.: Am. Ordnance Soc.; Am. Chem. Soc.; Am. Assn. Adv. Sci. Serv. Rec.: U. S. Army, 1942-45.

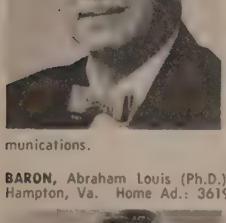
BARNES, Ralph Mosser (Ph.D.), Prof. Engrng. and Production management, Univ. of Calif., Los Angeles 24, Calif. Home Add.: 12304 Fifth Helena Dr., Los Angeles 49, Calif. INDUSTRIAL ENGINEERING, MECHANICAL ENGINEERING, PRODUCTION MANAGEMENT. b. Clifton Mills, W. Va., Oct. 17, 1900. s. John J. and Martha (Mosser) B. Edn.: B.S., W. Va. Univ., 1923; M.E., ibid., 1928; M.S., Cornell Univ., 1924; Ph.D., ibid., 1933. m. Mary Goodykoontz, June 13, 1931. c.: Elizabeth; Carolyn. Exp.: Asst. Engr., Bausch and Lomb Optical Co., Rochester, N. Y., 1924-25; Indusl. Engr., The Gleason Works, Rochester, N. Y., 1925-26; Instr., Univ. Ill., 1926-28; Prof., Indusl. Engrng., Dir. of Personnel, Dir. Iowa Mgt. Course, Univ. of Iowa, 1928-49; Prof., Engrng. and Production Mgt., Univ. Calif., 1949—. Fellow: Am. Soc. Mech. Engrs.; Am. Inst. of Indusl. Engrs.; Soc. for Adv. of Mgt.; A.A.A.S. Mem.: Am. Soc. for Engrng. Edn.; Indusl. Mgt. Soc.; Tau Beta Pi; Sigma Xi; Sigma Iota Epsilon; Pi Tau Sigma; Beta Gamma Sigma; Alpha Pi Mu. Author: Motion and Time Study, 4th ed., 1958; Work Measurement Manual, 1951; Work Methods Trng. Manual, 1950; Motion and Time Study Applications, 1961; Motion and Time Study Problems and Projects, 1961; Work Sampling, 1957. Contbr. to: Univ. of Iowa Bull.; Indusl. Engrng. Bull; Int. Rev. Edncl. Cinematography; Am. Mach.; Am. Soc. Mech. Engrs. Trans.; Am. Mgt. Assn.; The Jour. of Indusl. Engrng. Gen. Int.: Received Gilbreth Medal and the Industrial Incentive Award from the Soc. for the Advancement of Management, N. Y. Areas of Rsch.: Industrial Engineering; Work Measurement; Wage Payment and Admin. Automation.

BARNES, Richard Henry, (Ph.D.), Dean, Grad. Schl. of Nutrition, Prof. of Nutrition, Cornell Univ., Ithaca, N. Y. Home Add.: 140 N. Sunset Dr., Itnaca, N. Y. NUTRITION AND BIOCHEMISTRY. b. San Diego, Calif., June 29, 1911. s. Willard Gray and Nell (Tribby) B. Edn.: B.A., San Diego St. Coll., 1933; Ph.D., Univ. of Minn., 1940. m. Marjorie Ironside, Mar. 24, 1942. c.: Kyle; Marjorie Anne; Lisa. Exp.: Rsch. Chemist, Scripps Metabolic Clinic, La Jolla, Calif., 1933-37; Tchng. Asst., Instr. Asst. Prof., Univ. of Minn., 1937-44; Dir. of Biochem. Rsch., Merck Sharp & Dohme, Inc., West Point, Pa., 1944-56; Dean, Grad. Schl. of Nutrition, Cornell Univ., 1956—. Hon. Pos.: Chmn., Div. of Biol. Chem., A.C.S.; Hon. Prof. of Biochem., Rutgers Univ.; Editor, Jour. of Nutrition. Mem.: A.A.A.S., Fellow; A.C.S.; Am. Inst. Nutrition; Am. Soc. of Biological Chemists; N. Y. Acad. of Sci., Fellow; Soc. for Exptl. Biol. and Med.; Sigma Xi. Contbr. to: Proc. Soc. Exptl. Biol. & Med.; Am. Jour. Physiol.; Endocrinol.; Jour. of Clin. Invest.; Jour. Biol. Chem.; Jour. of Nutrition; Surgery; Physiol. Rev.; Annual Rev. of Biochem.; Industrial and Engrng. Chem.; Cereal Chem.; Arch. of Biochem.; N. Y. Acad. of Sci. Proc. Areas of Rsch.: General Nutrition, Fat Protein and Carbohydrate Metabolism; Intestinal Microflora.

BARNUM, Charles Norman (Mr.), Defense Coordinator, Wis. Tele. Co., Milwaukee, Wis. Home Add.: 1012 W. Wisconsin Ave., Oconomowoc, Wis. COMMUNICATIONS, NAVAL ARCHITECTURE. b. Milwaukee, Wis., June 12, 1901. s. Thomas Edson and Mary (Harrington) B. Edn.: B.S.E., Univ. of Mich., 1922. m. Marguerite Grossenbach, 1930. c.: Thomas Grossenbach; Jerusha Starr. Exp.: Special Serv. Engr., Wis. Tele. Co., Milwaukee, 1947-51; Gen. Staff Supvr., ibid., 1954-61; Defense Coord., ibid., 1961—. Hon. Pos.: Gov., Wis. Mayflower Soc. Mem.: Natl. Soc. Prof. Engrs.; A.A.A.S.; Soc. Nav. Arch. and Mar. Engrs.; Am. Soc. Nav. Engrs.; Newcomen; Phi Gamma Delta. Serv. Rec.: Capt., U.S.N.R., 1941-47, 1951-54. Areas of Rsch.: German Technical Language; Submarine and Landing Craft Design; Armed Forces Communications.

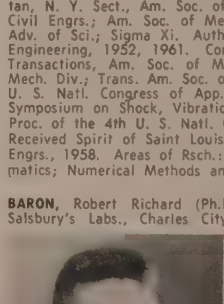


BARON, Abraham Louis (Ph.D.), Prof. of Chem., Hampton Instit., Hampton, Va. Home Ad.: 3619 Kenmore Dr., Hampton, Va. BIOCHEMISTRY. b. Brklyn., N. Y., June 27, 1907. s. Morris and Rose (Buchwald) B. Edn.: B.S., N. Y. Univ., 1928; M.S., ibid., 1930; Ph.D., ibid., 1934. m. Dora Pearlman, Sept. 21, 1936. Exp.: Rsch. Dir., Prof., Chem., L. I. Univ., N. Y., N. Y., 1935-43; Rsch. Biochem., S. B. Penick and Co., N. Y. and N. J., 1943-51; Rsch. Dir., Lincoln Labs., Decatur, Ill., 1951-53; Rsch. Dir., Chase Chem. Co., Newark, N. J., 1953-58; Chem. Prof., Benedict Coll., Columbia, S. C., 1958-59; Chem. Prof., Hampton Instit., 1959—. Mem.: Am. Chem. Soc. Author: Man Against Germs, 1957; Handbook of Antibiotics, 1950. Gen. Int.: N. Y. Sta. Scholarship, 1924-28; Saxton Award for Creative Writing, 1953. Areas of Rsch.: Biochemistry: Microbiology, Fermentations, Antibiotics, Pharmaceuticals, Analytical Chemistry.



BARON, Melvin Leon (Ph.D.), Assoc.. Paul Weidlinger, Consulti Engr., N. Y. Adjunct Assoc. Prof. of Civil Engrng., Columbia Uni N. Y , N. Y. and Vice-Pres., A Computer Techniques Corp., N.Y Home Add.: 2324 Morris Av Bronx 68, New York. A PLIED MECHANICS; APPLI MATHEMATICS; STRUCTURAL GINEERING. b. Brooklyn, N. Feb. 27, 1927. s. Frank a Esther (Hirskowitz) B. Ed B.C.E., City Coll. of N. Y., 194 M.S., Columbia Univ., 1949; Ph. ibid., 1953. m. Muriel Wick December 24, 1950. c.: Jac Adele; Susan Gail. Exp.: Str tural Designer, Corbett Ting Co., N. Y. City, N. Y., 1949-5 Rsch. Assoc. in Civil Engrn Columbia Univ., N. Y., 1951-5 Asst. Prof. of Civil Engrng., De of Civil Engrng. and Engr Mechanics, ibid., 1953-57; junct Asst. Prof. of C. E., ibid., 1957-58; Adjunct Assoc. Pro ibid., 1958—; Chief Engr., Paul Weidlinger, Consulting Eng N.Y.C.. N. Y., 1957-60; Assoc., ibid., 1960—; Vice-Pre Adv. Computer Techniques Corporation, 1962—. Hon. Pos.: Vi Chmn., Comm. on Mathl. Methods, Engrng. Mechanics Div., A Soc. of Civil Engrs.; Mem., Comm. on Elasticity, E.M.D., A.S.C. Vice-Chmn., App. Mechanics and Heat Transfer Comm., Metropo tan, N. Y. Sect., Am. Soc. of Mech. Engrs. Mem.: Am. Soc. Civil Engrs.; Am. Soc. of Mechanical Engrs.; Am. Assn. for t Adv. of Sci.; Sigma Xi. Author-Co-Author: Numerical Methods Engineering, 1952, 1961. Contbr. to: Jour. of App. Mechani Transactions, Am. Soc. of Mechanical Engrs.; Jour. of Engr Mech. Div.; Trans. Am. Soc. of Civil Engrs.; Procs. of the Seco U. S. Natl. Congress of App. Mech., 1944; Procs. of the 2 Symposium on Shock, Vibrations and Assoc. Environments, 196 Proc. of the 4th U. S. Natl. Congress of App. Mechs. Gen. In Received Spirit of Saint Louis Junior Award, Am. Soc. of Mec Engrs., 1958. Areas of Rsch.: Applied Mechanics; Applied Mat matics; Numerical Methods and Analysis.

BARON, Robert Richard (Ph.D.), Mgr., Parasitol. Sect. C, Salsbury's Labs., Charles City, Ia. Home Add.: 613-8th Av Charles City, Ia. PARASITOLO b. Denhoff, N. D., May 15, 19 s. Richard and Goldie (Skeie) Edn.: B.A., Concordia Coll., 195 M.S., Kans. State Univ., 195 Ph.D., ibid., 1959. m. Sue Cla McDowell, August 4, 1957. Mark Robert; Paul Alan. Ex Asst. Veterinary Microbiologi Univ. of Idaho, Branch Expt. St Caldwell, Idaho, 1959-61; Mg Parasitol., Sect. C., Dr. Salsbur Labs. ,1961—. Mem.: Am. Soc. Parasitol.; A. I. B. S.; Iowa Aca of Sci.; Sigma Xi; Gamma Sig Delta. Contbr. to: Exptl. Pa sitol.; Jour. of Vet. Rsch.; Jo of Dairy Sci. Serv. Rec.: U. Army, 1952-54. Gen. Int.: List in: Am. Men of Sci. Areas Rsch.: Coccidiosis of Chickens a Turkeys.



BARONDESS, Jeremiah Abraham (M.D.), 135 E. 71st St., N. 21, N. Y. Home Add.: 544 E. 86th St., N. Y. 28, N. Y. PHYS CIAN, INTERNAL MEDICINE. N. Y., June 6, 1924. s. Benjam and Dora (Greenberg) B. Ed M.D., The Johns Hopkins Un Schl. of Med., 1949. m. S Kaufman, Nov. 22, 1953. James Joseph. Exp.: Intern Johns Hopkins Hosp., Baltimo Md., 1949-50; Asst. Res., ibi 1950-51; Mem. Rsch. Dept., Un of Pa., Phila., Pa., 1951-53; As Res., N. Y. Hosp., N. Y., 195 54; Chief Med. Res., ibid., 195 55; Asst. Atten. Phys., ibi 1955-62; Assoc. Attend. Phy 1962—; Asst. Prof. of Clin. Me Cornell Univ., Med. Coll., N.Y. 1955-62; Assoc. Prof. of Clinic Med., 1962—; Asst. Visit. Phys Bellevue Hosp., ibid., 1955 Mem.: Am. Coll. of Physns., Fe low; Fellow, Internatl. Soc. of Internal Med.; Fellow, N. Y. Aca of Scis.; Fellow, N. Y. Acad. of Med.; Fellow, Am. Fed. for Cli Rsch.; Am. Assn. for the Adv. of Sci.; Alpha Omega Alpha; P Beta Kappa. Contbr. to: Am. Jour. of Med.; New England Jou of Med.; Archives of Internal Med.; Med. Clinics of N. Am Peds.; Bull. of Johns Hopkins Hosp. Serv. Rec.: U. S. Arm 1943-46; U. S. Pub. Serv., 1951-53. Gen. Int.: Work on Ep demiol. of Viral Hepatitis; Treatment of Lobar Pneumonia. Are of Rsch.: Clinical Medicine; Liver Disease; Particularly Vir Hepatitis; Infections; Blood Dyscrasias; Hepatitis of Infectio Mononucleosis.

BARONE, John A. (Ph.D.), Assoc. Prof. of Chem., Fairfield Univ., Fairfield, Conn. CHEMISTRY. b. Dunkirk, N. Y., Aug. 30, 1924. s. John and Josephine (Audino) B. Edn.: B.A., Univ. of Buffalo, 1944; M.S., Purdue Univ., 1948; Ph.D., ibid., 1950. m. Rose Marie Pace, Aug. 23, 1947. Exp.: Grad. Asst., Purdue Univ., 1947-48; Rsch. Fellow, ibid., 1948-50; Instr., Fairfield Univ., Fairfield, Conn., 1950-51; Asst. Prof., ibid., 1951-56; Assoc. Prof., ibid., 1956-62; Prof., ibid., 1962—; Dir., N.S.F. In-Serv. Inst., ibid., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; A.A.U.P.; Phi Beta Kappa; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Org. Chem. War Record: U. S. Army, 1944-46. Travel: European countries; Japan; Korea; Can. Special Int.: Antimetabolites; Organic Halogen Chem.

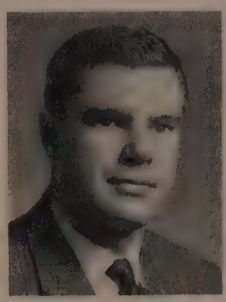
BARRACK, Carroll Marlin (D.E.), Prin. Devel. Engr., Aircraft Armaments, Inc., Cockeysville, Md. Home Add.: 1023 Scotts Hill Dr., Pikesville 8, Md. ELECTRICAL ENGINEERING (ELECTRONICS). b. Baltimore, Md., March 15, 1927. s. Grover and Jennie (Merrick) B. Edn.: B.E., The Johns Hopkins Univ., 1950; Dr. Engrng., ibid., 1956. m. Lola Mae Bashore, June 11, 1949. c.: Elizabeth Anne; Pamela Susan; Richard Carroll. Exp.: Sr. Design Engr., Aircraft Armaments, Inc., Cockeysville, Md., 1954-57; Rsch. Scientist, Electronic Communications, Inc., Timonium, Md., 1957-58; Mgr. Electronics Dept., Miller Rsch. Labs., Baltimore, Md., 1958-59; Prin. Devel. Engr., Aircraft Armaments, Inc., 1959—. Mem.: Inst. of Radio Engrs.; Am. Inst. Elect. Engrs.; Assn. for Computing Mach.; Am. Assn. for the Adv. of Sci.; Md. Soc. Profl. Engrs.; Tau Beta Pi; Sigma Xi; Gamma Alpha; Engrs. Club of Baltimore. Contbr. to: I.R.E. Trans.; Electronics; Electronic Design; Electronic Industs.; Proc. Eccane. Serv. Rec.: U. S. Naval Reserve, 1945-46. Areas of Rsch.: Electromagnetic Backscattering; Electronic Circuit Theory; Electronic Digital Computers.

BARRACLOUGH, Jack Thomas, (Mr.), Hydraulic Engr. in Chg., U. S. Geological Survey, Town and Country Plaza, Pensacola, Fla. Home Add.: 1105 Ariola Dr., Pensacola Beach, Fla. GROUND WATER HYDROLOGY. b. Salt Lake City, Utah, Sept. 15, 1927. s. Theodore and LaVeral A. (Thomson) B. Edn.: B.S., Univ. of Idaho, 1951; A.A., Boise Jr. Coll., 1948. m. Dorothy H. Jensen, Aug. 6, 1953. c.: Denise D.; Jacqueline H.; Bruce T. Exp.: Hydraulic Engr., U. S. Geol. Survey, Boise, Idaho, 1951-53; Hydraulic Engr. in Chg., ibid., Sanford, Fla., 1953-58; Hydraulic Engr. in Chg., ibid., Pensacola, Fla., 1958—. Mem.: Am. Geophys. Union; Southeastern Geol. Soc.; Sigma Nu; Kiwanis Internatl.; Pensacola Beach Vol. Fire Dept.; Elks Club. Author: The Water Resources of Escambia and Santa Rosa Counties, Fla., 1961; Ground Water Resources of Seminole County, Fla., 1962; Aquifers and Quality of Ground Water Along the Gulf Coast of Western Florida, 1962. Contbr. to: Proc. Geological Soc. of Am. Serv. Rec.: U.S.N.R., 1945-46. Areas of Rsch.: Evaluating Ground Water Resources of Specific Areas; Describing Ground Water Problems; Determining quantity and quality of water available; and writing interpretative reports.

BARRETT, Beatrice Helene (Ph.D.), Rsch. Fellow in Psychol., Dept. of Psychiat., Harvard Med. Schl. Behavior Rsch. Lab., 475 Trapelo Rd., Waltham 54, Mass. Home Add.: 65 Hawthorne St., Belmont 78, Mass. EXPERIMENTAL BEHAVIOR PATHOLOGY (PSYCHOLOGY). b. Cin., Ohio, Dec. 8, 1928. d. O. Slack Barrett and Helen (Kaiper) Eckhart. Edn.: B.A., Univ. of Ariz., 1950; M.A., Univ. of Ky., 1952; Ph.D., Purdue Univ., 1957. Exp.: Student Asst., Dept. of Philos. and Psychol., Univ. of Ariz., 1949-50; Grad. Tchng. Asst., Dept. of Psychol., Univ. of Ky., 1950-52; Psychol. Asst., Longview Sta. Hosp., Cin., Ohio, 1951; Staff Psychol., ibid., 1952; Staff Psychol., Children's Outpatient and Consult. Servs., Dept. of Psychiat., Ind. Univ. Med. Ctr., 1954-57; Chf. Psycholst., ibid., 1957-59; Psychol. Consult., Children's Unit, Carter Meml. Hosp., Indpls., Ind., 1959; Rsch. Assoc., Ind. Univ., Med. Schl., 1959-60; Instr., Dept. Psychiat., Ind. Univ. Med. Schl., 1956-60; Priv. Pract. of Clin. Psychol., 1957-60; Rsch. Fellow, Psychol., Dept. of Psychiat., Harvard Med. Schl., 1960—; Lectr., Dept. of Spec. Edn., Boston Univ., 1962—; Editor, Ind. Psychol. Assn. Bull.; Spec. Appointment, Govs. Youth Coun. of Ind.; Mem., Spec. Advry. Comm. on Mental Retardation, Div. of Spec. Edn., Ind. Dept. of Pub. Instrn., 1959-61. Mem.: Am. Psychol. Assn.; Midwestern Psychol. Assn.; Am. Soc. of Clin. Hypnosis; Ind. Psychol. Assn.; Soc. for Rsch. in Child Devel., Fellow; Am. Assn. on Ment. Defic.; Am. Acad. on Ment. Retard.; Eastern Psychol. Assn.; Mass. Psychol. Assn., Fellow; Am. Assn. Adv. Sci.; Northeastern Psychol. Assn.; Am. Edn'l. Rsch. Assn.; Phi Kappa Phi; Alpha Kappa Delta; Sigma Xi. Contbr. to: Jour. of Consult. Psychol.; Child Devel.; Jour. of Nervous and Mental Dis.; Am. Jour. of Ment. Deficiency. Areas of Rsch.: Experimental Analysis of Behavior Deficits in Retarded and Neurologically Impaired Children.

BARRETT, Elliott Pierce (Ph.D.), Technical Dir., The Baugh Cos., 25 S. Calvert St., Baltimore 2, Md. Home Add.: 121 Upnor Rd., Baltimore 12, Md. PHYSICAL CHEMISTRY. b. N. Y., N. Y., Aug. 12, 1902. s. Frederick Randolph and Jeannette (Pierce) B. Edn.: A.B., Columbia Coll., 1924; A.M., ibid., 1926; Ph.D., ibid., 1933. m. Inez Price, Sept. 29, 1928. c.: Mary Price. Exp.: Asst. in Chem., Columbia Univ., N. Y., 1922-25; Asst. in Chem., Wash. Square Coll., N. Y. Univ., 1925-26; Asst. in Chem., Columbia Univ., N. Y., N. Y., 1926-30; Devel. Engr., The Western Electric Co., Kearney, N. J., 1930-31; Asst. in Fuel Technol., The Pa. State Coll., State College, Pa., 1931-32; Rsch. Assoc., ibid., 1932-35; Sr. Fellow, Mellon Institute, Pittsburgh, Pa., 1935-50; Advisory Fellow, ibid., 1950—; Dir. of Rsch. and Devel., The Baugh Co's., Baltimore, Md., 1944-50; Technical Dir., ibid., 1950—. Hon. Pos.: Pres., U. S. Cane Sugar Refiner's Bone Char. Rsch. Project, Inc., 1960-61. Mem.: Am. Chem. Soc.; A.A.A.S., Fellow; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma. Author: Chemistry of Coal Utilization, 1945. Contbr. to: Jour. Am. Chem. Soc.; Ind. and Eng. Chem.; Jour. Am. Ceram. Soc. Areas of Rsch.: Adsorption, Fusion and Clinking of Coal Ash, Adsorbents for Sugar Refining; Bone Glue, Bone Black Pigments; Calcium Phosphates; Porosity Characteristics of Adsorbents and Catalysts, Superphosphate.

BARRETT, Richard John (M.D.), Rsch. Assoc. in Medicine, (Endocrinology), New England Ctr. Hosp., 171 Harrison Ave., Boston 11, Mass. Home Add.: 16 Prescott Road, Lynn, Mass. INTERNAL MEDICINE (ENDOCRINOLOGY). b. Lynn, Mass., Jan. 27, 1929. s. James Joseph, Jr. and Della (O'Donnell) B. Edn.: A.B., Boston Coll., 1950; M.D., Georgetown Univ. Schl. of Med., 1954. Exp.: Intern in Medicine, Georgetown, Univ. Hosp., 1954-55; Resident in Pathol., ibid., 1955-56; Jr. Asst. Resident in Medicine, Boston City Hosp., Boston, Mass., 1958-59; Rsch. Assoc. in Medicine, New England Ctr. Hosp., Boston, Mass., 1959—; Instr. in Medicine, Tufts Univ. Schl. of Medicine, 1961—. Mem.: Am. Heart Assn.; A.A.A.S.; Am. Fed. for Clin. Rsch.; Sandy Bay Yacht Club. Contbr. to: Jour. of Biological Chemistry; Endocrinology; Proc. of the Natl. Acad. of Scis.; Federation Proc.; Jour. of Exptl. Medicine; Sci. Serv. Rec.: U.S.A.F., 1956-58. Areas of Rsch.: Peptide Hormone Purification; Parathyroid Hormone Physiology.

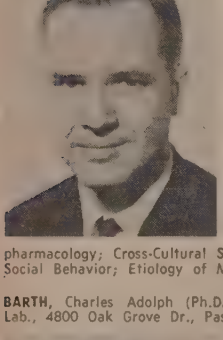


BARROW, William James (Mr.), Self Employed, State Library Bldg. and Va. Historical Soc. Bldg., Richmond, Va. Home Add.: 30 Albemarle Ave., Richmond, Va. PRESERVATION AND RESTORATION OF DOCUMENTS; DEVELOPMENT AND TESTING OF STABLE AND DURABLE PAPERS. b. Brunswick Co., Va., Dec. 11, 1904. s. Bernard and Sallie Virginia (Archer) B. m. Ruth Abbott Gibbs, April 6, 1935. c.: Bernard Gibbs; William Archer; James Abbott. Exp.: Self Employed in the Restoration of Deteriorated Documents and Rsch. in Preservation and Restoration Procedures, Richmond, Va., 1931—. Mem.: Paper Comm.; Am. Inst. of Chemists; Fellow, Am. Archivist; Congress Internatl. Archivist; A.A.A.S.; Tappi; Assn. of Consulting Chemists and Chem. Engrs.; Kappa Alpha; Phi Beta Kappa. Author: Manuscripts and Documents, Their Deterioration and Restoration, 1955; Deterioration of Book Stock—Causes and Remedies, 1959; The Manufacture and Testing of Durable Book Papers, 1960. Contbr. to: Sci.; Am. Archivist; Archivum; Library Trends; Bulletino Del' Instituto Di Patologia Del Libro. Gen. Int.: Developed Procedures of Deacidification and Lamination for Deteriorated Documents Used Here and Abroad; Developed a Durable and Lasting Book Paper Made of

Chemical Wood Fibers. Areas of Rsch.: Preservation and Restoration of Paper and Ink.

BARROWS, Edward Fletcher (Ph.D.), Prof. of Sci., Oregon Coll. of Edn., Monmouth, Oregon. Home Add.: 1 Wash. Lane, Monmouth, Ore. GENETICS. b. Brattleboro, Vt., April 8, 1900. s. Edward Bruce and Addie Jane (Putnam) B. Edn.: Ph.B., Brown Univ., 1923; M.A., Harvard, 1928; Ph.D., Brown, 1932. m. 1st, Marjorie Wescott, June 18, 1929. c.: Sybil; David. m. 2nd, Wilda Robbins, Dec. 25, 1949. c.: Brenda Carolyn. Exp.: Instr. in Sci., Oregon Coll. of Edn., 1932-35; Assoc., Prof., Sci. Dept., ibid., 1935-48; Prof. Sci., ibid., 1948-60; Pres., small pharm. corp., 1960-61. Hon. Pos.: Chmn., Science, Math. Dept., Oregon Coll. of Edn. Mem.: Sigma Xi; A.A.A.S.; Am. Genetic Assn.; C. of C. Author: Pedigrees and Checkerboards, 1940-53. Contbr. to: Proc. of the Soc. for Exper. Biol. and Medicine; Jour. of Medicine; Jour. of Genetics; Jour. of Exper. Zoology. Serv. Rec.: U.S.A. Areas of Rsch.: Genetics; Physiology.

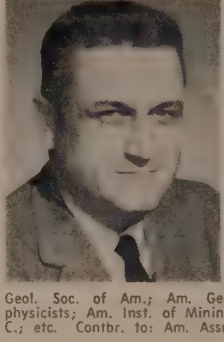
BARRY, Herbert, III (Ph.D.), Asst. Prof., Dept. of Psychol., Univ. of Conn., Storrs, Conn. Home Add.: 3 Oakwood Circle, Storrs, Conn. EXPERIMENTAL PSYCHOLOGY. b. N. Y. City, June 2, 1930. s. Dr. Herbert, Jr. and Lucy Manning (Brown) B. Edn.: B.A., Harvard Coll., 1952; M.S., Yale Univ., 1953; Ph.D., ibid., 1957. Exp.: Instr., Yale Univ., New Haven, Conn., 1958-59; Asst. Prof., ibid., 1960-61; Asst. Prof., Univ. of Conn., 1961—. Mem.: Am. Psychol. Assn.; Psychonomic Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Phi Beta Kappa. Contbr. to: Jour. of Comparative and Physiol. Psychol.; Psychopharm.; Sci.; Jour. of Exptl. Psychol.; Jour. of Abnormal and Social Psychol.; Am. Anthropol.; Archives of Gen. Psychiatry. Serv. Rec.: U. S. Army Reserve Corps, 1951-57. Areas of Rsch.: Psychopharmacology; Cross-Cultural Study of Socialization and of Other Social Behavior; Etiology of Mental Illness.



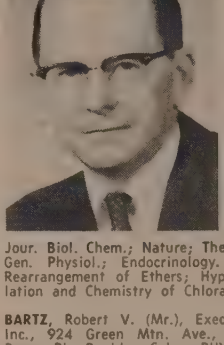
BARTH, Charles Adolph (Ph.D.), Rsch. Physicist, Jet Propulsion Lab., 4800 Oak Grove Dr., Pasadena 3, Calif. Home Add.: 2324 Henrietta Ave., La Crescenta, Calif. PHYSICS, UPPER ATMOSPHERE PHYSICS, CHEMICAL PHYSICS. b. Phila., Pa., July 12, 1930. s. Charles Adolph and Pauline Marie (Aretz) B. Edn.: B.S., Lehigh Univ., 1951; M.A., Univ. of Calif., Los Angeles, 1955; Ph.D., ibid., 1958. m. Louise Mary Tishon, Sept. 2, 1954. c.: Robert Charles; John Alexander. Exp.: Rsch. Physicist, Jet Propulsion Laboratory, Pasadena, Calif., 1958—. Hon. Pos.: Post-doctoral Fellow, Natl. Sci. Fdtn., Univ. of Bonn, Germany, 1958-59. Mem.: Am. Phys. Soc.; Am. Geophys. Union; A.A.A.S.; Am. Astron. Soc. Contbrng. Author: Threshold of Space, 1957; Space Technology, 1959; Physical Chemistry of Aeronautics and Space Flight, 1960. Contbr. to: Jour. of Chem. Physics; Jour. of Molecular Spectroscopy; Proc., Natl. Acad. of Scis.; Zeitschrift fur Physik; Canadian Jour. of Chem.; Jour. of Geophys. Rsch. Serv. Rec.: U.S.A.F., 1951-53. Areas of Rsch.: Upper Atmosphere Physics, Planetary Aeronomy, Laboratory Afterglow Reactions, Diatomic Molecular Spectroscopy, Electron Spin Resonance Spectroscopy, Plasma Physics.

BARTHELEMY, Joseph Edward, Jr. (Mr.), Geophysical Supvr., Western Geophysical Co. of Am., 962 E. 21st S., Salt Lake City 6, Utah. Home Add.: 565 Eighth Ave., Salt Lake City 3, Utah. GEOPHYSICAL EXPLORATION FOR OIL AND GAS. b. Jackson, Miss., Oct. 18, 1927. s. Joseph Edward and Lessie Jewel (Hooper) B. Edn.: B.S. in Geophysics, St. Louis Univ., 1949. m. Mary Jean De Lisle, Apr. 15, 1961. Exp.: Computer, Western Geophysical Co., Miss. and La., 1944-45, Summers, 1946, 1947, 1948; Party Chf., ibid., 1949-51; Supvr., Western Geophysical Co., Internatl., Can., 1951-53; Supvr., Western Geophysical Co. of Am., Rocky Mtn. Area and Calif., 1953-54, 1955—. Mem.: Soc. of Exploration Geophysicists; Am. Assn. of Petrol. Geologists; Seismological Soc. of Am.; Am. Geophysical Union; Alpha Sigma Nu; Pi Mu Epsilon. Serv. Rec.: U. S. Army, 1954-55.

BARTON, Jackson Mounce (Mr.), Vice-Pres., Northern Natural Gas Producing Co., 2223 Dodge St., Omaha, Nebr. Home Add.: 2506 S. 95th St., Omaha, Nebr. GEOLOGY. b. Shawnee, Okla., Jan. 12, 1917. s. Jesse D. and Elizabeth (Mounce) B. Edn.: B.S., Univ. of Okla., 1938; Grad. Schl., Yale Univ. m. Dorothy King Benedict, May 9, 1942. c.: Jackson Mounce, Jr.; Charles Downey; Elizabeth Benedict. Exp.: Geologist, Magnolia Petroleum Co., Okla. City and Midland, Tex., 1941-47; Divisional Geologist, Cooperative Refinery Assn., Wichita, Kan., 1947-49; Chief Geologist, ibid., Kan. City, Mo., 1949-50; Mgr. of Geol. Dept., Deep Rock Oil Corp., Tulsa, Okla., 1950-53; Exploration Mgr., Northern Natural Gas Producing Co., Omaha, 1953-57; Vice-Pres., ibid., 1957—. Mem.: A.A.A.S.; Am. Assn. Petroleum Geologists; Geol. Soc. of Am.; Am. Geophysical Union; Exploration Geophysicists; Am. Inst. of Mining and Metallurgical Engrng.; C. of C.; etc. Contbr. to: Am. Assn. of Petroleum Geologists.

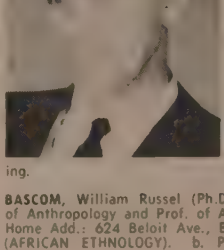


BARTZ, Quentin Royal (Ph.D.), Lab. Dir. in Biochemical Rsch., Parke, Davis, and Co., Detroit 32, Mich. Home Add.: 17111 Chandler Park Dr., Detroit 24, Mich. CHEMISTRY. b. Near Rockville, Mo., Jan. 25, 1909. s. John F. and Rosa M. (Schneiter) B. Edn.: A.B., Tarkio Coll., 1930; M.S., Univ. of Nebr., 1931; Ph.D., Univ. of Ill., 1935. Hon. Deg.: LL.D., Tarkio Coll., 1960. m. Mariann Dwyer, Aug. 16, 1941. c.: Geoffrey Bruce; Elizabeth Ann; Margaret Rose. Exp.: Rsch. Assoc., Inst. of Expti Biol., Univ. of Calif., 1934-38; Rsch. Chemist, Parke Davis & Co., Detroit, Mich., 1938-52; Lab. Dir. in Biochemical Rsch., ibid., 1952 . Mem.: Am Chemical Soc.; A.A.A.S.; Detroit Physiological Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. of Am. Chemical Soc.; Antibiotics and Chemotherapy; Sci.; Jour. Biol. Chem.; Nature; The Am. Review of Tuberculosis; Jour. Gen. Physiol.; Endocrinology. Areas of Rsch.: Carbohydrates; Rearrangement of Ethers; Hypophyseal Hormones; Enzymes; Isolation and Chemistry of Chloramphenicol and Other Antibiotics.



BARTZ, Robert V. (Mr.), Exec. Dir., Assoc. Rocky Mtn. Univs., Inc., 924 Green Mtn. Ave., Boulder, Colo. Home Add.: 285 Devon Pl., Boulder, Colo. PHYSICS. b. Bremen, Germany, March 1, 1924. s. Carl Frederick (dec.) and Mary Frances (Plitt) B. Edn.: B.S., Mass. Inst. of Tech., 1944. m. Rosemary Jean Burghoff, July 24, 1944. c.: Lauren Lee; Mary Jane. Exp.: Exec. Aide to the Dir., Lab. for Nuclear Sci. and Engrng., Mass. Inst. of Tech., 1947-48; Dir., Indust. Liaison Office, ibid., 1948-52; Exec. Dir., Indust. Associates Program, Calif. Inst. of Tech., 1952-56; Asst. to Vice Pres., Inst. for Defense Analyses, Wash., D. C., 1956-57; Vice Pres., Edn. Servs., Inc., Cambridge, Mass., 1957-59; Exec. Dir., Assoc. Rocky Mtn. Univs., Inc., 1959 . Mem.: Am. Assn. Adv. Sci.; Alpha Tau Omega. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Establishment of Industrial Liaison Programs at Institutes of Technol.; Management Confs. Concerning 100-Year Projs. in Nat. Resources and Sci. Manpower; National Defense Studies; Course Content in Secondary School Science Instruction; Regional Co-operative Programs of Research and Higher Education.

BASCOM, Willard, (Mr.), Dir., Mohole Project, Natl. Acad. of Scis., 2101 Constitution Ave., Wash., D. C. Home Add.: 5001 Earlston Dr., Wash. 16, D. C. ENGINEERING OCEANOGRAPHIC; DEEP SEA GEOPHYSICS. b. N. Y. City, Nov. 7, 1916. s. Willard, Sr. and Pearle (Boyd) B. Edn.: Att., Colo. Schl. of Mines, 1941. m. Rhoda Nergaard, April 15, 1946. c.: Anitra. Exp.: Rsch. Engr., Univ. of Calif., Berkeley and La Jolla, Calif., 1945-54; Dir., Mohole Project, Natl. Acad. of Scis., 1954—. Mem.: Am. Geophys. Union; A.A.A.S. Author: A Hole in the Bottom of the Sea, 1961. Contbr. to: Scientific Am. Transactions; Am. Geophys. Union. Gen. Int.: Distinguished Lect., 1960, of Soc. of Exploration Geophys. Areas of Rsch: Oceanography (Waves and Beaches); Deep Sea Engineering.



BASCOM, William Russel (Ph.D.), Dir., Robert H. Lowie Museum of Anthropology and Prof. of Anthropol., Univ. of Calif., Berkeley. Home Add.: 624 Beloit Ave., Berkeley 8, Calif. ANTHROPOLOGY; (AFRICAN ETHNOLOGY). b. Princeton, Ill., May 23, 1912. s.

eorge Rockwell and Litta Celia (Banschbach) B. Edn.: B.A., niv. of Wis., 1933; M.A., Northwestern Univ., 1936; Ph.D., ibid., 939. m. Berta Montero-Sanchez, Nov. 26, 1948. Exp.: Asst., ept. of Sociol., Univ. of Wis., Madison, Wis., 1935-36; Asst., ept. of Anthropol., Northwestern, 1938-39; Instr., Dept. of nthropol., ibid., 1939-42; Sr. Analyst and Chief French West frican Sect., Re-ocup. and Recon. Div., Bd. of Econ. Warfare, 942-43; Asst. Spec. Rep. to W. Africa, Bd. of Econ. Warfare, ffice of Econ. Warfare, 1943-44; Act. Spec. Rep. to British . Africa, Office of Econ. Warfare, 1944-45; Spec. Rep. to ritish W. Africa, Foreign Economic Administration, 1945-46; sst. Prof., Dept. of Anthropol., Northwestern Univ., Evanston, l., 1946-49; Assoc. Prof. Dept., ibid., 1949-54; Prof., ibid., 954-57; Chmn., Dept. of Anthropol., Northwestern Univ., 1956-7; Dir., Museum of Anthropol. and Prof. of Anthropol., Univ. f Calif., 1957—. Hon. Pos.: Pres. and Fellow, Am. Folklore oc.; 1952-59; Pres., 1950-51, Cent. Sta. Anthropol. Assn.; xec. Bd., 1961—, Am. Anthropol. Assn. Mem.: Am. Anthropol. ssn.; Internatl. African Inst.; Am. Folklore Soc.; Cent. Sta. nthropol. Soc.; Am. Ethnol. Soc.; Royal Anthropol. Inst. of reat Britain and Ireland, Fellow; Royal African Soc., Fellow; ellow, Nigerian Field Soc.; Am. Assn. for the Adv. of Sci.; Am. ssn. of Univ. Profs.; Am. Assn. of Museums; Phi Eta Sigma; hi Beta Kappa; Alpha Kappa Delta; Alpha Pi Zeta; Sigma Xi. uthor: The Sociological Role of the Yoruba Cult. Group, 1944; o-Editor, Continuity and Change in African Cultures, 1959, 962. Contbr. to: Am. Anthropol.; Jour. of Am. Folklore; frica; Jour. of the Royal Anthropol. Inst.; Am. Jour. of Sociol.; m. Sociol. Rev.; Southwestern Jour. of Anthropol.; The Scientific Monthly; The New Zealand Geographer; African Abstracts; Acad. f Pol. and Social Sci.; Annals of the N. Y. Acad. of Scis.; ull. de l'Institut Français d'Afrique Noire; Sociol. Rev.; Jour. of he Internatl. Folk Music Coun. Areas of Rsch.: West Africa; uba; Caroline Islands; Anthropology.

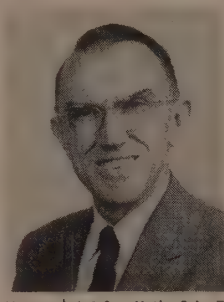
ASS, Nathan Withrop (Mr.), Vice-Pres. of Sales, The Brush eryllium Co., 5209 Euclid Ave., Cleveland 4, Ohio. Home Add.: 2644 W. Park Blvd., Cleveland 20, Ohio. METALLURGY, HIGH TEMPERATURE MATERIALS. b. N. Y. C., April 14, 1917. s. Harry and Cady (Bass) B. Edn.: B.S., Cornell Univ., 1941. m. Audry DeJong, 1944. c.: Andrew; Barbara; Thomas. Exp.: Chf., Beryllium Sect., War Production Bd., Wash., D. C., 1943-45; Sales Mgr., Brush Beryllium Co., Cleveland, Ohio, 1945-51; Vice Pres. of Sales, ibid., 1951—. Mem.: Am. Rocket Soc.; A.S.M.; Electrochemical Soc.; A.A.A.S. Contbr. to: A.S.M. Bk.; The Metal Beryllium; A.S.M. Handbk.; A.S.M. Beryllium Symposium; Am. Metal Mkt.; Steel Magazine. Areas of Rsch.: Beryllium Industry; High Temperature Materials; Space Rockets; Missiles; Hypersonic Aircraft; Nuclear Energy Materials and Applications.

ASSETT, Preston Rogers, Jr. (Mr.), Asst. to Prod. Supt., Sterile illing, Lederle Labs., Am. Cyanamid Co., Pearl River, N. Y. ome Add.: 275 River Rd., Grand View, Nyack, N. Y. CHEMICAL NGINEERING; FILLING AND PACKAGING. b. N. Y. City, N. Y., Oct. 16, 1922. s. Preston R. and Jeanne (Mordorf) B. Edn.: A.B., Amherst Coll., 1943; B. Chem. Engrng., Rennselaer Polyech. Inst., 1951. m. Harriett Greene, May 12, 1944. c.: Ellen .; Martha G.; Paul P. Exp.: Process Engr., Lederle Labs., Am. yanamid Co., 1951-58; Asst. to Prod. Supt., ibid., 1958—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; N. Y. ta. Soc. of Prof. Engrs.; Phi Lambda Upsilon; Tau Beta Pi; elta Upsilon; Volunteers of the Shelters; Am. Civil Liberties nion. Contbr. to: Package Engrng.; The Bull. of the Parenteral rug Assn. Serv. Rec.: U. S. Naval Reserve, 1944-46. Areas f Rsch.: Sterile Techniques in Parenteral Drug Manufacture; terilization of Drugs and Packaging Materials.

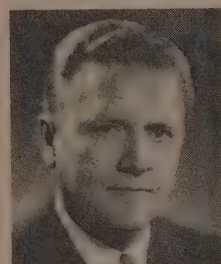
ATCHELOR, James Harold (Mr.), Consulting Operations Rsch. Scientist, 611 Olive St., St. Louis 1, Mo. Home Add.: 6226 Northwood Ave., St. Louis 5, Mo. OPERATIONS RESEARCH. b. Valley Falls, Kans., July 19, 1889. s. James Percy and Blanche (Beand) B. Edn.: A.B., Dartmouth Coll., 1911; L.L.B., Kans. City Schl. of Law, 1916. m. Catherine Dunlap Bowman, Apr. 24, 1918. c.: Dudley Bowman. Exp.: Lectr., Wash. Univ., St. Louis, Mo., 1945-51; Lectr., Case Inst. of Tech., Cleveland, Ohio, 1953; Lectr., Ill. Inst. of Tech., Chicago, Ill., 1957; Lectr., St. Louis Univ., St. Louis, Mo., 1957; Lectr., Wash. Univ., St. Louis, Mo., 1961; Consulting Operations Rsch. Scientist, St. Louis, Mo., 1961—. Mem.: Assn. Internationale de Cybernetique; Econo. Soc.; Soc. for Gen. Syst. Rsch.; Inst. of Mgmt. Scis.; Operations Rsch. Soc. of Japan; Operations Rsch. Soc. of Am.; Am. Assn. for the Adv. of Sci.; Fellow, Am. Soc. for Quality Control; Tech. Mem., Canadian Operational Rsch. Soc. Author Operations Research, A Preliminary Annotated Bibliography, 1952; Operations Research, An Annotated Bibl., 1959; Same, Vol. 2, 1962. Serv. Rec.: U. S. Army, 1916-47 (Ret. 1947).

BATES, John Bertram (Ph.D.), Technical Dir., Flint Ink Corp., Detroit, Mich. Home Add.: 42012 Clemons Dr., Plymouth, Mich. COLLOID CHEMISTRY. b. Big Flats, N. Y., Sept. 7, 1914. s. Glen E. and Blanch (Vaughn) B. Edn.: B.S., Clarkson Coll. of Technol., 1936; M.A., Rice Inst., 1939; Ph.D., ibid., 1941. m. Isabel Walker, Mar. 4, 1944. c.: John K.; Douglas B. Exp.: Chemist, Corning Glass Works, Corning, N. Y., 1936-37; Asst. Rsch. Dir., Graphic Arts Labs., Sun Chemical Corp., East Rutherford, N. J., 1941-56; Vice Pres. and Tech. Dir., Ho-Par, Inc., State College, Pa., 1956-60; Staff Chemist, H. R. B. Singer, Inc., State College, Pa., 1960-62; Technical Dir., Flint Ink Corp., Detroit, Mich., 1962—. Mem.: A.C.S.; Am. Soc. of Testing Materials; Soc. of Rheology; Intersoc. Color; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon; Kiwanis Internatl. Contbr. to: Jour. of Physical Chem.; Am. Ink Maker. Areas of Rsch.: Physical Chem.; Rheol. and Color of Printing Inks; Spectrophotometry; Spectrofluorometry; Analytical Chem. Rsch.; Trace Chem. Analysis; X-Ray Diffraction of Powders; Adsorption Wetting; Adhesives.

BATES, Conrad W. (Mr.), Hd. of Sci. Dept., Instr. in Physics, Chattanooga H. S., Chattanooga, Tenn. Home Add.: 1607 Knickerbocker Ave., Chattanooga 5, Tenn. SCIENCE EDUCATION. b. Hohenwald, Tenn., June 16, 1907. s. James Edward and Maggie Fay (Wood) B. Edn.: B.S., Tenn. Poly. Inst., 1932; M.A., George Peabody Coll., 1933. m. Mary Louise Cox (dec.), Aug. 11, 1940. c.: Connie Louise; Mary Lynn. Exp.: Prin., Morgan Co. Elem. Schls., Ala., 1925-29; Tchr. of Sci. and Math., Liberty H. S., Tenn., 1933-35; Tchr., Sci., Lauderdale Co. H. S., Ala., 1935-36; Tchr., Sci. and Math., Dickinson Jr. H. S., Chattanooga H. S., ibid., 1940—; Hd., Dept. of Sci., ibid., 1947—. Hon. Pos.: Chmn., Tenn. Sci. Tchrs. Assn.; Chmn., Sci. Sect., East Tenn. Edn. Assn.; Chmn., Chattanooga Sci. Tchrs. Assn. Mem.: A.A.A.S.; Natl. Sci. Tchrs. Assn.; Tenn. Acad. of Sci.; Tenn. Edn. Assn.; N.E.A.; East Tenn. Edn. Assn. Contbr. to: Teaching Tools; The Sci. Tchr.; The Tenn. Tchr. Gen. Int.: Developed and implemented a program for teaching Sci. in the Elem. Grades by use of a Microprojector; Built and presented at the N.S.T.A. meeting in Chicago, Mar. 1961, a device for demonstrating the operation of the triode tube; Received the Tenn. Acad. of Sci. Distinguished Tchr. Award, May, 1961. Areas of Rsch.: Science Teaching, especially Physics.



BATSON, Oscar Randolph (M.D.), Prof. of Pediatrics, Vanderbilt Univ. Schl. of Med., Nashville, Tenn. Home Add.: 4319 Esteswood Dr., Nashville 12, Tenn. MEDICINE; PEDIATRICS. b. Hattiesburg, Miss., Oct. 26, 1917. s. J. O. and Nellie (Nicholson) B. Edn.: B.A., Vanderbilt Univ., 1938; M.D., ibid., 1942. m. Bennie Shaw, Nov. 16, 1950. c.: Bennie Barbara; Nellie Wells; Randolph, Jr. Exp.: Instr., Vanderbilt Med. Schl., 1947-51; Asst. Prof., 1951-53; Assoc. Prof., ibid., 1953-59; Prof. of Pediatrics, ibid., 1959—. Hon. Pos.: Chmn., Comm. on Adms., Vanderbilt Univ. Schl. of Med. Mem.: Am. Ped. Soc.; Am. Bd. of Ped.; Am. Acad. of Ped.; Am. Acad. for Cerebral Palsy; A.M.A.; Tenn. Ped. Soc.; Southern Med. Soc.; A.A.M.C.; A.A.A.S.; Tenn. Comm. on Youth Guid.; Am. Soc. Human Genetics; South. Soc. for Ped. Rsch.; Nash. Acad. Med.; Alpha Omega Alpha; Sigma Chi. Contbr. to: Pediatrics; Am. Jour. Dis. Child.; J.A.M.A.; Jour. Ped.; South. Med. Jour. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Med. Dir., Clinical Study Cent for Poliomylitis; Med. Dir., Clinical Study Cent. for Birth Defects, Vanderbilt Univ. Schl. of Med. Areas of Rsch.: Pediatrics; Poliomylitis; Congenital Defects; Cerebral Palsy.



BATTLE, Warren Rich (Ph.D.), Chmn., Dept. of Farm Crops, Rutgers Univ., New Brunswick, N. J. Home Add.: 10 Pardun Ave., Milltown, N. J. AGRONOMY, PLANT BREEDING AND GENETICS. b. Ellisburg, N. J., May 27, 1919. s. Walter Clifford and Isabel (Liston) B. Edn.: B.S., Rutgers Univ., 1941; Ph.D., ibid., 1951. m. Dorothy Rogers, June 7, 1944. c.: Edwin Allen; Joyce Ellen. Exp.: Rsch. Asst., Kans. St. Univ., 1941-42; Instr., H. S., Newton, N. J., 1943-47; Instr., Rutgers Univ., 1947-51; Asst. Rsch. Specialist, ibid., 1951-53; Assoc. Rsch. Specialist, ibid., 1953-59; Prof., Rsch. Specialist, ibid., 1959—; Chmn., Farm Crops Dept., ibid., 1961—. Hon. Pos.: Exec. Comm., Grad. Schl., Rutgers Univ., Secy., Grad. Faculty; Planning Comm., Natl. Foundation Seed Project. Mem.: Am. Soc. of Agronomy; Am. Soc. of Crop Sci.; N. Y. Acad. of Scis.; Alpha Zeta; Sigma Xi; Forsgate Country Club. Contbr. to: Agronomy Jour.; Crop Sci.; Soil Sci.; McGraw-Hill Yrbk. of Sci. and Technol. Serv. Rec.: U. S. Marine Corps, W. W. II. Gen. Int.:

Sr. Fulbright Fellow, Univ. of Perugia, Italy, 1954-55. Areas of Rsch.: Plant Breeding; Plant Genetics; Crop Production and Mgmt.

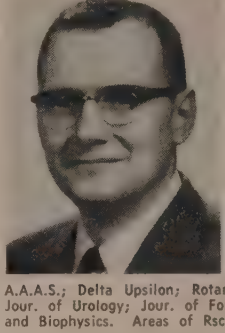
BATTLES, Willis Ralph Dawe (Mr.), Chemist, Richfield Oil Corp., Wilmington, Calif. Home Add.: 560 So. Helberta Ave., Redondo Beach, Calif. CHEMISTRY—DEVELOPMENT OF NEW ANALYTICAL METHODS AND INSTRUMENT DESIGN. b. Erie, Pa., Nov. 12, 1914. s. Ralph Asa and Laura M. (Dawe) B. Edn.: A.B., Univ. of Calif., Los Angeles, 1936. m. Roxy Edith Baker, 1941. c.: Margaret E.; Ralph W.; Laura L. Exp.: Petroleum Inspector, Shell Oil Co., Bakersfield, Calif., 1936-42; T.N.T. Chemical Operator, Trojan Powder Co., Sandusky, Ohio, 1942-43; Styrene Chemical Operator, Dow Chemical Co., Torrance, Calif., 1943-44; Rsch. Chemist, Union Oil Co., Wilmington, Calif., 1944-46; Mgr., Co-Partner, Calif., Car Bed Co., Los Angeles, Calif., 1946-51; Chemist and Chf. Chemist, Fletcher Oil Co., Wilmington, Calif., 1951-58; Chemist, Chas. Martin & Co., San Pedro, Calif., 1958-60; Chemist, Richfield Oil Corp., Wilmington, Calif., 1960—. Mem.: A.A.A.S.; Am. Chemical Soc.; Alpha Chi Sigma. Contbr. to: Petroleum Engr.; Analytical Chemistry. Areas of Rsch.: Micro-analytical Methods for Petroleum, Micro-Kjeldahl Nitrogen Method in Petroleum, Trace Sulfur Apparatus Development for Petroleum Distillates.

BAUDER, Frederick William (Mr.), Prof. in Chem., Newark Coll. of Engrng., Newark, N. J. PROTECTIVE COATINGS; CORROSION. b. Newark, N. J., July 24, 1897. s. John F. and Anna M. (Boehm) B. Edn.: B.S., Worcester Poly. Inst., 1920; M.S., Stevens Inst. of Technol., 1945. m. Florence Mehne, June 24, 1922. c.: Stephanie Ann. Exp.: Plant Chemist, Cooper Chem. Co., 1920-26; Supvr., Rug Printing Div., Congoleum-Nairn Co., 1926-27; Mgr., Holdt Paint Co., 1928-29; Instr. in Chem., Newark Coll. of Engrng., Newark, N. J., 1929-41; Asst. Prof. of Chem., ibid., 1941-48; Assoc. Prof. of Chem., ibid., 1948-56; Prof. Chem., ibid., 1956—; Owner, Bauder Products, Protective Coatings, 1930—. Hon. Pos.: Supvr. of Courses and Conferences on Protective Coatings; Dir., Mullaly Memorial Coatings Lab., Newark Coll. of Engrng. Mem.: Fellow, Am. Inst. of Chemists; Fellow, A.A.A.S.; Am. Chem. Soc.; Am. Soc. for Engrng. Edn.; Phi Sigma Kappa; Alpha Psi Omega; Omega Delta Kappa. Contbr. to: Federation of Paint and Varnish Production Clubs; Analytical Procedures; Water Fuel and Gas Analysis; etc. War Rec.: U. S. Navy Reserve, 1918. Spec. Int.: Protective Coatings; Corrosion, Metallurgy; Consultant on Protective Coatings and Water Treatment.

BAUER, Edwin Theodore (Ph.D.), Prof. of Sociol. and Family Life, Calif. West. Univ., San Diego 6, Calif. SOCIOLOGY. b. W. Chester, Ia., Mar. 29, 1907. s. Earnest Frederick and Ethel (Hopkinson) B. Edn.: A.B., Ia. Wesleyan Coll., 1929; B.D., Garrett Biblical Inst., 1933; A.M., Drake Univ., 1935; Ph.D., St. Univ. of Ia., 1949. m. Isabelle Olive Thompson, June 10, 1928. c.: Marjorie Kathleen; Margaret Isabelle. Exp.: Minister, Methodist Ch., Stockport, Iowa, 1930-33; Minister, Easton Place Methodist Ch., Des Moines, Iowa, 1933-36; Minister, Fifth Ave. Methodist Ch., Council Bluffs, Iowa, 1936-37; Chaplain, U. S. Navy, 1937-45; Minister, Gatchel Methodist Ch., Des Moines, Iowa, 1945-46; Prof. of Sociol., Iowa Wesleyan Coll., Mount Pleasant, Iowa, 1947-49; Prof., Morningside Coll., Sioux City, Iowa, 1949-55; Hd., Dept. of Sociol. of Religion, Iliff Schl. of Theol., Denver, Colo., 1955-56; Prof. of Sociol. and Hd., Dept. of Sociol., Morningside Coll., 1956-58; Sr. Prof. of Sociol., ibid., 1958-62; Prof., Sociol., Calif. Western Univ., 1962—. Mem.: Am. Sociological Soc.; Midwest Sociol. Soc.; Pi Gamma Mu; Alpha Kappa Delta; Family Service, Inc.; Natl. Coun. on Family Relations; Iowa Coun. on Family Relations; Am. Interprofessional Inst.; Am. Assn. of Marriage Counselors, Inc.; Perpetual Mem. of the Military Chaplains Assn.; Mason; Scottish Rite; Kiwanis; A.A.U.P.; The Soc. for Study of Social Problems. Contbr. to: Christian Advocate; Quarterly of the American Interprof. Inst. War Rec.: U. S. Navy, W.W. II. Special Int.: Marriage, Family and Social Psychology.

BAUER, LaVerne Norman (Ph.D.), Lab. Hd., Rohm and Haas Co., 5000 Richmond St., Phila. 37, Pa. Home Add.: 916 Gilbert Rd., Cheltenham, Pa. CHEMISTRY. b. Attica, N. Y., July 26, 1908. s. Harry and Ida (Gassman) B. Edn.: B.S., Alfred Univ., 1932; Ph.D., Northwestern Univ., 1936. m. Antoinette E. Black, Nov. 12, 1936. c.: Thomas F.; John H. Exp.: Chemist, Rohm and Haas Co., Phila., Pa., 1936; Lab. Head, ibid., 1956—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Sigma Xi; Alpha Chi Sigma. Contbr. to: Jour. Am. Chem. Soc. Gen. Int.: Listed in Am. Men of Sci. Areas of Rsch.: Chemistry of Dioxane; Synthetic Resins and Plastics.

BAUER, Frederick Charles, Jr. (M.D.), Dir., Dept. of Pathol., Silver Cross Hosp., Joliet, Ill. Home Add.: 819 Sherwood Pl., Joliet, Ill. PATHOLOGY (CLINICAL PATHOLOGY AND ANATOMIC PATHOLOGY). b. Champaign, Ill., Jan. 19, 1918. s. Frederick Charles, Sr. and Louise (Garrett) B. Edn.: B.S., Univ. of Ill., 1939; M.D., Harvard Med. Schl., 1943; M.S., Univ. of Chicago, 1945; Ph.D., ibid., 1949. m. Margaret Vaniman, 1941. c.: Richard Charles; Peter Frederick. Exp.: Asst. Attending Pathologist, Attending Pathologist, St. Luke's and Presby. Hosp., Chicago, Ill., 1950-60; Asst. Prof. of Pathol., The Univ. of Chicago, 1951-59; Dir., Dept. of Pathol., Silver Cross Hosp., Joliet, Ill., 1960—; Assoc. Prof. of Pathol., Univ. of Ill., 1959—. Mem.: Am. Assn. of Pathologists and Bacteriologists; A.A.A.S.; Delta Upsilon; Rotary. Contbr. to: Arch. of Pathol.; Jour. of Urology; Jour. of Forensic Scis.; Arch. of Biochemistry and Biophysics. Areas of Rsch.: Pathol.; Lipid Chemistry.



BAUER, Walter H., (Ph.D.), Dean, Schl. of Sci., Rensselaer Poly. Inst., Troy, N. Y. Home Add.: 1625 Tibbits Ave., Troy, N. Y. PHYSICAL CHEMISTRY. b. Red Oak, Iowa, Sept. 9, 1907. s. Philip J. and Emma M. (Herold) B. Edn.: B.S. in Ch.E., Ore. State Coll., 1929; Ph.D., Univ. of Wis., 1933. m. Ingeborg Midelfart, Dec. 26, 1933. c.: Karen Ingeborg B. Taylor; Hans Philip; Dagny Marie. Exp.: Asst. Instr., Univ. of Wis., 1929-33; Rsch. Asst., ibid., 1933-34; Instr., Rensselaer Poly. Inst., 1934-38; Asst. Prof., ibid., 1938-42; Assoc. Prof., ibid., 1945-48; Prof., ibid., 1948-60; Dean, Schl. of Sci., ibid., 1960—. Mem.: Soc. of Rheology; Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Soc. for Engrng. Edn.; Sigma Xi; Phi Lambda Upsilon. Author: Laboratory Manual of Physical Chemistry, 1956. Contbr. to: Jour. Phys. Chem.; Indus. and Engrng. Chem.; Trans. Soc. of Rheology. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Kinetics of Oxidation, Rheology.

BAUM, Harry (Mr.), Mgr., Scientific Information and Liaison, Light Military Electronics Dept., Gen. Elect. Co., Utica, N. Y. Home Add.: 22 Imperial Dr., New Hartford, N. Y. SCIENTIFIC AND TECHNICAL EDITING; PROFESSIONAL RELATIONS. b. N. Y. City, Feb. 22, 1923. s. Lester and Sarah (Namowitz) B. Edn.: B.M.E., The Cooper Union, 1950. m. Helen Schnoll, 1956. c.: Geoffrey Mark; Tad David. Exp.: Asst. Proj. Dir., Cushing and Nevell, N. Y. City, 1951-54; Proj. Mgr., McGraw-Hill Techn. Writing Serv., N. Y. City, 1954-58; Techn. Publicist, Harry Baum Assocs., N. Y., N. Y., 1958-59; Tech. Publs. Co-Ord., RCA Commercial Engrng., Harrison, N. J., 1959-61; Instr. in Tech. and Scientific Report Writing, Rutgers Univ., New Brunswick, N. J., 1960-61; Mgr., Scientific Information and Liaison, Light Milit. Elects. Dept., Gen. Elect. Co., 1961—. Hon. Pos.: Pres., N. Y. Chapter, Soc. of Tech. Writers; Dir., ibid.; Chmn., IRE Echoes Comm. Mem.: Inst. of Radio Engrs.; Soc. of Automotive Engrs.; Am. Soc. of Mech. Engrs., Assoc.; Soc. of Tech. Writers and Publs.; Am. Assn. for the Adv. of Sci. Co-Editor: Artillery Ammunition Design Handbook. Contbr. to: STW Rev. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Generalist in Science and Engineering.

BAUMAN, Howard Eugene (Ph.D.), Assoc. Dir. of Rsch., The Pillsbury Co., Minneapolis 14, Minn. Home Add.: 4660 Baker Rd., Hopkins, Minn. MICROBIOLOGY. b. Woodworth, Wis., March 20, 1925. s. Frederick and Signe (Rassmussen) B. Edn.: Ph.D., Univ. of Wis., 1953. m. Edith Tabbert, Sept. 3, 1948. c.: Victoria; Kay. Exp.: Bacteriologist, The Pillsbury Co., 1953-57; Hd., Food Rsch., ibid., 1957-60; Assoc. Dir. Rsch., ibid., 1960—. Hon. Pos.: Chmn., Minn. Sect. Inst. of Food Technologists, 1960. Mem.: I.F.T.; A.A.C.C.; A.S.M.; A.A.A.S.; Sigma Xi; Assn. of Food and Drug Officials; Nutrition Found. Contbr. to: Jour. of Bacteriol.; Food Technol. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Directing Research in Fields of Microbiology, Biochemistry, Organic Chemistry, Nutrition, Enzymology, Food Technology.

MGART, John Keppler (Mr.), Head, Math. Dept., Manchester , North Manchester, Ind. Home Add.: 106 W. 9th St., North Manchester, Ind. MATHEMATICS. b. Forest Park, Ill., Nov. 10, 1916. s. John August and Hedwig (Keppler) B. Edn.: B.S., Wheaton Coll., Ill., 1938; M.A., Univ. of Mich., 1939. Exp.: Instr. of Math, Dean of Men, Cumberland Coll., 1939-42; Head, Math. Dept., Assoc. Prof. of Math., Elmhurst Coll., 1946-54; Trng. Officer, Naval Rsch. Lab., Washington, D. C., 1954-56; Hd., Math. Dept., Manchester Coll., Ind., 1956—. Mem.: A.A.A.S.; Am. Math. Soc.; Math. Assn. of Am.; Phi Kappa Phi; Sigma Pi Sigma; Kappa Mu Epsilon; Lions Club. Contbr. to: The Math. Tchr. Serv. Rec.: Weather Officer, Army Air Corps, 1942-46; U. S. Air Force, 1951-53. Gen. Int.: c. Dir. of Math., NSF 1962 Summer Inst., Western Reserve .

ETTA, Lucien Andrew (Ph.D.), Prof. of Biochemistry, Univ. of hern Calif. Schl. of Dentistry, Los Angeles, Calif. Home Add.: Louise Ave., Encino, Calif. BIOCHEMISTRY—METABOLISM CONNECTIVE TISSUE. b. Italy, June 4, 1907. s. Andrew Bertha (Giovinco) B. Edn.: B.S., N. Y. Univ., 1930; M.S., . of So. Calif., 1933; Ph.D., ibid., 1942. m. Mildred Pom- , Nov. 9, 1933. c.: Ruth; Andrew. Exp.: Prof., Univ. of hern Calif., Schl. of Dent., L. A., Calif., 1948—. Hon. Pos.: ing Scientist, Natl. Insts. of Health. Mem.: Inst. Food nols.; I.A.D.R.; Soc. for Exptl. Biol. and Med.; Greater A. Nutrn. Coun.; N. Y. Acad. of Scis.; Am. Inst. Nutrn.; hern Calif. Biochem. Soc.; Sigma Xi; Phi Sigma; Omicron a Upsilon. Contbrng. Author: Care of the Geriatric Patient, . Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Jour. of n.; Jour. of Endocrinol.; Jour. of Dental Rsch. Areas of .: Biochemistry and Nutrition; Metabolism of Collagen.

CH, Leland Kenneth (Ph.D.), Rsch. Assoc., Esso Rsch. and ng. Co., Linden, N. J. Home Add.: 616 Clark St., Westfield, N. J. CHEMICAL RESEARCH. b. Holland, Mich., March 13, 1913. s. Chester L. and Edna (Knapp) B. Edn.: A.B., Hope Coll., 1935; M.S., Wash. Univ., 1937; Ph.D., Purdue Univ., 1940. m. Edith Mills, June 4, 1939. c.: Leland Clark; Kenneth Mills; Lawrence Murphy. Exp.: Staff, Esso Rsch. and Engrng. Co., Linden, N. J., 1939—; Rep., ibid., London, England, 1957-59; Rsch. Assoc., ibid., 1957—. Mem.: Sigma Xi; A.C.S.; A.A.A.S.; Phi Lambda Upsilon; Trustee, Westfield Community Center Assn. Contbr. to: Analytical Chem.; Ind. and Engrng. Chem. Areas of Rsch.: Rubber Raw Materials, Metal Porphyrins in Oil, Nerve Gas Analysis and Process, Nitrogen-Fluorine Rocket Oxidizers, Maleic and Maleic Anhydride Synthesis Research, Acrolein Synis, Super Automotive Fuels, Market Development and Sales ice.

CHAM, Woodard Davis (M.D.), Prof. of Clinical Obstetrics and ecology, Tulane Univ. Schl. of Med., 4240 Magnolia St. at Pershing, New Orleans 15, La. OBSTETRICS; GYNECOLOGY. McComb, Miss., Apr. 10, 1911. s. Woodard Davis and Ida der) B. Edn.: B.A., Univ. of Miss., 1932; B.S., ibid., 1933; , Tulane Univ. of La., 1935. Exp.: Student Asst. in Biol., . of Miss., Oxford, Miss., 1930-31; Asst. in Urology, La. e Univ. Schl. of Med., 1940-41; Instr. in Gynecology and tetrics, Tulane Univ. Schl. of Med., New Orleans, La., 1941- Asst. Prof. of Clin. Gynecology and Obstetrics, ibid., 1944- Assoc. Prof. of Clin. Gynecology and Obstetrics, ibid., 1947- Prof., ibid., 1949—. Fellow: Am. Coll. of Obs. and Gynecol.; Gynecological Soc.; Am. Assn. of Obstetricians, Gynecolo-, and Abdominal Surgeons; Am. Coll. of Surgeons; Fellow, .A.; A.A.A.S.; Alpha Omega Alpha; Sigma Xi; Phi Chi; Beta a Pi; etc. Contbr. to: New Orleans M. & S. Jour.; Clinics; . and Gynec. Survey; J.A.M.A.; Urol. and Cutan. Rev.; Clin. . and Gynec.; Current Therapy; Jour. La. Med. Soc.; Med. og. and Photog.; Ginecologia Y Obstetricia De Mexico; West. . Surg., Obst. and Gynec.; South. M. Jour.; Jour. Mo. M. A.; . Doctor; Mod. Med.; Am. Jour. Obst. and Gynec. Co-author Robt. J. Crossen and Daniel W. Beacham: 5th Ed. Synopsis Gynecology, C. V. Mosley Co., 1959.

L, Merrill David (Mr.), Chf. Park Naturalist, Grand Canyon . Park, Grand Canyon, Ariz. Home Add.: P. O. Box 156, nd Canyon, Ariz. ZOOLOGY AND WILDLIFE MANAGEMENT. Richfield, Utah, June 26, 1926. s. Merrill Dee and Bessy ll) B. Edn.: B.A., Ida. Sta. Coll., 1950; M.S., Utah St. ., 1952. m. Jean Wood, Feb. 24, 1947. c.: John David; es Merrill. Exp.: Seasonal Park Ranger and Naturalist, . Park Serv., Yellowstone Park, Wyo., Summers, 1947-52, glades Natl. Park, Fla., Winter, 1951-52; Tchng. Asst. in ., Utah St. Univ., 1950-51; Park Ranger, Natl. Park Serv., Yellowstone Park, Wyo., 1953-54; Park Naturalist, ibid., 1954-60; Chf. Park Naturalist, Natl. Park Serv., Grand Canyon, Ariz., 1960—. Hon. Pos.: Exec. Secy., Grand Canyon Natural Hist. Assn.; Vice Pres., Gand Canyon Rotary Club. Mem.: Sigma Xi; The Wildlife Soc.; A.A.A.S.; Phi Sigma Kappa; Rotary Internatl. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Broad Natural History Background; Interpretive Planning Work, Exhibit Development and Museum Administration.

BEALE, Frank Swan (Ph.D.), Assoc. Prof. Math., Lehigh Univ., Bethlehem, Pa. Home Add.: 316 W. Packer Ave., Bethlehem, Pa. ACTUARIAL MATHEMATICS. b. Eastport, Me., Nov. 28, 1898. s. Frank James Beale and Lavinia (Lank) B. Edn.: B.S., Univ. of Me., 1921; M.S., ibid., 1923; Ph.D., Univ. of Mich., 1931. Exp.: Instr. in Math., Univ. of Me., 1921-26; Asst. Prof. Math., Hamilton Coll., Clinton, N. Y., 1926-27; Instr., Univ. of Mich., 1927-30; Instr. Math., Lehigh Univ., 1930-35; Asst. Prof., Math., ibid., 1935-49; Assoc. Prof., Math., ibid., 1949—; on leave of absence with Conn. Gen. Life Ins. Co., Hartford, Conn., 1944-46. Mem.: Am. Math. Soc.; Am. Stat. Assn.; Sigma Xi; Tau Beta Pi; Phi Kappa Phi. Author: Elem. Math. of Finance, 1942. Contbr. to: Annals of Math. Statistics. Ph.D. Dissertation: Systems of Linear Difference Equations with Polynomial Coefficients. Hobbies: Boating; Camping; Baseball. Listed in: Who's Who in the East; Who's Who in Am. Edn.; A.M.S.; A.S.A. Special Int.: Pension Plans.

BEAMER, Parker R(eynolds) (M.D.), Prof. of Pathol., Ind. Univ. Schl. of Med., Ind. Univ. Med. Ctr., 1040-1232 W. Mich. St., Indianapolis, Ind. MICROBIOLOGY AND PATHOLOGY. b. July 27, 1914, Centralia, Ill. s. Powhatan Reynolds and Bessie Louise (Poole) B. Edn.: A.B., Univ. of Ill., 1935; M.S., ibid., 1937; Ph.D., ibid., 1940; M.D., cum laude, Wash. Univ., St. Louis, 1943. m. Mary Jo Scovill of Urbana, Ill., Aug. 31, 1939. d. Prof. and Mrs. Hiram T. Scovill. c.: Jo Ellen; Mary Susan; Grant Scovill. Exp.: Asst. in Bacteriol., Univ. of Ill., 1935-39; Jackson Johnson Scholar and Fellow, Wash. Univ. Schl. of Med., 1939-43; Lectr. in Bacteriol., Wash. Univ. Schl. of Dentistry, 1941; Asst. in Pathol., Wash. Univ. Schl. of Med., 1941-44; Asst. Prof. Pathol., ibid., 1946-49; Prof. of Microbiol. and Immunol., Dir. Dept. and Assoc. Prof. Pathol., Bowman Gray Schl of Med., Wake Forest Coll., 1949-53; Prof. of Pathol., Ind. Univ. Med. Ctr., Indianapolis, Ind., 1953—; Editor-in-Chf., Am. Jour. Clin. Pathol., 1956—; Consulting Editor, Stedman's Med. Dictionary, 1958—; Advisory Editor, Current Med. Digest, 1959—; Pres., N. C. Soc. of Bacteriol. Mem.: A.A.P.B.; Soc. of Am. Bacteriol.; A.S.C.P.; Coll. of Am. Pathologists (Fellow); Am. Soc. Expml. Pathol.; S.E.B.M.; A.P.H.A.; A.A.A.S.; A.M.A.; Sigma Xi; Alpha Omega Alpha; Gamma Alpha; Kiwanis. Contbr. to: Med. and Sci. Jours. Co-author of textbook: Principles of Human Pathology (Oxford Univ. Press), 1959. Ph.D. Dissertation: Heat Resistance of Certain Yeasts and Non-Spore-Forming Pathogenic Bacteria. War Rec.: Chf. Lab., Army Hosp., 1944-45; Chf. of Bacteriol. and Parasitol. Div., Antilles Genl. Med. Lab., 1945-46; Comdng. Off., Antilles Genl. Med. Lab., in Addition Above Duties, 1946; 1st Lt. to Maj., Med. Corps, Army U.S.A., 1944-46. Travel: N. Am.; British Guiana; Trinidad; French Guiana; Puerto Rico; Caribbean Areas. Gen. Int.: Diplomate of Am. Bd. of Pathol.; Bronze Tablet for Milit. and Scholastic Excellence, Univ. of Ill., 1935; S.A.M.A. Award, Outstanding Faculty Member of 1961, Ind. Univ. Med. Ctr. Hobbies: Basketball; Ice Skating. Listed in: A.M.S.; Who's Who in Am.; Who's Who in Midwest; Who Knows—and What; Dir. of Med. Specialists; Who's Who in Am. Edn.; Who's Important in Med. Special Int.: Pub. Health Bacteriol.; Heat Resistance of Pathogenic Microorganisms; Clostridium botulinum Food Poisoning; Chemotherapy in Salmonella and Shigella Infections; Pathogenic Staphylococci; Mycotic Infections; Viral Infections in Gnotobiotic (Germ-free) Animals; Microbiology and Pathol. of Miscellaneous Infectious Diseases; Med. Edn.

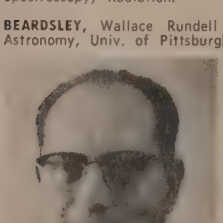
BEAMESDERFER, John William (Ph.D.), Prof. and Hd. Dept. of Chem., 287 Aubert Hall, Univ. of Me., Orono, Me. Home Add.: 4 Chapel Rd., Orono, Me. PHYSICAL CHEMISTRY. b. Schaefferstown, Pa., Aug. 24, 1910. s. David N. and Catherine (Mann) B. Edn.: B.S., Gettysburg Coll., 1932; M.S., Univ. of Mich., 1939; Ph.D., ibid., 1948. m. Maurine A. Smith, Feb., 1940. c.: J. Newman; Betty Ann. Exp.: Chemist, Gen. Chem. Co., Marcus Hook, Pa., 1932-34; Instr. Chem. and Phys., Fredericksburg H. S., Pa., 1934-38; Tchng. Fellow, Univ. of Mich., 1938-41; Rsch. Fellow, ibid., 1941-43; Chf. Chemist Engrng. and Rsch. Dept., Argus, Inc.; Ann Arbor, Mich., 1943-47; Asst. Prof. of Chem., Univ. of Me., 1947-52; Assoc. Prof., ibid., 1952-55; Prof. and Hd. Dept. Chem., ibid., 1955—. Mem.: Am. Chem. Soc.; A.A.A.S.; A.A.U.P.; Sigma Xi; Phi Lambda Upsilon; Gamma Alpha. Contbr. to: Paper Trade Jour.; Tech. Assn. Pulp and Paper Ind. Areas of Rsch.: Wettability of Solid Surfaces; Adsorption; Specific Surface area of Solids; Domestic Clays; Paper Coatings.

BEAR, Richard S(cott), (Ph.D.), Dean, Grad. Schl., Boston Univ., Boston 15, Mass. Home Add.: 75 Richardson Rd., Belmont 78, Mass. BIOPHYSICS. b. Miamisburg, Ohio, June 8, 1908. s. Harris V. and Georgiana (Scott) B. Edn.: B.S., Princeton Univ., 1930; Ph.D., Univ. of Calif., 1933. m. Josephine Hoyt, Sept.

4, 1942. c.: Mrs. Andrea Rugh; Mrs. Janet McTavish. Exp.: N.R.C. Fellow, Dept. of Chem., Princeton Univ., Princeton, N. J., 1933-34; Rsch. Assoc., Dept. of Zoology, Wash. Univ., St. Louis, Mo., 1934-38; Asst. Prof., Dept. of Chem., Ia. Sta., Ames, Ia., 1938-41; Assoc. to Full Prof., Dept. of Biol., Mass. Inst. of Tech., 1941-57; Dean, Coll. of Scis. and Humans., Ia. Sta. Univ., 1957-61; Dean, Grad. Schl., Boston Univ., 1961—. Mem.: Am. Acad. of Arts and Scis.; Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Biophys. Soc.; Natl. Edn. Assn.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Cellular and Comparative Physiol.; Jour. Biophys. and Biochem. Cytology; Acta Crystallographica; Jour. Polymer Sci. Areas of Rsch.: X-Ray Diffraction Studies of the Molecular Structure of Natural Polymers and Tissues.

BEARD, David Breed (Ph.D.), Prof. of Physics, Univ. of Calif., Davis, Calif. Home Add.: 54 College Park, Davis, Calif. NUCLEAR THEORY, SPACE PHYSICS, PLASMA PHYSICS. b. Needham, Mass., Feb. 1, 1922. s. Daniel Breed and Anne Louise (Curran) B. Edn.: B.S., Hamilton Coll., 1943; Ph.D., Cornell Univ., 1951. m. Eileen Mona Hersey, Mar. 4, 1945. c.: Lawrence Bennett; Jonathan Breckenridge; Valerie Curran; Rosemary Diane. Exp.: Instr., Catholic Univ. of Am., 1950-51; Instr., Univ. of Conn., 1951-53; Asst. Prof., Univ. of Calif., 1953-56; Staff Scientist, Lockheed Aircraft Corp., Palo Alto, Calif., 1956-58; Asst. Prof. to Prof., Univ. of Calif., 1958—. Mem.: Am. Phys. Soc., Feliów; A.A.A.S., Fellow; A.A.A.U.P.; Am. Geophysical Union; Sigma Xi; Wash. Phil. Soc.; Sigma Pi Sigma. Author: Elements of Quantum Mechanics, 1962. Contbr. to: Phys. Rev.; Jour. of Geophys. Rsch.; Physics of Fluids; Astrophysical Jour.; Phys. Rev. Letters; Revs. of Scientific Instruments; Nucleonics; A.R.S. Jour.; Jour. of Nuclear Energy; Nature; Am. Scientist. Service Record: U. S. Navy R., 1944-45. Areas of Rsch.: Nuclear Theory; Space Physics; Plasma Physics; Astrophysics; Field Theory; Beta-Ray Spectroscopy; Radiation.

BEARDSLEY, Wallace Rundell (Mr.), Astronomer and Instr. of Astronomy, Univ. of Pittsburgh, Pittsburgh, Pa. STELLAR SPECTROSCOPY AND ASTROMETRY. b. Camp Lewis, Wash., June 4, 1922. s. Arthur S. and Charlotte (Wallace) B. Edn.: B.S. in Math. and B.S. in Physics, Univ. of Wash., 1948; M.S., Univ. of Chicago, 1960. m. Natasha Ksointz, June 1956. Exp.: Asst., Univ. of Chicago, Yerkes Observatory, 1950-53; Astronomer and Instr., Univ. of Pittsburgh, Allegheny Observatory, 1953—; Instr., Chatham Coll., 1955-57. Mem.: Am. Astronomical Soc.; A.A.A.S.; Assn. for Computing Machinery. Contbr. to: Astrophysical Jour. Supplements; Astrophysical Jour.; Astronomical Jour. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Spectroscopic Binary Stars.

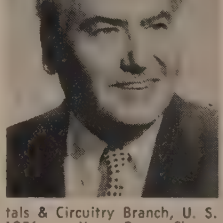


BEATON, Lindsay Eugene (M.D.), Private Physician, 1650 N. Campbell Ave., Tucson, Ariz. NEUROLOGY AND PSYCHIATRY. b. Chicago, Ill., Jan. 25, 1911. s.: David and Vera (deLipkau) B. Edn.: A.B., Dartmouth Coll., 1932; M.S., Northwestern Univ. Med. Schl., 1940; M.D., ibid., 1939; Internship, Passavant Hosp., Chicago, Ill., 1940. m. Eileen Barrous, June 28, 1962. c.: Kathleen and Jeremy. Exp.: Instr. of Anatomy, Northwestern Univ., Med. Schl., Chicago, Ill., 1937-39; Med. Fellow, Natl. Rsch. Council, ibid., 1941-42; Instr., Neuropsychiatric Schls., Pac. Ocean Areas, 1945; Mem., Med. Staffs, Tucson Med. Center, St. Mary's Hosp., Pima Co. Gen. Hosp., 1946—. Hon. Pos.: Vice-Chmn., Coun. on Mental Health, Am. Med. Assn.; Lecturer, Dept. of Psychology, Univ. of Ariz.; Consult., V. A. Hosp., Tucson; Consult., Ft. Huachuca Army Hosp. Mem.: Am. Acad. of Neurol.; Am. Psychiatric Assn.; A.M.A.; West. Assn. of Electroencephalography; Am. Bd. of Psychiatry and Neurol., Inc.; Am. Acad. of Forensic Sci.; Beta Theta Pi; Phi Beta Kappa; Sigma Xi; Alpha Omega Alpha; Rotary. Contbr. to: Archives of Neurol. and Psychiatry; Bull. of Menninger Clinic; Surgery, Gynecol. and Obstetrics; Jour. of Neurophysiol.; Anatomical Record; Am. Jour. of Physiol.; Ariz. Med.; Sci.; Jour. of Anatomy; Quart. Bull. of Northwestern Univ. Med. Schl.; Stain Tech.; Am. Jour. of Phys. Anthropol. War Rec.: U. S. Army Med. Corps, 1942-46. Special Int.: Anatomy and Physiol. of the Hypothalamus; Epilepsy; Multiple Sclerosis.

BEATTY, Alvin Von Erl (Ph.D.), Prof. of Biol., Box 22, Emory Univ., Atlanta 22, Ga. Home Add.: 1010 Liawen Court, Atlanta 6, Ga. CYTOGENETICS AND RADIATION BIOLOGY. b. Continental, Ohio, Jan. 7, 1909. s. Earl Roland and Beryl (Burriss) B. Edn.: B.A., Oberlin Coll., 1932; Ph.D., Univ. of Va., 1936. m. Jeanne Warren, May 26, 1951. c.: Susan Warren; Jane Warren. Exp.: Instr. in Biol., Univ. of Ala., 1937-40; Asst. Prof. in Biol., ibid., 1941-46; Assoc. Prof., Biol., Emory Univ., 1946-53; Prof. of Biol., ibid., 1954—. Hon. Pos.: Secy., Emory Chapt., 1948-49; Vice-Pres., 1951, Pres., 1952, Sigma Xi; Secy.-Treas., 1950-52; Vice-Pres., 1954, Pres., 1956, Assn. Southeastern Biologists. Gen. Int.: Emory Chapt., Soc. of Sigma Xi Rsch. Award, 1955; A.S.I. Rsch. Award, 1960. Mem.: Sigma Xi; Am. Bot. Soc.; A.A.A. Assn. of Southeastern Biol.; Ga. Acad. of Sci.; A.I.B.S.; Am. Genetics Soc.; Pi Kappa Alpha; A.E.D.; and others. Contbr. to: Am. Jour. of Bot.; Sci.; Bull. Torrey Botanical Club; Jour. of Heredity; Genetics; Proc. Natl. Acad. Sci.; Genetica; Stain Tech. Areas of Rsch.: Cytogenetics and Radiation Biol.

BEAULIEU, Edward Paul (Mr.), Civil Engr., Bur. of Reclamation, Dillon, Mont. Home Add.: Dillon, Mont. CIVIL ENGINEERING b. Missoula, Mont., Sept. 30, 1907. s. Paul and Madeline (Racine) B. Edn.: Mont. State Coll., 1925-30. m. Esther Johnson, July 28, 1934. c.: William Edward; Donald Lee; Marilyn Elise; Edward Paul, Jr.; Larry Allan; Carole Marie; LaVerna Kay; David Ray. Exp.: Worked with Construction of Kerr Dam, Flathead Hydro-Elec. Dev., Phoenix Utility Co. and Phoenix Engrng. Corp; Western Mont., 1930-32, 1936-38; Worked on Construction of F. Peck Dam in Eastern Mont., U. S. Army Engrs., 1933-35; Construction of Irrigation Projects, U. S. Bur. of Reclamation, Hamilton, Mont., Great Falls, Mont., Chester, Mont., Helena, Mont. and Dillon, Mont., 1945—. Mem.: Natl. Geographic Soc.; Am. Geographical Soc.; Am. Geophysical Union; Am. Assn. Adv. Sc.

BECHMANN, Rudolf (Ph.D.), Consultant, Piezoelectric Crystals Circuitry Branch, Solid State & Frequency Control Div., U. S. Army Signal Rsch. and Deve Lab., Fort Monmouth, N. J. Hom Add.: 165 Park Ave., Shrewsbur N. J. PIEZOELECTRICITY. b. Nu remberg, Germany, July 22, 190 s. Adolf and Anna (Bissinger) B Edn.: Ph.D., Univ. of Munich Germany, 1927. m. Irmgard Bethke, Oct. 5, 1933 (dec.). m 2nd, Luella Hyers, Nov. 23, 196 Exp.: Ranking Exec. at Telefunke Co. for Wireless Telegraphy, Ltd Berlin, Germany, 1927-45; Dir. o Oberspree Co., Berlin, 1945-48 Prin. Scientific Officer, Genera Post Office, Dollis Hill, Londo England, 1948-53; Hd. of Dielec tric Phenomena Sect. of the Ele trophysical Rsch. Dept., Clevit Rsch. Ctr., Cleveland Ohio, 195 56; Consultant, Piezoelectric Cry tals & Circuitry Branch, U. S. Army Signal Rsch. and Devel. Lab 1956—. Hon. Pos.: Chmn., Subcommittee 14.2, Piezoelectr Measurements, I.R.E. Mem.: Fellow, Am. Phys. Soc.; Fellow, Am Assn. for the Adv. of Sci.; Fellow, Inst. of Radio Engrs. Au thor: Piezoelectricity, 1957; Landolt-Bornstein, Physical Tables Section 273, 1959; Landolt-Bornstein, Physical Tables, Sectio 2825, 1962 (In Press). Contbr. to: Annal d. Physik; Telefunke Zeitung; Proc. Inst. of Radio Engrs.; Acta Crystallographica Archiv d. elektr. Ubertragung; Physics and Chem. of Solid British Jour. of Applied Physics; Proc. Physical Soc., London Zeitschrift fur Physik; Nature; Jour. Scientific Instruments; Hoch frequenztechn. u. Elektroak; Naturwissenschaften, E.N.T., Nucle onics. Gen. Int.: Discovery of AT-, BT-, CT-, DT-, and RT-Cu of Quartz with Small Temperature Coefficient of Frequency; Di covery of Triangular Form of Quartz Plates for Filter Purpose Areas of Rsch.: Crystallography, Particularly Piezoelectricity an Solid State Physics.



BECHTEL, Arthur Wellington (Mr.), Agronomist in Horticultura Crops, U. S. AID to Laos, APO-152, San Francisco, Calif. Hom Add.: Alfred Hawley, First Nat Bank & Trust Co., Millersburg Pa. TROPICAL ECONOMIC BO ANY. b. Reading, Pa., Sept. 19 1907. s. Arthur W. and Alm (Ludwig) B. Edn.: A.B., Univ. o Mich., 1934. m. Adelaide Se bert, June 30, 1938. Exp.: Sta tion Dir., U. S. Dept. of Agric Marfranc, Jeremie, Haiti, 1942 45; West Indies Supvr., ibid 1945-56; Coffee Adviser, Internat Cooperation Admin., Addis Ababa Ethiopia, 1956-60; Agronomist Horticultural Crops, U. S. Aid Laos, San Francisco, Calif., 196 —. Mem.: Am. Soc. of Botany Am. Soc. of Plant Physiol.; So for Economic Botany; Am. So of Horticultural Sci.; Mich. Acad of Sci.; A.A.A.S. Areas of Rsch Dir. of Rubber Rsch. Station in Haiti with Emphasis on Inte calary Crops Cacao, Coffee and Leguminous Covers; Tropical F bers and Foods; Shade Tolerant Agric. and Medicinal Crops.

BECHTOL, Lavon D. (Ph.D., M.D.), Dir. of Clinical Rsch., Baxte Labs., Inc., Morton Grove, Ill. Home Add.: Barrington, Il MEDICINE, CHEMISTRY. b. Wabash, Ind., Feb. 3, 1918. s. John S. and Mevel (Props) B. Edn.: A.B., Manchester Coll 1940; M.D., Johns Hopkins Univ., 1947; Ph.D., Purdue Univ 1944. m. Miriam Leisure, 1938. c.: Richard; David. Exp Internship and Residency Methodist Hosp., Indianapolis, Ind 1947-49; Priv. Practice of Med., Whiting, Ind., 1949-50; Assoc Med. Dir., Baxter Lab., Morton Grove, Ill., 1952-55; Med. Dir Ethicon, Inc., 1955-61; Dir. Clin. Rsch., Baxter Labs., Inc., Morto

Grove, Ill., 1961—; Rsch. Pharmacologist, Lilly Rsch. Lab., 1946. Mem.: Am. Med. Assn.; N. J. Med. Soc.; Am. Chem. Soc.; Aero Med. Assn.; Am. Assn. of Blood Banks; Johns Hopkins Med. and Surgical Assn.; Am. Assn. Adv. Sci.; Fellow, N. J. Acad. of Med.; N. Y. Acad. of Sci.; Assn. of Med. Dirs.; Am. Therapeutic Soc.; Sigma Xi; Phi Lambda Upsilon; Service Record: U. S. Air Force, 1950-52; U. S. Army, 1943-46. Areas of Rsch.: Clinical Research Co-ordination; Endocrinology and Metabolism; Surgical Implants; Blood Banking; Organic Fluorine Compounds.

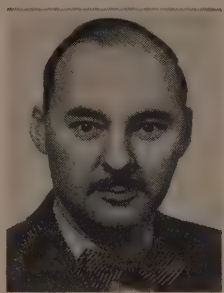
BECK, Edward Creer (Ph.D.), Physiological Psychologist, V. A. Hosp., Salt Lake City, Utah, Asst. Prof. Neurology, Pharmacology & Psychiatry, Univ. of Utah, Coll. of Med., Salt Lake City, Utah. Home Add.: 3156 E. 4430 South, Salt Lake City, Utah. PSYCHOLOGY. b. Spanish Fork, Utah, Feb. 20, 1918. s. Spencer Robertson and Eiffel (Creer) B. Edn.: B.A., Brigham Young Univ., 1950; Ph.D., Univ. of Utah, 1954. m. Leia Tendler, Jan. 22, 1944. c.: James Spencer; Melanie; Jon Edward; Daniel David. Exp.: Rsch. Assoc., Dept. of Physiol., Univ. of Utah, Coll. of Med., 1952-54; Clin. Psychol., V. A. Hosp., Salt Lake City, Utah, 1954-56; Rsch. Instr., Dept. of Psychiatry, Univ. of Utah, Coll. of Med., 1955—; Chf. Psychol., Utah State Prison, 1955—; Physiol. Psycholst., V. A. Hosp., Salt Lake City, Utah, 1956—; Senior Scientist, U.S.P.H.S., with Unite de Recherches Neurobiologique de l'Institut National d'Hygiene, Marseille, France, 1960-61. Mem.: Sigma Xi; Am. Psychological Assn.; Utah Neurological Assn.; Inter Am. Soc. of Psychol.; Rocky Mountain Psychological Assn.; Am. Physiological Soc.; N. Y. Academy of Sciences. Contbr. to: Jour. of Comparative and Physiol. Psychol.; Electroencephalography and Clin. Neurophysiol.; Jour. Exptl. Neurol. War Rec.: U. S. Maritime Service, 1943-47. Areas of Rsch.: Electrophysiological Correlates of Behavior.

BECK, Niels Christian (Mr.), Asst. Dir., Armour Rsch. Found. of Ill. Inst. of Tech., 10 W. 35th St., Chicago 16, Ill. Home Add.: 1435 N. Park Ave., Chicago 10, Ill. RESEARCH ADMINISTRATION. b. Denver, Colo., May 8, 1912. s. Niels Christian and Rosemary (Donegan) B. Edn.: A.B., Regis Coll., 1934; B.S., ibid., 1935. m. Lola da Motta, Jan. 13, 1957. c.: Niels Christian, Jr.; Michael. Exp.: Meteorologist, Parks Coll., E. St. Louis, Mo., 1939-45; Dean, ibid., 1945-53; Asst. Dir., Armour Rsch. Found., 1953—. Mem.: Life Mem., Burma Sci. Assn.; Sigma Xi; N. Y. Acad. of Scis.; Professional Mem. of Am. Meteorol. Soc.; Inst. of Aerospace Scis.; Soc. of Automotive Engrs.; A.A.A.S.; Geophys. Union.; Ill. Chamber of Commerce. Contbr. to: Am. Meteorological Soc. Bull.; Am. Soc. for Engrng. Edn. Jour.; Armour Rsch. Found. Quarterly; Jour. of Burma Sci. Assn. Serv. Rec.: U. S. Air Force, 1941-44. Gen. Int.: Built, Staffed and Equipped Union of Burma App. Rsch. Inst., Rangoon, 1956-60. Areas of Rsch.: Micrometeorology (Air Pollution); Tornado Forecasting; Technical Assistance to Industry, Research Administration.

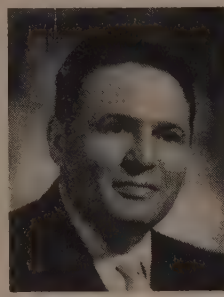
BECKER, Clarence Frederick (Ph.D.), Agricl. Engr., Univ. of Wyo., Laramie, Wyo. Home Add.: 2010 Thornburg, Laramie, Wyo. AGRICULTURAL ENGINEERING. b. N. D., Mar. 27, 1920. s. Henry and Ermie (Svenningson) B. Edn.: B.S., N. D. State Univ., 1943; M.S., ibid., 1949; Ph.D., Mich. State Univ., 1956. m. Irene Sad, Jan., 1944. c.: Bradford Clarence; Rodney Richard. Exp.: Dist. Representative, Food Machinery Corp., N. D., 1947-48; Agril. Engr., Univ. of Wyo., 1949—; Chmn., Rocky Mtn. Sec., Am. Soc. of Agril. Engrs., St. Joseph, Mich., 1960—. Mem.: Sigma Xi; Sigma Tau; Gamma Sigma Delta; Phi Kappa Phi; Blue Key; Alpha Zeta; Sigma Pi Sigma; Farmhouse. Contbrng. Author: Agricultural Engineering, 1961; Solar Energy, 1957. Contbr. to: Univ. of Wyo. Agril. Expt. Sta. Bull.; Agril. Engrng. Trans. Serv. Rec.: U. S. Air Force, 1943-46. Areas of Rsch.: Climatol. and Farm Mechanization.

BECKER, Harry C. (Ph.D.), Supvr., Texaco Rsch. Ctr., Beacon, N. Y. Home Add.: Shirley Ave., Fishkill, N. Y. ANALYTICAL CHEMISTRY. b. Bisbee, Ariz., Oct. 31, 1913. s. Harry S. and Maude (Hiller) B. Edn.: B.S., Univ. of Ill., 1936; M.S., ibid., 1937; Ph.D., ibid., 1940. m. Lestine Carson, Dec. 25, 1940. c.: Gregory S. Exp.: Chemist, Texaco Inc., Beacon, N. Y., 1940-43; Supvr., ibid., 1943—. Hon. Pos.: Chmn., Mid-Hudson Sect. of A.C.S., 1956-57; Chmn., Texaco Rsch. Ctr. Branch of R.E.S.A., 1954-55; Chmn., Mid-Hudson Sci. Adv. Coun., 1959. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Rocket Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Cereal Chemistry; Analytical Chem. Areas of Rsch.: Analytical Chemistry of Carbohydrates; Non-Protein Nitrogen; Petroleum and Rocket Propellants.

BECKER, R. Frederick (Ph.D.), Assoc. Prof., Anatomy, Duke Univ. Med. Ctr., Durham, N. C. NEUROANATOMY; FETAL PHYSIOLOGY; BEHAVIORAL SCIENCE. b. Methuen, Mass., Aug. 12, 1912. s. William Curtis and Bertha (Schroeder) B. Edn.: B.S., Mass. State Coll., 1935; M.S., ibid., 1937; Ph.D., Northwestern Univ., 1940. m. Florence Courtis, Sept. 8, 1936. c.: Richard Frost; Constance Louise. Exp.: Instr. to Asst. Prof., Anat., Northwestern Med. Schl., Chicago, Ill., 1940-46; Chmn., Anat. Dept., Univ. of Wash. Med. Schl., Seattle, Wash., 1946-49; Assoc. Prof. Anat. and Dir., Neuroanat. Labs., Daniel Baugh Inst. of Anat., Jefferson Med. Coll., Phila., Pa., 1949-52; Assoc. Prof., Anat., Duke Univ. Med. Ctr., 1952—. Hon. Pos.: Med. Advisor/Aid to Dept. Anat., Chiengmai Med. Schl., Chiengmai, Thailand. Mem.: Am. Anat. Assn.; Am. Physiol. Soc.; Am. Assn. for the Adv. of Sci.; Am. Assn. Med. Colls.; N. Y. Acad. of Sci.; Phi Kappa Phi; Sigma Xi. Contbr. to: Surg. Gyn. Obst.; Am. Jour. Physiol.; Anat. Record; Jour. Exptl. Psychol.; Jour. Genetic Psychol.; Jour. Comp. and Physiol. Psychol.; Proc. Soc. Exptl. Biol. and Med.; Arch. Neurol. and Psychiat.; Am. Jour. Obstet. and Gynec.; Phys. Therapy Rev. Areas of Rsch.: Physiology of Fetal Respiration, Somatic Motor Behavior, Circulation and Gastrointestinal Function; Alteration of Intrauterine Environment; Neonatal Asphyxia; Olfaction; Learning Behavior in Animals.



BECKER, Robert Jerome (M.D.), 58 N. Chicago St., Joliet, Ill. Home Add.: 702 W. Palladium Dr., Joliet, Ill. INTERNAL MEDICINE; ALLERGY; IMMUNOLOGY. b. Milwaukee, Wis., May 29, 1922. s. Jacob and Sarah (Saxe) B. Edn.: M.D., Marquette Univ. Schl. of Med., 1949. m. June S. Granof, June 25, 1950. c.: Scott M.; Jill S.; Jon G. Exp.: Interne, Michael Reese Hosp., Chicago, Ill., 1949-50; Res., Internal Med., V. A. Hosp., Wood, Wis., 1950-53; Tchng. Fellow, Int. Med., Marquette Univ. Schl. of Med., 1950-53; Res., Allergy, Roosevelt Hosp., N. Y. C., 1955-56; Clin. Instr., Int. Med. (Aliergy), Northwestern Univ. Schl. of Med., 1956—. Hon. Pos.: Secy., Allergy Sect., Ill. State Med. Soc., 1958-60; Chmn., ibid., 1960-61; Mem. of Adv. Bd., Asthmatic Children's Aid, Chicago. Mem.: Fel., Am. Acad. Allergy; Chicago Allergy Soc.; A.A.A.S.; N. Y. Acad. Scis.; Am. Coll. of Physicians; Alpha Omega Alpha; Alpha Sigma Nu; Phi Delta Epsilon. Serv. Rec.: U. S. Army, 1943-45, 1953-55. Areas of Rsch.: Clinical Allergy and Immunology; Repository Antigen Studies, Physical Conditioning Program for Asthmatic Children.



BECKJORD, Philip Rains (M.D.), Colonel, MC, U. S. Army (Ret.), Prof. of Publ. Hlth. Admin., Tulane Univ. Med. Schl., New Orleans 12, La. Home Add.: 3026 La. Ave., Pkwy., New Orleans 25, La. PREVENTIVE MEDICINE AND PUBLIC HEALTH. b. Manila, P. I., Jan. 9, 1914. s. Harry Lyman and Helen Gertrude (Rains) B. Edn.: B.S., Univ. of Minn., 1935; M.B., ibid., 1937; M.D., ibid., 1938; M.P.H., ibid., 1949; Dr. P.H., The Johns Hopkins Univ., 1957. m. Margaret McGilvray, Oct. 17, 1937. c.: Cedric Jon; Pamela Margaret; Ross Forrester; Peter Rains. Exp.: Gen. Pract. Med., Willmar, Minn., 1938-40; Field Med. Officer, 6th, 99th, 1st U. S. Inf. Divs., 1940-45; Sr. Publ. Health Staff Officer, U. S. Mil. Govt., Germany, 1945-48; Dep. Chf. Surg., U. S. Forces, Austria, 1949-52; Prev. Med. Officer, Hq., 1st U. S. Army, N. Y., 1952-53; Chf., Dept. of Hlth. Pract., Army Med. Serv. Grad. Schl., 1953-55; Instr. in Epidemiol., The Johns Hopkins Univ., Balt., Md., 1955-56; Dir., Div. of Prevent. Med., Walter Reed Army Inst. of Rsch., 1956-57; Asst. Chf., Prevent. Med. Div., Office of the Surgeon Gen. of the U. S. Army, Wash., D. C., 1957-59; Chf. of Prof. Servs., Office of the Surg., Hq., Korea, U. S. Army, 1959-60; Prof. of Publ. Hlth. Admin., Tulane Univ. Med. Schl., New Orleans, La., 1960—. Hon. Pos.: Mem., Publ. Hlth. Rsch. Study Sect., Natl. Insts. of Hlth., Wash., D. C., 1958; Med. Mem., Spec. Milit. Mission to Australia and the Far East, 1957; Mem., Comm. on Civil Affairs, Strategic Div., Office of Rsch. Operations, Wash., D. C., 1957-59; Mem., Panel on Physiol., Comm. on Environment, R and D Office, Dept. of the Army, 1958-59; Fellow, L.S.U. Inter American Program, 1961; Fellow, in Nutrition, 1962. Mem.: Phi Rho Sigma; Am. Medical Assn.; Am. Public Health Assn., Fellow; Am. Coll. of Preventive Medicine, Fellow; Am. Soc. of Tropical Medicine and Hygiene; Assn. of Teachers

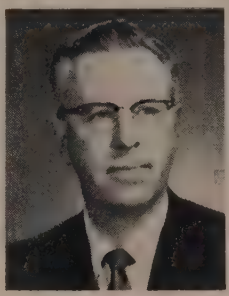
of Preventive Medicine. Contbr. Author: The Military Surgeon; Minn. Med.; The Bull. of the U. S. Army Med. Dept.; The Jour. Am. Med. Assn.; The U. S. Armed Forces Med. Jour. Serv. Rec.: U. S. Army, 1940-60. Gen. Int.: Bronze Star Medal for Merit, World War II, 1945; Citations: U. S. Milit. Gov., 1948, Commandant, Walter Reed Army Med. Ctr., 1957, The Surg. Gen., U. S. Army, 1959, The Govt. of Korea, 1960, Army Commendation Medal, 1961. Areas of Rsch.: Nutrition; Tuberculosis.

BECKMANN, Albert Jules (M.D.), Asst. Prof., Public Health Practice, Columbia Univ. Schl. Pub. Health and Admin. Med., N. Y., N. Y. Home Add.: 111 Hempstead Ave., Malverne, N. Y. PEDIATRICS; PUBLIC HEALTH. b. New York, N. Y., Mar. 2, 1917. s. Charles F. and Rose Tepper (Clair) B. Edn.: B.A., Cornell Univ., 1938; M.S., Univ. N. C., 1941; M.D., Bowman Gray Schl. Med., Wake Forest Coll., 1945. m. Blanche Cooper, Aug. 12, 1957. c.: Robin; Randi. Exp.: Rsch. Assoc., Columbia Univ. Schl. Pub. Health and Admin. Med., 1949-51; Asst. Prof., Pub. Health Practice, Columbia Univ., 1951—; Asst. Attending Pediatrician, Babies Hosp., Columbia Univ., 1954—; Asst. Attending Pediatrician, Meadowbrook Hosp., 1953-56; Attending Pediatrician, ibid., 1957—; Attending Pediatrician, St. John's Guild Floating Hosp., 1952—. Mem.: Am. Pub. Health Assn.; A.A.A.S.; Royal Soc. Health; A.M.A.; Am. Schl. Health Assn.; N. Y. Acad. Sci.; Phi Epsilon Pi; Shriner. Contbr. to: Jour. Pediatrics; Jour. Hyg. Serv. Rec.: U. S. Army Med. Corps, Captain, 1946-48. Gen. Int.: Dir., Civil Defense, Malverne, N. Y., 1952-54. Areas of Rsch.: Pediatrics; Pub. Health; Air Sanitation.

BECKNELL, Guy Gaillaird (Ph.D.), Prof. of Phys. (Emer.), Univ. of Tampa, Tampa, Fla. Home Add.: 6900 Dixon Ave., Tampa 4, Fla. PHYSICS AND MATHEMATICS. b. Milford, Ind., Apr. 16, 1878. s. Irvin J. and Sarah E. (Zook) B. Edn.: B.S., Northwestern Univ., 1904; M.S., ibid., 1905; Ph.D., Clark Univ., 1911. Hon. Degrs.: D.Sc., Univ. of Tampa, 1946. m. Geneva West, July 2, 1913. c.: Mrs. Elizabeth Ann Sisk. Exp.: Instr. in Phys., Purdue Univ., Lafayette, Ind., 1905-08; Rsch. Fellow and Sr. Fellow, Clark Univ., Worcester, Mass., 1908-11; Prof. of Phys., Mt. Allison Univ., N. Brunswick, Can., 1911-12; Instr. in Phys., Syracuse Univ., N. Y., 1912-14; Instr., Phys., Northwestern Univ., Evanston, Ill., 1914-15; Instr. to Prof. of Phys., Univ. of Pittsburgh, Pittsburgh, Pa., 1916-24; Prof. of Phys., Univ. of Tampa, 1931-60; Prof., ibid. (Emer.), 1960—. Hon. Pos.: Past Pres., Fla. Acad. of Sci. Mem.: Am. Phys. Soc.; Fellow (Emer.), Am. Assn. for the Adv. of Sci.; Am. Mathl. Soc.; Charter Mem., Fla. Acad. of Scis.; Natl. Geographic Soc.; Sigma Xi; Phi Beta Kappa; Tampa Torch Club, Past Pres. Contbr. to: Phys. Rev.; Procs. of the Fla. Acad. of Scis.; Maths. Mag. Areas of Rsch.: Theory of Numbers; Diffraction Evolutes; Demagnetization of Steel Rods by Flexure, Torsion, and Impact; Elizabethan History and Literature.

BEDWELL, Theodore Cleveland, Jr. (M.D.), Commander, Aerospace Med. Div., Brooks Air Force Base, Tex. Home Add.: 131 Vinsant Street, San Antonio 35, Texas. AVIATION MEDICINE; PREVENTIVE MEDICINE; OCCUPATIONAL MEDICINE. b. Caddo Mills, Tex., March 31, 1909. s. Theodore Cleveland, Sr. and Mary Rebecca (Gary) B. Edn.: B.S., Southern Methodist Univ., Dallas, 1931; M.D., Baylor Univ. Med. Coll., Dallas, 1933; M.P.H., Johns Hopkins Schl. of Pub. Health, Baltimore, 1951. m. Blanche Elizabeth Harper, June 1, 1935. c.: Beverly Anne. Exp.: Staff Mem. to Asst., Health and Med. in Off. of Secy. of Defense, Wash., 1952-53; Chief of Prev. Med., Office of Surgeon Gen., Hdqs. U. S. Air Force, Wash., D. C., 1953-56; Deputy Surgeon, Strategic Air Command, Offutt Air Force Base, Nebr., 1956-59; Command Surgeon, ibid., 1959-61; Commander, Aerospace Med. Div., Brooks Air Force Base, Tex., 1961—. Hon. Pos.: Mem., Exec. Coun., Aerospace Med. Assn. Mem.: Fellow, Aerospace Med. Assn.; Fellow, Royal Soc. of Health; Fellow, Am. Coll. of Prev. Med.; Pres., Soc. of U.S.A.F. Flight Surgeons; Mem. of Indust. Med. Assn.; Am. Pub. Health Assn.; Assn. of Military Surgeons and Am. Med. Assn.; Phi Chi; Rotary Internatl. Contbr. to: Med. and Pub. Health Aspects of Nuclear Weapons Incidents in Peacetime; Medical Serv. Digest; Armed Forces Med. Jour.; Aerospace Med. Serv. Rec.: U. S. Air Force, 1935—, Brigadier General, U.S.A.F., M.C. Areas of Rsch.: Certified by the American Bd. of Preventive Medicine as a Specialist in Aviation, Preventive and Occupational Medicine.

BEEBE, Byron Warren (Mr.), Pres., Exploration, Inc.; and Petroleum Exploration Consultant, Box 334, Boulder, Colo. Home Add.: 2885 19th St., Boulder, Colo. GEOLOGY AND GEOPHYSICS. b. Udall, Kan., July 25, 1913. s. John Eliot and Daisy Viola (McKinney) B. Edn.: B.A., Univ. of Wichita, 1935; Grad. Work, Calif. Inst. Tech., 1941-42. m. Ann Morrow Aderhold, June 16, 1959. c.: Robert Edward Lee. Stepchildren: Joan Marie Aderhold; Benjamin Morrow Aderhold; Thomas Maze Aderhold. Exp.: Asst. to Vice-Pres. charge of Explor., Shell Petrol. Corp., Wichita, Kan., Tulsa, Okla., St. Louis, Mo., 1935-38; Div. Geol., Brit. Am. Oil Prod. Co., Wichita, Kan., Mattoon, Ill., Tulsa, Okla., 1938-39; Assoc., Lerke & Wharton, Wichita, Kan., 1939-41; Explor. Mgr., Vice-Pres., Bay Petrol. Corp., Wichita and Denver, 1941-47; Explor. Mgr., Anderson-Prichard Oil Corp., Oklahoma City, Okla., 1947-50; Sr. Partner, Manhart, Millison & Beebe, Tulsa and Oklahoma City, 1950-55; Oil Producer, Vice-Pres., Keating Drilling Co., Tulsa and Okla. City, 1955-58; Pres., Explor., Inc., and Petrol. Explor. Consultant, 1958—. Hon. Pos.: Vice-Pres., Am. Assn. Petrol. Geol., 1957-58; Chmn., Dist. Lecture Comm., A.A.P.G., 1956-59; Chmn., Reorganization Comm., Am. Geol. Inst., 1959—; Chmn., Study Comm. for Professional Standards, A.G.I., 1958—; Special Editor, Natural Gases of No. Amer., for Am. Assn. Petrol. Geol., 1958—; Fellow, A.A.A.S.; Geol. Soc. of Am. Mem.: Am. Assn. of Petrol. Geols.; Kans. Acad. of Sci.; Am. Inst. Mining and Metall. Engrs.; Soc. Explor. Geophysicists; Am. Geophysical Union; Okla. City Geol. Soc.; Kans. Geol. Soc.; Rocky Mt. Assn. of Geologist; Delta Epsilon; Natl. Soc. of Scabbard and Blade; Blue Key. Contbrng. Author: Exploration Geophysics, 1950; Petroleum Exploration Handbook, 1961; Natural Gases of North America, 1962. Contbr. to: Bull. Am. Assn. Petrol. Geol.; Bull. Kansas Geol. Survey; Geophysical Case Histories; Proc., Int. Geol. Congress, 1956; Geotimes; Shale Shaker; Tulsa Geol. Soc. Digest; Mines Mag.; Guidebook, Colo. Schl. of Mines. Serv. Rec.: U. S. Army Res., 1935-55. Areas of Rsch.: Geologic History and Structure of Central U. S.; Application of Geophysics to Structural and Stratigraphic Problems Involving Location of Petroleum Deposits; Coordination of Geophysics and Geology in Exploration for Petroleum; Occurrence and Accumulation of Natural Gas.



BEECHER, William John (Ph.D.), Dir., The Chicago Acad. of Scis., 2001 N. Clark St., Chicago 14, Ill. ORNITHOLOGY, PARTICULARLY FUNCTIONAL ANATOMY AND HIGHER LEVELS OF CLASSIFICATION. b. Chicago, Ill., May 23, 1914. s. Edward J. and Anna (Lawlor) B. Edn.: Ph.B., Univ. of Chicago, 1946; B.S., ibid., 1947; M.S., ibid., 1948; Ph.D., ibid., 1954. Exp.: Zool. Asst., Chicago Nat. Hist. Museum, Chicago, Ill., 1937-42; Sr. Naturalist, Forest Preserve Dist. of Cook Co., Ill., 1953-57; Dir., Chicago Acad. of Sci., Chicago, Ill., 1958—. Mem.: Fellow, Am. Assn. Adv. Sci.; Mem., Am. Soc. of Zools.; Am. Ornithol. Union; Wilson Ornithol. Soc.; Cooper Ornithol. Soc.; Am. Inst. of Biol. Scis.; Ecol. Soc. of Am.; Am. Soc. of Mammalogists; Sigma Xi; Adult Edn. Coun. of Greater Chicago. Author: Nesting Birds and the Vegetation Substrate, 1942; Attracting Birds to Your Backyard, 1955. Contbr. to: Scientific Monthly; Science; Ecology; Jour. Wash. Acad. of Scis.; Jour. of Mammalogy; Wilson Bull.; Auk; Am. Midland Nat.; Scis. et Avenir; U. S. Camera. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: Creating an Outstanding Edni. and Exhibition Program in a Museum that was Badly Run-Down; New Techniques in Nature Photography, Particularly Movies; Theory on Direction-Finding in Birds and Other Vertebrates. Areas of Rsch.: Anatomy of Birds as an Aid to Correct Classification; Dissected over 1000 Species; Work on the Middle Ear of Vertebrates—Dissected Members of Every Family of Vertebrates; Inner Ear of Vertebrates, Particularly Semicircular Canals; The Ecology and Geographic Distribution of Birds; The Migration of Birds as Correlated Particularly with Events of the Ice Age.

BEENKEN, Harold George (Mr.), Sr. Staff Engr., Kearfott Div. of Gen. Precision, Inc., Clifton, N. J. Home Add.: Waughaw Road, Towaco, N. J. BIO-MEDICAL ENGINEERING. b. Lakota, Ia., Aug. 9, 1922. s. H. George and Sina U. (Miller) B. Edn.: B.S.E.E., Ia. State Coll., 1943. m. Mary Virginia Maher, Aug. 4, 1947. c.: Rita Ann; Gregory M. Exp.: Asst. Communica. Engr., Union Pacific Railroad, Omaha, Nebr., 1949-55; Rsch. Assoc., Coll. of Med., Univ. of Nebr., Omaha, Nebr., 1955-62; Sr. Staff Engr., Kearfott Div. of Gen. Precision, Inc., 1962—. Hon. Pos.: Chmn., Natl. A.I.E.E.-E.T.M.B. Comm.; Gen. Chmn., 1961, Conf. on the Role of Bio-Med. Engrng. in Univs. and Hosps.; Co-Chmn., 1959, Blood Flowmeter Symposium. Mem.: Am. Inst. of Elect. Engrs.; Inst. of Radio Engrs.; Instrument Soc. of Am.; Natl. Soc. of Prof. Engrs.; Nebr. Engrng. Soc.; Phi Kappa Tau; Eta Kappa Nu.

ntbr. to: Am. Med. Assn. Jour.; Am. Jour. of Psychol.; Perptual and Motor Skills; I.R.E.-P.G.B.M.E. Trans. Serv. Rec.: S. Army Signal Corps, 1943-46, 1950-52. Areas of Rsch.: Bioedical Engineering, Education and instrumentation.

EER, Michael (Ph.D.), Assoc. Prof. of Biophys., Johns Hopkins niv., Baltimore 18, Md. Home Add.: 4623 Wilmslow Rd., altimore 10, Md. BIOPHYSICS. b. Budapest, Hungary, Feb.), 1926. s. Paul and Lidia (Pap-Kovacs) B. Edn.: B.A., Univ. Toronto, 1949; M.A., ibid., 1950; Ph.D., Manchester Univ., ngland, 1953. m. Margaret Peters, Jan. 22, 1954. c.: Nicholas. xp.: Instr. in Physics, Univ. of Mich., Ann Arbor, Mich., 1953-; Post-Doctoral Fellow, Natl. Rsch. Coun. of Can., Ottawa, ntario, Can., 1956-58; Asst. Prof., Johns Hopkins Univ., Baltiore, Md., 1958-61; Assoc. Prof., ibid., 1961—. Mem.: Biophys. oc.; Am. Assn. for the Adv. of Sci.; Electron Microscopic Soc. Am.; Am. Assn. Univ. Profs. Contbr. to: Jour. of Molecular iol.; Biophys. Jour.; Procs. of Natl. Acad. of Scis.; Procs. of e Royal Soc.; Jour. of Biophys. and Biochem. Cytol. Areas Rsch.: Molecular Basis of Genetics; Structure of Macromoles of Interest in Biology; Electron Microscopy.

EERS, Charles Dale (Ph.D.), Prof. of Zool., Dept. of Zool., niv. of N. C., Chapel Hill, N. C. Home Add.: 707 Gimghoul d., Chapel Hill, N. C. ZOOLOGY. b. Arcanum, Ohio, Apr. 4, 901. s. Charles and Alma (Bireley) B. Edn.: A.B., Univ. of C., 1921; M.A., ibid., 1922; Ph.D., Johns Hopkins Univ., 925. m. Alma Holland, Sept. 16, 1941. Exp.: Instr., Yale niv., 1925-26; Asst. Prof., Univ. of N. C., 1927-29; Assoc. rof., ibid., 1929-37; Prof., ibid., 1937-60; Prof. Emeritus, ibid., 960—; Instr., Marine Biological Lab., Woods Hole, Mass., ummers, 1924, 1925; Rsch. Fellow, Johns Hopkins Univ., 1926-7; Lectr. in Biol., Stanford Univ., 1938-39; Guest investigator, aiser Wilhelm Institut fuer Biologie, Berlin-Dahlem, 1930-31. em.: Am. Soc. of Zoologists; Am. Microscopical Soc.; Soc. of rotozoologists; N. C. Acad. of Sci.; Delta Tau Delta; Phi Beta appa; Gamma Alpha; Sigma Xi. Contbr. to: Jour. of Morphol.; our. of Exptl. Zool.; Physiological Zool.; Biological Bull.; rchiv fuer Protistenkunde; Am. Naturalist; Jour. of Protozool.; ci.; Jour. of Exptl. Biol. Areas of Rsch.: Physiol. and Cytol. f Ciliated Protozoa; Host-Parasite Relationships in Unicellular rganisms.

EGLEY (Mrs.), Grace B., Gen. Sci. Tchr., Hardy Jr. H. S., 545 llis Ave., Jackson, Miss. Home Add.: P. O. Box 8153, 593 Sykes Rd., Jackson 4, Miss. BOTANY AND HOME ECONOMICS. b. Coffeeville, Miss., June 23, 1916. d. Henry H. (dec.) and Mary Ellen (McCammon) Brewer. Edn.: B.A.E., Univ. of Miss., 1947; M.Ed., Miss. Coll., 1960. m. Carlos Begley, June 3, 1938. c.: Carlos Ray; Philip; David Wayne. Exp.: Tchr., 6th Grade, Water Valley, Miss., 1946-47; Tchr., Gen. Sci., Blackjack, Pinola, Miss., 1947-48; Tchr., Home Econs. and Gen. Scis., Forest Hill H. S., Jackson, Miss., 1948-54; Tchr., 5th Grade, George Elem. Schl., Jackson, Miss., 1954-58; Tchr., Gen. Sci., Hardy Jr. H. S., Jackson, Miss., 1958—; N.S.F. Fellowship in Botany, Awarded 1959-60, Miss. Coll.; Vice-Pres., Iota Beta Chapt. f Kappa Delta Pi, Miss. Coll., 1961-62; Chmn. of Sci. Dept., ardy Jr. H. S., 1961-62. Mem.: N.E.A.; M.E.A.; J.E.A.; A.H.E.A.; iss. Home Econs. Assn.; A.A.A.S.; Miss. Acad. of Sci.; Kappa elta Pi. Contbr. to: Science; What's New in Home Econs.; .E.A. Mag.; M.E.A. Mag.; Daedalus.

EHLEN, Walter Dietrich (Dr. of Sci.), Pres., Behlen Manufacturing o., Columbus, Nebr. Home Add.: 2555 Pershing Rd., Columbus, Nebr. INVENTOR (MONOCOQUE BUILDINGS). b. Columbus, Nebr., Oct. 16, 1905. s. Fred A. and Ella (Benthack) B. Hon. Deg.: D.Sc., Midland Coll., 1959; Dr. of Engrng., Univ. of Nebr., 1959. m. Ruby Mae Cumming, April 13, 1940. c.: Mary Ann; Kent Walter. Exp.: Clerk, Railway Express Agency, Columbus, Nebr., 1925-41; Pres., Behlen Manufacturing Co., Columbus, Nebr., 1941—. Hon. Pos.: Dir., Columbus Savings and Loan Assn., Central Natl. Bk. of Columbus, Metal Bldg. Mfgrs. Assn.; Past Dir., Nebr. Public Power System; Past Pres., Columbus Community Concert Assn.; Past Pres., Columbus Y.M.C.A.; Mem.: Nuclear Energy Committee, Natl. Assn. of Mfgrs.; Manufacuring Committee, U.S. C. of C.; Dir., Miss. Valley Assn.; Advisory oun., Coll. of Agriculture, Univ. of Nebr., Bd. of Trustees, lebr. Independent Coll. 'Foundation. Mem.: Columbus Airport uthority; A.A.A.S.; Natl. Geographic Soc.; Rotary; Elks; Country lub; Columbus C. of C.; Isaak Walton League; Marco Polo lub of N. Y. Gen. Int.: Golden Deeds Award, Nebr. Motor arriers Assn., 1958; Bd. of Trustees, Univ. of Nebr. Foundation.

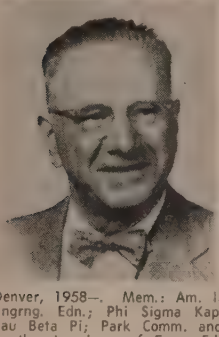
BEHM, Hans Joachim (Mr.), Techn. Correspondent and Consultant, E. Leitz, Incorporated, New York, N. Y. Home Add.: 21 Howard Ave., Staten Island 1, N. Y. GEOLOGY AND ALLIED FIELDS. b. Paraguay, S. Am., Jan. 19, 1922. s. Erna (Keding) Gruber. Edn.: B.A., Wash. Square Coll., N. Y. Univ., 1948; M.S., N. Y. Univ. Grad. Schl., 1953. Exp.: Tech. Asst., Am. Museum Natural Hist., N. Y. C., 1948-52; Asst. Sci. Curator, Staten Island Inst. of Arts and Scis., Staten Is., N. Y., 1952-53; Tech. Asst., Sci. Asst. and Rsch. Asst., Am. Museum Natural Hist., N. Y. C., 1953-59; Instr. of Geol., Staten Island Community Coll., 1959; Consulting Soil Engr., Andrews & Clark, N.Y.C., 1961-62; Techn. Correspondent and Consultant, E. Leitz, Inc., 1962—. Mem.: Am. Assn. Petroleum Geologists; A.A.A.S., Fellow; Am. Astronautical Soc.; Sigma Xi; Photographic Soc. of Am.; Staten Island Inst. of Arts and Scis.; Color Photographer's Club of Staten Island; N. Y. Microscopical Soc. Contbr. to: Proc. Staten Island Inst. of Arts and Scis.; Micropaleontol. Areas of Rsch.: Petrology, Mineralogy, Structural Geol.; Stratigraphy; Sedimentation; Vertebrate and Invertebrate Paleontol.; Micropaleontol.; Spore and Pollen Analysis; Petroleum Geol.

BEHRENS, Minnie Sophia (Ph.D.), Prof. and Hd., Elem. Edn. Dept., East Tex. State Coll., Commerce, Tex. Home Add.: 901 Sherman St., Apt. 510, Denver 3, Colo. ELEMENTARY SCIENCE AND MATHEMATICS. b. Pomeroy, Iowa, May 2, 1890. d. Henry Bernhardt and Annie Elizabeth (Albrecht) B. Edn.: B.A., Univ. of Ia., 1926; M.A., ibid., 1927; Ph.D., George Peabody Coll. for Tchrs., 1940. Exp.: Tchr., Pomeroy, Ia., 1910-12; Tchr., Pub., Primary, Intermediate and Jr. High, Pomeroy, Ia., 1912-19; Tchr., Jr. H. S., Humbolt, Ia., 1920-21; Tchr., Math., Eng., ibid., Fort Dodge, Ia., 1921-23; Tchr., ibid., Waterloo, Ia., 1923-25; Assistantship, Edn. Dept., Univ. of Ia., 1926-27; Instr., State Tchrs. Coll., Huntsville, Tex., 1928-31, 1932-35, 1936-49; Prof. and Hd., Elem. Edn. Dept., East Tex. State Coll., 1949-60. Hon. Pos.: Chmn., Math. Comm. for the State of Tex.; Edn. Chmn., A.A.U.W. Mem.: A.A.U.P.; A.A.U.W.; Natl. Edn. Assn.; Tex. Tchrs. Assn.; Assn. for Childhood Edn.; Assn. of Supervision and Curr. Devel., Natl. and State; Kappa Delta Pi; Delta Kappa Gamma; Pi Lambda Theta; Fellow, A.A.A.S.; C. of C.; Parent Tchrs. Assn. Co-author: The Learning of the One-Hundred Addition Combinations and the One-Hundred Subtraction Combinations, 1928. Contbr. to: Primary Reading Activities; Tex. Course of Study for Years 1-6; The Tex. Mathematics Tchrs. Bull.; An Evaluation of Reading Readiness. Gen. Int.: Lectures Given to Adult Groups, such as Parent Teacher Assn., in Service Tchrs., and Supvn. and Curr. Conferences; Supervisor in the Laradon Hall Schl. for retarded children, Denver, Colo. Areas of Rsch.: Elem. Sci.; Elem. Arithmetic; Lang. Arts (Reading, Spelling and Language).

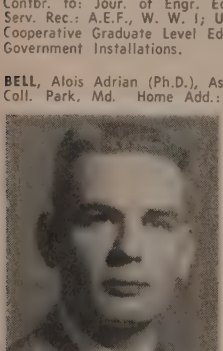
BEKKER, Mieczyestaw Gregory (Mr.), Hd., Land Mobility Lab., Defense Systems Div., Gen. Motors, Santa Barbara, Calif. Home Add.: 400 Mountain Dr., Santa Barbara, Calif. APPLIED MECHANICS OF TERRAIN-VEHICLE SYSTEMS. b. Strzyzow, Poland, May 25, 1905. s. Marjan Blazej and Albina Matylda (Bretsznajder) B. Edn.: DIPLING. Warsaw Inst. of Tech., 1929. m. Jadwiga Rychlewski, Apr. 6, 1931. c.: Eva Teresa Heuser; Anna McCarron. Exp.: Officer, Canadian Army Dept. of Natl. Defense, Vehicle Rsch. Dir., Ottawa, Ontario, 1943-50; Rsch. Prof., Grad. Schl., Steven Inst. of Tech., Hoboken, N. J., 1950-52; Canadian Army Repr., Operations Rsch. Office, Johns Hopkins Univ., 1952-54; Tech. Dir., Land Locomotion Rsch. Laboratory, Detroit Arsenal, Centerline, Mich., 1954-56; Chief Land Locomotion Lab., Ordnance Tank' Automotive Command, Detroit, Mich., 1956-60; U. S. Natl. Secy., First Internatl. Conference on the Mechanics of Soil-Vehicle Systems, Turin Inst. of Technol., Torino, Italy, 1960-61; Hd., Land Mobility Lab., Defense Systems Div., Gen. Motors Tech. Center, Warren, Mich., 1960—. Mem.: Operations Rsch. Soc. of Am.; Soc. of Automotive Engrs.; Am. Soc. of Agril. Engrs.; A.A.A.S. Author: Theory of Land Locomotion—The Mechanics of Vehicle Mobility, 1956; Off-The-Rd. Locomotion, Rsch. and Dev. in Terra-Mechanics, 1960. Contbr. to: Applied Mechanics Reviews; Franklin Inst. Jour.; The Automobile Engr.;

SAE Jour. and Proc. Agric. Engrng.; Machine Design; Ordnance; Ciencia y Technica; Automobiltechnische Zeitschrift; New Scientist. Serv. Rec.: Canadian Army, Lt. Col. Ret. Gen. Int.: Establishment and Assistance in Development of Rsch. Activities and Graduate Courses in Mechanics of Terrain-Vehicle Systems at a Number of Am. and Foreign Univs. Areas of Rsch.: Mechanics of Terrain-Vehicle Relationship, Lunar Surface Locomotion.

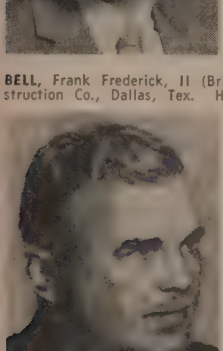
BELKNAP, John Harrison, Consulting Engr., 1370 Fairfax St., Denver 20, Colo. PHYSICS AND ELECTRICAL ENGINEERING. b. Corvallis, Ore., Feb. 17, 1892. s. Edward Milton and Elizabeth Ann (Hooper) B. Edn.: B.S., Oregon State Coll., 1912. Hon. Deg.: Engr. Dr., Oregon State, 1940. m. Inez Johnson, 1914. c.: Mrs. Margaret Lucile Davis. Exp.: Instr., Engr. Physics, Oregon State Coll., 1912-17; Asst. Prof., Elec. Engr., ibid., 1919-23; Engr., Section Engr., Mgr. Control Engr., Consulting Engr., and Mgr. Tech. Employment and Training, Westinghouse, 1923-42; Chmn. Div. of Engr., Univ. of Rochester, 1946-48; Dean, Grad. Section, USAF Inst. of Tech., 1948-53; Dir. Prof. Personnel, Univ. of Calif., Radiation Lab., 1953-54; Mayor's Cabinet, City and County of Denver, Colo., 1955-58; Consulting Engr., Denver, 1958–. Mem.: Am. Inst. of Elec. Engr.; Am. Soc. for Engrng. Edn.; Phi Sigma Kappa; Eta Kappa Nu; Sigma Tau; Tau Beta Pi; Park Comm. and Shade Tree Comm.; Civic Club. Contbr. to: Jour. of Engr. Edn.; Torch; Bent of Tau Beta Pi. Serv. Rec.: A.E.F., W. W. I; U.S.A.F., W. W. II. Areas of Rsch.: Cooperative Graduate Level Education for American Industry and Government Installations.



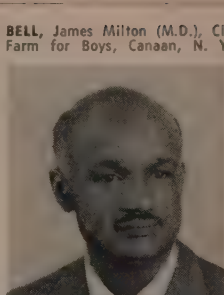
BELL, Alois Adrian (Ph.D.), Asst. Prof. of Botany, Univ. of Md., Coll. Park, Md. Home Add.: 5803 Oland Dr., Hyattsville, Md. PLANT PATHOLOGY. b. Bloomfield, Nebr., Jan. 25, 1934. s. Ancil C. and Helen (Korff) M. Edn.: B.Sc., Univ. of Nebr., 1955; M.Sc., ibid., 1958; Ph.D., ibid., 1961. m. Marie Gerdes, July 20, 1958. Exp.: Rsch. Asst., Univ. of Nebr., Lincoln, Nebr., 1955-61; Asst. Prof. of Botany, Univ. of Md., Coll. Park, Md., 1961–. Mem.: Am. Phytopathol. Soc.; Am. Soc. of Plant Physiols.; Am. Inst. of Biol. Scis.; Am. Assn. for the Adv. of Sci.; Alpha Gamma Sigma; Alpha Zeta; Gamma Sigma Delta; Sigma Xi. Areas of Rsch.: Physiology of the Fungi; Physiology of Diseased Plants; Plant Disease Control.



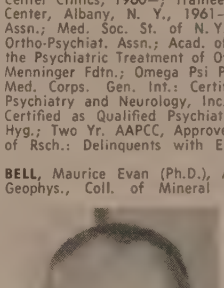
BELL, Frank Frederick, II (Brig. Gen.), Ret., Pres., Uvalde Construction Co., Dallas, Tex. Home Add.: 5019 Shadywood Lane, Dallas 9, Tex. ENGINEERING CONSTRUCTION. b. Philadelphia, Pa., Sept. 25, 1888. s. Frank Frederick and Helen (Edwards) B. Edn.: B.S., Mass. Inst. of Technol., 1910. m. Ione Sharpe, Apr. 12, 1919. c.: Frank F., III; Edwin Sharpe. Exp.: Engr. and Foreman on Engrng. Const. Projects, Ore., Hawaii, Far East, 1910-12; Field Engr. on Const., Panama-Pacific Internatl. Exposition and Engr., Wood Stave Pipe Dept., Redwood Mfg. Co., San Francisco, Calif., 1912-14; Pres., Simplex Vacuum Bottle Co., Philadelphia, Pa., 1914-17; Chf., Allotment & Allowance Div., War Risk Ins., Wash., D. C., Chf. Engr. for H. D. Lindsley Oil Syndicate, Dallas, Tex., 1919-21; Engr. to Vice-Pres., Uvalde Construction Co., Dallas, Tex., 1921-53; Pres., ibid., 1953–; Chmn., Bd. Phoenix Const. Co., Vice-Pres., B. & B. Equipment Co., Dallas, Tex., 1921-53. Hon. Pos.: Vice-Chmn., City-Co. Civil Defense and Diaster Comm.; Past Chmn., Dallas C. of C. Milit. Affairs Committee; Past Natl. Dir., Soc. Am. Milit. Engrs. Mem.: Am. Soc. Civil Engrs.; A.A.A.S.; Sigma Alpha Epsilon; Dallas Country Club; Dallas Athletic Club; Idlewild Club; Dallas Technical Club; Mason. Serv. Rec.: Air Serv., R.M.A., U. S. Army, 1st Lt. to Capt., 1917-19; Capt. C. of E. to 1930; Maj. to Lt. Col. AAA to 1942; Lt. Col. to Col. C. of E., A.U.S., 1942-44, Commanded 373rd Engr. Regiment and Group Units Attached Thereto, 1942-45; Col. C. of E., U.S.A.R., 1945-47; Brig. Gen., U.S.A.R., 1947-48. Gen. Int.: Leg. Merit, Bronze Star, Battle Participation Stars, Campaigns—Northern France, Rhineland and Central Europe. Areas of Rsch.: Wood Stave Pipe Design; Asphaltic Concrete Paving Mixes; Engrng. Construction.



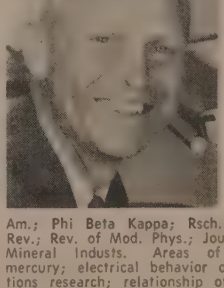
BELL, James Milton (M.D.), Clin. Dir. and Psychiatrist, Berkshire Farm for Boys, Canaan, N. Y. CHILD PSYCHIATRY. b. Portsmouth, Va., Nov., 1921. s. Charles Edward, Sr. and Lucy H. (Barnes) B. Edn.: B.S., N. C. Coll., 1943; M.D., Meharry Med. Coll., 1947. Exp.: Intern, Harlem Hosp., N. Y., 1947-48; Asst. Physician, Clin. Dir., Lakin State Hosp., Lakin, W. Va., 1948-51; Fellow, Menninger Schl. of Psychiatry, Res. in Psychiatry, Winter V.A. Hosp., Topeka, Kan., 1953-56; Asst. Section Chf., Children's Unit, Topeka State Hosp., Mem. Clin. Tchng. Staff, Menninger Schl. of Psychiatry, 1956-58; Fellowship in Child Psychiatry under Auspices of the Menninger Fd., 1957-58; Civilian Med. Consult. in Psychiatry, Irwin Army Hosp., Ft. Riley, Kan., 1957-58; Clin. Dir. and Psychiatrist, Berkshire Farm for Boys, 1959–; Asst. Clin. Prof. of Psychiatry, Albany Medical Coll., 1959–; Psychiatrist in Charge, Albany Home for Children, 1959–; Dispensary Psychiatrist, Albany Med. Center Clinics, 1960–; Trainee Consultant, Albany Child Guidance Center, Albany, N. Y., 1961–. Mem.: Fellow, Am. Psychiatric Assn.; Med. Soc. St. of N. Y.; A.M.A.; Natl. Med. Assn.; Am. Ortho-Psychiat. Assn.; Acad. of Relig. and Ment. Hlth.; Assn. for the Psychiatric Treatment of Offenders; N. Y. Acad. Sci.; A.A.A.S.; Menninger Fdtn.; Omega Psi Phi. Serv. Rec.: U. S. Army Reserve Med. Corps. Gen. Int.: Certified as Diplomate by Am. Bd. of Psychiatry and Neurology, Inc., Psychiatry and Child Psychiatry; Certified as Qualified Psychiatrist by the N. Y. Dept. of Mental Hyg.; Two Yr. AAPCC, Approved Trng. in Child Psychiatry. Areas of Rsch.: Delinquents with Emotional Problems.



BELL, Maurice Evan (Ph.D.), Asst. Dean for Rsch. and Prof. of Geophys., Coll. of Mineral Industs., 118 Mineral Scis., Pa. Sta. Univ., Univ. Pk., Pa. Home Add.: 1008 Glenn Circle N., Sta. Coll., Pa. SOLID-STATE PHYSICS; PHYSICAL ELECTRONICS; OPERATIONS RESEARCH. b. Newcastle, Ohio, Sept. 10, 1910. s. Samuel Evan and Della Geneva (Hagans) B. Edn.: Sc.B., Kenyon Coll., 1932; Ph.D., Mass. Inst. of Tech., 1937. m. Joan Mary Ridley, June 18, 1942. c.: Alan G. R. Exp.: Scient. Analyst, Operat. Eval. Grp., U. S. Navy, Office of Field Serv., 1942-47; Scient. Liaison Officer, U. S. Off. of Naval Rsch., London Br., U. S. Embassy, London, 1948-54; Engrng. Mgr., Sylvania Elect. Prod., Inc., Bayside, L. I., N. Y., 1954-56; Prof., Pa. St. Univ., 1956–. Mem.: Am. Phys. Soc.; Operats. Rsch. Soc. of Am.; Phi Beta Kappa; Rsch. Soc. of Am. Contbr. to: Phys. Rev.; Rev. of Mod. Phys.; Jour. of Appl. Phys.; Jour. of Metals; Mineral Industs. Areas of Rsch.: Ionization potentials of mercury; electrical behavior of solid dielectrics; Military operations research; relationship of organization and management to creativity in research.



BELL, Persa Raymond (D.Sc.), Sr. Physicist, Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 103 Pocono Lane, Oak Ridge, Tenn. PHYSICS, PRINCIPALLY PLASMA PHYSICS AND PHYSICAL INSTRUMENTATION. b. Fort Wayne, Ind., Apr. 24, 1913; s. P. R. Sr. and Gertrude (Wilken) B. Edn.: B.Sc., Howard Coll., 1936. Hon. Deg.: D.Sc., Howard Coll., 1954. m. Mildred Rhodes, 1940. c.: Raymond Thomas. Exp.: Investigator, N.D.R.C., Univ. of Chicago, 1940-41; Staff Mem., Radiation Lab., M.I.T., 1941-46; Physicist, Oak Ridge Natl. Lab., 1946–. Mem.: Am. Physical Soc.; Soc. of Nuclear Med.; Am. Geophysical Union. Contbr. to: Physical Rev.; Rec. of Scientific Instruments; Jour. of Nuclear Med. Areas of Rsch.: Plasma Physics, Scintillation Spectrometry; Fast Pulse Electronics; Microwaves; Radioisotope Scanning.



BELLET, Samuel (M.D.), Physician, 2021 Spruce St., Phila. 3, Pa. INTERNAL MEDICINE, CARDIO-VASCULAR DISEASES b. Russia, Aug. 21, 1902. s. Elias and Pauline (Tartetufsky) B. Edn.: B.S., Univ. of Pa., 1921; M.D., Jefferson Med. Coll., 1925. m. Jean Rosenthal, Jan. 19, 1947. c.: Joan Rose. Exp.: Mem. of Staff, Robinette Fdtn., Pa., 1934–; Assoc. Editor of Circulation and Editor of Abstract Sect., 1945-56; Dir., Div. of Cardiovascular Diseases, Grad. Hosp. of the Univ. of Pa., 1948–; Mem. Editorial Bd. of Circulation, 1957, Dir., Div. of Cardiol., Phila. Gen. Hosp., Phila., Pa., 1951–. Hon. Pos.: Assoc. Editor, Am. Jour. of Cardiology. Mem.: Am. Coll. of Physicians; Phila. Co.

Physicians; A.M.A.; Phila. Physiol. Soc.; Am. Physiol. Soc.; Heart Assn.; Heart Assn. of Southeastern Pa.; Am. Coll. of st Pnysicians; N. Y. Acad. of Scis.; Am. Coll. of Cardiol.; Am. of Internal Med.; Sigma Xi. Author: 221 Publications and Books; Clinical Disorders of the Heart Beat, 1953; Exercises Electrocardiography, with a section on Vectorcardiography, 4. Contbr. to: Am. Heart Jour.; Searchligt Ann. Int. Med.; Jour. Med. Sci.; Arch. Int. Med.; Am. Jour. Diseases Child.; Jour. Roentgenol.; Cyclopedia of Med.; Am. Heart Jour.; r. Clin. Invest.; Med. Clin. N. A.; Am. Jour. Med.; Am. betes Assn.; Med. Ann. Dist. of Columbia; Jour. Lab. and Clin. d.; Surg. Clin. N. A.; Jour. of Phila. Gen. Hosp.; Anesthesiol.; . Rsch. Proc.; Circulation Rsch.; Cardiol. Areas of Rsch.: diac Arrhythmics; Electrolytes with particular reference to Heart; Clinical Pharmacology of cardiac drugs.

LASCHI, Peter Louis (Sc.D.), Consulting Engr., 7417 S.E., nhill St., Portland 15, Ore. Home Add.: 7417 S.E. Yamhill St., Portland 15, Ore. CONSULTANT IN ELECTRIC POWER TRANSMISSION—HIGH VOLTAGE ENGINEERING — RELATED ACTIVITIES. b. Piedmont, Italy, Feb. 13, 1903. s. Giuseppe and Giulia (Bellaschi) B. Edn.: B.S., E.E., Mass. Inst. of Tech., 1926; M.S., E.E., ibid., 1928. Hon. Deg.: Sc.D., Wash. and Jefferson Coll. m. Maria Greggio, Oct., 1930. c.: Drusilla; Julius; Maria; Victor. Exp.: Student Engr., Westinghouse Elect. Corp., Pa., 1926-27; Sect. Engr., ibid., 1928-47; Consultant Engr., Private Bus., 1947—. Mem.: Fellow of Am. Inst. of Elect. Engrs.; Am. Assn. for the Adv. of Sci.; Conf. Internatl. des Grands Reseaux Elect. Contbr. to: High Voltage Engrng.; Electric Power

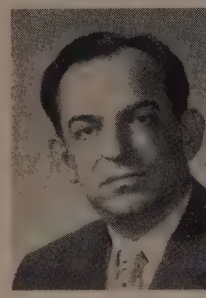
nsmission. Gen. Int.: Recognized Authority in High Voltage jineering and Electric Power; U.S.A. Delegate Abroad: To ernati. Electrotechnical Commission; Electric Power Transsion and High Voltage Engineering. Areas of Rsch.: Inventor htning-Stroke Generator and Other Patents.

LIS, Carroll Joseph, Surgeon, 303 Professional Center Bldg., 5 E. Eighth St., Long Beach 13, Calif. PHYSIOLOGY; SURGERY. Shreveport, La., May 11, 1908. s. Joseph E. and Rose (Bloome) Edn.: B.S., Univ. of Minn., 1930; M.S., Physiology, 1932; D., Physiology, ibid., 1934; M.D., ibid., 1936; Ph.D., Surgery, ., 1941. m. Mildred Darmody. c.: Joseph; David. Exp.: low in Physiol., Univ. of Minn., 1930-34; Charles Lyman en Prize in Physiology, 1934; Resident in Surgery, Univ. of nn., 1937-41; Instr. in Surgery, Univ. of Minn. Med. Schl., 41; Sr. Consult. in Surgery, Long Beach Gen. Hosp., Long Beach, if.; Consult. in Surgery, San Pedro Community Hosp., 1948—; ive Staff, St. Mary's and Community Hosps., Long Beach, Calif. m.: N. Y. Acad. of Sci.; Fellow, Amer. Gastroenterological n.; Mem., Pan-Pacific Surg. Assn.; Amer. Assn. Hist. Med.; lomate, Amer. Bd. of Surg.; Fellow, Amer. Coll. of Surgeons; low, Internatl. Acad. of Proctology; A.M.A.; A.A.A.S.; Geron-ogical Soc., Inc.; Fellow, Internatl. Coll. of Surgeons; Los geles Surg. Soc.; Hollywood Acad. of Med.; Miss. Valley Med. .; Amer. Med. Writers Assn.; N. Y. Acad. of Sci.; Indus. d. Assn.; Amer. Assn. for the Study of Neoplastic Diseases; ma Xi; Fellow, Am. Gastroenterol. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Am. Jour. ysiol.; Jour. Lab. Clin. Med.; Surgery; etc. War Rec.: Contant in Surgery to the Surgeon Genl., U. S. Army, 1941-45. ecial Int.: Plasma Proteins; Blood Coagulation; Respiratory tabolism; Reaction Time; Muscle Betabolism; Renal Secretion; nous Circulatory Time; Bowel Obstructions; Physical Factors Inflammation; Varicose Veins; Skin Temperatures; Blood Sludg-; Immediate Ambulation; Pilonidal Cysts.

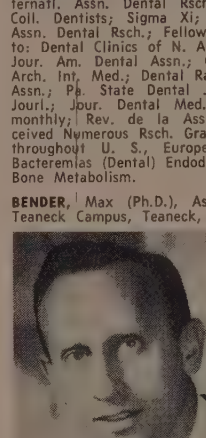
N, Max (Ph.D.), Head, Pharmacol., Hazleton Labs., Inc., P. O. x 30, Falls Church, Va. Home Add.: 524 Shiloh St., Fairfax, Va. PHARMACOLOGY. b. Utica, N. Y., Oct. 12, 1926. s. David and Sarah (Slakter) B. Edn.: A.B., Syracuse Univ., 1951; M.A., Princeton Univ., 1953; Ph.D., ibid., 1954. m. Dorene Smith, June 15, 1952. c.: Lisa Anne; Edward Harrison; Ellen Susan. Exp.: Lab. Asst., Gen. Biol., Utica Coll., Syracuse, 1950-51; Asst. Biochem., Princeton Univ., 1951-53; Assoc., Surg. Res., Harrison Dept., Med. Schl., Pa., 1954-56; Assoc., Merck, Sharp and Dohme, 1956-58; Section Hd., Endocrine Rsch. and Evaluation, Squibb Inst. for Med. Rsch., New Brunswick, N. J., 1958; Sr. Scientist, Warner Lambert Rsch. Inst., Morris Plains, N. J., 1958-62; Head, Pharmacol. Dept., Hazleton Labs., Falls

urch, Va., 1962—. Mem.: Am. Physiological Soc.; N. Y. Acad. Sci.; Physiological Soc. of Philadelphia; A.A.A.S.; Sigma Xi; ica Coll. Alumni; Princeton Univ. Alumni. Contbr. to: Proc. c. Exptl. Biol. and Med.; Am. Jour. of Physiol.; Endocrinol.; rgery; Arch. Int. de Pharm. et de Therap.; Surgical Clinics N. Am.; Surgical Forum; Angiol.; Jour. of Pharmacol. and Exptl. Therap. Serv. Rec.: U. S. Navy, W. W. II. Areas of Rsch.: Pharmacol.; Endocrinol. and Cardiovascular Physiol. and Pharmacol.

BENDER, Israel Boris (D.D.S.), Assoc. Prof., Univ. of Pa., Phila., Pa. Home Add.: 512 Woodbrook Lane, Phila. 19, Pa. ORAL MEDICINE AND ORAL HISTOLOGY. b. Russia, Nov. 4, 1905. s. Boris and Anna (Futeransky) B. Edn.: D.D.S., Schl. of Dentistry, Univ. of Pa., 1930. m. Lillian Zebooker, Feb. 6, 1932. c.: Andrew Lee; Susan Joyce. Exp.: Instr. in Oral Med., Univ. of Pa., 1942-52; Assoc., ibid., 1953-54; Asst. Prof., ibid., 1954-58; Assoc. Prof., ibid., 1959—; Assoc. Prof. in Grad. Schl. of Med., ibid., 1959—; Chf. of Dept. of Dentistry, Albert Einstein Med. Center, Phila., 1954—; Visiting Prof., Univ. of Sou. Calif.; Assoc. Prof. Postgrad. Studies, Boston Univ. Hon. Pos.: Chmn., Rsch. Comm., Am. Assn. of Endodontists; Pres., Am. Assn. of Endodontists, Phila. Sect.; Pres., Internatl. Assn. Dental Rsch., Phila. Sect. Mem.: Fellow, Am. Coll. Dentists; Sigma Xi; Am. Assn. Bacteriologists; Internatl. Assn. Dental Rsch.; Fellow, A.A.A.S.; N. Y. Acad. Sci. Contbr. to: Dental Clinics of N. Am.; Jour. Dental Rsch.; Jour. A.M.A.; Jour. Am. Dental Assn.; Oral Surg.; Oral Med.; Oral Pathol.; Arch. Int. Med.; Dental Rad. and Photog.; Jour. Ontario Dental Assn.; Pa. State Dental Jour.; Clinic Proc. Al. Einstein Med. Jourl.; Jour. Dental Med.; Am. Dental Soc.; Anaesth. Newsmonthly; Rev. de la Assn. Odontolargentina. Gen. Int.: Received Numerous Rsch. Grants—Private and Government; Lectured throughout U. S., Europe, Mexico, Israel. Areas of Rsch.: Bacteremias (Dental) Endodontics; Histopathology of Dental Pulp; Bone Metabolism.



BENDER, Max (Ph.D.), Asst. Prof., Fairleigh Dickinson Univ., Teaneck Campus, Teaneck, N. J. Home Add.: 16 So. Woodland Ave., E. Brunswick, N. J. COLLOID AND PHYSICAL CHEMISTRY. b. Boston, Mass., Oct. 23, 1914. s. Samuel and Jennette (Baratz) B. Edn.: S.B., Chem. E., Northeastern Univ., 1936; S.M., Mass. Inst. Tech., 1937; Ph.D., Chem., N. Y. Univ., 1950. m. May Kaplan, Sept., 1947. c.: Sanford Ross; Leslie M. Exp.: Sr. Rsch. Chemist, Interchem. Corp., N. Y. City, 1941-48; Sr. Rsch. Scientist, Am. Cyanamid Co., Bound Brook, N. J., 1950-61; Asst. Prof., Fairleigh Dickinson Univ., 1961—. Hon. Pos.: Phys. Chem. Gr. Chmn., A.C.S., N. J. Sect.; Chmn., N. J. Chapt., Chmn., Professional Advisory Comm., Chapt. Representative to Natl. Coun., Chmn., Programming of Natl. Annual Meeting, N. J. Chapt. Representative, Natl. Coun., Am. Inst. of Chemists. Mem.: Sigma Xi; Phi Lambda Upsilon; N. Y. Acad. of Sci., Fellow; Am. Chem. Soc.; Am. Inst. of Chemists. Contbr. to: Interchem. Rev.; Jour. Chem. Edn.; Procs. of the Rubber Tech. Conf.; Jour. Phys. Chem.; The Chemist 30; Jour. Colloid Sci.; Memorial des Poudres; Am. Scientist. Areas of Rsch.: Colloid and Physical Chem.



BENEDEK, Tibor (M.D.), Assoc. Clin. Prof. of Dermatol. and Syphilology, Stritch Schl. of Med., Loyola Univ., 25 E. Wash. St., Chicago 2, Ill. DERMATOLOGY, MEDICAL MYCOLOGY AND BACTERIOLOGY. b. Nagykoros, Hungary, May 8, 1892. s. Andreas and Flora (Venetianer) B. Edn.: M.D., Med. Faculty, Univ. of Budapest, 1919; M.D., Med. Faculty, Univ. of Leipzig, Germany, 1922. m. Therese Friedmann, 1919. c.: Thomas; Judith. Exp.: Clinical Asst. in Dermatol. Dept. and Instr., Med. Mycology in Chg. of Lab. for Mycological Rsch., Northwestern Univ., 1936-46; Formerly Attend. Dermatologist, The Catherine Booth Hosp. and Clinics, The Salvation Army Med. Ctr. and St. Catherine's Hosp.; Assoc. Clinical Prof. of Dermatol. and Syphilology, Stritch Schl. of Med., Loyola Univ., Chicago, Ill.; Ed.-in-

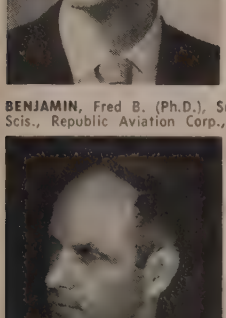
Chf., Mycopathologia et Mycologia Applicata. Hon. Pos.: Hon. Mem., Association des Diplomes de Microbiologie, Nancy, France. Mem.: Fellow, A.A.A.S.; Am. Acad. Dermatol. and Syphilography; Fellow, A.M.A.; Soc. Investigative Dermatol.; Mycological Soc. Am. Contbr. to: Mycopathologia; Jour. Tropical Med.; Mycologia; Chronica Botanica; Jour. Investigative Dermatol.; etc. War Rec.: Major to Lt. Col., M. C., U. S. Army, World War II, 1943-46. Special Int.: Dermatology, Medical Mycology and Bacteriol. Travel: Europe; Can.; Mex. Hobbies: Horseback Riding; Photography. Listed in: A.M.S.

BENEKE, Everett Smith (Ph.D.), Prof., Mycology, Dept. of Botany and Plant Pathology, Mich. State Univ., E. Lansing, Mich. Home Add.: 1664 Forest Hill, Okemos, Mich. MYCOLOGY; ANTITUMOR AGENTS. b. Greensboro, N. C., July 6, 1918. s. H. H. and Grace (Olive) B. Edn.: B.S., Miami Univ., 1940; M.S., Ohio State Univ., 1941; Ph.D., Univ. of Ill., 1948. Exp.: Asst. Prof., Mich. State Univ., E. Lansing, Mich., 1948-52; Assoc., ibid., 1952-58; Prof., ibid., 1958—. Hon. Pos.: Secy.-Treas., Mycological Soc. of Am., 1955-58, Vice Pres., 1959, Pres. Elect, 1960-61. Mem.: Mycological Soc. of Am.; Botanical Soc. of Am.; Am. Assn. of Bioanalysts; Soc. of Am. Bacteriologists; Am. Assn. for Adv. of Sci.; Gamma Alpha; Phi Sigma; Sigma Xi; Phi Kappa Tau. Author: Laboratory Manual, Medical Mycology, 1957; Laboratory Manual for Introductory Mycology. Contbr. to: Handbook of Biol. Data; Mycologia; Am. Jour. of Botany. Serv. Rec.: U. S. Air Force, 1942-46. Areas of Rsch.: Tchng., Rsch. in Medical Mycology; Diagnostic Studies of Pathoganic Fungi; Antitumor Compounds in Fungi.

BENIOFF, Paul A. (Ph.D.), Asst. Chemist, Argonne Natl. Labs., 9700 S. Cass Ave., Argonne, Ill. Home Add.: 81st and Madison Sts., Hinsdale, Ill. NUCLEAR PHYSICS. b. Pasadena, Calif., May 1, 1930. s. Victor Hugo and Alice (Silverman) B. Edn.: A.B., Univ. of Calif., Berkeley, 1951; Ph.D., ibid., 1959. m. Hanna Leschziner, Nov. 22, 1959. c.: Leora R. Exp.: Chemist, Tracerlab, Inc., Richmond, Calif., 1952-54; Weizmann Fellow, Weizmann Inst., Rehovoth, Israel, 1959-61; Ford, Fellow Universitetets Institut for Teoretisk, Fysik, Copenhagen, Denmark, 1961-61; Asst. Chemist, Argonne Natl. Labs., 1961—. Mem.: A.A.A.S.; A.P.S.; Sigma Xi; Am. Museum Natl. Hist.; Phi Beta Kappa. Contbr. to: Phys. Rev.; Nuclear Physics. Areas of Rsch.: Theoretical Studies of High Energy Nuclear Reactions.

BENJAMIN, Donald James (Mr.), Math. Tchr., Mayfield City Schls., Cleveland 24, Ohio. Home Add.: 545 Ferncliff Ave., Poland 14, Ohio. b. Youngstown, Ohio, Sept. 12, 1935. s. Dean A. and Mabel (Jones) B. Edn.: B.A. in Edn., Ariz. State Coll., 1958. Exp.: Math. Tchr., Lordstown H. Schl., Warren, Ohio, 1959-61; Math. Tchr., Mayfield City Schls., Cleveland, Ohio, 1961—. Mem.: C.A.-S.M.T.; N.C.T.M.; O.C.T.M.; A.A.-A.S.; Greater Cleveland Coun. of Tchrs. of Maths.; O.E.A.; N.E.A. Contbr. to: Schl. Sci.; Maths. Gen. Int.: Guest Speaker at Trumbull Edn. Assn. Maths. Meeting.

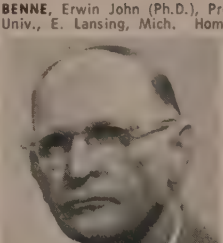
BENJAMIN, Fred B. (Ph.D.), Sr. Rsch. Coordinator, Dept. of Life Scis., Republic Aviation Corp., Farmingdale, L. I., N. Y. Home Add.: 20 White Birch Lane, Commack, L. I., N. Y. PHYSIOLOGY OF FLIGHT AND SPACE TRAVEL. b. Darmstadt, Germany, Oct. 24, 1912. s. Karl and Clara (Stern) B. Edn.: D.M.D., Bonn Univ., 1934; M.S., Univ. of Ill., 1950; Ph.D., Loyola Univ., 1953. m. Rita Mullerheim, Mar. 22, 1942. c.: Peter; Ronald. Exp.: Private Practice, Dentistry, British India, 1935-46; Rsch. Assoc., Med. Schl., Univ. of Ill. and Pa., 1949-54; Asst. Prof. of Physiol., Univ. of Pa., 1954-61; Sr. Rsch. Advisor, Life Scis. and Space Environment, Republic Aviation Corp., 1960-61; Sr. Rsch. Coordinator, ibid., 1961—. Mem.: Sigma Xi; Soc. Expmtl. Biol. Med.; Am. Physiol. Soc.; Am. Assn. Adv. Sci.; Aerospace Med. Assn. Contbr. to: Am. Jour. Appl. Physiol.; Proc. Soc. Expmtl. Biol. Med.; Science. Areas of Rsch.: Pain Sensation, Physiological Problems of Space Travel.



BENGSON, Myron Hilding, Supv. Physicist, G. E. Missile & Space Veh. Dept., Philadelphia, Pa. Home Add.: 552 Charles Dr., King of Prussia, Pa. WEAPONS PHYSICIST. b. Kewanee, Ill., Oct. 4, 1924. s. Hilding B. and Blanche (Olson) B. Edn.: B.S., Monmouth Coll., 1947; M.S., St. Univ. of Ia., 1949. m. Eleanor Mae Johnson, June 10, 1949. c.: Charles Hilding; Jeri Elizabeth; Edward Allgot. Exp.: Physicist, G. E. Space Sci. Labs., Philadelphia, Pa., 1958-60; Supv. Physicist, G. E. Missile and Space Veh. Dept., Philadelphia, Pa., 1960—. Mem.: Am. Phys. Soc.; A.C.S.; Am. Astro Soc.; Am. Geophysical Union; Alpha Chi Sigma; Theta Chi. Co-author: The Hypervelocity Projector, 1958; A Brief Review of Projectile Impact Phenomena, 1960. Contbr. to: Bull. Am. Phys. Soc.; C. & E. News; Proc. 4th Hypervelocity Symp. Serv. Rec.: U. S. Army, 1942-45, 1950-58. Gen. Int.: Disting. Alumni Award, Monmouth Coll., 1961. Areas of Rsch.: Hypervelocity Impact; Life Support Studies; Explosive Devices; Nuclear Weapons and Effects; C.B.R. Agent Tactics and Effects; Operations Analysis.

BENJAMIN, John Allison, Jr. (M.D.), Assoc. Prof. of Urol. Surgery, Univ. of Rochester, Schl. of Med. and Dentistry, Rochester, N. Y. UROLOGY. b. Salmon, Idaho, June 10, 1906. s. John Allison and Martha (Eichwald) B. Edn.: A.B., Univ. of Calif. at Los Angeles, 1930; M.D., Johns Hopkins Univ., 1934. m. Mae McElman, 1942. c.: Suzanne; Linda; John, III and Sallie. Mem.: Am. Urol. Assn.; A.A.A.S.; Am. Assn. of Hist. of Med.; Am. Med. Assn.; Acad. of Med.; Am. Soc. for Study of Sterility; Rochester Acad. of Sci.; Hist. of Sci. Soc. Contbr. to: Jour. Urol.; Surgery; Bull., Hist. of Med.; Jour., Hist. of Med.; Science; N. Y. State Med. Jour. Special Int.: Endocrinol., Urinary Calculi Anatomy, Congenital Malformations in Urinary Tract and Hypospadias. Radioactive P^{32} in Relation to Stones and Neoplasms; Hist. of Med.

BENNE, Erwin John (Ph.D.), Prof., Dept. of Biochem., Mich. State Univ., E. Lansing, Mich. Home Add.: Rt. 4, Mason, Mich. AGRICULTURAL BIOCHEMISTRY. b. Morrowville, Kans., May 21, 1902. s. Henry and Bertha (Thrun) B. Edn.: B.S., Kans. State Univ. of Agri. and Applied Sci., 1928; M.S., ibid., 1931; Ph.D., ibid., 1937. m. Gladys Ethel Meyer, Aug. 22, 1928. c.: Richard Gene; Max Erwin. Exp.: Sci. Instr., Wilson Co. H. S., Fredonia, Kans., 1928-29; Sci. Instr., Manhattan H. S., Manhattan, Kans., 1929-30; Instr. of Chem., Kans. State Coll., 1930-38; Rsch. Asst., Mich. State Univ., 1938-43; Rsch. Assoc., ibid., 1943-46; Prof., ibid., 1946—. Hon. Pos.: Chmn., Mich. State Univ. Sect. of the Am. Chem. Soc. Mem.: Am. Chem. Soc.; Am. Soc. of Agron.; Am. Assn. for the Adv. of Sci.; Assn. of Official Agril. Chemists; Mich. Acad. of Arts and Scis.; Phi Kappa Phi; Sigma Xi; Phi Delta Kappa. Contbr. to: Analytical Chem.; Jour. of the Assn. of Official Agril. Chemists; Jour. of the Am. Soc. of Agron.; Soil Sci. War Rec.: U. S. Army Res., 1928-38. Areas of Rsch.: Develop methods for the analysis of Agril. materials. Also analyze materials concerned in the rsch. program of the Mich. Agril. Exptl. Sta. to determine effects of exptl. treatments, etc., on plant and animal crops.



BENNETT, Bradley Frederick (Capt.), Dir. of Admin., U. S. Naval Rsch. Lab., Washington 25, D. C. Home Add.: New Milford, Conn. PHYSICS; RESEARCH ADMINISTRATION. b. New Milford, Conn., Aug. 29, 1911. s. Frederick Lum and Florence (Bradley) B. Edn.: B.S., Nav. Sci., U. S. Naval Acad., 1935; M.S., Nav. Constr., M.I.T., 1940; M.S., Phys., ibid., 1953. m. Virginia White, Dec., 1956. c.: Bradley Robert; Bruce Roy. Exp.: Jr. Officer, U. S. Navy, USS Saratoga, 1935-37; Nav. Constr., ibid., Norfolk Navy Yard, 1940-44; Hull Supt., ibid., Pearl Harbor Navy Yard, 1944-47; Eng. Serv. Off., ibid., U. S. Nav. Rsch. Lab., 1947-50; Repair Supt., ibid., Yokosuka, Japan, 1950-51; Dir., Materials Develop., Bur. Ships, Wash., D. C., 1953-57; Commanding Off., Off. Nav. Rsch., London, Eng., 1957-60; Dir. of Admin., U. S. Nav. Rsch. Lab., Washington, D. C., 1960—. Mem.: Am. Phys. Soc.; A.S.M.; Am. Geophys. Union; A.A.A.S.; Am. Soc. Nav. Engrs.; Royal Soc. Med., Fellow; Brit. Inst. Rad.; U.S.N.I.; Wash. Phil. Soc.; R.E.S.A.; Assn. for Rad. Rsch.; Sigma Xi. Serv. Rec.: See Exp. Above. Gen. Int.: Bronze Star; Navy Commendation Medal. Areas of Rsch.: Nuclear Physics; Metallurgy; Research Administration; Naval Construction.

BENNETT, Bailey (Mr.), Asst. Chief, Polymer Rsch., Battelle Memorial Inst., 505 King Ave., Columbus 1, Ohio. ORGANIC CHEMISTRY; POLYMERS. b. Waynesfield, Ohio, Nov. 27, 1916. s. Stephen A. and Clara (Bailey) B. Edn.: B.Sc., Ohio St. Univ., 1947; M.Sc., ibid., 1948. m. Marjorie Hewitt, Sept. 21, 1946. c.: Barbara; Karl; Mark. Exp.: Rsch. Asst., Owens-Corning Fiberglas Corp., Newark, Ohio, 1944-45; Rsch. Asst. and Rsch.

Fellow, Ohio St. Univ. Rsch. Found., Columbus, Ohio, 1945-48; Rsch. Assoc., ibid., 1949-51; Prin. Chemist, Polymer Rsch., Battelle Memorial Inst., Columbus, Ohio, 1952-55; Project Leader, ibid., 1955; Asst. Consultant, ibid., 1956-60; Asst. Chief, ibid., 1960—. Fellow: A.A.A.S. Mem.: Am. Chem. Soc.; Sigma Xi; Scientific Rsch. Soc. of Am.; Sou. Ohio Rubber Group; Natl. Acad. of Scis.; Natl. Rsch. Coun. Conf. on Elec. Insulation; Institution of the Rubber Industry (London). Contbr. to: India Rubber World; Rubber Age; Rubber Age and Synthetics; Rubber Chem. and Technol.; Jour. of Applied Polymer Sci.; Package Engrng.; Digest of Literature on Dielectrics. Special Int.: Synthesis of Organo-Silicon Compounds and Polynitro Biphenyls; Emulsion Polymerization; Crystallinity in Polymers; Rubber Latex and Foam Rubber.

BENNETT, Clarence Edwin (Ph.D.), Prof. and Hd. Dept. Phys., Univ. of Me., Orono, Me. Home Add.: 65 Forest Ave., Orono, Me. PHYSICS. b. Providence, R. I., May 23, 1902. s. George Wilfred and Clara (Wright) B. Edn.: Ph.B., Brown Univ., 1923; Sc.M., ibid., 1924; Ph.D., ibid., 1930. m. Ruth Nason, Sept. 8, 1928. c.: Mrs. Muriel B. McAlister; Ronald S. Exp.: Instr., Brown Univ., Providence, R. I., 1923-31; Instr., Mass. Inst. of Tech., Cambridge, Mass., 1931-34; Asst. Prof. to Prof. and Hd. Phys. Dept., Univ. of Me., 1934—. Hon. Pos.: Phys. Counselor for Me.; Mem. N.A.S.-N.R.C. Panel to Natl. Bureau of Standards. Mem.: Am. Phys. Soc., Fellow; Am. Assn. Phys. Tchrs.; Am. Assn. for the Adv. of Sci., Fellow; Am. Soc. Engrng. Edn.; Optical Soc. of Am.; Am. Assn. Univ. Profs.; Phi Beta Kappa; Sigma Xi; Tau Beta Pi; Phi Kappa Phi; Sigma Pi Sigma; Mason. Author: Physics, 1935; Physics Without Mathematics, 1949; First Year College Physics, 1954; Physics Problems and How to Solve Them, 1958. Contbr. to: Am. Jour. of Phys.; Jour. of Engrng. Edn.; Phys. Rev.; Jour. of Chem. Phys. Areas of Rsch.: Optical Properties of Gases at High Pressure.

BENNETT, Donald Menzies (Ph.D.), Prof. of Phys.; Hd. Dept. of Physics, Univ. of Louisville, Louisville 8, Ky. Home Add.: 1810 Fleming Rd., Louisville 5, Ky. PHYSICS, X-RAYS AND RADIOACTIVITY. b. Nov. 24, 1897, Milwaukee, Wis. s. Wm. Chase and Jean Louise (Menzies) B. Edn.: B.A., Univ. of Wis., 1921; M.A., ibid., 1922; Ph.D., ibid., 1926. m. Irene Schubring of Madison, Wis., 1922. d. Christian and Amelia Schubring. c.: Robert Menzies. Exp.: Asst. in Phys., Univ. of Wis., 1920-22, 1924-26; Instr. in Phys., Univ. of Colo., 1922-24; Asst. Prof. of Phys., Univ. of Louisville, 1926-29; Assoc. Prof., 1929-42; Prof., 1943—; Tech. Aide to Dir., Radiation Lab., M.I.T., 1943; Rsch. Participant, Oak Ridge Inst. of Nuclear Studies, Summer, 1950; Exec. Comm., A.A.P.T., 1946-50. Mem.: Am. Phys. Soc.; A.A.A.S.; Am. Acoustical Soc.; A.A.U.P.; A.A.P.T.; Ky. Acad. of Sci.; Ky. Assn. Phys. Tchrs.; Phi Beta Kappa; Sigma Tau; Phi Mu Alpha; Sigma Xi; Phi Kappa Tau; Phi Kappa Phi; Alpha Epsilon Delta; Kappa Delta Pi. Author: Fundamentals of Physics, 1936. Ph.D. Dissertation: X-ray K Absorption Limit of Calcium Halides. War Rec.: S.A.T.C., Univ. of Wis., 1918. Hobbies: Photography; Music. Listed in: Who's Who in Engrng.; A.M.S.; Who Knows—and What; Who's Who in Am. Special Int.: Musical Acoustics.

BENNETT, Paul Alfred (Mr.), Supvr. of Engine Oil Rsch., Rsch. Labs., Gen. Motors Corp., Warren, Mich. Home Add.: 882 Parliament, Madison Heights, Mich.

MECHANICAL ENGINEERING. b. Milnor, N. D., Jan. 8, 1922. s. C. W. and Augusta (Sebens) B. Edn.: B.S., N. D. St. Coll., 1949; M.S., Purdue Univ., 1952. m. Ruth Lovas, Dec. 28, 1946. c.: Randal; Joyce; Cynthia; Timothy. Exp.: Supvr., Rsch. Lab., Gen. Motors Corp., Warren, Mich., 1952—. Mem.: Am. Soc. of Mechanical Engrs.; Soc. of Automotive Engrs.; Am. Soc. of Lubrication Engrs.; Phi Kappa Phi; Pi Tau Sigma; Tau Beta Pi; Sigma Xi. Contbr. to: S.A.E. Trans.; A.S.L.E. Trans.; Lubrication Engrng.; Jour. Air Pollution Control Assn.; Inst. of Petroleum. Serv. Rec.: U. S. Navy, 1942-45. Areas of Rsch.: Problems of Knock, Autoignition, Carburetion, Wear, Corrosion, and Deposits in Internal Combustion Engines.

BENNETT, Henry Stanley (M.D.), Dean, Div. of Biol. Scis., Univ. of Chicago, Chicago 37, Ill. Home Add.: 5827 Blackstone Ave., Chicago 37, Ill. ANATOMY; CYTOLOGY AND FINE STRUCTURE. b. Tottori, Japan, Dec. 22, 1910. s. Henry James and Anna (Woodruff) B. Edn.: A.B., Oberlin Coll., 1932; M.D., Harvard Univ. Med. Schl., 1936. m. Alice Helen Roosa, July 28, 1935. c.: Mrs. Edith Roosa Page; Anna McNaught; Patience St. John; Henry James. Exp.: Rsch. Fellow of Natl. Rsch. Council, Instr. in Anatomy, Harvard Med. Schl., Bostno, Mass., 1937-42; Asst. Prof. of Cytol., Mass. Instt. of Tech., Cambridge, Mass., 1945-48; Chmn., Dept. of Anatomy, Univ. of Wash., Seattle, Wash., 1948-60; Dean, Div. of Biol. Scis., Univ. of Chicago, 1961—. Hon. Pos.: Pres., Am. Assn. of Anatomists, 1959-60. Mem.: Am. Assn. of Anatomists; Am. Physiol. Soc.; Aesculapian Club of Boston; Internatl. Soc. for Cell Biol.; Am. Assn. Univ. Profs.; Am. Assn. Adv. Sci.; Am. Acad. of Arts and Scis.; Sociedad Mexican de Anatomia; Colegia Antomica Brasileiro; Anatomical Soc. of Japan; Am. Chem. Soc.; Histochem. Soc.; Sigma Xi; Alpha Omega Alpha. Contbr. to: Jour. of Clin. Invest.; Am. Jour. of Anatomy; Jour. of Biophys. and Biochem. Cytology; Nature; Anatomical Rec.; Sci.; Anesthesiol.; Endocrinol.; Jour. of Neurosurgery; Jour. of the Am. Chem. Soc.; Lab. Invest.; Exptl. Cell Rsch.; Jour. of Med. Edn.; Am. Jour. of Phys. Med.; Neurol.; Am. Jour. of Physiol.; Revs. of Mod. Physics; Jour. of the Am. Med. Assn. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Cytochemistry; Electron Microscopy; Polarization Microscopy; Structure of Muscle; Blood Vessels; Optics as Applied to Study of Biological Structure.

BENNETT, Rawson (Radm.), Sr. Vice-Pres., Dir. of Engrng., Sangamo Electric Co., Springfield, Ill. ELECTRONICS. b. Chicago, Ill., June 16, 1905. s. Rawson and Cora A. (Jones) B. Edn.: B.S., U. S. Naval Acad., 1927; M.S., E.E., Univ. of Calif., 1937. m. Louise Holmes, Jan. 2, 1949. c.: Rawson, III; Sally Ann; Holmes; Gregory. Exp.: Various U. S. Naval Ships and Stations, 1927-43; Dir., Electronics Design, Bur. of Ships, 1943-46; Dir., U.S.N. Electronics Lab., San Diego, Calif., 1946-50; Various Naval Assignments, 1950-54; Asst. Chf., Bur. of Ships, 1954-56; Chf., Naval Rsch., Navy Dept., 1956-61; Sr. Vice Pres., Dir. of Engrng., Sangamo Electric Co., Springfield, Ill., 1961—. Mem.: Fellow, Inst. of Radio Engrs.; Fellow, Am. Inst. of Elec. Engrs.; Fellow, Acoustical Soc.; Fellow, A.A.A.S. Serv. Rec.: U.S.N., 1923-61. Area of Rsch.: Underwater Acoustics.

BENNION, Marion (Ph.D.), Visiting Asst. Prof. of Home Econs., Univ. of Calif., Davis; Prof. of Food and Nutrition, Brigham Young Univ., Provo, Utah. Home Add.: Provo, Utah. FOOD SCIENCE. b. Murray, Utah, Sept. 23, 1925. d. Sterling A. and Beryl (Hamilton) B. Edn.: B.S., Utah St. Univ., 1947; M.A., Columbia Univ., 1949; Ph.D., Univ. of Wis., 1956. Exp.: Instr., Idaho St. Coll., Pocatello, Idaho, 1949-50; Rsch. Asst., Univ. of Wis., Madison, Wis., 1953-55; Asst. Prof. to Prof., Chmn., Dept. Food and Nutr., Brigham Young Univ., 1955—; Visiting Asst. Prof., Univ. of Calif., Davis, Calif., 1961-62; Prof., Brigham Young Univ., 1962—. Hon. Pos.: Chmn., Dept. of Food and Nutr., Brigham Young Univ. Mem.: Sigma Xi; Am. Assn. Adv. Sci.; Inst. Food Tech.; Am. Dietetic Assn.; Am. Home Econs. Assn.; Phi Kappa Phi; Omicron Nu; Phi Upsilon Omicron; Altrusa Internatl. Contbr. to: Jour. of Home Econs.; Food Tech. Areas of Rsch.: Changes Occurring in Fats Heated to Frying Temperatures.

BENNISON, Bertrand E. (M.D.), Asst. Dir. of Rsch., Ortho Rsch. Found., Raritan, N. J. Home Add.: 121 Braeburn Dr., Princeton, N. J. MEDICINE; RESEARCH ADMINISTRATION. b. Boston, Mass., Apr. 18, 1915. s. Harold B. and Ina M. (Sterling) B. Edn.: B.S., Mass. Inst. of Tech., 1937; M.D., Harvard Med. Schl., 1941; M.P.H., Grad. Schl. of Pub. Health, Univ. of Pittsburgh, 1954. m. Lella Brice, Aug. 28, 1943. c.: Alice M.; John B.; Louise A.; Charles B. Exp.: Medical Officer, U. S. Pub. Health Serv., 1942-54; Asst. Dir., Med. Rsch. Div., Esso Rsch. and Engrng. Co., Linden, N. J., 1954-60; Asst. Dir. of Rsch., Ortho Rsch. Found., Raritan, N. J., 1960—. Hon. Pos.: Mem., Visiting Comm., Dept. of Biol., Mass. Inst. of Tech. Mem.: Am. Med. Assn.; Am. Pub. Health Assn.; Am. Assn. for the Adv. of Sci.; I.M.A.; N. Y. Acad. of Sci. Contbr. to: Pub. Health Reports; Sci.; Jour. Natl. Malaria Soc.; Jour. Natl. Cancer Inst.; Procs. Soc. Exptl. Biol. and Med.; Archives of Environmental Health; Jour. Occupational Med.; The Med. Bull. Areas of Rsch.: Malaria, Cancer; Currently Pharmaceutical; Rsch. Administration.

BENSON, Walter Russell (M.D.), Assoc. Prof. of Pathol., Univ. of N. C., Schl. of Med., Chapel Hill, N. C. Home Add.: Coker Dr., Chapel Hill, N. C. PATHOLOGY. b. Tamaqua, Pa., July 27, 1920. s. John and Mary (Green) B. Edn.: M.D., Duke Univ., 1944. m. Ruth Cogan, Dec. 9, 1950. c.: John; Christina; Eric; Carl. Exp.: Assoc., Duke Univ. Med. Schl., 1954-55; Asst. Prof., Louisville Univ. Med. Schl., 1955-56; Asst. Prof., Univ. of N. C., Med. Schl., 1956-60; Assoc. Prof., ibid., 1960—. Mem.: Sigma Xi; Phi Beta Kappa; Coll. Am. Path.; Internatl. Acad. of Path.; Am. Assn. Path. and Bact.; Am. Soc. Exp. Path. Contbr. to: Cancer; Am. Jour. Path.; Arch. Path.; Lab. Investigation; Am. Jour. Clin. Path.; Ann. Surg.; Surgery. Serv. Rec.: U. S. Army, 1943-47. Areas of Rsch.: Carcinogenesis; Cardiovascular and Pulmonary Diseases; Tuberculosis; Human Tumors.

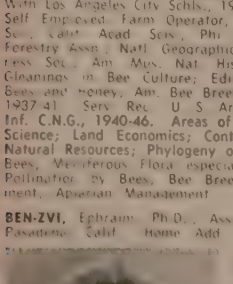
BENT, Henry Edward (Ph.D.), Dean of the Grad. Schl., Univ. of Mo., Columbia, Mo. Home Add.: 210 Westwood Ave., Columbia, Mo. CHEMISTRY. b. Oglesby, Ill., Oct. 6, 1900. s. Henry Albert and Josephine (Roberts) B. Edn.: A.B., Oberlin Coll., 1922; M.S., Northwestern Univ., 1923; Ph.D., Univ. of Calif., 1926. m. Florence E. Demo, Aug. 4, 1924. s. Henry Albert; Robert Demo. Exp.: Instr. in Chem., Harvard Univ., Cambridge, Mass., 1926-32; Asst. Prof., ibid., 1932-36; Assoc. Prof., Univ. of Mo., 1936-38; Prof., ibid., 1938—; Dean of the Grad. Schl., ibid., 1938—. Hon. Pos.: Chmn., Assn. of Grad.

Schls., 1952-53; Chmn., Coun. on Grad. Work, Assn. of Land-Grant Colls. and State Univs., 1954-55; Chief, Fellowship Sect., Natl. Defense Edn. Act, 1960; Chmn., Coun. of Grad. Schls. in the U. S., 1961. Mem.: Am. Chem. Soc.; Am. Assn. of Univ. Profs.; Phi Lambda Upsilon; Phi Delta Kappa; Alpha Chi Sigma; Sigma Xi; Phi Beta Kappa; Kiwanis. Contbr. to: Jour. of Am. Chem. Soc. Areas of Rsch.: Amalgams; Organic Free Radicals.

BENTLEY, Charles Raymond (Ph.D.), Asst. Prof., Geol. Dept., Univ. of Wis., Madison 6, Wis. Home Add.: 109 Brittingham Place, Madison 5, Wis. GEOPHYSICS. b. Rochester, N. Y., Dec. 23, 1929. s. Raymond and Janet (Everest) B. Edn.: B.S., Yale, 1950; Ph.D., Columbia, 1959. Exp.: Rsch. Asst. and Assoc., Lamont Geological Observatory of Columbia Univ., N. Y., 1950-56; Traverse Seismologist, Arctic Inst. of N. Am., N. Y. C., 1956-59; Project Assoc., Geol. Dept., Univ. of Wis., 1959-61; Asst. Prof., ibid., 1961—. Mem.: Am. Geophysical Union; Seismol. Soc. Am.; Am. Assn. for Adv. of Sci.; Soc. Explor. Geoph.; British Glaciological Soc. Contbr. to: Annales de Geophysique; Bull. Geol. Soc. Am.; Sci.; Jour. of Glaciology; Jour. of Geophysical Rsch.; Geophysical Jour. Gen. Int.: 2½ Years in Antarctica including Leadership of Four Oversnow Traverse Parties. Areas of Rsch.: Seismic Refraction Investigations at Sea; Theor. Wave Propag. Studies; Polar Geophysics and Glaciology; Antarctic Trail Operations.

BENTON, Ralph (Maj.), Prof. of Zool., Emer., Los Angeles City Schls., Los Angeles, Calif. Home Add.: 9109 S. Manzanar Ave., Downey, Calif. BIOLOGICAL SCIENCES; ZOOLOGY; COMPARATIVE ANATOMY AND EMBRYOLOGY; PHYLOGENY; BIOLOGY OF INSECTS. b. Munich, Germany, Aug. 2, 1884. s. Frank and Harriet M. (Wheeler) B. Edn.: B.S., Mont. State Coll., 1906; B.L., Univ. of Calif., Berkeley, 1907; M.S., ibid., 1909; M.A., Univ. of So. Calif., 1914; Life Dipl., Calif. State Bd. of Edn., 1928; Grad. Study and Rsch.: Univ. of Chicago, Summer Qtrs., 1926, 1927; Stanford Univ., 1932-33 and Summer Qtr., 1934; Hopkins Marine Station, Summer Qtrs., 1932, '33, and Spring Qtr., 1934; Rocky Mtn. Biol. Sta., Summer Qtr., 1950; U.C.L.A., 1950-52. m. Ruth Ann Ledig, 1929. c.: Franklin Dwight. Exp.: Field Agt., U.S.D.A. in Europe, 1905; Asst. and Instr. in Entomol., Univ. of Calif., Berkeley, 1905-10; Instr., Los Angeles State Normal Sch., U.C.L.A., 1910-12; Assoc. Prof. of Zool., Univ. of So. Calif., 1912-14; with U. S. Biol. Survey Wild Life Preservation, Calif. and Nev. Dist., 1914-18; Instr., Univ. of Calif., Berkeley, 1919-22; Instr., Chaffey Coll., 1921-22; Prof. of Comp. Anatomy and Embryology, Registrar, Los Angeles Coll. of Physicians and Surgeons and Ext. Prof. of Zool., Univ. of So. Calif., 1923-25; With Los Angeles City Schls., 1925-50; Tchr., Emer., ibid., 1950—; Self Employed, Farm Operator, 1950—. Mem.: Am. Assn. Adv. Sci., Calif. Acad. Scis., Phi Sigma Kappa; Sierra Club; Am. Forestry Assn.; Natl. Geographic Soc.; Natl. Parks Assn., Wilderness Soc.; Am. Mus. Nat. Hist. Contbr. to: Am. Bee Jour.; Gleanings in Bee Culture; Editorial Dir., Frontier Publications: Bees and Honey; Am. Bee Breeders Rec.; and Educational Scene, 1937-41. Servs. Rec.: U. S. Army 2nd Lt., Inf., 1918-19; Maj., Inf. C.N.G., 1940-46. Areas of Rsch.: History and Philosophy of Science; Land Economics; Contributions to the Conservation of Natural Resources; Phylogeny of Insects; Colonial Life of Honey Bees, Wonderous Flora especially that of the Calif. Chaparral; Pollination by Bees, Bee Breeding and Standards of Measurement, Apiarian Management.

BEN-ZVI, Ephraim, Ph.D., Asst. Prof., Immaculate Heart Coll., Pasadena, Calif. Home Add.: 1314 Huntington Dr., S. Pasadena, Calif. KINETICS OF REDOX REACTIONS, COORDINATION COMPOUNDS. b. Otynia, Poland, Nov. 14, 1922. s. Henry and Sarah (Schreier) Sokal. Edn.: B.S., Israel Inst. of Technol., 1952; Ph.D., Univ. of Calif., 1960. m. Hava Bromberg, Sept. 3, 1950. c.: Igal. Exp.: Prod. Engr., Fertilizers and Chemicals, Haifa, Israel, 1952-57; Tchng. Asst., Univ. of Calif., 1957-60; Rsch. Fellow, Calif. Inst. of Technol., 1960-61; Asst. Prof., Immaculate Heart Coll., 1961—. Mem.: A.C.S., Sigma Xi. Contbr. to: Jour. A.C.S. Servs. Rec.: Israel Army, 1948-49. Areas of Rsch.: Kinetics of Redox Reactions.



BERA, Chester (Mr.), Tchr. of Chem., West Leyden H. Schl., Northlake, Ill. Home Add.: 1738 N. Winchester Ave., Chicago 22, Ill. CHEMISTRY. b. Chicago, Ill., Nov. 19, 1915. s. Anton and Veronica (Pietrzyk) B. Edn.: B.S., Roosevelt Univ., 1958. Exp.: Music Tchr., Chicago, Ill., 1940-58; Tchr., W. Leyden H. Schl., Northlake, Ill., 1958—. Mem.: A.A.A.S.; Internatl. Soc. for Gen. Semantics; Internatl. Planned Parenthood Assn.; Am. Civil Liberties Union; Fed. of Am. Scientists; Independent Voters of Ill., ACOPOLL, Inc. Areas of Rsch.: Parasitology.

BERANBAUM, Samuel Louis (M.D.), Radiologist, 121 E. 60th St., N. Y. C. 22, N. Y. Home Add.: 275 Central Park W., N. Y. C. 24, N. Y. RADIOLOGY. b. Toronto, Can., April 20, 1915. s. Mandel and Bessie (Markson) B. Edn.: B.A., Univ. of Toronto, 1937; M.D., ibid., 1940. m. Betty Samson, Mar. 24, 1949. c.: Joan Louise; Nancy Ann; John Arthur. Exp.: Intern, Mt. Sinai Hosp., Cleveland, 1940-42; Res. In Radiol., N. Y. Postgrad. Hosp., 1942-45; Asst. Attending Radiol., N. Y. Postgrad. Hosp., 1945-46; Assoc. Attending Radiol., ibid., 1946-47; Acting Dir. of Radiol., ibid., 1948-49; Dir. of Radiol., St. Barnabas Hosp. for Chronic Diseases, 1945-; Assoc. Attending Radiol., Univ. Hosp. of the N. Y. Univ., Bellevue Med. Center, 1948-56; Acting Dir. of Radiol., Univ. Hosp., 1952-53; Attending Radiol., ibid., 1956-; Assoc. Attending Radiol., Hosp. for Joint Diseases, 1955-56; Asst. in Radiol., Columbia Univ., 1945-46; Instr. in Radiol., ibid., 1946-48; Asst. Clin. Prof. of Radiol., N. Y. Univ. Med. Schl., 1947-53; Assoc. Clin. Prof. of Radiol., ibid., 1953-60; Clin. Prof. of Radiol., 1960—. Mem.: Diplomate, Am. Bd. of Radiol.; Fellow, Am. Coll. Radiol.; N. Y. Acad. Med.; N. Y. Acad. Sci.; Am. Roent. Ray Soc.; Radiol. Soc. N. Am.; Am. Heart Assn.; N. Y. Roent. Soc.; Soc. Med. Jurisprudence; N. Y. Acad. Gastroenterology; N. Y. Gastro.; Phi Delta Epsilon. Contbr. to: Radiology; Am. Jour. Roent.; Gastro Enterology. Areas of Rsch.: Elusive Abdominal Masses; Ulcerative Colitis.

BERANEK, Leo Leroy (Sc.D.), Pres., Bolt, Beranek and Newman, Inc.; Lectr., Mass. Inst. of Tech., Cambridge, Mass. Home Add.: 7 Ledgewood Rd., Winchester, Mass. COMMUNICATION ENGINEERING AND ACOUSTICS. b. Solon, Iowa, Sept. 15, 1914. s. Edward F. and Beatrice (Stahle) B. Edn.: B.A., Cornell Coll., 1936; M.S., Harvard Univ., 1937; Sc.D., ibid., 1940. Hon. Deg.: Sc.D., Cornell Coll., 1946. m. Phyllis Knight of Boston, Mass., Sept. 6, 1941. c.: James K.; Thomas Haynes. Exp.: Parker Fellow, Harvard Univ., 1939-40; Instr. in Phys. and Communications Engrng., ibid., 1940-41; Asst. Prof. in Phys. and Communications Engrng., ibid., 1941-43; Dir. of Rsch. on Sound Control, ibid., 1943-45; Dir. of El-Acous. and Syst. Rsch. Labs., ibid., 1945-46; John Simon Guggenheim Fellow, Harvard and M.I.T., 1946-47; Assoc. Prof. of Commun. Engrng., M.I.T., 1947-59, Tech. Dir. of Acous. Lab., ibid., 1947-53. Hon. Pos.: Past Secy., Natl. Rsch. Coun. Commn. on Sound Control. Mem., Exec. Coun. of Acoustical Soc. of Am.; Past Pres. of Acoustical Soc. of Am.; Assoc. Editor of Jour. of Acoustical Soc. of Am., Acoust. Standards Bd., Am. Standards Assn.; Chmn., Acous. Panel, Rsch. and Development Bd. of Natl. Defense Dept., Fellow, Acoustical Soc. of Am.; Am. Phys. Soc.; Am. Acad. Arts and Sci.; Audio Engrng. Soc., Trustee, Cornell Coll., A.A.A.S. Mem.: Phi Beta Kappa, Sigma Xi, Groupement des Acousticiens de Langue Francaise, Paris; N. Y. Acad. Sci.; Eta Kappa Nu. Author: Sound Control in Airplanes, 1944; Acoustic Measurements, 1949, Acoustics, 1954; Noise Reduction, 1960; Music, Acoustics, and Architecture, 1962. Areas of Rsch.: Room Acoustics, Commun. Syst. Design; Noise Reduction, Physics of Sound and Systems Engrng.

BERBERIAN, Dicran Abraham (M.D.), Dir. of Rsch. in Tropical Med. and Parasitology, Physician of the Inst., Sterling-Winthrop Rsch. Inst., Rensselaer, N. Y. TROPICAL MEDICINE, PARASITOLOGY AND MEDICAL MYCOLOGY. b. Diarbekir, Turkey, Aug. 9, 1903. s. Abraham and Shamiram (Nalbandian) B. Edn.: B.A., Am. Univ. of Beirut, 1926; M.D., ibid., 1930. m. Armine Poladian, Dec. 24, 1932. c.: Cynthia Lea; Dicran Aram; Raffi Robert. Exp.: Instr. in Bacteriol. and Parasitol., Schl. of Med., Am. Univ. of Beirut, Lebanon, 1930-35; Rockefeller Fellowship for Advanced Study in Parasitol. and Tropical Medicine, London, Paris and Rome, 1935-36; Adj. Prof. of Bacteriol. and Parasitol., Schl. of Med., Am. Univ. of Beirut, Lebanon, 1936-45; Assoc. Prof. of Bacteriol. and Parasitol., Chmn. of Dept., ibid., 1945-47; Dir. of Rsch. in Trop. Med. and Parasitol., Mem. and Phys. of Inst., Sterling-Winthrop Rsch. Inst., Rensselaer, N. Y.; Asst. Clin. Prof. Med., Albany Med. Coll., Albany, N. Y., 1947—; Assoc.

Prof. Microbiol., Albany Med. Coll., Albany, N. Y., 1956—; Consultant, Medicine, Vet. Admin. Hosp., Albany, N. Y., 1954—. Mem.: New York Acad. of Sci.; Royal Soc. Tropical Med. and Hygiene; Am. Soc. of Tropical Med. and Hygiene; A.A.A.S.; Am. Soc. of Parasitol.; Soc. of Am. Bacteriol.; A.M.A.; Albany Co. Med. Assn. Contbr. to: Jour. of A.M.A.; Trans. of Royal Soc. of Hygiene and Trop. Med.; Arch. of Dermatol. and Syphil.; Am. Jour. Trop. Med.; Antibiotics and Chemotherapy. Gen. Int.: Production of Vaccines and Serums during War Years for Use in Lebanon, Syria, Iraq, Iran and Abyssinia; Malaria Control Programs in Lebanon; Investigating and Control of Epidemics of Typhus in Syrian Villages during World War II. Recipient Gold Medal of Meritorious Services to Lebanon from the Republic of Lebanon, 1943. Special Int.: Chemotherapy of Malaria, Amoebiasis, Schistosomiases, Helminthiases, Mycoses. Oriental Sore—Its Transmission and Prophylaxis. Enteric Fever—Their Prophylaxis and Control.

BERENSON, Gerald S. (M.D.), Assoc. Prof. of Med., La. St. Univ. Schl. of Med., 1542 Tulane Ave., New Orleans 12, La. Home Add.: 144 Audubon Blvd., New Orleans, La. INTERNAL MEDICINE, CARDIOLOGY, BIOCHEMISTRY, CONNECTIVE TISSUE. b. Bogalusa, La., Sept. 19, 1922. s. Meyer and Eva (Singerman) B. Edn.: B.S., Tulane Univ. of La., 1943; M.D., Tulane Med. Schl., 1945. m. Joan Seidendach, Mar. 7, 1951. c.: Leslie; Ann; Robert. Exp.: Asst., Tulane Med. Schl., Dept. of Med., 1948-49; Instr., ibid., 1949-52; Asst. Prof., La. St. Univ. Med. Schl., 1954-58; Assoc. Prof., ibid., 1958—; Publ. Health Fellowship, N.I.H., Dept. of Pediatrics, Univ. of Chicago, 1952-54. Mem.: Alpha Omega Alpha; Am. Fed. for Clin. Rsch.; Soc. for Exptl. Biol. and Med.; Sou. Soc. for Clin. Rsch.; Sigma Xi; A.A.A.S.; Biochem. Div. of A.C.S.; N. Y. Acad. of Scis.; New Orleans Acad. of Internal Med.; Am. and La. Heart Assn.; Am. Soc. for Biological Chemists. Contbr. to: Am. Jour. Publ. Health; Jour. Clin. Investigation; Am. Jour. Trop. Med.; Jour. Med. Sci.; Am. Heart Jour.; Jour. Lab. and Clin. Med.; Biochimica and Biophysica Acta; Jour. Biol. Chem.; Am. Jour. Med.; Fed. Proc.; Anat. Record; Proc. Soc. Exptl. Biol. and Med.; Circulation; Circulation Rsch.; British Jour. Exptl. Pathol.; Jour. Expti. Med.; Arch. Biochem. and Biophys.; Sou. Med. Jour.; Jour. Atheroscler. Serv. Rec.: U. S. Navy, 1945-48. Areas of Rsch.: Internal Med.; Cardiol.; Biochem.; Connective Tissue.

BERG, Irwin August (Ph.D.), Prof. and Chmn., Dept. of Psychol., La. St. Univ., Baton Rouge 3, La. Home Add.: 853 DuBois Dr., Baton Rouge 8, La. PSYCHOLOGY. b. Chicago, Ill., Oct. 9, 1913. s. Bertil S. and Clara Mathilda (Anderson) B. Edn.: A.B., Knox Coll., 1936; M.A., Univ. of Mich., 1940; Ph.D., ibid., 1942. m. Sylvia Maria Taipale, Mar. 4, 1939. c.: Karen Astrid Kirby. Exp.: Asst. Prof., Univ. of Ill., Urbana, Ill., 1942-47; Assoc. Prof., Pomona Coll., Claremont, Calif., 1947-48; Assoc. Prof., Northwestern Univ., Evanston, Ill., 1948-55; Prof. and Chmn., Dept. of Psychol., La. St. Univ., Baton Rouge, La., 1955—. Hon. Pos.: Pres., Southeastern Psych. Assn., 1962-63; Chmn., Com. on Evaluation, Am. Psych. Assn., 1956-59; Mem. of Coun. of Rep., Am. Psych. Assn., 1950-53; Pres., Ill. Psych. Assn., 1951-52. Mem.: Acad. of Psychoanalysis; Am. Assn. for Adv. of Sci.; Am. Assn. of Univ. Profs.; Am. Psychol. Assn.; Southeastern Psychol. Assn.; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Phi Sigma; Phi Gamma Delta. Author: Workbook in Psychology, 1955, 1961. Contbr. Editor: An Introduction to Clinical Psychology, 1948, 1954; Conformity and Deviation, 1961. Contbr. to: Jour. of Clin. Psychol.; Jour. of Coun. Psychol.; Jour. of Psychol.; Psychol. Reports. Areas of Rsch.: Measurement of Personality.

BERG, J(ohn) Robert (Ph.D.), Dean, Univ. Coll.; Chmn. and Prof., Geol. Dept., Univ. of Wichita, Wichita, Kans. Home Add.: 1719 Gentry Dr., Wichita 8, Kans.

GEOLOGY; CHEMISTRY. b. Chicago, Ill., Feb. 18, 1915. s. Gustav A. and Clara A. (Swanson) B. Edn.: B.A., Augustana Coll., 1938; M.S., State Univ. of Ia., 1940; Ph.D., ibid., 1942. m. Hazel C. Anderson, Sept. 11, 1940. c.: Richard. Exp.: Machine Operator, Continental Can Co., Chicago, Ill., 1933-36; Internatl. Harvester Co., Med. Techn., Moline, Ill., 1936-38; Rsch. Asst., Univ. of Ia., 1939-42; Field Geol. Instr., ibid., 1940-42; Chem. Engr., E. I. du-Pont Co., Gibbstown, N. J. and Dana, Ind., 1942-45; Subsurface Geolt., Shell Petrol. Co., Wichita, Kans., 1945-46; Prof. of Geol., Wichita Univ., 1946-50; Asst. Chf. Staff, Dept. of Army, Office, 1951-52; Prof. and Chmn., Dept. of Geol., Wichita Univ., 1953—. Hon. Pos.: Chmn., Dept. of Geol., Univ. of Wichita, 1953—; Dean, Univ. Coll., ibid., 1962—; Commr., Am. Comm. Stratigr. Nomenclature, 1955-57; Chmn., Bd. of Dirs., U. of W. Credit Union; Pres., Natl. Assn. of Geol. Tchrs.; Mem., Bd. of Dirs., Am. Geol. Inst.; Chmn., Univ. Coll. Comm.; Pres., So. Central Chapt., Kans. Credit Union League, 1961-62. Mem.: Am. Chem. Soc.; Fellow, Am. Assn. Adv. Sci.; Am. Assn. of Petrol. Geolts.; Fellow, Geol. Soc. of Am.; Am. Inst. of Mining and Metall. Engrs.; Sigma Xi; Geocbem. Soc.; Am. Geophys. Union; Natl. Assn. of Geol. Tchrs.; Soc. of Econ. Geolts. Contbr. to: Proc. Ia. Acad. of Sci.; Stats. of Oil and Gas Devel. and Prodn.; Reports of Investn.; Bull. Am. Assn. of Petrol. Geolts.; Gen. Geol. Lab. Manual; Jour. Geol. Edn.; Kans. Acad. of Sci. Areas of Rsch.: Geology; Chemistry.

BERG, Pauline Georgia (Miss), H. Schl. Sci. Instr., Odebolt, Ia. Home Add.: 309 Maple St., Odebolt, Ia. MAJOR--CHEMISTRY; PHYSICS, MATHEMATICS. b. Dayton, Ia., Dec. 27, 1909. d. George and Thora (Johnson) B. Edn.: B.S., Ia. St. Univ., 1931; M.A., St. Coll. of Iowa, 1960. Exp.: Instr., Elem., Dayton, Ia., 1936-38; Inst., Jr. High—Departmental, Dayton, Ia., 1938-44; Instr., H. Schl. Sci., Odebolt, Ia., 1944—. Mem.: Natl. Sci. Tchrs. Assn.; Am. Assn. for the Adv. of Sci.; Natl. Soc. for the Study of Edn.; Natl. Edn. Assn.; Ia. St. Edn. Assn.; Ia. Acad. of Sci.; Iota Sigma Pi; Lambda Delta Lambda. Contbr. to: Analysis of Rsch. in the Tchng. of Sci. Gen. Int.: Participant in, Radioisotopes Workshop at St. Coll. of Ia., Sum., 1955; Participant in N.S.F. Summer Inst., Ia. St. Univ., 1957; N.S.F. Academic Year Instit. at St. Coll. of Ia., 1959-60. Areas of Rsch.: Relationships Between Iowa High School Physical Science Programs and Placement Test Scores of Iowa State Teachers College Students.

BERGELIN, Olaf Preysz (D.Sc.), Educational Consultant, Texas A. and M. Coll., Pakistan Project, Dacca East Pakistan. CHEMICAL ENGINEERING. b. Nov. 8, 1911, Big Rapids, Mich. s. John E. and Ruby (Oleson) B. Edn.: B.S.E., Univ. of Mich., 1935; B.S.E., ibid., 1936; Sc.D., ibid., 1942. m. Sarah Rose Radford of Jackson Springs, N. C., Aug., 1942. d. Hilary and Betty Radford. c.: Sarah Marie; Robert Olaf; Barbara J. Exp.: Rsch. Asst., Univ. of Mich., 1935-37; Chem. Engr., Hercules Powder Co., 1941-42; Army, U. S. Ord. Dept., TNT Prod., 1942-43; Corps of Engrs., Manhattan Proj., 1943-46; Univ. of Del., Asst. Prof. Chem. Engrng., 1946-47; Assoc. Prof., 1947-52; Prof., ibid., 1952-56; Tex. A. and M. Pakistan Project, Ahsanullah Engrng. Coll., Dacca, E. Pakistan, 1956—; Mem. of Syndicate, E. Pakistan Univ. of Engrng. and Technol., 1962—. Mem.: A.I.Ch.E.; A.S.M.E.; A.S.E.E.; Sigma Phi; Inst. of Engrs., Pakistan. Author: Heat Transfer and Pressure Drop During Viscous Flow Across Banks of Tubes, 1950. Contbr. to: Sci. Jours. Ph.D. Dissertation: Liquid-Lipuid Extract on Across a Known Interfacial Area. War Record: (See above—2nd Lt., 1st Lt., Capt.). Travel: Europe; N. Am.; New Zealand; Pakistan; India; Ceylon. Hobbies: Golf; Fishing. Listed in: A.M.S. Special Int.: Geothermal Power; Heat Transfer; Two-Phase Flow.

BERGER, Frank Milan (M.D.), Pres., Wallace Labs., Cranbury, N. J. Home Add.: 227 Prospect Ave., Princeton, N. J. EXPERIMENTAL MEDICINE. b. Pilsen, Czechoslovakia, June 25, 1913. s. Otto and Martha (Weigner) B. Edn.: M.D., Univ. of Prague, 1937; M.D., St. Univ. of N. Y., 1948. m. Bozena, March 15, 1939. c.: Franklin Milan; Thomas Jan. Exp.: Rsch. Fellow in Physiology, Univ. of Prague, 1934-36; Rsch. Asst., ibid., 1936-38; Bacteriologist, Czechoslovak St. Inst. of Health, 1938-39; Sr. Resident, Monsall Hosp., Manchester, England, 1941-43; Chief Pharmacologist, British Drug Houses, London, 1945-47; Asst. Prof. Pediatrics, Univ. of Rochester, N. Y., 1947-49; Dir. of Rsch., Carter Products, New Brunswick, N. J., 1949; Vice-Pres., ibid., 1954-58; Pres., Wallace Labs., 1958—. Mem., Fellow, N. Y. Acad. of Sci.; Royal Soc. Med.; A.A.A.S.; Am. Soc. Pharm.; Brit. Pharm. Soc.; Am. Bacteriol. Soc.; Soc. for Gen. Microbiol.; Biometric Soc.; Am. Med. Assn.; Eastern Psychiatric Assn.; Nassau Club. Gen. Int.: Discovered Mephenesin, the First Centrally Acting Muscle-Relaxant, Meprobamate, the First Tranquilizer Useful in the Treatment of Neurotic States, and Other Neuropsychiatric Conditions, and Several Other Widely Used Pharmaceuticals. Areas of Rsch.: Experimental Medicine; Pharmacology; Bacteriology.

BERGMAN, Herbert Floyd (Ph.D.), Sr. Pathologist, U. S. Dept. Agric. (ret.), E. Wareham, Mass. Home Add.: E. Wareham, Mass. PLANT PATHOLOGY. b. Medicine Lodge, Kans., Sept. 15, 1883. s. Francis F. and Luella A. (Meigs) B. Edn.: B.Sc., Kans. St. Agric. Coll., 1905; M.S., Univ. of Minn., 1916; Ph.D., ibid., 1918. m. Margaret M. McCarty, Aug. 14, 1912. c.: Constance E. (dec.); Elizabeth Ann. Exp.: Asst. in Botany, Kans. St. Agric. Coll., Manhattan, Kans., 1906-08; Asst. Prof., N. D. Agric. Coll., Fargo, N. D., 1908-12; Asst. Prof. Botany, Univ. of Minn., Mlps., Minn., 1912-17; Prof. Botany, Coll. of Hawaii, Honolulu, Hawaii, 1919-29; Scientific Asst., U. S. Dept. of Agric., Wash., D. C.,

1917-19; Sr. Pathol., ibid. (ret.), 1929-53. Mem.: Am. Assn. for the Adv. of Sci.; Bot. Soc. Am.; Am. Genet. Assn.; Am. Phytopathological Soc.; Am. Soc. Plant Physiol.; Sigma Xi. Contbr. to: Jour. Am. Bot.; Annals of Bot.; Rev. Canad. de Biol.; Phytopathology. Areas of Rsch.: Diseases of Cranberries; Diseases Due to Oxygen Deficiency.

BERGMAN, Ernest L. (Ph.D.), Asst. Prof., Plant Nutrition, Dept. of Horticul., Pa. St. Univ., Univ. Pk., Pa. Home Add.: 1421 Harris St., St. Coll., Pa. HORTICULTURE-PLANT NUTRITION. b. Munich, Germany, July 12, 1922. s. Willi and Julia (Steiner) B. Edn.: Diploma Ldw., Kt. Ldw. Schule Schwand-Munsingen, Switzerland, 1941; B.S., Ore. St. Coll., 1955; M.S., Mich. St. Univ., 1956; Ph.D., ibid., 1958. m. Alice Adler, 1948. Exp.: Private Enterprises, Switzerland, 1941-45; U. S., 1946-53; Rsch. Asst., Gartenbauschule, Oeschberg, Switzerland, 1945-46; Grad. Rsch. Asst., Dept. of Horticul., Mich. St. Univ., E. Lansing, Mich., 1955-58; Asst. Prof., Dept. of Horticul., Pa. St. Univ., 1958 —. Mem.: Am. Soc. for Hort. Sci.; Am. Soc. for Plant Physiols.; A.A.A.S.; Sigma Xi; Phi Epsilon Phi; Alpha Zeta. Contbr. to:

Procs. A. S. H. S. Areas of Rsch.: Mineral Nutrition of Fruits and Vegetables; Physiological Disorders Connected with Deficiencies or Toxicities, Also Virus-Plant Nutrition Relationships.

BERGMAN, Moe (Ed.D.), Prof. and Director, Speech and Hearing Center, Hunter Coll., 695 Park Ave., N. Y. 21, N. Y. Home Add.: 27 Gladstone Rd., New Rochelle, N. Y. AUDIOLOGY. b. Brooklyn, N. Y., March 28, 1916. s. Max and Bessie (Stanzler) B. Edn.: Ed.D., Tchrs. Coll., Columbia Univ., 1949; M.A., ibid., 1939; A.B., Univ. of Ill., 1937. m. Hannah Goodelman, Dec. 18, 1938. c.: Jay Asa. Exp.: Dir. Edn. of the Handicapped, Peekskill Union Free Schl. District, Peekskill, N. Y., 1938-42; Faculty Mem., First Internatl. Course in Audiol., Sweden, 1950; Chief Audiologist, N.Y. Reg. Off., Vet. Admin., 1946-53; Consultant, Technin., U. S. Op. Mission to Israel, 1954; Lectr. in Otolaryngology, Coll. of Physicians and Surgeons, Columbia Univ., 1948-57; Lectr. in Spec. Edn., Columbia Univ., 1948-58;

Prof. and Director, Speech and Hearing Center, Hunter Coll., 1953—. Hon. Pos.: First Chmn., Audiol. Study Group of N. Y., 1954; Chmn., Greater N. Y. Council of Agencies for the Hearing Impaired, 1959—; Assoc. Editor, Jour. of Speech and Hearing Disorders; Chmn., Comm. of Am. Speech and Hearing Assn. Mem.: Am. Speech and Hearing Assn.; Acoustical Soc. of Am.; Am. Inst. of Physics; Am. Assn. Adv. of Sci.; N. Y. State Speech and Hearing Assn. Author: The Audiology Clinic, 1950. Contbr. to: A.M.A. Arch. of Otolaryngology; Acta Otolaryngology; Laryngoscope; Logos Jour. of Speech and Hearing Disorders; New Outlook for the Blind; Progressive Architecture; Annals of Otol., Rhin. and Laryng.; Excerpta Medica; Jour. of Laryng. and Otology; ASHA. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Binaural and Stereophonic Hearing; Audiology in Audiosurgery; Auditory Perception in Blind Persons; The Development of Audiology Services and Facilities; Presbycusis in Primitive and Contemporary Cultures.

BERK, J(ack) Edward (D.Sc.), Clin. Prof. of Med., Wayne St. Univ., 6767 W. Outer Drive, Detroit 35, Mich. Home Add.: 31660 Franklin Fairway, Farmington, Mich. MEDICINE. b. Philadelphia, Pa., Nov. 24, 1911. s. Samuel and Esther (Pill) B. Edn.: B.A., Univ. of Pa., 1932; M.D., Jefferson Med. Coll., 1936; M.Sc., Univ. of Pa., 1939; D.Sc., ibid., 1943. m. Adeline Elizabeth Alberts, June 26, 1937. c.: Philip Howard; Richard Hannah. Exp.: Assoc. Attending Phys., Albert Einstein Med. Center, 1939-54; Instr., Gastroenterol., Univ. of Pa., 1941-46; Asst. Prof. of Medicine, Temple Univ., 1946-54; Rsch. Assoc., Asst. to the Dir., Fels Rsch. Inst., ibid., 1946-54; Consultant, V.A. Hosp., Philadelphia, Pa., 1952-54; Dir., Dept. of Medicine, Sinai Hosp. of Detroit, Mich., 1954—; Clinical Assoc.,

Prof. of Medicine, Wayne St. Univ., 1954-62; Attending Physician, Detroit Receiving Hosp., Detroit, Mich., 1954—; Consultant, V.A. Hosp., Dearborn, Mich., 1956—; Editorial Bd., Current Therapeutic Rsch., N.Y.C., 1960—; Visiting Lectr., Univ. of Pa., 1961—; Clinical Prof. of Medicine, Wayne St. Univ., 1962—. Hon. Pos.: Secy.-Treas., Vice-Pres., Chmn., Editorial Bd., Pres., Am. Soc. for Gastrointestinal Endoscopy; Chmn., Eastern Sect., Am. Federation for Clinical Research; Treas., Bockus International Soc. of Gastroenterology; Secy., Vice-Pres., Pres., Detroit Gastroenterological Soc. Mem.: Am. Coll. of Physicians, Fellow; Am. Gastroenterological Assn.; Am. Soc. for Gastrointestinal Endoscopy; Am. Federation for Clinical Rsch.; Internatl. Soc. of Med.; A.A.A.S.; N. Y. Acad. of Sci.; Sigma Xi; Alpha Omega Alpha; Pi Gamma Mu; Phi Delta Epsilon. Contbrng. Author: Gastroenterology, Vol. II, 1944; Vol. III, 1946; Practical Therapeutics, 1st Ed. 1948; 2nd Ed. 1951; 3rd Ed. 1956; Postgraduate Gastroenterology, 1950; Current Therapy, 1949, 1950, 1951, 1953, 1955, 1960; Cyclopedia of Medicine, Surgery and Specialties, 1950; Peptic Ulcer, 1951; Diseases of the Digestive System, 1953; Encyclopedia Britannica, 1960. Contbr. to: Endocrinol.; Am. Jour. of Med. Sci.; Annals of Surg.; Am. Jour. of Digestive Diseases; Arch. of Internal Medicine; Med. Clinics of N. Am.; Am. Jour. of Surg.; Am. Jour. of Physiol.; Jour. of the A.M.A.; Jour. of Lab. and Clinical Medicine; Clinical Rsch. Proc.; Gastroenterol.; Am. Jour. of Gastroenterol.; Am. Jour. of Roentgenol., Radiation Therapy and Nuclear Medicine; Jour. of Allergy; Radiol.; Current Therapeutic Rsch. Service Rec.: U. S. Army, 1941-46. General Int.: Certificate of Merit, Tilton General Hosp., U. S. Army, 1945; Distinguished Serv. Award, Mich. St. Med. Soc., 1959; Hon. Mem., Ecuadorian Acad. of Med. Areas of Rsch.: Gastro-Intestinal Diseases.

BERING, Edgar Andrew, Jr. (M.D.), Assoc. Neurosurgeon, Dir. Neurosurgical Rsch. Lab., Children's Med. Center, Boston 15, Mass., and Asst. Clin. Prof. of Surgery, Harvard Med. Schl., Cambridge, Mass. Home Add.: 286 Warren St., Brookline 46, Mass. NEUROSURGERY; PHYSIOLOGY OF THE CEREBROSPINAL FLUID. b. Salt Lake City, Utah, Feb. 18, 1917. s. Edgar Andrew and Ilse (Billing) B. Edn.: B.A., Univ. of Utah, 1937; M.D., Harvard Univ., 1941. m. Harriet Aldrich, Nov. 3, 1944. c.: Edgar III; Charles C.; Harriet A. Exp.: Mosley Traveling Fellow, Harvard Med. Schl., Natl. Hosp., London, England, 1948-49; Rsch. in Neurosurg., Children's and P. B. Brigham, Boston, Mass., 1949-Tchng. Fellow in Surgery, Harvard Med. Schl., Boston, Mass., 1949-50; Rsch. Fellow and Asst., Neurosurg., Children's Hosp. Boston, Mass., 1950-51; Asst., Clin. Prof. of Surg., Harvard Med. Schl., Boston, Mass., 1955—; Dir., Neurosurg., Rsch. Lab., Children's Hosp. Med. Center, 1952—. Contbr. to: Am. Jour. of Physiol.; Jour. of Neurosurg.; Archives of Neurol.; Jour. of Clin. Investigation. Service Rec.: U. S. Navy, 1942-46. Gen. Int.: Invention of Fibrin Foam. Areas of Rsch.: Cerebrospinal Fluid Physiology; Deep Hypothermia; Effect of Radiation on the Central Nervous System; Production of Tumors with Plastics.

BERKEBILE, James Marcus (Ph.D.), Prof. of Chem. and Dir. of Extension, Elizabethtown Coll., Elizabethtown, Pa. CHEMISTRY. b. Defiance, Ohio, April 12, 1913. s. Stephen P. (dec.) and Nora E. (Flory, dec.) B. Edn.: A.B., Manchester Coll., 1934; M.A., Ohio State Univ., 1935; Ph.D., ibid., 1951. m. Clara Lucille Huber, Sept. 23, 1934. c.: Stephen; Ray; Rozann; Stanley, dec. Exp.: Prin. and Tchr. of Sci., Orange Centralized Schl., Galena, Ohio, 1935-40; Acting Supt., ibid., 1940-41; Chemist, Mid-Continent Petroleum Corp., Tulsa, Okla., 1941-43; Hd. of Dept. of Chem., McPherson Coll., 1943-48; Dean of Curriculum and Hd. of Dept. of Chem., ibid., 1950-57; Prof. of Chem., Elizabethtown Coll., 1957-59; Sci. Edn. Advisor, Internatl. Cooperative Admin. (China), Taipei, Taiwan, 1959-61; Prof. of Chemistry and Dir.

of Extension, Elizabethtown Coll., Elizabethtown, Pa., 1961—. Mem.: Am. Chem. Soc.; Sigma Xi; Pi Kappa Delta; Alpha Delta. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Chem. Edn.; Current Sci. Methods (China). Service Rec.: National Guard, 1937-39. Areas of Rsch.: Rsch. in Hydrocarbon Chem. and in Carbohydrate Chem.

BERKELHAMMER, Gerald (Ph.D.), Group Leader, Chem. Rsch., Am. Cyanamid, Princeton, N. J. Home Add.: 35 Lochatong Rd., Trenton 8, N. J. ORGANIC CHEMISTRY, ESPECIALLY MEDICINAL CHEMISTRY. b. Newark, N. J., Feb. 3, 1931. s. Max and Cecelia (Schein) B. Edn.: A.B., Brown Univ., 1952; Ph.D., Univ. of Wash., 1957. m. Sheila Rosenson, June 20, 1954. c.: Jill Barbara; Frederick Andrew; Paul David. Exp.: Rsch. Chemist, Am. Cyanamid Co., Stamford, Conn., 1957-60; Group Leader, ibid., Pearl River, N. Y., 1960-61; Group Leader, Princeton, N. J., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem. Areas of Rsch.: Synthetic Organic Chemistry as Applied to Veterinary Medicine; Organophosphorus Chemistry.

BERKMAN, Anton Hilmer (Ph.D.), Dean of Arts and Scis., Tex. Western Coll., El Paso, Tex. Home Add.: 2701 Anne Way, El Paso, Tex. BOTANY AND GENERAL BIOLOGY. b. Round Rock, Tex., Apr. 10, 1897. s. Gustav August and Hilda Antonetta (Forsman) B. Edn.: B.A., Univ. of Tex., 1924; M.A., ibid., 1926; Ph.D., Univ. of Chicago, 1936. Exp.: Botany Adjunct Prof., Tex. A. and M., 1926-27; Instr., Univ. of Tex., Summer, 1927; Biol. Sci. Assoc. Prof., Tex. Western Coll., 1927-35; Head, Dept. Biol. Sci., Prof., ibid., 1935-61; Acting Dean of Arts and Scis., ibid., 1934-35; Acting Dean, Student Life, ibid., 1951-52; Dean, Grad. Div., ibid., 1958-59; Dean of Arts and Scis., ibid.

959—. Mem.: Bot. Soc. of Am.; Am. Soc. of Microbiologists; m. Water Works Assn.; Internatl. Soc. of Plant Morphologists; E.A.; A.A.A.S., Fellow; Tex. Acad. of Sci.; Southwestern and ocky Mtn. Div., A.A.A.S.; Sigma Xi; Gamma Alpha; Phi Beta . Serv. Rec.: U. S. Army, 1918-19. Areas of Rcsh.: Sanitary azards of Pol. Irrigation Water; Sanitary Aspect of Composting ow Dust and Sewage Sludge.

ERKMAN, Sam (Ph.D.), Pres., Bio-Sci. Labs., 12330 Santa Monica vd., Los Angeles, Calif. Home Add.: 1124 Maybrook Dr., everly Hills, Calif. BACTERIOLOGY AND BIOCHEMISTRY. b. hicago, Ill., Apr. 7, 1916. s. Louis and Jessie (Pupko) B. in.: B.S., Univ. of Chicago, 1938; M.S., ibid., 1939; Ph.D., id., 1942. m. Roslyn Kuznitsky, July 29, 1943. c.: Susan argaret; Neil Gregory; Louis David. Exp.: Rsch. Asst., Univ. of hicago, 1940-43; Rsch. Scientist, Chem. Corps, U. S. Army, 946-48; Pres., Bio-Sci. Labs., Los Angeles, Calif., 1948—. Mem.: m. Sco. for Microbiol.; Soc. Exptl. Biol. and Med.; A.A.A.S.; m. Assn. of Clin. Chemists; N. Y. Acad. of Scis.; Sigma Xi. ontbr. to: Jour. of Bacteriol.; Jour. A.M.A.; Am. Jour. Clin. athol.; Clin. Chem.; Analytical Chem.; Jour. Lab. and Clin. ed. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Growth equirements of Bacteria; Mode of Action of Antibiotics on cteria.

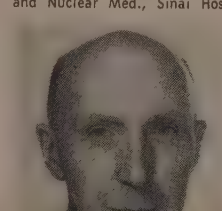
ERKNER, Lloyd Viel (D.Sc.), Pres., Grad. Rsch. Ctr. of the South- est, 6407 Airline Rd., Dallas 5, Tex. ELECTRONICS GEOPHYSICS AND PHYSICS. b. Milwaukee, Wis., Feb. 1, 1905. s. Henry Frank and Alma (Viel) B. Edn.: B.S., Univ. of Minn., 1927. Hon. Deg.: D.Sc., Brooklyn Poly. Inst., 1955; D.Sc., Univ. of Calcutta, India, 1957; Ph.D., Univ. of Uppsala, Sweden, 1957; D.Sc., Dartmouth Coll., 1958; D.Sc., Notre Dame Univ., 1958; D.Sc., Columbia Univ., 1959; LL.D., Univ. of Edinburgh, Scotland, 1959; D.Sc., Univ. of Rochester, 1960; D.Sc., Tulane Univ., 1961; D.Eng., Wayne St. Univ., 1962. m. Lillian Fulks, May 19, 1928. c.: Patricia Berkner Booth; Phyllis Jean. Exp.: Engr.-in-Chg. of Radio Sta. WLB-WGMS, Minneapolis, Minn., 1925-27; Elec. Engr., Airways Div., Bur. of Lighthouses, 1927-28; Engineer, First Byrd Antarctic Expedition, 1928-30; National Bureau of Standards, 1930-33; Physicist, Dept. of Terrestrial Magtism, Carnegie Institution of Washington, D. C., 1933-41; gr. in Chg., Watheroo Magnetic Obs., Watheroo, Australia, 38; Visit. Scientist and Lectr., Radio Rsch. Bd., Univ. of dney, Australia, 1939; Engr. and Observer-in-Chg., Founding ll. Magnetic Obs., Univ. of Alaska, 1941; Hd. of Sect. on ploratory Geophysics of Atmosphere, Dept. of Terrestrial Magtism, Carnegie Inst. of Wash., D. C., 1946-51; First Exec. cy., Rsch. and Devel. Bd., Dept. of Defense, 1946-47; Dir. of reign Milit. Asst. Program and Spec. Asst. to Secy. of State, pt. of State, Wash., D. C., 1949; Consult. to Mass. Inst. of chnol. on Spec. Projects, 1950-52; Pres., Chmn. Exec. Comm., em., Bd. of Trustees, Associated Univs., Inc., 1951-60; Pres., ad. Rsch. Ctr. of the Southwest, Dallas, Tex., 1960—. Hon. s.: Consultant, Natl. Defense Rsch. Comm.; Chmn., Dept. of ate Internatl. Sci. Steering Comm.; Consultant, M. I. T. on ecial Projects; Consultant, National Security Resources Board; airman, Board of Directors, Texas Instruments, Incorporated; mm. on Rockefeller Publ. Serv. Awards; President's Sci. Adv. mm.; Bd. of Dirs., Univ. Corp. on Atmospheric Rsch.; Adv. mm., Ctr. for Information on Am.; Bd. of Dirs., Industrial ll. of the Armed Forces. Mem.: Natl. Acad. of Scis.; A.A.A.S.; n. Geophysical Union; Am. Philosophical Soc.; Philosophical c. of Wash.; Coun. on Foreign Relations; Wash. Acad. of Scis.; n. Acad. of Arts and Scis., Fellow; Am. Inst. of Elec. Engrs., llow; Am. Physical Soc., Fellow; Arctic Inst. of N. Am., Fellw; Inst. of Radio Engrs., Fellow; N. Y. Acad. of Scis., Fellow; yal Swedish Acad. of Scis.; Swedish Acad. of Arts and Scis.; ysical Soc. of India; New Zealand Electronics Inst.; Royal Soc. Arts, England; Acacia; Eta Kappa Nu; Plumb Bob; Scabbard d Blade; Theta Tau; Cosmos Club of Wash.; Explorers Club of Y.; Century Assn. of N. Y. Contbr. to: Bur. Stan. Jour. of ch.; Proc. Inst. of Radio Engrng.; Union Geod. Geophys. Intertl. Bull.; Proc. Terr. Mag.; Am. Geophys. Union; Carnegie Inst. Wash. Publication; Nature; Sci.; Phys. Rev.; Jour. Applied ys.; Comm. Relations Solaires et Terrestres; Jour. Wash. Acad. Sci.; Proc. Am. Phil. Soc.; Elec. Engrng.; Carnegie Inst. of ash. Bull.; Bull. of Atomic Scientists; Am. Scientist; Physics day; Atlantic Monthly; Foreign Affairs. Service Rec.: U. S. vy, 1941-46, U.S.N.R., 1926—. Gen. Int.: U. S. Spec. Conessional Gold Medal, Silver Medal, Aeronautical Inst. and Gold edal, City of N. Y., 1930; Sci. Award, Wash. Acad. of Scis., 41; John A. Fleming Award, Am. Geophysical Union; Comendation Ribbon, Secretary of Navy, 1944; Honorary Officer, der of British Empire, 1945; U. S. Legion of Merit, 1946; umni Recognition Award, Acadia Frat., 1954. Areas of Rsch.: dio War Propagation; Structure of the High Upper Atmosphere; nization Measurements of the Ionosphere; Relation of Upper mospheric Ionization to Terrestrial Magnetisms; Aviation Radio velopment; Solar Phenomena; Solar and Terrestrial Relationips.

BERKSON, Joseph (M.D.), Hd., Div. of Biometry and Med. Statistics, Mayo Clinic; Prof. of Biometry, Univ. of Minn., Minneapolis

14, Minn. b. N. Y., N. Y., May 14, 1899. Edn.: B.S., Coll. of the City of N. Y., 1920; M.A., Columbia Univ., 1922; M.D., Johns Hopkins Univ., 1927; D.Sc., ibid., 1928. Exp.: Asst., Statistics Dept., Schl. of Hygiene, Johns Hopkins Univ., 1927; Assoc., Inst. for Biological Rsch., ibid., 1928; Assoc. Mem., ibid., 1929-30; Past Asst. Surg. (Statistics), U. S. Public Health Service, 1931; Macy Found. Fellow in Physiol., Mayo Clinic, Rochester, Minn., 1931-32; Hd., Div. of Biometry and Med. Statistics, ibid., 1933—; Prof. of Biometry, Univ. of Minn., 1949—; Chief, Div. of Med. Statistics, Office of the Air Surgeon, U. S. Army Air Forces, Colonel, Med. Corps, 1942-45. Mem.: Fellow, The Am. Assn. for the Adv. of Sci.; Fellow, The Am. Public Health Assn.; Fellow, The Am. Statistical Assn.; Fellow, Inst. of Mathematical Statistics; Fellow, Royal Statistical Soc., London; Internatl. Statistical Inst.; Expert Advisory Panel on Health Statistics, United Nations; Delta Omega; Sigma Xi. Contbr. to: Jour. of Gen. Physiol.; Procs. of the Soc. of Exptl. Biol. and Med.; Am. Jour. of Physiol. Anthropol.; Jour. of Physical Chem.; Am. Jour. of Hygiene; Quarterly Rev. of Biol.; Human Biol.; Annals of Mathematical Statistics; Jour. of the Wash. Acad. of Scis.; Archs. of Internal Med., and many others. Service Rec.: U. S. Army Air Force, Col., Med. Corps, 1942-45. Gen. Int.: Legion of Merit, War Dept., U. S. Army, 1946.

BERLINER, Julius Frederick Thomas (Ph.D.), Chem. and Engrng. Consultant, 624 So. Mich. Ave., Chicago 5, Ill. Home Add.: 2035 W. Granville Ave., Chicago 45, Ill. UTILIZATION OF DESERT PLANTS, BUILDING BOARD DEVELOPMENTS; METALLURGICAL PROCESSES, PLASTICS, PULP, FUELS AND LUBRICANTS. b. Santa Cruz de Tenerife, Canary Island, July 16, 1902. s. Sol and Jennie (Ottenberg) B. Edn.: B.S.Ch.E., George Wash. Univ., 1923; M.S., ibid., 1923; Ph.D., ibid., 1926. m. Vera Bailey, July 19, 1924. c.: Julius F. Thomas. Exp.: Asst. Phys., U. S. Bureau of Standards, Wash., D. C., 1918-23; Assoc. Chemist, Dept. of Agric., Wash., D. C., 1923-26; Mining Engr., U. S. Bureau of Mines, ibid., 1926-28; Consultant Chem. Engrng., Chase Natl. Bank, New York and Paris, 1928-29; Devel. Engr., E. I. du Pont de Nemours and Co., Wilmington, Del., 1929-45; Chem. and Engrng. Consultant, Chicago, Ill., 1945 -. Hon. Pos.: Pres., The Tempron Corp., El Paso, Tex.; Dir., Tempron de Mexico, S. A., Chihuahua, Mex.; Pres., Gardor Chem. Co., Chicago, Ill.; Pres., Municipal Disposal Systs., Inc., Chicago, Ill.; Dir., Cambria Iron and Steel Corp., Ohio; Dir., Morse Metals Corp., Chicago. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Soc. for Metal Prodn.; Alpha Chi Sigma; Sigma Tau. Contbr. to: U. S. Patents; Mex. Patents; Am. Chem. Soc.; Water Works Jour.; Jour. of Phys. Chem. Gen. Int.: Reg. Professional Engr., Ill., Tex. and Del. Areas of Rsch.: Desert Plant Utilization; Plastics Chemistry; Pulp and Paper; Metallurgical Processes; Rare Metals Separation; Fuels and Lubricants; Pharmaceuticals.

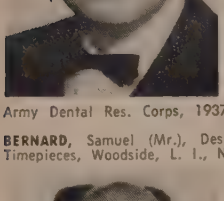
BERMAN, Harry Louis (M.D.), Head, Div. of Radiation Therapy and Nuclear Med., Sinai Hosp., Baltimore 15, Md. Home Add.: 35 Deerfield Dr., Ellicott City, Mo. RADIOLOGY. b. Peoria, Ill., May 7, 1908. s. Max and Golda Rose (Fogelman) B. Edn.: B.S., Bradley Univ., 1937; M.D., Northwestern Univ., 1933. m. Ellen Jean Stein, June 24, 1934. c.: Howard H. Exp.: Intern, Cook Co. Hosp., Chicago, Ill., 1933-34; Resident, ibid., 1934; Private Practice, Peoria, Ill., 1935-39; Staff, Ft. Dix, N. J. Sta. Hosp., 1939-42; Div. Surgeon, 10th Mtn. Div., Camp Carson, Colo., Camp Hale, Colo., Camp Swift, Tex. and Italy, 1942-45; Med. Instr., Mtn. and Winter Warfare Schl., Camp Carson, Colo., 1946-47; Resident in Radiol., Walter Reed Gen. Hosp., Wash., D. C., 1947-48; Prof. of Milit. Sci. and Tactics, Coll. of Physicians and Surgeons, Columbia Univ., 1948-50; Chf. of Radiol., U. S. Army Hosp., Ft. Monmouth, N. J., 1950-51; Chf. of Radiol. and Chf. of Profl. Servs., 343rd Gen. Hosp., Japan, 1951; Radiologist, Hiroshima and Nagasaki, Japan, 1951; Consult. in Radiol., 8th Army, Korea, 1952; Chf. of Radiation Therapy, Walter Reed Gen. Hosp., Wash., 1953-60; Head, Div. of Radiation Therapy and Isotopes, Sinai Hosp., Baltimore, Md., 1960—; Asst. Prof. of Radiol., Johns Hopkins Univ. Med. Schl., 1960—; Asst. Clin. Prof. of Radiol., Geo. Wash. Univ. Med. Schl., 1958—; Asst. Clin. Prof., Georgetown Univ., Med. Schl., 1958-60; Consultant in Radiol., Walter Reed Gen. Hosp., Wash., D. C., 1960—. Hon. Pos.: Vice Pres., Mid-Eastern Sect., Soc. of Nuclear Med.; Chmn., Med. Advisory Comm., Md. Div., Am. Cancer Soc. Mem.: Am. Radium Soc.; Am. Roentgen Ray Soc.; Radiological Soc. of N. Am.; Assn. of Am. Med. Colls.; Assn. of Milit. Surgeons; Baltimore City Med. Soc.; Med. and Chirurgical Faculty of Md.; Md. Radiological Soc.; Am. Coll. of Radiol., Fellow; Phi Delta Epsilon; Masons; Soc. of Nuclear Med.;



Retired Officers Assn. Am. Club of Therapeutic Radiologists. Contbr. to: U. S. Armed Forces Med. Jour.; Med. Annals of Dist. of Columbia; Am. Jour. of Roent., Rad. Therap. and Nuc. Med.; Radiol.; Arch. of Surg.; Irradiation of the Chest; Symposium on Supervoltage Radiation Therapy. Gen. Int.: Legion of Merit; Bronze Star with Cluster; Commendation Ribbon With Cluster; European Theatre Medal with Two Battle Stars; Korean Theatre Medal with Three Battle Stars. Areas of Rsch.: Radiation Therapy; Cancer

BERMAN, Martin Henry (D.D.S.), Dentist, 214 Jericho Turnpike, Floral Park, N. Y. Home Add.: 50 Melville Lane, Great Neck, N. Y. DENTISTRY. b. N. Y., June 22, 1913. s. Harry and Fanny (Kalstein) B. Edn.: B.S., N. Y. Univ., 1934; D.D.S., ibid., 1937. m. Hannah Sendrowitz, Oct. 26, 1940. c.: Judith Linda; Lawrence Elliott. Exp.: Private Practice, Dentistry, N. Y., 1937—. Mem.: Am. Dental Assn.; Am. Acad. Dental Med.; A.A.A.S.; Am. Assn. Dentistry for Children; Am. Dental Soc. Anaesthesia; Am. Hypodontic Soc.; Soc. for Clin. and Exptl. Hypnosis; Clinician N. Y. State Dental Soc.; Clinician, Am. Dent. Assn.; Omicron Kappa Upsilon; Alpha Omega; Lions; Masons. Contbr. to: Dental Items of Interest; Jour. Am. Dental Assn.; Dental Digest; Jour. Prosthetic Dentistry. Service Rec.: U. S. Army Dental Res. Corps, 1937-40.

BERNARD, Samuel (Mr.), Designer and Builder of Civilization Timepieces, Woodside, L. I., N. Y. Home Add.: 48-26 47th St., Woodside 77, L. I., N. Y. BUILDING CLOCKS AND CLOCKFACES; INTRODUCTION TO TIMEOLOGY. b. Dinaburg, Latvia, Apr. 12, 1889. s. Michael and Jennie (Libowitz) B. Edn.: B.S., N. Y. Univ., 1943; M.A., ibid., 1949. m. Helene Bornstein, 1926. Exp.: Clockmaker, Susfeld, Lorsh and Schimmel, N.Y.C., 1922-27; Bernard Time Serv., N.Y.C., 1927-33; Tchr., Brooklyn H. Schl. for Specialty Trades, Brooklyn, N. Y., 1933-39; Tchr., Central Commercial H. S., N. Y., 1939-42; Employee, Brooklyn Navy Yard, 1942-46; Designer and Builder of Civilization Timepieces, Woodside, L. I., N. Y., 1946—. Mem.: A.A.A.S.; N. Y. Univ. Alumni Assn.; Life Mem. Vet. of Foreign Wars; Am. Legion; Am. Assn. for the United Nations; Knights of Pythias; Henry George Schl. of Social Sci. Author: Our Trip to Aubigny. Co-author: The Mistral. Serv. Rec.: U. S. Army, 1918-19. Areas of Rsch.: Have Registered Designs for Watch and Clock Faces, Substituting Civilization Letter in English, French, German and Spanish and Respective Languages; Around the World for Meaningless Numerals and Figures, a Potential Contribution to World Peace.



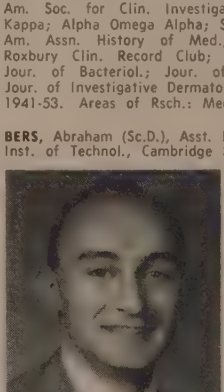
BERNFELD, Peter (Ph.D.), Vice Pres., Dir. of Rsch., Bio-Rsch. Inst., Inc. and Bio-Rsch. Consultants, Inc., 9 Commercial Ave., Cambridge 41, Mass. Home Add.: 10 Fairlee Rd., Waban 68, Mass. BIOCHEMISTRY (PROTEINS, POLYSACCHARIDES, ENZYMES). b. Leipzig, Germany, June 1, 1912. s. Isidor and Elsa (Gutfreund) B. Edn.: Ph.D., Univ. of Geneva, Switzerland, 1937. m. Helen C. Kroch, 1940. c.: Michele M.; Mark R. Exp.: Postdoctoral Rsch. Fellow, Sr. to Chf. Chemist, Dept. of Organic Chem., Univ. of Geneva, Switzerland, 1937-49; Privatdocent, ibid., 1947-49; Asst. to Assoc. Prof., Dept. of Biochem. and Nutrition, Tufts Univ. Med. Schl., 1949-57; Biochemist, Cancer Rsch. Unit, ibid., 1949-57; Vice Pres. and Dir. of Rsch., Bio-Rsch. Inst., Inc. and Bio-Rsch. Consultants, Inc., Cambridge, Mass., 1957—. Mem.: Am. Soc. Biol. Chem.; A.A.A.S.; A.C.S.; Soc. Exptl. Biol. and Med.; Soc. Sigma Xi; Am. Assn. Cancer Rsch. Contbrng. Author: Meth. Enzymology, 1955; Comparative Biochemistry, 1962. Editor: Biogenesis of Natural Compounds, 1962. Co-Editor: The Lipoproteins, Methods and Clinical Significance, 1958. Contbr. to: Jour. Biol. Chem.; Arch. Biochem. Biophys.; Proc. Soc. Exptl. Biol. and Med.; Cancer Rsch.; Jour. Clin. Invest.; Sci.; Fed. Proc.; Nature; Jour. Chromatogr.; Helv. Chim. Acta; Experientia; Chimia; Comp. Rend. Seances Soc. Phys. et D'Histoire Naturelle de Geneve; Melliand Textilber.; Arch. Pathol. Pharmakol. Gen. Int.: Werner Medal from Swiss Chem. Soc. Areas of Rsch.: Plasma Proteins, Lipoproteins; Polysaccharides, especially Starch and Starch-Like, Enzymes.

BERON, Peter (Ph.D.), Private Practice, 103 East 86th St., N. Y. 28, N. Y. Home Add.: Old Lyme, Conn. PSYCHOANALYST. b. Vienna, Austria, June 18, 1918. s. Dr. Joseph and Regina (Gordon) B. Edn.: Ph.D., Univ. of Prague, 1939. m. Ilene Joyce Isreal, 1951. c.: Kurt James; Carolyn Jessica. Exp.: Consultant in Analysis, Baro Clinic, Brooklyn, N. Y., 1950-51; Supervising Psychoanalyst, Lafargue Mental Hyg. Clinic, Manhattan, N. Y., 1952-58; Dir. of Therapeutic Servs, Center For Group Analysis, ibid., 1957—. Hon. Pos.: Vice Pres. and Lifetime Follow, Assn. for Applied Psychoanalysis, Inc. Mem.: The Coun. of Psychoanalytic Psychotherapists; The Am. Acad. Psychotherapists, Inc.; Am. Grp. Psychotherapy Assn., Inc.; N. Y. Soc. of Clin. Psychologists; The Am. Acad. of Polit. Soc. Sci. Contbr. to: Letters and Applied Psychoanalysis; Am. Jour. of Psychotherapy. Areas of Rsch.: Hypno Analysis; Research Project of the Stuyvesant Polyclinic, N. Y.; Emotional Factors in Illness, ibid.

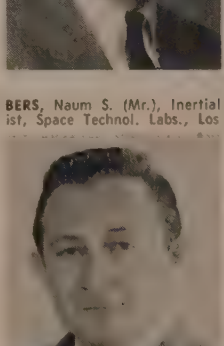
BEROUSEK, Ernest Roy (Ph.D.), Chmn., Animal and Dairy Sci. Dept., Univ. of R. I., Kingston, R. I. DAIRY SCIENCE, DAIRY CATTLE BREEDING. b. Oklahoma City, Okla., Mar. 3, 19[illegible] s. Joseph B. and Helen (Holechek) B. Edn.: B.S., Okla. Univ., 1941; M.A., Univ. of Mo., 1942; Ph.D., Okla. State Univ., 1959. m. Beatrice Rose Kouba, July 19, 1941. c.: Karl Annette; Erna Bea; Melinda Sue. Exp.: Supt., U. S. Dairy Exptl. Sta., Woodward, Okla., 1945-46; Asst. and Assoc. Prof., Okla. State Univ., 1946-60; Prof., Chmn., Dept. of Animal & Dairy Sci., Univ. of R. I., 1960—. Mem.: Sigma Xi; A.A.A.S.; Am. Dairy Sci. Assn.; Am. Genetic Assn.; Am. Soc. of Animal Sci.; Farm House Frat.; Phi Sigma; Alpha Zeta; Gamma Sigma Delta; Lions Club; Toastmasters' Internatl. Contbr. to: Journal of Dairy Sci.; Agric. Expt. Sta. Rsch. Bulls. Areas of Rsch.: Heritability Studies in Dairy Cattle; Carotene Requirements of Dairy Cattle; Studies of Summer Shelters for Dairy Cattle.

BERRY, George Packer (M.D.), Dean, Harvard Med. Schl., Shattuck St., Boston, Mass. Home Add.: Longwood Towers, 20 Chapel St., Brookline, Mass. BACTERIOLOGY AND IMMUNOLOGY. b. Troy, N. Y., Dec. 29, 1898. s. George Titus and Carrie Electa (Packer) B. Edn.: A.B., Princeton Univ., 19[illegible] M.D., Johns Hopkins Univ., 1925. Hon. Deg.: LL.D., Hobart & William Smith, 1949; M.A., Harvard Univ., 1949; D.Sc., Union Coll., 1950; D.Sc., Princeton Univ., 1951; D.Sc., Harvard Univ., 1954; D.Sc., N. Y. Univ., 1955; D.Sc., Univ. of Rochester, 1955; Litt.D., Tufts Univ., 1952; LL.D., Jefferson Med. Coll., 1955. m. Elizabeth L'Estrange Duncan (dec.), July 10, 19[illegible] c.: Mrs. Caroline Elizabeth B. Laporte. Exp.: Asst., Rockefeller Inst. for Med. Rsch., 1929-32; Prof., Univ. of Rochester Sch. of Med., 1932-49; Dean, Harvard Med. Schl., 1949—. Hon. Pos.: Trustee, Princeton Univ. and Am. Univ. of Beirut; Dir. Josiah Macy Fdtn.; Commonwealth Fund, Natl. Soc. for Med. Rsch., 1954-61; Natl. Health Coun., 1956-57; Advisory Com. V.A. Mem.: Am. Bd. Int. Med., Diplomate; A.A.A.S., Fellow; Am. Soc. for Clin. Investigation; Soc. Am. Bact.; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Am. Publ. Health Assn.; Am. Assn. History of Med.; The Commerical Club, Boston; Roxbury Clin. Record Club; James Packer Assn. Contbr. Jour. of Bacteriol.; Jour. of Immunol. and Bacteriol. Rev.; Jour. of Investigative Dermatol. Serv. Rec.: U. S. Navy Reserve, 1941-53. Areas of Rsch.: Med. Edn.

BERS, Abraham (Sc.D.), Asst. Prof., Elect. Communications, Mass. Inst. of Technol., Cambridge 39, Mass. Home Add.: 82 Oxford St., Cambridge 38, Mass. ELECTRICAL ENGINEERING. b. Cernauti, Romania, May 28, 1930. s. Isaac and Haia (Lechter) B. Edn.: B.S., Highest Honors in E., Univ. of California, Berkeley, 1953; S.M., M. I. T., 1955; Sc.D., ibid., 1959. Exp.: Rsch. Asst., M. I. T. Rsch. Lab. of Electronics, 1953-58; Instr., ibid., 1958-59; Asst. Prof., ibid., 1959—. Mem.: Instit. of Radio Engrs.; Am. Phys. Soc.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Sigma Xi; Tau Beta Pi; Eta Kappa Nu. Contbr. to: IRE Trans. Author: Wave in Anisotropic Plasmas, 19[illegible] Areas of Rsch.: Microwave Electron Beam Devices - Multicavity Klystrons; Waves in Plasma; Electron Beam; Plasma System



BERS, Naum S. (Mr.), Inertial Guidance Systems Engrng. Specialist, Space Technol. Labs., Los Angeles, Calif. Home Add.: 10[illegible] Strathmore Dr., Los Angeles 4[illegible] Calif. ELECTRO-MECHANICAL ENGINEERING, INSTRUMENTATION AND AUTOMATIC CONTROLS. b. Sulita, Romania, Aug. 13, 19[illegible] s. Isaias and Haia (Lechter) B. Edn.: B.S., Univ. of Calif., 19[illegible] Exp.: Sr. Instrumentation Engr., Am. Potash and Chemical Co., Trona, Calif., 1951-57; Instr., Physics and Math., Trona Unit, Schl. System, Extension Div., Trona, Calif., 1955-57; Rsch. Engr., Jet Propulsion Labs., Pasadena, Calif., 1957-59; Inertial Guidance Systems Engrng. Specialist, Space Technol. Labs., Los Angeles, Calif., 1959—. Mem.: Am. Soc. for Mechanical Engrs.; A.A.A.S.; Inst. of Aerospace Sci.; Am. Rocket Soc.; Univ. of Ca[illegible] Flying Club. Gen. Int.: Recipient of three Special Achievement Awards from Space Technol. Labs.; Sole Inventor of [illegible] Patented Inventions on Gyroscopic and Control Devices.



STEIN, Irving Aaron (Ph.D.), Pres. and Technical Director, trols for Radiation, Inc., 130 Alewife Brook Parkway, Cambridge, Mass. Home Add.: 10 Forest St., Cambridge, Mass. NUCLEAR AND RADIATION CHEMISTRY. b. Providence, R. I., Oct. 11, 1926. s. Robert L. and Laura (Sperber) B. Edn.: Sc.B., Brown Univ., 1947; Ph.D., Cornell Univ., 1950. Exp.: Project Ldr., Tracerlab, Inc., Waltham, Mass., 1950-55; Hd., Chem. Dept., ibid., 1955-57; Vice-Pres. and Tech. Dir., Controls for Radiation, Inc., Cambridge, Mass., 1957-58; Pres. and Tech. Dir., ibid., 1958—. Hon. Pos.: V.-Chmn., Chmn., Northeastern Sect., Am. Nuclear Soc. Mem.: Sigma Xi; Am. Chem. Soc.; Am. Nuclear Soc.; Radiation Rsch. Soc.; Health Physics Soc.; Univ. Club of Boston. Contbr. to: Jour. Am. Chemical Soc.; Science; Jour.

emical Physics; Nucleonics; Am. Dyestuff Reporter. Gen.: Received Award for Best Paper "Applications of Radioivity in the Textile Industry" from Am. Assn. of Textile emists, 1957. Areas of Rsch.: Nuclear Chemistry; Health ysics; Radiation Chemistry; Radiobiology; Synthesis and Apcation of Labeled Chemicals.

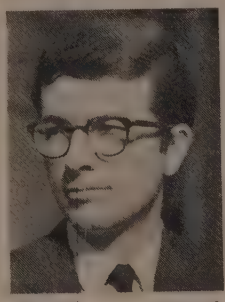
RTALANFFY, Felix D. (Ph.D.), Assoc. Prof. of Anatomy, Dept. of atomy, Med. Faculty, Univ. of Manitoba, Winnipeg, Can. Home Add.: 886 Lindsay St., Winnipeg, Manitoba, Can. ANATOMY; HISTOLOGY; CYTOLOGY; CANCER. b. Vienna, Austria, Feb. 20, 1926. s. Dr. Ludwig Von Bertalanffy and Maria M. (Bauer) B. Edn.: M.Sc., McGill Univ., Montreal, 1951; Ph.D., ibid., 1954. m. Gisele Lavimodiere, Jan. 20, 1954. Exp.: Med. Schl., Univ. of Vienna, 1945-48; Grad. Student, Rsch. Asst., McGill Univ., Montreal, Can., 1949-54; Asst. Prof., Univ. of Manitoba, Winnipeg, Can., 1955-58; Assoc. Prof., ibid., 1959—. Mem.: Am. Assn. of Anatomists; Canadian Assn. of Anatomists; Am. Assn. for Cancer Rsch., Inc.; N. Y. Acad. of Scis.; Am. Assn. for the Adv. of Sci.; Am. Bd. of Bio-Analysts; Soc. of Sigma Xi. Contr. to: Acta Anat.; Acta Cytol.; Anat. Rec.; Ann. N. Y. Acad. ci.; Arch. Pathol.; CA Bull.; Assn. Jour. Can. Med. Areas of ch.: Cell Division; Exfoliative Cytology; Cancer; Fluorescence icroscopy; Fluorescence Cytodiagnosis; Histophysiology of Respitory System; Histochemistry and Cytochemistry; Cell Renewal Organs; Carcinogenesis

ERTONE, Carmine Matthew (Mr.), Engrng. Psychologist, Lockheed issile and Space Co., Sunnyvale, Calif. Home Add.: 766 Lakewood Dr., Sunnyvale, Calif. PSYCHOLOGY. b. Jersey City, N. J., July 12, 1930. s. Anthony and Dellora (Sylvestri) B. Edn.: B.S., Seton Hall Univ., 1955. m. Suzanne Grasser, June 3, 1955. c.: Kathleen; Victoria. Exp.: Asst. Psychologist, Hudson Co. Hosp., Secaucus, N. J., 1952-55; Human Factors Spec., RAND Corp., Santa Monica, Calif., 1956-57; Asst. Social Scientist, System Devel. Corp., ibid., 1957-61; Rsch. Psychologist, Fed. Aviation Agency, 1961-62; Engrng. Psychologist, Lockheed Missile and Space Co., Sunnyvale, Calif., 1962—. Hon. Pos.: Chmn., Distinguished Serv. Awards, Junior Chamber of Commerce; Chmn., Salvation Army Fund Dr., 1961; Mem., City of Linwood Juvenile

d. Mem.: A.A.A.S.; Human Factors Soc.; Acoustical Soc. of m.; Mental Health Assn.; N. Y. Soc. for Projective Techniques Membership; Audio Engrng. Soc.; Instit. of Radio Engrs.; Natl. eronautic Assn.; Operations Rsch. Soc. of Am.; Knights of Columbus; Seton Hall Alumni Assn.; Toastmaster's Internatl.; Jr. hamber of Commerce; Speaker's Bureau P.T.A.; Speaker's Bureau Mental Health Assn.; Cubmaster, Boy Scouts of Am. Service Rec.: J. S. Natl. Guard, 1947-57. Gen. Int.: Honor Medal NJNG, 1948; 3rd Prize Am. Art Assn., 1950; Nominee, Woodrow Wilson Fellowship, 1961. Areas of Rsch.: Psychological Research in Hypnosis (Age Regression), Human Factors Work in Communications; Voice ntelligibility; Man-Machine Systems; Aircraft Noise; Noise Suppression; Abatement and Its Effects on Humans, Development of nternational Language; Research of Automatic Communications Systems (Air-Ground and Ground-Air Systems); Development of a New Psychological Projective Technique; Human Engrng. in the design of a Intra-Red Data Processing Laboratory, Human Engineering of Maintainability, and Operability of Lab. Equipment.

BERTSCH, Carl Vendalaine (Ph.D.), Prof. in Physics, Newark Coll. of Engrng., 98 Underwood St., Newark 6, N. J. PHYSICS. b. Quincy, Mich., July 29, 1903. s. Charles F. and Emma (Blosser) B. Edn.: B.S., Univ. of Mich., 1928; M.S., ibid., 1931; Ph.D., ibid., 1937. m. Pearl W. Shurlow, Dec. 28, 1929. c.: Christine Emma; Carol Georgene. Exp.: Tchr., Grade Schls., Mich., 1921-24; Instr. of Physics, Case Schl. of Applied Sci., Cleveland, Ohio, 1928-30; Instr. of Math., Freshman Coll., Brown City, Mich., 1934-35; Acting Prof. of Physics, Western Coll., Oxford, Ohio, 1935-37; Hd. Dept. of Math. and Physics, Intermountain Union Coll., Billings, Mont., 1937-38; Asst. Prof. of Math., Southwestern Coll., Winfield, Kans., 1938-41; Asst. Prof. of Physics, Amer. Univ., Wash., D. C., 1941-42; Tech. Crystal Section, Signal Corps, U. S. War Dept., Wash., D. C., 1942-44; Physicist, Reeves Sound Lab., N.Y.C., 1944-46; Asst. Prof. of Physics, Newark Coll. of Engrng., Newark, N. J., 1946-49; Assoc. Prof., ibid., 1949-57; Prof., ibid., 1957—. Mem.: Am. Phys. Soc.; A.A.A.S.; Am. Soc. of Engrng. Edn.; Sigma Xi; Am. Assn. of Physics Tchrs. Contbr. to: Phys. Rev.; Am. Jour. of Physics. Special Int.: X-rays of Crystals, Piezoelec. Crystals; Ultrasonics.

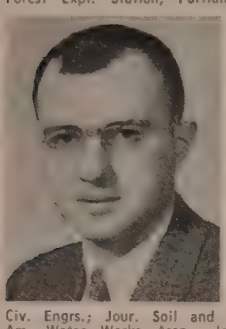
BERTSCH, Walter Frank (Ph.D.), Scientist, Biol. Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 232 W. Vanderbilt, Oak Ridge, Tenn. BOTANY-PHOTOSYNTHESIS. b. San Diego, Calif., Sept. 26, 1934. s. Bernard J. and Julia D. (Lathrop) B. Edn.: B.A., Pomona Coll., 1956; M.S., Yale Univ., 1957; Ph.D., ibid., 1960. m. Susan Horwood, Mar. 14, 1961. Exp.: Fellow, U. S. Natl. Sci. Fdtn., Paris, France, 1960-61; Assoc. Biol., Oak Ridge Natl. Lab., 1961—. Mem.: Am. Soc. of Plant Physiolts.; Am. Bot. Soc.; Sigma Xi; Kappa Mu Epsilon. Contbr. to: Arch. Biochemistry Biophys.; Am. Jour. Bot.; Plant Physiol.; Jour. of Acoust. Soc. of Am.; Jour. Speech and Hearing Rsch. Areas of Rsch.: Photobiology, Photoreactions of Plants, Plant Physiology and Biochemistry; Human Factors Engineering, Reception and Processing of Audio Messages.



BEST, William Robert (M.D.), Asst. Prof. Med., Univ. of Ill., Chicago, Ill. Home Add.: 367 Blythe Rd., Riverside, Ill. HEMATOLOGY; INTERNAL MEDICINE; STATISTICS. b. Chicago, Ill., July 14, 1922. s. S. Gordon and Marian B. (Shapland) B. Edn.: B.S., Univ. of Ill., 1945; M.D., ibid., 1947; M.S., ibid., 1951. m. Ruth J. Stuchlik, 1944. c.: Barbara Ann; Patricia Marian. Exp.: Attending Phys. and Hematologist, Univ. of Ill. Rsch. and Edn. Hosp. and V.A. Hosp., Chicago and Hines, Ill., 1953—; Asst. Prof., Med., Univ. of Ill., 1953—. Mem.: A.A.-A.S.; Cent. Soc. Clin. Rsch.; Am. Fed. Clin. Rsch.; Int. Soc. Hematol.; Am. Soc. Hematol.; Am. Soc. Human Genetics; Am. Med. Assn. Author: Contbr. Author, Laboratory Diagnosis. Contbr. to: Jour. Lab. and Clin. Med.; Jour. Am. Med. Assn.; Am. Jour. Med.; Jour. Clin. Invest.; Cancer Rsch.; Am. Jour. Physical Anthropol.; Annals Int. Med. Service Rec.: U. S. Army, 1951-53. Gen. Int.: Diplomat, Am. Bd. Internal Med., 1957; Nutrition Survey of Peru, 1959; Study Group on Blood Dyscrasias of Comm. on Drugs, Am. Med. Assn. Areas of Rsch.: Hematology; Mathematics, Statistics and Computers as Applied to Medicine; Human Genetics.

BESTE, Vernance Dolores (Miss), Biol. Instr., Walter Johnson Sr. H. Schl., 10311 Old Georgetown Rd., Rockville, Md. Home Add.: Apt. G-18, 8500-16th St., Silver Spring, Md. BIOLOGY; PLANT ECOLOGY. b. Osakis, Minn., Nov. 18, 1930. d. Andrew and Helen M. (Quirk) B. Edn.: B.S., St. Cloud St. Coll., 1951; M.S., ibid., 1959. Exp.: Biol., Gen. Sci. Instr., Paynesville H. Schl., Paynesville, Minn., 1951-53; Biol. Instr., Jefferson Sr. H. Schl., Alexandria, Minn., 1953-59; Biol. Instr., Walter Johnson Sr. H. Schl., 1959—. Hon. Pos.: Counselor for Freshmen Coll. Women, St. Cloud St. Coll., 1950-51; Mem. of the Faculty Coun., Cent. H. Schl., Alexandria, Minn.; Pres., Alexandria Edn. Assn., Alexandria, Minn., 1958-59; Discussion Leader, Minn. Edn. Assn. Workshop, Paynesville, Minn., 1959. Mem.: N.E.A.; Md. Edn. Assn.; Montgomery Co. Edn. Assn.; A.A.A.S.; N.A.B.T.; A.I.B.S.; B.S.C.S.; Md. Sci. Tchrs. Assn.; Minn. Acad. of Sci.; Minn. Soc. for the Study of Edn.; Corona Soc. Contbr. to: Procs. of Minn. Acad. of Sci.; The Minn. Jour. of Sci.; The Am. Biol. Tchr.; The Minn. Jour. of Edn. Gen. Int.: Awarded a Life Tchng. Cert., Minn. Areas of Rsch.: An Ecological Investigation of Upland Coniferous Forest of Itasca State Park, 1958.

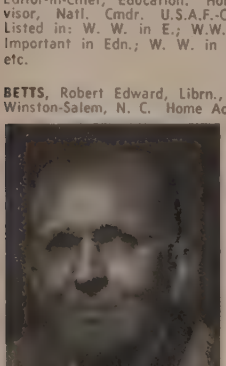
BETHLAHMY, Nedavia (Ph.D.), Rsch. Forester, Pacific Northwest Forest Expt. Station, Portland, Ore. Home Add.: 3336 N.E. Pacific, Portland, Ore. WATERSHED MANAGEMENT. b. Tel-Aviv, Palestine, July 23, 1918. s. David and Rachel (Aboulafia) B. Edn.: B.S., Penn. St. Coll., 1939; M.F., Yale Univ., 1940; Ph.D., Cornell Univ., 1956. m. Evelyn F. Nathan, Feb. 14, 1943. c.: David H.; Aliza D. Exp.: Rsch. Forester, Northeastern Forest Expt. Sta., Pennsylvania, 1946-56; Research Forester, Pacific Northwest Forest Expt. Sta., Oregon, 1956—. Hon. Pos.: Hydrologic Rsch., Am. Geophys. Union; PNW Reg. Comm., A.G.U. Mem.: Am. Geophys. Union; Soc. Am. Foresters; Xi Sigma Pi; Sigma Xi; R.O.A. Contbr. to: Bull. Inter. Assn. Sci. Hydrology; Trans. Am. Geophys. Union. Soil Sci.; Proc. Am. Soc.



Civ. Engrs.; Jour. Soil and Water Conserv.; N.W. Sci.; Jour. Am. Water Works Assn.; Jour. Forestry. Serv. Rec.: U. S. Army, 1941-46, Lt. Col. U.S.A.R. Areas of Rsch.: Watershed Hydrology; Forest Soils; Evapo-transpiration.

BETTS, Emmett Albert (Ph.D.), Rsch. Prof., Univ. of Miami, Coral Gables 46, Fla., and Editor-in-Chief, Education. PSYCHOLOGY OF LANGUAGE AND CLINICAL PSYCHOLOGY. b. February 1, 1903, Elkhart, Iowa. s. Albert Henry and Grace (Greenwood) B. Edn.: B.S., Des Moines Univ., 1925; M.A., Univ. of Ia., 1928; Ph.D., ibid., 1931. m. Thelma Marshall of Newton, Ia., May 29, 1924. d. S. S. Marshall. c.: Beverly Jean; Shirley Lee; Margaret Jane. 2d. m.: Carolyn Welch, July 15, 1950. Exp.: Vocl. Dir., Orient, Iowa, 1922-24; Supt. of Schls., Northboro, Iowa, 1925-28; Rsch. Asst., Univ. of Iowa, 1929-31; Schl. Psychologist, Shaker Hghts., Ohio, 1931-34; Tchr. of Edn., Dir. State Nor. Schl., Oswego, N. Y., 1934-37; Rsch. Prof. and Dir. of Reading Clinic., Pa. State Coll., 1937-46; Prof. of Psychol. and Dir. of Reading Clinic, Temple Univ., Phila., Pa., 1945-54; Dir., The Betts Reading Clinic, Haverford, Pa., 1954-61; Rsch. Prof., Univ. of Miami, 1961—. Hon. Pos.: Fellow, Distinguished Serv. Fdtn. in Optometry; Beta Sigma Kappa (Hon. Mem.). Mem.: Natl. Soc. for Study of Edn.; Phi Delta Kappa; Masons (Commandery, Consistory, Shrine); B.P.O.E.; Beta Sigma Kappa; Psi Chi; Am. Edn. Rsch. Assn.; A.P.A.; A.A.S.A.; Pa. Acad. of Sci.; A.A.A.P.; Am. Psychol. Assn.; A.A.A.S.; A.A.U.P.; Natl. Dept. of Elem. Prins.; Natl. Dept. of Supvrs.; Vice-Pres., Natl. Council for Aviation Edn.; Natl. Council of Tchrs. of Eng. Author: Betts Ready to Read Tests, 1934; Prevention and Correction of Reading Difficulties, 1935; Visual Problems of Schl. Children, 1941; Handbook on Corrective Reading, 1957; Foundations of Reading Instruction, Revised, 1957; How to Teach Reading, 1963; Index to Professional Publications on Reading and Related Topics, 1944. Co-author: Betts Basic Readers, Revised, 1958; Betts-Killgallon Basic Spellers, 1959; Betts-Greene Daily Drills in Language Skills, 1959. Editor: Am. Adventure Series. Contbr. to: Various Edncl. Publs. Gen. Int.: Language Disturbances. Editor-in-Chief, Education. Hobbies: Aviation; Lt. Col. and Advisor, Natl. Cmdr. U.S.A.F.-C.A.P.; Radio, Parachute Jumper. Listed in: W. W. in E.; W.W.A.; Who Knows—and What; Who's Important in Edn.; W. W. in Pa.; A.M.S.; Internatl. Blue Book, etc.

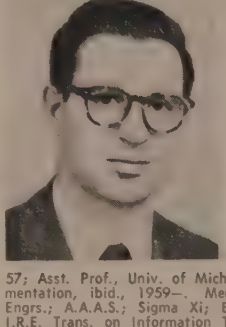
BETTS, Robert Edward, Librn., Western Elec. Co., Lexington Rd., Winston-Salem, N. C. Home Add.: P. O. Box 308, Winston-Salem, N. C. THE ADMINISTRATION AND DEVELOPMENT OF TECHNOLOGY LIBRARIES. b. New Bern, N. C., Apr. 11, 1907. s. James Russell and Lois Thomas (Autrey) B. Edn.: A.B., Univ. of N. C., 1932; B.S., Geo. Peabody Coll. for Teachers, 1942. Exp.: Libr. Asst., Soc. Security Bd. Library, Wash., D. C., 1942; Libr. Asst. and Binding Reviser and Statistician, Library of Congress., Wash., D. C., 1943-45; Chf. of Stacks, U. S. Dept. of Agri. Libr., Wash., D. C., 1945; Selector and Searcher, Acquisitions Div., Army Med. Libr., Wash., D. C., 1946-47; Librn., Iowa Wesleyan Coll., Mt. Pleasant, Iowa, 1947-48; Librn., Tex. Engrs.Libr., Coll. Sta., Tex., 1948-57; Librn., Western Elec. Co., Winston-Salem, N. C., 1957—. Hon. Pos.: Charter Mem. and Exec. Officer, Tex. Chapt., Special Libraries Assn., 1949-50; Chmn., Pure and Applied Sci. Sect. of Assn. of Coll. and Reference Libraries, Am. Library Assn., 1952-53. Mem.: Am. Library Assn.; Assn. of Coll. and Rsch. Libraries; Special Libs. Assn.; Am. Soc. for Engrng. Edn.; Am. Documentation Inst.; Soc. for the Hist. of Technol. Contbr. to: Spec. Libs.; Libr. Jour.; Wilson Libr. Bull., Am. Documentation. Co-author: Engineers Bibliography on the Design and Operations of Cooling Towers, 1956. Gen. Int.: Compiler of Bibliog. of Soil Mechanics and the Uses of Asphalt and Cement in Paving Roads, in Soils Lab. Manual, Engr. Sect., Hqrs. Fourth Army, Ft. Sam Houston, Tex., 1950. Special Int.: Preparation of Several Lists of Basic Engrng. Books and Periodicals for Different Types of Pub. and Special Libs.; Compiler of a Number of Bibliographies on Scientific and Tech. Subjects.



BEU, Karl Emil (Mr.), Supv., Physical Measurements Dept., Goodyear Atomic Corp., Box 628, Portsmouth, O. Home Add.: 35 Tecumseh Dr., Chillicothe, O. APPLICATIONS OF X-RAY DIFRACTION, ELECTRON MICROSCOPY, AND INFRARED SPECTROSCOPY TO METALLURGICAL INORGANIC, AND ORGANIC PROBLEMS. b. Vienna, Austria, Mar. 23, 1921. s. Erich W. K. F. and Laura (Sommer) B. Edn.: B.S., Univ. of Mich., 1944; M.S., ibid., 1953. m. Marjorie Moore, June 24, 1944. c.: Harold; Nancy; Walter; Beverly. Exp.: Chemist, Phillips Petrol. Co., Bartlesville, Okla., 1944-48; Senior Physicist, Gen. Motors Rsch. Div., Detroit, Mich., 1949-55; Supv., Goodyear Atomic Corp., 1955—. Hon. Pos.: Chmn., Apparatus and Standards Comm., Am. Crystallographic Assn.; Chmn., Task Group F on Electron Diffraction, Subcom.

XI of E-4, Am. Soc. for Testing Materials. Mem.: Am. Cryst. Assn.; E.M.S.A.; Tau Beta Pi; Sigma Xi. Contbr. to: Acta Crystallographica; Handbook of X-Rays; Encyc. of X- and Gamma Rays; Rev. Sci. Inst.; Jour. Polymer Sci.; Trans., A.I.M.E.; Trans., A.S.M.; Ind. Engr. Chem.; Trans. A.S.T.M. Gen. Int.: Contributed to Adoption of Standardized X-ray Diffraction Track Design, Approved by Am. Cryst. Assn.; Invited Lectr. to Gen. Elec. Diffraction Schl., Pittsburgh Diffraction Soc.; Taught Physics Courses, Ohio Univ. Extension. Areas of Rsch.: Crystallinity in Polymers; Phase Studies in Hardened Steels; Residual Stresses in Hardened Steels; Structures of Complex Uranium, Nitrogen Oxide Compounds; Design of Instrumentation Applicable to Fields of Interest; Classified Projects; Precision Lattice Parameter Technique Development.

BEUTLER, Frederick Joseph (Ph.D.), Assoc. Prof. of Instrumentation, Dept. of Aero. and Astro. Engrng., Univ. of Mich., Ann Arbor, Mich. Home Add.: 1232 Bending Rd., Ann Arbor, Mich. APPLIED MATHEMATICS; INSTRUMENTATION ENGINEERING. b. Berlin, Germany, Oct. 3, 1926. s. Alfred David and Kaethe (Italiener) B. Edn.: B.S., Mass. Inst. of Tech., 1949; M.S., ibid., 1951; Ph.D., Calif. Inst. of Tech., 1957. m. Abigail E. Caplan, June 21, 1950. c.: Arthur David; Kathryn Ruth; Michael Ernest. Exp.: Jr. Engr., AC Spark Plug Div., GMC, Milwaukee, Wis., 1949-50; Mem. Tech. Staff, Instrumentation Lab., Mass. Inst. of Tech., 1950-51; Rsch. Engr., Autonetics Div. of N. Am. Aviation, Downey, Calif., 1951-54; Mem., Tech. Staff, Ramo-Wooldridge Corp. (now Space Tech. Labs.), Los Angeles, Calif., 1954-57; Asst. Prof., Univ. of Mich., 1957-59; Assoc. Prof. of Instrumentation, ibid., 1959—. Mem.: Am. Math. Soc.; Inst. Radio Engrs.; A.A.A.S.; Sigma Xi; Econ. Club of Detroit. Contbr. to: I.R.E. Trans. on Information Theory; Jour. Soc. Indusl. and Applied Math.; Proc. of I.R.E.; Jet Propulsion; Jour. Math. Analysis and Applications; Jour. Instrument Soc. of Am.; Jour. Math. Anal. and App. Service Rec.: U. S. Army Signal Corps, 1945-46. Areas of Rsch.: Stochastic Processes with Applications to Optimum Filtering, Information, Theory; Inertial Navigation.



BEVER, James Edward (Ph.D.), Assoc. Prof. of Geol., Miami Univ., Oxford, Ohio. Home Add.: 112 N. Campus Ave., Oxford, Ohio. MINERALOGY AND GEOLOGY. b. Bellingham, Wash., July 7, 1920. s. James and Virginia Miriam (Hickey) B. Edn.: B.S., Wash. State Univ., 1942; M.S., Univ. of Mich., 1949; Ph.D., ibid., 1954. m. Helen Anne Ruder, Dec. 27, 1946. c.: Ernst James. Exp.: Instr., Univ. of Mich., 1950-54; Asst. Prof., Miami Univ., Ohio, 1954-58; Assoc. Prof. Geol., Ohio, 1958—. Mem.: Geol. Soc. of Am.; Am. Mineral. Soc. of Am.; Am. Geophys. Union; Geochem. Soc.; Sigma Xi; Phi Kappa Phi; Sigma Gamma Epsilon; Gamma Alpha; Torch Club; Oxford Men's Club. Serv. Rec.: USNR, 1942-46. Areas of Rsch.: Mineralogy and Crystallography; Ore deposits, Gem Stones.

BEVERIDGE, Elizabeth (Miss), Head, Household Equipment Dept., Ia. State Univ., Ames, Ia. Home Add.: 3210 Oakland St., Ames, Ia. HOUSEHOLD EQUIPMENT (APPLIED PHYSICAL SCIENCE). b. Somonauk, Ill., July 22, 1905. d. Alexander W. and Mary (Maxwell) B. Edn.: B.S., Colo. State Univ., 1929; M.S., Ia. State Univ., 1934. Exp.: Home Econs. Tchr., Cons. Schl., LaJara, Colo., 1929-30; Home Econs. Tchr., Schls., Canon City, Colo., 1930-33; Home Equipment Specialist and Editor, Woman's Home Companion, 1936-49; Household Equipment Specialist, Bur

f Home Econs., Wash., D. C., 1949-53; Head, Household Equipment Dept., Ia. State Univ., 1953—. Hon. Pos.: Chmn., N. Y. hapt., Electrical Women's Round Table. Mem.: Delta Kappa amma; Sigma Delta Epsilon; A.A.U.P.; Phi Kappa Phi; Omicron lu; Phi Upsilon Omicron. Author: Pocket Book of Home anning, 1943. Co-Author: Household Equipment Experiments, 957. Contbr. to: Jour. of Home Econs. Areas of Rsch.: Household Equipment and Housing.

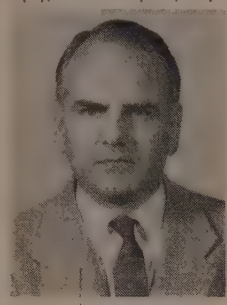
HAPPU, Roshan Boman, Sr. Metallurgist, New Mex. Bureau of Mines, NMIMT, Campus Sta., Socorro, N. Mex. Home Add.: 804 yle St., Socorro, New Mex. EXTRACTIVE METALLURGY. b. arachi, Pakistan, Sept. 14, 1926. s. Boman Kawasji and Soona Golwalla) B. Edn.: Met.E., Colo. Schl. of Mines, 1950; M.S., olo. Schl. of Mines, 1951; D.Sc., ibid., 1953. m. Carmen Mackintosh, June 8, 1952. c.: Manek; Zorin; Soonalyn; Ross. xp.: Rsch. Metallurgist, Colo. Schl. of Mines Rsch. Found., 1952-55; Metallurgist, Miami Copper Company, 1955-59; Sr. Metallurgist, New Mex. Bureau of Mines, 1959. Mem.: A.I.M.E.; A.S.M.; A.C.S.; Am. Assn. for Adv. of Sci.; Sigma Xi. Contbr. to: Quarterly, Colo. Schl. of Mines; Engrng. and Mining Jour.; Mining Engrng.; Mines Mag.; Mining World. Gen. Int.: Helped in Establishing Technical Schls. in Pakistan. Areas of Rsch.: Extractive Metallurgy, Mineral Beneficiation, Flotation Specialist; Recovery of Metals and Minerals from Low-Grade Ores By Mineral Beneficiation and Hydrometallurgical Techniques.

BHASKAR, Surindar N. (D.D.S.), Chief, Oral Pathol. Dept., Walter Reed Army Inst. of Rsch., Washington 25, D. C. Home Add.: 3000 Blueford Rd., Kensington, Md. PATHOLOGY. b. Rasul, India, Jan. 7, 1923. s. Jagan Nath and Maya Devi (Davesar) B. Edn.: D.D.S., Northwestern Univ. Dental Schl., Chicago, 1946; M.S., Univ. Ill., 1948; Ph.D., ibid., 1951. m. Norma E. Zeigle, Jan. 7, 1950. c.: William Carlos; Philip Brian; Thomas Adrian. Exp.: Fellow, Univ. Chicago, 1946-47; Fellow, Univ. Ill., 1947-51; Assoc. Prof., Pathol., Univ. Ill. Dental Schl., 1951-55; Chief, Oral Tumors Branch, Armed Forces Inst. Pathol., Washington, D. C., 1961. Hon. Pos.: Mem., Professional Edn. Comm., Am. Cancer Soc., Washington, D. C.; Mem., Fellowship Comm., Am. Acad. Oral Pathol.; Mem., Advisory Coun., Histopathol. Study Club, Michael Reese Hosp., Chicago; Diplomate, Am. Bd. Oral Pathol.; Fellow: A.A.A.S.; Am. Acad. Oral Pathol. Mem.: Am. Dental Assn.; A.A.A.S.; Internatl. Assn. Dental Rsch.; Am. Acad. Oral Pathol.; Delta Sigma Delta; Sigma Xi. Author: Synopsis of Oral Pathology; Synopsis of Oral Histology. Co-Author: Tumors of Oral Regions. Contbrng.-Author: Pediatric Dentistry; Atlas of Clinical Pathology of Oral Mucous Membrane. Contbr. to: Am. Jour. Pathol.; Anatomical Record; Oral Surg.; Oral Med.; Oral Pathol.; Am. Jour. Anatomy; Jour. Bone and Joint Surg.; Jour. Dental Rsch.; Jour. Periodontology; Proc. Inst. Med., Chicago; Jour. Oral Surg.; Archives Pathol. Serv. Rec.: U. S. Army, Lt. Colonel, Dental Corps, W. W. II. Gen. Int.: Snow Talbot Award, Univ. Ill. Dental Schl., 1951, '52, '53, '54; Essay Award, Am. Soc. Orthodontists, 1953; Recognition for Contribution to Scientific Program of Centennial Meeting Am. Dental Assn.; Superior Accomplishments, Advance Course, Army Med. Serv. Schl., 1959; Alpha Omega Frat., 1957. Areas of Rsch.: Pathology, Experimental Pathology.

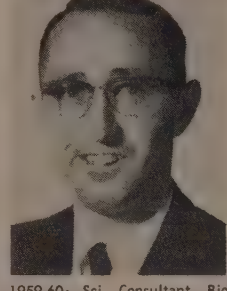
BICKERMAN, Hylan Arthur (M.D.), Assoc. Clinical Prof., Med. Coll. of P. and S., Columbia Univ., 929 Park Ave., New York, N. Y. Home Add.: 215-30 28th Ave., Bayside 60, N. Y. INTERNAL MEDICINE; PULMONARY PHYSIOLOGY. b. New York, N. Y., Oct. 26, 1913. s. Louis and Ida (Moskowitz) B. Edn.: A.B., Columbia Coll., 1934; M.A., Columbia Univ., 1935; M.D., N. Y. Univ. Schl. Med., 1939; Aviation Physiologist, Schl. Aviation Med., 1943; Diplomate Bd. Internal Med., 1948. m. Evelyn Apogi, June 7, 1941. c.: Pamela; Peter. Exp.: Asst., Med. Coll. of Phys. and Surg., Columbia Univ., N. Y., 1943-48; Instr. Med., ibid., 1948-51; Assoc., Med., ibid., 1951-56; Asst. Clin. Prof. Med., ibid., 1956-58; Assoc. Clin. Prof. Med., ibid., 1958—. Hon. Pos.: Chmn., Mechanical Aids to Respiration, Inhalation Therapy, Am. Coll. Chest Physicians; Chmn., Bd. of Advisors, Am. Assn. Inhal. Therapists; Consultant, Coun. on Drugs, Am. Med. Assn.; Mem., Editorial Bd., Clin. Pharm. and Therap. Mem.: Fellow, Am. Coll. Physicians; Fellow, Am. Coll. Chest Phys.; Aeromedical Assn.; N. Y. Acad. Scis.; Am. Thoracic Soc.; A.A.A.S.; Pan-Am. Med. Assn.; Alpha Omega Alpha; Tau Epsilon Phi. Editor: Pulmonary Emphysema, 1956. Co-Author: Meakin's Textbook of Medicine, 1956; Choice of Drugs, 1958; Clinical Cardiopulmonary Physiology, 1960. Contbr. to: Am. Jour. Med.; Aviation Med.; Postgrad. Med. Jour.; Annals Internal Med.; Bull. N. Y. Acad. Med.; Jour. Applied Physiol.; Jour. A.M.A.; Archives Internal Med.; Jour. Allergy; Diseases of Chest; Annals Allergy; Jour. Lab. and Clin. Med.; Am. Jour. Med. Sci.; Cancer Rsch.; Jour. Chronic Diseases; Clin. Pharmacol. and Therapeut.; G. P. Jour.; Am. Geriatric Soc.; Minnesota Med. Serv. Rec.: Aviation Physiol., 4th Air Force; Chief Med. Serv., Cushing Gen. Hosp., Major, M.C.A.U.S., 1944-46. Areas of Rsch.: Diseases of Chest. Pulmonary Physiology; Chronic Non-Tuberculous Lung Diseases and Lung Cancer.

BICKERTON, Robert Keith (Ph.D.), Sr. Rsch. Pharmacologist, Eaton Labs., Norwich, N. Y. Home Add.: 17 Chenango St., Oxford, N. Y. PHARMACOLOGY. b. East Liverpool, Ohio, Oct. 1, 1934. s. William Thomas and Marion (Rushton) B. Edn.: B.S., Univ. of Pittsburgh, 1956; M.S., ibid., 1958; Ph.D., ibid., 1960. m. Shirley Ann Yetter, July 20, 1957. c.: Adrienne Ann; Andrea Joan. Exp.: Sr. Rsch. Pharmacologist, Eaton Labs., 1960—. Mem.: Am. Pharmaceutical Assn.; A.A.A.S.; N. Y. Acad. Sci.; Kappa Psi; Sigma Xi. Contbr. to: Jour. Am. Pharmaceutical Assn.; The Pharmacologist; Fed. Proc.; Proc. Soc. Exptl. Biol. and Med. Areas of Rsch.: Cardiovascular Pharmacology with Particular Interest in the Mechanism of Action of Antihypertensive Drugs.

BICKFORD, Reginald George (M.D.), Consult. in Electroencephalography, Prof. of Physiol., Mayo Foundation, Rochester, Minn. Home Add.: 1141 6th St., S.W., Rochester, Minn. ELECTROENCEPHALOGRAPHY; NEUROPHYSIOLOGY; CYBERNETICS. b. Brewood, England, Jan. 20, 1913. s. George and Jessie (Jones) B. Edn.: B.A., Cambridge Univ., 1933; M.D., Univ. Coll. Hosp., London, 1936; M.R.-C.P., London, 1940. m. Joyce A. Davies, June 8, 1945. c.: Michael; Christopher. Exp.: Rsch. Fellow, Med. Rsch. Council England, 1937-39; Mayo Rsch. Assoc., 1946-48; Consult. in Electroencephalography and Neurophysiology, Mayo Clinic, 1948—; Hd. of Lab., ibid., 1948—. Hon. Pos.: Pres., Am. E.E.G. Soc., 1956; Mem. of Study Sec. on Neurol., U.S.P.H., 1959. Mem.: Am. E.E.G. Soc.; Am. Neurol. Assn.; Am. Assn. Adv. Sci. (Fellow); Sigma Xi; Am. Physiol. Soc.; Y.M.C.A. Co-Author: Electroencephalography in Anesthesiology, 1960. Contbr. to: Clin. Sci.; Electroencephalography and Clin. Neurophysiol.; Proc. of the Staff Meetings of the Mayo Clinic; Jour. of Physiol. Serv. Rec.: Royal A. F. Med. Corps, 1941-45. Gen. Int.: Designed first servosystem for Control of Human Anesthesia. Areas of Rsch.: Neurophysiology Brain Electroencephalography; Depth Electrography; Computer Applications; Cybernetics.



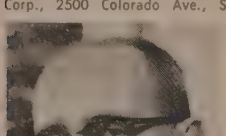
BIEDERMAN, Arthur August (Mr.), Sci. Consultant, Tigard Union High Schl. District; Principal, Twality Jr. High Schl., Tigard, Ore. Home Add.: 10030 S.W. Walnut St., Tigard, Ore. ZOOLOGY; SPERMOPHILES; FIELD STUDIES AND HIBERNATION STUDIES. b. Portland, Ore., Jan. 23, 1928. s. Wilbur George, Sr. and Coral Lillian (Garvin) B. Edn.: B.S., Ore. St. Coll., 1951; M.S., Northern Ill. Univ., 1956; M.S., Univ. Wis., 1959. m. Marilyn Jacobs, Jan. 29, 1949. c.: Shari Lynne; Bruce Arthur; Sanford Garvin; Brian Earl. Exp.: Sci. Tchr., Roosevelt High Schl., Portland, Ore., 1952-53; Sci. Tchr., Drain Grade Schl., Drain, Ore., 1953-56; Sci. Tchr., Fowler Jr. High Schl., Tigard, Ore., 1956-58; N.S.F.A.Y.I. Fellow, N.S.F.R.P.P. Fellow, Univ. Wis., 1958-62; Sci. Dept., Chmn., Fowler Jr. High Schl., Tigard, 1959-60; Sci. Consultant, Biol. Tchr., Tigard Union High Schl. District, 1960—. Hon. Pos.: Sci. Handbook Com., Ore. St. Dept. of Edn. Mem.: A.A.A.S.; A.I.B.S.; N.A.B.T.; Ore. Sci. Tchrs. Assn.; Sigma Zeta; Phi Delta Kappa; Tigard Lions Club. Serv. Rec.: U. S. Army, 1945-47. Areas of Rsch.: Currently Conducting Golden-Mantled Ground Squirrel Hibernation and Longevity Study with Research Participation Program Funds from Univ. Wis. Conducted Spermophile Population Study, Western Dane County, Wis., 1959.



BIEGELEISEN, Joseph Zachary, Jr. (Ph.D.), Supervisory Rsch. Bacteriologist (Medical), U.S.D.H.E.W., P.H.S., Communicable Disease Center, Atlanta 22, Ga. Home Add.: 2846 McClave Dr., Doraville, Ga. IMMUNOFLUORESCENCE. b. N. Y. City, N. Y., Oct. 22, 1922. s. Joseph Z., Sr. and Kamen (dec.) B. Edn.: B.S., Coll. of Ozarks, 1947; M.S., Univ. of Okla., Norman Campus, 1951; Ph.D., Univ. of Okla. Schl. of Med., 1958. m. Judy Jones, Sept. 15, 1945. c.: Rosanne; Alan; Louis; Dean. Exp.: Prin. Virologist, Okla. Sta. Dept. of Health, Okla. City, Okla., 1958-59; Visiting Lectr., Clin. Pathol., Univ. of Okla. Med. Schl., 1958-59; Rsch. Bact., Communicable Disease Center, Atlanta, Ga., 1959—; Instr. in Biol., Ga. State Coll., 1959—. Mem.: Southeastern Sect., A.S.M.; Am. Soc. for Microbiol.; The Soc. of Scis.; Sigma Xi; The Scientific Research Soc. of Am.; Kiwanis Internatl.; Masonic Blue Lodge; Scottish Rite; Shriner; Amaranth; Past Patron, Order of Eastern Star. Contbr. to: Am. Jour. of Hyg.; Am. Jour. Vet. Rsch.; for Gen. Microbiol.; Ga. Acad.

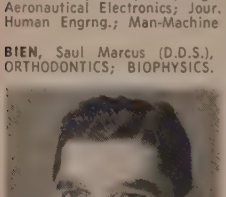
Jour. of Bacteriol.; Virology; Am. Jour. of Clin. Pathol.; Science; Jour. of Immunol.; Proc. Okla. Acad. of Sciences; Proc. for the Soc. of Expmtl. Biol. and Med.; Bacteriological Proc. Serv. Rec.: U. S. Army Reserve, 1941-42; U. S. Army Active Duty, 1942-46. Areas of Rsch.: Fluorescent Antibody Research on Herpes simplex in fetal rabbits and rapid diagnostic tests; Fluorescent Antibody Research in Potential B.W. agents, and F. A. Research in Bacterial Pathogens associated with Meningitis.

BIEL, William Collins (Ph.D.), Vice Pres., System Development Corp., 2500 Colorado Ave., Santa Monica, Calif. Home Add.: 556 12th St., Santa Monica, Calif.



PSYCHOLOGY. b. Granite City, Ill., Aug. 18, 1909. s. William John and Daisy (Collins) B. Edn.: B.A., Oberlin Coll., 1931; M.A., Western Reserve Univ., 1933; Ph.D., Stanford Univ., 1937. m. Magda von Wenck, July 20, 1935. c.: Nancy Ann; John William. Exp.: Instr., Psychol. Dept., Ohio St. Univ., 1937-40; Asst. Prof., Psychol. Dept., Miami Univ., Oxford, Ohio, 1940-42; Personnel Psychologist, Wright-Patterson AFB, Dayton, Ohio, 1942-43; Rsch. Psychologist, Brown Univ., N.D.R.C. Proj., 1943; Rsch. Psychologist and Field Dir., Tufts Coll., N.D.-R.C. Proj. SOS-6, 1943-45; Assoc. Prof. of Psychol., Denison Univ., 1946-48; Hd., Controls Unit, Psychol. Br., Aero Medical Lab., Wright-Patterson AFB, Dayton, Ohio, 1948-51; Soc. Scientist, Co-Chf., System Development Div., The RAND Corp., Santa Monica, Calif., 1951-57; Vice Pres., System Development Corp., Santa Monica, Calif., 1957—. Hon. Pos.: Pres., Human Factors Soc. of Los Angeles; Pres., Upper Miami Valley Psychological Assn. Mem.: Am. Psychological Assn.; A.A.A.S.; Calif. St. Psychological Assn.; Western Psychological Assn.; Human Factors Soc.; Sigma Xi; Psi Chi; Santa Monica C. of C.; Kiwanis. Contbrng. Author: Psychological Principles in System Development, 1962. Contbr. to: Jour. of Genetic Psychol.; Comparative Psychol. Monogr.; Jour. of Comparative Psychol.; Jour. of Exptl. Psychol.; Mgmt. Sci.; Proc. of the Natl. Conf. on Aeronautical Electronics; Jour. of Gen. Psychol. Areas of Rsch.: Human Engrng.; Man-Machine Systems.

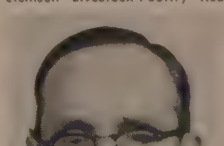
BIEN, Saul Marcus (D.D.S.), ORTHODONTICS; BIOPHYSICS.



76 Union Ave., Lynbrook, N. Y. b. N. Y., N. Y., Nov. 8, 1913. s. Joseph and Beatrice (Waldman) B. Edn.: B.A., N. Y. Univ., 1933; D.D.S., Columbia Univ., 1937; M.S., N. Y. Univ., 1961. Hon. Degs.: Diplomate, Am. Bd. of Orthodontics, 1951. m. Mina Louise Schneider, Mar. 6, 1935. c.: Beatrice L.; Martha Sue; Amos R. Exp.: Interne, Guggenheim Dent. Clinic, N. Y., 1937-38; Clin. Asst., Fr. Hosp., N. Y., 1938-42; Sr. Rsch., Dentist, N. Y. State, 1942-44; Orthodontist, Reg. Office, U. S. Vet. Admin., 1948-51; Guest Scientist, Brookhaven Natl. Lab., 1957. Hon. Pos.: Chmn., Sect. on Pathol.; Comm. on Materials, Processes and Formulae, 1958-61; First Dist. Dent. Soc., N. Y.; Comm. on Post Grad. Courses, Assn. Dent. Alumni, Columbia Univ., 1956-58. Mem.: Am. Assn. of Orthodontists; Am. Dent. Assn.; A.C.S.; Electrochem. Soc.; European Orthodontic Soc.; Am. Acad. Dent. Med.; Am. Assn. Dent. Eds.; Int. Assn. for Dent. Rsch.; Fed. Dentaire Internationale; Fellow, N. Y. Acad. of Scis.; Fellow, A.A.A.S.; Fellow, N. Y. Acad. Dentistry. Co-Author: Proceedings European Orthodontic Soc., 1957, 1961. Contbr. to: Jour. of Dent. Rsch.; Am. Jour. of Orthodontics; Am. Jour. of Periodontol.; Internatl. Dent. Jour.; Br. Dent. Jour.; Jour. Electrochem. Soc.; Die Zahntechnik. Serv. Rec.: U. S. Army, 1943. Areas of Rsch.: Pressures on Biological Systems; Electrical Properties of Biological Tissues; Crevice Corrosion of Chromium Alloy Junctions; Method Microanalysis of Fluorides; Autoradiography with Fluorine-18; Action of Zinc on the Neuromotor Unit.

BIESELE, John Julius (Ph.D.), Prof. of Zoology, The Univ. of Texas, Austin 5, Tex. Home Add.: 2500 Great Oaks Parkway, Austin 5, Tex. CYTOLOGY. b. Waco, Tex., Mar. 24, 1918. s. Rudolph L. and Anna (Jahn) B. Edn.: B.A., Univ. of Tex., 1939; Ph.D., The Univ. of Tex., 1942. m. Marguerite McAfee, July 29, 1943. c.: Marguerite Anne; Diana Terry; Elizabeth Jane. Exp.: Fellow, Internatl. Cancer Rsch. Fdtn., Univ. of Tex., Barnard Hosp., St. Louis, Mo. and Univ. Pa., 1942-44; Temp. Res. Assoc., Carnegie Inst. Wash., Cold Spring Harbor, 1944-46; Fellow, Asst. and Assoc., Sloan-Kettering Inst. for Cancer Rsch., N. Y. City, 1946-55; Mem., Sloan-Kettering Inst., N. Y. City, 1955-58; Asst. Prof. Anatomy, Cornell Univ., 1950-52; Assoc. Prof. Biol., ibid., 1952-55; Prof. Biol., ibid., 1955-58; Prof. of Zool., Univ. of Tex., 1958—. Hon. Pos.: Dir., Am. Assn. Cancer Rsch., 1960-63; Assoc. Scientist, Sloan-Kettering Inst., 1958—; Consultant, Anderson Hosp. and Tumor Inst.; Mem., Cell Biol. Study Sect., Natl. Inst. Health, 1959-62; Consult., Am. Cancer Soc., 1961-64. Mem.: Am. Assn. of the Adv. of Sci.; Am. Assn. Cancer Rsch.; Histochem. Soc.; Tissue Cult. Assn.; Internatl. Soc. for Cell Biol.; Harvey Soc.; Electron Microscope Soc. of Am.; N. Y. Acad. of Sci.; Ecological Soc. of Am.; Am. Soc. Cell Biol.; Am. Soc. Human Genetics; Am. Soc. Naturalists; Am. Soc. Zoologists; Am. Assn. Univ. Profs.; Am. Inst. Biol. Scis.; Phi Eta Sigma; Phi Beta Kappa; Sigma Xi. Author: Mitotic Poisons and the Cancer Problem, 1958. Contbr. to: Cancer Rsch.; Annals, N. Y. Acad. of Sci.; Cancer; Nature; Exptl. Cell Rsch.; Jour. Biophysic. and Biochem. Cytol.; Revue d'Hematologie; Transpl. Bull.; Jour. Natl. Cancer Inst.; Jour. Biol. Chem.; Jour. Am. Chem. Soc.; Jour. Applied Phys.; Scientific Am. Areas of Rsch.: Cellular Biol., Cancer Cytology; Tissue Culture; Exptl. Cancer Chemotherapy, Electron Microscopy; Cytochemistry.

BIERER, Bert Worman (V.M.D.), Lab. Dir. and Poultry Scientist, Clemson Livestock-Poultry Health Dept., P.O. Box 1771, Columbia, S. C. Home Add.: Route 2, Blaney, S. C. PATHOLOGY, POULTRY DISEASES AND DRUG EVALUATIONS. b. Phila., Pa., June 2, 1911. s. Walter Steck and Bessie (Beckwith) B. Edn.: V.M.D., Univ. of Pa., 1934. m. Virginia Murphy, Jan., 1932. c.: Ronnie Grant; Patricia Ray; Robert Lee; Jo-Ann; Charles Edward; Walter Steck; Nancy Virginia. Exp.: Vetn., Balt. City Hlth. Dept., Balt., Md., 1936-42; Vetn., United States Dept. of Agric., Gainesville, Fla., 1942-47; Asst. Sta. Vetn., Clemson Agric. Coll., 1947-61; Lab. Dir., Clemson Livestock-Poultry Dept., and Poultry Scientist, ibid., 1961—. Mem.: Poultry Sci. Assn.; S. C. Poultry Health Assn.; Am. Pub. Health Assn.; World Poultry Sci. Assn.; Am. Vet. Med. Assn.; S. C. Vet. Med. Assn.; U. S. Livestock Sanit. Assn. Author: Short History of Veterinary Medicine in America, 1955. Contbr. to: Poultry Sci.; Jour. Am. Vetnry. Med. Assn.; Vet. Med. Mag.; Avian Diseases. Gen. Int. Contbrd. to Devel. of an Egg Wash Germicide, the Use of Nitrofuran Drugs for Salmonella Infections in Poultry and the Use of Injectable Medication and Autogenous Vaccines for Fowl Cholera and Erysipelas in Chickens and Turkeys. Areas of Rsch.: Poultry Diseases, Especially in Salmonella and Pasteurella Infections; Drug Evaluation.



BIGELOW, Maurice Hubbard (Ph.D.), V.-Pres., Plastics and Coal Chemicals Div., Allied Chem. Corp., 40 Rector St., N. Y. 6, N. Y. CHEMISTRY. b. New Haven, Conn., Oct. 25, 1902. s. Joseph O. and Bertha (Findeisen) B. Edn.: B.Ch.E., Northeastern Univ., 1924; Ph.D., Univ. of Pittsburgh, 1933. Exp.: Chemist, Lever Brothers Soap Co., Cambridge, Mass., 1924-25; Hd. Dept. of Sci., Am. Coll., Salonica, Greece, 1925-28; Instr., Univ. of Pittsburgh, Pittsburgh, Pa., 1928-33; Fellow, Mellon Inst. of Indus. Rsch., Pittsburgh, Pa., 1933-35; Dir. of Tech. Service, Plaskon Co., Inc., Toledo, Ohio, 1935-42; Tech. Dir., Plaskon Div., Libbey-Owens-Ford Glass Co., Toledo, Ohio, 1946-53; Consultant, U. S. Office Coal Rsch. Mem.: Internatl. Standards Organization, Sec. 61 Plastics; Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Ord. Assn.; Am. Soc. for Testing Materials; Registered Professional Engr. (Ohio); Sigma Xi; Soc. Prof. Engrs.; Ill. Engr. Soc.; Chemists Club of N. Y.; Armed Forces Chem. Assn.; Forest Prod. Rsch. Soc.; N. Y. Downtown Athletic Club; Phi Lambda Upsilon; Alpha Chi Sigma; Col., U. S. Army Reserve. Author: The New Plastics, 1945; Handbook of Plastics, 1949; Acetylene and Carbon Monoxide Chem., 1949. Special Int.: Acetylene Chem.; Plastics and Glass.

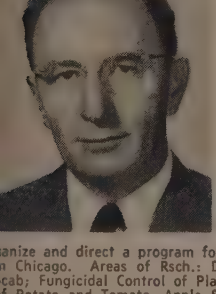
BILAN, M. Victor (Dr. of Forestry), Assoc. Prof. of Forestry and Forestry Rsch., Stephen F. Austin State Coll., Nacogdoches, Tex. Home Add.: 413 Myrtle St., Nacogdoches, Tex. SILVICULTURE, TREE PHYSIOLOGY, SILVICS. b. West Ukraine, June 6, 1922. s. Michael and Anna (Shkavritko) B. Edn.: Diplomforstwirt, Univ. of Munich, Germany, 1949; M. of Forestry, Duke Univ., 1954; Dr. of Forestry, ibid., 1957. m. Elisabeth Matushevsky, Aug., 1958. c.: Monica; Martha. Exp.: Rsch. Asst., Forest Biol., Duke Univ., 1954-57; Asst. Prof., Stephen F. Austin State Coll., 1957-61, Assoc. Prof., ibid., 1961—. Mem.: Soc. of Am. Foresters; Ecological Soc. of Am.; Sigma Xi. Author: Root Development of Loblolly Pine Seedlings in Modified Environment, 1960. Contbr. to: Forest Sci., Vol. 6, 1960; Jour. of Forestry; Proc. of Congresses of Internatl. Union of Forest Rsch. Organizations. Areas of Rsch.: Forest Tree Physiology; Forest Ecology.

IGGS, Robert Hilton, (Ph.D.), Asst. Biochemist, Univ. of Fla., ainesville, Fla. Home Add.: 1201 N.W. 25th Terr., Gainesville, a. PLANT PHYSIOLOGY. b. N. C., May 5, 1931. s. Dennis obert and Marie A. (Wynn) B. Edn.: B.S., E. Ca. Coll., 1953; .S., Purdue Univ., 1955; Ph.D., ibid., 1958. m. E. Rebecca oberson, June 19, 1953. c.: Dixie Ann; Mary Rebecca. Exp.: ellowship, Purdue Univ., Lafayette, Ind., 1953-58; Asst. Bio- hemist, Univ. of Fla., 1958—. Mem.: Am. Soc. of Plant hysiol.; Mem. Soc. of Hort.; Sigma Xi. Contbr. to: Am. Soc. f Plant Physiol.; Proc. Am. Soc. for Hort. Sci.; Am. Jour. f Bot. Areas of Rsch.: Plant Growth and Development.

ILBIJA, Zarko G. (Ph.D.), Dir. of Rsch., Chicago Dept. of City lanning, 211 W. Wacker Dr., Chicago 6, Ill. Home Add.: 3950 Lake Shore Dr., Chicago 13, Ill. ECONOMICS; CITY PLANNING. b. Yugoslavia, Sept. 19, 1927. s. Gavrilo and Persa (Kardum) B. Edn.: Ph.D., Univ. of Chicago, 1958; M.B.A., ibid., 1954. Exp.: Rsch. Assoc., Univ. of Chicago, 1954-58; Lectr. in Finance, ibid., 1958—; Dir. of Rsch., Dept. of City Planning, City of Chicago, 1958—. Mem.: Am. Econ. Assn.; Am. Finance Assn. Author: Metropolitan Chicago—An Economic Analysis, 1959; Industrial Movements and Expansions in Chicago, 1960; Location of Manufacturing Industries in Chicago, 1961. Gen. Int.: Consultant to O.E.E.C./E.P.A., Paris, 1961. Areas of Rsch.: Economics, Regional Economics, Finance, City Planning, Business

ycles.

ILBRUCK, James Donald (Ph.D.), Asst. Prof. of Bot., Eastern Ill. niv., Charleston, Ill. Home Add.: 2211 4th St., Charleston, Ill. BOTANY (PLANT PATHOLOGY). b. Kittery, Me., June 2, 1911. s. Lawrence Booth and Lucy Donna (Dow) B. Edn.: B.S., Univ. of N. H., 1952; M.S., ibid., 1954; Ph.D., Univ. of Ill., 1957. Exp.: Rsch. Asst., Univ. of N. H., 1951-55; Rsch. Asst., Forest Path., Ill. Nat. Hist. Survey, Urbana, 1955-58; Plant Path., Bur. of Forestry and Parkways, City of Chicago, 1958-60; Asst. Prof. of Bot., Eastern Ill. Univ., 1960—. Mem.: Am. Assn. Adv. Sci.; Am. Phytopathol. Soc.; Ill. Acad. of Sci.; Natl. Shade Tree Conf.; Am. Inst. Biol. Sci.; Phi Sigma; Sigma Xi; Gamma Sigma Delta. Contbr. to: U.S.D.A. Plant Disease Reporter; Phytopathology. Serv. Rec.: U.S.A.A.F., 1941-45. Gen. Int.: Helped or-

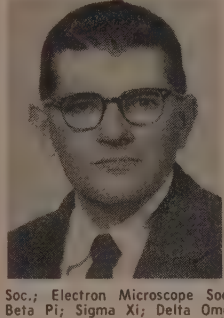


anize and direct a program for the control of Dutch Elm Disease n Chicago. Areas of Rsch.: Diseases of Trees, Oak Wilt, Apple cab; Fungicidal Control of Plant Diseases, Control of Late Blight f Potato and Tomato, Apple Scab Control; Plant Protective Subtances in Trees; Water-soluble Inhibitor of the Oak Wilt Fungus ound in Oak Heartwood.

ILLHARTZ, W. H. (Ph.D.), Hd., Dept. Math., Prof., Physics and Mathematics, State Coll., Lock Haven, Pa. OPTICS. b. Pittsburgh, Pa., Aug. 30, 1908. s. William Henry and Mabel (Foust) . Edn.: B.S. in E.E., Univ. of Pittsburgh, 1930; M.S., ibid., 934; Ed.M., ibid., 1936; Ph.D., ibid., 1938. m. Rose McClain, une 29, 1939. c.: Carol Jeannette. Exp.: Physics and Dir. isual Edn., H. S., Bellaire, Ohio, 1936-42; Consultant, Am. Win- low Glass Co., 1935-42; Hd., Phys. and Math., Franklin Coll. of nd., 1942-46; Hd., Phys. and Math., Morehead State Coll., Ky., 946-47; Hd., Phys., Western Coll., Oxford, Ohio, 1947-50; Consultant, E. Berninghouse Co. and Tatterman Marionettes, 1950-51; Physicist, Pittsburgh Corning Corp., Port Alleghany, Pa., 1951-55; Prof., Physics and Mathematics, State Coll., Lock Haven, Pa., 955—; Hd., Dept. Math., ibid., 1960—. Mem.: N. Y. Acad. of Sci.; Am. Phys. Soc.; Optical Soc. of Am.; A.A.P.T.; Illuminating Engrng. Soc.; Phi Delta Kappa. Contbr. to: Jour. Acoustical Soc.; Schl. and Soc.; Illuminating Engrng. Spec. Int.: Glass and Optics.

ILLINGS, Donald Earl (Ph.D.), Mem. of High Altitude Observ. tsch. Staff, High Altitude Observ., Boulder, Colo. Home Add.: 519 Arapahoe, Boulder, Colo. SOLAR PHYSICS. b. Durango, olo., Sept. 18, 1914. s. Edwin D. and Myrtle (Williams) B. dn.: B.A., Univ. of Colo., 1935; M.A., ibid., 1939; Ph.D., ibid., 949. m. Claire Zeagler, 1945. Exp.: Physicist, U. S. Navy, harleston, S. C., 1942-45; Instr., Univ. of Colo., Boulder, Colo., 945-49; Asst. Prof. Phys., La. St. Univ., Baton Rouge, La., 949-51; Solar Phys., High Altitude Observ., Boulder, Colo., 951—. Hon. Pos.: Chmn., Dept. of Astro-Geophys., Univ. of olo., 1960-62; Secy. of Org. Comm. Internatl. Astron. Union ymposium No. 16. Mem.: Am. Astron. Soc.; Am. Phys. Soc.; ellow, Am. Assn. for the Adv. of Sci.; Fellow, Royal Astronomi- al Soc.; Colo. Wyo. Acad. Sci.; Sigma Pi Sigma; Sigma Xi. ontbr. to: Astrophys. Jour.; Australian Jour. of Phys.; Zeitschrift ur Astrophysik; Publs. of the Astron. Soc. of the Pacific. Areas f Rsch.: Solar Corona; Solar Flares; Nuclear Theory; Ferro- agnetism; Liquid Theory.

BILLINGS, Charles Edgar (Mr.), Assoc. Prof. of Indust. Hygiene, W. M. Keck Lab., Environmental Health Engrng., Calif. Inst. of Technology, Pasadena, Calif. ENVIRONMENTAL HEALTH ENGINEERING; INDUSTRIAL HYGIENE; AIR POLLUTION CONTROL. b. Boston, Mass., May 26, 1925. s. Edgar Dewey and Elsie Henrietta (Nicholas) B. Edn.: S.B. in M.E., Northeastern Univ., 1950; S.M., Harvard Univ., 1953. m. Mary Lucille Devoider, Sept. 30, 1956. c.: John Edgar; Charles Christopher. Exp.: Rsch. Fellow, Harvard Schl. Pub. Health, 1950-53; Rsch. Assoc., ibid., 1953-56; Asst. Prof., ibid., 1956-62; Assoc. Prof., Indust. Hygiene, Calif. Inst. of Tech., 1962—. Mem.: Am. Soc. Mech. Eng.; Am. Assn. Adv. Sci.; Harvard Engrng. Soc.; Air Poll. Control Assn.; Am. Ind. Hyg. Assn.; British Occ. Hyg.

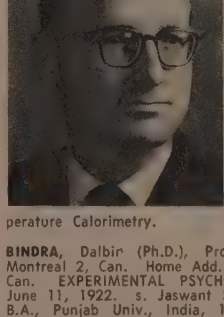


Soc.; Electron Microscope Soc. Am.; Health Physics Soc.; Tau Beta Pi; Sigma Xi; Delta Omega. Contbr. Author: Inhaled Particles and Vapours, 1961. Contbr. to: Jour. Air Poll. Control Assn.; Nature; Chem. Engrng. Areas of Rsch.: Air and Gas Cleaning, Air Pollution Control and Aerometric Survey, Aerosol Technology; Filtration of Sub-Micron Particles, Industrial Hygiene, Control of Air Borne Contamination From Nuclear Energy Processes, Metallurgical Furnace Fumes Control, Teaching Aerosol Technology.

BILLINGSLEY, Susan Kennon (Dr.), Technical Staff, Underseas Warfare Dept., Hughes Aircraft Co., Fullerton, Calif. Home Add.: 707 E. Adams Ave., Orange, Calif. INFORMATION SPECIALIST, THE LITERATURE OF; PHYSICAL OCEANOGRAPHY, STATISTICAL SIGNAL DETECTION, INFORMATION THEORY, ACOUSTICS OF THE MEDIUM, OCEANOGRAPHIC INSTRUMENTATION, TRANSDUCER DESIGN, ARRAY THEORY. b. Nice, France, Jan. 25, 1925. d. David A. and Hilda (Keyes) Vaughan. Edn.: B.A., Univ. of Calif., Los Angeles, 1950; M.A., ibid., Berkeley, 1951; Ph.D., ibid., 1958. m. Rodney H. Billingsley, 1951. Exp.: Asst. to the Librn., Am. Cyanamid Co., Fall River, N. Y., 1956; Dir., Technical Libr., Interstate Electronics Corp., 1957-60; Technical Staff, Underseas Warfare Dept., Hughes Aircraft Co., Fullerton,

Calif., 1960—. Mem.: Acoustical Soc. of Am.; Optical Soc. of Am.; Inst. of Radio Engrs.; Am. Soc. of Photogrametry; A.A.A.S.; Am. Geophysical Union; Hist. of Sci. Soc.; Am. Historical Assn.; Phi Beta Kappa; Phi Alpha Theta; Phi Theta Kappa; Alpha Mu Gamma; Alpha Gamma Sigma; Phi Alpha Theta; Phi Gamma Mu; Phi Gamma Sigma. Contbr. to: The Personnel Jour.; The Sci. Tech. News. Areas of Rsch.: Information Retrieval, the literature of information theory as applied to statistical noise detection; underseas warfare, oceanographic instrumentation, acoustic detection, ocean surveillance systems analysis and information processing.

BINFORD, Jesse S., Jr. (Ph.D.), Assoc. Prof., Dept. of Chem., Univ. of South Fla., Tampa, Fla. Home Add.: 10416 N. 22nd St., Tampa 12, Fla. PHYSICAL CHEMISTRY, KINETICS, THERMODYNAMICS. b. Freeport, Tex., Nov. 1, 1928. s. Jesse Stone and Eglan (Bracewell) B. Edn.: B.A., Rice Univ., 1950; M.A., ibid., 1952; Ph.D., Univ. of Utah, 1955. m. Lolita Fritz, June 8, 1955. c.: Lincoln Bracewell; Jason Jolly. Exp.: Instr., Dept. of Chem., Univ. of Tex., 1955-58; Asst. Prof., Dept. of Chem., Univ. of the Pacific, 1958-60; Assoc. Prof., ibid., 1960-61; Assoc. Prof., Univ. of S. Fla., 1961—. Mem.: Am. Assn. Adv. Sci.; Am. Chem. Soc.; Sigma Xi; Phi Beta Kappa; Phi Lambda Upsilon; A.A.U.P. Contbr. to: Jour. of Phys. Chem. Areas of Rsch.: Kinetics of Heterogeneous Reactions, High Tem-



perature Calorimetry.

BINDRA, Dalbir (Ph.D.), Prof. of Psychology, McGill Univ., Montreal 2, Can. Home Add.: 1520 McGregor St., Montreal 25, Can. EXPERIMENTAL PSYCHOLOGY. b. Rawalpindi, Pakistan, June 11, 1922. s. Jaswant S. and Lajiavati (Dhody) B. Edn.: B.A., Punjab Univ., India, 1941; M.A., Harvard Univ., 1946; Ph.D., ibid., 1948. m. Jane Stewart, Aug. 5, 1959. Exp.: Asst. Prof., Am. Univ., Wash., D. C., 1947-49; Asst. Prof., McGill Univ., 1949-53; Assoc. Prof., ibid., 1953-62; Prof., biid., 1962—. Hon. Pos.: Pres., Canadian Psychol. Assn., 1958-59. Mem.: A.A.A.S., Fellow; Am. Psychol. Assn., Fellow; Canadian Psychol. Assn. Author: Motivation, A Systemattic Reinterpretation, 1959. Contbr.

to: Jour. Exptl. Psychol.; Jour. Comparative and Physiol. Psychol.; Psychol. Rev.; Canadian Jour. Psychol. Areas of Rsch.: Animal Motivation; Learning; Experimental Psychopathology.

BINGHAM, Marjorie Tellefsen (Mrs.), Hd., Dept. of Biol., Centenary Coll. for Women, Hackettstown, N. J. Home Add.: 321 Lafayette St., Hackettstown, N. J. BIOLOGY. b. Buffalo, N. Y., Feb. 4, 1895. d. Theodore J. Tellefsen and Adeline (Smith) T. Edn.: A.B., Univ. of Cincinnati, 1918; M.A., ibid., 1921. m. Burton F. Bingham (div.), 1921. c.: Margaret Godfrey; Jean Hansen. Exp.: Botanist, Cranbrook Inst. Sci., Bloomfield Hills, Mich., 1933-46; Asst. Prof. Biol., Northern Mich. Coll., Marquette, Mich., 1947-51; Hd., Dept. of Biol., Centenary Coll. for Women, 1951–. Hon. Pos.: Fellow, Cranbrook Inst. of Sci. Mem.: Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Scis.; Mich. Acad. of Sci.; N. J. Acad. of Sci.; Sigma Xi; Sigma Delta Epsilon; Kappa Delta Pi. Author: Orchids of Michigan, 1939; Flora of Oakland County, Michigan, 1945. Areas of Rsch.: Plant Ecology; North American Orchids.

BINGHAM, N. Eldred (Ph.D.), Prof., Chmn., Sci. Edn., Univ. of Fla., Gainesville, Fla. Home Add.: 1718 N.W. 10th Ave., Gainesville, Fla. SOILS CHEMISTRY, BIOLOGY, SCIENCE EDUCATION. b. Edinburg, Ohio, June 7, 1901. s. Lyle B. and Blanche (Pinney) B. Edn.: B.S., Ohio State Univ., 1923; B.S., Kent St. Univ., 1926; M.A., Tchrs. Coll., Columbia University, 1930; Ph.D., ibid., 1938. m. Marjorie Heath, Sept. 15, 1934. c.: Merna; Sarah; Jane; Marjorie Ann. Exp.: Sci. Instr., Montclair State Tchrs. College, Lincoln Schl. Tchrs. Coll., 1927-44; Prof., Pa. St. Univ., s.s., 1934-42; Prof., Univ. of Calif., s.s., 1953; Prof., U.C.L.A., s.s., 1950; Prof., Univ. of Fla., 1950–; Assoc. Prof., Northwestern Univ., 1945-50; Staff, Ind. Univ., 1955-62; Sci. Consultant, Tchrs. Coll., Columbia Univ., New Delhi, India, 1962-64. Hon. Pos.: Pres., N.A.R.S.T., C.E.S.I. Mem.: A.A.A.S., Fellow; N.S.T.A.; A.I.B.S.; Fla. Acad. of Sci.; A.E.T.S.; F.A.S.T.; F.F.F.S.; Kiwanis; Phi Delta Kappa; Kappa Delta Pi. Author: Investigation: Teaching Nutrition in Biology Classes, 1938; Rethinking Science Education, 1960; Science in Florida Secondary Schools, 1960; Teachers Guide, Science in Your Life, 1961 Co-Author: Biology and Man, 1944. Contbr. to: Scientific Monthly; Sci. Edn.; Elem. Sci. Bull.; Bull. Natl. Assn. Sect. Schl. Prins.; F.A.S.T. Jour. Areas of Rsch.: Geology; Curriculum Rsch.; Sci. for Tchrs.; Edni. Television.

BIRCH, Carroll LaFleur (M.D.), Prof. of Med., Univ. of Ill. Med. Coll., 840 S. Wood St., Chicago 12, Ill. Home Add.: 2045 Sedgwick St., Chicago 14, Ill. MEDICINE-TROPICAL MEDICINE. b. Baltimore, Md., Dec. 29, 1896. d. Charles Edward and Eva Virginia (Robinson) LaFleur. Edn.: B.S., Univ. of Pa., 1920; M.D., Univ. of Ill., 1925; M.S., ibid., 1927. m. Richard B. Birch, 1921. Exp.: Instr., Med. Coll. of Univ. of Ill., 1927-29; Assoc., ibid., 1929-31; Asst. Prof., ibid., 1931-43; Assoc. Prof., ibid., 1943-50; Prof., Internal Med., ibid., 1950–. Mem.: Fellow, Am. Coll. of Physicians; Inst. of Med.; Chicago Soc. of Int. Med.; A.A.A.S.; English Assn. of Geneticists; 16 other Med. Socs.; A.O.A.; Sigma Xi; etc. Author: Hemophilia, Clinical and Genetic Aspects. Serv. Officer: Med. Dir., Res., U. S. Pub. Health Serv. Areas of Rsch.: Hematology, especially Hemophilia and Tropical Medicine.

BIRD, George R. (Ph.D.), Senior Scientist, Polaroid Corp., Rsch. Div., 730 Main St., Cambridge 39, Mass. PHYSICAL CHEMISTRY. b. Bismarck, N. Dak., Jan. 25, 1925. s. George Francis and Mary Helen (Hoppin) B. Edn.: A.B., Harvard Univ., 1949; A.M., ibid., 1952; Ph.D., ibid., 1953. m. Doris Elinor Forgue, June 12, 1948. c.: George Peter; Elizabeth Newell; Margaret Alison. Exp.: Natl. Rsch. Coun. Postdoctoral Fellow, The Columbia Radiation Lab., 1952-53; Asst. Prof., Chem., Rice Inst., 1953-58. Mem.: Am. Physical Soc.; Am. Chem. Soc. Contbr. to: Jour. of Chem. Physics; Physical Rev.; Jour. of the Optical Soc. of Am.; Rev. of Scientific Instruments. War Rec.: A.U.S., 1943-46. Areas of Rsch.: Microwave and Infrared Spectroscopy; Molecular Structure.

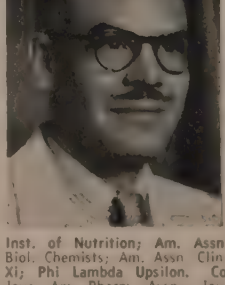
BIRD, Harold Crusius (Mr.), Prof. Emeritus, Civ. Engrng., Duke Univ., Durham, N. C. Home Add.: 2621 Hampton Ave., Charlotte 7, N. C. CIVIL ENGINEERING. b. Litchfield, Conn., June 3, 1888. s. Robert and Fannie Louise (Crusius) B. Edn.: Ph.B., Yale, 1908, C.E., ibid., 1911. m. Eleanor Macbeth, 1912. c.: Rev. Robert M.; John M.; Mrs. Frances M. Wansker. Exp.: Engr., N. Y., Conn. State Line, Water Power Devel., Factory Const., 1908-10; Asst., Civil Engrng., Yale Univ., New Haven, Conn., 1910-11; Asst. Prof., Assoc. Prof., Prof., Civ. Engrng., Pa. Military Coll., 1911-23; Engr., Don Co., Troy, N. Y., 1923-26; Prof., Civ. Engrng., Duke Univ., 1926-53. Mem.: Fellow, A.A.A.S.; Fellow, Am. Soc. Civ. Engrng.; Am. Soc. Engrng. Edn.; Sigma Xi; Omicron Delta Kappa; Tau Beta Pi; Pi Tau Sigma; Durham Engrs. Club; Charlotte Engrs. Club.

BIRD, Luther Smith (Ph.D.), Plant Pathologist, A. and M. Coll. of Tex., College Station, Tex. Home Add.: Rt. 3, Box 7, Bryan, Tex. PLANT PATHOLOGY, GENETICS. b. Greenville, S. C., Nov. 25, 1921. s. John P. and Gladys (Hunt) B. Edn.: B.S., Clemson Coll., 1948; M.S., A. and M. Coll. of Tex., 1950; Ph.D., ibid., 1955. m. Bernice Allen, Aug., 1947. c.: Mary Allene; Lois Eoline. Exp.: Instr., A. and M. Coll. of Tex., 1950-53; Asst. Prof., ibid., 1953-58; Assoc. Prof., ibid., 1958–. Hon. Pos.: Sec., Cotton Disease Coun., 1955-56; Chmn., Cotton Disease Coun., 1957, 1958. Mem.: Am. Soc. of Agron.; Am. Phytopathol. Soc.; Am. Soc. of Plant Physiol.; Am. Genetic Assn.; Biometrics Soc. of Am.; Sigma Xi; Alpha Zeta; Kiwanis. Contbr. to: Genetics; Agronomy Jour.; Plant Disease Reporter; Tex. Agric. Expt. Sta. Publ.; Phytopath.; Tex. Agric. Progress. Serv. Rec.: U. S. Army Air Force, 1942-47; Air Force Reserves, 1947–. Areas of Rsch.: Disease Resistance, Physiology of Disease Resistance and Genetics of Disease Resistance in Cotton. Also specializes in disease escape mechanisms and chemical control of cotton seedling disease.

BIRGE, Raymond Thayer (Ph.D.), Prof. of Phys. (emer.), Univ. of Calif., Berkeley, Calif. Home Add.: 1639 La Vereda, Berkeley 9, Calif. PHYSICS. b. Brooklyn, N. Y., March 13, 1887. s. John T. and Caroline (Raymond) B. Edn.: A.B., Univ. of Wis., 1909; M.A., ibid., 1910; Ph.D., ibid., 1914. Hon. Degrs.: LL.D., Univ. of Calif., Berkeley, 1955. m. Irene Walsh, 1913. c.: Robert W.; Carolyn Elizabeth. Exp.: Instr., Phys., Syracuse Univ., 1913-15; Asst. Prof. of Phys., ibid., 1915-18; Instr., Univ. of Calif., Berkeley, 1918-20; Asst. Prof. of Phys., ibid., 1920-22; Assoc. Prof., ibid., 1922-26; Prof. of Phys., ibid., 1926-55; Chmn. of Dept., ibid., 1933-55; Prof. of Phys. (emer.), ibid., 1955–. Hon. Pos.: Chmn., Phys. Sect., Natl. Acad. of Scis., 1940-43; Vice Pres., Sect. B, 1957, Am. Assn. for the Adv. of Sci.; Mem. of Council, Vice Pres., Pres., Am. Phys. Soc., 1927-30, 1954, 1955; Chmn., Com. on Phys. Optics, Optical Soc. of Am., 1926. Mem.: Am. Philos. Soc.; Assn. of the Am. Phys. Tchrs.; Am. Assn. of Univ. Profs.; Phi Beta Kappa; Sigma Xi. Contbr. to: Phys. Rev.; Revs. of Mod. Phys.; Jour. of Optical Soc. of Am.; Sci.; Astrophys. Jour.; Nature; Proc. Natl. Acad. Sci.; Trans. Faraday Soc.; Jour. Chem. Phys.; Phys. Today; Internatl. Critical Tables. Areas of Rsch.: Physical Optics; Spectroscopy; Values of Physical Constants; Statistics.

BIRNBERG, Charles Howard (M.D.), Physician, 191 Ocean Ave., Brooklyn 25, N. Y. OBSTETRICS; GYNECOLOGY; FEMALE SEX ENDOCRINOLOGY. b. Austria, May 1, 1900. s. Morris and Caroline (Horowitz) B. Edn.: B.A., Columbia Univ., 1920; M.D., Syracuse Univ., 1924. m. Lillian Levin, June 26, 1926. c.: Michael Seth Burnhill; Marion Joan Mintzer. B. Exp.: Intern, Brooklyn Jewish Hosp., 1924-26; Res., Obstet., Fordham Hosp., N. Y., 1926-28; Asst. Obs. and Gyn., Brooklyn Jewish Hosp., 1928-30; Assoc. Obstetrician, ibid., 1928-49; Attending Obs. and Gyn., ibid., 1949-60; Chf., Dept. of Female Sex Endocrinol., ibid., 1932; Instr., Kings Co. Med. Soc., 1934. Hon. Pos.: Fellow, Intern. Sterility Soc.; Fellow, Am. Coll. of Gyn.; Diplomate, Intern. Coll. of Surgeons. Mem.: A.M.A.; N. Y. State Med. Assn.; Endocrine Soc. for Study of Sterility; Harvey Soc.; N. Y. Acad. of Sci.; Corres. Fellow, Obs. and Gyn. in Brazil and Peru; Mem., Internatl. Obs. and Gyn. Soc.; Am. Coll. of Obs. and Gyn.; Brooklyn Gyn. Soc.; World Med. Assn.; Israeli Med. Assn.; Phi Delta Epsilon. Author: Female Sex Endocrinology, 1949. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Female Sex Endocrinology and Infertility.

BISCHOFF, Fritz Emil (Ph.D.), Dir. of Rsch., Santa Barbara Cottage Hosp. Rsch. Inst., Santa Barbara, Calif. BIOCHEMISTRY. b. Milwaukee, Wis., May 21, 1899. s. Emil A. and Elsie (Meyer) B. Edn.: B.S., Univ. of Wis., 1920; M.S., ibid., 1922; Ph.D., ibid., 1924. Exp.: Rsch. Chemist and Plant Supvr., Newport Chem. Co., Carrollville, Wis., 1920-21; Rsch. on Thio Indigo Dyes, E. I. duPont de Nemours Co., Wilmington, Del., 1924-25; Rsch. Chemist, Santa Barbara Cottage Hosp., Santa Barbara, Calif., 1925-28; Dir. of Chem. Labs., ibid., 1928-48; Dir. of Rsch., Santa Barbara Cottage Hosp. Rsch. Inst., 1939–. Hon. Pos.: Certified Clin. Chemist, Am. Bd. of Clin. Chem.; Natl. Exec. Com., Am. Assn. Clin. Chemists, 1951-52; Advisory Trustee, International Cancer Rsch. Found., 1946-48. Mem.: Am. Chem. Soc.; Am. Inst. of Nutrition; Am. Assn. for Cancer Rsch.; Am. Soc. of Biol. Chemists; Am. Assn. Clin. Chemists; Phi Beta Kappa; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Am. Pharm. Assn.; Jour. Biol. Chem.; Jour. Pharm. and Exptl. Therap.; Am. Jour. Physiol.; Jour. Nutrition; Sci.; Am. Jour. Cancer; etc. War Rec.: W. W. I, Private, 1918. Gen. Int.: Development of Delayed Acting Hormones, especially Insulin; Chem. of Hormones. Special Int.: Rsch. on Contact Catalysis; Volatile Oils, Sulfur Dyes; Chem. Protein on Hormones; Chem. Lead Poisoning; Chemotherapy in Cancer; Hyperthermia Inducing; Pituitary, Carbohydrate Metabolism; Clinical Rsch. on the Acid-Base Balance in Man; Cancer Rsch. as Related to Hormones, Sex Hormones.



IRREN, James Emmett (Ph.D.), Chief, Sect. on Aging, Natl. Inst. f Mental Health, Bethesda 14, Md. Home Add.: 4616 Langdrum ane, Chevy Chase 15, Md. PSYCHOLOGY GERONTOLOGY. b. hicago, Ill., Apr. 4, 1918. s. August F. and Elsie (Kolkman) . Edn.: B.E., Chicago Tchrs. Coll., 1941; M.A., Northwestern niv., 1942; Ph.D., ibid., 1947. m. Elizabeth Solomon, Dec. 2, 1942. c.: Barbara Ann; Jeffrey Emmett; Bruce William. xp.: Chief, Sect. on Aging, Natl. Inst. of Mental Health, Pub. ealth Serv., 1947—. Hon. Pos.: Pres., Gerontol. Soc.; Pres., iv. on Maturity and Old Age, Am. Psychol. Assn. Mem.: Am. hysiol. Soc.; Am. Psychol. Assn.; Gerontol. Soc.; Psychometric oc.; Am. Assn. Adv. Sci.; Am. Edn'l. Rsch. Assn. Editor: Handbook of Aging and the Individual, 1959; American Lectures n Gerontology and Geriatrics; Co-Editor, The Process of Aging n the Nervous System, 1959; Assoc. Editor, Jour. of Gerontology. erv. Rec.: U. S. Navy Reserve, 1943-46. Gen. Int.: Ciba Award or Research on Problems of Aging, 1956; First Annual Stratton ward of the American Psychopathological Association, 1960. reas of Rsch.: Research on the Psychophysiology of Aging.

ISPLINGHOFF, Raymond Lewis (D.Sc.), Prof., Mass. Inst. of Tech., ambridge, Mass. Home Add.: 15 Fife Rd., Wellesley Hills, Mass.

AERONAUTICS AND ASTRONAUTICS. b. Hamilton, Ohio, Feb. 7, 1917. s. Roscoe Earl and Isabelle (Lewis) B. Edn.: A.E., Univ. of Cincinnati, 1940; M.S., ibid., 1942; Sc.D., Swiss Fed. Inst. of Tech., 1957. m. Ruth Doherty, June, 1944. c.: Ross; Ron. Exp.: Engr., Aeronca Aircraft Corp., Cincinnati, Ohio, 1937-40; Engr., U.S.A.A.C., Wright Field, Dayton, Ohio, 1940-41; Instr., Univ. of Cincinnati, 1941-43; Engr., Bur. of Aeronautics, Navy Dept., Wash., D. C., 1943-46; Asst. Prof., Prof. and Deputy Hd., Dept. of Aeronautics and Astronautics, Mass. Inst. Tech., 1946—. Hon. Pos.: Mem., U.S.A.F. Adv. Bd.; Mem., N.A.S.A. Comm.; Dir., Office of Adv. Rsch. and Tech., N.A.S.A., 1962—. Mem.: Fellow, Institute of the Aeronautical Sciences; Royal Aeronautical Soc.; Am. Acad. Arts and Scis.; Am. Assn. Adv. Sci.; Am. Rocket Soc.; Phi Eta Sigma; Tau Beta Pi; Sigma Xi. Contbrng. Author: Aeroelasticity, 1955. Contbr. to: Jour. Aeronautical Scis.; Jour. Applied Mechanics; Jour. Franklin Inst.; Proc., Natl. Acad. Scis.; etc. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Aeronautics; Astronautics, Fluid and Solid Mechanics.

BITTER, Harold Louis (Ph.D.), Aviation Physiologist, Schl. of Avn. Med., San Antonio, Tex. Home Add.: 418 Nash Blvd., San Antonio, Texas. PHYSIOLOGICAL PROBLEMS OF SPACE FLIGHT. b. Baltimore, Md., Aug. 24, 1918. s. Anthony G. and Nellie (Cooper) B. Edn.: B.S., Univ. Md., 1949; M.S., ibid., 1951; Ph.D., Univ. Rochester, 1958. Hon. Deg.: Alpha Zeta, Univ. Md. m. Mary Edna Thomas, Nov., 1946. c.: Carol Ann; Denise Arlene; David Bruce. Exp.: Biologist, Agril. Rsch. Ctr., Beltsville, Md., 1949-51; Biolst., Univ. Rochester, 1953-56; Physiologist, Schl. Avn. Med., San Antonio, 1956 . Mem.: Aerospace Med. Assn.; N. Y. Acad. of Sci.; A.A.A.S.; Air Force Assn.; Phi Delta Theta. Contbr. to: Professional Periodicals; Jour. Appld. Physiol.; ASTIA Tech. Dept.; Schl. of Avn. Med. Reports. Serv. Rec.: U.S.A.F., 1951-60. Areas of Rsch.: Avn. Physiol.; Radiol.; Ventilation-Perfusion.

BIXBY, Louis William, Jr. (Mr.), Chmn., Sci. Dept., St. Louis Country Day Schl., St. Louis, Mo. CHEMISTRY—TEACHING. b. Saginaw, Mich., Feb. 24, 1921. s. Louis William, Sr. and Millie E. (Brown) B. Edn.: A.B., Hope Coll., 1949; Grad. Work, Cornell Univ., 1949-51; O.R.I.N.S., Oak Ridge, Tenn., 1959; Brown Univ., 1960. m. Beatrice E. Lockwood, June 18, 1949. c.: Daniel L.; Douglas William; Judy Lynn. Exp.: Tchr., Groton Central, Groton, N. Y., 1955-58; Tchr., Dryden Central, Dryden, N. Y., 1951-53, 1958-60; Hd., Sci. Dept., Weedsport Central, Weedsport, N. Y., 1960-62; C.B.A., Chem. Inst., Reed Coll., summers, 1961, 1962; Chmn. of Sci. Dept., St. Louis Country Day Schl., 1962 . Mem.: Am. Chemical Soc.; New England Chem. Tchrs. Assn.; A.A.A.S.; N. Y. St. Sci. Tchrs. Assn. Contbr. to: Jour. of Chemical Edn.; The Sci. Tchrs. Bull., N. Y. St.; Handbk. of Chem., N. Y. St.; Civil Defense Bull., N. Y. St. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Sci. Edn.

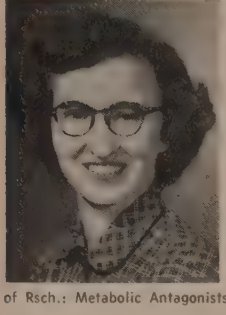
BJORKSTEN, Johan Augustus (Ph.D.), Founder and Pres. of Bjorksten Rsch. Labs., Madison, Wis. Home Add.: Route No. 2, Fish Hatchery Rd., Madison, Wis. HIGH POLYMERS AND BIOLOGICAL. b. Tammerfors, Finland, May 27, 1907. s. Walter and Gerda E. A. (Ramsay) B. Edn.: Ph.D., Univ. of Helsingfors, Finland, 1931. m. Christel Svedlin, Nov. 14, 1961. Exp.: Guest Rsch. Worker, Univ. of Minn., Mlps., Minn., 1931-32; Rsch. Chemist, Felton Chem. Co., Brooklyn, N. Y., 1932-34; Chief Chemist, ibid., 1934-35; Chg. of Dev., Pepsodent Co., Chicago, Ill., 1935-36; Chief Chemist, ibid., 1936-41; Chem. Dir., Quaker Chem. Prods. Corp., Conshohocken, Pa., 1941-44; Founder and Pres., Bjorksten Rsch. Labs., Madison, Wis., 1944 -; V.-Pres., ABC Packaging Machine Corp., Clearwater, Fla., 1943—; Pres., Bee Chem. Co., Chicago, Ill., 1945-53; Chmn. of Bd., Griffolyn Co., Houston, Tex., 1958—. Hon. Pos.: Chmn., Conf. on Basic Chem. of Aging, Gordon Rsch. Confs., 1962; Pres., Am. Inst. of Chemists, 1961-62. Mem.: Am. Inst. of Chemists; Am. Chem. Soc.; Soc. of Plastics Engrs.; Soc. of the Plastics Industry; Am. Geriatrics Soc.; Gerontol. Soc.; Chem. Arts Forum; Am. Soc. for Metals; Electrochem. Soc.; Am. Assn. of Cereal Chemists; Finland Chem. Soc.; Societas pro Fauna et Flora Fennica; Sigma Xi; Alpha Chi Sigma; Gamma Alpha; Rotary Club of Madison. Author: Polyesters and Their Applications. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Am. Geriat. Soc.; Mod. Plastics; The Chemist; Chem. and Engrng. News; Jour. of Soc. of Plastics Engrs.; Indust. and Engrng. Chem. Areas of Rsch.: Polymer Chemistry; Plastics Chemistry; Biochemistry; Organic Synthesis.

BLACK, Alex (Ph.D.), Assoc. Dir., Agric. Expt. Sta., Pa. State Univ., University Park, Pa. Home Add.: 126 W. Mitchell Ave., State College, Pa. ANIMAL NUTRITION. b. Richmond, Ky., Nov. 16, 1906. s. Thomas J. and Lizzie (Bales) B. Edn.: B.A., Univ. of Ky., 1929; M.S., Pa. State Univ., 1933; Ph.D., Univ. of Rochester, 1938. m. Jessie Clements, 1929. Exp.: Assoc. Dir., Agric. Expt. Sta., Pa. State Univ., 1929-34; Instr., ibid., 1934-38; Asst. Prof., ibid., 1938-48; Prof., ibid., 1948-53; Asst. to Assoc. Dir., 1953— ; Fellow, Univ. of Rochester, 1937-38. Mem.: Am. Inst. Nutrition; Am. Soc. Animal Prod.; Delta Chi; Sigma Xi; Gamma Sigma Delta; Alpha Chi Sigma. Contbr. to: Jour. of Nutrition; Jour. of Animal Sci. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Nutrition; Energy Metabolism.

BLACKFORD, Virginia L(ee) (Ph.D.), Exec. Secy., Med. Rsch. Study Sect., Office of Voc. Rehabilitation, Dept. of Health, Education and Welfare, Wash., D. C. Home Add.: 4858 Battery Lane, Bethesda 14, Md. VIROLOGY. b. Wash., D. C., Apr. 10, 1913. d. Eugene W. and Louise M. (Cropley) B. Edn.: B.S., Am. Univ., 1949; M.S., The George Wash. Univ., 1951; Ph.D., ibid., 1957. Exp.: Bacteriol., Walter Reed Army Med. Ctr., Wash., D. C., 1952-55; Bacteriolst., Naval Med. Rsch. Inst., Bethesda, Md., 1955-59; Asst. Prof., Coll. of Med., Howard Univ., Wash., D. C., 1959-61; Exec. Secy., Med. Rsch. Study Sect., OVR, Dept. Health, Edn. and Welf., 1961—. Hon. Pos.: Pres., Am. Univ. Alumni Assn., 1961-62; Pres., Sigma Delta Epsilon, Omicron Chptr., 1961-62. Mem.: N. Y. Acad. of Scis.; Soc. of Am. Bacteriols.; Am. Inst. of Biol. Scis.; Tissue Culture Assn.; Am. Assn. of Med. Colls.; Am. Assn. for the Adv. of Sci.; Md. Acad. of Sci.; Sigma Xi; Sigma Delta Epsilon; Beta Beta Beta; Delta Phi Alpha; Mineralol. Soc. of the D. C. Contbr. to: Jour. of Bacteriol.; Am. Jour. of Vet. Rsch.; Antibiotics and Chemotherapy; Bacteriol. Procs. Areas of Rsch.: Fungicidal Assay by Growth Experiments; Antibiotic Production by Coliform Bacteria; Host-Parasite Relationship of Viruses; Metabolism and Nutrition of Richettsiae.

BLACKWELDER, Richard E. (Ph.D.), Assoc. Prof. of Zool., Dept. of Zool., So. Ill. Univ., Carbondale, Ill. Home Add.: R.F.D., Makanda, Ill. BIOLOGY (PRINCIPLES OF BIOLOGY, CLASSIFICATION OF ANIMALS, BEETLE FAMILY STAPHYLINIDAE). b. Madison, Wis., Jan. 29, 1909. s. Eliot and Jean (Bowersock) B. Edn.: A.B., Stanford Univ., 1931; Ph.D., ibid., 1934. m. Ruth MacCoy, Jan. 3, 1935. Exp.: Walter Rathbone Bacon Travelling Scholar, Smithsonian Instn., 1935-38; Asst. Curator in Chg. of Coleoptera, Am. Mus. of Nat. Hist., N. Y., N. Y., 1939-40; Asst. Curator of Insects, U. S. Natl. Museum, Wash., D. C., 1940-42; Assoc. Curator of Insects, ibid., 1942-54; Assoc. Prof. of Biol., St. John Fisher Coll., 1956-58; Assoc. Prof. of Zool., So. Ill. Univ., 1958—. Hon. Pos.: Secy.-Treas., Soc. of Systematic Zool., 1950-60; Presluent, 1961. Mem.: A.A.A.S.; Pacific Coast Entomol. Soc.; Soc. for Study of Evolution; Calif. Acad. Scis.; Sigma Xi. Contbr. to: Am. Sci. Journals.

BLACKWOOD, Unabelle R. Boggs (Ph.D.), Rsch. Assoc., Poultry Sci. Dept., Ohio State Univ., Columbus, Ohio. Home Add.: 552 B Vermont Place, Columbus 1, Ohio. EXPERIMENTAL BIOLOGIST WITH SPECIAL EMPHASIS ON METABOLIC ANTAGONIST IN ANIMAL DEVELOPMENT. b. Looneyville, W. Va., Aug. 5, 1929. d. Ralph Clay Boggs and Rebecca L. (Boggs) B. Edn.: B.A., Berea Coll., 1952; M.A., Columbia Univ., 1956; Ph.D., Univ. of Md., 1958. m. Ralph O. Blackwood, July 17, 1956. Exp.: Rsch. Asst., Univ. of Md., 1957-59; Rsch. Assoc., Ohio St. Univ., 1959—. Mem.: Soc. Exptl. Biol. and Med.; A.A.A.S.; Am. Soc. of Zool.; N. Y. Acad. of Sci.; Sigma Xi. Contbr. to: Proc. Soc. Exptl. Biol. Med.; Poultry Sci.; Anatomical Record; Federal Proceedings; Jour. Embryol. and Exptl. Morphol.; Am. Zoologist. Areas of Rsch.: Metabolic Antagonists, Developmental Biology, Nutrition.



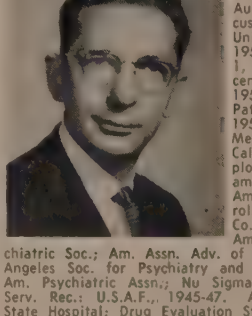
BLAIR, Etcyl Howell (Ph.D.), Gr. Leader, The Dow Chem. Co., Midland, Mich. Home Add.: 4 Crescent Ct., Midland, Mich. ORGANIC SYNTHESIS. b. Wynona, Okla., Oct. 15, 1922. s. T. W. and R. B. (Wilson) B. Edn.: A.B., Southwestern Coll., 1947; M.S., Kans. State Coll., 1949; Ph.D., ibid., 1951. m. Ruth M. Gross, Sept. 4, 1949. c.: David E.; Ronald H.; Kevin L. Exp.: Chemist, Dow Chem. Co., 1951-56; Gp. Leader, ibid., 1956—. Hon. Pos.: Chmn. of Midland Sect. of the Am. Chem. Soc. Mem.: The Am. Chem. Soc.; Am. Assn. Adv. Sci. Contbr. to: Jour. of Org. Chem.; Indust. and Engrng. Chem.; Jour. of Agric. and Food Chem.; Plant Physiol. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Synthesis of Biologically Active Compounds, (Agricultural Chemicals); Organo Phosphorus Compounds.

BLAISDELL, Francis Joseph (Ph.D.), Design Engr. and Human Factors Scientist, Martin-Orlando, Orlando, Fla. Home Add.: 200 E. Lucerne Circle, Orlando, Fla. PSYCHOLOGY; RESEARCH; TEACHING MACHINES AND PROGRAMMED LEARNING. b. Chicago, Ill., Dec. 14, 1913. s. Frank Thomas and Alice (Aiken) B. Edn.: B.A., The Univ. of Chicago, 1948; M.A., ibid., 1956; Ph.D., Ill. Inst. of Technol., 1959. Exp.: Instr., Roosevelt Univ., Chicago, Ill., 1957-59; Rsch. Sci., HRu-USAAD, Ft. Bliss, Tex., 1959-60; Rsch. Engr., Douglas Aircraft, Santa Monica, Calif., 1960-61; Design Engr., Martin-Orlando Corp., 1961—. Mem.: Am. Soc. of Trng. Dirs.; Am. Psychol. Assn.; Am. Assn. Univ. Prof.; Am. Rocket Soc.; Psychometric Soc.; Am. Assn. Sci.; Human Factors Soc.; Phi Kappa Psi. Contbr. to: Jour. of Abnormal and Social Psychol. Serv. Rec.: U. S. Army, 1951-55; 1941-46. Areas of Rsch.: Programmed Learning and Teaching Machines; Human Decision Behavior.

BLALOCK, Alfred (M.D.), Prof. of Surg. and Dir., Dept. of Surg., The Johns Hopkins Univ., Surgeon-in-Chf., Johns Hopkins Hosp., Baltimore 5, Md. SURGERY. b. Culloden, Ga., Apr. 5, 1899. s. George Zadock and Martha (Davis) B. Edn.: A.B., Univ. of Ga., 1918; M.D., Johns Hopkins Univ. Schl. of Med., 1922. Hon. Deg.: Sc.M., Yale Univ., 1946; M.D., Honoris Causa, Univ. of Turin, 1951; Sc.D., Univ. of Rochester, 1951; Sc.D., Univ. of Chicago, 1951; Sc.D., Lehigh Univ., 1953; LL.D., Hampden-Sydney Coll., 1954; Sc.D., Emory Univ., 1954; Sc.D., Georgetown Univ., 1959. m. Mary O'Bryan, Oct. 27, 1930 (dec). m. 2nd, Alice Seney Waters, Nov. 12, 1959. c.: William Rice; Mary Elizabeth; Alfred Dandy. Exp.: Intern and Asst. Resident Surg., Johns Hopkins Hosp., Baltimore, Md., 1922-25; Resident Surg., Vanderbilt Univ. Hosp., Nashville, Tenn., 1925-26; Instr. in Surg., ibid., Schl. of Med., 1925-27; Asst. Prof. of Surg., ibid., 1928-30; Assoc. Prof., ibid., 1930-38; Prof., ibid., 1938-41; Prof. of Surg. and Dir., Dept. of Surg., Johns Hopkins Univ. Schl. of Med., Baltimore, Md., 1941—; Surgeon-in-Chf., Johns Hopkins Hosp., ibid., 1941—. Hon. Pos.: Hon. Assoc. Consultant Surgeon to Guy's Hosp., London, 1947; Taub Visit. Prof. of Surg., Baylor Univ., 1957; Visit. Prof. of Surg., Univ. of Va., 1957; Visit. Prof. of Surg., UCLA Schl. of Med., Los Angeles, 1958; Visit. Prof. of Surg., Univ. of Rochester, 1959; George A. Ball Visit. Prof. of Surg., Ind. Univ. Med. Ctr., 1961; Visit. Lectr. on Surg., Harvard Coll., 1961; Visiting Surgeon-in-Chf. Pro Tem, Peter Bent Brigham Hosp., 1961; Visiting Prof., Surgery, Med. Coll. of Georgia, 1962. Mem.: Natl. Acad. of Sci.; Royal Coll. of Surgeons of England. Hon. Fellow: Academie des Sci., Institut de France, Associe etranger; Royal Coll. of Surgeons of Edinburgh, Hon. Fellow Assn. of Surgeons of Great Britain and Ireland, Hon. Fellow, Royal Soc. of Med.; Hon. Fellow, Royal Faculty of Physicians and Surgeons of Glasgow; Hon. Fellow, Soc. of Thoracic Surgeons of Great Britain and Ireland; Hon. Mem., Brit. Cardiac Soc.; Hon. Mem., Am. Clin. and Clin. Assn.; Hon. Mem., Chicago Surgical Soc.; Hon., Greek Surgical Soc.; Hon. Fellow, Harvey Soc.; Hon., Horse Shoe Club; Hon. Mem., Soc. Brasileira de Cardiologia; Hon., Soc. of Univ. Surgeons; Acad. de Chirurgie; L'Acad. Natl. de Med.; Argentine Acad. of Surg.; Belgian Soc. of Surg.; Coll. Brasileiro de Cirurgioes; Royal Acad. of Med. of Belgium; Academie de Med.; Academie de Chirurgie, Foreign Assoc.; Buffalo Surgical Soc.; Am. Coll. of Cardiology; Allen O. Whipple Surgical Soc.; A.A.A.S.; Am. Assn. for Thoracic Surgery (Pres., 1950); Am. Bd. of Surg.; Am. Coll. of Surgeons (Pres., 1955); Am. Med. Assn.; Am. Soc. for Clin. Investigation; Am. Surgical Assn. (Pres., 1956—); Bd. of Thoracic Surg.; Soc. of Clin. Surg. (Pres., 1951-52); Soc. for Vascular Surg. (Pres., 1952); Am. Acad. of Arts and Scis.; Am. Heart Assn.; Am. Members of the Institut of France; Halsted Soc.; James IV Surgical Assn. Sou. Surgical Assn. (Pres., 1949); Internatl. Soc. of Surg.; Internatl. Surgical Group; Alpha Omega Alpha; Nu Sigma Nu; Sigma Chi; Phi Beta Kappa. Author: Prin. of Surgical Care: Shock and Other Considerations, 1940. Contbr. to: Sci. Articles on Traumatic Shock, Hypertension, Myasthenia Gravis, Congenital Heart Disease, Acquired Heart Disease; Annals of Surg.; Arch. of Surg.; Surg., Surg., Gynecol., and Obsts.; Jour. of Thoracic Surg.; Jour. of Am. Med. Assn. Gen. Int.: Rsch. Medal, Sou. Med. Assn., 1940; Gordon Wilson Medal, 1941; Chevalier de La Republique Francaise Order Natl. de la Legion de Honneur, 1947; Charles Mickle Fellowship, 1947; Passano Award, 1948; Rene Leriche Award, 1949; Matas Award, 1950; A.M.A. Distinguished Serv. Award, 1953; Internatl. Feltrinelli Prize for 1954; Lasker Award, 1954; Roswell Park Medal, 1955; Natl. Order of Merit "Carlos J. Finlay"—Officer's Degree, from Govt. of Cuba, 1956; Holland Soc. of N. Y., Potomac Branch, Award, 1959; Gairdner Award, 1959; Modern Medicine Award for Distinguished Achievement, 1960; The Johns Hopkins Hosp. Distinguished Serv. Award, 1960; Alumni Merit Award, Univ. of Ga., 1960.

BLANCHARD, William Henry (Ph.D.), Human Factors Scientist, System Devel. Corp., Santa Monica, Calif. Home Add.: 19756 Gilmore St., Woodland Hills, Calif. CLINICAL PSYCHOLOGY. b. St. Paul, Minn., Mar. 25, 1922. s. Charles Edgar and Ethel Rachaeline (Gurney) B. Edn.: B.S., Ia. St. Coll., 1944; Ph.D., Univ. of Sou. Calif., 1954. m. Martha Ida Lang, Aug. 11, 1947. c.: Gregory; Mary. Exp.: Dir. of Rsch., Reception Cent. of Calif. Youth Authority, Norwalk, Calif., 1954-57; Instr., Univ. of Calif. at L. A., Norwalk Ext., 1956-57; Scientist, System Devel. Corp., 1957—. Hon. Pos.: Clinical Assoc., Univ. of Sou. Calif., 1956-57. Mem.: Am. Assn. for Adv. of Sci.; Am. Psychol. Assn.; Western Psychol. Assn.; L. A. Co. Psychol. Assn.; Calif. State Psychol. Assn. Contbr. to: American Imago; Jour. of Social Psychol.; Jour. of Correctional Psychol.; Am. Jour. of Nursing. Serv. Rec.: U. S. Marines, 1944-45. Areas of Rsch.: Psychodynamics of Jean-Jacques Rosseau, Contribution of Psychology to Epistemology, Juvenile Delinquency, Intellectual Inhibition.

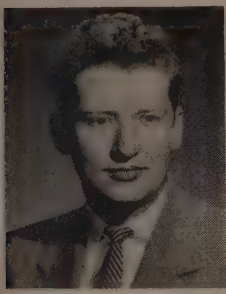
BLANCHETTE, James Edward (M.D.), Acting Chief of Professional Edn.; Asst. Supt., Psychiatric Services, Patton State Hosp., (Part Time, Private Practice), Patton, Calif. Home Add.: PTPP - 233 Cajon St., Redlands, Calif. PSYCHIATRY. b. Syracuse, N. Y., Aug. 28, 1924. Edn.: B.A., Syracuse Univ., 1950; M.D., State Univ. of N. Y., Syracuse, N. Y., 1953. m. Shirley R. Brisco, Sept. 1, 1948. Exp.: Intern, St. Vincent's Hosp., N. Y. City, N. Y., 1953-54; Psychiatric Residency, Patton State Hosp., Patton, Calif., 1954-55; Psychiatric Residency, Metropolitan St. Hosp., Norwalk, Calif., 1957-59. Hon. Pos.: Diplomate, Natl. Bd. of Med. Examiners; Diplomate, Psychiatry, Am. Bd. of Psychiatry and Neurol., Inc. Mem.: San Bernardino Co. Med. Soc.; Calif. Med. Soc.; Am. Med. Soc.; Sou. Calif. Psychiatric Soc.; Am. Assn. Adv. of Sci.; N. Y. Acad. of Sci.; Los Angeles Soc. for Psychiatry and Neurol.; Pan-Am. Med. Assn.; Am. Psychiatric Assn.; Nu Sigma Nu; Phi Mu Alpha Sinfonia. Serv. Rec.: U.S.A.F., 1945-47. Areas of Rsch.: Suicides in a State Hospital; Drug Evaluation Studies.



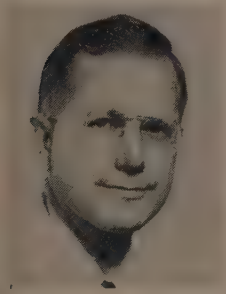
BLAU, Julian Herman (Ph.D.), Prof. of Math., Antioch Coll., Yellow Springs, Ohio. Home Add.: 1335 Meadow Lane, Yellow Springs, Ohio. MATHEMATICS. b. N. Y. C., Dec. 23, 1917. s. Alexander and Ida (Gottlieb) B. Edn.: B.S., City Coll. of N. Y., 1938; M.S., N. Y. Univ., 1939; Ph.D., Univ. of N. C., 1948. m. Marcelle Rodbart, Mar. 1, 1948. c.: David; Gary. Exp.: Instr., S. D. State Coll., City Coll. of N. Y., M.I.T., 1945-49; Asst. Prof., Pa. State Univ., 1949-52; Assoc. Prof., Antioch Coll., 1952—; Chmn., Dept. of Math., ibid., 1957-61. Mem.: Am. Mathematical Soc.; Mathematical Assn. of Am.; Econometric Soc.; Indian Mathematical Soc.; A.A.U.P.; Sigma Xi. Contbr. to: Proc. of Am. Mathematical Soc.; Am. Mathematical Monthly; Econometrica; Fundamenta Mathematicae. Serv. Rec.: U. S. Army Air Force, 1943-45. Areas of Rsch.: Theory of Games; Mathematical Econs.; Mathematical Psychol.; Measure Theory.

LASS, Gerhard Alois (Ph.D.), Prof. of Phys., Univ. of Detroit, Detroit, Mich. Home Add.: 16636 Wildemere, Detroit 21, Mich. THEORETICAL PHYSICS. b. Germany, Mar. 12, 1916. s. Gustav Alois and Anna Maria (Mehnert) B. Edn.: Ph.D., Univ. Leipzig, Ger., 1943. m. Barbara Siegert, July 16, 1945. c.: Andreas; Marcus; Eva Maria; Anna Maria; Peter. Exp.: Asst., Inst. of Theor. Phys., Univ. Leipzig, 1939-43; Scientific Adviser, Siemens & Halske, Berlin, 1943-45; Math., Phys. Tchr., Oberralschule, Nuremberg, 1946-47; Dozent, Math., Phys., Ohm-Polytechnikum, Nuremberg, 1947-49; Asst. Prof., Coll. of St. Thomas, 1949-51; Assoc. Prof., Univ. of Detroit, 1951-61; Prof., ibid., 1961—. Mem.: Am. Physical Soc.; Math. Assn. of Am.; N. Y. Acad. of Scis.; Sigma Xi. Areas of Rsch.: Quantum—Theory of Fields; Philosophy of Sci.

BLAZER, John Allison (Mr.), Psychologist, Suite 8, Profl. Bldg., 8220 Westchester Dr., Dallas, Tex. Home Add.: 708 N. Graycroft Ave., Madison, Tenn. CLINICAL PSYCHOLOGY. b. Cincinnati, Ohio, April 18, 1930. s. John Payne and Henryetta (Rowland) B. Edn.: B.Acct., Andrew Jackson Univ., 1954; A.A., Cumberland Univ., 1958; Univ. of Tenn., 1958; B.S., Coll. of William and Mary, 1959; M.S., Richmond Prof. Inst. of the Coll. of William and Mary, 1960; Vanderbilt Univ., summer, 1960; Univ. of Miami, 1960-61; Ph.D., Free Protestant Univ. (England), 1962. Exp.: Public Acct., Tax Consult., 1953-56; Grad. Student, Dept. of Psychol., Grad. Schl., Univ. of Miami, Fla., 1960-62; Psychol., Dallas, Tex., 1962—. Mem.: A.A.-A.S.; Am. Sociol. Assn.; Am. Acad. Pol. and Soc. Sci.; Brit. Assn. Adv. Sci.; The Natl. Coun. on Family Relations; Am. Gen. Assn.; Am. Assn. for Humanistic Psychol.; Internatl. Assn. Hypno.; Am. Hist. Assn.; Am. Hum. Assn.; Soc. for the Scientific Study of Sex; Psi Chi; Arcane Soc.; Alpha Sigma Chi; Xi Gamma Iota. Contbr. to: Marriage and Family Living; Jour. of Humanistic Psychol.; Jour. of Gen. Psychol. Serv. Rec.: U. S. Naval Reserve, 1947-48; U. S. Marine Corps, 1948-53. Listed in: Who's Who Among Students in Am. Univs. and Colls. Areas of Rsch.: Complementary Needs and Marital Happiness; Fantasy; Abnormal Psychology; Psychotherapy; Psychodiagnostics; Psychometrics; Humanistic Psychology.



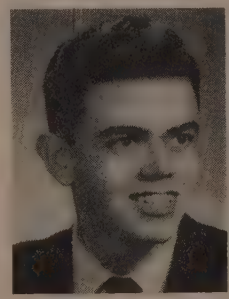
BLESSEY, Walter Emanuel (Mr.), Head, Dept. of Civil Engrng., Tulane Univ., New Orleans 18, La. Home Add.: 11 Forest Ave., Metairie, New Orleans, La. CIVIL ENGINEERING. b. New Orleans, La., Oct. 2, 1919. s. Sidney H., Sr., and Carrie (Grabert) B. Edn.: B.E., Tulane Univ., 1940; M.S., ibid., 1943. m. Ruth Adele Peterson, Nov. 11, 1941. c.: Walter Emanuel, Jr. Exp.: Asst. S.W. La. Dist. Engr., United Gas Pipe Line Co., 1940-41; Asst. City Engr., City of New Orleans, La., 1941-42; Asst. Prof., Tulane Univ., 1942-45; Assoc. Prof., ibid., 1946-56; Consulting Engr., Walter E. Blessey, New Orleans, La., 1949—; Prof., Tulane Univ., 1956-59; Head, Civil Engrng. Dept., ibid., 1959—. Hon. Pos.: Natl. Comm., Joint Am. Concrete Inst.-Am. Soc. of Civil Engrs. Comm.; A.C.I. Comm.; A.S.C.E. Engrng. Mechanics Div. Comm.; Am. Inst. of Steel Const. Comm. responsible for new specification for steel building construction. Mem.: A.S.C.E.; L.E.S.; A.C.I.; A.S.E.E.; Phi Kappa Sigma; Tau Beta Pi; Pickwick Club; Roundtable Club; New Orleans Country Club; Sigma Xi; Omicron Delta Kappa. Author: Relation of Soil Mechanics to Foundation Design, 1942. Contbr. to: Am. Soc. Engrng. Edn. Jour.; Civil Engrng. Serv. Rec.: U.S.N.R., W.W. II. Areas of Rsch.: Prestressed Concrete, Steel and Foundation Design.



BLOCK, George Edward (M.D.), Asst. Prof. of Surgery, 950 E. 59th St., Univ. of Chicago, Chicago, Ill. Home Add.: Box 1106, Joliet, Ill. SURGERY. b. Joliet, Ill., Sept. 16, 1926. s. Edward and Florence (Hyland) B. Edn.: M.D., Univ. of Mich., 1951; M.S., Surg., ibid., 1958. c.: George E., Jr.; John R. Exp.: Instr., Univ. of Mich., Ann Arbor, Mich., 1958-60; Asst. Prof., Surg., ibid., 1960; Asst. Prof., Surg., Univ. of Chicago, 1960—. Mem.: Am. Coll. of Surgeons; Diplomat Am. Bd. of Surg.; Frederick A. Coller Surg. Soc.; Chicago Surg. Soc.; Ill. Chicago and Am. Med. Assn.; Ill. Surg. Soc.: Nu Sigma Nu; Sigma Xi. Contbr. to: Annals of Surgery; Surg.; Surg., Gynecol. and Obsts.; Jour. of Lab. and Clin. Med.; Archives of Surg. Serv. Rec.: U. S. Army Reserve, 1953-55. Areas of Rsch.: Mammary Cancer; Malignant Melanoma.

BLOCH, Robert Gustav (M.D.), Chf., Div. of Pulmonary Diseases, Montefiore Hosp., Bronx 67, N. Y. Home Add.: 5 East 73rd St., N. Y. 21, N. Y. INTERNAL MEDICINE. b. Nurnberg, Ger., Mar. 3, 1894. s. Sally G. and Gutta (Rosenberg) B. Edn.: M.D., Munich Univ., 1922. m. Charlotte Donnerstag, 1925. c.: Francis Adolph; Peter Roberts. Exp.: Internship, Res., Univ. Clinics, Univ. of Munich, 1922; Resident, Montefiore Hosp., Bedford Hills, N. Y., 1923-24; Resident, Municipal Tuberc. San., Chicago, Ill., 1925-26; Instr., Surgery, Univ. of Ill., 1926-27; Instr., Med., Univ. of Chicago, 1927-28; Asst. Prof. of Med., ibid., 1928-30; Assoc. Prof., Med., ibid., 1930-42; Prof., Med., ibid., 1942-51; Chf., Div. of Pulmonary Dis., Montefiore Hosp., N. Y., 1951—; Clinical Prof. of Med., Ret., Coll. of Physicians and Surgeons, Columbia Univ., 1951-59. Mem.: Soc. Clin. Invest.; Am. Assn. Thoracic Surg.; Am. Thoracic Soc.; Am. Coll. Physicians; Soc. Exptl. Biol. and Med.; N. Y. Acad. of Sci.; Central Soc. Clin. Rsch.; A.M.A.; Sigma Xi. Contbr. to: Am. Rev. of Tuberculosis; Am. Jour. of Roent.; Ann. of Int. Med.; Proc. Soc. for Exptl. Biol. and Med.; Jour. of Thor. Surg. Areas of Rsch.: Diseases of the chest, especially Tuberculosis.

BLOCK, Jacob (Ph.D.), Senior Research Analyst, Olin Mathieson Chem. Corp., New Haven, Conn. Home Add.: 404 Hill Street, Hamden, Conn. ANALYTICAL CHEMISTRY. b. Brooklyn, N. Y., March 8, 1936. s. Abraham and Betty (Feuer) B. Edn.: B.S., Brooklyn Coll. of the City, Univ. of N. Y., 1956; Ph.D., Case Instit. of Technol., 1961. Exp.: Tchng. Asst., Syracuse Univ., Syracuse, N. Y., 1956-57; Grad. Asst., Case Inst. of Tech., Cleveland, Ohio, 1957-61; Sr. Rsch. Analyst, Olin Mathieson Chem. Corp., New Haven, Conn., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi. Contbr. to: Chemist-Analyst; Hungarica Chimica Acta. Areas of Rsch.: Coprecipitation; Precipitation from Homogeneous Solution; Inorganic Analysis.



BLOCK, Virginia Lee (Ed.D.), Prof. of Edn. and Psychol., San Francisco St. Coll., 1600 Holloway Ave., San Francisco 27, Calif. b. Asbury Park, N. J., July 4, 1902. d. Frank J. and Sara (Spiro) B. Edn.: A.B., Rtugers Univ., 1924; M.A., Columbia Univ., 1928; Grad. Study, Stanford Univ., 1934-36, 1947; Ed.D., ibid., 1950. Exp.: Social Worker, Red Cross, New Brunswick, N. J., 1921-24; Social Worker, Henry St. Settlement House, N. Y. City, 1924; Instr. of Eng., Drama, Latin, Bd. of Edn., Garfield, N. J., 1924-28; Head of Eng. Dept., Bd. of Edn., Hasbrouck Heights, N. J., 1929-33; Rsch. Asst., Dept. of Edn., Stanford Univ., Calif., 1933-36; Dir. Guidance Dept., Seattle Publ. Schls., Seattle, Wash., 1936-50; Assoc. Prof., Univ. of Wash. Ext. Serv., 1946-50; Assoc. Prof. of Edn. and Psychol., San Francisco St. Coll., 1950-54; Prof. of Edn. and Psychol., ibid., 1954—; Head, Guidance and Counseling Dept., ibid., 1954—; Dir., N.D.E.A. Title V Adv. Guidance and Counseling Inst., 1961. Hon. Pos.: Pres., Seattle Supts. and Supvrs. League; Bd. of Dirs., Chmn., Membership Comm., Chmn., Publ. Affairs Comm., Soroptomist Club, San Francisco; Deleg. to the W.E.A. Assembly; Chmn., Rsch. Comm. and Former Pres., Wash. Alum. Chapt. and Upsilon Chapt. of Pi Lambda Theta; Bd. of Dirs., Chmn., Student Affairs Comm., Starr King Schl., Berkeley, Calif.; Legislative Chmn., Bd., Northern Calif. Guidance Assn.; Legislative Chmn., Chmn., Internatl. Relations Comm., Chmn., Higher Edn. Comm., A.A.U.W.; Diplomate, Am. Bd. of Examiners in Prof. Psychol.; Bd., Family and Children's Div., Calif.; Delegate, 4th Annual Conf., Chmn., Nominating Comm., Internatl. Coun. of Psychologists; Natl. Assn. of Guidance Supvrs. and Counselors Trainers; Bd. of Dirs., Wash. Soc. for Mental Hygiene, Wash. Alumnae Chapt., Pi Lambda Theta, Family Planning Ctr., Big Sister; Pres. Forum; N. W. Voc. Guidance Assn.; In-Serv. Training Comm., First Unitarian Ch., San Francisco; Bd. of Dirs., Internatl. Coun. of Psychologists. Mem.: Am. Psychol. Assn., Fellow; Soc. for Rsch. in Child Devel.; A.A.U.P.; Calif. St. Employees Assn.; Assn. of Calif. St. Coll. Instrs.; Natl. Rehab. Assn.; Calif. Edn. Rsch. Assn.; N.E.A.; Wash. Edn. Assn.; Admin. Women in Edn.; Natl. Vocational Guidance Assn.; Calif. Assn. of Women Deans and Vice-Principals; Western Psychol. Assn.; Calif. Psychol. Assn.; San Francisco Psychol. Assn.; Am. Personnel & Guid. Assn.; Calif. Tchrs. Assn.; Stanford Edn. Club; Natl. Coun. on Measurements Used in Edn.; Am. Coll. Personnel Assn.; Calif. Personnel & Guidance Assn.; Internatl. Coun. of Psychologists, Fellow; A.A.A.S., Fellow. Editor: Pi Lambda Theta Jour.

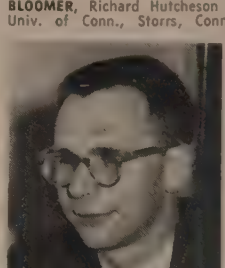
BLOOD, Frank Raymond (Ph.D.), Dir. of Clin. Labs., Prof. of Biochem., Vanderbilt Univ., Nashville, Tenn. Home Add.: 3705 Woodmont Lane, Nashville, Tenn. TOXICOLOGY. b. Denver, Colo., Sept. 13, 1910. s. Raymond F. and Rose (Bannick) B. Edn.: B.S., Univ. of Denver, 1934; Ph.D., Univ. of Mich., 1940. m. Ethel Peterson, 1935. c.: Sally Sue. Exp.: Grad. Asst., Univ. of Denver, 1934-35; Biochemist, Haskell Lab., E. I. DuPont de Nemours Co., Wilmington, Dela., 1935-36; Grad. Asst., Univ. of Mich., 1936-40; Chf., Biochemist, Haskell Lab., E. I. DuPont de Nemours, Wilmington, Del., 1940-42; Asst. Prof., Univ. of Denver, 1942-48; Assoc. Chmn., Dept. of Chem., ibid., 1947-50; Prof., ibid., 1948-50; Consultant, Industrial Toxicology, Gates Rubber Co., Denver, Colo., 1949-50; Consultant, Film Div., Olin Chem. Corp., New Haven, Conn., 1950—; Assoc. Prof. of Biochem., Vanderbilt Univ., 1950-53; Prof., ibid., 1953—; Dir. of Clin. Labs., Hosp., ibid., 1959—; Assoc. Prof., Clin. Pathol., ibid., 1960—. Hon. Pos.: Chmn., Toxicol. and Safety Evaluations Sect., Gordon Rsch. Conf. Mem.: Am. Physiol. Soc.; A.C.S.; Soc. Exptl. Biol. and Med.; A.A.A.S.; Am. Assn. Clin. Chem.; Soc. of Toxicol.; Sigma Xi; Phi Lambda Upsilon. Author: Laboratory Manual for Mammalian Physiology, 2nd Ed., 1954. Contbr. to: Jour. Biol. Chem.; Am. Jour. Physiol.; Jour. Toxicol. Appl. Pharmacol.; Proc. Soc. Exptl. Biol. and Med. Areas of Rsch.: High Altitude Physiol.; Toxicol.; Lipid Metabolism.

BLOODWORTH, James Morgan Bartow, Jr. (M.D.), Prof. of Pathol., Univ. of Wis., 426 N. Charter St., Madison 6, Wis. Home Add.: 4401 Woods Edn., Madison 11, Wis. MEDICINE. b. Atlanta, Ga., Feb. 21, 1925. s. James Morgan, Sr. and Elizabeth Westfield (Dimmock) B. Edn.: M.D., Emory Univ., 1948. m. Jean Stone, Nov. 26, 1947. c.: Lowell Ann; Joyce Lynn; Elizabeth Carol. Exp.: Instr., Columbia Univ., Dept. of Pathol., N. Y., 1949-50; Instr. to Assoc. Prof., Ohio State Univ., 1951-60; Prof. of Pathol., ibid., 1960-62; Prof. of Pathol., Univ. of Wis., 1962—. Mem.: Am. Assn. of Patholts. and Bacteriolts.; Am. Soc. for Exptl. Pathol.; The Histochem. Soc.; The Endocrine Soc.; Am. Diab. Assn.; Soc. for Exptl. Biol. and Med.; Am. Fed. for Clin. Rsch.; Internatl. Acad. of Pathol.; Am. Soc. for Clin. Pathol.; Am. Assn. of Neuropatholts.; Am. Soc. for Cell Biol.; Am. Heart Assn.; Coll. of Am. Patholts.; Sigma Nu; Phi Chi; Gyro Internatl. Contbr. to: Jour. of the Am. Diabetes Assn.; Achives of Int. Med.; Diabetes; Exptl. Eye Rsch.; Metabolism; Jour. of the Am. Med. Assn.; Clin. Med.; Endocrinol.; Lab. Investn.; Cancer; Am. Jour. of Pathol.; Acta Histochemica. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Electron Microscopy Technology and Degenerative Vascular Disease, especially Diabetes Mellitus, Pancreatic Disease and Ulcerogenic Tumors.

BLOOM, Fredrick Kenneth (Mr.), Manager, Baltimore Lab., Rsch. Div., Armco Steel Corp., 3400 E. Chase St., Baltimore 13, Md. Home Add.: 1223 Robin Hood Circle, Baltimore 4, Md. Metallurgy. b. Calgary, Alberta, Can., Dec. 31, 1914. s. Chester A., Sr. and Margaret E. (Forster) B. Edn.: B.S., Geo. Washington Univ., 1935. m. Elizabeth Hortens, Davis, Sept. 11, 1936. c.: Fredrick Kenneth, Jr. Exp.: Supvsng. Rsch. Metallurgist, Armco Steel Corp., Baltimore, Md., 1935-58; Mgr., Baltimore Lab., Rsch. Div., ibid., 1959—. Hon. Pos.: Chmn., Tech. Com. on Stainless Steels of the Am. Iron and Steel Inst.; Chmn., Materials Advisory Bd. Tech. Com. Mem.: Am. Chem. Soc.; Am. Soc. for Metals; Am. Phys. Soc.; Am. Soc. for Testing Materials; British Iron & Steel Inst.; Soc. of Automotive Engrs.; Boy Scouts of Am.; Baltimore Assn. of Commerce. Author: Stress Corrosion Cracking of Austenitic Chromium-Nickel Stainless Steels, 1960. Contbr. to: Metal Progress; Trans., A.S.M.; Special Tech. Publications, A.S.T.M.; Corrosion. Areas of Rsch.: Physical Metallurgy of Stainless Steels and High Alloys.

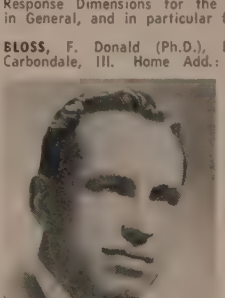
BLOOMFIELD, Arthur Irving (Ph.D.), Prof. of Econs. and Finance, Univ. of Pa., Philadelphia 4, Pa. Home Add.: 2101 Chestnut St., Philadelphia 3, Pa. ECONOMICS. b. Montreal, Can., Oct. 2, 1914. s. Samuel and Hanna (Brown) B. Edn.: B.A., McGill Univ., 1935; M.A., ibid., 1936; Ph.D., Univ. of Chicago, 1942. Exp.: Economist, Fed. Res. Bank of N. Y., 1941-58; Staff Mem., Foreign Econ. Admin., 1944-45; Adviser, Bank of Korea, 1949-50, 1951-52, 1956; Officer of Bank, Federal Reserve Bank of N. Y., 1953-58; Staff Member, President's Comm. on Foreign Economic Policy, 1953; Consultant to Internatl. Cooperation Administration, Indochina, 1953-54; Korea, 1960; Prof. of Econs. and Finance, Univ. of Pa., 1958—. Hon. Pos.: Hd. of U. S. Delegation of Working Party of U. N. Economic Commission for Asia and the Far East, 1954. Mem.: Am. Econ. Assn. Author.: Capital Imports and the American Balance of Payments, 1934-39; Banking Reform in South Korea, 1951; Speculative and Flight Movements of Capital in Postwar Finance, 1954; Monetary Policy under the International Gold Standard: 1880-1914, 1959. Contbr. to: A Econ. Rev.; Canadian Jour. of Economics and Polit. Sci.; Quarte Jour. of Economics; Rev. of Economics and Statistics; Princet Essays in Internatl. Finance. Areas of Rsch.: Internatl. E nomics History of Economic Thought; Monetary Theory a Policy.

BLOOMER, Richard Hutcheson (Ed.D.), Asst. Prof., Schl. of Ed Univ. of Conn., Storrs, Conn. Home Add.: R.D. #2, #22 Willimantic, Conn. EDUCATION. PSYCHOLOGY. b. Rochester, N. Dec. 31, 1925. s. Gifford and Dorotna Hutcheson (Bradl B. Edn.: B.S., Columbia Uni 1949; M.A., Tchrs. Coll., Colu bia Univ., 1952; Ed.D., Univ. Southern Calif., 1959. m. Carol Mitchell of Wichita, Kans., Au 1955. d. Donald I. and Katheri Reed Mitchell. c.: Michael Bra ford; Jennifer. Exp.: Rsc Asst., Board of Higher Edn., Y. C., N. Y.; Instr. in Edn., Un of Wichita, Wichita, Kans., 195 55; Assoc. Prof. of Edn., Sta Univ. Tchrs. Coll., Geneseo, N. 1956-61; Sr. Scientist, The Ge Wash. Univ., Wash., D. C., 196 62 Mem.: A.A.A.S.; A.E.R A.S.H.A.; E.P.A.; N.S.S.E.; A

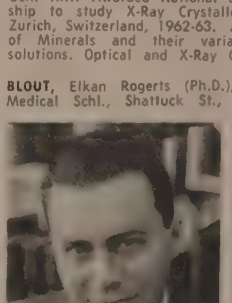


Assn. of Univ. Profs.; Natl. Edn. Assn.; A.P.A.; Internatl. Rea ing Assn.; Phi Delta Kappa. Contbr. to: Journal of Educ tional Rsch.; Personnel Jour.; Jour. of Speech and Hearing Di orders; The Reading Tchr.; Elem. Schl. Jour.; Jour. Development Reading. Ed.D. Dissertation: Some Variables Relating to t Spelling Difficulty of Words. Armed Service Rec.: U. S. Arm 1943-46. Travel: England; France; Germany; Luxemborg; Panam Philippines; Mexico; Canada. Hobbies: Farming; Areas of Rsch The Development of Learning Theory Aupplied to Simulus a Response Dimensions for the Sequencing of Learning Materia in General, and in particular for the learning of language.

BLOSS, F. Donald (Ph.D.), Prof. of Geol., Sou. Ill. Univ Carbondale, Ill. Home Add.: 902 Taylor Dr., Carbondale, I MINERALOGY. b. Chicago, Il May 30, 1920. s. Fred Mart and Adele C. (Ludwig) B. Edn B.S., Univ. of Chicago, 194 M.S., ibid., 1949; Ph.D., ibid 1951. m. Louise Land, Mar. 1946. c.: Terry; Janet; Jill. Exp Asst. Prof., Univ. of Tenn., 195 55; Assoc. Prof., ibid., 1955-5 Assoc. Prof., Sou. Ill. Univ., 195 61; Prof., ibid., 1961—. Mem Geol. Soc. of Am.; Mineral. So of Am.; The Mineral. Soc., Lo don; Mineral. Assn. of Canad Phi Beta Kappa; Sigma Xi. Au thor: Introduction to the Metho of Optical Crystallography, 196 Contbr. to: Encycl. Britannic Am. Mineralogist; Bull., Geol. So of Am.; Am. Jour. of Sci.; Jou of Geol.; Jour. of Sedimenta Petrology; Southeastern Geol. Serv. Rec.: U. S. Army, 1942-4 Gen. Int.: Awarded National Sci. Fdtn. Sr. Postdoctoral Fellow ship to study X-Ray Crystallography at Cambridge Univ. an Zurich, Switzerland, 1962-63. Areas of Rsch.: Physical Properti of Minerals and their variation with composition in soli solutions. Optical and X-Ray Crystallography.



BLOUT, Elkan Rogerts (Ph.D.), Prof. of Biol. Chem., Harvar Medical Schl., Shattuck St., Boston 15, Mass. Home Add 111 Fletcher Rd., Belmont 7 Mass. CHEMISTRY. b. N. Y. C July 2, 1919. s. Eugene an Lillian (Sroge) B. Edn.: A.B Princeton, 1939; Ph.D., Columbi Univ., 1942. m. Joan Dreyfus Aug. 27, 1939. c.: James; Su san; William. Exp.: Natl. Rsch Council Fellow, Harvard Univ 1942-43; Rsch. Div., Polaroi Corp., 1943—; Assoc. Dir. o Rsch., ibid., 1948-58; Vice Pres and Gen. Mgr. of Rsch., ibid 1958-63; Consult., ibid., 1963 Research Assoc. in Pathology Harvard Med. Schl., 1950-52 1957-60; Rsch. Assoc., Chil dren's Med. Center, Boston, 1950 52, 1957—; Consultant in Chem istry, ibid., 1952-57; Lectr. o Biophysics, Harvard Med. Schl



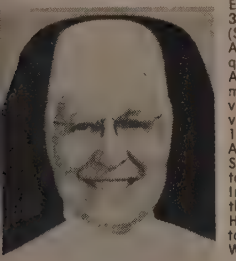
1960-62; Prof. of Biol., Chem., Harvard Med. Schl., 1962— Mem.: Fellow, N. Y. Acad. of Sci.; Fellow, Am. Acad. of Arts an Sci.; Fellow, A.A.A.S.; Optical Soc. of Am.; Advisory Bd., Jour of Polymer Sci.; Am. Chem. Soc.; Chem. Soc. Contbrng. Author Advances in Biological and Medical Physics, 1953; Physical Meth ods of Organic Chemistry, 1954; Fourth Internatl. Congress of Bio chemistry, 1959; Optical Rotatory Dispersion, 1960; Physical Meth ods of Organic Chemistry, 1960. Contbr. to: Jour. Am. Chem Soc.; Journ of the Optical Soc. of Am.; Nature; Sci.; Jour. o

olymer Sci.; Biochimica et Biophysica Acta; Proc. of the Natl. cad. of Sci.; Comptes Rendus. Areas of Rsch.: Biochemistry; iophysics; Synthetic Organic Chemistry; Polypeptides and Proeins.

BLUM, Arthur M., (Mr.), Secretary of Coll., Point Park Jr. Coll., ittsburgh 22, Pa. Home Add.: 230 Orchard Dr., Pittsburgh 28, a. SPEECH PATHOLOGY; COUNSELING AND GUIDANCE. b. Brooklyn, N. Y., Aug. 29, 1934. s. Albert R. and Lucy (Tax) B. dn.: A.B., Univ. of Pa., 1956; M.S., Univ. of Pittsburgh, 1958. n. Joanne L. Finkelhor, June 14, 1959. c.: Sherry Ruth. Exp.: onsultant, Bureau of Measurement and Guid., Carnegie Inst. f Tech., Pittsburgh, Pa., 1958-59; Clin. Supvr., Speech Clinic, niv. of Pittsburgh, Pittsburgh, Pa., 1958-60; Instr., ibid., 1959-0; Secy. of Coll., Point Park Jr. Coll., 1961—. Mem.: Am. peech and Hearing Assn., Advanced Clinical Cert.; A.A.U.P.; .A.A.S.; Am. Assn. for Cleft Palate Rehabilitation; Pa. Speech ssn.; Internatl. Assn. for Logopedics and Phoniatrics; Speech ssn. of Eastern States; N. Y. Soc. for Speech and Voice; Phi lpha; Mason; DeMolay. Contbr. to: Pa. Speech Assn.; Am. peech and Hearing Assn. Areas of Rsch.: Stuttering and Allied peech Disorders; Effects of White Noise on Delayed Auditory eedback Response—Current Research Electromyographic Analysis f Artificially Produced Speech Disturbance.

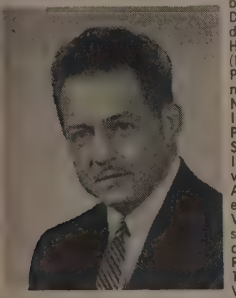
BLUM, George Walter, Manager, Plastics and Organic Chemicals rocess Devel., Goodyear Tire & Rubber Co., Akron, Ohio. PLASTICS AND POLYMERS: PROCESS DESIGN. b. Pittsburgh, Pa., Aug. 3, 1912. s. Louis P. and Clara (Mendel) B. Edn.: B.S., Univ. of ittsburgh, 1934; Pa. St. Coll., 1940. m. Ruth Pennington, June 22, 1940. c.: Margaret; Phyllis. Exp.: Gulf Oil Corp., Phila., a., 1934-38; Rsch. Asst., Pa. State Coll., 1938-40; Chem. Engr., loudry Process Corp., Marcus Hook, Pa., 1940-44; Lab. Dir., Hawley Products Co., St. Charles, Ill., 1944-46; Project Engr., Standard Oil (Ind.), Whiting, Ind., 1946-47; Assoc. Prof., Chem. Engrng., Case Inst. of Tech., Ohio, 1947-55; Asst. Mgr., Chem. Engrng., Goodyear Tire & Rubber Co., Akron, Ohio, 1955—. Mem.: Alpha Chi Sigma; Phi Lambda Upsilon; Sigma Xi; A.C.S.; A.I.Ch.E.; A.I.C.; Registered Professional Engr. (Ohio); N. Y. Acad. of Sci. Contbr. to: Indus. and Engrng Chem.; Chem. Engrng.; Chem. Engrng. Progress.

BLUM, Mary Georgiana, F.S.P.A. (Sister), Prin., Marquette H. S., Bellevue, Ia. Home Add.: St. Rose Convent, La Crosse, Wisc.



ENTOMOLOGY; GENETICS. b. Mar. 3, 1906. d. Benedict J. and Anna (Schwarte) B. Edn.: B.S., St. Ambrose Coll., 1942; M.S., Marquette Univ., 1950. Exp.: Sci. Adviser, Rosary H. Schl., Bozeman, Montana, 1949-51; Sci. Adviser, Marquette H. Schl., Bellevue, Ia., 1951—; Prin., ibid., 1956—. Mem.: Natl. Sci. Tchrs. Assn.; Natl. Assn. of Secondary Schl. Prins.; Phi Sigma. Contbr. to: The Am. Naturalist. Gen. Int.: Granted a Scholarship to the Marine Rsch. Lab., Woods Hole, 1949. Areas of Rsch.: Entomology; Genetics of the Parasitic Wasp, Habrobracon Juglandis Ashmead; Plant Taxonomy in Iowa, Wis. and in La.; Classification of Mollusc Shells.

BLUMNER, Harry Norman (D.V.M.), Asst. Veterinary Prod. Mgr., Wyeth Labs., Marietta, Pa. Home Add.: 33 East High St., Elizabethtown, Pa. BIOLOGICAL PRODUCTION AND TESTING. b. Philadelphia, Pa., Apr. 5, 1920. s. Harry Norman and Gladys Grace (Kay) B. Edn.: V.M.D., Univ. of Pa., 1944. m. Catherine Krimmel, 1943. c.: Karen Anne; Harry N., Jr.; Kendra Lynne. Exp.: Asst. Instr., Veterinary Physiol. and Pharmacol., Univ. of Pa. Vet. Schl., Philadelphia, Pa., 1944-46; Instr., ibid., 1946-52; Tech. Advisor, Wyeth Labs., Pa., 1952-54; Asst. Vet. Prod. Mgr., ibid., Marietta, Pa., 1954—. Mem.: Am. Veterinary Med. Assn.; U. S. Livestock Sanitary Assn.; Royal Soc. of Health, London. Asst. Editor: Remington's Practice of Pharmacy, 1956. Contbr. to: Am. Jour. of Veterinary Rsch.; Cornell Veterinarian Areas of Rsch.: Pharmacology and Immunology.



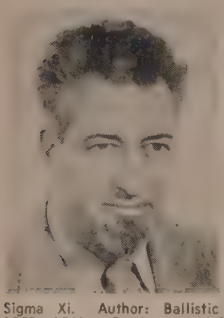
BLUMENTHAL, Harold Jay (Ph.D.), Assoc. Prof. of Bacteriol., Univ. of Mich., Ann Arbor, Mich. Home Add.: 1245 Creal Crescent, Ann Arbor, Mich. BACTERIOLOGY (MICROBIAL METABOLISM). b. New York, N. Y., Jan. 21, 1926. s. Louis J. and Rose (Peck) B. Edn.: B.S., Ind. Univ., 1947; M.S., Purdue Univ., 1949; Ph.D., ibid., 1953. m. Doris Ceren, June 18, 1950. c.: Robert Martin; Steven Mark; David Alan. Exp.: Am. Cancer Soc. Postdoctoral Fellow, Inst. for Cancer Rsch., Philadelphia, Pa., 1953-54; Rsch. Assoc., Univ. of Mich., 1954-56; Instr., ibid., 1954-56; Asst. Prof., ibid., 1956-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Chmn., Comm. on Edn., Am. Soc. for Microbiol.; Visiting H. S. Biologist Prog., Am. Inst. of Biol. Scis. Mem.: A.C.S.; A.A.A.S.; Am. Soc. for Microbiol. (A.S.M.); Am. Inst. of Biol. Scis.; A.A.U.P.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Sci.; Jour. of A.C.S.; Jour. of Bacteriol.; Jour. of Biological Chem.; Biochimica et Biophysica Acta; Biochem. and Biophysical Rsch. Communications; Canadian Jour. of Microbiol.; Spores II; Jour. of Cellular and Comparative Physiol. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Atomic Energy Comm. Fellow, 1951. Areas of Rsch.: Carbohydrate Metabolism in Microorganisms, Metabolism of Hexaric Acids; Staphylococcal Virulence.

BLUMSTEIN, George Isaac (M.D.), 2039 Delancey St., Philadelphia 3, Pa. Home Add.: 5219 Wayne Ave., Philadelphia 44, Pa. ALLERGY. b. Philadelphia, Pa., Nov. 26, 1904. s. Aron and Sarah (Glaser) B. Edn.: M.D., Temple Univ. Schl. of Med., 1929. m. Molly Goldman, Dec. 22, 1935. c.: Charles Goldman. Exp.: Attending in Allergy, Albert Einstein Med. Center, 1933—; Assoc. Prof. of Med., Temple Univ. Schl. of Med., 1958—. Hon. Pos.: Pres., Am. Acad. of Allergy, 1962; Chmn., Postgrad. Edn., Albert Einstein Med. Center, 1952-61; Bd. Mem., Allergy Found. of Am. and Medico; Mem. of Subspecialty Bd. of Allergy of Am. Bd. of Internal Med., 1958-63. Mem.: Fellow, Phila. Coll. of Physicians; Fellow, Am. Coll. of Physicians. Contbr. to: Jour. Allergy; Am. Jour. Med. Sci.; J.A.M.A. of Diseases of Am.; Philadelphia Health Bull.; Pa. State Med. Jour.; Clin. Analysis Ann. of Allergy; Jour. Lab. and Clin. Med.; etc.

BOATMAN, Ralph Henry, Jr. (Ph.D.), Prof. and Chmn., Dept. Publ. Hlth. Edn., Schl. Pub. Hlth., Univ. of N. C., Chapel Hill, N. C. Home Add.: 220 Hayes Rd., Chapel Hill, N. C. PUBLIC HEALTH EDUCATION. b. Carlinville, Ill., Apr. 20, 1921. s. Ralph Henry, Sr. and Mildred (Emrick) B. Edn.: B.Edn., So. Ill. Univ., 1943; M.P.H., Univ. of N. C., 1947; Ph.D., ibid., 1954. m. Helen Weaver, June 11, 1943. c.: Cynthia Anne; Elizabeth Wade. Exp.: Chmn., Hd. Dept., Hlth. Edn., Southern Ill. Univ., Carbondale, Ill., 1947-54; Dir. of Community Scis., Tuberculosis Inst., Chicago, Ill., 1954-60; Asst. Prof. (part-time), Univ. of Ill., Chicago, Ill., 1956-60; Prof. and Chmn., Dept. Publ. Hlth. Edn., Schl. Publ. Hlth., Univ. of N. C., 1960-61. Mem.: Delta Omega; Phi Delta Kappa; Am. Publ. Hlth. Assn.; Soc. Pub. Hlth. Educators; Am. Schl. Hlth. Assn.; Lions; Elks. Contbr. to: Jour. Am. Schl. Hlth. Assn.; Hlth. Educators at Work. Serv. Rec.: U. S. Naval Reserve, 1942-46 Active; Inactive Reserve, 1946-50, Scientist, Publ. Hlth. Serv., Reserve (Inactive), 1950—. Areas of Rsch.: Public Health Education.

BOBBITT, Blanche Gauthier (Ph.D.), Supvr. Health Edn. and Editor of HEALTH EDN. JOUR., Health Edn. and Health Services Br., Los Angeles City Schls., 1500 Glenmont Dr., Glendale 7, Calif. b. June 20, Hopkinton, N. H. d. Napoleon and Alice (Champagne) G. Edn.: A.B., Cum Laude, Coll. of Letters, Arts, and Sci., Univ. of Sou. Calif., 1922; M.S., Chem., ibid., 1927; Ph.D., Biochem. and Nutrition, Schl. of Med., ibid., 1941. m. Dr. Carlin Medford B. of Los Angeles, Calif., 1922. s. Dr. and Mrs. Joseph Bobbitt. Exp.: Asst. and Instr. in Chem., Univ. of Sou. Calif., 1920-22, 1926-27; Tchr., Grade Counselor, Training Tchr., 1927-45; Asst. in Biochem., Schl. of Med., 1937-39; Supvr. Certificated Examinations, Personnel Div., L. A. City Schls., 1945-46; Supvr. Sci., Math., Health Coord., and Aviation Edn., Div. of Secd. Edn., L. A. City Schls., 1946-52; Supvr. Health Edn. and Ed. of HEALTH EDN. JOUR., Health Edn. and Health Services Branch, L. A. City Schls., 1952 -; Edni. Supvr., Radiological Services, Calif. State Office of Civil Defense, 1951. Hon. Pos.: Mem., U. S. Official Delegation to 15th Internatl. Conference on Public Edn., Geneva, 1952; Forum Speaker, 1960 White House Conf. on Children and Youth; Speaker, Internatl. Conf. on Hlth. and Hlth. Edn., Phila., 1962. Mem.: Fellow, Am. Schl. Health Assn.; Amer. Pub. Health Assn.; Med. Res. Assn. of Calif.; Am. Natl. Coun. for Health Edn. of the Public; Phi Kappa Phi; Phi Beta Kappa; Iota Sigma Pi; Phi Sigma; Sigma Xi; Delta Kappa Gamma; Pi Lambda Theta. Author: A Manual on Gas Warfare for Civilian Defense, 1942; The S in UNESCO, 1948, revised, 1950; Atomic Energy and YOU, 1951, revised, 1953. Contbr. to: Sci., Med. and Edn. Jours. Ph.D. Dissertation: A Study of the Effect of Glycogen on the Oxidation of Butyrate by Rat Liver Slices. Travel: N. Am.; Europe. Hobby: Music. Listed in: A.M.S.; Who's Who in Am. Edn.

BOCK, Charles Dickens (Ph.D.), Staff Scientist, Arma Div., Am. Bosch Arma Corp., Garden City, N. Y. Home Add.: 70 Joyce Rd., Plainview, L. I., N. Y. PHYSICS (APPLIED). b. Mishawaka, Ind., Jan. 11, 1908. s. Andrew Henry and Edith (Pelham) B. Edn.: A.B., Kalamazoo Coll., 1929; Ph.D., Yale Univ., 1933. m. Doris R. Lipovetzky, July 1, 1936. Exp.: Physicist, Co-op. Distributors, N. Y., 1935-36; Devel. Engrng., Arma Engrng. Co., Brooklyn, N. Y., 1936-48; Assoc. Dir. R & D, Arma Div., Am. Bosch Arma Corp., N. Y., 1948-50; Tech. Dir., ibid., Garden City, N. Y., 1950-58; Staff Scientist, ibid., 1958—. Hon. Pos.: Loomis Fellow, Yale, 1930-31; Sterling Fellow, Yale, 1934-35. Mem.: Am. Phys. Soc.; Am. Rocket Soc.; Inst. of Radio Engrs.; A.A.A.S.; Am. Geographical Soc.; Radio Tech. Conf. for Aeronautics; Sigma Xi. Author: Ballistic Missile Symposium, 1956, 1957, 1958, 1961. Contbr. to: A.R.S. Jour.; Control Engrng.; Space Guid.; Arma Engrng. Gen. Int.: Recipient of Naval Ordnance Award; Holder of Patents in Electronic and Computer Instrumentation. Areas of Rsch.: Ions in Gases; Servo Systems; Anti-Aircraft Fire Control; Submarine and Anti-Submarine Fire Control; Accelerometers and Gyros for Inertial Guidance; Inertial Guidance Systems.



BOCKHOFF, Frank James (Ph.D.), Assoc. Prof., Chmn., Dept. of Chem., Fenn Coll., Cleveland, Ohio. Home Add.: 3131 Scarborough Rd., Cleveland Heights, Ohio. PHYSICAL CHEMISTRY, POLYMER CHEMISTRY. b. Tiffin, Ohio, Mar. 26, 1928. s. Cornelius Frank and Helen Odelia (Bormuth) B. Edn.: B.S.Ch.E., Case Inst. of Tech., 1950; M.S., Western Reserve Univ., 1952; Ph.D., ibid., 1959. m. Esther Ida Camperchioli, Jan. 27, 1951. c.: Frank Matthew; Susan Virginia; Celia Marie; James Paul. Exp.: Grad. Asst., Western Reserve Univ., 1950-51; Assoc. Dir. of Rsch. and Dev., Am. Agile Corp., Bedford, Ohio, 1953-61; Dept. of Chem. Engrng. and Chem., Fenn Coll., 1951—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Ohio Acad. of Sci.; Am. Soc. of Engrng. Edn.; Sigma Xi; Tau Beta Pi; Alpha Chi Sigma. Author: Welding of Plastics, 1959. Contbr. to: Jour. of Chem. Physics; Jour. of Chem. Edn.; Chem. Engrng. Progress; Indus. and Engrng. Chem.; Soc. of Plastic Engrs. Jour.; Plastics Technol.; Mod. Plastics; Mod. Plastics Encycl.; Machine Design; Product Engrng.; Industrial Labs.; Heating, Piping and Air Conditioning; Chem. and Engrng News; Chem. Engrng. Gen. Int.: Outstanding Engrng. Tchr., 1960 by Ohio Sect., Am. Soc. of Engrng. Edn.; 1961 Jr. Tech. Achievement Award, Cleveland Tech. Societies Coun. Areas of Rsch.: Polymer Chemistry; Thermodynamics; Adhesion and Surface Properties.

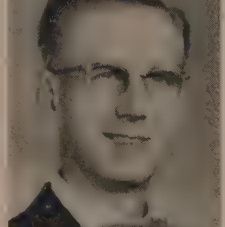
BOCKUS, Henry LeRoy (M.D.), Prof. and Chmn., Dept. of Med., Grad. Schl. of Med., Univ. of Pa., Philadelphia 3, Pa. GASTROENTEROL. AND INTERNAL MEDICINE. b. Newark, Del., Apr. 18, 1894. s. William Jones and Luella (Whiteman) B. Edn.: B.S., Central H. S., 1913; M.D., Jefferson Med. Coll., 1917. Hon. Deg.: D.Sc., Dickinson Coll., 1946; D.Sc., Jefferson Med. Coll., 1958; D.Sc., Univ. of Pa., 1961. m. Rosalynd Foss, Jan. 13, 1935. c.: Barbara Ann. Exp.: Organized Stomach Clinic, Grad. Hosp., Phila., Pa., 1921; Prof. of Gastroenterol., Univ. of Pa., 1931-39; Prof. of Med., ibid., 1949—. Mem.: Fellow, Am. Geographical Soc.; Am. Gastroenterol. Assn., Pres., 1948; Am. Protol.; A.M.A.; Am. Anthropol. Assn.; Am. Coll. Physicians; Phila. Coll. of Physicians; Chmn., World Congress of Gastroenterol., Wash., D. C., 1958; Pres., World Gastroenterological Assn., 1958-62; Hon. Pres., World Organizataion of Gastroenterology, 1962—; Phi Chi; Alpha Omega Alpha. Hon. Mem.: Sociedad Chilena de Gastro-Enterologia; Asociacion de Gastroenterologia de Columbia; Facultad Biologia y Ciencias Medicas, University of Chile; Sociedad Cubana de Gastroenterologia; Sociedad Venezolana de Gastroenterologia, Endocrinologia y Nutrition; Sociedad de Gastroenterologia y Nutrition de Buenos Aires; Sociedad de Gastroenterologia de Peru; Soceidade Brazileiradede Gastroenterologia E. Nutricao; Sociedad de Gastroenterologia del Uruguay; Sociedad Espanola de Patalogia Digesta y de la Nutrition; Societe Belge Gastroenterologie; Gastrological Soceity of India; Deutsche Gesellshaft und Sloffwechsel Krankneiten, Honorary Fellow Royal Soceity of Medicine (London); Commander Oder of Merit, Chile; Commander of the Order "Unuau" (Peru); Chmn., Bd. Dirs., Medico. Author: Gastroenterology (3 volumes), 1942-46; Postgraduate Gastroenterology (1 volume), 1950; Editorial Bd., Jour. Gastroenterology; Editorial Bd., Jour. Diseases of Colon and Rectum. Contbr. to: Jour. Am. Med. Assn.; Am. Jour. of Med. Sci.; Annals of Med.; Archives of Internal Med.; etc. War Rec.: Lt. (M.C.), U.S.N., W. W. I. Recipient: Caldwell Medal, Am. Roentgen Ray Soc., 1950; Strittmatter Award, Phila. County Med. Soc., 1951; Mod. Med. Award for Dist. Achievement, 1962; Griedenwald Medal, Am. Gastroenterological Assn., 1962. Special Int.: Diseases of Digestive Tract. Listed in: Who's Who in Am.

BOCQUET, Philip Edmund (Ph.D.), Prof. and Hd., Chem. Engrng., Univ. of Ark., Fayetteville, Ark. Home Add.: 555 E. N. St., Fayetteville, Ark. CHEMICAL ENGINEERING; ELECTROKINETICS. b. Beeville, Tex., Oct. 6, 1918. s. Oscar Jacob and Anne (Henderson) B. Edn.: B.S., A. and M. Coll. of Tex., 1940; M.S.E., Univ. of Mich., 1947; Ph.D., ibid., 1953. m. Helen Bratton, 1958. Step-c.: Ray M.; Ann Gay; Phillip B. Boudreaux. Exp.: Rsch. Sec. Supvr., Continental Oil, Ponca City, Okla., 1953-57; Assoc. Prof., Univ. of N. Mex., Albuquerque, N. M., 1957-61; Prof. and Dept. Hd., Univ. of Ark., 1961—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; A.I.Ch.E.; A.S.E.E.; Electrochem. Soc.; N.S.P.E.; A.S.P.E.; A.I.M.E. Pet. Soc.; Phi Kappa Phi; Phi Lambda Upsilon. Contbr. to: Ind. and Engrng. Chem.; A.P.I. Drill and Prod. Prac.; Oil and Gas Jour. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Electrokinetics; Static Charge in Fluids; Electrochemical Processes; Cryogenics; Petroleum Reservoir Engineering.

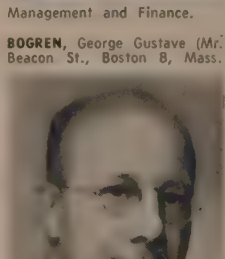
BOEHM, Alice E(velyn) (Ph.D.), Rsch. Psychologist (Independent), N. Y., N. Y. Home Add.: 30 East 81st St., N. Y. 28, N. Y. PSYCHOLOGY. b. Prague. d. Leopold and Bertha B. Edn.: Ph.D., German Univ., Prague, 1938. Exp.: Rsch. Asst., N. J. State Hosp., Trenton, N. J., 1941-42; Clin. Interne, Southbury Trng. Schl., Southbury, Conn., 1945-46; Independent Rsch., 1947—. Mem.: Fellow, A.A.A.S.; Internatl. Coun. of Psychol. (Fellow); Am. Psychol. Assn.; Eastern Psychol. Assn.; N. Y. Acad. Scis.; N. Y. State Psychol. Assn. Contbr. to: Br. Jour. Psychol.; Jour. of Abnormal and Social Psychol. Areas of Rsch.: Problems of Space Perception, Vision, Touch.

BOGACZ, John (Ph.D.), Asst. Prof., La Salle Coll., Philadelphia, Pa. Home Add.: 2316 Fairhill Ave., Glenside, Pa. BACTERIOLOGY. b. Poland, May 12, 1916. s. Stanley and Mary (Czuma) B. Edn.: M.S., Fordham Univ., 1952; Ph.D., Univ. of Paris, 1954. Exp.: Rsch. Asst., State Univ. of N. Y., Med. Coll., 1955-57; Rsch. Asst., Hahnemann Med. Coll., 1957-60; Lectr., Biol., La Salle Coll., 1957-59; Asst. Prof., ibid., 1959—. Mem.: Inter-Soc. Cytology Council; N. Y. Acad. Scis.; Pa. Acad. Scis.; Am. Soc. for Microbiol.; Acta Cytologica; Am. Assn. Adv. Sci.; Natl. Premedical Honor Soc., Alpha Epsilon Delta. Contbr. to: Comptes rendus des seances de la Societe de Biologie; Bull. de la Societe de Pathologie Exotique; Cancer Rsch.; Jour. Natl. Cancer Inst. Areas of Rsch.: Cytologic Study of Carcinogenesis.

BOHLING, Harold (Mr.), Fertilizer Control Inspector, Grad. Rsch. Asst., Univ. of Mo., Columbia, Mo. Home Add.: 306 Hartley Ct., Columbia, Mo. AGRICULTURAL EDUCATION, AGRICULTURAL ECONOMICS, AGRICULTURAL FINANCE. b. Mora, Mo., July 21, 1928. s. Henry C. and Lillie A. L. (Wittrock) B. Edn.: B.S., Univ. of Mo., 1957. m. Lorene Nadine Niehoff, Aug. 21, 1955. c.: Grace Kathryn; John Henry. Exp.: Farmer and Custom Operator, Henry C. Bohling and Sons, Mora, Mo., 1942-51; Vocl. Agric. Instr., Clever H. S., Clever, Mo., 1957-59; Grad. Rsch. Asst., Univ. of Mo., 1959—; Fertilizer Control Serv. Inspector, ibid., 1961—. Mem.: Am. Farm Econ. Assn.; Gamma Delta; Alpha Tau Alpha; Gamma Sigma Delta. Serv. Rec.: U. S. Army, 1951-53. Areas of Rsch.: Agricultural Economics; Management and Finance.



BOGREN, George Gustave (Mr.), Partner, Weston & Sampson, 14 Beacon St., Boston 8, Mass. Home Add.: 145 W. Plain St., Cochituate P.O., Wayland, Mass. SANITARY CHEMISTRY AND ENGINEERING. b. Wayland, Mass., June 14, 1900. s. Carl John Alfred and Emma Charlotte (Holmstrom) B. Edn.: B.S., Harvard Univ., 1922. m. Louise Armstrong Smith, June 12, 1929. c.: Peter Alfred; David Smith. Exp.: Engr. Asst., Mass. Dept. of Publ. Hlth., Boston, Mass., 1922-23; San. Engr., Weston & Sampson, Boston, Mass., 1923-42; Partner, ibid., 1946—; Instr., Northeastern Univ. Grad. Schl., 1954—. Hon. Pos.: Chmn., New England Sect., A.W.W.A.; Pres., N.E.W.W.A.; Pres., Boston Soc. Civ. Engrs. Mem.: A.A.A.S.; A.C.S.; A.S.C.E.; A.P.H.A.; A.W.W.A.; Diplomate Am. Acad. San. Engr.; A.F. & A.M.



Contbr. to: Jour. Boston Soc. Civ. Engrs.; Jour. New England

Water Works Assn.; New England Water Pollution Control Assn. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Water Treatment.

BOHNENBLUST, Henri Frederic (Ph.D.), Prof., Calif. Inst. of Technol., Pasadena, Calif. Home Add.: 1798 Pepper Dr., Pasadena, Calif. MATHEMATICS. b. Switzerland, Mar. 22, 1906. s. Otto Jules and Bertha (Hostettler) B. Edn.: Diploma, Swiss Fed. Inst. of Technol., 1928; Ph.D., Princeton Univ., 1931. m. Eleanor Young, 1937. Exp.: Instr. to Assoc. Prof., Princeton Univ., 1931-45; Prof., Ind. Univ., 1945-46; Prof., Calif. Inst. of Technol., 1946—; Dean of Grad. Studies, ibid., 1956—. Hon. Pos.: Vice Pres., Trustee, A.M.S. Mem.: Mathematical Assn. of Am.; Soc. for Industrial and Applied Math.; A.A.A.S. Contbr. to: Annals of Math. Areas of Rsch.: Analysis.

BOHNING, Richard Howard (Ph.D.), Asst. Dean, Coll. of Agri. and Home Econs., Ohio State Univ., Columbus, Ohio. Home Add.: 3031 Greenvale Dr., Worthington, Ohio. PLANT PHYSIOLOGY. b. Hope Valley, R. I., Sept. 16, 1919. s. Clarence Minot and Annie Delhia Lewis Greene (both dec.). Edn.: B.Sc., R. I. State Coll., 1940; M.Sc., Ohio State Univ., 1941; Ph.D., ibid., 1948. m. Evelyn Maxon Bitgood, 1938. c.: Richard Howard, Jr. Exp.: Instr., Ohio State Univ., 1946-50; Asst. Prof., ibid., 1950-55; Assoc. Prof., ibid., 1955-61; Prof., ibid., 1961—; Campus Coordinator, ibid., AID Agric. Project, 1957—; Asst. Dean, Coll. of Agric. and Home Econs., ibid., 1961—. Mem.: A.A.A.S.; Botanical Soc. of Am.; Am. Soc. of Plant Physiologists; Am. Inst. of Biological Scis.; Ohio Acad. of Sci.; Alpha Zeta; Gamma Sigma Delta; Gamma Alpha; Phi Kappa Phi; Phi Epsilon Phi; Sigma Xi. Author: Introduction to Plant Physiology, 1960. Contbr. to: Am. Jour. of Botany; Plant Physiol.; Ohio Jour. of Sci. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Photosynthesis, Photoperiodism, Translocation.

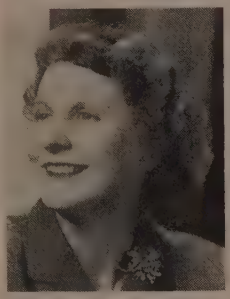
BOIES, Robert Brice (Mr.), Sr. Engr., Natl. Lead Co., Fernald, Ohio. Home Add.: 5741 Green Lawn Rd., Hamilton, Ohio. MINING ENGINEERING; GEOLOGY; AERONAUTICAL ENGINEERING; HEATING; VENTILATING; AIR CONDITIONING ENGINEERING. b. Louisville, Ky., Sept. 11, 1920. s. Lambert Brice and Lorinne E. (Voss) B. Edn.: B.S.M.E., Univ. of Ky., 1947; M.S.G., Miami Univ., Oxford, Ohio, 1949. m. Boone Tucker, June 5, 1948. c.: Robert B., Jr.; Boone Tucker. Exp.: Owner, Consulting Engrng. Firm, Heating, Ventilating and Air Condit., Hamilton, Ohio, 1948-58; Instr., Miami Univ., Oxford, Ohio, 1948-50; A.P.A.S., ibid., 1955—; Sr. Engr., Natl. Lead Co., 1960—. Mem.: Alpha Chi Sigma; Sigma Gamma Epsilon; A.S.H.R.A.E.; Am. Assn. for the Adv. of Sci. Author: Structure and Stratrigraphy, Little Horse Creek Area, 1949. Serv. Rec.: U. S. Air Force Cadet, 1942—; Maj., A.F.R., 1962.

BOLEF, Dan Isadore (Ph.D.), Adv. Physicist, Westinghouse Rsch. Labs., Beulah Rd., Churchill Boro, Pittsburgh 35, Pa. Home Add.: 1800 Beechwood Blvd., Pittsburgh 17, Pa. SOLID STATE PHYSICS. b. Phila., Pa., June 10, 1921. s. Solomon and Dora (Lukoff) B. Edn.: B.S., Penn. State Univ., 1946; M.A., Columbia Univ., 1948; Ph.D., ibid., 1952. m. Doris Sappir, Feb. 5, 1943. c.: Lawrence; Richard; Terry Alvan. Exp.: Instr., Stevens Inst. of Tech., Hoboken, N. J., 1947-48; Asst. Prof., N. Y. State Univ., Ft. Schuyler, N. Y., 1948-52; Physicist, Westinghouse Rsch. Labs., 1952-60; Adv. Physicist, ibid., 1960—. Mem.: Am. Phys. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Sigma Pi Sigma; Phi Kappa Phi; Pi Mu Alpha; Fed. of Am. Scientists; Soc. for Social Responsibility in Sci. Contbr. to: Phys. Rev.; Jour. of App. Phys.; Jour. of Phys. and Chem. of Solids; Phys. Rev. Letters; Procs. of the Phys. Soc., London; Rev. of Scientific Instruments; Sci.; Procs. of the I.R.E.; Trans. of the I.R.E. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Nuclear and Electron Paramagnetic Resonance; Nuclear and Electron Spin-Phonon Coupling; Microwave Ultrasonics; Magneto-Elastic Interactions; Ultrasonic Techniques.

BOLEN, Max C. (Ph.D.), Chmn., Physics Dept., Trinity Univ., 715 Stadium Dr., San Antonio, Tex. Home Add.: 370 Sprucewood Lane, San Antonio, Texas. PHYSICS: (THERMODYNAMICS AND STRUCTURE OF POLYMERS) or (PHYSICS OF FLUIDS). b. Waynetown, Ind., Sept. 23, 1919. s. Forrest B. and Grace (Wilkinson) B. Edn.: A.B., Wabash Coll., 1941; Certificate of Meteorology, Univ. of Chicago, 1943; M.S., Purdue Univ., 1950; Ph.D., A. and M. Coll. of Tex., 1961. m. Lois Larkins, May 1, 1942. c.: Ronald Lee; Roger Kent. Exp.: Sci. Tchr., Wingate H. S., Wingate, Ind., 1941-42; Meterologist, U.S.A.A.F., 1942-46; Grad. Asst., Purdue Univ., 1946-48; Chmn., Phys. Dept., Millikin Univ., 1948-59; Chmn., Physics Dept., Trinity Univ., Tex., 1959—. Hon. Pos.: Sec. and Mem., Exec. Coun., Ill. Sect., Am. Assn. of Physics Tchrs.; Assoc. Radiol. Officer for Civil Defense, Decatur, Ill. Mem.: A.A.P.T.; A.I.P.; Sigma Zeta; Sigma Pi Sigma; Tex. Acad. of Sci. Contbr. to: Jour. of Polymer Sci. Serv. Rec.: U.S.A.A.F., 1942-46. Gen. Int.: Welch Grant Rsch. Fellow, A. and M. Coll. of Tex.; Instructed the Air Force Reserve Unit, Decatur, Ill. in the fields of Meteorol., also Communication and Navigation (electronic), 1955-57; Produced and gave a 10 minute weather report (program) on TV (WTVP), Decatur, Ill., 1955-57. Areas of Rsch.: Polymer Physics; Thermodynamics of Polymer Solutions; Instrumentation and Beta Spectroscopy.

BOLIN, Donald William (Mr.), Assoc. Nutritionist, N. D. State Univ., Fargo, N. D. Home Add.: 1425 North University Dr., Fargo, N. D. NUTRITION, BIOCHEMISTRY. b. Maiden Rock, Wis., May 4, 1897. s. Cassius M. and Anna Ellen (Sorenson) B. Edn.: B.S., Univ. of Wis., 1926; M.S., Univ. of Ida., 1935. m. Margaret Knudson, Aug. 16, 1929. Exp.: Assoc. Nutritionist, Univ. of Ida., 1929-45; Assoc. Nutritionist, N. D. State Univ., 1945—. Mem.: A.C.S.; Sigma Xi. Contbr. to: Jour. of Nutrition; Poultry Sci. Jour.; Jour. Animal Sci.; Expt. Sta. Bulls., Analytical Ed.; Jour. of Dairy Sci.; Sci. Serv. Rec.: U. S. Army, W.W. I. Areas of Rsch.: Nutrition of Farm Animals.

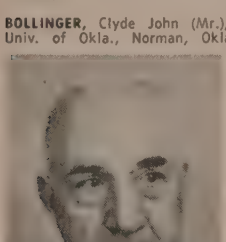
BOLING, Jewell (Miss), Occupational Analyst, Labor Dept., Wash. 25, D. C. Home Add.: 1717 P. St., N.W., Wash. 6, D. C., also R.F.D. 2, Randleman, N. C. OCCPATIONAL AND WORKER TRAIT SYSTEM; DESIGN OF EXPERIMENTS AND DEVELOPMENT OF NEW RESEARCH METHODS. b. Randleman, N. C., Sept. 26, 1907. d. John E. and Carrie E. (Ballard) B. Edn.: Univ. of N. C.; Am. Univ.; Geo. Wash. Univ.; U. S. Dept. Agric. Grad. Schl.. Exp.: Occupational Analyst, Labor Dept., Wash., D. C., 1942-57; Employment Serv. Adv., ibid., 1957-62; Occupational Analyst, ibid., 1962—. Mem.: Am. Personnel and Guid. Assn.; Profl. Mem., Div. of Rehabilitation Counsel; Profl. Mem., Natl. Voc. Guid. Assn.; A.A.A.S.; Astronomical League; Natl. Capital Astronomers. Ed.: Star Dust, 1948-58. Co-Author: Estimates of Worker Trait Requirements for 4,000 Jobs, 1956; Worker Traits for 5,000 Occupations, 1962. Contbr. to: Employment Security Rev.; Jour. of Voc. and Edni. Guid.; Am. Psychologist; Jour. of Applied Psychol. Areas of Rsch.: Criterion Research in Field of Personality Concomitants of Successful Job Adjustment; Use of Language in a Structured Way to Convey and Communicate Worker Trait and Occupational Information; Functional Classification of Occupations; Suitable Occupations for Various Categories of Physically and Mentally Handicapped People.



BOLLE, Arnold William (Dr. P.A.), Prof. of Forestry, Dean, Schl. of Forestry and Dir., Forest and Cons. Expt. Sta., Mont. State Univ., Missoula, Mont. Home Add.: 1630 Jackson Dr., Missoula, Mont. ECONOMICS, PUBLIC POLICY AND ADMINISTRATION OF NATURAL RESOURCES, PARTICULARLY PROBLEMS OF INTEGRATED LAND USE. b. Watertown, Wis., Oct. 5, 1912. s. Charles F. and Anna (Riedelbach) B. Edn.: B.A., Northwestern Coll., 1934; B.S., Mont. State Univ., 1937; M.P.A., Harvard Univ., 1955; Dr.P.A., ibid., 1960. m. Helen Swan, June, 1937. c.: Stanton Gene; Susan Swan; Charles Kenneth. Exp.: Soil Conservationist, U.S.D.A., Wyo., Ore., Wash., 1938-54; Assoc. Prof., Mont. State Univ., 1955-61; Prof., ibid., 1961—; Dean, Schl. of Forestry, Dir., Forest and Cons. Expt. Sta., ibid., 1962—. Hon. Pos.: Chmn., Schl. for Administrative Leadership; Pres., Mont. Conservation Coun.; Pres., Mont. Woodland Coun.; Chmn., S.C.S.A. Comm. on Profl. Training in Conservation. Mem.: A.A.A.S.; Soc. Am. Foresters; Soil Cons. Soc. of Am.; Wilderness Soc.; Phi Kappa Phi; Sigma Xi; Xi Sigma Pi; Druids; Phi Sigma. Contbr. to: Mont. Schl. of Forestry Bulls.; Jour. of Farm Econs.; Trans. of N. Am. Wildlife Congress; Govt. Reports; Mont. Bus. Rev. Areas of Rsch.: Analysis of Multiple Land Use Problems, Resolution of Conflict Between Uses of Land Under Multiple Agency Administration; Problems of Area Econ. Development;

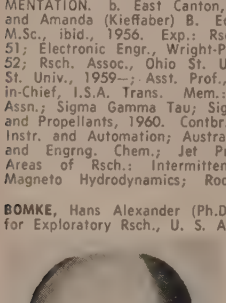
Relationship of Outdoor Recreation Use of Land to Timber, Grazing and Other Established Uses; Long Range Planning of Resources.

BOLLINGER, Clyde John (Mr.), Assoc. Prof. of Geo., Emeritus, Univ. of Okla., Norman, Okla. Home Add.: 725 Chautauqua, Norman, Okla. GEOGRAPHY; METEOROLOGY; PLANETARY CLIMATOLOGY; SUNTIDE SOLAR CYCLES. b. Eaton Co., Mich., Oct. 24, 1888. s. Charles F. and Emma L. (Perry) B. Edn.: A.B., Cent. Mich. Coll., Univ. of Mich., 1915; S.M., Univ. of Chicago, 1922. m. Hazel Jessie Guest, 1915. c.: Ralph; Ruth (dec.); Helen (dec.). Exp.: Tchr., Rural Mt. Calm Co., Mich., 1908-10; Prin., Kolb Schl., Bay City, Mich., 1912-14; Supt. Schls., Chesaning, Mich., 1915-17; Prin., Cent. Schl., Ironwood, Mich., 1918-19; Asst. Prof., Univ. of Okla., 1936-36; Assoc. Prof., ibil., 1936, Emeritus, 1959. Hon. Pos.: Secy., O. U. Chapt., Sigma Xi; Vice Pres., Southwest Social Sci. Assn. Mem.: Fellow, Am. Geographical Soc.; Okla. Acad. of Sci.; Am. Meterol. Soc.; Am. Geophys. Union. Author: Elementary Geography of Okla., 1930; Atlas, 1900-50, of Planetary Solar Climate, 1960; Atlas (1960-80) [Vol. 2, 1962.] Contbr. to: Jour. of Geography; Bull. of Am. Meteorol. Soc.; Internatl. Geographical Congress; Procs. of the Okla. Acad. of Sci. Areas of Rsch.: Population Distribution and Change; The Great Plains; Planetary Solar Climatic Cycles; Sun Tide Radiation Theory.



BOLLINGER, Loren Eugene (Mr.), Asst. Prof., Dept. of Aeronautical and Astronautical Engrng., Ohio State Univ., 2036 Neil Ave., Columbus 10, Ohio. Home Add.: 1975 Wickford Rd., Columbus 21, Ohio. COMBUSTION, DETONATION, ROCKETS AND INSTRUMENTATION. b. East Canton, Ohio, Mar. 24, 1926. s. Albert and Amanda (Kieffaber) B. Edn.: B.E.E., Ohio St. Univ., 1948; M.Sc., ibid., 1956. Exp.: Rsch. Assoc., Ohio St. Univ., 1949-51; Electronic Engr., Wright-Patterson AFB, Dayton, Ohio, 1951-52; Rsch. Assoc., Ohio St. Univ., 1952-59; Asst. Supvr., Ohio St. Univ., 1959—; Asst. Prof., ibid., 1960—. Hon. Pos.: Editor-in-Chief, I.S.A. Trans. Mem.: Am. Rocket Soc.; Am. Ordnance Assn.; Sigma Gamma Tau; Sigma Xi. Co-Author: Liquid Rockets and Propellants, 1960. Contbr. to: Rev. Sci. Instr.; I.S.A. Jour.; Instr. and Automation; Australian Jour. Instr. Technol.; Industr. and Engrng. Chem.; Jet Propulsion; A.R.S. Jour.; N.A.S.A. Areas of Rsch.: Intermittent and Steady-State Combustion; Magneto Hydrodynamics; Rocket Propellants; Instrumentation.

BOMKE, Hans Alexander (Ph.D.), Principal Rsch. Scientist, Inst. for Exploratory Rsch., U. S. Army Signal Rsch. and Development Labs., Fort Moumouth, N. J., and Adjunct Prof. of Physics, Fordham Univ., N. Y., N. Y. Home Add.: 408 Central Ave., Spring Lake, N. J. GENERAL PHYSICS, ATOMIC AND NUCLEAR PHYSICS, SPACE PHYSICS. b. Berlin, Germany, May 26, 1910. s. Karl Christian and Charlotte (Teucher) B. Edn.: Dr. Habil., Tech. Univ. Berlin, Germany, 1935; Ph.D., Univ. of Berlin, 1931. m. Ilse C. Nagel, 1932. c.: Thomas Roger. Exp.: Sci. Asst., Radiation Lab., Univ. of Berlin, Germany, 1931-33; German Bur. of Standards, Berlin, Germany, 1933-37; Mem., Kaiser Wilhelm Inst., ibid., 1938-41; Mem., Aerial Navigation Inst., Oberpfaffenhofen, Germany, 1943-45; Assoc. Prof., Med. Schl., Univ. of Munich, Germany, 1946-52; Rsch. Physicist, U. S. Army Signal Rsch. and Dev. Labs., Ft. Monmouth, N. J., 1952-57; Dir. of Explor. Rsch. Div., Surveil. Dept., ibid., 1958-60; Prin. Rsch. Scientist, Inst. for Explor. Rsch., ibid., 1960—. Mem.: Am. Phys. Soc.; German Phys. Soc.; Optical Soc. of Am.; Am. Rocket Soc.; Am. Geophys. Union; N. Y. Acad. of Scis.; Aero Club, N. J. Author: Vacuum Spectroscopy, 1937; Atomic and Ionic Beams, 1939; Theory of Electromagnetic Wave Propagation, 1950. Contbr. to: ZS. f. Physik; Physikalische Zeitschrift; Annalen der Physik; Naturwissenschaften; Nature; J. of Geophysical Rsch.; Proc. IRE. Areas of Rsch.: Spectroscopy; Atomic Physics; Nuclear Physics; Plasma Physics; Biophysics; Microwaves; Space Physics.



BOND, Thomas Jackson (Ph.D.), Prof. of Chem., Baylor Univ., Waco, Tex. Home Add.: 2701 Braemar, Waco, Tex. BIOCHEMISTRY. b. Ennis, Tex., Aug. 16, 1912. s. John Henry and Frances Ann (Puckett) B. Edn.: B.S., N. Tex. State Univ., 1938; M.S., ibid., 1939; Ph.D., Univ. of Tex., 1950. m. Edith Gorman, 1939. c.: Anedith; Tommy; Robert. Exp.: Instr., Tex. A. and I. Univ., 1941-43; Asst. Prof., Baylor Univ., 1943-50; Prof., ibid., 1952— Hon. Pos.: Past Chmn., Tex. A. and M.-Baylor Section, A.C.S. Mem.: A.C.S.; Sigma Xi; Phi Lambda Upsilon; Alpha Epsilon Delta. Contbr. to: Jour. A.C.S.; Arch. Biochem. and Biophysics; Nature; Biochem. et Biophysica Acta; Biochem. and Biophysical Rsch.; Communications; Jour. Bacteriol. Areas of Rsch.: Intermediary Metabolism; Chemical Carcinogenesis; One-Carbon Metabolism.

BOND, John Walter (Ph.D.), Staff Scientist, Kaman Nuclear, Colorado Springs, Colo. THEORETICAL PHYSICS. b. Denver, Colo., Jan. 13, 1917. s. John Walter and Esther (Williams) B. Edn.: B.S., Univ. of Chicago, 1940; Ph.D., Univ. of N. M., 1954. m. (Div.). c.: John Walter; Marilyn. Exp.: Physicist, Manhattan Proj., Columbia Univ., N. Y. C., 1943-45; Physicist, Theoretical Div., Los Alamos Scientific Lab., Los Alamos, N. M., 1945-55; Hd., Applied Physics Grp., Lockheed (MSD), Van Nuys, Calif., 1955-56; Mgr., Theoretical Physics Grp., Gen. Elect. (MSVD), Phila., Pa., 1956-57; Chf. of Physics, Convair-San Diego, San Diego, Calif., 1957-59; Sr. Staff Scientist., Inst. of Defense Analyses (ARPA), Wash., 1959-60; Gen. Mgr., Geophysics Corp. of Am., 1960; Dir., Mil. and Space Appl., ibid., 1960-62; Staff Scientist, Kaman Nuclear, Colorado Springs, Colo., 1962— Mem.: Am. Physical Soc.; A.A.A.S. Contbr. to: Thresehold of Space; Physics Rev.; Agardographs; Astronautics; Jet Propulsion. Areas of Rsch.; Missile Physics; Ballistic Missile Defense; Nuclear Explosion Physics; Atomic and Molecular Physics; Shock Physics; Transport Theory.

BOND, Victor Potter (M.D.), Chmn., Med. Dept., Brookhaven Natl. Lab., Upton, L. I., N. Y. Home Add.: Cedar Lane, Box 884, Setauket, L. I., N. Y. RADIOBIOLOGY AND MEDICAL PHYSICS. b. Santa Clara, Calif., Nov. 30, 1919. s. George Milton and Lois Edna (Potter) B. Edn.: A.B., Univ. of Calif., 1943; M.D., ibid., 1945; Ph.D., ibid., 1952. m. Mary S. Bond, Feb. 22, 1946. c.: Barbara Ann; Frederick William; Robert Michael; Beverly Jean. Exp.: Rsch. Asst., Pharmacol., Univ. of Calif., San Francisco, Calif., 1945; Interne, U. S. Navy Hosp., Astoria, Ore., 1946-47; Grad. Trng., Univ. of Calif., Berkeley, Calif., 1947-48; Hd., Exptl. Pathol. Br., Biol. and Med. Sci. Div., U. S. Naval Radiol. Defense Lab., San Francisco, Calif., 1948-54; Hd., Div. of Microbiol., Med. Dept., Brookhaven Natl. Lab., Upton, L. I., N. Y., 1954-62; Chmn., Med. Dept., ibid., 1962—. Mem.: Am. Physiol. Soc.; N. Y. Acad. Sci.; A.A.A.S.; Soc. Exptl. Biol. Med.; Alpha Kappa Kappa. Contbr. to: Am. Jour. Tron. Med.; Am. Jour. of Physiol.; Proc. Soc. of Exptl. Biol. and Med.; Jour. of Infectious Diseases; Sci.; Fed. Proc., etc. Special Int.: Radiation Biol., Med. and Med. Physics. Areas of Rsch.: Radiobiology, Effects of Radiation; Hematology; Effects of Nuclear Weapons.

BONDURANT, James Allison (Mr.), Agric. Engr., U. S. Dept. of Agric., Agric. Rsch. Serv., Boise, Idaho. Home Add.: 3314 N. 32nd. St., Boise, Idaho. IRRIGATION SCIENCE. b. Ness City, Kans., Oct. 10, 1926. s. Dewey Wybrant and Mary Gladys (Kramer) B. Edn.: B.Sc., Kans. Sta. Coll., 1949; M.Sc., Univ. of Neb., 1951. m. Ruth M. Trautman, 1951. c.: Kathleen Alice; Nancy Ruth. Exp.: Agric. Engr., Univ. of Neb., Lincoln, Nebr., 1951-55; Agric. Engr., U. S. Dept. Agric., Agric. Rsch. Serv., Boise, Idaho, 1958—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Soc Agric. Engrs.; U. S. Natl. Comm. of the Internatl. Comn. on Irrigation and Drainage; Gamma Sigma Delta; Sigma Tau. Contbr. to: Agric. Engrng.; Crops and Soils; U. S. Dept. Agric. Publs. Serv. Rec.: U. S. Naval Reserve, 1944-46. Gen. Int.: Registered Prof. Engr. Areas of Rsch.: Hydraulics of Surface Irrigation; Automation of Surface Irrigation.

BONGIORNI, Domenic Frank (Ph.D.), Consultant (Special Situations), P. O. Box 291, Ivoryton, Conn. PHYSICAL-ORGANIC CHEMISTRY. b. Essex, Conn., June 19, 1908. s. Gaetano and Esterina (Carini) B. Edn.: B.S., Univ. of Conn., 1933; Ph.D., Johns Hopkins Univ., 1936; LL.B., Fordham Univ., 1944. Exp.: Rsch. Chemist, General Chemical Co., L. I., N. Y., 1936-39; Special Consultant, N. Y., N. Y., 1940; Staff, Patent Dept., Union Carbide and Carbon Rsch. Labs., Inc., 1941-42; Rsch. Chemist Bakelite Corp., 1942; Chemical Rsch. Asst., Columbia Univ., 1942-44; Assoc. Pat Lawyer, Campbell, Brumbaugh, Free and Graves, N. Y., N. Y., 1944-51; Patent Lawyer, Gen. Aniline and Film Corp., N. Y., N. Y., 1951-52; Counsel, Scientific Design Co., Inc., 2 Park Ave., N. Y., N. Y., 1952-55; Patent Counsel, Johnson and Johnson, New Brunswick, N. J., 1955-60; Consultant, Special Situations, Ivoryton, Conn., 1960—. Mem.: A.C.S., A.A.A.S.; A.I.C.; A.B.A. Gen. Int.: Reg. U. S. Pat. Office, 1941; Mem., N. Y. Bar, 1944. Areas of Rsch.: Reaction Kinetics, Free Radicals, Surgical Materials, Pharmaceuticals, Dyestuffs, Plastics, Textiles, Patents, Scientific-legal and related matters.

BOOKHOUT, Cazalyn Green (Ph.D.), Prof. of Zool. and Dir. of the Duke Univ., Marine Lab., Durham, N. C. Home Add.: 1307 Ala. Ave., Durham, N. C. MARINE INVERTEBRATE ZOOLOGY AND EMBYOLOGY. b. Gilboa, N. Y., Jan. 28, 1907. s. Eugene Anson and Sara Mae (Green) B. Edn.: A.B., St. Stephens Coll., 1928; M.A., Syracuse Univ., 1929; Ph.D., Duke Univ., 1934. m. Elizabeth Circle, Aug. 31, 1936. c.: Beverly Anne; Glenn Allen

xp.: Instr., Womans Coll. of the Univ. of N. C., Greensboro, . C., 1929-31; Assoc. Prof., Elon Coll., Elon Coll., N. C., 1934-5; Instr. to Prof., Duke Univ., 1935—. Mem.: Am. Soc. of imnol. and Oceanog.; Am. Assn. of Univ. Profs.; Am. Soc. of ools.; Atlantic Estuarine Rsch. Soc.; N. C. Acad. of Sci.; Am. oc. of So. Eastern Zools.; Sigma Alpha Epsilon; Phi Sigma Biol. oc.; Sigma Xi. Contbr. to: Jour. of Morphol.; Limnol. and ceanog.; Crustaceana; Physiol. Zool.; Jour. of the Elisha Mitchell cientific Soc. Gen. Int.: Poteat Award of the N. C. Acad. of ci., 1950. Areas of Rsch.: Development of Marine Invertebrates n Relation to Physical Factors.

BOONE, Enoch Milton (Mr.), Prof. of Electrical Engineering, Dir., Electron Device Lab., Ohio State Univ., 2024 Neil Ave., Columbus 10, Ohio. Home Add.: 2579 Berwyn Rd., Columbus 21, Ohio. ELECTRON DEVICES AND ELECTRONICS. b. Millersburg, Ky., Feb. 17, 1903. s. Robert E. and Mary Alice (Clarke) B. Edn.: B.A., Univ. of Colo., 1926; M.S., ibid., 1932; M.S., Univ. of Mich., 1937. m. Nevada Atkinson, June 15, 1927. c.: Mildred Louise. Exp.: Instr., Univ. of Colo., 1926-28, 1928-30; Rsch. Physicist, Gen. Elec. Co., Pittsfield, Mass., 1930-32; Head, Engrng. Dept., Amarillo Coll., 1932-37; Asst. Prof., Ohio St. Univ., 1937-44; Assoc. Prof., ibid., 1944-47; Prof., Dir., Electron Device Lab., ibid., 1947—. Hon. Pos.: Chmn., Comm. on Microwave Tubes, Mem., Electron Tubes Comm. and Awards Comm., Dir., I.R.E., 1955-56. Mem.: I.R.E.; A.I.E.E.; Am. Soc. for Engrng. Edn.; Sigma Xi; Phi Beta Kappa; Tau Beta Pi; Eta Kappa Nu. Author: Circuit Theory of Electron Devices, 1953. Contbr. to: Proc. and Trans. of I.R.E. Areas of Rsch.: Vacuum and Solid-State Electron Devices.

BOOTH, Nicholas Henry, Jr. (Ph.D.), Prof., Hd., Dept. of Physiol., Coll. of Vet. Med., Colo. St. Univ., Fort Collins, Colo. Home Add.: 829 Pitkin, Fort Collins, Colo. PHYSIOLOGY; PHARMACOLOGY. b. Hannibal, Mo., Oct. 22, 1923. s. Nicholas H. and Ruby Marie (Swan) B. Edn.: D.V.M., Mich. State Univ., 1947; M.S., Colo. State Univ., 1951; Ph.D., Univ. of Colo., 1959. m. Jean Rawson Atyeo, Sept. 29, 1944. c.: Richard R.; Debra Jean; Diane Marie. Exp.: Asst. Prof., Dept. of Physiol., Colo. State Univ., 1948-55; Assoc. Prof., ibid., 1955-56; Assoc. Prof., Hd., Dept. of Physiol., ibid., 1956-59; Prof., Hd., Dept. of Physiol., 1959—. Mem.: A.A.A.S.; Am. Vet. Med. Assn.; Soc. of Exptl. Biol. and Med.; Phi Kappa Phi; Phi Zeta; Sigma Xi. Contbr. to: Jour. of Am. Vet. Med. Assn.; Am. Vet. Rsch. Jour.; Vet. Med.; Am. Jour. of Physiol. Serv. Rec.: U.S.N., 1944-46. Areas of Rsch.: Artificial Respiration of Large Animals (Cows and Horses); Meperidine Hydrochloride Studies in the Cat; D-Tubocurarine Chloride and Succinylcholine Chloride Studies in the Horse; Electrical Defibrillation of the Dog Heart; Baro- and Chemoceptor Reflex Mechanisms in Swine.

BORDAS, Carl William (D.Ed.), Prof., Chem., State Coll., Indiana, Pa. Home Add.: 686 S. 5th St., Indiana, Pa. INORGANIC CHEMISTRY; CHEMICAL EDUCATION. b. W. Decatur, Pa., Apr. 24, 1920. s. John C. and Edna F. (Goss) B. Edn.: B.S., The Pa. State Univ., 1944; M. Edn., ibid., 1950; D. Edn., ibid., 1957. m. Margaret M. Brown, Dec. 24, 1945. c. Linda Eileen; Pamela Jane. Exp.: Tchr., Curwensville H. S., Curwensville, Pa., 1946-48; Instr., Pa. St. Univ. Ctr., DuBois, Pa., 1948-50; Tchr., H. S., Curwensville, Pa., 1950-57; Prin., H. S., Ulysses, Pa., 1957; Asst. Prof., Pa. State Ctr., DuBois, Pa., 1957-59; Prof., State Coll., 1959—. Mem.: Am. Chem. Soc.; Theta Chi; Assn. of Pa. Chem. Tchrs.; Masons; Tall Cedars of Lebanon; Am. Legion. Author: Ashes of Conflict, 1958. Serv. Rec.: Army of U. S., 1944-46. Areas of Rsch.: Teaching of Science; Inorganic Chemistry.

BOREK, Felix (Ph.D.), Assoc. Chemist, Armed Forces Instit. of Pathol., Wash., D. C. Home Add.: 1911 E. W. Hwy., Silver Spring, Md. ORGANIC CHEMISTRY; IMMUNOCHEMISTRY. b. Krakow, Poland, May 5, 1926. s. Joel L. and Stephanie (Kronengold) B. Edn.: B.S., Hobart Coll., 1950; M.A., Harvard Univ., 1952; Ph.D., Rutgers Univ., 1956. m. Carmia Ganz, Oct. 27, 1957. Exp.: Rsch. Asst., Rutgers, Univ., New Brunswick, N. J., 1952-55; Rsch. Chemist, Columbia Univ., N. Y., 1955-57; Assoc. Chemist, Armed Forces Inst. of Pathol., Wash., D. C. 1958—. Mem.: Am. Chem. Soc.; Sigma Xi; A.A.A.S.; Phi Lambda Upsilon. Contbr. to: Jour. Biol. Chem.; Arch. Biochem. Biophys.; Jour. Org. Chem.; Jour. Immunol.; Nature; Bull. W.H.O. Gen. Int.: Lectr. in Immunochemistry at the Grad. Schl. of the Natl. Instits. of Health, Bethesda, Md. Areas of Rsch.: Studies of the Chemi. Specificity of Immune Reactions; Modification of Antigens; Labeling of Antibodies with Fluorescent Dyes and with Ferritin; Synthesis of Dyes; Chemistry of Steroid Hormones; Infrared Spectroscopy.

BORDIN, Edward S. (Ph.D.), Prof. of Psychol., Univ. of Mich., Ann Arbor, Mich. Home Add.: 210 Montgomery, Ann Arbor, Mich. CLINICAL PSYCHOLOGY. b. Phila., Pa., Nov. 7, 1913. s. Morris and Jennie (Zarovsky) B. Edn.: B.S.C., Temple Univ., 1935; M.S., ibid., 1937; Ph.D., Ohio State Univ., 1942. m. Ruth Anderson, June 20, 1941. c.: Martha Christine; Charlotte Anna. Exp.: Counselor, Univ. of Minn., Mlps., Minn., 1939-42; Person. Techn., War Dept., AGO, Wash., D. C., N. Y., 1942-45; Asst. Prof., Univ. of Minn., Mlps., Minn., 1945-46; Assoc. Prof., Wash. State Univ., Pullman, Wash., 1946-48; Assoc. Prof., Univ. of Mich., 1948-55; Prof., ibid., 1955—. Hon. Pos.: Editor, Jour. of Consulting Psychol.; Pres., Div. of Counseling Psychol., Am. Psychol. Assn. Mem.: Am. Psychol. Assn.; Am. Assn. for the Adv. of Sci.; Am. Pers. and Guid. Assn. Author: Psychological Counseling, 1955. Contbr. to: Jour. of Consulting Psychol.; Jour. of Counseling Psychol.; Pers. and Guid. Jour.; Ednl. and Psychol. Measurement; Contemporary Psychol.; Psychol. Rev. Areas of Rsch.: Counseling and Psychotherapy; Personality and Vocational Choice.

BORG, Alfred Francis (Ph.D.), Head, Dept. of Bacteriol., Kans. State Univ., Manhattan, Kans. Home Add.: 1801 College Ave., Manhattan, Kans. BACTERIOLOGY. b. Pateros, Wash., Jan. 13, 1918. s. Charles T. and Emma Ethel (Shinbur) B. Edn.: B.S., Univ. of Wash., 1940; M.S., ibid., 1943; Ph.D., ibid., 1948. m. Betty Eleanor Watson, Dec. 27, 1941. c.: Carol C.; David A.; Jennifer A. Exp.: Bacteriologist, Biochem. Rsch. Fdtn., Newark, Del., 1948-49; Asst. Prof., Univ. of Ill., 1949-53; Assoc. Prof., N. C. State Coll., 1953-57; Prof. and Head, Kans. State Univ., 1957—; Acting Dean, Grad. Schl., Kans. State Univ., 1961-62. Hon. Pos.: Chmn., Inter-Soc. Com. on Lab. Servs. Related to Health, 1952-55; Pres., Mo. Valley Br., Am. Soc. for Microbiol., 1960-61. Mem.: Am. Soc. for Microbiol.; Am. Soc. of Prof. Biologists; Am. Assn. Adv. Sci.; Soc. for General Microbiol.; Wildlife Disease Assn.; Kans. Acad. of Scis.; Sigma Xi; Phi Sigma; Gamma Sigma Delta. Contbr. to: Jour. of Bacteriol.; Applied Microbiol. Serv. Rec.: Army of U. S., 1943-46. Gen. Int.: Special Consultant, Special Programs in Sci. Edn., Natl. Sci. Fdtn. Areas of Rsch.: General Bacteriology, Microbial Ecology, Cellular Slime Molds.

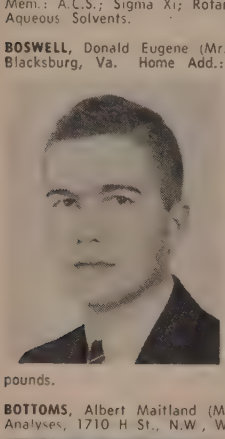
BORST, Lyle Benjamin (Ph.D.), Prof., Dept. of Physics, Univ. of Buffalo, Buffalo 14, N. Y. NUCLEAR PHYSICS. b. Chicago, Ill., Nov. 24, 1912. s. Geo. Wm. and Jean Carothers (Beveridge) B. Edn.: A.B., Univ. of Ill., 1936; A.M., ibid., 1937; Ph.D., Univ. of Chicago, 1941. m. Barbara Mayer, 1939. c.: John Benjamin; Stephen Lyle; Frances Elizabeth. Exp.: Dept. Chmn., Brookhaven Natl. Lab., Upton, N. Y., 1946-51; Chmn., Dept. of Physics, N. Y. Univ., 1954-61; Prof., Physics, Univ. of Buffalo, 1962—. Hon. Pos.: Chmn., Am. Inst. of Physics, Comm. Visiting Scientists, Bd. Mem., Am. Civ. Lib. Union. Mem.: Am. Phys. Soc.; A.A.A.S.; Phi Beta Kappa; Tau Beta Pi. Contbr. to: Phys. Rev.; Science; Jour. Chem. Phys. Areas of Rsch.: Nuclear Physics and Technology; Cryophysics; History of Technology.

BOSEE, Captain Roland A. (Ph.D.), Dir., Air Crew Equip. Lab., Naval Air Material Center, Phila. 12, Pa. BIOCHEMISTRY; PHYSIOLOGY. b. Hagerstown, Md., Feb. 12, 1910. Edn.: B.A., Temple Univ., 1932; B.S., Drexel Inst. of Tech., 1934; Ph.D., Syracuse Univ., 1937. m. Teri Somers. c.: Teri; Roland, Jr. Exp.: Flight Deck and V-1 Div. Off. to Asst. Air Off., USS Bataan (CVL 29), 1943-44; Air Off., USS Matanikau, (CVE 101), 1944-45; Staff, Technical Training Command, Pensacola, Fla., 1946-47; Air Group Commander, 1947; Naval Air Test Center, Patuxent River, Md., 1947; Hd., Aviation Physiology Branch (now the Aviation Medicine Branch), 1949-53; Test Dir. of the Naval Parachute Facility, El Centro, Calif., 1953-56; Deputy Dir. of the Air Crew Equip. Lab., Naval Air Material Center, 1956-58; Dir., Naval Air Crew Equip. Lab., 1958—. Hon. Pos.: Alternate Mem., Aerospace Med. Panel of the Advisory Group for Aeronautical Resc. and Development, 1959. Mem.: Inst. of Chemists; Am. Chem. Soc.; Fellow, Aerospace Med. Assn.; N. Y. Acad. of Scis.; Assoc. of Milit. Surgeons; Am. Assn. for the Adv. of Sci.; Soc. of Am.

Military Engrs. Serv. Rec.: U.S.N., 1940—. Gen. Int.: Designed and Supervised the Construction of the 40' x 10' Low Pressure Chamber currently in use as a tool for space investigations; directed the development of the Project Mercury Space Suit.

BOSTON, Alvin Dale (Ph.D.), Dean, Coll. of Arts and Scis., N. M. St. Univ., University Park, N. Mex. Home Add.: 2037 Crescent Dr., Las Cruces, N. Mex. INORGANIC CHEMISTRY. b. Pawnee, Ill., May 13, 1902. s. Burley Andrew and Hallie Blanche (Dewhirst) B. Edn.: A.B., Ill. Coll., 1927; M.S., Tulane Univ., 1929; Ph.D., Ohio St. Univ., 1936. m. Lora Oletha Glass, Sept. 19, 1927. c.: Joan Ellen. Exp.: Assoc. Personnel Dir., Antioch Coll., 1936-38; Head, Chem. Dept., Ill. Coll., 1938-43; Head, Chem. Rsch., Olin Corp., East Alton, Ill., 1943-44; Assoc. Prof. of Chem., Wabash Coll., 1944-47; Head, Chem. Dept., N. Mex. St. Univ., 1947-60; Dean, Coll. of Arts and Scis., ibid., 1947 . Mem.: A.C.S.; Sigma Xi; Rotary Internatl. Areas of Rsch.: Non-Aqueous Solvents.

BOSWELL, Donald Eugene (Mr.), Rsch. Fellow, Va. Poly. Instit., Blacksburg, Va. Home Add.: 203 Turner St., Blacksburg, Va. ORGANIC CHEMISTRY. b. Durham, N. C., Aug. 12, 1934. s. Luther Eugene and Jennie (Clegg) B. Edn.: B.S., Duke Univ., 1956; M.S., Va. Polytech. Instit., 1960. m. Wilma Rudder, 1956. c.: Russell Arleigh; Andrew Luther. Exp.: Analytical Chemist, Liggett and Myers, Tobacco Co., Durham, N. C., 1953-56; Phys. Sci. Spec., U. S. Army Chem. Corps, Rocky Mtn. Ars., Denver, Colo., 1957-59; Rsch. Fellow, Va. Polytech. Inst., 1959—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Phi Lambda Upsilon; Sigma Xi; Sigma Phi Epsilon. Contbr. to: Va. Jour. of Sci.; Jour. of Organic Chemistry. Serv. Rec.: U. S. Army, 1957-59. Areas of Rsch.: Unsaturated Cyclic Sulfur Compounds.



BOTTOMS, Albert Maitland (Mr.), Staff Mem., Inst. for Defense Analyses, 1710 H St., N.W., Wash., D. C. Home Add.: 3213 Old Dominion Blvd., Alexandria, Va. MILITARY OPERATIONS RESEARCH—OCEANOGRAPHY. b. N. J., Sept. 2, 1925. s. Maitland (dec.), and Manette (Staudt) B. Edn.: B.S., Ch.E., Univ. of Pa., 1949; M.S., Phys. Chem., Ia. Sta. Coll., 1951. m. Marjorie Spangenberg, 1957. c.: Karen. Exp.: Devel. Chemist, Am. Cyanamid Co., Piney River, Va., 1951-52; Operations Analyst, Operations Eval. Group, Wash., D. C., 1952-58; Proj. Leader, Hd. Undersea Warfare Group, Staff Mem., Inst. for Defense Analyses, Wash., D. C., 1958—. Mem.: Am. Assn. for the Adv. of Sci., Fellow; Operations Rsch. Soc. of Am., N. Y. Acad. of Sci.; Am. Rocket Soc.; U. S. Naval Inst.; Am. Geophys. Union; Sigma Tau; Alpha Chi Sigma. Contbr. to: Classified Lit. Serv. Rec.: U. S. Milit. Acad., 1943-45. Gen. Int.: Town Councilman, Vienna Virginia, 1958-59 Areas of Rsch.: Operations Rsch. as Applied to Undersea Warfare; Military Oceanography; Underwater Acoustics.

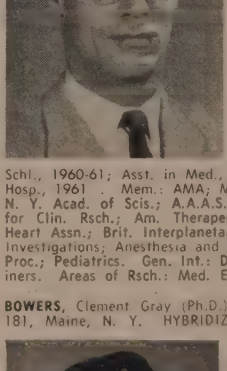
BOTTUM, Joe Carroll (Mr.), Asst. Hd., Dept. of Agric. Econs., Purdue Univ., Lafayette, Ind. Home Add.: 611 Rose St., W. Lafayette, Ind. AGRICULTURAL ECONOMICS AND PUBLIC AFFAIRS. b. Tulare, S. D., Nov. 21, 1902. s. George Roswell and Mary Jane (Stewart) B. Edn.: B.S., S. D. Sta. Coll., 1926; M.S., Univ. of Ill., 1927 m. Florence Margaret Brown, June 8, 1928 c.: Bruce Carroll; Edward Stewart. Exp.: Asst., Univ. of Ill., Urbana, Ill., 1926-28; Asst., Purdue Univ., W. Lafayette, Ind., 1928-40; Asst. Prof., ibid., 1940-42; Assoc. Prof., ibid., 1942-45; Asst. Hd., ibid., 1945—. Hon. Pos.: Vice-Pres., Am. Farm Econ. Assn., 1954-55; Mem. of Natl. Edn'l. Comm. on Agric. Policy; Mem. of Am. Soc. of Farm Mgrs. and Rural Appraisers; Mem. of Interregional Comm. on Agric. Price Policy; Chmn. of U. S. Coun. of the Internatl. Conf. of Agric. Econts., 1959-61; Vice Pres., Am. Country Life Assn., 1959-60. Mem.: Internatl. Assn. of Agric. Econts.; Am. Farm Econ. Assn.; Am. Farm Mgrs. and Rural Appraisers; Ind. Acad. of the Social Scis.; Alpha Zeta; Sigma Xi; Epsilon Sigma Phi; Pi Kappa Delta; Phi Sigma. Contbr. to: Am. Farm Econ. Assn. Gen. Int.: Received U. S. Dept. of Agric. Award for Superior Serv. for Initiating Edn'l. Progs. Resulting in Major Improvements in Agric. Through Application of Econ. Inform. and Understanding in Farm, Community and Natl. Affairs, 1960. Areas of Rsch.: Farm Management, Outlook, Public Policy.

BOUCHER, Raymond E. (Ph.D.), Hd., Organic Lab., Anken Chem. and Film Corp., Williamstown, Mass. Home Add.: 23 So. St., Williamstown, Mass. ORGANIC SYNTHESIS b. Brunswick, Me., May 11, 1921. s. Frank E. and Alma (Dufresne) B. Edn.: B.S., Bowdoin Coll., 1945; Ph.D., Ind. Univ., 1950 m. Phyllis Rutan, 1947 c.: Virginia Lee; Dale Barry Exp.: Org. Chemist, Eli Lilly and Co., Indpls., Ind., 1950-56; Asst. to Tech. Dir., Polak's Frutal Works, Middletown, N. Y., 1956-60; Adm. Asst. to Pres., Gamma Chem. Corp., Great Meadows, N. J., 1960-61; Hd. Organic Lab., Anken Chem. and Film Co., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Inst. of Chemists; N. Y. Acad. of Sci.; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Psi Upsilon. Serv. Rec.: U. S. Army, 1943. Areas of Rsch.: Organic Syntheses; Chemical Production; Flavors and Perfumes Chemistry; Drug Research; Natural Products Isolation and Identification.

BOURDO, Eric Albert, Jr. (Ph.D.), Dir., Ford Forestry Ctr., Mich. Coll. of Mining and Technol., L'Anse, Mich. FORESTRY MANAGEMENT RESEARCH (INCLUDING SILVICULTURAL AND SILVICAL RESEARCH). b. Muskegon, Mich., Jan. 15, 1917. s. Eric A. and Rose E. (Beckman) B. Edn.: Ph.D., Univ. of Mich., 1955; M.A., ibid., 1951; B.S., Mich. Coll. of Mining and Technol., 1943. m. Charline V. (Leady) March, 1942. c.: Eric A., III; Laura L.; Michael Forest. Exp.: Instr., Mich. Coll. of Mining and Technol., 1946-51; Asst. Prof., ibid., 1951-55; Assoc. Prof., ibid., 1955-58; Prof., Mich. Coll. of Mining and Technol., 1958 . Mem.: Soc. of Am. Foresters; Ecol. Soc. of Am.; Wilson Ornithol. Soc.; Mich. Acad. of Sci.; Wis. Acad. of Sci.; Delta Sigma Phi; Sigma Xi; L'Anse Lions Club. Contbr. to: Ecology; Edn'l. and Psychol. Measurements; Jour. of Forestry. Areas of Rsch.: Forest Management Rsch. (including Silvical and Silvicultural Rsch.); Management of the Ford Forestry Center.

BOVE, Albert Norman (Mr.), Editor, IGY Bulletin, Natl. Acad. of Scis., Washington, D. C. Home Add.: 5707 N. 36th St., Arlington 7, Va. SCIENCE EDITING AND WRITING IN THE GEOPHYSICAL AND SPACE SCIENCES. b. Brooklyn, N. Y., Feb. 5, 1924. s. John William and Ida (Steinberg) B. Edn.: B.A., Univ. of N. Mex., 1950. m. Karen Lynn Thompson, Dec. 14, 1957. c.: Erika Lynn. Exp.: Geologist, Military Geol. Br., U. S. Geological Survey, Wash., D. C., 1951-54; Geologist, Gen. Geol. Br., ibid., 1954-57; Sci. Editor-Writer, U. S. Natl. Comm. for Internatl. Geophys. Year, Natl. Acad. of Scis., Wash., D. C., 1957—. Mem.: Am. Geophys. Union; A.A.A.S.; Geol. Soc. of Wash. Contbr. to: IGY Bull.; Trans. of Am. Geophysical Union; Various U. S. Geol. Survey Publications. Serv. Rec.: U. S. Army, 1943-46.

BOWEN, Edward Hooper, Jr. (M.D.), Chief, Med. Electronics and Space Med., Melpar, Inc., Falls Church, Va. Home Add.: 207 Valley Brook Dr., Falls Church, Va. INTERNAL MEDICINE (CARDIOLOGY); BIOASTRONAUTICS. b. Fall River, Mass., March 7, 1925. s. Edward Hooper and Isabel (Carpenter) B. Edn.: M.D., Harvard Univ. Medical School, 1949. m. Ann Noble, Nov. 21, 1959. Exp.: Internship, and Residency Training, Long Island College Hosp., Brooklyn, N. Y., 1949-52, Resident, Cardiology, St. Luke's Hosp., N. Y. City, 1952-53; Private practice, Internal Med., N. Y. City, 1953-56; Med. Officer, Pa. Railroad, Phila., Pa., 1956; Clin. Staff, Smith, Kline and French Labs., Phila., Pa., 1956-59; Dir. of Clin. Rsch., Baxter Labs., Morton Grove, Ill., 1960-61; Assoc. in Med., Northwestern Univ., Med. Schl., 1960-61; Asst. in Med., Georgetown Med. Div., D. C. Gen. Hosp., 1961 . Mem.: AMA; Med. Soc. of the Dist. of Columbia; N. Y. Acad. of Scis.; A.A.A.S.; Phila. Co. Med. Soc.; Am. Fed. for Clin. Rsch.; Am. Therapeutic Soc.; Aerospace Med. Assn.; Heart Assn.; Brit. Interplanetary Soc. Contbr. to: Jour. of Clin. Investigations; Anesthesia and Analgesia, Current Researches, Fed. Proc.; Pediatrics. Gen. Int.: Diplomate, Natl. Bd. of Med. Examiners. Areas of Rsch.: Med. Electronics and Bioastronautics.



BOWERS, Clement Gray (Ph.D.), Rsch. Assoc., Cornell Univ., Box 181, Maine, N. Y. HYBRIDIZATION OF ORNAMENTAL PLANTS. b. Binghamton, N. Y., Dec. 22, 1893 s. LaMont M. and Fanny A. Gray) B. Edn.: B.S., Cornell Univ., 1923; M.S., ibid., 1925; Ph.D., Columbia Univ., 1930 m. Janet R. Whitney, Oct. 12, 1925 c.: Janet W. Exp.: Rsch. in Plant Breeding and Cytology, N. Y. Botanical Garden, 1926-30; Private Work and Consultant in Horticulture Trade, 1930-41; Lectr. in Botany, Triple Cities Coll., Syracuse Univ., 1947-51; Professorial Lectr. in Bot., Harpur Coll., State Univ. of N. Y., 1951-55; Rsch. Assoc. in Ornamental Horticulture, Cornell Univ., 1948- Hon. Pos.: Vice-Chmn. Plant Breeding Methods and Chmn. Floriculture Exhibits, 6th Internatl. Cong. of Genetics, 1932; Mem., Internatl. Com. on Horticultural Nomenclature, London, 1952; Chmn., Broome Co. Planning Board, 1941—. Mem.: Fellow, A.A.A.S.; Life Fellow, R.H.S.; Charter Dir., Am. Horticultural Coun.; Botanical Soc. Am.; Torrey Botanical Club; Am. Genetic Assn.; Am. Soc. for Horticultural Sci.; Am. Rhododendron Soc.; Internatl. Dendrol. Union; Am. Horticultural Soc.; Pi Alpha Xi. Author: Rhododendrons and Azaleas, 1936, Rev. 1960; Winter-Hardy Azaleas and Rhododendrons, 1953 Contbr. to: Jour. N. Y. Botanical Garden;

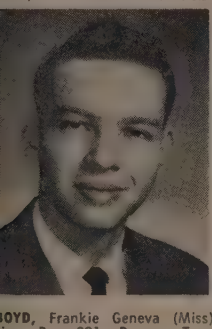
ətl. Horticulture Mag.; Bull. Torrey Botanical Club; etc. Serv. ec.: War Trans. Administrator for Broome Co., N. Y. and Mem. the Co. War Coun., 1941-46. Gen. Int.: Internatl. Pres., ɔrch Clubs Assn., 1940-41; Silver Medalist, Fed. Garden Clubs N. Y. State, 1951; Jackson Dawson Award, Mass. Hort. Soc., ɔ61; Gold Medalist, Men's Garden Clubs of Am., 1960; Distin- ɔished Serv. Citation, Broome Co., Civil Serv. Employees, 1953; ɔn. Life Mem., Univ. of Wash. Arboretum Assn. Special Int.: ıant Breeding and Hybridization, with Special Reference to Orna- ental and Floral Materials; General Botany; History of Plants ıd Garden Design.

OWEN, William Harold (Mr.), Supt., Guggeinheim Aeronautics ab., Calif. Inst. of Technol., 2067 Paloma St., Pasadena 7, alif. AERONAUTICS RESEARCH. b. Pilot Oak, Ky., Sept. 27, 903. s. Berry and Belle (Murchison) B. Edn.: B.S., Univ. of alif., 1928; M.S., Calif. Inst. of Tech., 1932; M.S., ibid., 1938. ı. Ruth DeWitt, July 27, 1929. c.: Stuart W.; Louise E. Exp.: utomotive Engr. in Detonation Rsch. with Basic Cycle Changes, alif. Inst. of Tech., Pasadena, Calif., 1928-29; Rsch. Asst. in eronautics, Guggeinheim Aero. Labs., Calif. Inst. of Tech., 1929- 1; Supt., ibid., 1941—. Mem.: Inst. of Aero. Sci.; A.A.A.S.; igma Xi; Calif. Profl. Engr. Serv. Rec.: O.R.S., 1927-42. Spec. ıt.: Wind Tunnel Testing and Equipment Design.

OWERS, James Hoyt (Mr.), Tchr. of Biol., Robert E. Lee H Schl., aytown, Tex. Home Add.: 301 W. James St., Baytown, Tex.

VERTEBRATE ZOOLOGY; HERPETOLOGY. b. Clarksville, Tex., May 3, 1935. s. Hoyt Tyndle and Frances Elizabeth (Proctor) B. Edn.: A.B., Paris Jr. Coll., 1955; B.S., Sam Houston Sta. Coll., 1957; M.Ed., ibid., 1958; M.A., Stephen F. Austin Sta. Coll., 1962. m. Joanne Neal, Aug. 19, 1955. c.: Mark Tyndle. Exp.: Hd. of Biol. Dept., Tex. Sr. H. Schl., Texarkana, Tex., 1958-61; Tchr., Biol., Robert E. Lee H. Schl., 1961—. Hon. Pos.: Mem. of Exec. Bd., Texarkana Classroom Tchrs. Assn.; Sponsor of H. Schl. Sci. Seminar, Co-Sponsored by the H. Schl. and Humble Oil and Refining Co. Mem.: Am. Assn. for the Adv. of Sci.; Herpetols. League; Phila. Herpetol. Soc. Contbr. to: he Southwestern Nat.; Herpetologica; Bull. of the Phila. Herpetol. oc. Gen. Int.: Locality Record of Bufo Valliceps, Nacogdoches o., Recorded Record Birth of Thamnophis Sauritus. Areas of tsch.: Feeding Habits of the Natrix Water Snakes of Bowie and ed River Counties; Ophiology.

OXER, Robert Jacob (Ph.D.), Asst. Prof., Oglethorpe Univ., Atanta, Ga. Home Add.: 702 Button Rd., N.E., Atlanta 5, Ga.



ORGANIC CHEMISTRY. b. Brooklyn, N. Y., Apr. 9, 1935. s. Nathan and Frieda (Walkin) B. Edn.: B.S., Brooklyn Coll., 1956; Ph.D., Rutgers Univ., 1961. Exp.: Asst. Prof., Oglethorpe Univ., 1961—; Instr., Part time, Sou. Coll. of Pharmacy, 1961—. Mem.: Ga. Acad. of Sci.; A.C.S.; Pi Lambda Upsilon. Areas of Rsch.: Chemical Edn.

OYD, Frankie Geneva (Miss), Chemist, J. M. Huber Corporaion, Box 831 Borger, Texas. Home Add.: 7419 Stagecoach Lane, San Antonio 27, Texas.

PHYSICAL CHEMISTRY (RESEARCH). b. Roscoe, Tex., May 22, 1933. d. Charlie and Lucy May (Younger) B. Edn.: B.S., Tex. Tech. Coll., 1955. Exp.: Biol., Tchr., Big Spring H. Schl., Big Spring, Tex., 1955-56; Chemist, M. D. Anderson, Univ. of Tex., Houston, Tex., Sum., 1957; Medical Technol., Howard Co., Hosp. Found., Big Spring, Tex., 1957-59; Chemist, J. M. Huber Corp., 1959. Mem.: Am. Cheml. Soc.; Am. Assn. for the Adv. of Sci. Areas of Rsch.: Carbon Black Rsch., Cancer Research (Protein Chemistry); Chemical Librarianship.

BOWMAN, Donald H. (Ph.D.), Agronomist, Delta Br. Expt. Station, Miss. Agric. Expt. Statn., Stoneville, Miss. Home Add.: 316 Sycamore, Leland, Miss. AGRONOMY. b. Osage City, Kans., May 18, 1911. s. L. Houts and May (Lux) B. Edn.: B.S., Kans. Sta. Univ., 1933; M.S., ibid., 1935; Ph.D., Univ. of Wis., 1939. m. Kathryn R. Pelton, Apr. 27, 1935. c.: Robert P.; Patricia R. Exp.: Asst. Pathol., U. S. Dept. Agric., Wooster, Ohio, 1939-44; Plant Pathol., Tex. A. and M. Coll., Coll. Station, Tex., 1946-48; Agronomist, Miss. Agric. Expt. Stat., Stoneville, Miss., 1948—. Mem.: Am. Soc. of Agronomy; Am. Phytopathol. Soc.; Am. Assn. for the Adv. of Sci., Fellow; Sigma Xi; Lions Club of Leland. Contbr. to: Agronomy Jour. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Corn and Oat Breeding.

BOYD, Frederick Tilghman (Ph.D.), Agronomist, Univ. of Fla., 5305 S.W. 12th St., Ft. Lauderdale, Fla. Home Add.: 5305 S.W. 12th St., Ft. Lauderdale, Fla.

FIELD CROPS AND SOILS. b. St. Paul, Minn., Mar. 9, 1913. s. Leon Higginson, and Marie Elizabeth (Mollet) B. Edn.: B.S., Univ. of Wis., 1934; Ph.D., ibid., 1938. m. Jeannette Dresser, 1937. c.: Barbara; Marilyn; Virginia; Bettie; Frederick, Jr. Exp.: Agronomist, U. of Fla., 1938-41; Agronomist, Am. Cyanamid Co., Lafayette, Ind., 1945-48; Agronomist, Crow's Hybrid Corn Co., Milford, Ill., 1948-51; Agronomist, Univ. of Fla., 1953—. Mem.: Am. Soc. of Agron.; Fla. Soil and Plant Sci. Soc.; A.A.A.S.; Natl. Geographic Soc.; Sigma Xi; Rotary Club; Mason; Reserve Officer's Assn. (Lt. Col.). Contbr. to: Soil and Crop Sci. Soc. Proc.; Botanical Gazette; Fla. Expt. Sta. Bull. Serv. Rec.: U. S. Army, 1942-45, 1951-52. Areas of Rsch.: Corn and Sorghum Improvement; Fertilization of Grass and Grain Crops.

BOYD, Landis Lee (Ph.D.), Prof., 306 Riley-Robb Hall, Cornell Univ., Ithaca, N. Y. Home Add.: 1311 E. Sta. St., Ithaca, N. Y.

AGRICULTURAL ENGINEERING. b. Creston, Ia., Dec. 1, 1923. s. Harold Everett and Edith Elizabeth (Lauer) B. Edn.: B.S.A.E., Ia. Sta. Coll., 1947; M.S., ibid., 1948; Ph.D., Ia. Sta. Univ., 1959. m. Lila Mae Hummel, Sept. 7, 1946. c.: Susan Lee; Barbara Edith; Shirley Rae; Carl Steven; Philip Wayne. Exp.: Sr. Rsch. Fellow, Ia. Sta. Coll., Ames, Ia., 1947-48; Asst. Prof., Cornell Univ., 1948-53; Assoc. Prof., Cornell Univ., 1953-60; Sr. Rsch. Fellow, Ia. Sta. Coll., 1954-55; Prof., Cornell Univ., 1960—. Hon. Pos.: Co-Ordinator of Grad. Instrn., Agric. Engrng. Dept. Chmn., ASAE Comm. on Grad. Instrn.; Vice Chmn., Edn. and Rsch. Div., ASAE. Mem.: Am. Soc. of Agric. Engrs.; Am. Soc. for Engrng. Edn.; Phi Kappa Phi; Sigma Xi; Gamma Sigma Delta; Kappa Sigma; Rotary Internatl. Contbr. to: Agri. Engrng.; Trans. of ASAE; Forest Prods. Jour.; Jour. of Engrng. Edn. Serv. Rec.: U. S. Naval Reserve, 1942-61. Gen. Int.: ASAE Grad. Paper Award, 1949; NATO Postdoc. Fellowship Awardee, 1962; Licensed Profl. Engr. Areas of Rsch.: Farm Buildings and Equipment-Structural, Environment, and Materials Handling and Processing.

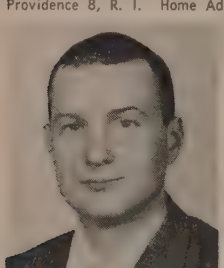
BOYER, Peter Boyajian (Mr.), Supervising Hydr. Engr., Asst. Chief, Hydrol. and Meteorol. Sect., Head, Spec. Hydrol. Problems, U. S. Army Engrs., Portland, Ore. Home Add.: 2724 N.E. Dunckley St., Portland, Ore.

HYDROLOGY (SNOW HYDROLOGY, RESERVOIR AND RIVER WATER TEMPERATURES). b. Haruniye, Turkey, May 18, 1905. s. Sarkis and Martha (Bedrosian) B. Edn.: B.S., Colo. St. Univ., 1930; M.S., Columbia Univ., 1932. m. Gladys F. Niebling, Sept. 5, 1937. c.: Philip; Nancy; Bette. Exp.: Instr. and Unit Leader, Am. Near East Relief Orphanage, Syros, Greece, 1923-26; Civil Engr., Genesee Bridge Co., Rochester, N. Y., 1935-36; Civil Engrng. Dept. Head, Ore. Inst. of Technol., 1936-39; Structural Hydraulic Engr., U. S. Army Engrs., 1940-49; Tech. Asst., Coop. Snow Rsch. and Anal., San Francisco, Calif., 1949-53; Asst. Dir., ibid., Portland, Ore., 1953-56; Instr., Multnomah Jr. Coll. Ext., 1954—; Hydr. Engr., U. S. Army Engrs., Portland, Ore., 1957—. Hon Pos.: Northwest Regional Coun. Mem., Am. Geophys. Union. Mem.: Am. Soc. of Civil Engrs.; Western Snow Conf.; Soc. Am. Military Engrs.; Phi Kappa Phi. Contbr. to: Am. Geophys. Union Trans.; Jour. of Hydraulics, Am. Soc. of Civil Engrs.; Western Snow Conference Annual; Bull. of Internatl. Assn. of of Scientific Hydrology. Serv. Rec.: U. S. Army, 1950-61. Gen. Int.: Medal of Award from Colo. St. Bd. of Engrs., 1930. Areas of Rsch.: Photoelasticity; Snow Melt Rsch. and Analysis; Reservoir and River

Temperatures; Methods of Tchng. Math. and Engrng. Fundamentals; Regional Flood Frequency Studies. Foreign Languages: Turkish, Armenian, some German and French.

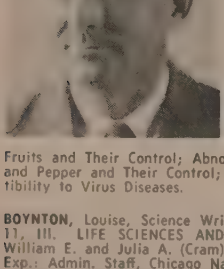
BOYER, Lee Emerson (Ed.D.), Coordinator In-Service Programs, Dept. Public Instruction, Harrisburg, Pa. Home Add.: 1508 Pelham Road, Harrisburg, Pa. MATHEMATICS; EDUCATION. b. Gratz, Pa., July 27, 1900. s. Jacob M. and Carrie (May) B. Edn.: A.B., Susquehanna Univ., 1926; Ed.M., Harvard Univ., 1934; Ed.D., Pa. State Univ., 1939. m. Laura Henninger, March 21, 1921. c.: Romaine Evelyn, (Mrs. Wm. E. Macht); Dolores Elaine, (Mrs. Byron L. Parry). Exp.: Rural Schl. Tchr., Lykens Twp., Pa., 1918-23; Math.-Sci. Tchr., Berrysburg H.S., 1926-27; Math. and Sci. Tchr., Loysville H.S., 1928-34; Math. Prof., Millersville State Coll., 1934-56; Math. Specialist, Pa. Dept. Pub. Insctn., 1956—. Hon. Pos.: Dir., Natl. Coun. Tchrs. of Math. Mem.: A.A.A.S.; Natl. Coun. Tchrs. Math.; Pa. Coun. Tchrs. Math; Natl. Sci. Tchrs. Assn.; Pa. Sci. Tchrs. Assn.; Natl. Edn. Assn.; Pa. Edn. Assn.; Phi Delta Kappa. Author: Story of Tressler Orphans Home in Word and Picture, 1930; College General Math. for Prospective Secondary School Teachers, 1939; An Introduction to Math. for Teachers, 1945; An Introduction to Math., 1955. Contbr. Author: A Sourcebook of Math. Applications, 1942. Contbr. to: Math. Tchr.; Jour. Exptl. Edn.; Schl. Sci. and Math.; Pa. Schl. Jour.; Ednl. Method; Tchr. Edn. Jour.; Proc. Internatl. Congress, Mathematicians,; 1950 Schl. Sci. and Math.; Jour. Ednl. Rsch.; Updating Math.; Phi Delta Kappan; Ednl. Outlook; Scripta Math. Areas of Rsch.: Math. and Education.

BOYKO, Edward Raymond (Ph.D.), Asst. Prof., Providence Coll., Providence 8, R. I. Home Add.: 1890 Broad St., Cranston, R. I.



SOLID STATE PHYSICS. b. Passaic, N. J., May 16, 1930. s. Edward and Helen (Guzy) B. Edn.: B.A., Univ. of Pa., 1951; M.S., Rutgers Univ., 1954; Ph.D., ibid., 1956. Exp.: Rsch. Assoc., Gen. Electric Co., Schenectady, N. Y., 1955-57; Sr. Engr., Westinghouse Electric Co., Pittsburgh, Pa., 1957-59; Rsch. Supvr., American Standard Rsch. Div., Union, N. J., 1959-61; Asst. Prof., Providence Coll., 1961—. Mem.: Am. Crystallographic Assn.; The N. Y. Acad. of Scis.; Am. Assn. for Adv. of Sci.; Kappa Alpha; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Acta Crystallographica. Areas of Rsch.: Determination of Crystal Structures by X-Ray Crystallography; Crystal Physics: Defect Structures and Radiation Effects in Solids.

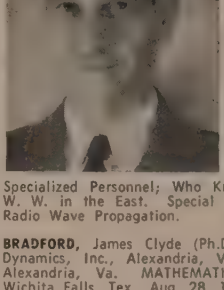
BOYLE, John Samuel (Ph.D.), Assoc. Prof. of Plant Path., Buckhout Lab., The Pa. State Univ., Univ. Park, Pa. Home Add.: 536 Hillcrest Ave., State Coll., Pa.



VIRUS DISEASES OF FRUIT AND VEGETABLE CROPS. b. Laverne, Okla., June 7, 1917. s. William F. and Elizabeth H. (Maffitt) B. Edn.: B.A., Univ. of Wichita, 1939; M.S., Univ. of Iowa, 1942; Ph.D., Univ. of Wis., 1949. m. Nellie Garretta Girvin, June 7, 1941. c.: Elizabeth M.; Stephen G.; Margaret E. Exp.: Rsch .Asst., Plant Pathol., Univ. of Wis., 1946-49; Asst. Prof., Plant Pathol., Pa. State Univ., 1949-55; Assoc. Prof., Plant Path., ibid., 1956—. Mem.: Am. Assn. Adv. Sci.; Am. Phytopath. Soc.; A.A.U.P.; Gamma Alpha; Sigma Xi; Kiwanis. Contbr. to: Science; Phytopathology. Serv. Rec.: U.S.N.R., 1942-45. Areas of Rsch.: Virus Diseases of Stone Fruits and Their Control; Abnormal Ripening Disorders of Tomato and Pepper and Their Control; Host-plant Metabolism and Susceptibility to Virus Diseases.

BOYNTON, Louise, Science Writer, 56 East Bellevue Pl., Chicago 11, Ill. LIFE SCIENCES AND CERAMICS. b. Chicago, Ill. d. William E. and Julia A. (Cram) B. Edn.: Ph.B., Univ. of Chicago. Exp.: Admin. Staff, Chicago Nat. Hist. Museum, 1946-53; Foreign Assignments, Scandinavia, Gr. Brit., Europe, 1953-55; Domestic Assignments, 1955-58; Author, Zoology Vol., Childcraft Series, Field Enterprises, 1958; Asst. Dir., Chicago Acad. Sci., 1959-60; Dir. Scientific Rsch., Boynton Associates, Chicago, Ill., 1960—. Hon. Pos.: Participant, Mich. State Univ. Seminar for Selected Sci. Writers, 1961; Del., Acad. Conf., Natl. Sci. Found., 1959, 1960. Mem.: Am. Soc. of Ichthyologists and Herpetologists; Am. Soc. of Mammalogists; Am. Forestry Assn.; Natl. Assn. of Sci. Writers; Am. Assn. for Adv. of Sci.; Ill. State Microscopical Soc.; Ill. St. Acad. of Sci.; Minn. Acad. of Scis.; Am. Craftmens' Coun.; Pi Delta Pi. Author: Nature's Ways in the Animal World, 1960. Contbr. to: Craft Horizons; Ceramics Monthly; Ceramics Age; Institutions; Highlights for Children. Areas of Rsch.: Life Scis.; Ecology; Comparative Anatomy; Animal Behavior; Ceramics; High Temperature and Crystalline Glazes; Interpretation above Fields in Life Sciences for Lay and Juvenile Readers; Scientific Photography.

BRAATEN, Arthur M. (Mr.), Rsch. Engr., RCA Labs., Box 6 Riverhead, L. I., N. Y. RADIO ENGINEERING. b. St. Paul, Mi

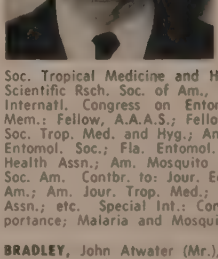


Nov. 30, 1901. s. Peter T. Louise M. (Pitra) B. Edn.: B.E Univ. of Minn., 1928; E.E., ib 1950. m. Louise F. Herman, J 29, 1930. c.: Arthur Peter. E Prospector-trapper, Eagle, Alas 1920-23; Lt., Sig. Corps R U.S.A., 1928-38; Rsch. Engr., dio Commun. Rsch. and Dev. L RCA, Riverhead, L. I., N. 1928—. Mem.: Inst. Rad. Eng A.A.A.S.; Radio Soc. Gt. Brita Am. Radio Relay League; Forestry Assn.; Natl. Rifle Ass Tau Beta Pi; Eta Kappa Nu; Sc bard and Blade; Pi Tau Pi Sig Contbr. to: Proc. I.R.E.; Jo Terrestrial Magnetism and Atm pheric Electricity; Bull. Rad Soc. Gt. Britain; QST. Listed A.M.S.; Natl. Roster of Sci. Specialized Personnel; Who Knows—and What; W. W. in Er W. W. in the East. Special Int.: Ionospheric and Troposph Radio Wave Propagation.

BRADFORD, James Clyde (Ph.D.), Mathematician, United Elec Dynamics, Inc., Alexandria, Va. Home Add.: 4001 Cavend Alexandria, Va. MATHEMATICS, OPERATIONS RESEARCH. Wichita Falls, Tex., Aug. 28, 1930. s. B. L. and Erlene (Over B. Edn.: B.S., N. Tex. St. Univ., 1951; M.S., ibid., 1952; Ph Univ. of Okla., 1957. m. Elizabeth Echols., May 31, 1951. Susan Carol; Charles Alan. Exp.: Assoc. Prof., Abilene Ch tian Coll., 1957-61; Instr., Univ. of Okla., 1952-57; Consulta Chance-Vought Corp., Dallas, Tex., 1957-61; Mathematician, Uni Electro Dynamics, Inc., Pasadena, Calif., 1961—. Mem.: Math. Soc.; Math. Assn. of Am.; Operations Rsch. Soc.; T Acad. of Sci., Fellow; Sigma Xi; Phi Mu Alpha; Alpha Chi; Mu Epsilon; Sigma Pi Sigma. Contbr. to: Proc. Am. Math. Sc Tex. Jour. of Sci. Areas of Rsch.: Analysis; Operations Rsch.

BRADLEY, Amos Day (Ph.D.), Assoc. Prof. of Math., Hunter Co 66 Villard Avenue, Hastings on Hudson 6, N. Y. MATHEMATIC CARTOGRAPHY. b. Wakefield, Pa., Oct. 9, 1905. s. Joseph He and Harriet Rachel (Wood) B. Edn.: B.A., Pa. State, 1927; M. Columbia, 1929; Ph.D., ibid., 1933. m. Gladys Mary Barker Otsego, Mich., Sept. 15, 1929. d. Frank and Eva Barker. Ann. Exp.: Tchr., Drumore, Pa., 1923-24; Asst. Prin. of H Drumore, Pa., 1924-25; Hunter Coll. of the City of N. Y. Ins 1929-40; Asst. Prof., 1940-1961; Assoc. Prof., ibid., 1961 Summer session Instr., Tchrs. Coll., Columbia, 1938, 41, 42, 49. Mem.: Natl. Coun. of Tchrs. of Math.; Math. Assn. of Am Am. Math. Soc.; Kappa Delta Pi; Kappa Phi Kappa; Pi Mu Epsil Author: Math. of Air. and Marine Navigation, Am. Book C 1942; Air Navigation Workbook (co-author) with C. B. Upt 1943. Contbr. to: Math. Tchr.; Am. Math. Monthly; Scri Math.; Geog. Review. Ph.D. Dissertation: The Geometry of peating Design. Serv. Rec.: Active Duty as Lt. (jg) and Lt. USN 1943-45. Listed in: Am. Men of Sci.

BRADLEY George Hirst (Ph.D.), Special Asst., Communicable D ease Center, U. S. Pub. Health Serv., Wash., D. C. Home Ad



4200 Cathedral Ave., N.W., Wa 16, D. C. PUBLIC HEALTH EN MOLOGY. b. Patch Grove, W July 14, 1893. s. John and A Jane (Charlesworth) B. Edn.: B. Cornell Univ., 1916; Ph.D., ibi 1949. m. Nancy McMurry, D 30, 1922. c.: George H., J John Bryan. Exp.: Asst. in Bi Cornell Univ., 1916-17; Scient Asst., U. S. Dept. of Agri., B of Entomol., 1917; 1st Lt. a Capt., Infy., U. S. Army, 1917-1 Asst. to Sr. Entomologist, Bur. Entomol., U.S.D.A., 1919-42; Entomologist, U. S. Pub. Hea Serv., 1943-48; Scientist D ibid., 1948-57; Pub. Health A viser, ibid., 1957—. Hon. Po Pres., Natl. Malaria Soc., 194 Dir., ibid., 1950; Councillor, A Soc. Tropical Medicine and Hygiene, 1951; Pres., C.D.C. Chap Scientific Rsch. Soc. of Am., 1952; Delegate of the U. S. to t Internatl. Congress on Entomology, Stockholm, Sweden, 19 Mem.: Fellow, A.A.A.S.; Fellow, Entomol. Soc. Am.; Fellow, A Soc. Trop. Med. and Hyg.; Am. Assn. Econ. Entomologists; Wa Entomol. Soc.; Fla. Entomol. Soc.; Ga. Acad. Sci.; Am. Pub Health Assn.; Am. Mosquito Control Assn.; Sigma Xi; Sci. R Soc. Am. Contbr. to: Jour. Econ. Entomol.; Annals Entomol. S Am.; Am. Jour. Trop. Med.; Proc. N. J. Mosquito Exterminati Assn.; etc. Special Int.: Control of Insects of Pub. Health I portance; Malaria and Mosquito Rsch. and Control.

BRADLEY, John Atwater (Mr.), Vice Pres., Prod. Corp., 400 Pa Ave., N. Y. 22, N. Y. Home Add.: 150 E. 52nd St., N. Y. 2 N Y CONSULTANT TO INSTITUTIONS, CORPORATIONS AND GO ERNMENTS ON NUCLEAR AND APPLIED SCIENTIFIC RESEAR AND DEVELOPMENT PROGRAMS, ADMINISTRATION, FINANCE. N. Y., Dec., 23, 1930. s. John R. and Eleanor (MacKenzie) Edn.: A.B., Princeton Univ., 1954; Ph.D., (cand.), Yale Uni 1957. Exp.: Field Exec., Inst. of H. Edn., N. Y. City, 1956

r., Scholarship Rsch. Ctr., N. Y. City, 1957—; Vice Pres., The akeley Co., Inc., N. Y., 1961—; Vice Pres., U. S. Minerals orp., N. Y., 1961—; Vice Pres., Columbia Metal Prods. Co., 961—; Vice Pres., Avis Indust. Corp., Detroit, Mich., 1961—; Vice res., Prod. Corp., 1961—. Hon. Pos.: Chmn., Adv. Coun., Inst. of igher Edn. Mem.: N. Y. Acad. of Scis.; Am. Acad. of Pol. and oc. Sci.; Am. Assn. for the Adv. of Sci.; N. Y. Rocket Soc.; N. Y. ool. Soc.; Nassau Club; Princeton Club of N. Y. Author: Be- vixt Scylla and Charybdis, 1954. Contbrng. Author: Annals, ealism and Idealism in American Foreign Policy, 1954; American uide to Scholarships, Fellowships and Loans, 1961; Philanthropy or Higher Education, 1960. Areas of Rsch.: Am. Philanthropy; onsultant to Numerous Foundations and Colleges on Administra- on and Finance; Specialist in Higher Education.

RADLEY, Richard Crane (Ph.D.), Assoc. Prof. of Phys., Colo. Coll., olo. Spngs., Colo. Home Add.: 1531 Wood Ave., Colo. Spngs., olo. SURFACE PHYSICS (EXPERIMENTAL). b. Chicago, Ill., May 4, 1922. s. Harold Cornelius and Josephine (Crane) B. Edn.: .B., Dartmouth Coll., 1943; Ph.D., Univ. of Calif., Berkeley, 953. m. Dorothy Holden, June 7, 1947. c.: Richard; Helen; osephine; David. Exp.: Rsch. Assoc., Cornell Univ., Ithaca, N. Y., 953-56; Instr., ibid., 1956-57; Asst. Prof., ibid., 1957-61; Assoc. rof., ibid., 1961-62; Assoc. Prof., Colo. Coll., 1962—. Mem.: igma Xi; Phi Beta Kappa; Am. Phys. Soc.; Am. Assn. of Phys. chrs.; Am. Assn. for the Adv. of Sci.; Am. Assn. of Univ. Profs.; . Y. Acad. of Sci.; Ithaca Rotary Club; Sierra Club. Contbr. to: hys. Rev.; Jour. of App. Phys.; Jour. of Chem. Phys.; Internatl. our. of the Phys. and Chem. of Solids. Serv. Rec.: U. S. Naval eserve, 1944-46. Areas of Rsch.: Physics of Surfaces of Solids urface Ionization; Sputtering; Field Emission Microscopy; Mass pectrometry; Ion Emission Phenomena.

RADY, Frederick (M.D.), Dir., Pima Co. Health Dept., 161 W. lameda St., Tucson, Ariz. Home Add.: 4440 Flecha Dr., Tucson, riz. PUBLIC HEALTH. b. Canton, Pa., July 1, 1908. s. Clar- nce A. and Elizabeth M. (Abbott) B. Edn.: M.D., Univ. of Mich., 931. m. Lolita Blakeley, May 19, 1932. c.: Robert; Wilson; arbara. Exp.: Comm. Officer, Pub. Health Serv., 1934-61; Dir., ima Co. Health Dept., Tucson, Ariz, 1961—. Hon. Pos.: Past res., Am. Soc. of Trop. Med. and Hyg.; Past Pres., Wash., D. C. rop. Med. Assn.; Local Secy. Royal Soc., London, of Trop. Med. nd Hyg.; Hon. Mem. Korean Pub. Health Assn.; A Mem. of Offi- ial U. S. Delegations to Health Confs. Mem.: Am. Assn. for the dv. of Sci.; Am. Med. Assn.; Theta Kappa Psi. Contbr. to: our. Am. Med. Assn.; Jour. Am. Soc. Trop. Med. and Hyg.; Pub. ealth Reports. Serv. Rec.: U. S. Pub. Health Serv., 1934—. tsch.: Tropical Medicine.

BRAGE, Burton LeRoy (Ph.D.), Dir. of Res. Instrn. and Prof. of Agron., S. D. Sta. Coll., Brookings, S. D. Home Add.: 1205 2nd St., Brookings, S. D. AGRONOMY (SOILS). b. Cannon Falls, Minn., May 18, 1918. s. Robert T. and Ellen (Carlson) B. Edn.: B.S., Univ. of Minn., 1946; Ph.D., ibid., 1950. m. Dolores O. Anderson, Sept. 18, 1948. c.: Sharon; Diane. Exp.: Grad. Asst., Univ. of Minn., St. Paul, Minn., 1948-50; Asst. Prof., Assoc. Prof., to Prof., Agron., S. D. State Coll., 1950—; Dir. of Rsch. Instrn., ibid., 1959—. Hon. Pos.: Pres., Sigma Xi, Local Club; Chmn., NC-17 Tecn. Comm. on Org. Matter and Structure. Mem.: S. D. Acad. of Sci.; Am. Soc. of Agron.; Soil Sci. Soc. of Am.; Soil Conservation Soc. of Am.; S. D. Edn. Assn.; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Alpha Zeta; Kiwanis; Chamber of Commerce. Contbr. to: Agron. Jour.; Procs. of the Soil Sci. Soc. of Am.; S. D. Expt. Stan. Circ. and Pamphlets. Serv. Rec.: U. S. Army, 1941-45. Gen. Int.: George Lincoln Brown Award for Teaching in 1955. Areas of Rsch.: Soil Fertility.

BRAHDY, Leopold (M.D.), Physician, 301 E. 66th St., N. Y., 21, N. Y. OCCUPATIONAL DISEASES AND DISABILITIES. b. N.Y.C., May 6, 1892. s. Alois Louis and Katherin (Strauss) B. Edn.: B.S., Columbia Coll., 1914; M.D., Columbia Univ. Med. Schl., 1916. m. Mina Rees, 1955. Exp.: Asst., Dir., Mt. Sinai Hosp., N.Y.C., 1919-20; Chf. of Clinic, O.P.D., Asst. Adj. Surgeon, ibid., 1923-29; Med. Examiner, St. Dept. of Labor, Albany, N. Y., 1930-34; Physician in Chf. of Occupational Diseases and Injuries, Corp. Counsel's Office, N.Y.C., 1934-59. Hon. Pos.: Chmn., Comm. on Occupational Tuberculosis, Am. Thoracic Soc.; Chmn., Comm. on Occupational Tuberculosis, Am. Coll. of Chest Physicians. Mem.: Am. Pub. Hlth. Assn., Fellow; Industrial Med. Assn., Fellow; Am. Coll. of Chest Physicians, Fellow; Roy. Soc. of Health; A.M.A.; Hist. of Sci. Soc.; A.A.A.S.; Law-Sci. Acad.; Am. Bd. of Preventive Med. Author: Disease and Injury, 1961. Co-author: Trauma and Disease, 1937. Contbr. to: Jour. of A.M.A.; Jour. of Pub. Health; Industrial Med. and Surgery; Am. Rev. of Tuberculosis; N. Y. St. Med. Jour. Serv. Rec.: U. S. Navy, 1918. Areas of Rsch.: Tuberculosis Prevention Among Hospital Employees; Med. Aspects of Workmen's Compensation Laws.

BRAGG, George Lee (Mr.), Economist, 1700 E. Imperial Hwy., El Segundo, Calif. Home Add.: 4041 Via Solano, Palos Verdes Estates, Calif. ECONOMICS. b. Ada, Okla., Aug. 24, 1932. s. George Lee and Delza B. (Thompson) B. Edn.: B.S., Pepperdine Coll., 1954. m. Mary Ann Underwood, Jan. 30, 1958. c.: Daniel Lee. Exp.: Student, Free Univ. of Berlin, Berlin, Germany, 1956-57; Financial Analyst, Security First Natl. Bank, Los Angeles, Calif., 1957; Economist, North Am. Aviation, Inc., 1959—. Mem.: Am. Mktng. Assn.; Am. Econ. Assn.; Am. Mgmt. Assn.; Omicron Delta Gamma. Serv. Rec.: U. S. Army, 1955-56. Areas of Rsch.: Specialized Study into the Economics of the Electronic Industry.

BRAMER, Henry Conrad (Ph.D.), Fellow, Mellon Inst., 4400 Fifth Ave., Pittsburgh, Pa. Home Add.: R. R. 1, Box 151, Venetia, Pa.

CHEMICAL ENGINEERING; ECONOMICS. b. Dormont, Pa., Sept. 22, 1921. s. John Conrad and Lillias (Smith) B. Edn.: B.S., Univ. of Pittsburgh, 1948; M.S., ibid., 1953; Ph.D., ibid., 1960. m. Ruth Marie Watson, Sept. 25, 1945. c.: David Conrad; Kathleen Louise. Exp.: Draftsman, The Levinson Steel Co., 1940-49; Chemical Engr., Goodyear Tire and Rubber Co., Akron, Ohio, 1948-49; Fellow, Mellon Inst., Pa., 1950—. Hon. Pos.: Secy., Water and Waste Chem., Div. of the Am. Chemical Soc.; Secy., Pollution Control Engrng. Comm. of the Am. Inst. of Chem. Engrs. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Assn. for the Adv. of Sci.; The Water Pollution Control Federation; The Am. Econ. Assn.; The Am. Statistical Assn.; Sigma Xi; Sigma Tau; Phi Lambda Upsilon. Contbr. to: Chemical Engineering Progress; Industrial and Engineering Chemistry; Jour. of the Water Pollution Control Fedn.; Industrial Wastes. Serv. Rec.: U. S. Army Air Force, 1942-45. Areas of Rsch.: Water Resources Research; Chemical Engineering Unit Operations; Economics of Natural Resources Utilization; Statistical Methods.

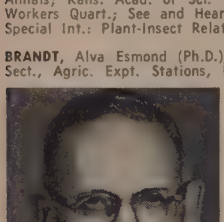
BRANCH, Hazel Elisabeth (Ph.D.), Prof. Emeritus of Zool., Univ. of Wichita, Wichita, Kan. Home Add.: 3756 East Douglas, Wichita 8, Kan. ENTOMOLOGY. b. Concordia, Kan., Oct. 1, 1886. d. Vernon Harris and Luella (Brown) B. Edn.: B.A., Univ. of Kan., 1908; M.A., ibid., 1912; Ph.D., Cornell Univ., 1921. Exp.: Preceptress, Coll. of the Sisters of Bethany, Topeka, Kan., 1914-18; Grad. Asst., Cornell Univ., 1918-22; Rsch. Asst., Milk Conf. Bd., N. Y. Stationed at Cornell Univ., 1920-22; Prof. of Biol., Farimount Coll., 1922-26; Prof. of Zool., Univ. of Wichita, Emeritus, 1926-56. Hon. Pos.: Pres., Kan. Acad. of Sci., 1931. Mem.: A.A.A.S.; Kan. Acad. of Sci.; Phi Beta Kappa; Sigma Xi; Emeritus Entomol. Soc. of Am.; Sigma Delta Epsilon; Am. Assn. of Univ. Women, Wichita Branch. Author: Laboratory Manual of Cryptobranchus alleganiensis, 1935. Contbr. to: Cornell Univ. Agric. Exp. Sta. Entomol. News; Jr. N. Y. Entomol. Soc.; Ann. of Entomol. Soc. of Am.; Trans. of Kan. Acad. of Sci.; Kan. Univ. Sci. Bull. Gen. Int.: Counsellor to Those Interested in Med. 211 Grad. as M.D., Many Nurses and R.M.T. Thru the 34 Years at Univ. of Wichita and Fairmount Coll. Areas of Rsch.: Entomology.

BRANDENBERGER, Arthur Joseph (Dr.), Prof. and Rsch. Supvr., The Ohio Sta. Univ., Columbus 10, Ohio. Home Add.: 280 Oakland Pk. Ave., Columbus 14, Ohio.

PHOTOGRAMMETRY AND NAVIGATION. b. St. Gallen, Switzerland, June 24, 1916. s. August and Emma (Buechi) B. Edn.: M.S., Federal Instit. of Technol., Zurich, Switzerland, 1940; Dr. Techn. Sci., ibid., 1947; Land Surveyor, Ministry of Justice, Switzerland, 1943. m. Paulette Hertig, Feb. 19, 1945. c.: Elizabeth; Maria Therese. Exp.: Lectr., Fed. Inst. of Tech., Zurich, Switzerland, 1946-49; Consult., Ministry of Pub. Works, Athens, Greece, 1949-50; Prof. and Dir., Inst. of Photogrammetry, Polytech. Inst., Instanbul, Turkey, 1950-54; Visit. Prof., Ohio Sta. Univ., 1955-56; Assoc. Prof., ibid., 1957-59; Prof. and Rsch. Supvr., ibid., 1959—. Hon. Pos.: Secy., Comn. III, Internatl. Soc. of Photogrammetry, 1946-50; Dir., Great Lakes Region, Am. Soc. of Photogram., 1959-61; Chmn., Sub Comn. III-4, Internatl. Soc. of Photogram., 1958-61; Dir., Am. Ctr. of Exptl. Rsch. Intl. Soc. of Photogram., 1958—. Mem.: Am. Soc. of Photogram.; Internatl. Soc. of Photogram.; German Soc. of Photogram.; Swiss Soc. of Photogram. Author: Theory of Error of Exterior Orientation, 1947; Theory of Error of Interior Orientation, 1948; General Report of Commission, III, Internatl. Soc. of Photogrammetry, 1948; The Practice of Spatial Aerotriangulation, 1951; Aerotriangulation by Least Squares, 1957; Heading Compatability Studies, 1959. Contbr. to: Photogrammetria; Periodical of the Am. Soc. of Photogram.; Schweizersche Zeitschrift fur Vermessung. Gen. Int.: Archaeological Expedition to Mount Ararat, Turkey, 1960; Expedition to Antarctica, 1962. Areas of Rsch.: Photogrammetry, Cartography, Navigation, Geodesy, Space Science.

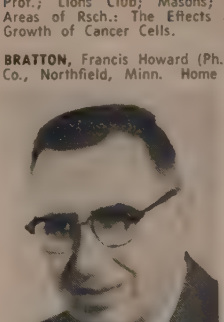
BRANDHORST, Carl Theodore (Ph.D.), Prof. of Biol. Sci., 55 Pearl St., Seward, Neb. BIO-ECOLOGY. b. Lincoln, Neb., Aug. 24, 1898. s. Charles W. and Alvina (Backhaus) B. Edn.: Grad., Concordia Tchrs. Coll., 1917; Univ. of Neb., Univ. of Denver, Fort Hays, Kans. State Coll., S. in Ed., 1939; M.Sc., 1942; Art, Univ. of Neb. and Terrence Duren; Ph.D., Univ. of Neb., 1961. m. Louise Koeneke of Bremen, Kans., June 28, 1922. d. Ernst and Auguste Koeneke. c.: Dorothy; Adeline; Olivia; Carl; Ellen; Charlotte; Curt; Mark. Exp.: Prin., Zion Luth. Schl., Okla. City, 1917-18; Prin., Immanuel Luth. Schl., Bremen, Kans., 1920-30; Tchr., Bethlehem Luth. Schl., Sylvan Grove, Kans., 1930-38; Prof., Concordia Tchrs. Coll., Seward, Neb., 1938—. Mem.: Luth. T.V. Productions Com., Luth. Church-Missouri Synod; Past Pres., Neb. Acad. of Sci. Mem.: The Entomological Soc. of Am.; A.A.A.S.; Kans. Acad. of Sci.; Nebr. Acad. of Sci.;Okla. Acad. of Sci.; N.A.B.T.; Sigma Xi; Phi Kappa Phi. Contbr. to: Ent. Soc. of Am. Annals; Kans. Acad. of Sci. Trans.; Nebr. Acad. of Sci. Proc.; Workers Quart.; See and Hear. Hobbies: Photography; Philately. Special Int.: Plant-Insect Relation, Especially Gall Wasps.

BRANDT, Alva Esmond (Ph.D.), Statistician and Head, Statistical Sect., Agric. Expt. Stations, Head, Dept. of Statistics, Coll. of Agric., Univ. of Fla., Gainesville, Fla. Home Add.: 2009 N.W. 14th Ave., Gainesville, Fla. STATISTICIAN. b. Larchwood, Ia., Nov. 13, 1892. s. Charles August and Arvetta (Blue) B. Edn.: B.S., Ia. St. Coll., 1917; M.S., ibid., 1927; Ph.D., ibid., 1932. m. Lula Litton May, July 2, 1921. c.: Mrs. Jane B. McGee-Russell; Peter Blue. Exp.: Extension Specialist, Univ. of Ill., 1917; Asst. Prof., Farm Mechanics, Ore. St. Coll., 1919-23; Rsch. Asst. Prof., Math. and Statistics, Ia. St. Coll., 1924-38; Sr. Math. Statistical Analyst, Rsch. Div., Soil Conservation Serv., U. S. D. A., Wash., D. C., 1937-40; Principle Soil Conservationist, Chf. Expt. Stations, Rsch. Div., ibid., 1940-43; Operations Analyst, Army Air Force, 1943-45; Rsch. Specialist, Soil Conservation Serv., U.S.D.A., 1945-46; Statistical Consultant to Technical Dir., Naval Ordnance Lab., White Oak, Md., 1946-48; Biometrician, Health and Safety Lab., N. Y. Operations Office of Atomic Energy Comm., New York, N. Y., 1948-58; Biometric Consultant to Atomic Bomb Casualty Comm., Japan, 1951, 1953, 1954; Statistician and Head, Statistical Sect., Agric. Expt. Station, Univ. of Fla., 1958—; Head, Dept. of Statistics, Coll. of Agric., ibid., 1961—. Mem.: Am. Statistical Assn., Fellow; Inst. of Mathematical Statistics; The Biometric Soc.; Radiation Rsch. Soc.; The Am. Genetic Assn.; A.A.A.S.; Phi Kappa Phi; Gamma Sigma Delta; Pi Mu Epsilon; Tau Beta Pi; Sigma Xi; Kappa Sigma. Contbr. to: Ia. St. Coll. Jour. of Sci.; Jour. of the Am. Statistical Assn.; Sci.; Jour. of Biological Chem.; Jour. Opt. Soc. of Am.; Jour. of Heredity; Jour. of the Am. Soc. of Agronomy; Agricl. Engrng.; A.S.T.M. Standards on Textile Materials; Soil Sci. Soc. of Am. Proc. Serv. Rec.: U. S. Navy, 1917-19. Gen. Int.: Centennial Award, Ia. St. Coll., 1958; Twenty-Yr. Button, U. S. Civil Serv. Comm., Rockefeller Experience Fellowship, Galton Lab., Univ. Coll., London Univ., 1934-35. Areas of Rsch.: Conservation; Math. of Statistics, Especially Design of Experiments; Design of Biological and Med. Experiments and Analysis of Resulting Data; Plant and Animal Breeding.



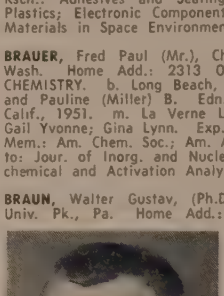
BRASHER, Earl Floyd (Ph.D.), Hd. Tchr., Whittman Elem. Schl., Whittman, Ariz. Home Add.: 5026 N. 17th Ave., Phoenix 15, Ariz. CHEMISTRY. b. Decaturville, Tenn., Nov. 27, 1904. s. Phillip R. and Elizabeth (Smith) B. Edn.: B.S., Memphis St. Univ., 1940; M.A., George Peabody Coll., 1948; Ed.S., ibid., 1958; Ph.D., Minderva Univ., Italy, 1961. Exp.: Tchr., Crawford Elem. Schl., Decaturville, Tenn., 1934-35; Chem. Aide, Tenn. Valley Authority, Wilson Dam, Ala., 1941-43; Chemist, Standard Oil Co. of Calif., Richmond, Calif., 1943-46; Special Analyst Spreckels Sugar Co., Woodland, Calif., 1946-47; Principal and Tchr., Pinal Co. Schls., Florence, Ariz., 1947-51; Sci. Tchr., Mayer Pub. Schl., Mayer, Ariz., 1952-53; Tchr., Camp Wood Schl., Camp Wood, Ariz., 1955-56; Principal, Winkelman Elem. Schl., Winkelman, Ariz., 1956-57; Chem. Instr., Tusculum Coll., 1957-58; Asst. Prof. of Chem., Ariz. St. Coll., 1959-60; Prof. of Chem., Panhandle A. and M. Coll., 1961—. Mem.: Natl. Edn. Assn.; Okla. Edn. Assn.; Okla. Acad. of Sci.; Am. Assn. of Univ. Prof.; Lions Club; Masons; Lambda Sigma Tau, Hon. Mem. Areas of Rsch.: The Effects and Relationship of Foods to the Growth of Cancer Cells.

BRATTON, Francis Howard (Ph.D.), Dir. of Rsch., G. T. Schjeldahl Co., Northfield, Minn. Home Add.: 2 Fareway Dr., Northfield, Minn. CHEMISTRY AND CHEMICAL ENGINEERING. b. Elkton, Md., May 6, 1916. s. William D. and Bertha (Wilson) B. Edn.: B.S., Wash. Coll., Md., 1937; A.M., Ph.D., Clark Univ., 1941. m. Jean W. Clarahan, 1942. c.: Anne C.; Daniel W.; Christine V. Exp.: Rsch. Chem. Proj. Engr., Gen. Chem. Co., Gen. Chem. Defense Corp., 1941-47; Rsch. Chem., Pilot Plant, Hercules Powder Co., Wilmington, Del., 1947-52; Sr. Rsch. Chem., Durez Plastics and Chem., Inc., LeRoy, N. Y., 1953-54; Sr. Rsch. Supvr., Cincinnati Milling Mac. Co., Cincinnati, Ohio, 1954-60; Dir. of Rsch., G. T. Schjeldahl Co., Northfield, Minn., 1960—. Mem.: Am. Chemical Soc.; Am. Inst. of Chemical Engrs.; A.A.A.S.; Soc. of Plastic Engrs.; Am. Soc. for Quality Control; Omicron Delta Kappa; Sigma Sigma Omicron. Contbr. to: Proc. of the Reinforced Plastics Div., Soc. of Plastics Industry. Areas of Rsch.: Adhesives and Sealing; Inflatable Satellites; Reinforced Plastics; Electronic Components; Printed Circuit Fabrication and Materials in Space Environment.



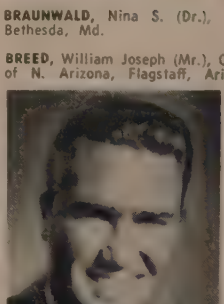
BRAUER, Fred Paul (Mr.), Chemist, Gen. Elect. Co., Richland, Wash. Home Add.: 2313 Olympia, Richland, Wash. RADIOCHEMISTRY. b. Long Beach, Calif., Feb. 3, 1929. s. Fred A. and Pauline (Miller) B. Edn.: B.S., Univ. of Calif., Berkeley, Calif., 1951. m. La Verne Lucille Kinzel, Jan. 27, 1951. c.: Gail Yvonne; Gina Lynn. Exp.: Chemist, Gen. Elect. Co., 1951—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci. Contbr. to: Jour. of Inorg. and Nuclear Chem. Areas of Rsch.: Radiochemical and Activation Analysis; Radiochemical Instrumentation.

BRAUN, Walter Gustav, (Ph.D.), Assoc. Prof., Pa. Sta. Univ., Univ. Pk., Pa. Home Add.: 225 Twigs Lane, St. Coll., Pa. CHEMICAL ENGINEERING. b. Springfield, Mass., June 23, 1917. s. Gustav F. and Alma E. (Voigt) B. Edn.: B.Ch.E., Cooper Union, 1942; M.S., Pa. Sta. Univ., 1948; Ph.D., ibid., 1955. m. Gloria J. McCurdy, June 20, 1948. c.: Karen Jean; Kenneth Walter. Exp.: Rsch. Asst., Pa. Sta. Univ., 1943-47; Instr., ibid., 1947-56; Assoc. Prof., ibid., 1956—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Petrol. Inst.; Am. Soc. for Engrng. Edn.; Am. Assn. of Univ. Profs.; Alpha Chi Sigma; Phi Lambda Upsilon; Sigma Xi. Contbr to: Analytical Chem.; Petrol. Refiner; Procs. A.P.I. Areas of Rsch.: Distillation, Liquid Extraction; Analytical Spectroscopy; Thermodynamic Properties.



BRAUNWALD, Nina S. (Dr.), Surgeon, National Heart Institute, Bethesda, Md.

BREED, William Joseph (Mr.), Curator of Geol., Box 1389, Museum of N. Arizona, Flagstaff, Ariz. Home Add.: Fort Valley Rd., Flagstaff, Ariz. GEOLOGY. b. Massillon, Ohio, Aug. 3, 1928. s. Earl F. and Grace Amelia (Snyder) B. Edn.: B.A., Denison Univ., 1952; B.S., Univ. of Ariz., 1956; M.S., ibid., 1960. Exp.: Geologist, U. S. Geol. Survey, Denver, Colo., 1956; Curator of Geology, Museum of N. Ariz., 1960—. Hon. Pos.: Fulbright Scholar to New Zealand, 1957-58. Mem.: A.A.A.S.; Sigma Xi; Delta Upsilon; New Zealand Geol. Soc.; Ariz. Geol. Soc. Contbr. to: Jour. of Paleontology. Serv. Rec.: U. S. Army, 1947-48. Areas of Rsch.: Paleontology and General Geology of N. Arizona.



BRECKINRIDGE, Charles Edward, Jr. (Ph.D.), Health Physicist, Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 9217 Burchfield Dr., Oak Ridge, Tenn. MEDICINAL CHEMISTRY. b. Louisville, Ky., June 21, 1923. s. Charles Edward and Elizabeth Clark (Kendall) B. Edn.: B.S., Univ. of Ky., 1953; M.S., Purdue Univ., 1959; Ph.D., ibid., 1960. m. Doris Jean Smith, June, 1955. c.: Charles Edward, III; Debbie Jean; Richard Glenn. Exp.: Instr., Univ. of Ky., Lexington, Ky., 1954-57; Instr., Purdue Univ., Lafayette, Ind., 1957-59; Hlth. Physicist, Oak Ridge Natl. Lab., 1960—

Mem.: Am. Assn. for the Adv. of Sci.; Sigma Xi; RESA; Health Phys. Soc.; Phi Delta Chi; Rho Chi. Contbr. to: Jour. of the Am. Pharml. Assn.; Jour. of Pharm. Scis. Gen. Int.: Held U. S. Pub. Health Serv. Predoc. Rsch. Fellowship Awarded by Natl. Inst. of Allergy and Metabolic Diseases, NIH. Areas of Rsch.: Radioiostope Tracer Techniques; Isotope Dilution Analyses; Spectrophotometry; Chromatography.

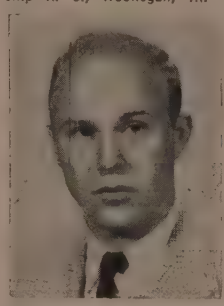
BREESE, Gerald (William), (Ph.D.), Dir., Bur. of Urban Rsch., Prof. of Sociol., Princeton Univ., Princeton, N. J. Home Add.: 195 Russell Rd., Princeton, N. J. URBAN SOCIOLOGY, CITY PLANNING. b. Horseheads, Chemung Co., N. Y., June 4, 1912. s. Bert M. and Leona B. (Goodrich) B. Edn.: A.B., Ohio Wesleyan Univ., 1935; B.D., Yale Divinity Schl., 1938; Univ. of Sou. Calif., 1939; Ph.D., Univ. of Chicago, 1947. m. Alice Janette Bailey, July 4, 1937. c.: Adele; James; Dana Sue; Brinda Sue. Exp.: Asst. Prof. of Sociol. and English, Dean of Men, Pacific Univ., 1938-41; Rsch. Planner, Chicago Plan Comm., Chicago, Ill., 1942; Tchr., Shrivenham Am. Univ., Shrivenham, England, 1945; Tchr., Univ. of Chicago, 1947; Staff Mem., Social Sci. Rsch. Coun., Wash., D. C., 1947-49; Dir., Bur. of Urban Rsch., Princeton Univ., 1950—; Assoc. Prof., ibid., 1952-59; Prof., ibid., 1959 ; Consultant, Community Planning Assocs., Inc., Princeton, N. J., 1953—; Fulbright Prof., Am. Univ., Cairo, Egypt, 1954-55; Coordinator, Ford Foundation Consulting Team, Delhi, India, 1957-60. Mem.: Am. Inst. of Planners; Am. Sociol. Assn., Fellow; Eastern Sociological Soc.; Am. Soc. of Planning Officials; Institute of Town Planners, India; Population Assn. of Am.; Phi Beta Kappa. Author: The Daytime Population of the Central Business District of Chicago, 1949; Industrial Land Use in Burlington County, New Jersey, 1951; Regional Analysis, Trenton-Camden Metropolitan Area, 1954; Industrial Site Selection, 1954; Accelerated Urban Growth in a Metropolitan Fringe Area, 1954. Contbr. to: Land Econs. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Urban Studies, City Planning, Human Ecology.

BREIT, Gregory (Ph.D.), Prof. of Physics, Sloane Physics Lab., Yale Univ., 2014 Yale Station, New Haven, Conn. Home Add.: 15 Homeland Terr., Hamden 14, Conn. NUCLEAR PHYSICS AND THEORETICAL PHYSICS. b. Russia, July 14, 1899. s. Alfred and Alexandra (Smirnova) B. Edn.: B.A., The Johns Hopkins Univ., 1918; A.M., ibid., 1920; Ph.D., ibid., 1921. Hon. Degrs.: D.Sc., Univ. of Wis., 1954. m. Marjorie MacDill, Dec. 30, 1927. Exp.: Asst. Prof., Physics, Univ. of Minn., Mpls., Minn., 1923-24; Math. Physicist, Dept. of Terrestrial Magnetism, Carn. Instit., Wash., D. C., 1924-29; Prof. of Physics, N. Y. Univ., Univ. Hts., N.Y.C., 1929-34; Prof. Physics, Univ. of Wis., Madison, Wis., 1934-47; Resident Assoc., Technische Hochschule, Zurich, Switzerland, 1928-29; Rsch. Assoc., Carnegie Instit. of Wash., 1929-44; Prof. Physics, Yale Univ., 1947-57; Donner Prof., ibid., 1957—. Hon. Pos.: Editorial Bd. of Phys. Rev., 1927-29, 1939-41, 1961-63; Councillor, Am. Phys. Soc., 1935-38; Editorial Bd. of Proc. of Natl. Acad. of Scis., 1959-61; Natl. Rsch. Coun. Fellow, Univ. of Leiden, 1922-23, Harvard Univ., 1923-24. Mem.: Natl. Acad. Sci.; Fellow, Am. Acad. Arts and Sci.; Phys. Soc. London; Am. Phys. Soc.; A.A.A.S.; Instit. Radio Engrs.; Wash. Acad. Sci.; Phi Beta Kappa; Sigma Xi; Natl. Acad. of Sci. Contbr. to: Phys. Rev.; Rev. Mod. Physics; Proc. Natl. Acad. Sci.; Nature; Astrophys. Jour. Serv. Rec.: Naval Ord. Labs., 1940-42. Gen. Int.: Devel. of Tesla Coils for 5 Million Volts; High Voltage Tubes for Use with Tesla Coils; Invented Magnetic Field Extrapolating Apparatus—A Device for Simulating the Magnetic Field of a Vessel. Areas of Rsch.: Quantum Theory; Quantum Electrodynamics; Hyperfine Structure; Radio Ionosphere; Resonance Theory of Nuclear Reactions; Forces Between Nucleons.

BREMNER, Raymond Wilson (Ph.D.), Prof. of Chem., Fresno St. Coll., Fresno 26, Calif. Home Add.: 1554 West San Ramon, Fresno 5, Calif. ANALYTICAL CHEMISTRY. b. Wash., Dec. 4, 1904. s. George A. and Rose (Wilson) B. Edn.: B.S., Univ. of Wash., 1928; M.S., ibid., 1932; Ph.D., ibid., 1937. m. Evelyn Hagen, Feb. 5, 1935. c.: Raymond Hagen; John Wilson; Robert Otto. Exp.: U. S. Customs Inspector, Prin. and Tchr., Wash. and Ore., 1926-30; Fellow, Univ. of Wash., 1931-37; Instr., A. & M. Coll. of Tex., 1937-40; Asst. Prof., ibid., 1940-44; Project Leader, Dow Chem. Co., 1944-47; Analytical Rsch. Chemist, Stanford Rsch. Inst., 1948; Assoc. Prof., Fresno St. Coll., 1947-53; Prof., ibid., 1953—; Sr. Fulbright Prof., Univ. of Peshawar, Pakistan, 1959-60. Mem.: A.C.S.; A.A.U.P.; Calif. Assn. of Chem. Tchrs.; Assn. of Calif. St. Coll. Profs.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. of A.C.S.; Analytical Chem.; Industrial and Engrng. Chem.; Jour. of Chem. Edn.; du Jour. du Conseil Internatl. Pour Exploration de la Mer, Shafaq. Gen. Int.: Cottrell Grants, 1950-51; Army-Navy Production Award, 1947. Areas of Rsch.: Tchng., Instrumental and Chem. Analysis, Spectroscopy, Air Pollution Control, Fluoridation, Che. of the Sea.

BRENEMAN, James C. (M.D.), Physician, 25 Pearl St., Galesburg Mich. Home Add.: Rt. 1, Galesburg, Mich. MEDICINE. b. Sherburn, Minn., Mar. 20, 1922. s. Henry E. and Clara S. (Larson) B. Edn.: B.A., Gustavus Adolphus Coll., 1941; B.S., Univ. of Minn., 1942; B.M., ibid., 1945; M.D., ibid., 1945. Hon. Degrees: Lambda Sigma, Gustavus Adolphus Coll., 1940. m. Mary Jo Helmerson, 1946. c.: Craig; Grant; Lisa. Exp.: Clinical Instr., Borgess Hosp., Kalamazoo, Mich., 1957-60; Physician, 25 Pearl St., Galesburg, Mich., 1948—. Mem.: A.A.-A.S.; N. Y. Acad. of Sci.; Am. Diabetic Assn.; Mich. Allergy Soc.; Am. Acad. of General Practice; Am. Med. Assn.; Mich. State Med. Soc.; Phi Rho Sigma; Am. Legion. Contbr. to: Jour. of Am. Med. Assn.; G. P.; Current Therapeutic Rsch. Serv. Rec.: U.S.A. Med. Corps. Gen. Int.: 1959 Ross Award Winner for Medical Literature; Invented Boat Baler, Ground Cleaner. Areas of Rsch.: Enuresis; Diabetes; Allergy; Arthritis; Thrombo-Embolic Disease.

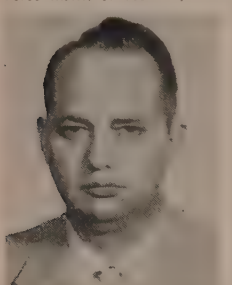
BRETT, Richard J. (Mr.), Speech Correctionist, Waukegan Township H. S., Waukegan, Ill. SPEECH CORRECTION. b. Chicago, Ill., Sept. 5, 1921. s. Richard J. and Emily (Salter) B. Edn.: B.E., Northern Ill. State Tchrs. Coll., 1943; M.S., Univ. of Ill., 1947. Exp.: Speech Correctionist, Waukegan Twp. H.S., Waukegan, Ill., 1946—; Speech Supvr., Summer Residential Speech Clinic, Univ. of Ill., Summers, 1948, '50—, '52. Hon. Pos.: Co-Chmn., Internatl. Relations Com., Am. Federation of Tchrs. Mem.: Speech Assn. of Am.; Am. Speech and Hearing Assn; Internatl. Coun. for Exceptional Children; Central States Speech Assn.; Ill. Speech Assn.; Sigma Zeta; Alpha Delta; Chicago Speech Therapy and Audiol. Soc.; Ill. Assn. for Edn. of Exceptional Children; Ill. St. Fed. of Tchrs. Contbr. to: Kans. Speech Jour.; Ill. Edntl. Press Bull.; The Am. Tchr. Author: Internatl. Summer Study Opportunities. War Record: U. S. Army, 1943-45. Special Int.: Speech Correction; Math.; Public Speaking. Travel: Europe; Asia; Africa.



BREUER, Charles B. (Ph.D.), Rsch. Asst., Rutgers Univ., New Brunswick, N. J. Home Add.: 343 Franklin Blvd., Somerset, N. J. NUCLEIC ACID; BIOCHEMISTRY. b. Brooklyn, N. Y., Aug. 7, 1931. s. Michael and Anna (Hershkowitz) B. Edn.: B.A., Wash. Square Coll., N. Y. Univ., 1953; M.S., Rutgers Univ., 1959; Ph.D., ibid., (can., 1963). Exp.: Rsch., E. R. Squibb and Sons, New Brunswick, N. J., 1959-61; Rsch. Asst., Rutgers Univ., ibid., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci. Contbr. to: Cancer Rsch.; Archives of Biochemistry and Biophysics; Fed. Procs.; Am. Cancer Soc. Procs. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Adrenal Gland Enzymology, Mammary Tumor Enzymology; Nucleic Acid Structure and Function.

BREWER, George Eugene Francis (Ph.D.), Head, Dept. of Chem., Marygrove Coll., Detroit 21, Mich. Home Add.: 28610 Meadowbrook Rd., Novi, Mich. INDUSTRIAL PAINT APPLICATION; FRICTIONAL ELECTRIC PHENOMENA. b. Jan. 23, 1909, Vienna, Austria. s. Ernst and Sophie (Segalla) B. Edn.: B.A., State Ref. Real Gym. Coll., Vienna, 1927; Ph.D., Univ. of Vienna, 1932. m. Frances Joan Werner, June 29, 1933. Exp.: Asst. Lectr., Inst. of Chem. Technol., Univ. of Vienna, 1931-37; Tech. Mgr., S. Wolf & Co., Textile Refiners, Erlach, Austria, 1936-39; Lectr., Inst. del'Industrie Textile, Bruxelles, Belgium, 1939; Prof. of Chem., Rosary Coll., Ill., 1940-43; Rsch. Chem., Elgin State Hosp., Natl. Rsch. Council, Elgin, Ill., 1944; Prof. of Chem., Marygrove Coll., Mich., 1944—; Consultant to Gage Products Co., Distributors Shell Chem. Corp., Ferndale, Mich., 1946-57; Consultant to Ford Motor Co., Mfg. Devel. Office, Dearborn, Mich., 1957—; Consultant to Ethyl Corp., Rsch. Div., Ferndale, Mich., 1958—. Hon. Pos.: Chmn., Detroit Sect., Am. Chem. Soc., 1960-61; National Councilor, Am. Chem. Soc., 1951-57; 1962-65; Vice-Pres., Assn. of Analytical Chemists, 1958; Pres., ibid., 1959. Mem.: Am. Chem. Soc.; Am. Assn. Univ. Prof.; A.A.A.S.; Natl. Sci. Tchrs. Assn.; Catholic Austrian Confraternity; Central Assn. of Sci. and Math. Tchrs.; Optical Soc. of Am.; Assn. of Analyt. Chemists; Mich. Coll. Chem. Tchrs. Assn., President, 1953; Engrng. Soc. of Detroit; Metrop. Detroit Sci. Club.

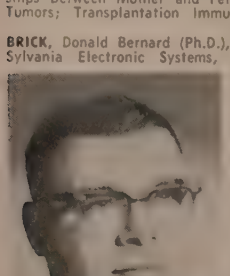
BREUER, Delmar Wallace (Ph.D.), Hd. of Dept. of Mechanics, Air Force Instit. of Technol., WPAFB, Ohio. Home Add.: 2521 Olson Dr., Dayton 20, Ohio. ENGINEERING; MECHANICS; AERONAUTICAS. b. St. James, Mo., June 21, 1925. s. Oscar Bernard and Ida Mae (Johnson) B. Edn.: B.S., Ia. St. Coll., 1947; M.S., Mo. Schl. of Mines and Metall., 1950; Ph.D., Ohio St. Univ., 1961. m. Ethelene Paschal, July 31, 1949. c.: Deborah Diane; Teresa Lea. Exp.: Instr., Mo. Schl. of Mines, Rolla, Mo., 1947-50; Stress Analyst, N. Am. Aviat., Los Angeles, Calif., 1950-51; Asst. to Prof., and Hd. of Mechanics, Air Force Inst. of Tech., 1951—. Mem.: Am. Soc. for Engr. Edn.; Soc. of Expt. Stress Analysis; Inst. of Aerospace Scis.; Am. Rocket Soc.; Tau Beta Pi; Sigma Xi. Contbr. to: Jour. of Aerospace Scis.; Procs. of 9th Natl. Cong. of Appl. Mechanics. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Aeronautical Engineering; Astronautics; Mechanics.



BREWER, Herbert Lee (Mr.), Geophysicist, 1411 Classen Blvd., Oklahoma City, Okla. Home Add.: 3709 N.W. 65th St., Oklahoma City Okla. GEOPHYSICS AND GEOLOGY IN PETROLEUM EXPLORATION. b. Emporia, Kans., March 25, 1926. s. William Madison and Zella Eunice H. (Cline) B. Edn.: B.S., Univ. of Tex., 1947. m. Pauline B. Ver Benec, Aug. 11, 1950. c.: David Madison. Exp.: Geophysicist, Carter Oil Co., Texarkana, Ark., 1947-48; Geophysicist, Creole Petroleum Corp., Caracas, Venezuela, 1948-52; Chief Geophysicist, Esso Rep., Bordeaux, France, 1952-58; Asst. Exploration Mgr., Esso Rep., ibid., 1958-60; Geophysicist, Humble Oil Co., Tulsa and Okla. City, Okla., 1960—. Hon. Pos.: Commandeur Bon Temps Du Medoc, Biganhomme De Honor Jurade De St. Emilion; Program Chmn., European Assn. of Exploration Geophysicists, Bordeaux, France, 1957. Mem.: Am. Assn. of Petroleum Geologists; Am. Geophysical Union; Soc. of Exploration Geophysicists; Am. Inst. of Mining; Metallurgical and Petroleum Engrs.; European Assn. of Exploration Geophysicists; Okla. City Geol. Soc.; Geophys. Soc. of Okla. City; Sigma Phi Epsilon. Contbr. to: European Assn. of Exploration Geophysicists. Areas of Rsch.: Geophysical Interpertation and Petroleum Exploration.

BREYERE, Edward Joseph (Ph.D.), Assoc. Prof. in Rsch., Dept. of Biol. of the Am. Univ., Sibley Mem. Hosp., 5255 Loughboro Rd., N.W., Wash., D. C. Home Add.: 10303 Montrose Ave., Bethesda 14, Md. IMMUNOGENETICS. b. Wash., D. C., Apr. 25, 1927. s Edward Joseph and Mollie P. (Swing) B. Edn.: B.S., Univ. of Md., 1951; M.S., ibid., 1954; Ph.D., ibid., 1957. m. Marjorie Louise Gillet, June 16, 1951. c.: Edward John. Exp.: Tchng. Asst., Univ. of Md., Coll. Pk., Md., 1954-55; Pre-Doct. Rsch. Fellow, ibid., 1955-57; Rsch. Fellow, Natl. Cancer Inst., Bethesda, Md., 1957-61; Assoc. Prof. in Rsch., Dept. of Biol., Am. Univ., Sibley Mem. Hosp., 1961—. Mem.: Am. Assn. for Cancer Rsch.; Sigma Xi; Am. Assn. for the Adv. of Sci. Contbr. to: Jour. of the Natl. Can. Inst.; Annals of the N. Y. Acad. of Scis.; Procs. of the Soc. for Exptl. Biol. and Med.; Cancer Rsch. Serv. Rec.: U. S. Army, 1945-46. Areas of Rsch.: Immunogenetic Relationships Between Mother and Fetus; Immunology of Virus Induced Tumors; Transplantation Immunity.

BRICK, Donald Bernard (Ph.D.), Sr. Scientist, Applied Rsch. Lab., Sylvania Electronic Systems, 40 Sylvan Rd., Waltham, Mass. Home Add.: 4 Blueberry Lane, Lexington, Mass. APPLIED PHYSICS AND MATHEMATICS (INFORMATION PROCESSING AND INFORMATION THEORY, ELECTROMAGNETIC THEORY). b. Brooklyn, N. Y., Oct. 1, 1927. s. Maxwell B. and Edna (Newman). Edn.: A.B., Harvard Univ., 1950; S.M., ibid., 1951; Ph.D., ibid., 1954. m. Phyllis Hahn, Oct. 19, 1952. c.: James; Susan; Howard. Exp.: Rsch. Fellow, Harvard Univ., 1954-55; Consultant, Trans-Sonics, Bedford, Mass., 1954-55; Consultant, Sylvania Electronic Systems, Waltham, Mass., 1954-55; Engrng. Specialist, Sr. Engrng. Specialist, ibid., 1955-61; Sr. Scientist, ibid., 1961—. Mem.: The Am. Physical Soc.; Harvard Engrng. Soc.; N. Y. Acad. of Sci.; A.A.A.S.; Inst. of Radio Engrs.; Lions Club. Contbr. to: Proc. I.R.E.; I.R.E. Trans. Antennas and Propagation; Proc. Institution of Electrical Engrs., Britain. Serv. Rec.: U. S. Army, 1946-47. Areas of Rsch.: Pattern Recognition, Decision Theory, Automatic Perception; Antenna Theory (Surface Wave Antennas), Electromagnetic Scattering.



BRICE, Luther Kennedy, Jr. (Ph.D.), Assoc. Prof., Dept. of Chem., Va. Poly. Inst., Blacksburg, Va. Home Add.: No. 6, Francis Apt., Blacksburg, Va. PHYSICAL CHEMISTRY. b. Spartanburg, S. C., Jan. 29, 1928. s. Luther K. and Frances (Boggs) B. Edn.: B.A., Harvard Univ., 1949; M.A., Dartmouth Coll., 1951; Ph.D., Duke Univ., 1955. Exp.: Asst. Prof. of Chem., Va. Poly. Inst., 1954-57; Assoc. Prof., ibid., 1957—. Mem.: Am. Chem. Soc.; A.A.A.S.; Chemical Soc. of London; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Chemical Kinetics in Solution.

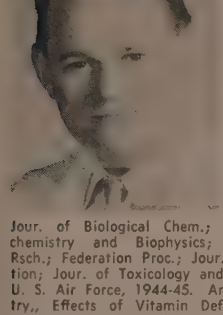
BRICKLIN, Barry, Instr. in Psychol., Dept. of Psychiatry, The Jefferson Med. Coll., Philadelphia, Pa. Home Add.: 78 Heartwood Rd., Levittown, Pa. CLINICAL PSYCHOLOGY; TEACHING; RESEARCH, DIAGNOSIS, PSYCHOTHERAPY, CONSULTANT OPERATIONS RESEARCH. b. Phila., Pa., Dec. 4, 1933. s. Arthur and Rose (Gaurd) B. Edn.: B.A., Temple Univ., 1955; M.A., ibid., 1957; Ph.D., ibid., 1959. m. Patricia McIntosh, 1957. c.: Brian Frederick. Exp.: Sr. Asst., Psychological Clinic, Temple Univ., 1956-57; Clinical Psychologist, Reading Clinic, Temple Univ., 1957; Instr. in Psychol., Jefferson Med. Coll., 1957—; Psychological Consultant, E. I. duPont de Nemours, Wilmington, Del., 1960—; Psychological Consultant, U. S. Army, 1960—; Psychological Consultant, Kimberton Farms Schls., Kimberton, Pa., 1960—; Psychological Consultant, Natl. Rsch. Coun., Div. of Med. Scis., Wash., D. C., 1960—; Psychological Consultant, Walter Reed Hosp. Rsch. Ctr., Wash., D. C., 1960—. Hon. Pos.: Chmn., Comm. Edn., Phila. Soc. Clin. Psychologists; Secy.-Treas., Phila. Soc. Prof. Techniques; Editor, Newsletter, Phila. Soc. for Clin. Psychologists; V.-Pres., Psi Chi. Mem.: Am. Psychol. Assn.; A.A.A.S.; Eastern Psychol. Assn.; The Inst. of Mgt. Scis.; Pa. Psychol. Assn.; Phila. Soc. Clin. Psychologists; Psi Chi. Co-author: The Hand Test: A New Projective Test (in print). Contbr. to: Psychiatric Quart.; Jour. of Consulting Psychol.; Jour. Projective Techniques; Am. Anthropologist; Proc. Am. Psychiatric Assn. Gen. Int.: Development of Scale to Predict Effects of Increased Communication on Marital Relationship. Areas of Rsch.: Prognosis in Schizophrenia, Prediction of Overt Aggressive Behavior, Prediction of Marital Compatibility from Rorschach Test, Child Diagnosis from Psychol. Tests.

BRIDGES, Claude Frier (Mr.), Supervisory Research Psychologist, Personnel Measurement and Evaluation, Evaluation Center, Ft. Harrison, Indianapolis 49, Ind. PSYCHOLOGY. b. Locust Grove, Ga., Nov. 11, 1909. s. Rev. Claude and Emma Mae (Frier) B. Edn.: B.S., Univ. of Fla., 1933; M.A., ibid., 1937. m. Sevinch Erem, Ankara, Turkey, Aug. 8, 1956. Exp.: Tchr., Fla. Public Elementary Schl., 1932-35; Tchr., Fla. Public High Schl., 1935-39; Supv. Prin., Jupiter, Fla., Public Schl., 1937-39; Asst. and Instr., Dept. of Psychology, Ohio St. Univ., Columbus, Ohio, 1939-42 and 1945-46; Lectr. in Indus. Psychol., Miami Univ., E.S.M.W.T., Dayton, Ohio; Civilian Personnel Rsch., U. S. War Dept., 1942-46; Lectr. in Tests and Measurements, Grad. Schl., U. S. Dept. of Agric., Wash., D. C., 1946-47; Asst. Dir., Div. of Test Rsch. and Service, World Book Co., Yonkers, N. Y., 1947-54 Meas. and Rsch. Specialist, Turkish Ministry Educ., Ankara, Turkey, 1954-55; Edni. Meas. and Rsch. Consultant to Imperial Ethiopian Government, I.C.A., 1956-57; Chief, Test Development Section, U. S. Army Enlisted Evaluation Center, The Ocffie of Personnel Operations, 1958—; Lecturer in Psychol., Indianapolis Campus of Purdue Univ., 1959—. Mem.: Am. Psychological Assn.; Psychometric Soc.; Am. Pers. and Guid Assn.; Am. Edn. Rsch. Assn.; Kappa Phi Kappa; Phi Delta Kappa. Contbr. to: Am. Psychologist; Psychological Bulletin; Psychometrika. Special Int.: Psychological Rsch., Test Development and Utilization, Edn. Evaluation Programs.

BRIGHAM, Virginia May (Ph.D.), Prof. of Physics and Asst. Dean, The Coll. of Advanced Sci., Canaan, N. H. Home Add.: 11 Whitcomb St., Belmont 78, Mass. ELECTRONICS AND SPECTROSCOPY. b. Boston, Mass., Mar. 20, 1915. d. George L. (dec.) and Catherine A. (Condry) (dec.) B. Edn.: A.B., Boston Univ., 1936; A.M., ibid., 1945; Ph.D., ibid., 1952. Exp.: Instr. in Physics, Boston Univ., 1943-49; Instr. in Physics, Simmons Coll., 1950-52; Asst. Prof. of Physics, ibid., 1952-58; Assoc. Prof. of Physics, ibid., 1958-61; Chmn., Dept. of Physics, ibid., 1959-61; Prof. of Physics and Asst. Dean, The Coll. of Advanced Sci., Canaan N. H., 1961—. Mem.: A.A.A.S.; Am. Physical Soc.; Opt. Soc of Am. (N. E. Sect.). Contbr. to: Schl. Sci. and Math.; Am. Jour. of Physics. Areas of Rsch.: Spectroscopy.

BRIGGS, Paul Revere (M.D.), Surgeon, Med. Dir., Dir. of Rsch., Scott Well Memorial Hosp., Hartland, Me. Home Add.: 1 Blake St., Hartland, Me. SURGERY–RESEARCH (CLINICAL AND ANIMAL) SCIENTIFIC MEDICAL WRITER. b. Ashland, Mass., July 12, 1904. s. Robert P. and Blanche C. (Raymond) B. Edn.: M.D., Tufts Med. Schl., 1931. m. Ida E. Fox, July 11, 1953. c.: Beverly; Dorcas; Jennifer; Paul Revere, 2nd. Exp.: Asst. Night Supt., Boston City Hosp., Boston, Mass., 1928-31; Intern, Bridgeport Hosp., Bridgeport, Conn., 1931-32; Resident Surgeon, V.A., Conn., 1932-35; Resident Surgeon, Scott Well Memorial Hosp., Hartland, Me., 1935—; Resident, Wesson Meml. Hosp., Springfield, Mass., 1950-51; Resident, St. Vincent's Hosp., Jacksonville, Fla., 1951-52; Visiting Staff, Fairview Hosp., Skowhegan, Me., 1960-62. Hon. Pos.: Med. Dir., Dir. of Rsch., Scott Well Memorial Hosp.; Past Pres., Somerset Co. Med. Soc.; Vice-Regent, Internatl. Coll. of Surgeons, Bd. of Governors, A.B.A.S.; Chmn., Rural Health Comm., M.M.A.; Med. Dir., Selective Serv., Edwards and Co. Mem.: A.M.A.; Me. Med. Assn.; A.A.A.S.; A.S.A.S.; F. A. Med. Writer's Assn.; F. A. Acad. of Med. Administrators; F. A. Geriatrics Soc.; Lions Club. Contbr. to: Me. Med. Jour.; Med. Times; Miss. Valley Med. Jour.; N.E.M. Jour.; Jour. A.M.A.; Internatl. Coll. of Surgeons Jour. Areas of Rsch.: Plastic Implants in Animals, Chemical Mediation, Plastic Contacts with Both Dermal and G.I. Tract, Fluid Equilibrium, Antibiotics and Vitamin K, Radiation Fallout, Anaesthesia and Hypnotics on Animals.

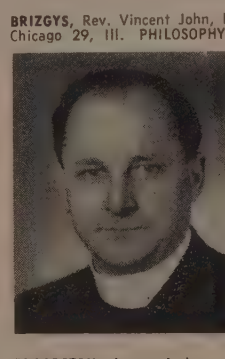
BRIN, Myron (Ph.D.), Assoc. Prof., Biochemistry and Medicine, Upstate Medical Centre, St. Univ. of N. Y., Syracuse 10, N. Y. Home Add.: 830 Hazelwood Ave., Syracuse 3, N. Y. NUTRITIONAL BIOCHEMISTRY, MEDICAL SCIENCE. b. N.Y.C., July 1, 1923. s. Philip and Frances (Kraut) B. Edn.: B.S., Cornell Univ., 1947; M.N.S., ibid., 1948; Ph.D., Harvard Univ., 1951. m. Phyllis Bletcher, June 4, 1944. c.: Kenneth Philip; Steven Charles; Mitchell Francis. Exp.: Instr., Harvard Med. Schl., 1953-56; Chf. Biologist, Food and Drug Rsch. Labs., Inc., L. I., N. Y., 1956-58; Assoc. Prof., Biochemistry and Medicine, Upstate Med. Ctr., St. Univ. of N. Y., 1958—. Mem.: Am. Soc. of Biological Chemists; Am. Inst. of Nutrition; N. Y. Acad. of Scis.; Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Phi Kappa Phi. Contbr. to: Jour. of Biological Chem.; Jour. of Nutrition; Arch. of Biochemistry and Biophysics; Biochemical Preparations; Cancer Rsch.; Federation Proc.; Jour. of Water Pollution Control Federation; Jour. of Toxicology and Applied Pharmacology. Serv. Rec.: U. S. Air Force, 1944-45. Areas of Rsch.: Nutritional Biochemistry,, Effects of Vitamin Deficiency on Enzymes in Tissue and Blood, Use of Blood Enzymes to Measure Vitamin Adequacy, Metabolism of (L+) and D(-) Lactic Acid, Tumor Metabolism, Feeding of X-Irradiated Foods on Tissue and Blood Enzymes.



BRINK, Raymond Woodard (Ph.D.), Mathematics Ed., Appleton-Century-Crofts, Inc., New York 1, N. Y. Home Add.: 6036 Bellevue Ave., La Jolla, Calif. MATHEMATICS (ANALYSIS). b. Newark, N. J., Jan. 4, 1890. s. Clark Mills and Helen R. (Bacon) B. Edn.: B.S., Kan. State Coll., 1908; B.S.E.E., ibid., 1909; M.A., Harvard Univ., 1915; Ph.D., ibid., 1916; Postdoctoral Studies, Sorbonne and College de France, 1916-17, 1924-25, 1932-33. m. Carol Ryrie, July 12, 1918. c.: David Ryrie; Nora C. (Brink) Hunter. Exp.: Instr., Mathematics, Univ. Idaho, 1909-12; Instr., Math., Coll. Engrng., Univ. Minn., 1912-13; Instr. Math., Arts Coll., Univ. Minn., 1917-19; Lectr., Math., Univ. Edinburgh, Scotland, 1919-20; Assoc. Prof., Math., Univ. Minn., 1920-28; Prof., Math., (Chmn., 1928-32, 1939-57), ibid., 1928-57; Visiting Prof., Univ. of Miami, 1958-59; Math. Editor, Appleton-Century-Crofts, Inc., 1942—; Prof. Emer., Univ. Minn., 1957—; Acting Asst. Dean, Sr. Coll., Univ. Minn., 1954-55. Hon. Pos.: Pres., Mathematical Assn. Am., 1941-42; Secy., Sect. A, Am. Assn. Adv. Sci., 1944-52; Assoc. Editor, Trans. Am. Mathematical Soc., 1927-31. Mem.: Mathematical Assn. Am.; Am. Mathematical Soc.; Edinburgh Mathematical Soc.; Sigma Xi; A.A.A.S. Author: Analytic Geometry, 1924, 1935; Plane Trigonometry, 1928, 1940, 1959; College Algebra, 1933, 1950; Intermediate Algebra, 1935, 1951; Algebra-College Course, 1934, 1951; A First Year of College Mathematics, 1937, 1954; Spherical Trigonometry, 1942; Essentials of Analytic Geométry, 1939. Contbr. to: Trans. Am. Mathematical Soc.; Annals Mathematics; Am. Mathematical Monthly; Jour. General Edn. Serv. Rec.: U. S. Signal Corps, 1917-18. Areas of Rsch.: Convergence of Infinite Series, Differential Equations.

BRISTOW, William Harvey (M.D.), Asst. Supt., Bur. of Curr. Rsch., N.Y.C. Bd. of Edn., 130 W. 55th St., N. Y. 19, N. Y. Home Add.: 70 Exeter St., Forest Hills 75, N. Y. PSYCHOLOGY AND EDUCATION. b. Nettleton, Mo., Oct. 9, 1897. s. Thomas Benjamin and Elizabeth May (Bacon) B. Edn.: B.S., Central Mo. S. T. C., 1920; M.A., Tchrs. Coll., Columbia Univ., 1922; Ed.D., ibid., 1936. m. Rosa Leah St. Clair of Independence, Mo., June 17, 1923. d. Harvey and Susan Brown St. Clair. c.: Wm. H., Jr., M.D.; Elizabeth Anne (Jacobs); Rosemary St. Clair (Mele). Exp.: Tchr., Breckenridge, Mo., 1916-17; Tchr., Prin., Knob Noster, Mo., 1919-20; Tchr., Prin., Quapaw, Okla., 1920-21; Settlement Worker, N. J. and N. Y., 1921-23; Tchr., Prin., Milford, Pa., 1923-25; Asst. Dir., Dir., Deputy Supt., Pa. Dept. Edn., 1925-35; Instr., S. T. C., Mo., Summer, 1920; Univ. of Okla., Instr., Summer, 1923; Instr., Cornell Univ., Summer, 1932; Rsch., U. S. Office of Edn., 1936; Instr., Geo. Wash. Univ., Summer, 1938; Forum Leader, U. S. Office of Edn., 1938-39; Instr., Mansfield Tchrs. Coll., 1939; Dean, Shippensburg Tchrs. Coll., 1939-40; Gen. Sec., Natl. Congress of Parents and Tchrs., 1936-39; Asst. Dir., Bur. of Reference, Rsch. and Statistics, N. Y. City Bd. of Edn., 1940-49; Dir., Bur. of Curr. Rsch., 1949-61; Asst. Supt., of Edn., 1940-49; Dir., Bur. of Curr. Rsch., 1949-61; Asst. Supt., of ibid., 1951—; Instr., N. Y. Univ., 1947-54; Instr., City Coll. of N. Y., 1947—; Instr., Cortland, N. Y. St. Tchrs. Coll., Summers, 1955-57; Bowling Green Univ., Summer, 1959. Mem.: Pres., N. Y. St. A.S.C.D., 1957; N. Y. St. Edn. Rsch. Assn., Pres., 1961; Prog. Comm., Girl Scouts of Am.; Bd. Mem., N. Y. Soc. for Expt. Edn.; Am. Museum of Safety; Greater N. Y. Safety Coun's., Comm. on Traffic; Citizens Comm. on Children; Assoc. for Supvn. and Curr. Devel.; Brooklyn Home for Children; Natl. Child Labor Comm.; Consultant, United Parents Assn.; N.E.A.; N.A.S.S.P.; A.A.S.A.; N. Y. State Schl. Superintendents Coun.; Metro. Assn. for Childhood Edn.; A.E.R.A.; N. Y. Acad. of Pub. Edn.; Am. Legion; N.S.S.E.; A.A.A.S., Vice-Pres. and Chmn., Sect. Q., 1961; Conslt. on Curr. Studies, Rsch., Aud.-Vis. Projects; Lectr., Delegate, W.C.O.T.P., Rome, Italy, 1958; Observer, Stockholm, 1962; Official Observer, I.U.F.O., 1960; UNESCO-IBE, Geneva, 1956, 1958, 1961, 1962; E.R.A.N.Y., (Pres., 1961). Author: Articles, Yearbook Proc., Articles, Reports and Studies. War Rec.: S.A.T.C., 1917. Travel: U. S.; Europe. Listed in: W. W. in the East; Leaders in Am. Edn.; World Biography. Areas of Rsch.: Curriculum Rsch. and Development; Audio-Visual; Safety.

BRIZGYS, Rev. Vincent John, Home Add.: 6727 S. California Ave., Chicago 29, Ill. PHILOSOPHY, LAW, SOCIOLOGY AND POLITICAL ECONOMY. b. Plyniai, Lithuania, Nov. 10, 1903. s. Mathew and Mary (Vilkelis) B. Edn.: Ph.D., Gregorian, Rome, 1930-35; L.D., ibid., 1935. Exp.: Prof. in Priests Semin., Lithuania, 1936-40; Rector of Priests Semin., Lithuania, 1940-41; R.C. Bishop, Coad. of KAUNAS, 1940—; Dean of Theol. Philos. Faculty, State's Univ., Lithuania, 1941-44; Consultor in Commiss. for Bishops and Adminstr. of Dioeceses Preparat. of Vatican II Ecumenic Council, 1959. Mem.: A.A.A.S. Gen. Int.: Since 1951 all Capabilities Concentrated in Helping to Domesticate the Emigrants in New Countries, Canada, S. Am., Australia. Areas of Rsch.: Moral and Social Questions of the Life.



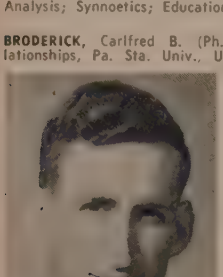
BROADSTON, James Andrew (Mr.), Mgr., Logistics, ROCKETDYNE, A Div. of N. Am. Aviat., Inc., 6633 Canoga Ave., Canoga Park, Calif. Home Add.: 19111 Sprague St., Tarzana, Calif. MECHANICAL ENGINEERING; STRUCTURAL ANALYSIS AND TEST, SURFACE ROUGHNESS, PRODUCT AND CUSTOMER SUPPORT. b. Cinc., Ohio, June 1, 1909. s. Andrew Edgar and Grace Elizabeth (Moore) B. Edn.: M.E., Mech. Engr., Univ. of Cincinn., 1934. m. Elizabeth Jeanette Herrnstein, Oct. 25, 1936. c.: Donald Andrew; Susan Elizabeth; Lois Anne. Exp.: Chf., Structures Test Engr., Los Angeles Div., N. Am. Aviat., Inc., Los Angeles 45, Calif., 1936-43; Asst. Engr. and Design Supvr., ibid., 1943-44; Design Grp. Engr., Hydraulics and Armament, Engrng. Dept., ibid., 1944-47; Grp. Leader, Facilities Design, Aerophys. Dept., ibid., Downey, Calif., 1947-48; Propulsion Grp. Leader, Aerophys. Lab., ibid., 1948-51; Propul. and Exptl. Grp. Leader, ibid., Chatsworth, Calif., 1951-53; Mgr., Propul. Field Lab., ibid., 1953-57; Dir., Serv. Div., ROCKETDYNE, 1957-60; Mgr., Logistics, ibid., 1960—. Hon. Pos.: V.-Pres., Downey Plant, N. Am. Aviat. Mgmt. Club,

Inc., Natl. Mgt. Assn., 1948-49; Calif. Sect. Dele. to Natl. Conv., Pgh., Instrument Soc. of Am., 1947; Sr. Mem., Am. Soc. for Quality Control, 1946—; Sr. Mem., Am. Soc. of Tool and Mfng. Engrs., Detroit, 1946—; Sr. Mem., Secy., V.-Pres., and Pres., So. Calif. Sect., Am. Rocket Soc., 1948—; Life Mem., Am. Ordn. Assn., 1944—; Hon. Mem., Aircraft Mfrs. Safety Coun., 1951—. Mem.: A.A.A.S.; Am. Soc. for Engrng. Edn.; Am. Soc. for Testing Materials; Institute of Aerospace Scis., Inc.; So. Calif. Meter Assn.; Soc. of Auto. Engrs.; Soc. of Am. Milit. Engrs.; Acacia; Canoga Masonic Lodge; Melrose Masonic Lodge; Malibou Lake Mtn. Club. Author: Control of Surface Quality, 1944, 1945, 1949, 1951, 1953, 1957, 1960. Contbr. to: Prod. Engrng.; Iron Age; Machine Design; Steel; Instruments; ASTM Bull.; Natl. Safety Coun. Bull. Gen. Int.: Considered World's Leading Authority on Surface Roughness Designation and Measurement. Areas of Rsch.: Internationally Known Authority on Surface Roughness Measurement and Quality Control for Precision Machine Parts.

BROADWIN, Samuel Morrison (Mr.), Vice-Pres., Engrng. and Rsch., Am. Lab. Apparatus Co., 345 E. 81st, N. Y. C. 28, N. Y. Consultant, Westinghouse Electric, Gulton Industries, Lourdes Inst. Co., Labline, Inc., Jelrus Technical Products Corp., N. Y., N. Y. CHEMICAL ENGINEERING. b. N. Y. City, Jan. 11, 1918. s. Hyman and Gussie (Morrison) B. Edn.: B.S., N. Y. Univ., 1939; LL.B., ibid., 1942. m. Lois Smith, Aug. 22, 1959. Exp.: Radio Engr., U. S. Govt., Wash., D. C., 1945-48; Design Engr., Emerson Radio, Jersey City, N. J., 1948-52; Rsch. Engr., Partner, Am. Lab. Apparatus Co., N.Y.C., 1952—. Mem.: Sr. Mem., Instrument Soc. of Am. Serv. Rec.: U.S.N.R. Gen. Int.: Holder of Patents in Freeze-Drying, Automatic Filling, Humidity Detection, Vacuum Instrumentation, Insulation, Evaporation of Heat Sensitive Materials; Wrote U. S. Government Specification on Packaging of Radio and Transmitting Equipment. Areas of Rsch.: Relative Humidity Detection; Instrumentation for Vacuum Detection.

BROCK, Paul (Ph.D.), Hd., Simulation and Gaming Group, S. R. I., Menlo Park, Calif.; Prof. of Engrng., U. C. L. A., Los Angeles, Calif. Home Add.: P. O. Box 826, Monterey, Calif. APPLIED MATHEMATICS; SYNNOETICS; MILITARY GAMING. b. Brooklyn, N. Y., Mar. 29, 1923. Edn.: Ph.D., N. Y. Univ., 1951. m. Anne Netreba, Sept. 14, 1946. c.: Janice Jo; Frances Dena; Holly Irene. Exp.: Instr., Hunter Coll., N.Y.C., 1946-48; Hd., Math., Group, Proj. Cyclone, Reeves Inst. Co., N.Y.C., 1948-52; Mgr. Tech. Serv. Dept., Electro Data Corp., Pasadena, Calif., 1952-56; Assoc. Prof., Purdue Univ., Lafayette, Ind., 1956-59; Mgr., Indust. Dynamics Rsch., Hughes Aircraft, Culver City, Calif., 1959-60; Hd., Simulation and Gaming Grp., S.R.I., 1960—; Consult. to CEIR, AMF, Bendix; Rand; V.-Pres. and Dir. of Inland Electronic Products Corp.,, Pasadena, Calif.; V.-Pres. and Dir., J. W. Smith Assoc., Inc., L. A., Calif.; Dir., Computer Inst. Corp., Hempstead, L. I., N.Y. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Soc. of Indust. Appl. Math.; Assn. of Comp. Mach.; The Ind. Mgnt. Soc.; Pi Mu Epsilon; Sigma Xi. Contbr. to: Am. Math. Monthly; SIAM Jour.; Jour. of ACM; Jour. of App. Phys.; Maths. of Comp.; Maths. Tchr. Serv. Rec.: U. S. Army Air Force, 1943-46. Gen. Int.: Six Years Counselor at Large SIAM. Areas of Rsch.: Computers; Numerical Analysis; Synnoetics; Education.

BRODERICK, Carlfred B. (Ph.D.), Assoc. Prof. of Family Relationships, Pa. Sta. Univ., Univ. Park, Pa. Home Add.: 1972 Park Forest Ave., Sta. Coll., Pa. SOCIOLOGY OF THE FAMILY. b. Salt Lake City, Utah, Apr. 7, 1932. s. Frederick A. and Napina A. (Bartholomew) B. Edn.: A.B., Harvard Coll., 1953; Ph.D., Cornell Univ., 1956. m. Kathleen A. State, July 3, 1952. c.: Katherine N.; Carlfred B.; Victor K.; Wendi R.; Jenifer L.; Frank R. Exp.: Assoc. Prof., Univ. of Ga., Athens, Ga., 1956-60; Assoc. Prof., Pa. Sta. Univ., 1960—. Mem.: Am. Sociol. Assn.; Soc. for Rsch. in Child Devel.; Natl. Coun. on Family Relationships; Am. Home Econs. Assn.; Groves Conf. Contbr. to: Marriage and Family Living; Jour. of Home Econs. Areas of Rsch.: Family Protective System; Development of Heterosexual Attitudes and Interests in Children.

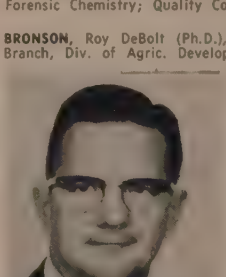


BRODY, Jerome Ira (M.D.), Asst. Prof. of Med., Grad. Schl. of Med., Univ. of Pa., Phila., Pa. and Att. Physn., Grad. Hosp. of the Univ. of Pa. Schl. of Med. Home Add.: 5420 Orduna Dr., Coral Gables, Fla. HEMATOLOGY (INTERNAL MEDICINE). b. N. Y., Jan. 24, 1928. s. Morris and Leah (Lewin) B. Edn.: A.B., N. Y. Univ., 1947; A.M., ibid., 1948; M.D., Jefferson Med. Coll. of Phila., 1952. m. Anita Blumstein, 1959. c.: Lisa Ellen. Exp.: Intern, Phila. Gen. Hosp., Phila., Pa., 1952-53; Res., Pathol., ibid., 1953-54; Res. Cardiol., Phila. Gen. Hosp., ibid., 1954-55; Asst Instr., Pathol., Univ. of Pa., Schl. of Med., 1953-54; Asst. Instr., Med., Univ. of Pa., Schl. of Med., 1954-55; Res., Internal Med., Grad. Hosp. of the Univ. of Pa., ibid., 1957-58; Rsch. Fellow, U.S. Pub. Health Serv., Yale Univ., New Haven Conn., 1958-60; Asst. Prof. of Med., Univ. of Miami Schl. of Med. and Chief, Hematol. Sect., Vet. Adm. Hosp., 1960-62; Asst. Prof. of Med., Grad. Schl. of Med., Univ. of Pa. and Att. Physn., Grad. Hosp. of the Univ. of Pa., 1962—. Hon. Pos.: Asst. Att. Physician, Grace-New Haven Community Hosp., 1958-60; Att. Physician, Jackson Mem. Hosp., 1960—; Consultant in Hematol., Variety Childs. Hosp., 1962—. Mem.: Am. Fed. Clin. Rsch.; Am. Soc. of Hematol.; Soc. for the Study of Blood; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Sci.; Physiol. Soc. of Phila.; Am. Assn. of Blood Banks; Sigma Xi. Contbr. to: Jour. of Clin. Invest.; Blood; New England Jour. of Med.; Jour. Am. Med. Assn.; Am. Jour. Med. Sci.; Ann. Int. Med.; A.M.A. Arch. Int. Med.; Proc. Am. Assn. Cancer Rsch.; Trans. Assn. Am. Phys.; Circulation. Serv. Rec.: Capt., U. S. Air Force, 1955-57. Areas of Rsch.: Immunologic Alterations in Leukemias and Related Disorders.

BRODNYAN, John George (Mr.), Rsch. Chemist, The Rohm and Haas Co., Bristol, Pa. Home Add.: 4817 Carlisle St., Philadelphia 41, Pa. RHEOLOGY, COLLOID SCIENCE. b. Philadelphia, Pa., Nov. 29, 1929. s. John and Lillian (Sweeney) B. Edn.: B.S., Villanova Univ., 1952. m. Claire C. O'Donnell, June 9, 1956. c.: James G.; Claire G. Exp.: Rsch. Chemist, The Franklin Inst., 1953-57; Rsch. Chemist, The Rohm and Haas Co., Philadelphia, Pa., 1957-61; Rsch. Chemist, ibid., Bristol, Pa., 1961—. Mem.: Am. Chemical Soc.; Soc. of Rheol.; The Scientific Rsch. Soc. of Am.; A.A.A.S. Contbr. to: Trans. Soc. Rheol.; Jour. Colloid Sci.; Jour. Appl. Phys. Areas of Rsch.: Flow Properties of Polymer Solutions and Dispersions; The Mechanism of Emulsion Polymerization; The Physical Properties of Synthetic Latices.

BROMBERG, Milton Jay (Mr.), Quality Control Mgr., Olin Mathieson Chem. Corp., Brandenburg, Ky. Home Add.: P. O. Box 523, Brandenburg, Ky. PROCESS CHEMISTRY, QUALITY CONTROL. b. Brooklyn 12, N. Y., Sept. 15, 1923. s. David Ezra and Esther (LeVine) B. Edn.: B.S., Coll. of the City of N. Y., 1944; M.A., Columbia Univ., 1948. m. Marie Louise, June 5, 1945; div., 1949. c.: Jacqueline Noella. Exp.: Chief Chemist, H. A. Brassert Co., Washington, Conn., 1948-51; Tech. Supvt., Olin Mathieson Chem. Corp., Newport, Ind., 1951-57; Quality Control Mgr., ibid., Niagara Falls, N. Y., 1957-62; Quality Control Mgr., ibid., Brandenburg, Ky., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Criminal Investigation Div.; Agents Assn. Contbr. to: Industrial and Engrng. Chem., 1954. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Organic Chem.; Explosives; Forensic Chemistry; Quality Control Statistics; Mkt. Rsch.

BRONSON, Roy DeBolt (Ph.D.), Chief, Soils and Fertilizer Rsch. Branch, Div. of Agric. Develop., Tenn. Valley Authority, Wilson Dam, Ala. Home Add.: 402 Watts Bar St., Sheffield, Ala. SOIL CHEMISTRY AND FERTILITY RESEARCH. b. Reno, Nev., May 30, 1920. s. LaVerne R. and Ivy (Kraft) B. Edn.: B.S., Mich. St. Univ., 1948; M.S., ibid., 1949; Ph.D., Purdue Univ., 1959. m. Alberta Hazel Griffith, June 7, 1947. c.: Barbara Jean; Nancy Gail; Timothy Roy. Exp.: Soil Technologist, Green Giant Co., Le-Sueur, Minn., 1949-52; Instr., Agronomy, Purdue Univ., 1952-59; Assoc. Prof., ibid., 1959-60; Hd., Dept. of Soils and Chem., United Fruit Co., La Lima, Honduras, 1960-61; Chief, Soils and Fertilizer Rsch. Br., Tenn. Valley Authority, Wilson Dam, Ala., 1962—. Hon. Pos.: Secy., North Central Tech. Comm. on Soil Testing, 1957; Chmn., ibid., 1958. Mem.: Am. Soc. of Agronomy; Soil Sci. Soc. of Am.; Internatl. Soil Sci. Soc.; Am. Chem. Soc.; A.A.A.S.; Alpha Gamma Rho; Alpha Zeta; Sigma Xi; Phi Kappa Phi. Contbr. to: Clays and Clay Minerals. Serv. Rec.: U. S. Army. Areas of Rsch.: Soil Testing and Analysis; Soil Chem.; Clay Mineralogy.



BROMLEY, Helen Jean Brown (Ph.D.), Registrar and Instr., Stamford Br., Univ. of Conn., Stamford, Conn. Home Add.: 17 Knollwood Ave., Stamford, Conn. BOTANY—ALGAE. b. Beaumont, Tex., Aug. 9, 1903. d. Elmer Axline Brown and Iva (Ballou) B. Edn.: B.A., Ohio Sta. Univ., 1925; M.A., ibid., 1925; Ph.D., ibid., 1929. m. Dr. Stanley W. Bromley (dec.), 1935. c.: James Robert. Exp.: Prof. of Sci., St. Mary of Springs Coll., Columbus, Ohio, 1925-28; Instr. of Bot., Ohio Sta. Univ., Columbus, Ohio, 1929-36; Instr. of Algae, Franz Theodore Stone Lab., Put-in-Bay, Ohio, Summer, 1930; Registrar and Instr., Stamford Br., Univ. of Conn., 1952—. Hon. Pos.: Natl. Secy., 1929, Natl. Pres., 1930-35, Sigma Delta Epsilon. Mem.: Ohio Acad. of Sci.; Am. Assn. for the Adv. of Sci., Fellow; Sigma Xi; Sigma Kappa; Pi Lambda Theta; Repub. Womens Orgs. Contbr. to: Trans. of Am. Microscopical Soc.; Schl. Sci.; Maths. Areas of Rsch.: Taxonomy of Freshwater Algae; Rsch. on House Plants.

BROOKS, Adelaide J., Head of Science Department, Riverside Schl., Harris, Okla. Home Add.: Box 305, Idabel, Okla. MATHEMATICS. b. Boley, Okla., Aug. 4, 1936. d. George H. and Louise (Moss) J. Edn.: B.S., Langston Univ., 1958. Exp.: Hd. of Sci. Dept., Luther H. Foster Schl., Nottoway, Va., 1958-59; Hd. Sci. Dept., Riverside Schl., 1960—. Hon. Pos.: Hd. of Sci. Dept. and Textbook Selection Comm. of the Riverside School. Mem.: Mathl. Assn. of Am. Areas of Rsch.: Mathematics (Pure).

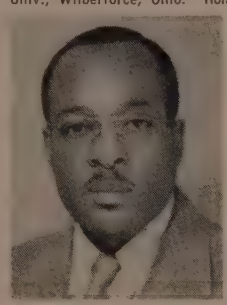
BROOKS, Betty Watt (Ph.D.), Rsch. Analyst, United States Pub. Health Serv., Wash., D. C. Home Add.: 319 Grove Ave., Wash. Grove, Md. BIOLOGY (BOTANY AND INVERTEBRATE ZOOLOGY). b. Wellesley, Mass., Apr. 3, 1902. d. Thomas Thompson and Barbara Jane (Hunter) Watt. Edn.: B.A., Wellesley Coll., 1922; M.A., ibid., 1923; Ph.D., Univ. of Pittsburgh, 1934. m. Dr. Stanley Truman Brooks, Apr. 30, 1927 (dec.). c.: Stanley Hunter Watt; Mrs. Richard E. Preston; Mrs. Clyde W. Kenyon. Exp.: Rsch. Asst., The Carnegie Inst. of Wash., Dept. of Evolution, Cold Spring Harbor, L. I., N. Y., 1923-25; Instr., and Grad. Stud., Univ. of Pittsburgh, 1925-28; Asst. Prof., Pa. Coll. for Women, 1928-30; Rsch. Assoc., Carnegie Inst. of Pittsburgh, Pa., Dept. of the Museum, 1930-45; Sci. Editor, Biological Abstracts, Inc., Phila., Pa., 1945-46; Document Analyst; Tech. Indusl. Intelligence Div., Dept. of Commerce, Wash., D. C., 1946; Tech. Editor, Field Information Agency, Tech. Dept. of Commerce, Germany, 1946-47; Pub. Health Rsch. Analyst, Bur. of State Serv., U. S. Pub. Health Serv., Wash., D. C., 1951-52; District Dir. and Camp Dir., Girl Scouts of U.S.A., Richmond, Va., 1953-55; Pub. Health Rsch. Analyst, Div. of Hosp. and Med. Facilities, Bur. of Sta. Serv., Wash., D. C., 1957—. Hon. Pos.: Trustee, Sea Pines Schl., Brewster, Mass. Mem.: Am. Pub. Health Assn.; N. Y. Acad. of Sci.; Am. Museum of Natural History; A.A.A.S.; Botanical Soc. of Am.; Am. Malacological Union; Am. Soc. of Parasitologists; Am. Microscopical Soc.; Boston Soc. of Natural History; The Malacological Soc. of London; Chi Omega; Authors Club of Pittsburgh; Wash. Wellesley Club; Wellesley Coll. Alumnae; Pittsburgh Wellesley Club; Phi Sigma; Quax; Montgomery County Comm. on Aging. Contbr. to: Proc. of the Pa. Acad. of Sci.; Annals of the Carnegie Musuem; The Am. Naturalist; The Nautilus; The Modern Hosp. Areas of Rsch.: Hospital and Med. Facilities; Planning The Hill-Burton Program—Objectives, Progress, and Remaining Needs; Psychiatric Units in General Hospitals; Planning Mental Health Facilities.

BROOKS, Edward Morgan (D.Sc.), Sr. Meterologist, Allied Rsch. Assoc., Boston 15, Mass. METEOROLOGY. b. Mar. 19, 1916, N. Haven, Conn. s. Charles and Eleanor (Stabler) B. Edn.: A.B., Harvard, 1937; S.M., M. I. T., 1939; Sc.D., ibid., 1945. m. Sarah Bergh of Miami, Fla., Dec. 24, 1941. d. Mr. and Mrs. O. I. Bergh. c.: Karena; Daniel; Roxana; Valerie; Marita; Bernard; Larimore; Galen. Exp.: Rsch. Fellow, Woods Hole, Mass., 1938; Instr., Pan Am. Airways, 1941-42; Instr., M. I. T., 1942-46; Asst. and Assoc. Prof., St. Louis Univ., 1946; Prof., ibid., 1952-61; Sr. Meterologist, Allied Rsch. Assoc., Boston, Mass., 1961—. Hon. Pos.: Chmn., St. Louis Chapter, Am. Meterological Soc., 1948-49; Chmn., St. Louis Amateur Astronomical Soc. and Observing Chmn., 1953-54. Mem.: Sigma Xi; Amer. Meteorological Soc.; Amer. Geophysical Union. Sc.D. Dissertation: An Analysis of an Unusual Rainfall Distribution in a Hurricane. Travel: Hawaii; Cuba; Can.; Spain. Hobbies: Music; Astronomy. Listed in: Who's Who in Amer.; Who Knows—and What. Special Int.: Tornadoes and Thunderstorms.

BROOKS, Clyde S. (Mr.), Sr. Rsch. Scientist, United Aircraft Corp., E. Hartford, Conn. Home Add.: 41 Baldwin Lane, Glastonbury, Conn. PHYSICAL CHEMISTRY RESEARCH. b. Pittsburgh, Pa., May 1, 1917. s. Clyde and Marie (Thompson) B. Edn.: B.S., Duke Univ., 1940. m. Ruth Bolton, Aug. 8, 1946. c.: Suzanne; Philip. Exp.: Rsch. Assoc., Mellon Inst. of Ind. Rsch., Pittsburgh, Pa., 1941-44; Jr. Fellow, ibid., 1946-49; Rsch. Chemist, Shell Devel. Co., Houston, Tex., 1949-61; Sr. Rsch. Scientist, United Aircraft Corp., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; N. Y. Acad. of Scis.; Phi Eta Sigma; Pi Mu Epsilon. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Phys. Chem.; Rev. of Scientific Intruments; Jour. of Petroleum Technol.; Soil Sci. Serv. Rec.: U. S. Naval Resv., 1944-46. Areas of Rsch.: Surface Chemistry and Catalysis.

BROOKS, Erica May (Miss), 180 Washington Ave., Albany 10, N. Y. CHIROGRAPHOLOGY, VOCATIONAL CREATIVE GUIDANCE FROM THE SHAPE OF HANDS IN RELATION TO WRITING. b. London, Eng., July 9, 1894. d. Howard and May Louise (Gilpin) B. Exp.: Art Dir., Friends Seminary, N. Y. City, 1923-35; Art Dir., St. Agnes Schl., Albany, N. Y., 1946-53. Mem.: A.A.A.S.; City Club of Albany; Albany Inst. of Hist. of Art; The Print Club of Albany; M.R.S.T., R.D.S., Hon. Mem. Author: Into Space, 1939. Contbr. to: Am. Ency. of Biography. Areas of Rsch.: Hands Reveal Ratio of Five Senses; Human Relations.

BROOKS, Maxwell Roy (Ph.D.), Prof. of Sociol., Wilferforce Univ., Wilberforce, Ohio. Home Add.: 316 E. Church St., Xenia, Ohio. BEHAVIOR SCIENCES, SOCIOLOGY. b. Laurel, Ohio, Oct. 17, 1908. s. Edward and Virginia (Robinson) B. Edn.: B.S., Wilberforce Univ., 1932; M.A., Ohio Sta. Univ., 1937; Ph.D., ibid., 1953. m. Naomi Gaskin, Nov. 25, 1938. c.: Maxine; Ellwood; Diana; Judith; Roy. Exp.: Tchr., Louisa Trng. Schl., Louisa, Va., 1933-36; Tchr., Harvard H. Schl., Piedmont, W. Va., 1937-40; Asst., Fisk Univ., Nashville, Tenn., 1941-42; Asst. Prof. to Prof., Livingstone Coll., Salisbury, N. C., 1942-51; Prof., Wilberforce Univ., 1951—. Hon. Pos.: Visit. Prof., A. and M. Coll., Normal, Ala., 1961-62; Pike Co. Atomic Energy Citizens Comm., Ohio; Advry. Comm. of the Ednl. Inst. of the Univ.; Civil Rights Advry. Comm., Sta. of Ala. Mem.: Am. Acad. Pol. and Soc. Sci.; Ohio Valley Sociol. Soc.; Assn. of Social Sci. Tchrs.; Alpha Phi Alpha; Alpha Kappa Delta; Frontiers Internatl. Author: A Review of Race and War, 1944; The Negro Press Re-Examined, 1959. Contbr. to: Phi Delta Kappan; Sociol. and Social Rsch.; Quart. Rev. of Higher Edn.; Social Forces. Areas of Rsch.: Social Psychology and Mass Communications.



BROOKS, Robert Alan (Ph.D.), Lab. Mgr., Jackson Laboratory, E. I. duPont de Nemours Co., Wilmington 99, Del. Home Add.: 233 Woodstown Rd., Salem, N. J. ORGANIC CHEMISTRY. b. Gloversville, N. Y., Feb. 23, 1924. s. Archibald Charles and Ada M. (Cadman) B. Edn.: B.S., Harvard Univ., 1944; M.S., Yale Univ., 1945; Ph.D., ibid., 1949. m. Marjorie R. Robbins, Dec. 15, 1951. c.: Robert Alan, Jr. Exp.: Rsch. Chem., duPont Co., Jackson Lab., Wilmington, Del., 1948-54; Rsch. Supvr., ibid., 1954-58; Rsch. Div. Hd., ibid., 1958-60; Asst. Lab. Dir., ibid., 1960-62; Lab. Mgr., ibid., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Alpha Chi Sigma; Sigma Xi. Contbr. to: Jour. Org. Chem. Areas of Rsch.: Organic Chemistry (Dyes, Polymers, Fluorine Compounds).

BROOKS, Stanley Nelson (Ph.D.), Rsch. Agronomist and Leader, Hop and Mint Investigations, Crops Rsch. Div., ARS, U.S.D.A., Ore. State Univ., Corvallis, Ore. Home Add.: 2500 Garfield, Corvallis, Ore. PLANT BREEDING AND GENETICS. b. Laplata, N. Mex., March 1, 1922. s. Bert E. and Avis (Heflin) B. Edn.: B.S., Colo. State Univ., 1948; M.S., Kans. State Univ., 1949. Ph.D., Ore. State Univ., 1961. m. Rebecca Rankin, July 6, 1946. c.: Robert L.; Ronald J.; Richard S.; Roger W. Exp.: Asst. Agron., Colo. St. Univ., 1948; Rsch. Asst. in Agron., U.S.D.A., Kans. St. Univ., 1948-49; Asst. in Agron., Mont. Agri. Expt. Sta., 1949-53; Asst. Agron., ibid., 1953-55; Rsch. Agron., Crops Rsch. Div., ARS, U.S.D.A., Ore. St. Univ., 1955—. Hon. Pos.: Permanent Chmn., Natl. Hop Rsch. Adv. Comm., 1960—; Coordinator, Hop Investigations, Ore. State Univ., 1958—. Mem.: Crop Science Soc. of Am.; A.A.A.S.; Am. Soc. of Agronomy; Gamma Sigma Delta; Phi Sigma; Alpha Zeta; Boy Scouts of Am. Contbr. to: Agron. Jour.; Rsch. Bulls.; Crop Sci.; Modern Brewery Age; Ency. Brittanica; McGraw-Hill Ency. of Sci. and Tech. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Plant Breeding and Agronomy; Quantitative Inheritance, Flowering Behavior, Sex Expression in Hops; Hop Rsch. in Europe.

BROOM, Perry Morris (Ed.D.), Prof., E. Tex. State Coll., Commerce, Tex. Home Add.: 1711 Walnut St., Commerce, Texas. PSYCHOLOGY-EDUCATIONAL AND INDUSTRIAL. b. Effingham, Ill., Aug. 7, 1908. s. Charles A. (dec.) and Lillian (Cohea) B. Edn.: B.S., Sam Houston St. Coll., 1936; M.Ed., Univ. of Tex., 1938; Ed.D., ibid., 1942. Exp.: Assoc. Prof., Howard Baptist Coll., 1946-47; Prof., Franklin Coll., 1947-49; Special Instr., Univ. of Tex., 1949-51; Prof., E. Tex. St. Coll., 1951—. Hon. Pos.: Co-editor, Commerce Bull., State Dept. Bull., Tex. Curr. Dev., 1938. Mem.: A.S.Q.C.; N.P.A.; Am. Psychol. Assn.; A.A.A.S.; Life Mem., N.E.A.; Am. Stat. Assn.; Am. Mgmt. Assn.; T.S.T.A.; S.A.M.; A.I.M.; N.B.E.A.; Am. Acad. Polit. and Soc. Sci.; A.A.U.P.; Delta Sigma Pi; Alpha Chi; Phi Delta Kappa; Kappa Phi Kappa; Pi Gamma Mu; Sigma Iota Epsilon; Pi Omega Pi; Kappa Delta Pi; Phi Alpha Theta; Rotary; C. of C.; M.W.A.; Southwestern Phychological Assn.;: Tex. Assn. of Classroom Tchrs. Author: Simplified Statistics, 1955. Serv. Rec.: U.S.N.R., 1942-45. Areas of Rsch.: Personnel-Indusl. Psychol., Exec. Development in Industry.

BROSCHE, Anton Franz (Mr.), (dec.), Horticulturist, Chicago Park Dist., Ill., (ret.). Home Add.: 2255 S. Drake Ave., Chicago 23, Ill. FLORICULTURE; VITICULTURE. b. Mochove Austria, Jan. 3, 1886. s. Anton Augustine and Antonie (Cerny) B. Edn.: Diploma, Vinarske a Ovocnicka Skoly na Melniku, Austria, 1906. m. Emily Mrazek, June 26, 1915. c.: Rose Vera (Mrs. Frederick H. Harris, Jr.) Exp.: Technical Consultant, Falzfein Estates, Odessa, Russia, 1906-11; Prod. Mgr., Jos. Triner Co., Chicago, Ill., 1912-36; Horticulturist, Chicago Park Dist., Ill., 1937-51; (ret.). Mem.: Am. Assn. for the Adv. of Sci.; Am. Forestry Assn.; Am. Rose Soc.; Czech Engrs. Soc., Chicago; Art Inst. of Chicago, Life Mem.; Libr. Bd., Toman Branch Chicago Pub. Libr. Contbr. to: The Florist Review. Achievements of Gen. Int.: Art Collector, Colored Etchings. Areas of Rsch.: Cultivation of Roses, Orchids, Lilies.

BROUGHER, John Challen (M.D.), Obstetrics and Gynecology, Sr. Partner, The Vancouver Clinic, 111 West 39th St., Vancouver, Wash. Home Add.: 10407 S.E. Evergreen Hwy., Vancouver, Wash. MEDICAL OBSTETRICS AND GYNECOLOGY. b. LaCenter, Wash., June 9, 1901. s. Alvin Lincoln and Carra (Barnes) B. Edn.: A.B., Willamette Univ., 1923; M.A., Univ. of Oregon Med. Schl., 1927; M.D., ibid., 1928. m. Esther Bauman, June 14, 1928. c.: Joanne Marilyn; Gordon John. Exp.: General Practice, Vancouver, Wash., 1928-37; Senior Mem. The Vancouver Clinic, 1937—; Specialty: Obstetrics and Gynecology, The Vancouver Clinic, 1937—. Hon. Pos.: Fellow, Am. Coll. of Surgeons; Fellow, Am. Coll. of Surgeons; Pres., Clark County Med. Soc., 1959; Pres., Fort Vancouver Historical Soc., 1959 and 1960; Trustee of Cascade Coll., Portland, Ore.; Trustee, George Fox Coll.; Fellow, Am. Coll. of Obs. and Gyn. Mem.: Portland Acad. of Med.; Sigma Xi; Phi Delta Theta; Phi Beta Pi; C. of C. Contbr. to: Am. Jour. of Obst. and Gyn.; Western Jour. of Surgery, Obs. and Gyn.; Northwest Med.; Jour. of the Internatl. Coll. of Surgeons; Western Medicine.

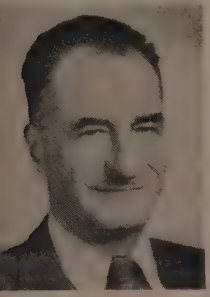
BROUSE, Don (Ph.D.), Chem. Engr., Forest Products Lab., U. S. Forest Service, Madison 5, Wis. FOREST PRODUCTS. b. Noble Co., Ind., Aug. 19, 1895. s. Ulysses C. and Jenny Lind (Tyler) B. Edn.: B.S., Purdue Univ., 1921; M.S., Univ. of Wis., 1925; Ph.D., ibid., 1931. m. Margery E. O'Hora, Oct. 17, 1944. Exp.: Instr. of Math., Baker Univ., Baldwin, Kans., 1922-23; Chem. Engr., Forest Products Lab., U. S. Forest Serv., Madison, Wis., 1923—. Mem.: Am. Chem. Soc.; A.A.A.S.; Forest Products Rsch. Soc.; Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon; Sigma Phi Epsilon. Contbr. to: Jour. of the Forest Products Rsch. Soc.; Chem. Abstracts. War Record: Lt., Inf., 1917-19; Lt. Col., Air., 1942-46. Special Int.: Woodworking Adhesives and Glued Wood Products.

BROWN, Alice Lenore (Ph.D., DSc.), Research Asst. to Investigator of Chromosomes, U. S. Public Health Project No. 435, Ohio State Univ. Chem., Rsch. Foundation, Ohio State Univ., 1536 N. High St., Columbus 1, Ohio. EMBRYOLOGY, PATHOLOGICAL EMBRYOLOGY, PHYSIOLOGICAL CHEMISTRY (FUNDAMENTAL BIOLOGY). b. Norton Center, Mass., Dec. 17, 1888. d. Lyle Lincoln and Catherine Anne (Farlee) B. Edn.: A.B., Univ. of Kans., 1916; A.M., ibid., 1920; Ph.D.-Sc.D., Cornell Univ. Med. Coll., N. Y. C., 1929. Exp.: Asst. Instr. and Rsch. Asst., Zool. Dept., Univ. of Kans., Lawrence, Kans., 1916-18; Instr., Zool., Embryol. and Physiol., Kans. State Agri. Coll., Manhattan, Kans., 1918-21; Asst. to, Anatomy Dept., Cornell Univ. Med. Coll., N. Y. C., 1921-22; Fellow, Rsch. Biol., Cornell Univ. Med. Coll., N. Y. C., 1922-24; Asst. to, Dept. of Biol., Hunter Coll., N. Y., 1924-25; Asst. Bacteriol. Lab., St. Luke's Hosp., N. Y., 1925-29; Serologist, Serol. Lab., City of New York, Ave. Angel Mem., 1929; Prof. Biol. Dept. Biol. Chem., Dept. of Sci., 1929-33; Hon. Fellow, Rsch. Assoc., Zool., Duke Univ., Durham, N. C., 1933-34; Assoc. Dir. Biol. Proj., U. S. Biol. Lab., Beaufort, N. C., 1934-35; Independent Biol. Rsch., Various Projects, Washington, D. C., 1935-42; Asst. to- Biochem. Dept., Sci. Hy. and Pub. Health, Johns Hopkins Univ., 1937; Tch. Chem. I-II, McKinley Night H. S., Washington, D. C., 1937-38; Coordinator (Sr. Rsch.), U. S. Dept. of Agri., Weather Bureau, River and Floods Div., 1938-39; Assoc. of Dr. Henry A. Monat, Private, Wash., D. C., 1941; Tchr., Biol. Physics, Chem., St. Mary's Sem. Jr. Coll., St. Mary's, Md., 1942-43; Tech. Interne, Clinic-X-ray, Spring Grove St. Hosp., Catonsville, Md., 1943; Asst. to-, Clinic-X-ray, Ashtabula General Hosp., Ashtabula, Ohio, 1946-47; Asst. to-, Zool. Dept., Hancock Museum, Univ. of Southern Calif., 1947; Asst. to-, Zool. Dept., Museum, Univ. of Kans., 1947-48; Assoc. in Ophthalmol., Univ. of Kans., Schl. of Med. Lawrence and Kans. City, 1948; Asst. to-, Engr. Exp. Sta., Ohio Rsch., Ohio State Univ., Columbus, Ohio, 1951-52; Rsch. Asst. to- Isolation of Chromosomes, Chem. Dept., ibid., 1952—. Mem.: Fellow, A.A.A.S.; A.A.U.P.; Beta Beta Beta; Microscopical Soc.; N. Y. Acad. Sci.; Kan. Acad. Sci.; Ohio Acad. of Sci.; Am. Ornithol. Union; Delta Zeta. Contbr. to: Am. Jour. Anat.; Anatomical Rec.: Proc. Wildlife Restoration and Conservation, N. Am. Wildlife Conf., 1936; Symposium Molecular Structure Spectroscopy, June, 1953-54, Ohio St. Univ.; (Abstract in printed program). Gen. Int.: Interest in Coordination of Life Factors as related to Our Religions; Internatl. Understanding. Special Int.: Exptl. Endocrinol.; Embryol. (species differences); Pathological Embryol. (Nutrition values); Micro-dissection and Tissue Culture (Endocrine Extracts); Isolation of Chromosomes to this Relationship; Thermo-electromagnetic Resonance Coordinations (Biophysical).

BROWN, Allen H. (Mr.), Hd. Chem. Dept., Jackson Sta. Coll., Jackson, Miss. Home Add.: 3602 Westchester Dr., Jackson, Miss. CHEMISTRY. b. Charlotte, N. C., June 28, 1921. s. Lafayette and Hattie (Thompson) B. Edn.: B.S., Johnson C. Smith Univ., 1942; M.S., Indiana Univ., 1948. m. Ollie Thomas, 1947. c.: Carlton; Marquessa. Exp.: Chemist, U. S. Engrs. Wash., D. C., 1941-43; Hd. Sci. Dept., Fayetteville Sta. Coll., Fayetteville, N. C., 1949-53; Hd. Chem. Dept., Bluefield Sta. Coll., Bluefield, W. Va., 1953-58; Hd. Chem. Dept., Jackson Sta. Coll., 1958—. Mem.: N. C. Acad. of Scis.; W. Va. Acad. of Sci.; Am. Chem. Soc.; Alpha Kappa Mu; Omega Psi Phi; Beta Kappa Chi; Phi Delta Kappa; Masonic Lodge; Elks Lodge. Serv. Rec.: U. S. Army. Achievements of Gen. Int.: Chemist, U. S. Bureau of Standards. Areas of Rsch.: Chemical Analysis; Photography.

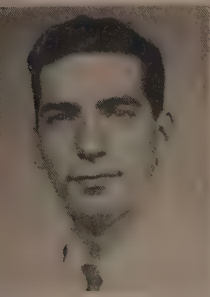
BROWN, Arlan Kay (Mr.), Sci. Instr., Mt. Ayr Community H. S., Mt. Ayr, Ia. Home Add.: 800 E. Jefferson, Mt. Ayr, Ia. BIOLOGY AND SCIENCE EDUCATION. b. Bussey, Iowa, April 8, 1936. s. Walter Lee and Amanda Jane (Arnold) B. Edn.: B.A. Simpson Coll., 1957; M.S. Iowa State Univ., 1960. Exp.: Sci. Instr., Mt. Ayr Community H. S., Mt. Ayr, Ia., 1957—. Mem.: Iowa Acad. of Sci.; Iowa Assn. of Sci. Tchrs.; Nat. Sci. Tchrs. Assn.; Am. Museum of Natural Hist.; Nat. Assn. of Biol. Tchrs.; A.A.A.S.; Alpha Psi Omega; Lions Internatl. Areas of Rsch.: Genetics; H. S. Sci Curriculum; Bio-Chem

BROWN, Arthur Allen (Mr.), Dir., Div. of Forest Fire Rsch., U. S. Forest Serv., Washington 25, D. C. Home Add.: 1215 Popkins Lane, Alexandria, Va. FORESTRY (RESEARCH IN FIRE). b. Norcattur, Kans., Feb. 5, 1900. s. Ora L. and Catharine Ann (Farlee) B. Edn.: B.S.F., Univ. of Mich., 1922. m. Marie Clare Sicher, 1925. c.: Alline M. Brown Sontag; Yvonne E. Brown Kendall. Exp.: Forest Asst., U. S. Forest Serv., Coeur d'Alene, Idaho, 1922-26; Asst. Supvr., U. S. Forest Serv., Helena, and Lewis & Clark Natl. Forests, Mont., 1926-30; Assoc. Silviculturist, Silviculturist, Fire Rsch., U. S. Forest Serv., Berkeley, Calif., 1930-37; Regional Chief, Forest Fire Control, Denver, Colo., 1937-45; Asst. Chief, Div. Forest Fire Control, Washington, D. C., 1945-46; Chief, Div. Forest Fire Control, ibid., 1946-47; Chief,



ater Dir., Div. of Forest Fire Rsch., U. S. Forest Serv., ibid., 1948—. Hon. Pos.: Mem., Fire Rsch. Com., Natl. Acad. of Scis.; Natl. Rsch. Coun., Rsch. Com., Fed. Fire Coun., etc. Mem.: Soc. of Am. Foresters; A.A.A.S.; Am. Meteorol. Soc.; Am. Geophysics Union; Operations Rsch. Soc.; former Kiwanis. Author: Fire in the Forests of the United States, Revised, 1954. Contbr. to: Jour. of Forestry; Fire Abstracts and Reviews; Fire Control Notes. Serv. Rec. U. S. Army, 1918. Gen. Int.: First National Dir., Div. of Forest Fire Research. Areas of Rsch.: Forest Fire Behavior; Micrometeorology and Microclimate; Forestry and Forest Fuels.

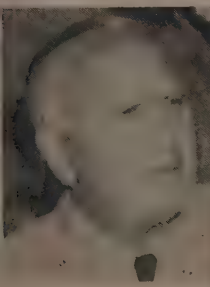
BROWN, Bertram S. (M.D.), Special Asst. for Program, National Inst. of Mental Health, Bethesda 14, Md. Home Add.: 7817 Greentwig Rd., Bethesda, Md., PUBLIC HEALTH PSYCHIATRY. b. Brooklyn, N. Y., Jan. 28, 1931. s. David H. and Jean (Gubkin) B. Edn.: B.A., Brooklyn Coll., 1952; M.D., Cornell Univ. Med. Coll., 1956; M.P.H., Harvard Univ. Schl. of Pub. Health, 1960. m. Joy Gilman, 1952. c.: Dale; Laurie; Wendy; Tracy. Exp.: Intern, Pediatrics, Yale Univ., 1956-57; Resident, Psychiatry, Harvard Univ., 1957-60; Psychiatrist, U. S. Public Health Serv., Washington, D. C., 1960—. Mem.: Am. Psychiatric Assn.; Am. Pub. Health Assn.; Am. Sociol. Assn.; Am. Assn. on Mental Deficiency; Phi Beta Kappa; Alpha Omega Alpha; Delta Omega. Contbr. to: Jour. Pediatrics; Public Health



Reports; Corrective Psychiatry and Jour. Social Psychiatry; A.M.A. Arch. of Gen. Psychiatry. Serv. Rec.: U. S. Army Air Force Reserve, 1957-60. Areas of Rsch.: Public Health Psychiatry (Community Mental Health), Mental Retardation, Forensic Psychiatry.

BROWN, Charles Augustus (Ph.D.), Assoc. Prof. of Zoology, Howard Univ., Wash., D. C. Home Add.: 1902 Newton St., N.E., Wash., D. C. CYTOLOGY. b. Columbia, S. C., April 26, 1928. s. Charles A. and Rosa (Howell) B. Edn.: B.S., Johnson C. Smith Univ., 1948; M.S., Howard Univ., 1950; Ph.D., Univ. of Wis., 1956. m. Rosaline Freeman, Sept. 5, 1953. c.: Russell Craig; Phillip Howell; Keith Oliver. Exp.: Instr. in Zool., Howard Univ., 1950-53; Rsch. Asst., Univ. of Wis., 1953-56; Instr. to Assoc. Prof. of Zool., Howard Univ., 1956—. Mem.: A.A.A.S.; A.I.B.S.; Genetics Soc. of Amer.; Amer. Soc. of Zoologists; Sigma Xi; Omega Psi Phi. Contbr. to: Anatomical Record; Jour. of Morphology; Jour. of Protozoology. Areas of Rsch.: Electron Microscopy and Cytochemistry.

BROWN, Edward Fisher (Col.), Retired Corp. Exec. Home Add.: 1158 Fifth Ave., New York 29, N. Y. PUBLIC HEALTH EDUCATION. b. New York, N. Y., Oct. 2, 1889. s. Samuel and Bertha (Fisher) B. Edn.: N. Y. Univ., Law Schl. m. Nathalie Boshko, Mar. 30, 1922. c.: David; Edward Fisher, II; Mrs. Natasha B. Doyle. Exp.: Field Agent. Natl. Child Labor Comm., N. Y., N. Y.,1910-13; Dir., Bur. Welfare Schl. Children; Orgn. Dir., N. Y. Schl. Lunch Comm., 1913-17; Org. Secy., ibid., N. Y.-N. J., Palisades Interstate Pk., Allegheny Sta., N. Y., 1917-21; Impartial Chmn. in Labor Disputes, Garment Industry, N. Y., N. Y., 1917-20; Field Secy., Playground and Rec. Assn., N. Y., N. Y., 1921-23; Exec. Dir., Child Welfare Comm., 1925-28; Dir., Diphtheria Prevention Comm. of N. Y. C., Health Dept., 1928-31;



Pres., Health News Serv., Syndication Scientific News, N. Y., 1932-42; Exec. Vice-Pres., Milk Rsch. Coun., N. Y., 1932-42; Asst. to Pres., Vice-Pres., Natl. Dairy Products Corp., N. Y., 1946-55. Hon. Pos.: Special Deputy Health Commnr.; Dir., Noise Abatement Comm. and Loose Milk Commn.; Orgn. Dir., Santa Barbara Community Arts Assn.; Dir., Physicians' Home; Dir., N. Y. Diabetes Assn.; Mem., U. S. Advisory Coun., Inter-Am. Schl., Univ. of Fla. Mem.: Fellow, Am. Pub. Health Assn.; Fellow, A.A.A.S.; Army and Navy Club. Author: Dipththeria Prevention, 1929; Noise Abatement, 1930; Loose Milk, 1931; Milk Papers, Vol. I-IX; The Lusts of Don Dashell, 1959. Serv. Rec.: Col., U. S. Army, 1942-46; Col., U.S.A. Reserve, 1946-50. Areas of Rsch.: Pub. Health Edn.; Nutrition, Schl. Hygiene.

BROWN, Elizabeth E. (Miss), Reference Librn., IBM Rsch. Libr., Yorktown Heights, N. Y. Home Add.: 221 So. Broadway, Tarrytown, N. Y. LIBRARY SCIENCE; DOCUMENTATION; INFORMATION SERVICES. b. Charlotte, Mich., Aug. 29, 1921. d. Delbert F. and Katherine E. (Griffith) B. Edn.: B.A., Albion Coll., 1943; M.L.S., Pratt Inst., 1953. Exp.: Information Spec., Enjay Co., N. Y. City, 1943-50; Reports Indexer, Bakelite Co., Bound Brook, N. J., 1950-52; Rsch. Librn., IBM, 1953—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Special Librs. Assn.; Am. Libr. Assn.; Am. Documentation Inst.; Delta Zeta; Phi Beta Kappa; Mortar Bd. Areas of Rsch.: Machine Methods for Indexing, Storing and Retrieving Information.

BROWN, Eric Reeder (Ph.D.), Rsch. Scientist, Dept. of Hematol., Hektoen Inst. for Med. Rsch. of the Cook Co. Hosp., 637 South Wood St., Chicago 12, Ill. Home Add.: 409 S. Maple, Oak Park, Ill. CANCER BIOLOGY, IMMUNOCHEMISTRY AND BIOCHEMISTRY, MICROBIOLOGY AND MYCOLOGY. b. Cortland, N. Y., Mar. 16, 1925. s. Harold McDaniel and Helen Virginia (Seitz) B. Edn.: Cert. of Engrng., U. S. Coast Guard Acad., 1944; B.A., Syracuse Univ. 1949; M.S., ibid., 1951; Ph.D., Univ. of Kan., 1957. m. 1st: Margaret H. Kupfer, May 31, 1952. m. 2nd: Chloe C. Ledbetter, May 9, 1961. c.: Eric R., II; Daniel K.; Dianne M. Exp.: Instr., Univ. of Ill. Med. Schl., 1956-58; Asst. Prof., Immunology, Univ. of Ala., 1958-59; Asst. Prof. of Pathol., Univ. of Minn. Med. Schl., 1960—. Mem.:

Fellow, Natl. Cancer Inst.; Fellow, Am. Cancer Soc.; Soc. Am. Bacteriol.; A.A.A.S.; N. Y. Acad. Sci.; Am. Pub. Health Assn.; Ala. Acad. Sci.; Sigma Xi; Nu Sigma Nu; Psi Chi; Phi Sigma; P.T.A.; Reserve Officers Assn. Author: Chapt. 9, "Dissemination of Cancer, Prevention and Therapy," 1961. Contbr. to: Jour. of Bacteriol.; Bacteriol. News; Jour. Infectious Dis.; Bacteriol. Proc. A.M.A. Arch. of Surg.; Proc. Soc. Exptl. Biol. and Med.; Cancer Rsch.; Jour. Cancer Rsch.; Jour. Ala. Acad. Sci. Serv. Rec.: U. S. Coast Guard, 1942-46; U.S.A.F., 1952—. Areas of Rsch.: Cancer Immunology and Cancer Immunogenetics; Bacterial Genetics; Bacterial Morphology; Immunology, Biochemistry, Microbiology.

BROWN, Frederick Winfield (Ph.D.), Dir., Boulder Labs., Natl. Bur. of Standards, Boulder, Colo. Home Add.: 3840 Baseline Rd., Boulder, Colo. PHYSICS. b. Enid, Okla., July 2, 1908. s. Winfield Scott and India Mae (Graham) B. Edn.: B.S., Univ. of Ill., 1928; M.S., ibid., 1930; Ph.D., ibid., 1932. m. 1st: Jovita Ramirez, Aug. 25, 1935. (dec.). m. 2nd: Betty Ellen Boylan, Dec. 27, 1958. c.: Frederick W., Jr.; David C. R.; Anita M.; Suzanne S.; Scott J. Exp.: Instr. in Physics, Univ. of Kansas City, 1936-38; Rsch. Assoc., Calif. Inst. of Tech., 1938-40; Supvng. Physicist, U. S. Bur. of Mines, Pittsburgh, Pa., 1940-46; Rsch. Specialist, North Am. Avn., Inc., Los Angeles, Calif., 1946-49; Tech. Dir., Naval Ordnance Test Sta., China Lake, Calif., 1949-54; Dir., Boulder Labs., Natl. Bur. of Standards,

1954—. Hon. Pos.: Natl. Rsch. Fellow, Univ. of Calif., 1934-35; Chmn., Tech. Comm. of U. S. Dept. of State to Prepare U. S. Position for Internatl. Radio Conf., 1957-59; Chmn., Govt. Milit. Participation, Colo. Centennial Celebration, 1958-59. Mem.: Fellow, Am. Physical Soc.; Fellow, A.A.A.S.; Fellow, Inst. of Radio Engrs.; Am. Mathematical Soc.; Rsch. Soc. of Am.; Cosmos Club; Sigma Xi; Eta Kappa Nu; Rotary Internatl.; Torch Club. Contbr. to: Physical Rev.; Jour. of Applied Phys.; Am. Jour. of Phys.; Proc. of the Natl. Acad. of Sci.; Indust. and Engrng. Chem.; Signal; Colo. Schl. Jour. Areas of Rsch.: Theoreti-

cal Spectroscopy, Nuclear Physics, Solid State Physics, Nuclear Reactor Technol., Explosives and Explosions, Radio Wave Propagation.

BROWN, Frank Arthur, Jr. (Ph.D.), Morrison Prof. of Biol., Northwestern Univ., Evanston, Ill. Home Add.: 906 Greenleaf Ave., Wilmette, Ill. BIOLOGY AND PHYSIOLOGY. b. Beverly, Mass., Aug. 30, 1908. s. Frank Arthur, Sr. and Arletta Esten (Robinson) B. Edn.: A.B., Bowdoin Coll., 1929; M.A., Harvard, 1934; Ph.D., ibid., 1934. m. Jennie Wentworth Pettegrove, June 24, 1934. c.: Charlotte; Frank Arthur, III; Marilyn Diane. Exp.: Austin Tchng. Fellow, Harvard, Mass., 1929-32; Tchng. Asst., Zoology, Harvard, 1932-34; Instr., Univ. of Ill., Urbana, Ill., 1934-37; Asst. Prof., Zoology, Northwestern Univ., 1937-40; Assoc. Prof., ibid., 1940-46; Prof., ibid., 1946–; Morrison Prof., ibid., 1956–. Hon. Pos.: Fellow, A.A.A.S. Mem.: Am. Soc. Zoologists; Soc. Plant Physiol.; Am. Soc. Limnology and Oceanography; Am. Physiol. Soc.; Am. Soc. Naturalists; Soc. Gen. Physiols.; Soc. Study Growth and Devel.; Ill. Acad. of Sci.; Soc. Exptl. Biol. and Med.; Union of Am. Biol. Socs.; Ecological Soc. Am.; Am. Geophys. Union; Sigma Xi; Gamma Alpha; Phi Sigma; Delta Upsilon; Conglist. Club; Am. Inst. Biol. Sci. Author: Selected Invertebrate Types, 1950; Comparative Animal Physiology, 1950; 1961. Contbr. to: Numerous Profl. Jours. Areas of Rsch.: Invertebrate Endocrinology; Sensory Physiology and Behaviour; Biological Rhythms and Clocks.

BROWN, Giles T. (Ph.D.), Chmn., Social Sci. Div., Orange Sta. Coll., Fullerton, Calif. Home Add.: 413 Catalina Dr., Newport Beach, Calif. DEMOGRAPHY; CONSERVATION. b. Marshall, Mich., Apr. 21, 1916. s. A. Watson and Ettroile Lamar (Kent) B. Edn.: A.B., San Diego Sta. Coll., 1937; M.A., Univ. of Calif., Berkeley, 1941; Ph.D., Claremont Grad. Schl., 1949. m. Beth Cosner, Nov. 21, 1951. Exp.: Counselor, Binet Tester, San Diego City Schls., San Diego, Calif., 1937-46; Chmn., Social Sci. Div., Orange Coast Coll., Costa Mesa, Calif., 1948-60; Chmn., Social Sci. Div., Orange State Coll., 1960–. Hon. Pos.: Pres., Western Region of Internatl. Platform Assn.; Pres., Western States Coun. on Edn'l. Travel. Mem.: Am. Assn. for the Adv. of Sci.; Am. Assn. of Univ. Profs.; Natl. Audubon Soc.; Population Ref. Bureau; Phi Delta Kappa; Phi Alpha Theta; Masons; Am.-Scandinavian Found. Contbr. to: Encyclo. Britannica; Overview; World Affairs Qtrly.; Pacific Hist. Rev.; Clearing House; Pacific Northwest Qtrly.; Jr. Coll. Jour.; Pacific Hist. Rev. Serv. Rec.: U. S. Navy, 1942-46. Gen. Int.: Dir. of Seminar to Africa, 1956, Asia, 1958, Africa, 1960. Areas of Rsch.: Study of the Newly Independent Areas of the World with Particular Emphasis on Africa, the Middle East and South-Central Asia (The Subcontinent of India, Pakistan, Ceylon and Burma); Field Studies of the Areas Have Been Made on Eight Separate Occasions.

BROWN, Harold, Dir. of Rsch. and Engr., The Pentagon, Washington, D. C

BROWN, Harry Darrow (Ph.D.), Assoc. Prof., Sou. Ill. Univ., Edwardsville, Ill. BOTANY. b. N. J., 1925. Edn.: B.S., Long Island Univ., 1950; A.M., Columbia Univ., 1952; Ph.D., ibid., 1957. Exp.: Tchng. Asst., Columbia Univ., 1950-53; Lectr., Hunter Coll., 1954-56; Asst. Prof., Loyola Univ., New Orleans, 1957-61; Asso. Prof., Sou. Ill. Univ., 1961–. Mem.: A.A.A.S.; Torrey Bot.; Bot. Soc. of Am.; Am. Soc. Plant Physiol.; Sigma Xi; Assn. of Southeastern Biologists; Am. Soc. Cell Biology. Author: Bibl. of Nectar Glands, 1960. Contbr. to: Anatomical Rec.; Torrey Bull., Bot. Gaz. Areas of Rsch.: Development and Function of Plant Glands; Active transport.

BROWN, Merle J. (M.D.), Surgeon, 2247 Fairhaven Rd., Davenport, Iowa. GENERAL SURGICAL SCIENCE. b. Colo, Iowa, Jan. 16, 1905. s. Jessie J. and Emma (Dolph) B. Edn.: B.A., State Univ. of Iowa, 1927; M.D., ibid., 1933; M.Sc., Grad. Schl. of Med., Univ. of Pa., 1938. m. Lisette Brooke, June 22, 1933. c.: Jean Brown Frank; Carolyn Mary. Exp.: Sci. Instr., Lincoln H. S., Vinton, Iowa, 1927-29; Intern, City Hosp. of Akron, Akron, Ohio, 1933-34; Fellow, Guthrie Clinic & Robert Packer Hosp., Sayre, Pa., 1935-38; Surgical Staff, Moline Pub. Hosp., Moline, Ill., 1946; Surgical Staff, Mercy Hosp., Davenport, Iowa, 1938; Surgical Staff, St. Lukes Hosp., ibid., 1938. Hon. Pos.: Pres., Iowa Acad. of Surg., 1960-61; Chmn., Program Com., Scott Co. Med. Soc., 1958-62. Mem.: Fellow, Am. Coll. of Surgeons; Fellow, Internatl. Coll. of Surgeons; Mem., Internatl. Soc. of Surgery; Mem., Central Surgical Assn.; A.M.A.; Ia. Med. Soc.; Scott Co. Med. Soc.; Life Mem., Miss. Valley Med. Soc.; Fellow, Acad. Internatl. Med.; Iowa Clin. Surgical Soc.; Iowa Acad. of Surgery; Hawthorne Surgical Soc.; Guthrie Clinic Residents Assn.; Diplomat, Am. Bd. of Surgery; Alpha Kappa Kappa; Awards Co-Chmn., Quad-Cities Sci. Fair. Contbr. to: Bull. Guthrie Clinic; Am. Jour. Surgery; Surgery; Surg. Obstet & Gynec.; Pa. Med. Jour.; N. Y. State Jour. Med.; Jour. Iowa State Med. Soc.; Archives Surg. Serv. Rec.: Lt. Col., U. S. Army Med. Reserve Corps, 1933-46; Reserves, 1948-58 (Resigned). Areas of Rsch.: Clinical Surgical Research.

BROWN, Merton Leopold (M.D.), Physician, 2294 Grand Ave., New York City 68, N. Y. Home Add.: 18 E. 199 St., N. Y. C. 68, N. Y. INTERNAL MEDICINE, CARDIOLOGY, GASTROENTEROLOGY, GERIATRICS, NEOPLASTICS AND CHEMICAL ENGINEER. b. U. S., Nov. 3, 1915. s. Ignatz and Laura (Kiss) B. Edn.: B.S. in Ch.E., N. Y. Univ., 1936; B.A., ibid., 1939; M.D., ibid., 1943. Exp.: Chem. Engr., U. S. Rubber Co., Passaic, N. J., 1936-37; Interne, Morrisania City Hosp., N. Y. City, N. Y., 1943; Resident in Med., ibid., 1944; Resident in Med., Montefiore Hosp., N. Y. City, N. Y., 1944-45; Externe in Med., ibid., 1947; Asst. Physician, Med., Morrisania Hosp., N. Y. C., 1948-50; Adjunct Physician, Med., ibid., 1950-55; Assoc. Physician, Med., ibid., 1955–; Asst. Physician, Med., Montefiore Hosp., N. Y. C., 1948-51; Adjunct Physician, Med., ibid., 1951–; Asst. Phys. Neoplastics, ibid., 1949-59; Adjunct Phys., Neoplastics, ibid., 1959–. Hon. Pos.: Asst. in Med., Columbia Univ., Phys. and Surgeons, N. Y. C., 1944-55; Lectr. in Med., ibid., 1955–; Chf. Gastroenterology Clinic, Montefiore Hosp., N. Y. C., 1949–. Mem.: Fellow, Am. Coll. Cardiol.; Am. Coll. Gastroenterol.; N. Y. Cardiological Soc.; N. Y. Acad. Gastroenterol.; Am. Geriatrics Soc.; N. Y. Acad. of Scis.; A.A.A.S.; A.M.A.; N. Y. State Med. Soc.; Bronx Co. Med. Soc.; Am. Assn. Med. Colls.; Am. Heart Assn.; Am. Inst. Chem. Engrs.; Beta Lambda Sigma; Caduceen Soc.; Phi Lambda Kappa; Am. Legion; Mason; Scottish Rite; Ancient Arabic Order Shrine. Co-author: Handbook of Digestive Diseases, 1950. Contbr. to: Med. Clinics of N. Am.; Am. Jour. of Digestive Diseases. Serv. Rec.: U. S. Army, 1945-47. Areas of Rsch.: (1) Chem. Engr.: Variations of Reynold's Number with Alterations of Velocities and Specific Gravities of Saline; Rsch. in Paints, Plastics and Rubber. (2) Physician: Internal Med., Cardiology, Gastroenterology, Geriatrics, Neoplastics and Peripheral Vascular Diseases.

BROWN, Moroni Harold (Ph.D.), Dir. of Psychol. Clinic and Assoc. Prof. of Psychol., Univ. of Utah, Salt Lake City 12, Utah. Home Add.: 1221 Fifth Ave., Salt Lake City 3, Utah. PSYCHOLOGY. b. Brigham City, Utah, Feb. 18, 1912. s. Dr. A. Lee and Florence (Thorne) B. Edn.: B.A., Univ. of Utah, 1936; M.A., Columbia Univ., 1937; Ph.D., Univ. of Denver, 1956. m. Cherry Sale, Feb. 12, 1938. c.: Adam; Jesse; Dwight; Janet Daniel; Lynn; Matthew. Exp.: Psychologist, Salt Lake Public Schls., Salt Lake City, Utah, 1941-48; Clin. Instr., Coll. of Med., Univ. of Utah, ibid., 1946-60; Asst. Prof., ibid., 1948-56; Consultant, Primary Children's Hosp., ibid., 1946-60; Dir. of Psychol. Clinic and Assoc., Univ. of Utah, 1956–; Consultant, Wyoming State Hosp., Evanston, Wyo., 1959–. Hon. Pos.: Chmn., Mem. Utah Sta. Bd. of Edn., 1958–. Mem.: Am. Psychol. Assn.; Sigma Xi; Am. Assn. for the Adv. of Sci.; Am. Assn. of Univ. Profs.; Psi Chi; Sigma Nu; Kiwanis Club of Salt Lake City. Contbr. to: Jour. of Clinical Psychol.; Jour. of Nervous and Mental Disease; Am. Jour. of Phys. Med.; Jour. of Edn'l. Psychol.; Rehabilitation Record. Areas of Rsch.: Techniques for Increasing Learning Efficiency; Effects of Brain Injury on Learning Ability; Sex Differences in Intelligence; Detection of Suicidal Tendencies; Psychological and Organic Factors in Alcoholism.

BROWN, Patricia Lynn (Miss), Mgr. of Information Servs., Corp. Rsch. and Engrng., Tex. Instruments Incorp., P. O. Box 5474, Dallas 22, Tex. Home Add.: 9054 Longmont Dr., Dallas 18, Tex. TECHNICAL LITERATURE SPECIALIST. b. Lafayette, La., Oct. 1928. d. Arthur Marlowe and Mayde Thomas B. Edn.: B.S. in Ch.E., Southwestern La. Inst., 1947; M.A. in Chem. Engrng., Rice Inst., 1949. Exp.: Instr., Smith Coll., Northampton, Mass., 1949-50; Tex. Instr., Coll. Station, Tex., 1950-51; Rsch. Asst., Albany Med. Coll., Albany, N. Y., 1951-52; Lit. Searcher, Ethyl Corp., Detroit, Mich., 1952-55; Sr. Tech. Lit. Searcher, Westinghouse Atomic Power Div., Pittsburgh, Pa., 1955-57; Mgr. of Information Servs., Tex. Instruments, Dallas, Tex., 1957–. Hon. Pos.: Pres., Soc. of Women Engrs., 1961-62. Mem.: Am. Chem. Soc.; Am. Assn. for Adv. of Sci.; Inst. of Radio Engrs.; Soc. of Technical Writers and Publishers; Soc. of Women Engrs.; Special Libs. Assn.; Iota Sigma Pi. Contbr. to: Author: How to Locate and Obtain Government Information Reports; Contbr. Editor, Women in Engineering. Areas of Rsch.: Technical Literature Searching; Information Acquisition, Storage and Retrieval.

OWN, Paula McKinney (Ph.D.), Ward Administrator, V. A. Hosp., skegee, Ala. Home Add.: 535 Old Montgomery Rd., Apt. 2A, skegee Inst., Ala. CLINICAL PSYCHOLOGY; RESEARCH, RE-BILITATION OF THE MENTALLY ILL AND ADMINISTRATION. Birmingham, Ala., Apr. 9, 1910. d. Clinton L. (dec.) and essa Henry (McKinney) B. Edn.: M.A., N. Y. Univ., 1949; .D., ibid., 1956. Exp.: Tchr., Jeff. Co. Bd of Edn., Birming-m, Ala., 1930-42; Adm. Asst., AGO, U. S. Gov't., Newark, J., 1942-48; State Psycholt., State of Ala., 1949-55; Rsch. in habilitation, Albany, N. Y., V. A. Hosp., 1957-58; Ward Ad-nistrator, V. A. Hosp., Tuskegee, Ala., 1958—. Hon. Pos.: ec. Secy., Tuskegee Mental Hlth. Assn.; Secy., Ala. Psychol. sn.; Fellow, Internatl. Coun. of Psycholts.; Mem., Am. Psy-ol. Assn. Mem.: Kappa Delta Pi. Author: Co-Author, Procedure Manual for Office of Dependency Benefits, 1945. Contbr. to: ychol. Remot.; Jour. of Chronic Diseases. Areas of Rsch.: oup Psychotherapy; Rehabilitation; Clinical Procedures as Re-ed to Administration.

OWN, Richard C. (Mr.), Dir. of Lab., U. S. Envelope Co., Me-chen, N. J. Home Add.: 175 Highland Ave., Metuchen, N. J. EMISTRY. b. Medford, Mass., June 26, 1925. s. Harry N. d Lillian (Carson) B. Edn.: B.A., Clark Univ., 1948; M.A., d., 1949. m. Martha Adlerz, Sept. 10, 1949. c.: Kenneth ; Janice R. Exp.: Chemist, U. S. Envelope Co., Worcester, ass., and Metuchen, N. J., 1949-58; Asst. Dir. of Lab., ibid., etuchen, N. J., 1958-59; Dir. of Lab., ibid., 1959—. Hon. Pos.: mn., TAPPI Testing of Adhesives, 1960. Mem.: A.C.S.; A.A.A.S.; I.C.; T.A.P.P.I.; F.T.A.; Lambda Chi Alpha. Serv. Rec.: U.S.N., W. II. Areas of Rsch.: Adhesives; Inks.

OWN, Robert Thorson (Ph.D.), Assoc. Prof. Biol., Mich. Coll. Mining and Tech., Houghton, Mich. Home Add.: 500 Garnet St., Houghton, Mich. PLANT ECOLOGY. b. Rochester, Minn., Sept. 29, 1923. s. Lloyd K. and Alma (Idso) B. Edn.: B.S., Ch.E., Univ. of Wis., 1947; B.S., Botany, ibid., 1948; M.S., ibid., 1949; Ph.D., ibid., 1951. m. Viola Jarvenpaa, Sept. 1, 1953. c.: Linda Anne; Cynthia Ellen; Lisa Linnea. Exp.: Instr., Mich. Coll. of Mining and Tech., 1951-54; Asst. Prof., ibid., 1954-60; Assoc. Prof., ibid., 1960—. Mem.: A.A.A.S.; Sigma Xi; Am. Soc. for Cell Biol.; Ecol. Soc. Am.; Am. Museum of Natural History; Am. Assn. of Univ. Prof. Contbr. to: Ecological Monographs; Ecol.; Mich. Acad. of Sci. Serv. Rec.: U. S. Navy, 1944-45. Areas of Rsch.: Tree Seed Germination, Autecology of nus Banksiana; Ecology of Lake States Forest.

OWN, Thomas Gordon (D.O.), Dir. of Clinical Labs., Allentown teopathic Hosp., Allentown, Pa. Home Add.: 120 Miller St., Allentown, Pa. PATHOLOGY. b. Detroit, Mich., Dec. 20, 1919. s. Hugh William and Harriet (Smyth) B. Edn.: B.S., Wayne Univ., 1942; D.O., Chicago Coll. of Osteopathy, 1951. m. Marion E. Brenton, May 11, 1946. c.: Jean Ann; Gordon David. Exp.: Analytical Chemist, Packard Motor Car Co., Detroit, Mich., 1943-47; Instr. of Pathol., Chicago Osteopathic Coll., 1952-55; Dir., Clin. Labs., Chicago Osteopathic Hosp., Chicago, Ill., 1954-55; Dir., Clin. Labs., Allentown Osteopathic Hosp., Allentown, Pa., 1955-62; Consulting Pathologist, South Bend Hosp., South Bend, Ind., 1952-55; Dir. of Clin. Labs., Allentown Osteopathic Hosp., 1961—. Hon. Pos.: Chmn., Dept. of Pathol., icago Osteopathic Coll., 1954-55. Mem.: Pan Am. Cancer Cytol. c.; Am. Assn. for the Adv. of Sci.; Am. Osteopathic Assn.; Pa. teopathic Assn.; Lehigh Valley Osteopathic Assn.; Am. Osteo-thic Coll. of Pathologists; Phi Beta Pi Kappa; Atlas Club; Allen-wn Musical Assn. Contbr. to: Sci. Editor of Osteon, 1947-49. rv. Rec.: U. S. Army Med. Dept., 1943-46. Gen. Int.: Bd. of dn. Scholarship Winner to Wayne Univ. Areas of Rsch.: Chem-ry; Clinical Pathology; Anatomical Pathology.

ROWNING, Francis Livingston (M.D.), 20119 Van Aken Blvd., aker Heights 22, Ohio. Home Add.: 2689 Colchester Rd., eveland Heights 6, Ohio. GENERAL PRACTICE OF MEDICINE ND SURGERY. b. Grafton, W. Va., May 16, 1910. s. William and Hattie (Corpening) B. Edn.: A.B., Dartmouth Coll., 1932; .D., Western Reserve Univ., 1936. m. Helen Bronson, 1936. William; Carolyn; Jeffrey; Harriet. Exp.: Med. Dir., Cargie Coll., 1946-59; Dir., Cleveland Acad. of Med., Cleveland, io, 1951-60; Med. Dir., Locomotive Engrs., Mutual Life and cident Indemnity Assn., Cleveland, Ohio, 1954—; Plant Physi-n, Natl. Castings Co., Cleveland, Ohio, 1956—. Hon. Pos.: Chmn., Liaison Com. on Edn., Ohio Acad. Gen. Practice; Bd. Edn., Cleveland Heights; Med. Advisory Bd., Maternal Health sn.; Chf. of Staff, Woman's Hosp.; Exec. Com., Woman's Hosp. Listed in: Who's Who in the Midwest. Areas of Rsch.: Cancer of Breast; Hodgkins Disease.

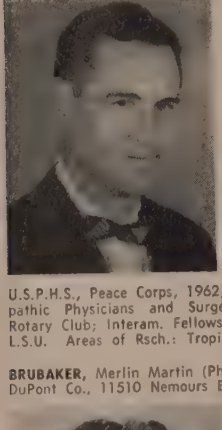
BROWNELL, Gordon Lee (Ph.D.), Assoc. Prof., Mass. Inst. of Technol., Cambridge 39, Mass. Applied Physicist, Mass. Gen. Hosp., Boston 14, Mass. Home Add.: 11 Shady Hill Rd., Weston, Mass. BIOLOGICAL EFFECTS OF RADIATION, APPLICATIONS OF RADIOISOTOPES AND RADIATION. b. Duncan, Okla., Apr. 8, 1922. s. Roscoe D. and Mabel (Gourley) B. Edn.: B.S., Bucknell Univ., 1943; Ph.D., Mass. Inst. of Technol., 1950. m. Catherine Wittenberg, Oct. 31, 1944. c.: Wendy; Peter; David; James. Exp.: Rsch. Assoc. in Med., Harvard Med. Schl., Boston, Mass., 1950—; Assoc. Physicist, Physics Rsch. Lab., Mass. Gen. Hosp., Boston, Mass., 1951-61; Asst. Prof., Nuclear Engrng. Dept., Mass. Inst. of Technol., 1956-61. Hon. Pos.: Trustee and Dir., Neuroresearch Fdtn.; Dir., Retina Fdtn.; Dir., Am. Assn. of Physicists in Med. Mem.: Am. Physical Soc., Fellow; Radiation Rsch. Soc.; A.A.A.S.; Am. Assn. of Physicists in Med.; Health Physics Soc.; Sigma Xi; Pan Am. Soc. of N.E. Serv. Rec.: U.S.N.R., 1944-46. Gen. Int.: Developed Positron Technique for Brain Tumor Scanning. Areas of Rsch.: Nuclear Physics; Radiation Effects; Biophysics.

BROWZIN, Boris Sergeevich (Dr. Engrng.), Prof. of C.E., The Catholic Univ. of Am., Wash. 17, D. C. SOIL MECHANICS, THEORY OF STRUCTURES AND HYDROLOGY. b. St. Petersburg, Russia, Oct. 10, 1912. s. Sergei Borisovich and Amalia Lavrentievna (Bueman) B. Edn.: Engr., C.E. with Dipl., Leningrad Polytech. Inst., 1938; Dr. Engrng., Technische Hochschule, Aachen, 1961. m. Nina Miagkova, June 1, 1943. c.: Olga. Exp.: Hydrographical Survey and hydrologic field investigations for hydro-power developments, Far East and Siberia, 1930-35; Field Investigations and Design, State Institutions for design of heavy industry, Leningrad, U. S. S. R., 1930-42; Engr., Structural Analysis, Tief und Hoch-Bau A. G. Breslau, Germany, 1943-45; Scientific Asst., Stuttgart Technische Hochschule, Germany, 1945; Engr., Bureau Veritas, Paris, France, 1946-48; Rsch. Assoc., Columbia Univ., N. Y., 1948; Design Engr., Fargo Engrng. Co., Austin, Tex., 1949-51; Sr. Design Engr., Harza Engrng. Co., Chicago, Ill., 1951-57; Assoc. Prof. of Civil Engrng., Laval Univ., Quebec, Can., 1952-58; Assoc. Prof. of Civil Engrng. and Engrng. Mechanics, Case Inst. of Tech., 1958-60 and 1960-62; Ohio State Univ., 1960—. Mem.: Fellow, Am. Soc. of Civil Engrs.; Mem., Am. Soc. of Engrng. Edn.; Am. Geophys. Union; Soc. of Civil Engrs. of France. Author: Lateral Earth Pressure, 1958. Contbr. to: Second Internatl. Conf. on Soil Mechanics; Revue de Geographie Alpine; Jour. ACI; Proc. Fifth Internatl. Conf. on Soil Mechanics, Paris. Areas of Rsch.: Transient Flow in Soils; River Classifications, General and Regional: Northern Caucasus in Russia, Great Lakes and St. Lawrence River Basin.

BROZEK, Josef (Ph.D.), Prof. and Chmn., Dept. of Psychol., Lehigh Univ., Bethlehem, Pa. Home Add.: 265 E. Market, Bethlehem, Pa. PSYCHOLOGY (EFFECTS OF NUTRITION ON BEHAVIOR, AGING, HISTORY OF PSYCHOLOGY, FATIGUE), ANTHROPOLOGY (BODY COMPOSITION). b. Melnik, Bohemia, Aug. 14, 1913. s. Josef F. and Filomena (Sourek) B. Edn.: Ph.D., Charles Univ., Prague, Czechoslovakia, 1937. m. Eunice Magnuson, 1945. c.: Peter; Margaret. Exp.: Jr. Psychologist, Lab. of Physiol. Hyg., Schl. of Pub. Health, Univ. of Minn., 1941-43; Assoc. Scientist, ibid., 1943-44; Asst. Prof., ibid., 1944-49; Assoc. Prof., ibid., 1949-56; Prof., ibid., 1956-59; Prof. and Chmn., Dept. of Psychol., Lehigh Univ., 1959—. Hon. Pos.: Secy., Com. on Nutritional Anthropometry, Food and Nutrition Bd., Natl. Rsch. Coun., 1950-55. Mem.: Am. Psychol. Assn.; Am. Assn. Physical Anthropol.; Am. Physiol. Soc.; Am. Assn. Pub. Health. Co-author: The Biology of Human Starvation, 1950. Editor: Symposium on Nutrition and Behavior, 1957; Body Measurements and Human Nutrition, 1956; Performance Capacity—A Symposium, 1961; Techniques for Measuring Body Composition, 1961; Soviet Studies on Nutrition and Higher Nervous Activity, 1962. Contbr. to: Contemporary Psychol.; Human Biol.; Am. Jour. Clin. Nutri-

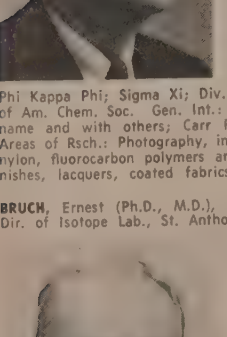
tion; Am. Jour. Psychol.; Psychomat. Med.; Nutrition Revs.; Science. Areas of Rsch.: Nutrition and Behavior. Effect of Physiological Stresses. Aging. Evaluation of Nutritional Status, including Body Composition. History of Science, with Special Ref. to Slavic Countries and the U.S.S.R. Fatigue.

BRUBAKER, Merlin L. (M.D.), Assoc. Prof. Med. and Pub. Health, Calif. Coll. of Med., 1721 Griffin Ave., Los Angeles 31, Calif. Home Add.: 502 N. Alta, Whittier, Calif. INTERNAL MEDICINE, PREVENTATIVE MEDICINE, MEDICAL EDUCATION. b. Live Oak, Calif., July 1, 1922. s. William R. and Rosetta (Landis) B. Edn.: D.O., Coll. of Osteopathic Physicians and Surgeons, 1946; B.A., LaVerne Coll., 1956; M.A., U.C.-L.A., 1962; M.D., Calif. Coll. of Med., 1962. m. Paulina Hylton, 1943. c.: Judith; Jon; James; Joel. Exp.: Private Practice, Fullerton, Calif., 1947-52; Med. Supt., Garkida Leprosarium, Nigeria, West Africa, 1952-55; Prof. in Residence, Coll. of Osteopathic Physicians and Surgeons, 1955—; Dir. Clin. Prfactice, Coll. of Osteopathic Physicians and Surg., 1959-61. Hon. Pos.: Sr. Surg., U.S.P.H.S., Peace Corps, 1962; Chmn., Curr. Com., Coll. of Osteopathic Physicians and Surgeons. Mem.: Phi Sigma Gamma; Rotary Club; Interam. Fellowship in Tropical Med. and Parasitol., L.S.U. Areas of Rsch.: Tropical Diseases and Public Health.



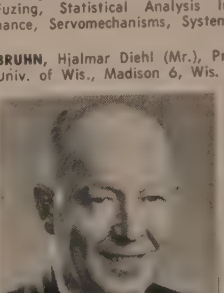
BRUBAKER, Merlin Martin (Ph.D.), Asst. Dir., Central Rsch. Dept., DuPont Co., 11510 Nemours Bldg., Wilmington, Del. Home Add.: R.D. No. 1, Chadds Ford, Pa. ORGANIC CHEMISTRY. b. Northfield, Minn., May 14, 1901. s. Delmer D. and Maude (Spear) B. Edn.: B.A., Carleton Coll., 1923; M.S., Univ. of Ill., 1926; Ph.D., ibid., 1927. m. Clara Ellen Robinson, Oct., 1927. c.: Robert; Elizabeth. Exp.: Asst. in Anal. Chem., Univ. of Ill., Urbana, Ill., 1923-25; Chemical Rsch., ibid., 1925-26; Rsch. Chem., DuPont Co., Wilmington, Del., 1927-31; Group Leader, ibid., 1931-33; Rsch. Supv., ibid., 1933-42; Asst. Dir. Expti. Sta., ibid., 1942-46; Lab. Dir. Exptl. Sta., ibid., 1946-47; Dir. of Rsch. and Dir. Exptl. Sta. Servs., ibid., 1947-53; Asst. Dir., Central Rsch. Dept., ibid., 1953—. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Kappa Phi; Sigma Xi; Div. 9 of N.D.R.C. Contbr. to: Jour. of Am. Chem. Soc. Gen. Int.: Patents on 64 inventions in own name and with others; Carr Fellow at Univ. of Ill., 1926-27. Areas of Rsch.: Photography, insecticides, light-polarizing devices, nylon, fluorocarbon polymers and ethylene polymers, paints, varnishes, lacquers, coated fabrics, cellophane, textile sizes.

BRUCH, Ernest (Ph.D., M.D.), Physician, 614 Empire Bldg. and Dir. of Isotope Lab., St. Anthony Hosp., E. State St. Rd., Rockford, Ill. Home Add.: 204 So. Benton St., Winnebago, Ill. ENDOCRINOLOGY AND NUCLEAR MEDICINE. b. Muelheim (Ruhr), Germany, Jan. 3, 1905. s. Hermann and Robertine (Levy) B. Edn.: Ph.D. (Chem.), Georg August Univ., Goettingen, Germany, 1928; M.D., Ludwig Maximilians Univ., Munich, Germany, 1936. m. Margarete Willstaetter (Ph.D.), 1932. c.: Ludwig Walter; Carol Sophie; Doris Betty; Richard Franklin. Exp.: Rsch. Fellow, Chem. Dept., Coll. of Forestry, Hannover-Muenden, Germany, 1928-29; Rsch. Fellow and Instr., Dept. of Chem., Univ. of Heidelberg, Germany, 1929-30; Rsch. Chemist, Dept. of Physiol., Univ. of Greifswald, 1930-32; Rsch. Chemist, Dept. of Med., Univ. of Bonn, Germany, 1932-33; Rsch. Fellow, Dept. of Biochem., Duke Univ. Med. Schl., Durham, N. C., 1936-37; Intern, St. Mary's Hosp., Madison, Wis., 1937-38; Resident, Lakeview Tuberculosis San., Madison, Wis., 1938-39; Med. Practice, Winnebago, Ill. and Rockford, Ill., 1939—; Dir. of Isotope Lab., St. Anthony Hosp., Rockford, Ill., 1953—. Mem.: Winnebago Co. and Ill. Sta. Med. Socs.; Am. Med. Assn.; Am. Diabetes Assn.; Fellow, Gerontol. Soc.; Soc. of Nuclear Med.; Sigma Xi; Lions Internatl.; Friends of the Symphony; Am, Interprof. Inst. Contbr. to: Annal. d. Chemie; Ber. d. Deutsch. Chem. Gesellschaft; Jour. Am. Diabetes Assn.; Ill. Med. Jour.; Arch. of Internal Med.; and others. Areas of Rsch.: Organic Chemistry; Biochemistry; Insulin Physiology; Diabetes Therapy; Nuclear Medicine (Diagnostic and Therapeutic Application of Radioisotopes).



BRUDNER, Harvey Jerome (Ph.D.), Pres., HJB Enterprises, Inc., 372 Cent. Pk., West, N. Y., N. Y. Home Add.: 372 Cent. Park W., N. Y. 25, N. Y. MEDICAL PHYSICS; MEDICAL ELECTRONICS. b. N. Y. City, May 29, 1931. s. Joseph and Anna (Fidelman) B. Edn.: B.S. in Engrng. Physics, N. Y. Univ., 1952; M.S. in Phys., ibid., 1954; Ph.D., ibid., 1959; Med. Schl., Columbia Univ., Coll. of Physicians & Surgeons, 1959-61. Exp.: Electronics Engr., Bendix Corp., Teterboro, N. J., 1952; Instr., N. Y. Univ. Coll. of Eng., Univ. Hgts., N. Y., 1953-54; Physicist, U. S. Naval Ordnance Lab., White Oak, Md., 1953-54; Prin. Physicist, Emerson Rsch. Labs., Wash., D. C., 1954-57; Rsch. Scientist, N. Y. Univ., Inst. of Math. Scis., 1957-60; Consulting Physicist, Emertron, Inc., Jersey City, N. J., 1957; Pres., Med. Devel., Inc., 1962—. Mem.: Am. Phys. Soc.; Inst. of Radio Engrs., I.R.E., P.G.B.M.E.; Assn. for the Adv. of Sci.; Internatl. Fed. for Med. Electronics; Tau Beta Pi; Sigma Pi Sigma; Sigma Xi. Author: A Thomas-Fermi Technique for Determining Wave Functions for Alkali Atoms with Excited Valence Electrons, 1959; Semiconductor Physics, 1955; Co-Author, Study of Propagation Phenomenon in a Pulse Altimeter System, 1956. Contbr. to: Phys. Rev.; Phys. Rev. Letters; Inst. of Radio Engrs. Transactions. Gen. Int.: N.Y.L. Founders Day Achievement Award; W. W. in Electronics; Guest Scientist, The Rockefeller Inst. Areas of Rsch.: Medical and Biophysics, Medical Electronics, Atomic Physics, Electromagnetic Theory, Nuclear Instrumentation, Magnetic Recording Systems, Pulse Altimetry, Semiconductors, Guided Missile Fuzing, Statistical Analysis Instrumentation, Underwater Ordnance, Servomechanisms, Systems Planning.

BRUHN, Hjalmar Diehl (Mr.), Prof. and Chmn. of Agric. Engrng., Univ. of Wis., Madison 6, Wis. Home Add.: 5418 Lake Mendota Dr., Madison, Wis. RESEARCH, WORK AND TEACHING IN AGRICULTURAL ENGINEERING, WITH MAIN EMPHASIS ON FARM POWER AND MACHINERY. b. Spring Green, Wis., Aug. 5, 1907. s. Aksel T. and Emma (Diehl) B. Edn.: B.S. (Agric.), Univ. of Wis., 1931; B.S. (Mech. Engrng.), ibid., 1933; M.S., Mass. Inst. of Technol., 1937. m. Janet Weber, Aug. 7, 1938. c.: Janet Margaret. Exp.: Instr., Univ. of Wis., 1933-39; Summer Work with Soil Erosion Control, 1933-1934; Asst. Prof., Univ. of Wis., 1939-46; Summer Work with International Harvester Co., 1940, 1941; Assoc. Prof., Univ. of Wis., 1946-48; Prof. of Agric. Engrng., ibid., 1948—. Mem.: Am. Soc. of Agric. Engrng.; Am. Soc. Adv. of Sci.; Registered Engr. with the Wis. Registration Bd. of Architects and Profl. Engrs.; Alpha Zeta; Pi Tau Sigma; Alpha Gamma Rho. Contbr. to: Agric. Engrng.; Crops and Soils; Jour. of Forestry. Areas of Rsch.: Rsch. Leading to the Development of Improvements of Equipment for Pelleting of Forage for Dairy Cattle, Tree Planting, Drying of Forage and Crops, Forage Crushing, Harvesting, Mechanical Harvesting of Fruit, and Irrigation. Gen. Int.: Teacher of Courses on Farm Power and Machinery.



BRUNELL, Raymond W., Jr. (Mr.), Exec. Dir., Greater Hartford Assn. for Mental Health, Inc., 217 Farmington Ave., Hartford, Conn. Home Add.: R.D. No. 1, Hebron, Conn. PUBLIC HEALTH. b. Meriden, Conn., Nov. 18, 1925. s. Raymond W., Sr. and Floret (Boisvert) B. Edn.: B.A., Univ. of Conn., 1950; M.Ed., Univ. of Hartford, 1956; Postgrad., Yale Dept. of Public Health, 1958-59. m. Joan Peterson, Sept. 3, 1955. c.: Raymond W., III; Bonnie Sherryl. Exp.: Sanitarian Inspector, Sanitarian, City of Hartford Health Dept., Bureau of Food and Sanitation, Hartford, Conn., 1955; Edn. Consultant, Commission on Alcoholism, State of Conn., ibid., 1955-56; Publ. Health Edn. Consultant, Dept. of Mental Health, St. of Conn., ibid., 1957; Exec. Dir., Greater Hartford Assn. for Mental Health, Inc., ibid., 1957—. Hon. Pos.: Pres. and Chmn., Bd. of the Conn. Assn. of Sanitarians, 1953-54; Dir. of Natl. Assn. of Sanitarians, 1953-54. Mem.: Fellow, Am. Publ. Health Assn.; A.A.A.S.; Sigma Chi. Contbr. to: Conn. St. Med. Jour.; Conn. Rev. of Alcoholism. Areas of Rsch.: Community Mental Health; Environmental Hygiene; Health Edn.

BRUNNER, Hans (Sc.D.), Hd., Solid State Physics Lab., Boeing Scientific Rsch. Labs., P.O. Box 3981, Seattle 24, Wash. Home Add.: 5623 80th Ave., S.E., Mercer Island, Wash. PHYSICAL METALLURGY. b. Basle, Switzerland, Oct. 5, 1919. s. Heinrich and Beatrice (Steininger) B. Edn.: Dipl. Ing., Swiss Federal Inst. of Tech., 1945; M.S., Mass. Inst. of Tech., 1954; Sc.D., ibid., 1957. m. Rosa Jauslin, 1948. c.: John; Beatrice; Peter; Mark. Exp.: Preliminary Design Engr., Dornier Aircraft Co., Altenrhein, Switzerland, 1945-47; Rsch. Engr., Holderbank Cement Works, 1947-49; Rsch. Engr., Buehler Bros., Uzwil, Switzerland, 1949-50; Consultant, Jeffrey Mfg. Co., Columbus, Ohio, 1951-52; Rsch. Staff, Mass. Inst. of Tech., 1957-59; Hd., Solid State Physics Lab., Boeing Scientific Rsch. Labs., 1959—. Mem.: A.I.M.E.; Inst. of Metals; Sigma Xi; A.S.M.; A.A.A.S. Contbr. to: Jour. of the Inst. of Metals; Trans. of A.I.M.E. Areas of Rsch.: Deformation; Imperfections in Crystalline Solids.

BRUNSON, Joel Garrett, (M.D.), Prof., Chmn., Dept. of Pathol., Univ. of Miss. Med. Center, Jackson, Miss. Home Add.: RFD #2, Terry, Miss. MEDICINE; PATHOLOGY. b. Greenville, S. C., April 22, 1923. s. James Edwin and Leila (Ballenger) B. Edn.: M.D., Univ. of Buffalo Med. Schl., 1950. Exp.: Instr., Univ. of Minn. Med. Schl., 1955-57; Asst. Prof., ibid., 1957-59; Prof., Chmn., Dept. of Pathol., Univ. of Miss. Med. Center, 1959—. Hon. Pos.: Mem., Editorial Bd., Am. Jour. of Pathol. Mem.: Am. Assn. of Pathologists and Bacteriologists; Internatl. Acad. of Pathol.; Sigma Xi; Federation of Am. Societies for Expmtl. Biol.; Am. Nuclear Soc.; Soc. for Rsch. on Reticuloendothelial System; Am. Assn. Adv. of Sci.; Nu Sigma Nu. Contbr. to: Am. Jour. of Pathol.; Lab. Investigation; Archives of Pathol. Serv. Rec.: U. S. Med. Corps, 1943-46. Areas of Rsch.: Experimental Cardiovascular Fibrinoid Diseases, Tissue effects of radiation, Cytoplasmic fluorescence of malignant cells.

BRUTON, Joseph (Mr.), Biochemist, Walter Reed Army Inst. of Rsch., Wash. 12, D. C. Home Add.: 5202 New Hampshire Ave., N.W., Wash. 11, D. C. BIOCHEMISTRY-ENDOCRINOLOGY (STEROID METABOLISM) ANALYTICAL BIOCHEMIST-CHROMATOGRAPHY (GAS, COLUMN AND PAPER)—INFRA-RED SPECTROPHOTOMETRY. b. Orlando, Fla., Jan. 30, 1927. s. Isaiah, Sr. and Susie (Kilpatrick) B. Edn.: B.S., Howard Univ., 1950; M.S., Georgetown Univ., 1957. m. Cynthia Reid, Aug. 11, 1951. c.: Denise; Vincent; Jeanine. Exp.: Rsch. Asst., Howard Univ., Wash., D. C., 1951; Biochemist, Walter Reed Army Inst. of Rsch., 1951—; Chf., Chemist, Steroid Sect., Dept. of Metabol., Div. of Med., ibid., 1951—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Kappa Alpha Psi. Contbr. to: Jour. Am. Chem. Soc.; J.B.C.; Clin. Chem.; Nature; Metabol. Serv. Rec.: U. S. Army, 1945-46. Gen. Int.: Superior Performance Award by the Army, 1961. Areas of Rsch.: Biochemistry, Steroids, Chromatography, Gas, Column and Paper: Infrared Spectrophotometry; Radioactive Tracers for Studying Biosynthetic Pathways of Various Steroids; Isolation, Detection and Identification of Various Steroids.

BRUUN, Johannes Hadeln (Ph.D.), Staff Specialist (Chemicals), Product and Process Evaluation Staff, Office of Administrator, Agri. Rsch. Serv., U. S. Dept. of Agri., 7th and D Streets, S.W., Washington 25, D. C. Permanent Home: 523 Paxinosa Road, East, Easton, Pa.; Also: Capitol Park Apt., 800 4th St., S.W., Washington 24, D. C. RESEARCH ADMINISTRATION; ORGANIC AND PHYSICAL CHEMISTRY. b. Sweden, Nov. 8, 1899. s. Karl and Thora (Wager) B. Edn.: Ch.E., Norweigan Inst. of Tech., 1923; Ph.D., The Johns Hopkins Univ., 1929. m. Dr. Mildred Hicks, May 1, 1930. Exp.: Production Supvr., Am. Aniline Products, Lock Haven, Pa., 1924-27; Sr. Rsch. Assoc. Chemist, Natl. Bureau of Standards, Washington, D. C., 1927-32; Mgr. of Rsch. Div., Sun Oil Co., Philadelphia, Pa., 1932-42; Acting Plant Manager, General Aniline and Film Corp., 1942-43; Dir. of Process Dev., ibid., 1943-47; Dir. of Rsch., ibid., 1947-52; Dir. of Commercial Dev., ibid., 1952; Dir. of Rsch., Hooker Chem. Co., Niagara Falls, N. Y., 1952-54; Dir. of Rsch. and Dev., ibid., 1954-58; Staff Specialist, U. S. Dept. of Agric., Washington, D. C., 1959—. Hon. Pos.: Pres., Assn. of Rsch. Dirs., N. Y., 1950-51; Pres., Am. Inst. of Chemists, Niagara Chapt., 1954-55; Pres., Johns Hopkins Chem. Alumnae, 1950-51; Mem., Bd. of Mgrs., ACS, Washington, D. C., 1930-32; Exec. Comm., ACS, Philadelphia, Pa., 1940-41; Councillor, A.C.S., N. Y., 1950-51. Mem.: Am. Chem. Soc.; Am. Inst. Chem.; Assoc. Rsch. Dirs., Com. Chem. Dev. Assn.; Sigma Xi; Skytop Club, Skytop, Pa.; Country Club, Northampton Co., Easton, Pa.; Johns Hopkins Club and Chemist Club, N. Y.; Cosmos Club, Washington, D. C. Contbr. to: Bureau of Standards Jour. of Rsch.; Ind. Engr. Chem.; Jour. Am. Chem. Soc. Areas of Rsch.: Research Administration, Petroleum, Dyestuffs, Industrial Chemicals.

BRYANT, Harold H. (Ph.D.), Pharmacologist, Hynson Westcott and Dunning, Inc., Baltimore 1, Md. Home Add.: Brooklandville, Md. PHARMACOLOGY. b. Alachua, Fla., Aug. 19, 1916. s. Mathias M. and Mabel (Wilkinson) B. Edn.: B.S., Johns Hopkins Univ., 1953; M.S., Univ. of Md., 1954; Ph.D., ibid., 1956. m. Fannie Mai Norvell, May 15, 1938. c.: Charlotte Ann; Harold Norvell. Exp.: Sr. Rsch. Assoc., Hynson, Westcott and Dunning, Inc., 1944-54; Pharmacolst., ibid., 1954—; Asst. Prof., Pharm., Univ. of Md., Schl. of Med., Balt., Md., 1962—. Mem.: Am. Soc. for Pharmacol. and Exptl. Theraps.; Md. Br. of Am. Soc. for Microbiol.; Scientific Sect., Am. Pharml. Assn.; Am. Assn. for the Adv. of Sci.; Assoc. Mem., Balt. City Med. Soc.; Assoc. Mem. Med. and Chirurgical Faculty of the Sta. of Md.; Md. Biol. Soc.; Johns Hopkins Faculty Club; Business Mens Club. Contbr. to: Jour. of Pharm. and Exptl. Theraps.; Surgery, Gynecol. and Obsts.; Scient. Ed., Jour. Am. Pharmal. Assn. Areas of Rsch.: Naturally Occurring Uterine Relaxants; Smooth Muscle Relaxants in General; Pharmacologic and Toxicologic Evaluation of Plastics Used in Medicine.

BRYANT, Marvin Pierce (Ph.D.), Bacteriologist, Animal Husbandry Rsch. Div., Beltsville, Md. Home Add.: 10531 Edgemont Dr., Adelphia, Md. RUMINAL MICROBIOLOGY; TAXONOMY; METABOLISM; NUTRITION OF NONSPOREFORMING ANAEROBIC BACTERIA. b. Boise, Idaho, July 4, 1925. s. Melvin B. and Emma Louise (Bucklin) B. Edn.: B.S., Wash. Sta. Coll., 1949; M.S., ibid., 1950; Ph.D., Univ. of Md., 1955. m. Margaret A. Betebenner, June 30, 1946. c.: Margaret P.; Susan J.; Katherine C.; Robert M. Exp.: Rsch. Asst., Sta. Coll. of Wash., Pullman, Wash., 1949-51; Bacteriol., U. S. Dept. Agric., 1951—. Hon. Pos.: Secy., Rumen Microbiol., VIII Intern. Congress for Microbiol. Mem.: A.A.A.S., Fellow; Am. Soc. for Microbiol.; Am. Dairy Sci. Assn.; Sigma Xi; Phi Beta Kappa; Phi Kappa Phi; Sigma Alpha Omicron. Contbr. to: Nature; Jour. Bacteriol.; Sci.; Appl. Microbiol.; Arch. Biochem.; Jour. Dairy Sci.; TAPPI; Bacteriol. Revs. Serv. Rec.: U. S. Army Air Corps, 1944-45. Areas of Rsch.: Taxonomy; Metabolism, Ecology and Nutrition of Ruminal Bacteria; Protein, Nitrogen and Carbohydrate Metabolism in Therumen; Nonsporeforming Anaerobic Bacteria; Discovery of Volatile Fatty Acids Such as N-Valeric; Isovaleric, 2-Methylbutyric as Growth Factors for Bacteria; First Isolation and Description of Many Species of Rumen Bacteria.

BRYANT, Paul Thompson (Mr.), Editor, Jour. of Engrng. Edn., Am. Soc. for Engrng. Edn.; Editor, Engrng. Experiment Sta., Univ. of Ill., Urbana, Ill. Home Add.: 511 S. Westlawn, Champaign, Ill. ENGINEERING INFORMATION AND PUBLICATIONS. b. Oklahoma City, Okla., Aug. 24, 1928. s. Paul D. and Lynnis (Thompson) B. Edn.: B.S., Univ. of Okla., 1950; M.S., ibid., 1952; M.A., ibid., 1956. m. Genevieve Dale, 1949. c.: Elaine Lynette; Christopher Dale. Exp.: Editor, Wash. State Inst. of Tech., Wash. State Univ., Pullman, Wash., 1954-56; Tchng. Asst., Dept. of Eng., Univ. of Ill., Urbana, Ill., 1956-58; Asst. Editor, Engr. Exper. Sta., ibid., 1958-61; Editor, ibid., 1961; Editor, Am. Soc. for Engrng. Edn., Urbana, Ill., 1958—. Hon. Pos.: Chmn., Editorial Comm., Am. Soc. for Engrng. Edn.; Chmn., Publications Comm. Engrng. Coll. Rsch. Coun. Mem.: Am. Soc. for Engrng. Edn.; A.A.A.S.; Soc. for the Hist. of Tech.; Mod. Lang. Assn.; Soc. of Tech. Writers and Publishers; Natl. Coun. of Tchrs. of Eng.; Conf. on Coll. Composition and Communication; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi; Phi Sigma; Phi Eta Sigma. Contbr. to: Jour. of Engrng. Edn. Serv. Rec.: A.U.S., 1946-47. Editor: Bienniel Engineering College Research Review. Areas of Rsch.: Technical Communication, Engineering Education.

BRYER, Ben F. (M.D.), Surgeon, 1115 Fifth Ave., New York 28, N. Y. Home Add.: 5 West 86th St., New York 24, N. Y.

SURGEON, GENERAL AND ABDOMINAL. b. Flint, Mich., May 21, 1912. s. Samuel and Leah (Ehrlich) B. Edn.: B.S., Cum Laude, Univ. of Pittsburgh, 1933; M.D., ibid., 1937; Grad. Work: Coll. of Columbia, Physicians and Surgeons, Presbyterian Med. Ctr., 1948. m. Elsa Kastor, Mar. 24, 1942. c.: Elliott K. Exp.: Interne, Montefiore Hosp., Pittsburgh, Pa., 1937-38; Res. Surg., Philadelphia Orthopedic Hosp., Div. Univ. of Pa. Med. Ctr., 1938-39; Res. Surg., Queens Gen. Hosp. Ctr., N. Y., N. Y., 1939-41; Res. Surg., The Mount Sinai Hosp., ibid., 1946-47; Assoc. Attending Surg., N. Y. City Hosp., ibid., 1949—; Sr. Clin. Surg., Mount Sinai Hosp., ibid., 1949—; Surg., Beekman, Downtown Hosp., ibid., 1949—; Surg., Doctors Hosp., ibid., 1949—; Instr. in Surg., Grad. Schl., Univ. of Pa. Med. Ctr., 1938-39; Lecturer in Surg., Grad. Schl., N. Y. Univ. Bellevue Med. Ctr., 1950-60; Asst. Clin. Prof. of Surg., N. Y. Med. Coll., 1950-57. Hon. Pos.: Pres., Assn. of Attendings, The N. Y. City Hosp.; Chmn., Quart. Meetings, Entire Attending Staff, N. Y. City Hosp. Mem.: Fellow, Am. Coll. of Surgs.; Am. Med. Assn.; Am. Soc. of Abdominal Surg.; Am. Bd. of Abdominal Surg.; N. Y. Acad. of Med.; N. Y. Acad. of Sci.; Assn. of Military Surg. of the U. S.; Am. Geriatric Soc.; N. Y. Co. Med. Soc.; N. Y. St. Med. Soc.; A.A.A.S.; Pi Tau Phi; Phi Delta Epsilon. Author: The Multiple Injury Patient, co-author, 1956. Contbr. to: Archives of Surg.; Jour. of Am. Med. Assn.; Gastroentierology Jour.; Mod. Med.; Bull. of Am. Coll. of Surg.; A.M.A. Scientific Exhibit Text Bk. Serv. Rec.: U. S. Army, 1941-45. Gen. Int.: Letter of Commendation, Commanding General, Camp Barkley; Certificate of Merit, Citation, Tilton Gen. Hosp., Ft. Dix, N. J.; China, Burma, India Medal; Pacific Medal; Defense Medal; Achievement Award, N. Y. St. Med. Soc.; Scientific Award, Am. Coll. of Surgeons; Gold Award of Achievement, Am. Soc. of Abdominal Surgeons, A Permanent Scientific Exhibit, Cleveland Health Museum. Areas of Rsch.: Peptic Ulceration of the Gastro-intestinal Tract, Physiology, Pathology and Surg.; Uses of Radioisotopes in Surg., Licensed by the Atomic Energy Commission; Blood Volume Changes in Surgical and Traumatic Shock.

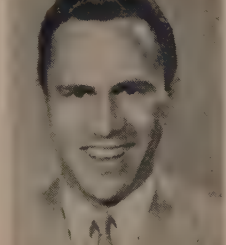
BUCKINGHAM, Robert George (Mr.), Mgr. Analytical Dept., Pa. Indust. Chem. Corp., Clairton, Pa. Home Add.: 1451 Cathell Rd., Pittsburgh 36, Pa. PHYSICAL AND ANALYTICAL CHEMISTRY MAINLY IN THE FIELD OF INSTRUMENTATION, IR, UV, GLC, POLAROGRAPHY, RHEOLOGY. b. New Castle, Pa., Aug. 14, 1935. s. Norman Henry and Naomi (George) B. Edn.: B.S., Westminster Coll., 1957. m. Edith Joanne Balo, June 20, 1959. c.: Robert George, Jr. Exp.: Student Asst., Univ. of Pittsburgh, Pittsburgh, Pa., 1957-58; Chemist, Pa. Indust. Chem. Corp., Clairton, Pa., 1958-60; Mgr., Anal. Dept., ibid., 1960—. Mem.: A.A.A.S.; A.S.T.M. Chmn., Task Group II Subcomm. E-12; Soc. for App. Spectroscopy; ACS; Soc. for Analytical Chemists of Pittsburgh; I.S.A., Instrumental Analysis Div.; Alpha Sigma Phi; Kappa Mu Epsilon. Serv. Rec.: Pa. Natl. Guard, 1953-60. Areas of Rsch.: Structures of Some Hydrocarbon Polymers.

BUCHELE, Wesley Fisher (Ph.D.), Assoc. Prof. of Agric. Engrng., Mich. Sta. Univ., E. Lansing, Mich. Home Add.: 5364 Sleight Rd., Bath, Mich. TEACHING AGRICULTURAL ENGINEERING DEALING WITH POWER AND MACHINERY; GUIDE THE WORK OF SIX AGRICULTURAL EXPERIMENT STATION RESEARCH PROJECTS. b. Cedar Vale, Kans., March 18, 1920. s. Charles J. and Bessie M. (Fisher) B. Edn.: B.S., Kans. Sta. Univ., 1943; M.S., Univ. of Ark., 1951; Ph.D., Ia. Sta. Univ., 1954. m. Mary Jagger, June 12, 1945. c.: Rodney; Mary Elizabeth; Sharon Ann; Steven. Exp.: Jr. Engr., Waterloo Tractor Works, Waterloo, Ia., 1946-48; Asst. Prof., Univ. of Ark., Fayetteville, Ark., 1948-51; Asst. Prof., Ia. Sta. Univ., Ames, Ia., 1954-56; Assoc. Prof. of Agric. Engrng., Mich. Sta. Univ., 1956—. Hon. Pos.: Chmn. of Power and Machinery Div., Am. Soc. of Agric. Engrs.; Vice Chmn., Mich. Section of A.S.A.E. Mem.: Am. Soc. of Agric. Engrs.; Am. Soc. of Agronomy; Gamma Sigma Delta; Phi Lambda Tau; Sigma Xi; MSU Men's Club. Contbr. to: Agric. Engrng. Jour.; Bull. of the Mich. Agric. Exptl. Sta.; Proc. of Am. Soc. of Sugar Beet Technols.; Soil Conservation. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Patents Issued, Hydrostatic Torquemeter; Threshing Method. Areas of Rsch.: Teach Mechanics of Soil-Vehicle Systems; Soil Dynamics; Tillage; and Advanced Power and Machinery; Research in Tillage, Harvesting and Processing Machinery.

BUCKWALTER, Frank Harold (Mr.), Dir., Pharmaceutical Rsch. and Development, Bristol Labs., Syracuse, N. Y. Home Add.: 105 Lansdowne, Dewitt, N. Y.

PHARMACEUTICAL RESEARCH AND DEVELOPMENT. b. Philadelphia, Pa., Apr. 25, 1909. s. Elmer Marion and Mary Lucetta (Arters) B. Edn.: B.S., Pa. St. Univ., 1930; M.S., N. Y. Univ., 1940. m. Vivian E. Packer, Aug. 14, 1929. c.: Lee Eleanore; Mary Lou. Exp.: Chemist, Procter & Gamble Co., Cincinnati, Ohio, 1930-32; Chemist, Surpass Leather Co., Philadelphia, Pa., 1932-35; Chemist, Bristol Myers Co., Hillside, N. J., 1935-45; Dir., Pharmaceutical Rsch. and Development, Bristol Labs., Syracuse, N. Y., 1945—. Hon. Pos.: Scientific Committee on Leprosy, World Health Organization, Committee on Absorption and Excretion of Drugs, Am. Pharmaceutical Assn. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; A.A.A.S.; Chemists Club of N. Y.; N. Y. Acad. of Sci.; Sigma Xi; Delta Chi. Contbr. to: Jour. of Am. Pharm. Assn.; Jour. Pharm. Scis.; Antibiotics and Chemotherapy; Antibiotic Medicine and Clinical Therapy; Antibiotics Annual; Jour. of Investigative Dermatology; Am. Jour. Syphilis, Gonorrhea and Venereal Diseases; S. African Practioner. Areas of Rsch.: Antibiotics, Development of New Drugs and Their Dosage Forms, Physical Chemistry, Rheology.

BUCKWALTER, Joseph Addison (M.D.), Prof. of Surgery, Univ. of Ia. Hosp., Iowa City, Ia. Home Add.: 1006 Highwood St., Iowa City, Ia. MEDICINE. b. Royers Ford, Pa., Jan. 4, 1920. s. Joseph A. and Dorothy (Latshaw) B. Edn.: B.A., Colgate Univ., 1941; M.D., Univ. of Pa., 1944. m. Carole Kelly, Mar. 15, 1946. c.: Joseph; Judith; Jeffrey; John. Exp.: Inter., Resident Physician, Univ. of Iowa, 1944-46, 1949-52; Registrar, Univ. of London, England, 1953-54; Asst., Assoc. and Prof., Univ. of Ia., 1954—; Fellow, Univ. of N. C., 1948-49. Mem.: Phi Beta Kappa; Phi Rho Sigma. Serv. Rec.: U. S. Navy, 1946-48. Areas of Rsch.: Human Genetics; Surgery.



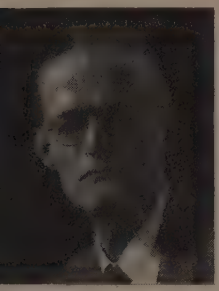
BUEHLER, John Adolph, Prof. Chem., LeMoyne Coll., Memphis, Tenn. Home Add.: 850 McLemore, Memphis 6, Tenn. SYNTHESIS OF ORGANIC COMPOUNDS WITH PROMISE AS CHELATION COMPLEXES FOR METAL IONS. b. Phila., Pa., Nov. 17, 1916. s. Charles and Caroline Wilhelmiena (Kramer) B. Edn.: A.B., Univ. of Pa., 1939; B.Th., Anderson Coll., 1944; Ph.D., Indiana Univ., 1949. m. Josie Dell Trigleth, Aug. 16, 1945. c.: Harold Eugene; Donald Dean; Jane Marie. Exp.: Chemist, Barrett Coal Tar, Phila., 1939-40; Chemist, Midvale Steel, Phila., 1940-41; Chemist, Foreman, Empire Ordnance, Phila., 1941-43; Asst., Lab., Indiana Univ., 1945-47; Asst., Assoc. Prof. Chem., Anderson Coll., 1947-60; Chemist, City of Anderson, Ind., 1947-60; Instr., Chem., Ind. Univ. Extension, 1951-60; Prof. Chem., LeMoyne Coll., Memphis, 1960—. Hon. Pos.: Chmn., Chem. Sect., Ind. Acad. Sci., 1954. Mem.: Fellow, A.A.A.S.; Am. Chem. Soc.; Am. Scientific Affiliate; Water Pollution Control Assn.; Sigma Xi; Sigma Zeta; Natl. Honorary Sci. Soc.; Sigma Gamma Epsilon; Mayor's Advisory Bd. Public Utilities, Anderson, Ind.; Am. Assn. United Nations; Urban League. Contbr. to: Jour. Am. Chem. Soc.; Proc. Ind. Acad. Sci. Gen. Int.: Assoc. Minister, Church of God; Consulting work for Anderson Bird Co. Water Consultants of Rome City, Ind., City Anderson, Rhoden Products Co., Memphis, Tenn., Gen. Chem. Consultants, Anderson, Ind. Areas of Rsch.: Amino Acids; Use of Organic Reagents for Analytical Reagents; Colorimetric Determination of Beryllium; Cobalt and Aldehydes; Preparation and Manufacture of T-Sulfonamidine, a New Reagent for the Determination of Copper.

BUDENHOLZER, Roland A. (Ph.D.), Prof. of Mech. Engrng., Ill. Inst. of Tech., Chicago 16, Ill. Home Add.: 306 Harris Ave., Clarendon Hills, Ill. MECHANICAL ENGINEERING. b. St. Charles,

Mo., Nov. 24, 1912. s. Joseph P. and Mary E. (Willey) B. Edn.: B.S., New Mex. State Univ., 1935; M.S., Calif. Inst. of Tech., 1937; Ph.D., ibid., 1939. m. Florence Christiansen, Nov. 28, 1941. c.: Francis E.; John C.; Robert J. Exp.: Grad. Asst., Calif. Inst. of Tech., 1935-39; Rsch. Fellow, Am. Petroleum Inst., ibid., 1939-40; Instr., Ill. Inst. of Tech., 1940-43; Asst. Prof., ibid., 1943-45; Assoc. Prof., ibid., 1945-47; Consultant, Armour Rsch. Found., Chicago, Ill., 1946—; Prof., Ill. Inst. of Tech., 1947—; Resident Rsch. Assoc., Argonne Natl. Lab., Summer, 1961; Dir., Midwest Power Conf., Chicago, Ill., 1949-51; Dir., Am. Power Conf., Chicago, Ill., 1951—. Mem.: Am. Soc. of Mech. Engrs.; Natl. Soc. of Prof. Engrs.; Western Soc. of Engrs.; Am. Soc. for Engrng. Edn.; A.A.U.P.; Sigma Xi; Tau Beta Pi; Pi Tau Sigma; Tau Kappa Epsilon. Consulting Editor: Vols. 11 to 24; Proceedings of the American Power Conf. Contbr. to: Indust. and Engrng. Chem. Areas of Rsch.: Thermodynamics; Heat Transfer; Heat Power Engrng.

BUESS, Charles Merlyn, (Ph.D.), Assoc. Prof., Univ. of Wichita, Wichita, Kans. Home Add.: 541 N. Belmont, Wichita, Kans. ORGANIC CHEMISTRY. b. Forest, Ohio, Apr. 22, 1922. s. Charles A. and Jessie K. (Benning) B. Edn.: B.A., Ohio St. Univ., 1942; M.S., Western Reserve Univ., 1946; Ph.D., Univ. of Sou. Calif., 1949. m. Anita Durand, 1953. c.: Alice; Charles —; Ann; Zoe. Exp.: Chemist, Natl. Adv. Comm. Aero., Cleveland, Ohio, 1943-46; Asst. Prof., Univ. of Ga., 1951-56; Assoc. Prof., Univ. of Ky., 1956-57; Visiting Assoc. Prof., Univ. of Sou. Calif., 1957-61; Assoc. Prof., Univ. of Wichita, 1961—. Mem.: A.C.S.; Chemical Soc. of London; A.A.A.S.; N. Y. Acad. of Sci.; Kans. Acad. of Sci.; Sigma Xi; Phi Beta Kappa; Gamma Sigma Epsilon; Phi Lambda Upsilon. Contbr. to: Jour. A.C.S.; Jour. Org. Chem. Areas of Rsch.: Organic Sulfur Compounds; Heterocyclic and Polynuclear Compounds; Cancer Chemotherapy.

BUETTNER, Konrad J. K. (Ph.D.), Prof., Dept. of Meteorology and Climatology, Univ. of Wash., Seattle 5, Wash. Home Add.: 1526 34th Ave., Seattle 22, Wash. METEROLOGY; BIOCLIMATOLOGY. b. Westendorf, Ger., Oct. 6, 1903. s. Johannes S. and Elisabeth (Kreuser) B. Edn.: Ph.D., Univ. of Gottingen, 1926; Ph.D., habil., Kiel, 1934. m. Lucie S. A. Fischer, Aug. 18, 1933. c.: Michael J. F. Exp.: Rsch., Meteorol. Obs., Potsdam, 1927-31; Rsch. and Asst. Prof., Dept. of Bioclimatology, Univ. of Kiel, 1931-47; Rsch., Dept. of Space Med., Dept. of Radiology, U.S.A.F. Schl. of Aviation Med., 1947-51; Rsch. Dept. of Engrng., Univ. of Calif., L. A., 1952; Assoc. Prof., Meteorol. and Rsch., Physiologist, Univ. of Wash., 1953-57; Prof., ibid., 1957—. Hon. Pos.: Mem., Comm. on Bioclimatology, Am. Meterological Soc.; U. S. Mem. of Bd., Internatl. Soc. on Bioclimatology. Mem.: Cooper. Res. Inst.; Am. Meterological Soc.; Am. Geophysical Union; Sigma Xi; Am. Physiol. Soc.; Space Med. Assn. of Aero-med. Assn.; Internatl. Soc. on Bioclimatology. Author: Veroeff. Preuss. Meteor. Institut; Physikalische Bioklimatologie; Die Physiologischen und Physikalischen Grundlagen der Hautthermometrie. Contbng. Author: Hdb. d. Experimentalphysik; German Aviation Med.; Lehrbuch d. Baeder und Klimaheilkunde; Abderhaldens Handbuch der biologischen Arbeitsmethoden; Compendium of Met.; Physics and Med. of the upper Atmosphere. Contbr. to: Geophysik; Die Naturwissenschaften; Publ. Astron. Soc. Pacific; Der Militaerarzt; Jour. Am. Med. Assn.; Arch. Met. Geophys. und Biokl.; Jour. of Applied Physiology; Jour. of Aviation Medicine; Sci.; The Sigh Saving Rev.; Jour. Met.; Bull. Met. and others. War Record: German Air Force, W. W. II. Areas of Rsch.: Physical Meterology, Air Electricity, Meteorol. Radiation, Soil water exchange; Bioclimatology; Water passage through human skin; Space medicine.



BUFFALOE, Neal Dollison (Ph.D.), Hd., Dept. of Biol., Ark. St. Tchrs. Coll., Conway, Ark. Home Add.: 327 Augusta Ave., Conway, Ark. BIOLOGY. b. Leachville, Ark., Nov. 15, 1924. s. William Thomas and Maude (Eatherly) B. Edn.: B.S., David Lipscomb Coll., 1949; M.S., Vanderbilt Univ., 1952; Ph.D., ibid., 1957. m. Inez Owens, 1947. c.: Bonnie; Robert; Anne; Laurie. Exp.: Instr. of Biol., David Lipscomb Coll., 1949-54; Instr. of Biol., Vanderbilt Univ., 1954-56; Instr. of Biol., George Peabody Coll., summer, 1955; Prof. of Biol., Ark. St. Tchrs. Coll., 1957—. Hon. Pos.: Pres., Ark. Acad. of Sci., 1958-59. Mem.: Am. Inst. of Biol. Scis.; Natl. Assn. of Biol. Tchrs.; A.A.A.S.; Ark. Acad. of Sci.; Sigma Xi. Author: Principles of Biology, 1962. Contbr. to: Bull. of the Torrey Botanical Club; Experimental Cell Rsch. Serv. Rec.: U. S. Navy, 1943-45. Areas of Rsch.: Cytology and Genetics.

BULL, Nina (Mrs.), Dir. of Rsch., Project for the Study of Motor Attitudes, N. Y. St. Psychiatric Inst., 722 W. 168th St., N. Y. 32, N. Y. Home Add.: 310 E. 55th St., N. Y. 22, N. Y. ATTITUDE PSYCHOLOGY. b. Buffalo, N. Y., Nov. 4, 1880. d. Ansley and Cornelia Coburn (Rumsey) Wilcox. m. Henry Adsit Bull, 1901. c.: Katherine; Harry; Marian. Exp.: Rsch. Assoc. in Psychiatry, Coll. of Physicians and Surgeons, Columbia Univ., 1940-50; Dir. of Rsch., Project for Study of Motor Attitudes, N. Y. St. Psychiatric Inst., 1950—. Hon. Pos.: Pres., Brain Rsch. Found., Inc., N.Y.C., 1930-40. Mem.: A.A.A.S.; Fellow, N. Y. Acad. Sci.; Am. Psychol. Assn. Author: The Attitude Theory of Emotion, 1951; The Body and Its Mind—An Introduction to Attitude Psychology, 1962. Contbr. to: Jour. of Psychol.; Scientific Monthly; Psychosomatic Med.; Jour. of Nervous and Mental Disease; Archivio di Psicologia; Internatl. Record of Med.; Pan Am. Med. Women's Jour.; Jour. of Clin. and Exptl. Psychopathol.; Quar. Rev. of Psychiatry and Neurology; etc. Gen. Int.: Founder and First Pres., Park Schl. of Buffalo, N. Y. Areas of Rsch.: Motor Attitudes in Emotion; The Orienting Function of Vision; The Goal-oriented Motor Attitude and its breakdown in Frustration.

BULLEN, Adelaide Kendall (Mrs.), Assoc. in Anthropol., Fla. St. Museum, Gainesville, Fla. ANTHROPOLOGY. b. Jan. 12, 1908, Worcester, Mass. d. Oliver Sawyer and Grace (Adelaide) Marble Kendall. Edn.: Simmons Coll., 1925-26, 1929; A.B., cum laude, Radcliffe, 1943; Field Schl., Univ. of N. Mex., Summer, 1941; Grad. Work, Harvard, 1943-46; Grad. Work, ibid., 1947-48, 1950. m. Ripley Pierce Bullen of Worcester, Mass., and Schnectady, N. Y., July 25, 1929. s. Mr. and Mrs. Dana Ripley Bullen. c.: Dana Ripley, II; Pierce Kendall. Exp.: Rsch. Anthropol., Health Center, Radcliffe Coll., 1943-44; Staff and Rsch. Fellow, Fatigue Laboratory, Graduate Schl. of Business Administration, Harvard Univ., 1944-46; Civilian Consultant in Anthropology, Dept. of Army, 1946; Analysis of Data Collected and Writing of Report, Dept. of Anthropol., Peabody Museum, Harvard Univ., 1946-48; Rsch. Anthropol., Fla. St. Museum, 1949—. Mem.: Sigma Xi; Fellow, Am. Anthropol. Assn.; Fellow, Royal Anthropol. Inst., London; Am. Assn. of Phys. Anthropol.; Soc. of Applied Anthropol.; Am. Psychosomatic Soc.; Soc. for Rsch. in Child Development; A.A.A.S.; A.A.P.S.S. Author: (book) New Answers to the Fatigue Problem, 1956; Qualitative and Quantitative Theory as Applied to Body Build Rsch.; Child Development, Vol. 16; Psychosomatic Med.; Am. Jour. of Phys. Anthropol.; etc. Former Editor: The Fla. Anthropologist; Fla. Anthropological Soc. Publications. Travel: Europe; Caribbean; Middle East. Hobbies: Music; Writing; Gardening. Listed in: A.M.S.; Who Knows—and What; W. W. of Am. Women. Special Int.: Social Anthropology; Physical Anthropology; Applied Anthropology; Body Build and Temperament; Language; Nervous and Mental Fatigue; Industrial Studies; Vocational Rsch.

BULLOUGH, Vern LeRoy (Ph.D.), Assoc. Prof., San Fernando Valley St. Coll., Northridge, Calif. Home Add.: 7849 White Oak, Reseda, Calif. HISTORY OF SCIENCE. b. Salt Lake City, Utah, July 24, 1928. s. David Vernon and Augusta (Ruekert) B. Edn.: B.A., Univ. of Utah, 1951; M.A., Univ. of Chicago, 1951; Ph.D., ibid., 1954. m. Bonnie Uckerman, Aug. 2, 1947. c.: David Vernon; James Clyde; Steven Vincent; Susan Bonnie. Exp.: Assoc. Prof., Youngstown Univ., Youngstown, Ohio, 1954-59; Assoc. Prof., San Fernando Valley St., Northridge, Calif., 1959—. Mem.: A.A.A.S.; History of Sci.; Am. Assn. for the History of Med.; Renaissance Soc.; Am. Hist. Assn.; Mediaeval Acad.; History of Technol.; Townhall Club, L. A. Contbr. to: Technol. and Culture; Bull. of the History of Med.; Jour. of the History of Med.; Renaissance News; Speculum; Medievalia Et Humanistica; Utah Hist. Rev.; Mediaeval Studies; Jour. of Health and Human Behavior; Bucknell Rev.; Am. Hist. Rev. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: History of Science, Especially Ancient, Medieval and Early Modern European.

BUNGS, Janis Arvids (D.Sc.), Rsch. Assoc., Diamond Alkali Co., P. O. Box 348, Painesville, Ohio. Home Add.: 4661 Willoughcroft Rd., Willoughby, Ohio. POLYMER CHEMISTRY. b. Vecsvirlauka, Latvia, May 16, 1912. s. Janis and Dore (Plostins) B. Edn.: M.S., Univ. of Latvia, 1938; D.Sc., Technical Univ. of Darmstadt, 1949. m. Meta Kalnins, Dec. 24, 1939. c.: Dzintra; John. Exp.: Asst. Prof., Univ. of Latvia, Riga, Latvia, 1938-44; Chemist, Zellwolle und Kunstseide, Ring Schwarza, Germany, 1944-45; Lectr., UNRRA Univ., Munich, Germany, 1946-47; Sr. Chemist, N. Am. Rayon Corp., Elizabethton, Tenn., 1950-53; Rsch. Assoc., Diamond Alkali Co., Painesville, Ohio, 1953—. Mem.: Am. Chem. Soc.; Am. Assn. for Adv. of Sci.; Latvian Am.

Assn. of Univ. Profs. and Instrs. Contbr. to: Chemical Abstracts; Chemische Berichte. Areas of Rsch.: Intermediates for Polymers; Cellulosics; Vinyl and Condensation Polymers.

BUNTING, John James (M.D.), 4705 Montrose, Houston, Tex. Home Add.: 5621 Lynbrook Dr., Houston, Tex. INTERNAL MEDICINE AND DIAGNOSIS. b. Sunbury, Pa., Nov. 7, 1913. s. James Henry and Dora (Smith) B. Edn.: B.S., Lafayette Coll., 1934; M.D., Univ. of Md. Med. Schl., 1938. m. Katharyne Denton, Sept. 28, 1941. c.: Beverly Sue; John J., Jr.; William. Exp.: Assoc. Prof., Clinical Med., Baylor Schl. of Med., 1947—; Lectr. in Med., Univ. of Tex., Postgrad. Med. Schl., 1957—; Active Staff, Memorial, Methodist, Hermann, St. Luke's Hosp., 1947—; Sr. Partner and Founder, Montrose Diagnostic Center, 1953. Hon. Pos.: Dir., Central Natl. Bank, Houston Tex. Mem.: Am. Heart Assn.; Am. Diabetes Assn.; Am. Geriatrics Soc.; Fellow, Am. Coll. Physicians; Fellow, Am. Coll. Chest Physician; Diplomate, Am. Bd. of Internatl. Med.; N. Y. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Tex. Acad. of Int. Med.; So. Med. Assn.; Phi Beta Pi. Assoc. Editor: Medical Records and Annals. Contbr. to: Jour. Am. Med. Assn.; Nervous and Mental Diseases; Med. Records and Annals. Serv. Rec.: U. S. Air Force, 1941-45. Areas of Rsch.: Cardiac and Pulmonary Disorders.

BUNTYN, James Russell (Lt. Col.), Asst. to Comdr. for Standardization, U.S.A. Artillery Combat Devel. Agency, Fort Sill, Okla. Home Add.: 512 Morford Dr., Lawton, Okla. METEOROLOGY, CIVIL ENGINEERING. b. Hattiesburg, Miss., Oct. 21, 1910. s. Oscar Whatley and Della (Herring) B. Edn.: B.S., Miss. St. Coll., 1933; B.A., Univ. of Calif., 1948. m. Aleen Austin, May 8, 1935. c.: James, Jr.; William A. Exp.: Foreman, U. S. Forest Serv., Richton, Miss., 1933-35; Constr. Engr., Miss. Sta. Highway Dept., Hattiesburg, Miss., 1936-40; Various Milit. Assignments as Prof. of Milit Sci., Miss. St. Coll. and Columbia, Tenn. Milit. Acad., Procurement Officer, Instr. at U.S.A. Artillery and Missile Schl., and Command and Staff Assignments, 1940—. Hon. Pos.: Prin. Mem., U. S. Delegation to N.A.T.O. Grp. on Exterior Ballistics, 1959-62. Mem.: Am. Soc. of Civil Engrs.; Prof. Mem., Am. Meteorol. Soc.; Am. Geophys. Union; Miss. Soc. of Prof. Engrs.; Pi Kappa Alpha; Tau Beta Pi; Scabbard and Blade; Rotary. Serv. Rec.: U. S. Army, 1940—. Gen. Int.: Rec'd. Legion of Merit, 1953. Areas of Rsch.: Army Metro Operations Rsch.; Artillery Meteorology.

BURACK, Benjamin (Ph.D.), Prof. of Psychol., Roosevelt Univ., Chicago, Ill. Home Add.: 4880 N. Marine Dr., Chicago, Ill. PSYCHOLOGY. b. Apr. 28, 1914, Chicago, Ill. s. Hyman and Ida (Glasser) B. Edn.: B.S., Ill. Inst. of Tech., 1936; M.A., Northwestern Univ., 1938; Ph.D., ibid., 1940. Exp.: Instr. of Psychol., Chicago City Jr. Coll., 1939-41; Psychol., U. S. Army, 1941-45; Asst. Prof. of Psychol., Roosevelt Coll., 1946-47; Assoc. Prof. Psychol., ibid., 1947-56; Prof., 1956—. Mem.: Am. Psychology Assn.; A.A.A.S. Contbr. to: Progressive Edn.; Sci.; Psychol. Monog.; Jour. of Criminal Law; Jour. of Edn'l. Rsch. Ph.D. Dissertation: The Nature and Efficacy of Methods of Attack on Reasoning Problems. Travel: N. Am.; Europe; England; Greece. Gen. Int.: Inventor; An Electrical Logic Machine, 1936; King Sq. Game, 1949. Listed in: A.M.S.; W. W. in Chicago and Ill. Areas of Rsch.: Human Reasoning; Creative Thinking; Exptl. Methodology.

BURAS, Nathan (Mr.), Asst. Rsch. Engr., Water Resources Ctr., Univ. of Calif., L. A., Calif. Home Add.: 924 N. Ogden Dr., Los Angeles 46, Calif. ENGINEERING (WATER RESOURCES). b. Barlad, Rumania, Aug. 23, 1921. s. Baruch and Ethel (Weisser) B. Edn.: B.S., Univ. of Calif., 1949; M.S., Technion, Haifa, Israel, 1958; Ph.D., U.C.L.A., 1962. m. Netty Stivel, April, 1951. c.: Nir Hayim. Exp.: Dist. Engr., Water Planning for Israel Ltd., Haifa, Israel, 1954-57; Rsch. Assoc., Dept. of Irrigation and Soil Sci., Univ. of Calif., Los Angeles, Calif., 1957-59; Jr. Rsch. Engr., Dept. of Engrng., ibid., 1959-62; Asst. Rsch. Engr., Water Resources Ctr., 1962—. Mem.: Am. Geophys. Union; A.A.A.S.; Am. Soc. of Civil Engrs.; Am. Soc. of Agric. Engrs.; Phi Eta Sigma. Contbr. to: Jour. of Geophys. Rsch.; Agric. Engrng.; Publications of Internatl. Assn. of Scientific Hydrology. Serv. Rec.: British Army, 1942-46; Israel Defense Forces, 1950-51. Areas of Rsch.: Optimum Design of Water-Resource Systems; Application of Programming Techniques to Problems in Water Resources Development; Analysis of Water-Resource Problems Using Digital Computers.

BURBANK, Jeanne Beadle (Mrs.), Head, Crystal Chemistry Section, Electrochemistry Branch, Chemistry Division, U. S. Naval Rsch. Lab., Wash., D. C. Home Add.: 3304 Cleveland Ave., N.W., Wash. 8, D. C. ELECTROCHEMISTRY. b. Phila., Pa., May 8, 1915. d. John B. and Isabelle M. (Peacock) Beadle. Edn.: B.A., The Am. Univ., 1936; M.S., Univ. of Pa., 1940. m. Robert C. Burbank (dec.), 1936. c.: Carey Lea. Exp.: Rsch. Chemist, Peacock Labs., Phila., Pa., 1940-42, 1942-46; Rsch. Chemist, U. S. Naval Rsch. Lab., Wash., D. C., 1946—. Hon. Pos.: Exec. Committee, Battery Div., Electrochemical Soc. Mem.: Am. Chemical Soc.; A.A.A.S.; Electron Microscope Soc. of Am.; Scientific Rsch. Soc. of Am.; Sigma Delta. Contbr. to: Jour. of the Electrochemical Soc. Areas of Rsch.: Batteries, Corrosion, Lead Oxides, X-Ray and Electron Diffraction, Electron Microscopy.

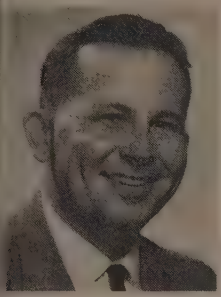
BURCH, Neil Robinson (M.D.), Assoc. Prof. of Psychiatry, Baylor Univ. Coll. of Med.; Hd., Bio-Electronics Div., Houston Sta. Psychiat. Inst., Houston, Tex. Home Add.: 4619 Richmond Ave., Houston, Tex. PSYCHIATRIC RESEARCH. b. Houston, Tex., Apr. 3, 1924. s. Barney Feagin and Mary Louise (Robinson) B. Edn.: M.D., Baylor Univ. Coll. of Med., 1947. m. Gloria Jean Surratt, Feb. 1, 1947. c.: Vicki Lea; Corneil Surratt; Kirby Robinson; Terrell Jean. Exp.: Neuropsychiatric Resident, Lyons Veterans Administration Hosp., N. J., 1948-50; Neuropsychiatric Res., Palo Alto Vets. Administration Hosp., Calif., 1950-51; Staff Psychiatrist, ibid., 1951; Asst. Prof., Baylor Univ. Coll. of Med., 1956-59; Assoc. Prof., ibid., 1959—; Chf. Psychophysiol. Labs., Houston St. Psychiatric Inst., 1956-58; Hd., Bio-Electronics Div., ibid., 1958-61; Chf., Day Hosp., ibid., 1960-61. Mem.: A.M.A., Harris Co. Chapter, Houston Acad. of Med.; Harris Co. Med. Soc. of Tex.; Tex. Med. Assn.; Am. Psychiatric Assn.; A.A.A.S.; Am. Geriatrics Soc.; Soc. for Psychophysiol. Rsch.; I.R.E. Prof. Group on Bio-Med. Electronics. Contbr. to: Neurol.; Jour. of Applied Psychol.; Jour. Aviation Med.; Jour. Nervous and Mental Dis.; Jour. of Psychol.; A.M.A.; Arch. Neurol. and Psychiatry; E.E.G. Clin. Neurophysiol.; Fed. Proc.; I.R.E. Trans. on Med. Electronics. Serv. Rec.: U. S. Army, 1942-46; U. S. Air Force, 1951-56. Gen. Int.: Legion of Merit for Psychiatric Rsch., 1956; Appointed Markle Scholar in Med. Sci., 1958-63. Areas of Rsch.: Psychophysiology; Bioelectric Data Reduction; Small Group Rsch.; Clin. Rsch.

BURDICK, Everette Marshall (Ph.D.), Chem. Consult., 4821 Ronda St., Coral Gables, Fla. Home Add.: 4821 Ronda St., Coral Gables 46, Fla. BIOCHEMISTRY; RESEARCH ADMINISTRATION. b. Champaign, Ill., Aug. 9, 1913. s. Pearl O. and Margaret (Hyde) B. Edn.: B.S., Univ. of Miami, 1935; M.S., Purdue Univ., 1937; Ph.D., ibid., 1943. m. Lois A. Enyart, 1937. Exp.: Rsch. Chemist, U.S.-D.A., Peoria, Ill., 1941-45; Rsch. Chemist, U.S.D.A., Weslaco, Tex., 1945-46; Dir. Rsch., Texsun Citrus Exchange, Weslaco, Tex., 1946-52; Dir. of Lab., Am. Chlorophyll Div., Strong Cobb and Co., Lake Worth, Fla., 1942-43; Vice-Pres. and Dir. of Rsch., ibid., Cleveland, Ohio, 1953-54; Chemical Consult., Coral Gables, Fla., 1954—. Hon. Pos.: Mem., Adv. Bd., Jour. of Agric. and Food Chem., Am. Chem. Soc. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. (Fellow); Instr. of Food Technol., N. Y. Acad. Sci.; A.A.A.S.; Kappa Sigma; Sigma Xi; Phi Lambda Upsilon; Iron Arrow. Co-Author: An Outline of Organic Chemistry, 1947; Modern Chemical Processes, Vol. I, 1950; and Vol. IV, 1956; The Chemistry and Technology of Fruit and Vegetable Juice Production, 1961. Contbr. to: Indust. and Engrng. Chem.; Analytical Chem.; Chem. Engrng. Prog.; Econ. Bot. Areas of Rsch.: Plant Extractives; Papain; Humates; Citrus Processing; Chlorophyll Derivatives Carotinoids; Submerged Combustion; Enzymes; Fermentations.

BURGER, Henry G. (Mr.), Consulting Strategist and Tactician, 100 E. 18th St., Brooklyn 26, N. Y. STRATEGY, TACTICS, TECHNOCULTURE. b. N.Y.C., June 27, 1923. Edn.: A.B., Columbia Univ., incl. grad. work, with honors, 1947. Exp.: Industl. Engr., Various U. S. Mfg. Corps., 1947-51; Mfrs.' Rep., Esp. Designing Self-Service, Midwest, 1952-54; Consulting Strategist and Tactician, Esp. in Product Conception, to Agencies and Services in 93 Industries, 1954—; Faculty Mem., The City Coll., City Univ. of N. Y., 1957—; Founding Author and Editor, "Marketing Tactics and Strategy," 1961—. Mem.: Soc. for Gen. Systems Rsch.; Ecological Soc. of Am.; Soc. for the Hist. of Technol.; Authors Guild; Phi Beta Kappa. Contbr. to: Automation; Industrial Design; Jour. of Mktng.; Rsch. Inst. of Am. Management Reports; Technol. and Culture; Tactics Column in Mktg. Magazine. Serv. Rec.: U. S. Army, 1943-46; Capt., Pacific Engr. Logistics. Gen. Int.: Keynote Speaker on Cultural Trends at Conventions; Internatl. Broadcaster Contrasting Am. Peluralism with Soviet Monopolism. Areas of Rsch.: Strategy (Procedure Codification for Solving Physical or Social Problems); Tactics (Efficiency Principles for Any Selected Strategy); Sociotactics (Tactics in Intersocial Situations); Technoculture (Interplay Be-

·veen Technol. and Culture); Product Conception, Especially ·eification of Professional Services into Devices or Systems. isted in: World's Who's Who in Commerce and Industry; W. W. › the East; W. W. in N. Y.

BURGER, Othmar Joseph (Ph.D.), Asst. Dean, Dir. of Res. Instrn., oll. of Agri., W. Va. Univ., Room 1004, Agril. Sci. Bldg., Morgantown, W. Va. Home Add.: 635 Villa Pl., Morgantown, W. Va. AGRONOMY - PLANT CHEMISTRY - PLANT PHYSIOLOGY. b. Jasper, Ind., May 23, 1921. s. August and Katherine (Lechner) B. Edn.: B.S., Purdue Univ., 1943; M.S., ibid., 1947; Ph.D., ibid., 1950. m. Elizabeth Ann Evans, Aug. 21, 1943. c.: Thomas Glen; Robert Howard; David William. Exp.: Grad. Asst., Agron., Purdue Univ., 1946-47; Grad. Asst., Agricultural Biochem., ibid., 1947-50; Agronomist, W. Va. Univ., 1950-57; Agronomist, Iowa St. Univ., 1957-59; Asst. Dean, W. Va. Univ., 1959—. Hon. Pos.: Pres., Kiwanis Club; Pres., P.T.A.; Cubmaster. Mem.: Am. Soc. of Agron.; Sigma Xi; A.A.A.S.; Alpha Gamma Rho; Sphinx; Alpha Zeta; Phi Lambda Upsilon; Kiwanis. Contbr. to: Soil Sci.; Agron. Jour. Serv. Rec.: U.S.N.R., W. W. II. Areas of Rsch.: Plant Chemistry; Agronomy; College Administration.

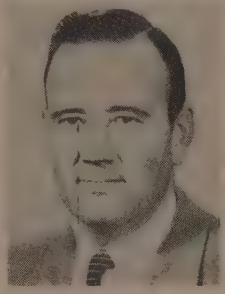


BURGERS, Johannes Martinus (Dr.), Rsch. Prof., Inst. for Fluid Dynamics and Applied Mathematics, Univ. of Md., College Park, Md. Home Add.: 4622 Knox Rd., Apt. 7, College Park, Md. FLUID DYNAMICS, IN PARTICULAR GAS DYNAMICS. b. Arnhem, Netherlands, Jan. 13, 1895. s. Johannes Martinus and Johanna Hendrika (Romijn) B. Edn.: Dr. Phys. and Math. Scis., Univ. of Leiden, Netherlands, 1918. m. 2nd, Anna Margretha Verhoeven, Aug. 20, 1941. c.: (by first wife) Anna Charlotte; Jan Herman; Jeannette Marion Veronica. Exp.: Prof. of Aero-and Hydrodynamics, Tech. Univ., Delft, Netherlands, 1918-55; Rsch. Prof., Inst. for Fluid Dynamics, Univ. of Md., 1955—. Hon. Pos.: Vice-Chmn., Sect. Phys. Scis. of Royal Netherlands Acad. of Scis., Amsterdam, 1947-50; Gen. Secy., Internatl. Union Theor. and Appl. Mechanics, 1946-52. Mem.: Royal Netherlands Acad. of Scis.; Am. Inst. of Physics; Am. Acad. Arts and Scis.; Inst. of Aerospace Scis.; Wash. Acad. of Scis.; N. Y. Acad. Scis.; Philos. Soc. of Wash.; Sigma Xi; etc. Areas of Rsch.: Fluid Dynamics; Gas Dynamics; Kinetic Theory of Gases.

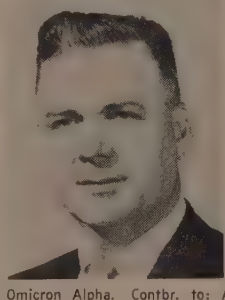
BURHOE, Ralph Wendell (Mr.), Exec. Officer, Am. Acad. of Arts and Scis., 280 Newton St., Brookline 46, Mass. PHILOSOPHY OF SCIENCE. b. Somerville, Mass., June 21, 1911. s. Winslow Page and Mary Treneman (Stumbles) B. Edn.: Attend., Harvard Coll., 1932. m. Frances Bickford, Aug. 4, 1931. c.: Winslow Newton; Mrs. Laura Jean Maier; Thomas Allen; Diana May. Exp.: Asst. to Dir., Blue Hill Meteorol. Observatory, Harvard Univ., Milton, Mass., 1936-47; Asst. Secy. and Treas., Am. Meteorol. Soc., 1936-46; Exec. Officer, Am. Acad. of Arts and Scis., 1947—. Hon. Pos.: Hon. Pres., Inst. on Religion in an Age of Sci. Mem.: Am. Assn. for the Adv. of Sci.; Am. Philos Assn. Co-Editor: Evolution and Man's Progress, 1962. Contbr. to: Am. Meteorol. Soc. Bull.; Daedalus; Jour. of the Am. Academy of Arts and Scis. Areas of Rsch.: Philosophy of Science, Particularly in its Implications for Human Life, Theory of Knowledge and Religion.

BURINGTON, Richard Stevens (Ph.D.), Chf. Mathematician Bur. of Naval Weapons and Spec. Asst. to Asst. Chief for Rsch., Devel., Test, and Evaluation, Bur. of Naval Weapons, Navy Dept., Wash., D. C. MATHEMATICS; PHYSICS. b. Columbus, Ohio, Aug. 31, 1901. s. Herbert M. and Eva (Stevens) B. m. Jennet Mae Wootton of Cambridge, Ohio, May 15, 1924. d. Mr. and Mrs. Joseph Wootton. c.: Artha Jean; Richard Edward; Juanita Virginia. Edn.: B.A., Ohio St. Univ., 1925; M.A., ibid., 1926; Ph.D., ibid., 1931. Exp.: Grad. Asst. in Math., Ohio St. Univ., 1925-26; Instr. in Math., Case Schl. of Applied Sci., 1926-32; Asst. in Math., Ohio St. Univ., 1929-30; Asst. Prof. of Math., Case Schl. of Applied Sci., 1932-38; Assoc. Prof. of Math., 1938-46 (on leave to Navy Dept., 1941-46); Consult. and Hd. Mathematician, Bur. of Ord., Navy Dept., Wash., D. C., 1941-46; Consult., Applied Math. Panel, N.D.R.C., O.S.R.D., 1942-45; Chf. Mathematician, Bur. of Ord., Navy Dept., Wash., D. C., 1946-59; Chf. Mathematician, Bur. of Naval Weapons, 1959—. Mem.: Chmn., Math. Conf., Cornell Meeting of S.P.E.E., 1934; Am. Math. Soc.; Math. Assn. of Am.; Am. Soc. for Engrng. Edn.; S.I.A.M.; Fellow, A.A.A.S.; Inst. of Math. Stat.; Am. Stat. Assn.; Am. Phys. Soc.; Chmn., Appl. Math. Div., S.P.E.E., 1940-41; Chmn., Math. Div., A.S.E.E., 1954-55; Mem. Coun., A.S.E.E., 1955-57; Op. Res. Soc. Am.; U. S. Naval Inst.; Philos. Soc. of Wash.; Wash. Acad. of Sci.; Cosmos Club (of Wash.); Phi Beta Kappa; Pi Mu Epsilon; Sigma Xi. Ph.D. Dissertation: An Invariantive Classification of Plane Cubic Curves under Affine Transformations. Author: Handbook of Math., 1933, 2nd Ed., 1940, 3rd Ed., 1949; Sr. Author (with C. C. Torrance), Higher Mathematics, 1939; Sr. Author (with D. C. May), Handbook of Probability and Statistics with Tables, 1953; Rschs.; Matrices in Elec. Cir. Theory, Hydro- and Aero-dynamics; Probability, Statistics; Algebra, Algebraic Geometry; Naval Ordnance; Operations Rsch., Evaluation Rsch.; Scientific Admin.; Edn. Travel: U. S.; C. Am.; S. Am.; Europe; Pacific Oceania. Hobbies: Travel; Pipe Organ; Transportation. Listed in: A.M.S.; W. W. in Engrng.; W. W. in the S. and S.W. Special Int.: Operations Rsch.; Applied Math.; Philosophy of Math.

BURKE, Edward Walter, Jr. (Ph.D.), Prof. of Physics, King Coll., Bristol, Tenn. PHYSICS. b. Macon, Ga., Sept. 16, 1924. s. Edward Walter and Lora (Waterman) B. Edn.: B.S., Presbyterian Coll., 1947; M.S., Univ. of Wis., 1949; Ph.D., ibid., 1954. m. Julia Thorpe Struby, June 22, 1946. c.: Edward Walter, III; Julia Riley. Exp.: Assoc. Prof., Physics, King Coll., Tenn., 1949-53; Prof. of Physics, ibid., 1954—; Chmn., Div. of Natural Sciences and Math., ibid., 1960—. Mem.: Am. Assn. of Physics Tchrs.; Tenn. Acad. of Sci.; Am. Physical Soc.; Sigma Xi; Lions Internatl. Contbr. to: Phys. Rev.; Jour. Optical Soc. of Am.; Serv. Rec.: U.S.N.R., 1943-46. Gen. Int.: Fulbright Lectr., Univ. of Chile, Santiago, Chile, 1959. Areas of Rsch.: Research on isotope shifts in spectra of boron, boron singly ionized, boron doubly ionized.



BURKE, Frederic Gerard (M.D.), Prof. and Dir., Dept. of Pediatrics, Georgetown Univ., Med. Center, Wash., D. C. Home Add.: 3307 Woodbine St., Chevy Chase, Md. PEDIATRICS. b. England, Feb. 17, 1917. s. Patrick John and Frances (Smitton) B. Edn.: B.S., Seton Hall, So. Orange, N. J., 1938; M.D., Georgetown Univ., 1942. m. Ruth Elizabeth, 1945. c.: Frederic, Jr.; Mary Elizabeth; Patrick; Francis Ann; Barbara; John; Frank; Robert Thaddeus. Exp.: Instr., George Wash. Univ., Wash., D. C., 1943-45; Asst. Prof. and Dir., Med. Edn. Georgetown Univ. at Children's Hosp., Wash., D. C., 1945-50; Dir., and Prof., Ped., Georgetown Univ. Med. Ctr., 1950 . Mem.: Am. Bd. of Pediatrics; Am. Acad. of Ped.; Am. Med. Assn.; D. C. Med. Soc.; Am. Found. for Clinical Rsch.; Southern Soc. for Ped. Rsch.; Alpha Omicron Alpha. Contbr. to: A.M.A. Jour.; N. E. Jour. of Med. Areas of Rsch.: Pediatric Clinical Research.



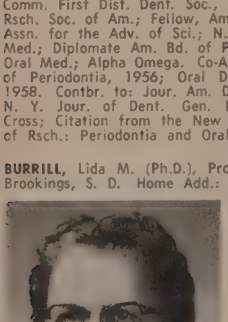
BURKET, Walter Cleveland (M.D.), Surgeon, 3046 N. Ashland Ave., Chicago, Ill. Home Add.: 1020 Lake Shore Blvd., Evanston, Ill. PHYSICIAN. b. Kingman, Kans., Nov. 16, 1888. s. J. Fremont and Belle (Weimar) B. Edn.: A.B., Baker Univ., 1912; B.S., Univ. of Chicago, 1911; M.D., The Johns Hopkins Univ., 1915. m. Gail Brook, 1929. c.: Gail Elaine; Anne Elizabeth; Margaret Brook. Exp.: Surgical House Officer, The Johns Hopkins Hosp., Baltimore, Md., 1915-16; Full-time Surg. Asst., The Johns Hopkins Univ., ibid., 1916-17; Surgical Research, Hunterian Lab. for Surg. Rsch., ibid., 1916-17; Surgeon, Chicago, Ill., 1921—; Attending Staff, Alexian Bros. Hosp., The American Hospital, The Frank Cuneo Meml. Hosp., Chicago, Ill., and The Community Hosp., Evanston, Ill.; Former Asst. Attending Surgeon, Children's Meml. Hosp., Chicago, Ill.; Clin. Assoc. in Surgery, Univ. of Chicago; Consulting Specialist in Surgery; U. S. Marine Hosp. No. 5, Chicago, Ill.; Fellow in the Otho S. A. Sprague Mem. Inst., Chicago, Ill. Mem.: Internatl. Coll. of Surgeons; The N. Y. Acad. of Scis.; Am. Assn. Adv. of Sci.; The Am. Med. Assn.; Ill. Med. Assn.; The Chicago Med. Soc.; Am. Legion; Res. Officers Assn. of the U. S.; Hon. Mem., Res. Officers Assn. of Mexico; Zeta Chi; Mason; Univ. Club of Evanston. Author: Bibliography of Dr. William Henry Welch, 1917; Editor, Papers and

Addresses of William Henry Welch, 1920; Surgical Papers of Dr. William Stewart Halsted, 1924. Contbr. to: Jour. of Expmtl. Med.; Surgery Gynecol. and Obstetrics; The Jour. of the Internatl. Coll. of Surgeons; The Soc. of Abd. Surgeons; The Internti. Oceanographic Foundation. Serv. Rec.: Lt. to Major, U. S. Med. Corps, W. W. I and II. Travel: Europe. Hobbies: Pianist and Composer; Chess; Gardening. Areas of Rsch.: Studies in Spleen Transplantation of the Trachea; Aseptic Intestinal Anastamosis and the Suture of Large Arteries.

BURKES, Marshall R. (Mr.), Rsch. Asst., Ohio St. Univ., 214 Ag. Adm. Bldg., Columbus, Ohio. Home Add.: Lindsay, Okla. AGRICULTURE FINANCE. b. Lindsay, Okla., Mar. 27, 1934. s. Charley M. and Marie (Park) B. Edn.: B.S., Okla. St. Univ., 1956; M.S., Purdue Univ., 1960. Exp.: Mgr., Burkes Ranch, Lindsay, Okla., 1953-56; Clin. Psychol., and Rsch. Asst., Purdue Univ., W. Lafayette, Ind., 1956-60; Rsch. Asst., Ohio St. Univ., 1960—. Mem.: Am. Farm Econ. Assn.; Am. Mkt. Assn.; Am. Econ. Assn.; Am. Assn. for the Adv. of Sci.; Alpha Gamma Rho; Alpha Zeta; Delta Sigma Alpha. Contbr. to: Successful Farming; Timely Econ. Information for Ohio Farmers. Serv. Rec.: U. S. Army, Clin. Psychol., 1956-58. Areas of Rsch.: Agriculture Finance; Private and Co-operative Business.

BURMAN, Louis Robert (D.D.S.), Assoc. Prof., Peridontia and Oral Med., N. Y. Univ. Coll. of Dent. and Dentist, 200 Cent. Pk. Sp., N. Y. 19, N. Y. Home Add.: 25 Rosbury Dr., Yonkers, N. Y. PERIODONTIA AND ORAL MEDICINE. b. N.Y.C., Aug. 23, 1906. s. Isidor N. and Gussie (Levine) B. Edn.: Ph.G., Fordham Univ., 1924; B.S., N. Y. Univ., 1934; A.M., George Wash. Univ., 1935; D.D.S., N. Y. Univ., 1940. m. Frances Cohen, 1932. c.: David Jay; Lester Bruce. Exp.: Instr., New York Univ., New York City, 1940-47; Asst. Prof., Anatomy, 1941-59; Asst. Prof., ibid., 1948-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: Pres., Am. Academy Dentai Medicine, 1951; Pres., Alpha Omega Frat., 1957; Pres., Bronx Co. Dent. Soc., 1963; Chmn., Prog. Comm. First Dist. Dent. Soc., 1963. Mem.: Sigma Xi; Scientific Rsch. Soc. of Am.; Fellow, Am. Coll. Dent.; Soc. Gerontol.; Am. Assn. for the Adv. of Sci.; N. Y. Acad. Dent.; Am. Acad. Dent. Med.; Diplomate Am. Bd. of Periodontol.; Diplomate Am. Bd. of Oral Med.; Alpha Omega. Co-Author: Periodontia, 1961; Textbook of Periodontia, 1956; Oral Diagnosis and Treatment Planning, 1958. Contbr. to: Jour. Am. Dent. Assn.; N. Y. St. Dent. Jour.; N. Y. Jour. of Dent. Gen. Int.: Citation from American Red Cross; Citation from the New York Port of Embarkation. Areas of Rsch.: Periodontia and Oral Medicine; Anatomy.

BURRILL, Lida M. (Ph.D.), Prof., Home Econs., S. D. St. Coll., Brookings, S. D. Home Add.: 1323 Fourth St., Brookings, S. D.



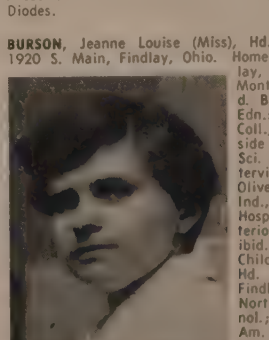
FOOD AND NUTRITION. b. St. Paul, Minn., July 7, 1903. d. William Thomas and Florence F. (Baker) B. Edn.: B.S., Univ. of Minn., 1926 ; M.A., Univ. of Toronto, 1933; Ph.D., Univ. of Minn., 1947. Exp.: Rsch. Asst., Mich. St. Coll., E. Lansing, Mich., 1940-41; Asst. Prof., Miss. St. Coll. for Women, Columbus, Miss., 1941-44; Dietitian, Mayo Clinic, Rochester, Minn., 1944-47; Prof., Home Econs., S. D. St. Coll., 1947—. Hon. Pos.: Ellen H. Richards Fellowship; Pres., S. D. Dietetic Assn. Mem.: Sigma Xi; Am. Inst. of Nutrn.; Am. Dietetic Assn.; Am. Home Econs. Assn.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Inst. of Food Technolts.; Am. Assn. Univ. Women; Phi Kappa Phi; Omicron Nu; Iota Sigma Pi; Delta Kappa Gamma; Business and Profl. Women's Club. Contbr. to: Jour. of Peds.; Jour. of Am. Dietetic Assn.; Jour. of Nutrn.; Expt. Stan. Bulls. Areas of Rsch.: Food and Nutrition: Iron Absorption, Dietary and Nutritional Status Survey, Protein and Amino Acid Requirement and Utilization.

BURNS, Donald A. (Ph.D.), Rsch. Assoc., Dover Med. Rsch. Ctr., 9 Kings Hgwy., Dover, Del. Home Add.: Andrews Lake, Frederica, Del. INVESTIGATIONS INTO CAUSES OF ATHEROSCLEROSIS; IMPROVEMENT OF BIOCHEMICAL ANALYTICAL METHODS; CINEPHOTOMICROGRAPHY. b. Alexandria Bay, N. Y., Feb. 5, 1929. s. Ishmael B. and Agnes (Makepeace) B. Edn.: A.B., Syracuse Univ., 1951; M.S., Univ. Puget Sound, Tacoma, Wash., 1955; Ph.D., Purdue Univ., 1958. Exp.: Anal. Chemist, Natl. Cash Register Co., Dayton, Ohio, 1953-54; Office Naval Rsch. Fellow, Chem. Dept., Univ. Puget Sound, 1954; Rsch. Chemist, Solvay Process Div., Allied Chem. and Dye Corp., Syracuse, N. Y., summer, 1955; David E. Ross Fellow, Biochem. Dept., Purdue Univ., 1956-57; Sr. Rsch. Biochemist, Natl. Cash Register Co., 1958-61; Rsch. Assoc., Dover Med. Rsch. Ctr., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S., Soc. Technical Writers and Publishers; Phi Lambda Upsilon; Sigma Tau Delta; Am. Guild of Organists; Internatl. Brotherhood Magicians; Aircraft Owners and Pilots Assn. Author: The Venice of America, 1950; Microencapsulation—A New Research Tool, 1961. Contbr. to: Arch. of Biochem. and Biophys.; Sci. Serv. Rec.: U.S.A.F., 1951-53. Gen. Int.: Production of Technical Motion Pictures; Normal and Time-Lapse Cinephotomicrography; Bionics; Self-Organizing Systems; Utilization of Brainstorming in Rsch. (Group Creative Imagination Techniques); Programming of High-Speed Digital Computers; Autoradiography. Areas of Rsch.: Synthesis of 6,8-Dihydroxyisochroman, Model Compound of Citrinin; Preparation of High-Purity Alpha-Resorcylic Acid; Interrelationships in the Arginine-Manganese-Arginase System; Intracellular Distribution of Manganese; Effect of Dietary Manganese on Rat Liver Arginase; Manganese as Both Activator and Inhibitor of Arginase; Protein and Enzyme Isolation Techniques by Differential Ultracentrifugation and Several Electrophoretic Schemes; Microencapsulation by Coacervation; Clinical Investigations into Causes of Atherosclerosis; Effects of Nicotine and Tars from Smoke Condensates on Cells from Cardiovascular Tissues of Normal and Atherosclerotic and/or Hypercholesteremic Rabbits and Humans.

BURR, Helen Gunderson (Ph.D.), Assoc. Prof. of Speech Pathol. and Audiology, Dir., Speech and Hearing Ctr., Univ. of Va., Charlottesville, Va. Home Add.: "Carrsgrove," Stribling Ave., Charlottesville, Va. SPEECH PATHOLOGY AND AUDIOLOGY. b. Iowa City, Ia., Dec. 30, 1918. d. George Byron and Grace (Farrell) Gunderson. Edn.: B.A., Stanford Univ., 1937; M.A., Univ. of Sou. Calif., 1940; Ph.D., Columbia Univ., 1949. m. Horace Burr, July 24, 1954. c.: David Stanford. Exp.: Speech Pathologist, Priv. Prac., N.Y.C. and Los Angeles, Calif., 1944-50; Asst. Prof., Dir. of Speech Clinic, St. Univ. of N. Y., 1950-53; Asst. Prof., Univ. of Va., 1953-60; Assoc. Prof., Dir. of Speech and Hearing Ctr., ibid., 1960— Hon. Pos.: Pres., Speech and Hearing Assn. of Va.; Mem., Natl. Clinical Certification Committee of Am. Speech and Hearing Assn.; Bd. of Dirs., Soc. for Crippled Children and Adults, Albemarle Chapt.; Bd. of Dirs., Va. Hearing and Speech Foundation; Editor, Jour. of Speech and Hearing Assn. of Va.; Mem., Coordinating Committee on Crippled Children's Servs., Va. Coun. on Health and Med. Care. Mem.: Linguistic Soc. of Am.; Internatl. Soc. for Gen. Semantics; Sou. Speech Assn.; Speech Assn. of the Eastern States; Delta Delta Delta; Kappa Delta Pi; Pi Lambda Theta; Delta Kappa Gamma; A.A.U.P.; Albemarle Art Assn.; Albemarle Historical Assn.; A.A.U.W.; English Speaking Union. Contbr. to: Jour. of Speech and Hearing Disorders; Quarterly Jour. of Speech; Jour. of Speech and Hearing Assn. of Va.; N. Y. St. Tchrs. Bull.; Va. Jour. of Rehabilitation; Arch. of Neurology and Psychiatry; Arch. of Otolaryngology; Biological Abstracts; Child Development Abstracts; Psychological Abstracts; Excerpta Medica. Areas of Rsch.: Speech Pathol.; Linguistics and Verbal Behavior.

BURRUS, Charles Andrew, Jr. (Ph.D.), Mem. Techn. Staff, Bell Telephone Labs., Holmdel, N. J. Home Add.: 62 Highland Ave., Fair Haven, N. J. PHYSICS. b. Shelby, N. C., July 16, 1927. s. Charles A. and Velma (Martin) B. Edn.: B.S., Davidson Coll., 1950; M.S., Emory Univ., 1951; Ph.D., Duke Univ., 1955. m. Barbara Dunlevy, May 4, 1957. c.: Charles Andrew, III; Barbara Jean. Exp.: Tex. Co. Fellowship, Duke Univ., Durham, N. C., 1952-53; Shell Co. Fellowship, ibid., 1953-54; Rsch. Assoc., ibid., 1954-55; Mem. Techn. Staff, Bell Telephone Labs., 1955—. Mem.: Am. Physical Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Sigma Pi Sigma; Phi Beta Kappa; Delta Phi Alpha. Contbr. to: Phys. Rev.; Jour. Appl. Phys.; Rev. Sci. Instr.; Proc. I.R.E., Jour. Chem. Phys. Serv. Rec.: U. S. Naval Reserve, 1945-46. Areas of Rsch.: Millimeter Wave Spectroscopy; Millimeter Wave Diodes.

BURSON, Jeanne Louise (Miss), Hd. Technologist, Clinical Lab., 1920 S. Main, Findlay, Ohio. Home Add.: 228 Edith Ave., Findlay, Ohio. QUALITY CONTROL. b. Montpelier, Ind., Dec. 23, 1930. d. Bur U. and Myrtle (Brecht) B. Edn.: B.S.Ed., Ball St. Tchrs. Coll., 1952; M.T.A.S.C.P., Riverside Hosp. of Toledo, 1955. Exp.: Sci. Tchr., Center Twp. H. S., Centerville, Ind., 1952-53; Sci. Tchr., Olive Twp. H. S., New Carliste, Ind., 1953-54; Intern, Riverside Hosp., Toledo, Ohio, 1954-55; Bacteriol., Mycol., Paristol., Serol., ibid., 1955-58; Chief Technologist, Children's Hosp., Toledo, 1958-61; Hd. Technologist, Clinical Lab., Findlay, Ohio, 1961—. Mem.: Northwestern Ohio Soc. Med. Technol.; Ohio Soc. Med. Technol.; Am. Soc. Med. Technol.; Am. Assn. Adv. Sci.; Kappa Delta Pi; Sigma Zeta; Kappa Kappa Kappa. Areas of Rsch.: Pediatric Microchemistry.



URT, Charles Earle (Ph.D.), Dir., Quivira Scientific Co., (Biol. upplies), 4204 W. 21st St., Topeka, Kan. b. Aug. 12, 1904, Neodesha, Kan. s. Edward Waird and Mary Ellen (Pierce) B. Edn.: B.S., Kan. St. Univ., 1926; M.S., ibid., 1927; Ph.D., Univ. of Mich., 1930. m. May Danheim of Blue Rapids, Kan., Dec. 29, 1926. d. Henry N. and Jennie E. Choate. Exp.: Asst. Curator, Herpetol., Am. Museum of Nat. Hist., 1929-30; Prof. of Biol., Trinity Univ., Tex., 1930-31; Prof. of Biol., Southwestern Coll., Kan., 1931-44; Dir., Quivira Scientific Co., Topeka, Kan., 1945—; Field Expeditions, Smithsonian Inst., summers, 1931-34. Mem.: Am. Soc. Zool.; Kan. Acad. Sci.; Mich. Acad. Sci., Arts and Letters; A.A.A.S.; Audubon Soc.; A.S.I.H.; Herpetol. League; Chicago Acad. Sci.; Am. Micros. Soc.; Kan. Entomol. Soc.; Biol. Soc. Wash.; Wilderness Soc.; Southwestern Assn. of Naturalists; Nature Study Soc.; Phi Kappa Phi; Sigma Xi; Brit. Herpetol. Soc.; Nat. Assoc. Biol. Tchrs.; Nature Conservancy. Contbr. to: Sci. Mags. Ph.D. Dissertation: A Phylogenetic Study of the Teiid Lizards of the Genus Cnemidophorus. War Rec.: O.R.C., Inf., 1926-36, 2nd Lt. Travel: N. Am. Hobbies: Travel; Biol. Field Work. Listed in: Am. Men of Sci.; Naturalists Dir.; Ldrs. in Am. Sci. Special Int.: Herpetology; Biological Supply Business.

BURTON, Helen Brown (Ph.D.), Prof. Emer., Home Econ., Univ. of Okla., Norman, Okla. NUTRITION; EXPERIMENTAL FOOD STUDY. b. Chicago, Ill., Jan. 7, 1889. d. Frank and Lena (Brown) B. Edn.: A.B., Ind. Univ., 1911; B.S., Lewis Inst., 1915; S.M., Univ. of Chicago, 1922; Ph.D., ibid., 1929. Exp.: Instr., Home Econ., Lewis Inst., 1915-18; Hd. of Home Econ. Dept., Wayne St. Tchrs. Coll., 1918-21; Hd. of Home Econ. Dept., W. Tex. St. Tchrs. Coll., 1922-25; Dir., Schl. of Home Econ., Univ. of Okla., 1927-49; Prof. of Home Econ., ibid., 1927-58. Hon. Pos.: Fellowship, Univ. of Chicago, 1925-27; Fellow, A.A.A.S. and Okla. Acad. Sci.; Hon. Mem., Okla. Acad. Sci.; Pres., Okla. Home Econ. Assn., 1945-47; Former Pres., Norman Bus. and Profl. Women's Club. Mem.: Sigma Xi; Omicron Nu; Iota Sigma Pi; Delta Kappa Gamma; Am. Dietetic Assn.; Okla. Dietetic Assn.; Am. Home Econ. Assn.; Okla. Home Econ. Assn.; A.A.A.S.; Altrusa Club; P.E.O.; D.A.R. Contbr. to: Jour. Biol. Chem.; Jour. Home Econ.; Proc. Okla. Acad. Sci. Ph.D. Dissertation: The Effect of Cereals upon the Retention of Calcium and Phosphorus in Children and Adults. Travel: Europe; Mex.; Hawaii. Listed in: Am. Men of Sci.; W.W.A.E.; W. W. Among Am. Women. Special Int.: Calcium and Phosphorus Retention in Human Beings; Ascorbic Acid Metabolism in Human Beings; Ascorbic Acid Content of Foods.

BURTON, Henrietta Kolshorn (Ph.D.), Journalist, 1395 Grantham St., St. Paul 8, Minn. HUMAN NUTRITION. Edn.: M.A., Univ. of Wyo., 1930; Ph.D., Columbia Univ., 1936. m. (widow). Exp.: First Supvr. of Home Ext. Work of U. S. United Indian Serv., Dept. of Interior at Large, Wash., D. C., 1930—; Journalist, St. Paul, Minn., 1954. Mem.: Am. Assn. Univ. Women; Natl. League of Am. Pen Women; Congregational Church; PEO Sisterhood; Froula Reading Circle. Author: A Study of Trends in Savings Accounts, 1930; The Re-Establishment Of The Indians In Their Pueblo Life Through The Revival Of Their Traditional Crafts, 1936; Fun And Good Form, 1954.

BUSCH, Daniel Adolph (Ph.D.), Consulting Geologist, 833 Mayo Bldg., Tulsa, Okla. Home Add.: 3757 So. Wheeling Ave., Tulsa, Okla. GEOLOGY. b. St. Paul, Minn., May 31, 1912. s. Dr. Karl G. A. and Lulu (Snapp) B. Edn.: B.Sc., Capital Univ., Ohio, 1934; M.A., Ohio State Univ., 1936; Ph.D., ibid., 1939. Hon. Degree: D.Sc., Capital Univ., 1960. m. Emilie Finch, Dec. 22, 1939. c.: Daniel Andrew; David Arthur. Exp.: Instr., Univ. of Pittsburgh, 1938-43; Pet. Geol., Pa. Geol. Survey, Harrisburg, Pa., 1943-44; Pet. Geol., Huntley & Huntley, Pittsburgh, Pa., 1944-46; Sr. Rsch. Geol., Carter Rsch. Lab., Tulsa, Okla., 1946-49; Staff Geol., Carter Oil Co., ibid., 1949-51; Exploration Mgr., Zephyr Pet. Co., ibid., 1951-56; Consulting Geol., ibid., 1956—. Hon. Pos.: Pres., Tulsa Geol. Soc., 1952-53. Mem.: Fellow, Geol. Soc. of Am.; Am. Assn. of Pet. Geol.; Soc. of Econ. Paleontol. and Mineral.; Tulsa Geol. Soc.; Sigma Xi; Phi Sigma. Author: Oil Bearing Sands, 1944. Contbr. to: Jour. of Paleontol.; U. S. Bur. of Mines Bull.; Bull. of Am. Assn. Pet. Geol.; World Oil; Oil and Gas Jour.; Tulsa Geol. Soc. Digest; Kans.-Okla. Oil News. Gen. Int.: Orton Award, distinguished alumnus award, Ohio State Univ.; Matson Award, best paper award at 1959 annual meeting of A.A.P.G. Listed in: W. W. in the Southwest. Areas of Rsch.: Petroleum Geology; Stratigraphy.

BUSCH, Henry Miller (Mr.), Prof. of Sociology, Western Reserve Univ., Cleveland 6, Ohio. Home Add.: 2597 Exeter Rd., Cleveland Hgts. 18, Ohio. PUBLIC OPINION; SOCIAL MOVEMENTS; POPULATION AND IMMIGRATION; MARRIAGE AND THE FAMILY. b. N. Y., N. Y., Sept. 24, 1894. s. Casper H. and Annie (Miller) B. Edn.: B.S., Columbia Univ., 1926; M.A., ibid., 1927. m. Lucy A. L. Young, Mar. 13, 1916. c.: David Clarendon. Exp.: Boys' Work Dir., E. Side Y.M.C.A., N.Y.C., 1916-20; Asst. Field Work Dir., Union Theol. Seminary, N. Y., 1920-27; Asst. Prof. of Group Work, Schl. of App. Social Sci., Western Reserve Univ., Cleveland, Ohio, 1927-29; Assoc., ibid., 1929-30; Asst. Dir. and Head of Extension Division, Cleveland College, Western Reserve Univ., ibid., 1930-36; Prof. of Sociology, ibid., 1936—. Mem.: Am. Sociol. Assn., Fellow; Am. Academy of Polit. and Social Sci.; Am. Assn. for Adv. of Sci.; Am. Assn. of Univ. Profs.; Population Assn. of Am.; Pop. Ref. Bureau, Inc., Fellow; Soc. for Study of Social Problems; Natl. Coun. on Family Relations; Theta Kappa Sigma; City Club of Cleveland, Past. Pres. Author: Leadership in Group Work, 1934; Conference Methods in Industry, 1949. Achievements of Gen. Int.: Foreman, Cuyahoga Co. Grand Jury, 1937; Mem., Cuyahoga Co. Bd. of Child Welfare, 1939-44; Mem., Shaker Libr. Bd., 1942-44. Areas of Rsch.: Public Opinion; Conference (Discussion) Methods; Immigration; Marriage and the Family.

BUSCH, Karl H. D., (Ph.D.), Head, Biol. Dept., Univ. of Omaha, Omaha, Nebr. Home Add.: 3348 Martin Ave., Omaha, Nebr. EMBRYOLOGY. b. St. Paul, Minn., Oct. 23, 1909. s. Karl G. A. and Lulu E. (Snapp) B. Edn.: B.S., Capital Univ., 1931; M.S., Ohio St. Univ., 1937; Ph.D., ibid., 1940. m. Helen M. Montague, Aug. 26, 1936. c.: Irene F.; Karl M.; John D. Exp.: Head, Depts. of Biol. & Physics, Corpus Christi Jr. Coll., 1940-44; Assoc. Prof. of Biol., Univ. of Houston, 1944-45; Head, Biol. Dept., Prof., Augustana Coll., Sioux Falls, S. Dak., 1945-49; Prof., Augustana Coll., Rock Island, Ill., 1949-52; Head, Biol. Dept., Prof., Millikin Univ., 1952-56; Prof., Head, Biol. Dept., Univ. of Omaha, 1956—. Mem.: Nebr. Acad. of Sci.; Gamma Sigma Delta; Am. Soc. Zool.; Sigma Xi; Tri-Beta. Areas of Rsch.: Embryol. of Crayfish; Bryozoa.

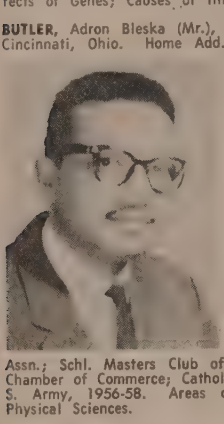
BUSH, Mildred (Ph.D.), Prof. of Biol. Sci. Emer., San Francisco St. Coll., San Francisco 2, Calif. Home Add.: 334 Mason St., San Francisco 2, Calif. BOTANY AND PROTOZOOLOGY. b. Lebanon, Ind., Apr. 29, 1886. d. Luther and Alice (DeVol) B. Edn.: B.A., Ind. Univ., 1913; M.A., Univ. of Tex., 1929; Ph.D., Univ. of Calif., 1932; Instr., H. S., Anacortes, Wash., 1915-17; Instr., H. S., Cascade, Mont., 1917-22; Prin., H. S., DuQuoin, Ill., 1922-27; Instr., Univ. of Tex., 1927-29; Prof., Tex. Tech. Coll., 1929-30; Prof., San Francisco St. Coll., 1941-56; Instr., Puget Sound Biol. Sta., Friday Harbor, Wash., Summers, 1917, 1920. Mem.: Am. Microscopical Soc.; Botanical Soc. of Am.; A.A.A.S.; Soc. of Protozoologists; Calif. Acad. of Sci.; Sigma Xi. Contbr. to: Publ. Puget Sound Biol. Sta.; Plant Physiol.; Univ. of Calif. Publ. of Zool.; Bull. Mus. Natural Hist., Brussels; Arch. of Protistenk; Trans. Am. Microscopical Soc. Areas of Rsch.: Water Biol.; Protozool.; Taxonomy—Flowering Plants; Taxonomy of Algae.

BUSH, Powell Daniel, Jr. (Mr.), Asst. Prof., Physics Department, Mercer Univ., Macon, Ga. Home Add.: Route #1, Lizella, Ga. INFRARED SPECTROSCOPY AND MOLECULAR SPECTRA. b. Athens, Ga., Oct. 2, 1924. s. Powell D. and Rosamond (Epps) B. Edn.: B.S., Emory Univ., 1948; M.A., ibid., 1951. m. Helen Hawthorne, June 15, 1948. Exp.: Instr., Morehouse Coll., 1951-52; Rsch. Engr., Lockheed Aircraft, Marietta, Ga., 1952-58; Asst. Prof., Mercer Univ., 1958—; Acting Chmn., Physics Dept., ibid., 1958—. Mem.: Southeastern Sec. of Am. Physical Soc.; Am. Rocket Soc.; Sigma Pi Sigma; Sigma Xi; Lambda Chi Alpha. Contbr. to: Bull. Ga. Acad. of Sci. Serv. Rec.: U. S. Air Force, 1942-45. Areas of Rsch.: Infrared Spectroscopy and Molecular Spectra; Gen. Physics; Aircraft Pneumatic Systems.

BUSKIRK, Elsworth Robert (Ph.D.), Physiologist in Chg. of Metabolic Chamber, NIAMD, Natl. Insts. of Health, Bethesda 14, Md. Home Add.: 10221 Farnham Dr., Bethesda 14, Md. PHYSIOLOGY. b. Beloit, Wis., Aug. 11, 1925. s. Ellsworth Frederick and Laura (Parman) B. Edn.: B.A., St. Olaf Coll., 1950; M.A., Univ. of Minn., 1951; Ph.D., ibid., 1954. m. Mable Heen, Aug. 28, 1948. c.: Laurel Ann; Kristine Janet. Exp.: Rsch. Assoc., Univ. of Minn., 1954; Physiologist, Chief Environment Physiol. Sec., QM R and E Center, Natick, Mass., 1954-57; Physiologist in Chg., Metabolic Chamber Group, NIAMD, Natl. Insts. of Health, 1957—. Hon. Pos.: Bd. of Trustees, Am. Coll. of Sports Med. Mem.: A.A.A.S.; Sigma Xi; Am. Coll. of Sports Med.; Am. Assn. for Health, Physical Edn. and Recreation; Fed. Internatl. Edn. Physique; Am. Physiol. Soc. Contbrng. Author: Science and Medicine of Exercise and Sports, 1960. Contbr. to: Fed. Proc.; Jour. of Applied Physiol.; Arbeitsphysiologie; Metabol.; Am. Jour. Clin. Nutrition; Human Biol.; Bull., N. Y. Assn. of Med.; Medicina Sportiva. Serv. Rec.: U. S. Army Infantry, W. W. II. Areas of Rsch.: Metabolism and Nutrition; Exercise Physiology; Environmental Physiology Including Field Rsch. in Several Areas in the World Where Climatic Extremes Exist.

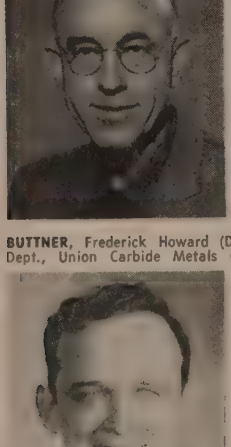
BUSS, Edward George (Ph.D.), Assoc. Prof., Pa. St. Univ., University Park, Pa. Home Add.: 1420 So. Garner, State College, Pa. GENETICS. b. Concordia, Kans., Aug. 28, 1921. s. George (dec.) and Kathryn (Luginsland) B. Edn.: B.S., Kans. St. Coll., 1943; M.S., Purdue Univ., 1949; Ph.D., ibid., 1956. m. Dorothy Ruth Arvidson of Lafayette, Ind., May 7, 1949. d. Robert and Ollie Arvidson. c.: Ellen Ruth; Norman Edward. Exp.: Asst. Prof., Colo. A. and M. Coll., 1949-50; Asst. Prof. and Head of Poultry Husbandry Dept., ibid., 1950-55; Assoc. Prof., Pa. St. Univ., 1956—. Mem.: Poultry Sci. Assn.; A.A.U.P.; Am. Soc. of Animal Science; A.A.A.S.; Genetics Soc. of Am.; Am. Genetic Assn.; Am. Soc. of Zoologists. Contbr. to: Papers published in Poultry Sci. and J. Heredity. War Rec.: R.O.T.C., 1939-43, Officer, U.S.A., 1943-46. Areas of Rsch.: Inheritance of Feather Colors; Nature of Altered Metabolism Caused by Mutant Genes; Pleiotropic Effects of Genes; Causes of Infertility; Parthogenesis in Turkeys.

BUTLER, Adron Bleska (Mr.), Sci. Tchr., Bloom Jr. High Schl., Cincinnati, Ohio. Home Add.: 3985 Warwick Ave., Cincinnati 29, Ohio. CHEMISTRY; BIOLOGY.



b. Rome, Ga., May 22, 1934. s. Adron and Bessie F. (Brown) Butler Crawford. Edn.: B.S., Hampton Inst., Univ., 1956; M.E., Univ. of Cincinnati, 1962. m. Peggy Joyner, Dec. 21, 1957. c.: Adron Bleska, II. Exp.: Sci. Tchr., Pender Co. Trng. Schl., Rocky Point, N. C., 1958-59; Sci. Tchr., Beach Jr. High Schl., Savannah, Ga., 1959-60; Sci. Tchr., Bloom Jr. Hi Schl., 1960—. Hon. Pos.: Chmn., Inter-Schl. Coun. Sci. Fair, Savannah, Ga.; Sponsor—Future Scientists of Am., Chapter #377. Mem.: Natl. Sci. Tchrs. Assn., Life Mem.; A.A.A.S.; N.E.A.; Ohio Edn. Assn.; Southwestern Ohio Tchrs. Assn.; Ohio Sci. Edn. Assn.; Cincinnati Tchrs. Assn.; Schl. Masters Club of Greater Cincinnati, Cincinnati Jr. Chamber of Commerce; Catholic Interacial Coun. Serv. Rec.: U. S. Army, 1956-58. Areas of Rsch.: Chemistry; Biology and Physical Sciences.

BUTLER, John Lowell (Mr.), Rte. No. 3, Box 995, Gresham, Ore. ASTRONOMY AND GEOLOGY. b. Fargo, N. Dak., Sept. 6, 1896.



s. Robert Butler and Sarah Ethel (Lowell) Butler Macklin. Edn.: B.A., Pacific Union Coll., 1922. Exp.: Hd. of Voice Dept., S. Jr. Coll., Ooltewah, Tenn., 1923-25; Singing Evangelist and Reporter in Many States, 1920-26; Rsch. and Astronomer. 1926—. Mem.: A.A.A.S.; Astronomical Soc. of the Pacific; Astronomical League; Portland Astronomical Soc.; Am. Scientific Affiliation. Contbr. to: Popular Astronomy; Bibliotheca Sacra; The Forum; The Naturalist; Jour. Am. Scientific Affiliation; etc. Areas of Rsch.: Solar Astronomy; Lunar Astronomy; Geology; Paleontology; Photoperiodism; Biblical Research.

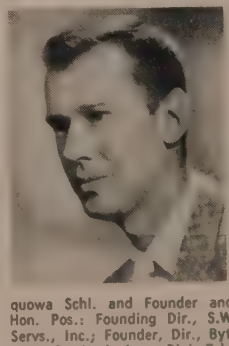
BUTTNER, Frederick Howard (D.Sc.), Mgr., New Product Engrng. Dept., Union Carbide Metals Co., Niagara Falls, N. Y. Home Add.: 1229 Staley Rd., Grand Island, N. Y. PHYSICAL METALLURGY. b. Cleveland, Ohio, Oct. 11, 1920. s. H. B. and Mary Ellen (McLean) B. Edn.: B.S., Mich. St. Coll., 1944; M.S., Mass. Inst. of Tech., 1949; D.Sc., ibid., 1951. m. Phebe L. Powell, 1957. c.: Charles Howard; Janet Ellen. Exp.: Asst. Prof., Chemistry and Math., Muskegon Community Coll., 1946-47; Instr., Rsch. Assoc., Mass. Inst. of Technol., 1947-51; Staff Metallurgist, Natl. Rsch. Coun., Natl. Acad. of Scis., Washington, D. C., 1951-53; Mgr., New Product Engrng., Union Carbide Metals, Div. of U.C.C., Niagara Falls, N. Y., 1953—. Hon. Pos.: Chmn., Committee on Electrolyntic Processes, A.I.M.M.E.

Mem.: Sigma Xi; Tau Beta Pi; Phi Theta Kappa; A.S.M.; A.M.A.; A.X.E.; A.A.S.R.; A.F.A.M.; Kiwanis. Contbr. to: Trans. A.I.M.E.; Jour. Phys. Chemistry; Am. Foundryman. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Administration of Economico-Technical Rsch. and Program Evaluation As It Pertains to Finding, Screening, Choosing and Monitoring New Product Research and Development Projects. Seminar Lctr. and Workshop Leader in a Number of A.M.A. Programs in this Field.

BUTLER, Byron Clinton (M.D.), Dir., Butler Rsch. Found. and Biophysics Lab., Box 447, Cane Creek, Ariz. Home Add.: 4102 E. Palo Verde Dr., Phoenix, Ariz. BIOPHYSICS. b. Carroll, Ia., Aug. 10, 1918. s. Clinton J. and Blanche (Prall) B. Edn.: M.D., Columbia Coll. of Phys. and Surgeons, 1943; Med. Sc.D., Columbia Univ., 1953. m. Elizabeth Ann, 1958. c.: Marilyn; John; Barbara; Denise. Exp.: Instr., Columbia Coll., N. City, 1941-42; Instr., ibid., 1950-53; Dir., Butler Rsch. Found., 1959—. Mem.: Am. Soc. for Study of Sterility; Fellow, A.A.A.S.; Phi Eta Sigma. Contbr. to: Am. Jour. Obs. and Gyn.; Cancer Areas of Rsch.: Hypnosis in Relation to Relief of Pain in Cancer; Fibrinolysin Enzyme System in Relation to Clotting Defects; Bacterial Vaginal Flora; Magnetic Field Inhibitation of Cancer Cells.

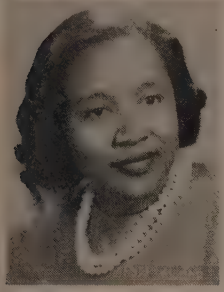
BUTTON, Edward Francis (Mr.), Landscape Engr., Conn. State Highway Dept., Highway Testing Lab., Portland, Conn. Home Add.: 352 Barbara Rd., Middletown, Conn. AGRONOMY (TURF AND SOIL FERTILITY); DEVELOPMENT OF MATERIALS AND METHODS FOR ROADSIDE DEVELOPMENT. b. Thompsonville, Conn., Feb. 24, 1923. s. Edward W. and Louise A. (Wombacher) B. Edn.: B.S., Univ. of Conn., 1950; M.S., ibid., 1956. m. Kathryn E. Hales, Aug 23, 1952. c.: Terry Francis; Keith and Karl (twins); Dale Karen; Ann; Dawn Frances. Exp.: Undergrad., Univ. of Conn., 1946-50; Work Unit Conservationist, U.S.D.A., 1950-53; Rsch. Asst., Agron. Dept., Univ. of Conn., 1954-56; Landscape Engr., (Agronomist), Roadside Dev., Conn. State Hwy. Dept., 1956—. Mem.: Am. Assn. Adv. of Sci.; Am. Soc. of Agronomy; Sigma Xi; Alpha Zeta; Soil Conservation Soc. of Am. Mem., Northeastern Weed Control Conference; Holy Name Soc. Contbr. to: Agronomy Jour.; Am. Potato Jour.; Proceedings Northeastern Weed Control Conference; Conn. Highways. Serv. Rec.: U. S. Army Air Corps, 1943-46. Gen. Int.: Consulting Agronomist under the firm name, CONAGRO to analyze specific situation to determine the need for fertilization, erosion control measures, drainage and slope stablization, etc. Areas of Rsch.: Foliar Application of Urea as Nitrogen Source; Effect of Gibberellins on Grass Seed; Developmental work with Rates and Management of Maleic Hydrazide for suppression of highway Turf growth (Chemical mowing); Studies with Herbicides for Soil Sterilization; Current: Developmental work with dispersed Polyethelenes, Resins, Sodium Silicate, Latex, Wood Pulp and Bran as erosion retardants and chemical mulches.

BYINGTON, Fred D. (Mr.), Chmn., Sci. Dept., Uhquowa Schl., Fairfield, Conn. and Pres. and Founder, Byington Coll., Easton, Conn. Home Add.: Old Sow Rd., Easton, Conn. BIOLOGY; PHYSIOLOGY. b. Oakland, Calif., May 2, 1930. s. H. D. and Zoe (Burdick) B. Edn.: B.A., Pomona Coll., 1952; M.S., Univ. of Southern Calif., 1956; M.Ed., ibid., 1956. m. Jennifer Grant, Aug. 1, 1955 (dec.). Exp.: Tchng. Assoc., Univ. of So. Calif., 1954-55; Sec. Sci. Instr., Chadwick Schl., Rolling Hills, Calif., 1955-57; Founder and Dir., Yokaya Prep. Schl. and Jr. Coll., Redland, Calif., 1956-58; Sec. Instr., Supvr., Biol., Bd. of Edn., Mt. Vernon, N. Y., 1958-59; Instr. Hd. Dept. of Biol., Englewood Schl. for Boys, N. J., 1959-60; Prof., Fairleigh-Dickinson Univ., 1960; Chmn., Sci. Dept. Uhquowa Schl. and Founder and Pres. of Byington Coll., 1962-. Hon. Pos.: Founding Dir., S.W. Fedn. of Prep. Schls. and Edn. Servs., Inc.; Founder, Dir., Byton Hall Schl., N. J., 1960. Mem.: A.A.A.S.; Natl. Assn. Biol. Tchrs.; Natl. Sci. Tchrs. Assn.; N.E.A.; A.A.S.A.; N.A.S.S.P.; A.S.C.D.; Phi Delta Kappa; A.I.B.S.; Western Soc. Naturalists; Alpha Tau Omega; Alpha Phi Omega; Lion. Contbr. to: Am. Biol. Tchr.; Sci. Tchr.; N.E.A. Jour. Edn. Leaders. Areas of Rsch.: Parasitology, Marine Invertebrates and Ecology; Endocrine Physiology; Vertebrate Physiology; Plant Physiology; Secd. Sci. Curriculum and teaching, lab. techniques, Advanced placement.



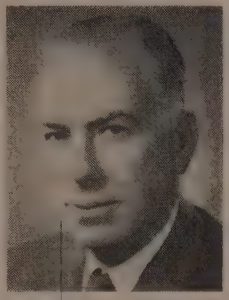
BYLER, William H. (Ph.D.), Vice-Pres., U. S. Radium Corp., Mt. Kemble Ave., Morristown, N. J. CHEMISTRY. b. Prairie Home, Mo., Dec. 16, 1904. s. William H. and Lutetia (Mills) B. Edn.: B.S., Central Mo. State Coll., 1927; A.B., ibid., 1927; M.A., Univ. of Mo., 1931; Ph.D., ibid., 1937. m. Thelma Tyson, Aug. 24, 1929. Exp.: Prof. of Chem. and Phys., Hannibal-LaGrange Coll., 1931-35; Grad. Asst. in Chem., Univ. of Mo., 1935-37; Rsch. Chem., General Elec. Co., 1937-38; Asst. Biochemist, N. J. State Dept. of Health, 1938-39; Dir. of Rsch., U. S. Radium Corp., 1939-50; Vice-Pres., ibid., 1950—. Mem.: Amer. Chem. Soc.; Amer. Electrochem. Soc.; Amer. Inst. of Chemists; A.A.A.S.; Sigma Xi; Kappa Delta Pi. Contbr. to: Jour. of Am. Chem. Soc.; Rev. Sci. Inst.; Jour. Phys. Chem.; Jour. Optical Soc. Am.; Jour. Am. Electrochem. Soc. Special Int.: Luminescence.

BYRD, Flossie Marian (Ph.D.), Tchr., Educator and Assoc. Prof. of Home Econs., Prairie View A. and M. Coll., Prairie View, Tex. Home Add.: Route 2, Box 261, Monticello, Fla. SOCIAL SCIENCE. b. Sarasota, Fla., Aug. 8, 1927. d. John and Lizzie (Smith) B. Edn.: B.S., Fla. A. and M. Univ., 1948; M.Ed., Pa. St. Univ., 1954; Ph.D., Cornell Univ. Exp.: Tchr., Home Economics, Quinn High Schl., Apalachicola, Fla., 1948-51; Tchr., Home Econs., Douglas H. Schl., Live Oak, Fla., 1951-53; Tchr. Educator, Home Econs. Edn., Fla. A. and M. Univ., Tallahassee, Fla., 1954-59; Tchr., Educator, and Assoc. Prof. of Home Econs., Prairie View A. and M. Coll., 1962—. Mem.: Am. Home Econs. Assn.; N. Y. St. Home Econs. Assn.; Am. Museum of Nat. History; Pi Lambda Theta; Alpha Kappa Mu; Delta Sigma Theta. Contbr. to: Jour. of Home Econs. Gen. Int.: Recipient of Prentice-Hall Fellowship, 1961-62; Recipient of Anna Cora Smith Scholarship, 1961-62, Summer Rsch. Fellowship, Cornell Univ. Areas of Rsch.: Home Economics Education, Child Development, and Educational Psychology with emphasis on concept formation in early adolescence.



BYRNES, Agnes Mary Hadden (Ph.D.), Prof. Emer., Hunter Coll. of City of New York, N. Y. 21, N. Y. Home Add.: San Carlos, 150 East 50th St., New York 22, N. Y. SOCIAL SCIENCE (Economics Sociology Anthropology). b. Chicago, Ill., Sept. 10, 1879. d. Thomas A. and Margaret Houston (Hadden) B. Edn.: A.B., Northwestern Univ., 1915; A.M., Columbia Univ., 1916; Ph.D., Bryn Mawr Coll., 1920. Exp.: Statistical Analyst, War Trade Bd., 1918-19; Asst. Prof., Carnegie Inst. of Tech., 1919-26; Child Welfare Studies, U. S. Children's Bureau, 1926-27; Asst. Prof., Hunter Coll., 1928-40; Assoc. Prof., ibid., 1940-50; Prof., ibid., 1950-51; Chmn., Pre-Social Work Specialization, ibid., 1940-50; Dept. Sociology and Anthropology, Ibid., 1943-50; Prof. Emer., ibid., 1951—. Hon. Pos.: Chmn., Dept. of Sociol. and Anthropology, Hunter Coll.; Bd. of Dirs., N. Y. Branch Amer. Assn. of Univ. Women; Delegate; Internatl. Fdn. of Univ. Women, London, 1953; Comm., Bryn Mawr Grad. Dept. of Social Work and Social Rsch. Development Fund, 1957—; Adv. Bd., Hammond Museum, North Salem, N. Y., 1958—; Mem. of Natl. Council of Women of U. S. Metropolitan Museum of Art. Mem.: Am. Assn. of Univ. Women; Phi Beta Kappa. Contbr. to: Social Abstracts, 1929-32, Columbia Univ.; Industrial Home Work in Pa.; Dept. of Labor and Industry, 1920, pp. 189. Gen. Int.: Organized Dept. of Sociol. and Anthropology, Hunter Coll., 1943; Organized Pre-Social Work Specialization, Hunter Coll., 1940. Areas of Rsch.: Social Work; Corporate Finance; Statistics; Social Legislation.

BYRD, Oliver Erasmus (M.D.), Exec. Hd., Dept. of Health Edn., Stanford Univ., Stanford, Calif. Home Add.: 1533 Madrono Ave., Palo Alto, Calif. SCHOOL HEALTH EDUCATION. b. Little Rock, Ark., Feb. 25, 1906. s. Erasmus A. and Clara (Alsbury) B. Edn.: A.B., Stanford Univ., 1929; M.A., ibid., 1933; Ed.D., ibid., 1940; M.D., Univ. of Calif. Schl. of Med., 1947. m. Jennie Sonnichsen, Dec. 21, 1930. c.: Beverly Joan; Thomas Russell. Exp.: Tchr., Harvard Milit. Schl., Los Angeles, 1930-31; Instr., San Mateo Jr. Coll., 1932-37; Asst. Prof., Assoc. Prof., Stanford Univ., 1937-47; Prof. of Health Edn., Exec. Hd., Dept. Health Edn., ibid., 1947—. Hon. Pos.: Hall of Fame, Natl. Jr. Coll. Athletic Assn.; Founder and First Pres., Natl. Jr. Coll. Athletic Asst. Mem.: Am. Assn. Adv. Sci.; Am. Pub. Health Assn.; Am. Coll. Sports Med.; Am. Med. Assn.; Am. Acad. Phys. Edn.; Commonwealth Club; and others. Author: Health Yearbooks, 15 Vols., 1943-58; Nutrition Sourcebook, 1955; School Health Sourcebook, 1955; Family Life Sourcebook, 1956; Textbook of Coll. Hygiene, 1953, 1957, 1961; Health, 1961; New Road to Health Series, 1960. Area of Rsch.: Research in School Health.



C

CABRAL, Concetta Bellini (Ph.D.), Assoc. Prof., Biol., Adelphi Coll., Garden City, N. Y. Home Add.: 77 Wellington Rd., So., W. Hempstead, N. Y. MICROBIOLOGY AND BACTERIOLOGY. b. Bklyn., N. Y., May 10, 1922. d. Pietro Louis Bellini and Elvira (Spagnuolo) B. Edn.: B.A., Bklyn. Coll., 1944; M.A., Fordham Univ., 1946; Ph.D., ibid., 1949. m. Oliver Andrew Cabral, Dec. 29, 1951. c.: Louise Anne; Marie Constance. Exp.: Instr., Biol., St. Francis Coll., Loretto, Pa., 1949-50; Asst. Prof., Manhattanville Coll. of the Sacred Heart, Manhattan, N. Y., 1950-51; Prof., Carroll Coll., Helena, Mont., 1951-52; Assoc. Prof., Biol., Adelphi Coll., 1952—. Hon. Pos.: Rsch. in Bot. at Mich. Univ., Summer, 1950. Mem.: N. Y. Acad. of Sci.; Am. Assn. Adv. Sci.; Natl. Assn. of Biol. Tchrs.; Am. Soc. for Microbiol.; N. Y. City Br. of Am. Soc. of Microbiol.; Am. Soc. of Med. Technolts.; Am. Forestry Assn.; Am. Assn. of Univ. Profs.; Natl. Sci. Tchrs. Assn.; Eta Sigma Phi; Delta Tau Alpha; Beta Beta Beta. Contbr. to: Classical Jour.; Jour. of Heredity. Areas of Rsch.: Bacterial Genetics; Applied Microbiology; Translations from Foreign Languages to English.

CACIOPPO, Anthony Joseph, Mgr., Life Scis. Rsch., Goodyear Aircraft Corp., Akron, Ohio. Home Add.: 2600 Overbrook Rd., Cuyahoga Falls, Ohio. ENGINEERING PSYCHOLOGY. b. Akron, Ohio, Oct. 13, 1923. s. Carlo and Mary (Almerico) C. Edn.: B.S., Kent State Univ., 1948; M.A., ibid., 1949; Universita di Roma, Italy, 1951-52; Ph.D., State Univ. of Iowa, 1954. m. Wilma Jean, Sept., 1949. c.: Diana; Toni-Mari; Gian Marco. Exp.: Process Engr., Ravenna Ordnance Plant, 1952-53; Hd., Biomechanical Engrng., Goodyear Aircraft, 1953—; Rsch. Mgr., Life Science Dept., Goodyear Aircraft Corp., 1961—. Hon. Pos.: Consult., Office of Electronics and Office of Rsch., Dept. of Defense, 1961; Inst. for Defense Analysis, 1961; Editorial Board, IRE Transactions on Human Factors in Electronics, 1961; Mem., N.A.S.-N.R.C.; Life Sci. Comm., 1958. Mem.: Am. Psychol. Assn.; Soc. of Engrng. Psychologists; Human Factors Soc. of Am.; A.A.A.S.; Ohio Psychol. Assn.; Am. Acad. of Polit. and Soc. Sci.; Psi Chi; Alpha Kappa Delta. Contbr. to: Jour. of Exp. Psychol.; A.S.M.E.; Tech. Papers. Serv. Record: U.S.A.F., 1942-45. Gen. Int.: Fulbright Schlr., 1951-52, Rsch. Fellowship, State Univ. of Ia., 1953-54; Logical Behavior Models. Areas of Rsch.: Engrng. Psychology; Social Psychology.

CADY, George Johnson, Prof. of Econs., Univ. of Redlands, Redlands, Calif. Home Add.: 209 E. Sunset Dr., Redlands, Calif. ECONOMICS. b. Boonville, Ind., Aug. 13, 1899. s. John Franklin and Katie (Johnson) C. Edn.: A.B., Franklin Coll., 1922; A.M., Northwestern Univ., 1926; Ph.D., Northwestern Univ., 1929. m. Elizabeth Sinclair, 1934. c.: Kate Sinclair; Barbara Ellen. Exp.: Instr., Asst. Prof., Assoc. Prof., Northwestern Univ., 1929-49; Prof. of Econ., Univ. of Redlands, 1949-62; Visiting Prof. of Econs., Univ. of Calif., 1957-58. Hon. Pos.: Bd. of Trustees, Exec. Bd., Western Econs. Assn. Mem.: Am. Econ. Assn.; Western Econ. Assn.; A.A.U.P.; Sigma Alpha Epsilon; Alpha Soc. Author: Econs. of Bus. Enterprise, 1950; Entrepreneurial Costs and Price, 1942. Contbr. to: Jour. of Polit. Economy; Sou. Econ. Jour.; Proc. of Western Assn. War Record: W. W. I. Areas of Rsch.: Price Theory; Monetary Theory; Economics of Multiple Production.

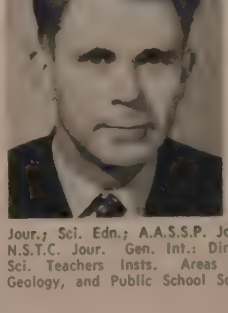
CAIN, Robert Mitchel (D.Med.Sc.), Bacteriologist, Preventive Med. Unit, Naples, Italy. Home Add.: Royal Hotel 38, Via Partenape, Naples, Italy. PUBLIC HEALTH BACTERIOLOGY AND SEROLOGY. b. Charlotte, N. C., March 22, 1922. s. Robert Lee and Marguerite Antoinette (Bondurant) C. Edn.: B.Sc., Ala. Poly. Inst., 1943; B.Sc., ibid., 1949; M.Sc., McGill Univ., 1951; D.Med.Sc., Univ. of Tokyo, 1958; Certificate in French, Univ. of Montreal, 1949. m. Delphine Thomas, Dec. 17, 1943. c.: Toni Margo; Robert William. Exp.: Rsch. Engr., The Texas Co., Port Arthur, Texas, 1943-45; Bacteriologist, Naval Med. Schl., Bethesda, Md., 1951-52; Rsch. Bacteriologist, Prev. Med. Unit 4, Great Lakes, Ill., 1952-53; Officer in Chg., Bact. Dept., Naval Med. Schl., Bethesda, Md., 1953-54; Serol. Rsch., 1954-56; Pub. Health Officer, PMU 8, Yokosuka, Japan, 1956-57; Bacteriologist, and Asst. Officer in Charge, PMU 5, San Diego, Calif., 1957-62; Bacteriologist, Preventive Med. Unit, Naples, Italy, 1962—. Mem.: Royal Soc. of Tropical Medicine and Hygiene; Canadian Soc. of Microbiologists; Canadian Public Health Assn.; Am. Public Health Assn.; Am. Soc. for Microbiol.; A.A.A.S.; N. Y. Acad. of Scis.; Natl. Assn of Doctors in the U. S. Contbr. to: Bacteriol. Revs.; Canadian Jour. of Public Health; Japanese Jour. of Experimental Med.; U. S. Armed Forces Med. Jour.; Modern Sanitation. Serv. Rec.: U. S. Navy, 1946-48; U. S. Naval Reserves, 1948-51; Active U. S. Navy, 1951—; present rank of Lt. Commander. Gen. Int.: Judge in Microbiol. Div. of Greater San Diego Sci. Fair; Guest Lectr. in Sanitation, Boston Univ. Schl. of Med., May, 1954. Areas of Rsch.: The Serology of Syphilis. The Pathogenic Bacteria encountered in mass feeding and in the cleansing of eating utensils used in conjunction with mass feeding. General contamination levels in hospital environments, with special reference to Staphylococcus aureus. Straptococcal seeding and epidemic control methods in "closed" groups.

CAIN, Cornelius K., Dir. Chem. Rsch., McNeil Labs., Inc., Camp Hill Rd., Fort Washington, Pa. Home Add.: 11 Weiss Ave., Flourtown, Pa. ORGANIC CHEMISTRY. b. Owensboro, Ky., Sept. 10, 1910. s. Earl G. and Melvina (Kennady) C. Edn.: B.S., Univ. of Ky., 1932; M.S., Univ. of Mass., 1937; Ph.D., Johns Hopkins Univ., 1939. m. Ann H. Van Hoose, 1943. c.: Cornelius; Penelope Mason. Exp.: Rsch. Asst., Univ. of Ill., 1939-41; Instr., St. Louis Univ., 1941-44; Asst. Prof., Corneli Univ., 1944-50; Hd., Organic Chem. Dept., McNeill Labs., Phila Pa., 1950-60; Dir., Chem. Rsch., McNeil Labs., Inc., 1960—. Mem.: A.C.S.; A.A.A.S. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem.; Jour. of Med. Chem. Areas of Rsch.: Medicinal Chem.

CALABRO, John James (M.D.), Asst. Prof. of Med., Seton Hall Coll. of Med., Jersey City, N. J. Home Add.: 2500 Hudson Blvd., Jersey City, N. J. INTERNAL MEDICINE — RHEUMATOLOGY. b. Buffalo, N. Y., May 18, 1924. s. Lawrence and Theresa (Ferrara) C. Edn.: B.S., Canisius Coll., 1947; M.D., Georgetown Univ. Schl. of Med., 1952. Exp.: Chief Med. Res., Boston City Hosp., Harvard Med. Schl., Boston, Mass., 1955-56; Chief Med. Res., Jersey City Med. Center, Jersey City, N. J., 1956-57; Asst. Prof. of Med., Seton Hall Coll. of Med., 1958—; Dir., Div. of Rheum., Jersey City Med. Center, 1958—. Hon. Pos.: Chmn., Rheum. Sec., Med. Soc. of N. J.; Prog. Chmn., N. J. Rheum. Assn.; Postgrad. Edn. Comm., Am. Rheumatism Assn. Mem.: Horseshoe Club of England. Contbr. to: G.P.; Arthritis and Rheumat.; Jour. Am. Med. Assn.; Am. Jour. Med.; Postgrad. Med.; Arch. Interam. Rheum. Serv. Rec.: U.S.N.R., 1944-46. Gen. Int.: Established First Arthritis Juvenile Treatment Center Under Natl. Found., Begun at Seton Hall Coll. of Med., Feb., 1960. Areas of Rsch.: Rheumatology Rsch.

CALAME, Gerald Paul (Ph.D.), Asst. Prof., Rensselaer Polytechnic Inst., Troy, N. Y. Home Add.: 2176B Daisy Lane, Schenectady 9, N. Y. APPLIED MATHEMATICS AND NUCLEAR ENGINEERING. b. Lelocle, Switzerland, Nov. 27, 1930. s. Paul Arnold and Jessie (Beesley) C. Edn.: B.A., Coll. of Wooster, 1953; M.A., Harvard Univ., 1955; Ph.D., ibid., 1960. m. Jocelyn Sullivan, July 26, 1958. Exp.: Tchng. Fellow, Harvard Univ., 1957-59; Theoretical Physicist, Knolls Atomic Power Lab., Schenectady, N. Y., 1959-61; Asst. Prof., Rensselaer Polytechnic Inst., 1961—. Mem.: Am. Physical Soc.; Am. Nuclear Soc.; Assn. for Computing Machinery; A.A.A.S.; Kappa Mu Epsilon; Sigma Xi. Contbr. to: Nuclear Sci. and Engrng. Areas of Rsch.: Neutron Transport Theory, Reactor Physics, Engrng. Applications of Variational Methods, Numerical Methods in Reactor Physics.

CALDWELL, Loren Thomas (Ed.D.), Hd. Dept. of Earth Sci., Northern Ill. Univ., De Kalb, Ill. Home Add.: 580 Normal Rd., De Kalb, Ill. GEOLOGY. b. Fairmount, Ind., Aug. 17, 1902. s. John W. and Nettie J. (Moon) C. Edn.: B.S., Earlham Coll., 1925; M.S., Univ. of Chicago, 1936; Ed.D., Ind. Univ., 1952. m. Constance Waterman, 1929. Exp.: Sci. Tchr., Chicago H. S., Chicago, Ill., 1928; Assoc. Prof., to Prof. and Chmn., Earth Sci. Dept., Northern Ill. Univ., 1929—. Hon. Pos.: Consultant for Minn. State Dept. of Edn. in Pub. Schl.; Consultant, Curriculum Comm., Natl. Assn. for Rsch. in Sci. Teaching. Mem.: A.A.S.A.; I.E.A.; N.E.A.; N.S.T.A.; N.A.R.S.T.; A.A.C.T.E.; A.A.A.S. Contbr. to: Bull. of the Am. Assn. of Petroleum Geologists; Sedimentary Petrology; Ill. Edn. Jour.; H. S. Jour.; Sci. Edn.; A.A.S.S.P. Jour.; The Bulletin; The Sci. Tchr.; N.S.T.C. Jour. Gen. Int.: Dir. of Two N.S.F. in Service Earth Sci. Teachers Insts. Areas of Rsch.: Sedimentation, Glacial Geology, and Public School Science Curriculum K-12 Grades.



CALL, Tracey Gillette (Ph.D.), Dept. of Biol. Sciences, Calif. State Polytech. Coll., San Luis Obispo, Calif. PHYSIOLOGY, PHARMACOLOGY, PHARMACOGNOSY. b. Afton, Wyo., May 31, 1915. s. Gillette J. and Louisa (Shepherd) C. Edn.: B.S. Pharm., Idaho St. Coll., 1940; M.S., Univ. of Md., 1944; A.B., Brigham Young Univ., 1947; Ph.D., Univ. of Minn., 1956. m. Viola Clifton of Olympia, Wash., Jan. 27, 1941. d. Lester and Ethel Clifton. c.: Cecelia Beth; Anita Susanne; Cynthia Joy; Julia Elaine. Exp.: Asst. Prof., Pharmacognosy and Pharmacol., Duquesne Univ., 1945-46; Asst. Prof., Pharmacognosy, Univ. of Wyo., 1947-49; Assoc. Prof., Mont. State Univ., 1949-57; Pharmacologist, Rsch. Dept., Sunkist Growers, Corona, Calif., 1957-60; Pharmacologist, Consult., 1960-62; Dept. Biol. Sci., Calif. State Polytech. Coll., 1962—. Mem.: Phi Sigma; Rho Chi; Am. Pharm. Assn.; A.A.A.S.; Am. Soc. Pharmacognosy; Soc. Econ. Bot.; Phi Delta Chi. Travel: Europe; Mex. Gen. Int.: Rsch. into Constituents and Pharmacol. Actions of Plant Drugs. Hobbies: Botanical Collections; Hunting; Fishing; Photography; Gardening. Areas of Rsch.: Occurrence, Isolation and Pharmacological Activity of Coumarin Derivatives and Flavonoids from Plants; Exptl. hypertension, drugs affecting nervous system and neurohormones; Medical Botany, esp. of Umbelliferae, Leguminosae and Rutacae, History of Plant Drug Usage; Medicnal Plants Used by Am. Indians; Poisonous Plants.

CALLAHAN, John Gualbert Paul (Mr.), Chief, Evaluation Office; Deputy Commander for Technology, Aero. Systems Div., Wright-Patterson A.F. Base, Ohio. Home Add.: 661 Garden Rd., Dayton 19, Ohio. AERONAUTICAL RESEARCH AND DEVELOPMENT. b. Brooklyn, N. Y., July 12, 1910. s. James Christopher and Lillian Irene (Fitzpatrick) C. Edn.: B.Sc., (Cum Laude), New York Univ., 1931; Aero. Engr., N. Y. Univ., 1932; Grad., Industrial Coll. of the Armed Forces, 1957. m. Marie Loughlin, Oct. 10, 1936. c.: Clare; Aileen; Annice; John Loughlin. Exp.: Aeronautical Designer, Sikorsky Aviation Corp., Bridgeport, Conn., 1929-30; Aeronautical Engr., Chance Vought Corp., East Hartford, Conn., 1932-35; Project Engr. Res. and Dlv., Materiel Div., U. S. Army Air Corps, Wright Field, Ohio, 1935-42; Asst. Chf., Equipment Lab. Air Materiel Command, U.S.A.F., Wright Field, Ohio, 1946-51; Asst. Deputy Dir. of Res. and Dev., Ministry of Supply H.M. Gov., London, Eng., 1951-54; Chf., Instrument and Navigation Br., Combat Components Div., DCS/Dev., Washington, D. C., 1954-55; Asst. Chf., Dev. Operations Div., DCS/Plans and Operations, Wright-Patterson A.F.B., Ohio, 1955-56; Chf. Engrng. Serv. Div., ibid., 1957-60; Chf., Evaluation Office, ibid., 1960—. Mem.: Tau Beta Pi; Iota Alpha; Assoc. Fellow, Royal Aeronautical Soc., (London, England); Assoc. Fellow, Inst. of the Aeronautical Scis.; Mem., Inst. of Navigation (London, England); Sr. Mem., Inst. of Radio Engrs.; Profl. Engr., Registered by the State of Ohio; Mem., Am. Assn. for the Adv. of Sci. Serv. Rec.: U.S.A.F., 1942-46. Areas of Rsch.: Management and Evaluation of Applied Research.

CALLAHAN, Mary Vincent (Sister), S.S.N.D., Assoc. Prof. of Chem., Coll. of Notre Dame of Md., Baltimore, Md. Home Add.: 4701 N. Charles St., Balt. 10, Md. CHEMISTRY. b. Bridgeport, Conn., July 2, 1922. d. Vincent T. and Helen (Driscoll) C. Edn.: A.B., Coll. of Notre Dame of Md., 1943; M.S., The Catholic Univ. of Am., 1945. Exp.: Tchr., Notre Dame H. Schl., Baltimore, Md., 1944-47; Instr., Coll. of Notre Dame, Baltimore, Md., 1947-50; Tchr., St. Saviour H. Schl., Brooklyn, N. Y., 1950-54; Assoc. Prof., Coll. of Notre Dame., 1954—. Mem.: Delta Epsilon Sigma; Kappa Gamma Pi; Am. Chem. Soc. Gen. Int.: Winthrop Fellowship at Catholic Univ., 1943-44; Natl. Sci. Found. Faculty Fellowship at Catholic Univ., 1959-60, 1961-62. Areas of Rsch.: Physical Chemistry, Infra-Red Spectroscopy.

CALVIN, Allen David (Ph.D.), Dir., Behavioral Res. Labs., 780 Welch Rd., Stanford Professional Center, Palo Alto, Calif. Home Add.: 1177 Portola Rd., Portola Valley, Calif. EXPERIMENTAL PSYCHOLOGY. b. St. Paul, Minn., Feb. 27, 1928. s. Carl and Zelda (Engelson) C. Edn.: B.A., Univ. of Minn., 1950; M.A., Univ. of Tex., 1951; Ph.D., ibid., 1953. m. Dorothy Ver Strate, Oct. 5, 1953. c.: Jamie; Kris; David. Exp.: Instr., Mich. State Univ., East Lansing, Mich., 1953-55; Asst. to Assoc. Prof., Hollins Coll., Hollins Coll., Va., 1955-61; Dir., Britannica Center for Studies in Learning and Motivation, Palo Alto, Calif., 1961; Dir., Behavioral Res. Labs., Palo Alto, Calif., 1962—. Mem.: Am. Psychol. Assn.; Midwestern Psychol. Assn.; A.A.A.S.; Sigma Xi; N. Y. Acad. of Sci.; Psi Chi; A.A.U.P. Co-Author: Current Studies in Psychology, 1958; Psychology, 1961. Contbr. to: Am. Jour. of Psychol.; Jour. Abnormal Soc.; Psychol. Jour. Exp. Psychol.; Jour. Comp. Physiol. Psychol.; Psychol. Bull.; Brit. Jour. Psychol.; Jour. Counseling Psychol.; Jour. Edn. Psychol.; Jour. Genet. Psychol.; Jour. Edn. Res.; Jour. Soc. Psychol.; Applied Psychol. Jour. Serv. Rec.: U.S.N., 1946-47. Areas of Rsch.: Learning and Perception.

CALLAWAY, Richard Joseph (Mr.), Oceanographer, U. S. Pub. Health. Serv., 570 Pittock Block, Portland 5, Ore. Home Add.: 7054 S.E. 35th Ave., Portland 2, Ore. PHYSICAL OCEANOGRAPHER. b. Wash., D. C., Oct. 31, 1928. s. Steven Ward and Catherine (Nagle) C. Edn.: B.S., Univ. of Wash., 1956; M.S., Ore. State Univ., 1959. m. Helen Ingraham, 1956. c.: Kathleen; Steven. Exp.: Oceanog., U.S.F.W.S., Honolulu, Hawaii, 1956-58; Rsch. Asst., Ore. Sta. Univ., Corvallis, Ore., 1958-59; Oceanographer, U.S.F.W.S., Seattle, Wash., 1959-60; Oceanographer, U. S. Pub. Hlth. Serv., 1960—. Mem.: Am. Soc. Limnol. and Oceanography; Am. Geophys. Union; Marine Biol. Assn. of India. Serv. Rec.: U. S. Navy, 1948-52. Areas of Rsch.: Physical Oceanography, Pollution of Estuarine and Coastal Waters.

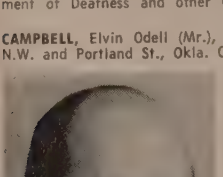
CAMBEL, Ali Bulent (Ph.D.), Walter P. Murphy Prof., Chmn., Mechanical Engrng. Dept., Northwestern Univ., Technological Inst., Evanston, Ill. Home Add.: 2027 Orrington Ave., Evanston, Ill. GAS DYNAMICS, AEROTHERMOCHEMISTRY, TRANSPORT PHENOMENA AND MAGNETOFLUIDMECHANICS. b. Merano, Italy, Apr. 9, 1923. s. H. C. and R. (Hakki) C. Edn.: B.S., Robert Coll., Istanbul, Turkey, 1942; M.S., Calif. Inst. of Technol., 1946; Ph.D., St. Univ. of Ia., 1950. m. Marion de Paar, Dec. 20, 1946. c.: Metin; Emel; Leyla; Sarah. Exp.: Instr. of Mechanical Engrng., St. Univ. of Ia., 1947-50; Asst. Prof., ibid., 1950-53; Assoc. Prof., Northwestern Univ., 1953-56; Prof., ibid., 1956-61; Walter P. Murphy Prof., ibid., 1961; Chmn., Mechanical Engrng. Dept., ibid., 1957—. Mem.: Am. Soc. of Mechanical Engrs.; Am. Soc. Engrng. Edn.; Am. Rocket Soc.; A.A.U.P.; Verein Deutscher Ingenieure; Combustion Inst.; Sigma Xi; A.A.A.S.; Pi Tau Sigma; Tau Beta Pi. Author: Gas Dynamics, 1958; Transport Properties in Gases, 1958; Dynamics of Conducting Gases, 1960; Magnetohydrodynamics, 1960. Contbr. to: Heat Power News and Views; Jour. of Engrng. Edn.; Higher Edn.; Plumbing and Heating Bus.; Jour. of Aeronautical Scis.; The Review of Scientific Instruments; Jet Propulsion; Aircraft Engrng.; A.A.-U.P. Bull.; Industrial and Engrng. Chem.; A.R.S. Jour.; Astronautics; S.A.E. Jour.; Zeitschrift fur Naturforschung. Gen. Int.: J. Edward Pendray Award for Contributions to Scientific Literature; C. McGraw Award for Rsch. Contributions; Leadership Award, Y.M.C.A.; Sigma Xi National Lecturer. Areas of Rsch.: Magnetohydrodynamics; Plasma Physica; Aerothermochemistry; Gasdynamics.

CAMPAZZI, Betty Carlson (Mrs.), Administrator Nursing Serv., N. Y. City, N. Y. Home Add.: 35-16 85th St., Jackson Hgts., N. Y., N. Y. NURSING SERVICE ADMINISTRATION. b. Erie, Pa., Dec. 16, 1923. s. Simon A. and Evelina (Lofgren) C. Edn.: R.N., Johns Hopkins Schl. of Nursing, 1947; B.S., Columbia Univ., 1958; M.A., ibid., 1959. m. Earl James Campazzi, Sr., Oct., 1952. c.: Earl James, Jr. Exp.: Hd. Nurse, Johns Hopkins Hosp., Balt., Md., 1947-49; Staff Nurse, N. Y. Hosp., N. Y., 1949-52; Adminr., Private Clinic, N. Y., 1960-61; Administr. Nursing Serv., N. Y. City, 1962-63. Mem.: Am. Assn. Adv. Sci.; Am. Assn. Univ. Women.; The Alumnae Assn. of Johns Hopkins Hosp.; Johns Hopkins University Alumni; Alumni Fed. of Columbia Univ., Inc.; Assn. of the Alumni Div. of Nursing Edn., T.C.-Columbia Univ.; Kappa Delta Pi; Pi Lambda Theta.

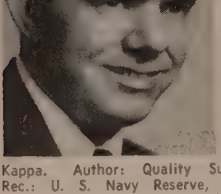
CAMPBELL, Dan Norvell (Mr.), Res. Chemist, Monsanto Chem. Co., Texas City, Tex. Home Add.: 1233 Sunset Lane, Tex. City, Tex. ANALYTICAL CHEMISTRY. b. Mt. Enterprise, Tex., Sept. 10, 1928. s. Will C. and Evie (Wallace) C. Edn.: B.S., Southern Methodist Univ., 1952; M.S., ibid., 1953. m. Ola Shumate, May 11, 1951. c.: Duane Owen; Nanette. Exp.: Res. Chemist, Monsanto Chem. Co., Texas City, Tex., 1955—. Mem.: Chem. Soc. of Am.; Alpha Chi Sigma. Contbr. to: Analytical Chemistry. Serv. Rec.: U.S.C.G., 1946-48. Areas of Rsch.: Alkylation of Aromatics; Styrene Chemistry-Analytical Chemistry.

CAMPBELL, Edward Hastings (M.D.), Surgeon and Tchr., 133 S. 36th St., Phila. 4, Pa. Home Add.: 244 Gypsy Ln., Wynnewood, Pa. OTOLOGY-SURGICAL SPECIALTY IN MEDICAL FIELD. b. Kane, Pa., Feb. 8, 1894. s. Eddy W. and Cora (Hoyt) C. Edn.: M.D., Univ. of Pa., 1919. m. Ethel Hanna, Aug. 26, 1915. c.: Edward G.; Jean C. Moss; Thomas M. Exp.: Chf., Otolaryngologist, Pa. Hosp., Phila., Pa., 1938-51; Chf. Otolaryngologist, Lankenau Hosp., ibid., 1939-59; Prof., Clinical Otolaryngology, Univ. of Pa. Med. Schl., 1939-59; Emeritus Prof., Otolaryngology, 1959—; Prof., Otolaryngology, Grad. Schl. of Med., ibid., 1946—. Mem.: John Morgan Soc.; Alpha Mu Pi Omega; Sigma Chi; Sigma Xi. Contbrng. Author: Cyclopedia of Otolaryngology, 1956. Contbr. to: Arch. of Otolaryngology; Ann. of Rhinology, Otology and Laryngology; The Laryngoscope and other Professional Jours. War Record: S.A.T.C., W. W. I; U. S. Navy, 1942-46. Areas of Rsch.: Surgical Treatment of Deafness and other Otological Conditions.

CAMPBELL, Elvin Odell (Mr.), Admin. Mgr., R. & D., 150th St., N.W. and Portland St., Okla. City, Okla. Home Add.: 1223 N.W. 79th St., Okla. City, Okla. ORGANIC CHEMISTRY. b. Comanche County, Okla., October 24, 1918. s. Henry L. W. and Lue Ethel (Wainscott) C. Edn.: B.A. in Chem., Univ. of Okla., 1942. m. Lois Evelyn Franklin, Dec. 31, 1945. c.: Samuel Odell; Robert Elvin. Exp.: Rsch. Chemist, Petroleum Rsch. Center, U.S.B.M., Bartlesville, Okla., 1942-44; Engr., Off. Sec. of Defense, Washington, D. C., 1945-51; Lab. Mgr., E. I. duPont de Nemours and Co. and Additives Sales Coord., Tulsa, Okla., 1951-56; Mgr., Kerr-McGee Oil Ind., Oklahoma City, Okla., 1956—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Phi Theta; Sigma Pi Sigma; Alpha Chi Sigma; Phi Theta Kappa. Author: Quality Surveillance Manual, 1949. Serv. Rec.: U. S. Navy Reserve, 1944—. General Int.: Chmn. of a Committee that compiled and edited "Federal Specification VV-L-791 Lubricants, Liquid Fuels, and Related Products; Methods of Inspection, Sampling, and Testing. Areas of Rsch.: Management of Tech. Groups. Mgr. of Several Areas of Refining for Kerr-McGee.



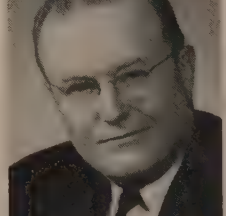
CAMPBELL, James A. (Ph.D.), Res. Group Leader, Miles Labs., Inc., Elkhart, Ind. Home Add.: 1401 Kilbourn St., Elkhart, Ind. PHARMACEUTICAL CHEMISTRY. b. Dillon, S. C., Sept. 27, 1916. s. William A. and Eppsie Bell (Herring) C. Edn.: B.S., Univ. of S. C., 1948; M.S., Purdue Univ., 1952; Ph.D., ibid., 1953. m. Dorothy Harrelson, April 17, 1946. c.: James Alan; Dona Marie; Ronald Stephen. Exp.: Assoc. Prof., Univ. of S. C., Columbia, S. C., 1953-58; Sr. Res. Scientist, Baxter Labs., Inc., Morton Grove, Ill., 1958-59; Group Leader, Miles Labs., Inc., Elkhart, Ind., 1959—. Mem.: Sigma Xi; Rho Chi; Am. Pharm. Assn.; Am. Chem. Soc. Contbr. to: Annals of N. Y. Acad. of Sci.; Jour. of Am. Pharm. Assn.; Jour. of Phar. Scis. Serv. Rec.: U.S.A.F., 1940-46. Areas of Rsch.: Development of Pharmaceutical Dosage Forms and Drug Assay.



CAMPBELL, Frank Bixby (Mr.), Chf., Hydraulic Analysis Branch, U. S. Army Engr., Waterways Expt. Sta., Vicksburg, Miss. Home Add.: 311 Marian Lane, Vicksburg, Miss. HYDRAULIC ENGINEERING OF HIGH HEAD STRUCTURES. b. Ironton, Ohio, Sept. 16, 1904. s. Harry H. and Elizabeth (Bixby) C. Edn.: C.E., Cornell Univ., 1928. m. Maverette Beauchamp, Feb. 5, 1933. c.: Duncan B.; Marcia Ann; Kristin K. Exp.: Jr. Engr., U. S. Geological Survey, Denver, Colo., 1929-30; Asst. Engr., U. S. Bur. of Reclamation, Denver, Colo., 1930-34; Soil Conserv., U. S. Soil Conservation Serv., Spartanburg, S. C., 1935-38; Assoc. Engr., U. S. Army Engrs., Denison, Tex., 1938-40; Engr., ibid., Nashville Tenn., 1940-41; Hydraulic Engr., ibid., Omaha, Neb., 1945-51; Hydraulic Engr., ibid., Vicksburg, Miss., 1951—. Hon. Pos.: Chmn., Comm. on Rsch., Chmn., Comm. on Standards, A.S.C.E. Hydraulics Div. Mem.: A.S.C.E.; Am. Geophys. Union; Internatl. Assn. of Hydraulic Rsch.; Natl. Soc. Prof. Engrs.; Sigma Alpha Epsilon. Contbr. to: Trans. A.S.C.E.; Trans. A.G.U.; Trans. I.A.H.R.; Civ. Engrng. Serv. Rec.: U. S. Navy, 1941-45. Areas of Rsch.: Hydraulic Design Practice for High Head Dams; Field Investigations of Hydraulic Appurtenances for High Head Structures.

CAMPBELL, John Lloyd, Prof. and Chmn. of Oral Surg., Schl. of Dentistry, W. Va. Univ. Med. Center, Morgantown, W. Va. Home Add.: 601 Valley View St., Morgantown, W. Va. ORAL SURGERY. b. Leavenworth, Kans., Jan. 29, 1914. s. Lloyd Gully (dec.) and Lorena Mary (Starry) C. Edn.: D.D.S., Ind. Univ. Schl. of Dentistry, 1939; M.S., Univ. of Md. Grad. Schl., 1953. m. Eleanor Lois Ingebretson, Oct. 4, 1947. c.: Margaret Lee; Sally Ann. Exp.: Intern., Columbia Presby. Med. Center, N. Y., 1939-40; Oral Surgeon, U. S. Army Hosps., 1940-60; Prof. of Milit. Sci. and Tactics in R.O.T.C., Baltimore Coll. of Dental Surg., Univ. of Md., 1950-53; Prof. and Chmn. of Oral Surgery, W. Va. Univ. Med. Center, 1960—. Mem.: Am. Dent. Assn.; Am. Assn. Adv. Sci.; Assn. of Milit. Surg.; Fed. Dentaire Internatl.; Am. Soc. Oral Surg.; Southeastern Soc. Oral Surg.; W. Va. Soc. of Oral Surg.; Omicron Kappa Upsilon; Royal Soc. of Health; Delta Upsilon; Delta Sigma Delta; Alpha Phi Omega; Mason; Am. Leg.; Scottish Rite; Shriner. Contbr. to: Jour. Oral Surg. Serv. Rec.: Ret. U. S. Army Dental Officer. Areas of Rsch.: Causative Agents of Acute Cellulitis of Head and Neck and Their Antibiotic Sensitivity.

CAMPBELL, John Malcolm (Mr.), Scientific Dir., General Mtrs. Rsch. Labs., Warren, Mich. Home Add.: 1333 Glengary, Birmingham, Mich. MOTOR FUELS AND COMBUSTION. b. Arlington, Mass., Aug. 8, 1903. s. Walter M. and Mabel (Spaulding) C. Edn.: B.S., Mass. Inst. of Technol., 1925. m. Dorothy Schutte, 1928. c.: John M., Jr.; Robert S. Exp.: Gen. Mtrs. Rsch. Labs., 1926-57; Scientific Dir., 1957—. Hon. Pos.: Mem. Bd. of Dirs., Engrng. Soc. of Detroit. Mem.: Soc. Auto. Engrs.; Horning Mem. Award, 1956; Am. Soc. Mech. Engrs.; Am. Chem. Soc.; Am. Ordnance Soc.; Am. Inst. Phys.; Am. Soc. Testing Material; Am. Rocket Soc.; Am. Petroleum Inst.; Engrng. Soc. Detroit; A.A.A.S; Alpha Chi Sigma; Tau Beta Pi; Sigma Xi; Economic, Club. of Detroit. Contbr. to: Ind. Engr. Chem.; Jour. Soc. Auto. Engrs. Areas of Rsch.: Fuels, Lubricants, Combustion, Research Management.



CAMPBELL, Mildred F. (Miss), Science Tchr., Shortridge H. S., 3401 N. Meridian, Indianapolis 7, Ind. Home Add.: 29 N. Hawthorne Lane, Indianapolis 19, Ind. BIOLOGICAL SCIENCES. b. Lagansport, Ind., Apr. 5, 1906. d. Sam G. and Lottie (Behmer) Campbell. Exp.: Sci. Tchr., Shortridge H. S., Indianapolis, Ind., 1928—. Hon. Pos.: Secy., City Sci. Tchrs.; Secy. and Vice Pres., Ind. Sect. of Sci. Tchrs.; Shortridge H. S. Repr., Children's Museum. Mem.: Ind. Acad. of Sciences; NSTA; NABT; Wilson Soc.; Am. Orni. Union; Internatl. Orni. Congress; Wilderness and Conservation; Ind. Audubon; Women's Garden Club. Contbng. Author: Least Flycatchers, 1942. Editor and Contbr.: Indiana Audubon Yearbook, 1946-47-48. Contbr. to: Biology Text, Edition 1 and 3; Pettingills Guide, 1951, 1961 The Biol. Tchr.; Bull. of Central Sci. and Math.; Successful Devices for Tchng. Biol. Gen. Int.: Irvington Presbyterian Ch. Schl. Tchr.; Nature Guide for Scouts Campfire, and Volunteer work at Hosp. Areas of Rsch.: Diatoms, Ecology, Ornithology.

CAMPBELL, William Buford, Jr. (Mr.), Rsch. Asst., Dept. Geol. Scis., Harvard Univ., Cambridge 38, Mass. Home Add.: 406 Maple Ave., Clarksdale, Miss. CERAMIC ENGINEERING; EXPERIMENTAL MINERALOGY. b. Clarksdale, Miss., Nov. 23, 1935. s. William Burford, Sr. and Bertha (Atkins) C. Edn.: B. of Cer.E., Ga. Inst. of Technology, 1958; M.S. in Cer.E., ibid., 1960; A.M. in Mineralogy, Harvard Univ., 1962. Exp.: Asst. Prof., Ga. Inst. of Technology, Atlanta, Ga., 1958-60; Research Scientist, Arctic Inst. of North Am., Cambridge, Mass., 1960-61;

Rsch. Asst., Harvard Univ., 1961. Hon. Pos.: Secy., Earth Sci. Sect., Ga. Acad. of Sci. Mem.: Soc. of Exploration Geophts.; Natl. Inst. of Ceramic Engrs.; Am. Ceramic Soc.; Mineralo. Soc. of Am.; Ga. Acad. of Sci.; Am. Geophys. Union; Sigma Xi; Pi Delta Epsilon; Keramos. Contbr. to: Jour. of Am. Ceramic Soc.; Ga. Acad. of Sci. Bull. Gen. Int.: Sigma Xi Undergrad. Rsch. Award; Sigma Xi; Masters Rsch. Award. Areas of Rsch.: Solid State Diffusion and Ultra-Pure Crystal Synthesis.

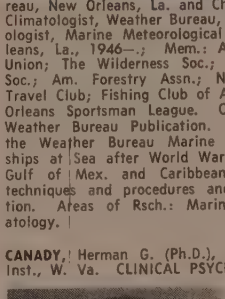
CAMPBELL, William Andrew (Ph.D.), Pathologist, Southeastern Forest Experiment Sta., Chapel Hill, N. C. Home Add.: 16A Williams Cir., Chapel Hill, N. C. FOREST PATHOLOGY. b. Paterson, N. J., Jan. 29, 1906. s. Joseph M. and Bertha (Courtright) C. Edn.: B.S., State Tchrs. Coll., 1929; M.A., Univ. of Colo., 1931; Ph.D., Pa. State Univ., 1935. m. Eleanor Ebert, 1936. c.: William A., Jr.; George Ebert; Kathleen Lois. Exp.: Pathologist, U.S.D.A., 1936-55; Rsch. Center Ldr., Southeastern Forest Expmt. Sta., 1955-61; Pathologist-in-charge, Forest Serv., Biol. Lab. Rsch., Triangle Park, N. C., 1961—. Mem.: Soc. of Am. Foresters; Am. Phytopathological Soc.; Mycological Soc. of Am.; Am. Assn. for the Adv. of Sci.; Forest Products Rsch. Soc. Areas of Rsch.: Forest Pathology and Mycology.

CAMPOS, Homero Augusto (M.D.), Instr. of Pharmacol., Univ. of Wis., Med. Schl., Dept. of Pharmacol., Madison, Wis. Home Add.: 700 University S.E., Mnpls. 14, Minn. AUTONOMIC TRANSMITTERS; CARDIOVASCULAR PHARMACOLOGY. b. San Pedro, Pacasmayo, Peru, Jan. 14, 1926. s. Abelardo and Manuela (Iturrizaga) C. Edn.: B.M., San Marcos, Univ. of Med. Schl., 1956; M.D., ibid., 1957. Exp.: Instr., Pharmacol., Univ. of Wis., 1961—. Mem.: Am. Assn. Adv. Sci. Contbr. to: Jour. of Pharmacol. Expti. Therapts.; Internatl. Jour. of Neuropharmacol. Areas of Rsch.: Physiological Role of Catechol Amines in the Body, in Particular Subcellular Studies of Mediators in the Heart.

CAMPSEN, Herman M., Jr. (Mr.), Chmn., Physical Sci. Dept., Bronx H. S. of Sci., Bronx, N. Y. Home Add.: 22 Glenwood Rd., Scarsdale, N. Y. INORGANIC CHEMISTRY, PHYSICS AND SCIENCE EDUCATION. b. N. Y. City, Sept. 6, 1900. s. Herman M. and Mary (Meyer) C. Edn.: A.B., Columbia Univ., 1922; A.M., ibid., 1923; Grad. work at Tchrs. Coll., Columbia Univ., City Coll., and N. Y. Univ. m. Anna Hoppe, June 28, 1930. c.: Anne-Marie C. Tietjen. Exp.: Tchr. of Gen. Sci., Jefferson Jr. H. S., Meriden, Conn., 1924-26; Tchr. of Chem., Brooklyn Tech. H. S., N. Y. City, 1926-30; Tchr. of Chem. and Physics, DeWitt Clinton H. S., N. Y. City, 1930-38; Founder and Chmn., Dept. of Phys. Sci.; Bronx H. S. of Sci., 1938—. Hon. Pos.: Past Chmn., Sci. Textbook Appraisal Comm. for N. Y. C. Bd. of Edn.; During W.W. II, Consult., War Dept. and U. S. Office of Edn. on Sec. Schl. Pre-Induction Courses; Dir. of War Courses for the Academic and Voctnl. H. S. of N.Y.C.; Consult. to Am. Soc. for Metals, Am. Petroleum Inst., Ford Fdn., Conant Comm.; Organizer of and Consult. on N. Y. C. Sci. Fairs. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Natl. Sci. Tchrs. Assn.; Past Pres., Chem. Tchrs. Club of N. Y.; Past Pres., Phys. Sci. Chmns. Assn.; N. Y. City Physics Club; Edntl. Frat. of Emile, N. Y. C. Co-Author: War Dept. Fundamentals of Automotive Mechanics, 1942. Contbr. to: N. Y. City Bd. of Edn. "High Points"; The Sci. Counselor; Am. Schl. and Univ.; N.S.F. "Schl. Facilities for Sci. Instrn." Serv. Rec.: U. S. Army, 1918. Gen. Int.: Cited by the N. Y. Sect. of the Am. Chem. Soc. for Outstanding Contributions to Chem. Through Inspirational Tchng. and Profl. Activities, 1958; Hd. of the Physics Dept. which was chosen by the Am. Assn. of Physics Tchrs. as Outstanding among the High Schls. of the U. S., 1958. Areas of Rsch.: Science Teaching Demonstrations, Curricula, Laboratory Facilities and Equipment, Visual Aids, Textbooks; Science Teacher and Supervisor Training.

CANADAY, George Lewis, Meterologist, Marine Meterological Supvr., U. S. Weather Bureau, 701 Loyola Ave., New Orleans 12, La. Home Add.: 130 Alden Place, New Orleans 19, La. MARINE METEOROLOGY. b. Cottageville, S. C., Aug. 31, 1904. s. Thomas Burney and Rosa Viola (Jacques) C. Edn.: Cert., Synoptic Meteorol., Weather Bureau Regional Tech. Conf., Chicago, Ill., 1940; Cert., Synoptic Meteorol., Univ. of Chicago, 1943. m. Bonnie Jean Smith, Nov. 3, 1935. c.: George Lewis, Jr.; Alice Marguerite. Exp.: Observer, Weather Bureau, Charleston, S. C., Miami, Fla., New Orleans, La., 1921-29; Meteorologist, Marine Asst., Weather Bureau, New Arleans, La., 1929-34; Meteorologist, Marine Specialist, Weather Bureau, New Orleans, La., 1935-40; Meteorologist, Dist. and Airways Forecaster, Weather Bureau, New Orleans, La. and Chicago, Ill., 1940-45; Meteorologist, Climatologist, Weather Bureau, New Orleans, La., 1945-46; Meteorologist, Marine Meteorological Supvr., Weather Bureau, New Orleans, La., 1946—.; Mem.: Am. Assn. Adv. Sci.; Am. Geophys. Union; The Wilderness Soc.; Natl. Parks Assn.; Am. Meteorol. Soc.; Am. Forestry Assn.; Natl. Audubon Soc.; Mason; Natl. Travel Club; Fishing Club of Am.; La. Wild Life Federation; New Orleans Sportsman League. Contbr. to: Monthly Weather Rev.; Weather Bureau Publication. Gen. Int.: Assisted in developing the Weather Bureau Marine Weather reporting programs from ships at Sea after World War II; With special emphasis on the Gulf of Mex. and Caribbean Sea Areas. Also, observational techniques and procedures and Ship Meteorological Instrumentation. Areas of Rsch.: Marine Meteorology. Forecasting Climatology.

CANADY, Herman G. (Ph.D.), Prof. Psychol., W. Va. Sta. Coll., Inst., W. Va. CLINICAL PSYCHOLOGY. b. Okmulgee, Okla., Oct. 9, 1901. s. Howard T. and Anna (Carter) C. Edn.: A.B., Northwestern Univ., 1927; M.A., ibid., 1928; Ph.D., ibid., 1941. m. Julia Witten, Aug. 16, 1934. c.: Herman G., Jr.; Joyce A. Exp.: Prof., Hd. Dept. Psychol., W. Va. Sta. Coll., 1928—. Hon. Pos.: Pres., W. Va., Sta. Psychol. Assn., 1954-55; Chmn. of the Dept. of Psychol., W. Va. Acad. of Sci., 1952-53, 1955-56; Chmn. of the Dept. of Psychol., Am. Tchrs. Assn., 1938-45. Mem.: Am. Psychol. Assn., Fellow; Am. Assn. for the Adv. of Sci., Fellow; Am. Assn. of Univ. Profs.; W. Va. Sta. Tchrs. Assn.; Sigma Xi; Alpha Kappa Delta; Eugene Fields Soc.; Kappa Alpha Psi; Charles F. Grey Scholarship, Northwestern Univ., 1928. Contbr. to: Jour. of Negro Edn.; Jour. Soc. Psychol.; 20th Cent. Psychol.; Encyc. of Psychol.; Schl. and Soc. Areas of Rsch.: Clinical and Differential.



CANDLER, Marguerite Louisa (M.D.), Chief of Hematol. Standardization Lab., Med. Lab. Sect., Lab. Br., Communicable Disease Center, Public Health Service, U.S.D.H.-E.W., Atlanta 22, Ga. Home Add.: 3092 Argonne Dr., N.W., Atlanta 5, Ga. INTERNAL MEDICINE-EXPERIMENTAL HEMATOLOGY; PUBLIC HEALTH. b. Atlanta, Ga., June 14, 1920. d. Maj. Asa W. Warren (dec.) and Hattie Lee (West) C. Edn.: B.A., Vassar Coll., 1942; M.S., Grad. Schl., Emory Univ., 1943; M.D., Med. Schl., ibid., 1948. Exp.: Woodruff Malaria Rsch. Fellow, Emory Univ., 1942-43; War Dept., Lawson Gen. Hosp., Chamblee, Ga., 1943-44; Rotating Int., Res. in Internal Med., Md. Gen. Hosp., Baltimore, Md., 1948-51; Examining Physician, Lockheed Aircraft, Marietta, Ga., 1951-52; Clin. Fellow in Hematol., Emory Univ., Schl. of Med., 1952-54; Clin. Assoc., Dept. of Med., ibid., 1955—; Chief, Expmtl. Hematol. Unit, Communicable Disease Center, Pub. Health Serv., U.S.D.H.-E.W., Atlanta, Ga., 1954—. Hon. Pos.: Pres., Br. 29, Am. Med. Women's Assn., 1961-63. Mem.: CDC Br. of RESA; A.A.A.S.; N. Y. Acad. of Sci.; Ga. Soc. Adv. Sci.; Commissioned Officers' Assn. of Pub. Health Serv.; Fulton Co. Med. Soc.; Med. Assn. of Ga.; Am. Med. Assn.; Sou. Med. Assn.; Am. Med. Women's Assn.; Internatl. Med. Women's Assn.; Assoc. Alumnae Assn. of Vassar Coll.; Alumni Assn. of Emory Univ.; Episcopal Ch. Women; Daughters of the King; Girls' Circle of the Tallulah Falls Schl.; Jr. Guild of the Rabun Gap Nacoochee Schl.; Sheltering Arms. Contbr. to: VIIIth Internatl. Congress of

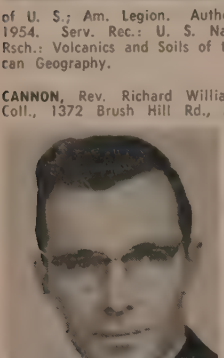
Hematol., Tokyo, Japan; Proc. Soc. Exp. Biol. Med.; Jour. Am. Med. Women's Assn. Serv. Rec.: Commissioned Officer, U. S. Pub. Health Serv., 1955—. Areas of Rsch.: Standardization of Laboratory Techniques in Hematology, especially Coagulation Problems in Heart Disease Control; Hemoglobinopathies and their laboratory diagnosis; Teaching in Hematology laboratory techniques.

CANDON, Vera Anne (Ph.D.), Psycholst., Berea Bd. of Edn., Berea, Ohio. Home Add.: 246E 214 St., Cleveland 23, Ohio. PSYCHOLOGY. b. Cleveland, Ohio, Jan. 26, 1910. d. William (dec.) and Frances (Skerl) C. Edn.: B.S., Ohio State Univ., 1932; M.A., ibid., 1937; Ph.D., Western Reserve Univ., 1954. Exp.: Sci. Tchr. and Departmental Head, Cleveland Public Schls., 1933-37; Psychologist, Cleveland Bd. Edn., 1937-56; Lectr., Western Reserve Univ., 1950-60; Psychologist, Berea Bd. Edn., 1956-60; Coordinator, Special Services, Berea Bd. Edn., 1960—. Hon. Pos.: Mem. White House Conf. Comm. on Socially and Emotionally Disturbed Child; Mem., Cleveland Counc. Comm. on Edn. of Mentally Retarded Child; Pres., Tri-State Conf. on Pupil Personnel. Mem.: Am. Psychol. Assn.; N.E.A.; O.E.A.; A.A.A.S.; Inter-Counc. Women Psychol.; World Mental Hyg. Assn.; Cleveland Mental Hyg. Assn.; Inter-Counc. Exceptl. Child; Women's City Club (Cleveland, O.). Areas of Rsch.: Emotionally Disturbed Children and Ednl. Problems and Adjustments.

CANFIELD, Earle Lloyd (Ph.D.), Dean of the Grad. Div. and Prof. of Maths., Drake Univ., Des Moines, Ia. Home Add.: 3820 S.W. 31st., Des Moines, Ia. MATHEMATICS STATISTICS. b. Des Moines, Ia., Oct. 24, 1918. s. Lloyd A. and Margaret M. (Earle) C. Edn.: B.A., Drake Univ., 1940; M.A., Northwestern Univ., 1944; Ph.D., Ia. State Univ., 1950. m. Betty Elice Fosher, Jan. 30, 1947. c.: Irving Nelson; Ward Evan; Marcia Elice. Exp.: Math. Sci. Tchr., Moorhead H. S., Moorhead, Ia., 1940-42; Tchr. and Prin., Winterset H. S., Winterset, Ia., 1942-46; Math. Instr., Drake Univ., 1946—; Edn. Rsch. Advisor, Colo. St. Univ., Ft. Collins, Colo., Summers, 1952-57; Grad. Dean, Drake Univ., 1957—; Prof. of Maths., ibid., 1958—. Hon. Pos.: Secy.-Treas., Ia. Sect., Math. Assn. of Am.; Fellow, Ia. Acad. of Sci. Mem.: Phi Beta Kappa; Pi Mu Epsilon; Phi Delta Kappa; Am. Edn. Rsch. Assn. Areas of Rsch.: Statistics.

CANNON, John Pershing (Ph.D.), Hd., Engr. and Earth Sci. Dept., Cerritos Coll., 11110 Alondra Blvd., Norwalk, Calif. Home Add.: 1711 E. Grove Pl., Fullerton, Calif. EARTH SCIENCES, GEOLOGY, ASTRONOMY, GEOGRAPHY. b. Pocatello, Idaho, Sept. 29, 1919. s. Frank Mullen and Katherine (McGovern) C. Edn.: B.A., Long Beach Sta. Coll., 1952; M.A., Mex. City Coll., 1953; Ph.D., Univ. of Mex., 1958. m. Margaret Erickson, Sept. 7, 1947. c.: Michael; Colleen; Erika. Exp.: Aviat. Consultant, Aeronaves De Mexico, Mex., D. F., 1952-54; Instr., Fullerton Coll., Fullerton, Calif., 1954-58; Instr., Cerritos Coll., 1958—; Asst. Prof., Orange Sta. Coll., 1962—. Mem.: Natl. Assn. Geol. Tchrs.; Assn. of Am. Geographers; Calif. Assn. of Geography Tchrs.; Calif. Tchrs. Assn.; S. W. Commandry of Naval Order of U. S.; Am. Legion. Author: Physical Geology Lab Manual, 1954. Serv. Rec.: U. S. Naval Reserve, 1938-58. Areas of Rsch.: Volcanics and Soils of the Valley of Mexico; Latin American Geography.

CANNON, Rev. Richard William (D.C.L.), Prof., St. Columbans Coll., 1372 Brush Hill Rd., Milton 86, Mass. MATHEMATICS. b. Buffalo, N. D., Nov. 15, 1928. s. Leonard B. and Ethyl E. (Smith) C. Edn.: D.C.L., Gregorian Univ., Rome, Italy, 1958; A.B., Boston Coll., 1961. Exp.: Prof., St. Columban's Coll., 1958 . Mem.: Math. Assn. of Am. Areas of Rsch.: Foundations of Math. and Logic (Formal Logic).



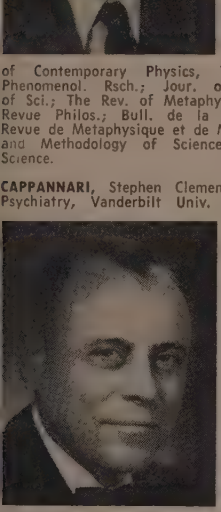
CANNON, William John (Ph.D.), Acting Chmn., Behavioral Servs. and Scis., Assoc. Prof., Psychol. and Rel., Columbia Union Coll., Takoma Park, Md. Home Add.: 8113 Carroll Ave., Takoma Park 12, Md. PSYCHOLOGY–SOCIOLOGY. b. Glamorgan, So. Wales, United Kingdom, Sept. 16, 1908. s. Frederick John Harold and Elsie (Keturah) C. Edn.: Ministerial, Stanborough Coll., Watford, Herts, England, 1931; F.L.C.Th., London Coll. of Theol., England, 1946; M.A., Theol. Sem., Wash., D. C., 1954; B.D., ibid., 1956; Ph.D., Am. Univ., 1959. m. Dorothy Olive Tasker, Aug. 19, 1931. c.: Ruth Olive. Exp.: City Pastor, Various Cities, England, 1931-50; City Pastor, Capital Memorial Church, Washington, D. C., 1951-56; Asst. Prof. Theol. Sem., 1956-60; Assoc. Prof. Psych. and Rel., Columbia Union Coll., 1960—. Hon. Pos.: Co-Chmn., Acad. of Rel. and Mental Health, D. C. Chap. Mem.: A.A.A.S.; A.P.S.; S.E.A.; Assn. of Sem. Prof.; Applied Fields, Acad. of Rel. and Mental Health; Behavioral Sci. Areas of Rsch.: Social Psychology.

CANTRIL, (Albert) Hadley (Ph.D.), Chmn. of the Bd., Inst. for Internatl. Social Rsch., 240 Nassau St., Princeton, N. J. Home Add.: 124 Mercer St., Princeton, N. J. SOCIAL PSYCHOLOGY. b. Hyrum, Utah, June 18, 1906. s. A. H. and Edna (Meyer) C. Edn.: B.S., Dartmouth Coll., 1928; Ph.D., Harvard Univ., 1931. Hon. Degrs.: LL.D., Wash. and Lee Univ., 1949; D.Sc., Dartmouth Coll., 1960. m. Mavis Lyman, June 18, 1932. c.: Albert Hadley, Jr.; Mavis Ann. Exp.: Instr., Sociol., Dartmouth Coll., Hanover, N. H. (1931-32); Instr., Psychol., Harvard Univ., Cambridge, Mass., 1932-35; Asst. Prof., Edn., Columbia Univ., N.Y., 1935-36; Asst. Prof., Psychol., Princeton Univ., Princeton, N. J., 1936-37; Assoc. Prof., ibid., 1937-44; Prof., ibid., 1944-55; Stuart Prof. of Psychol., and Chmn., Dept. Psychol., ibid., 1953-55; Rsch. Assoc., Dept. Psychol., ibid., 1955—; Chmn. of the Bd. and Sr. Counsellor, Inst. for Internatl. Social Rsch., 1955—. Hon. Pos.: Pres., E. Psychol. Assn.; Pres., Soc. for Psychol. Study of Social Issues. Mem.: Am. Psychol. Assn.; Phi Beta Kappa. Author: The Psychology of Social Movements, 194); The "Why" of Man's Experience, 1950; Human Nature and Political Systems, 1961. Contbr. to: Sci.; Jour. of Abnormal and Social Psychol.; Pub. Opinion Quart.; Psychol. Rev. Areas of Rsch.: Social Perception, Public Opinion; Motivation.

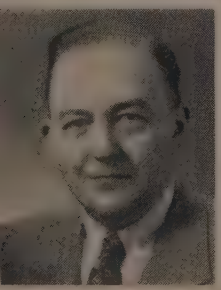
CAPLAN, Gerald (M.D.), Assoc. Prof. of Mental Health, Harvard Univ. Schl. of Publ. Health, 55 Shattuck St., Boston 15, Mass. Home Add.: 93 Fresh Pond Parkway, Cambridge 38, Mass. PSYCHIATRY AND PSYCHOANALYSIS. b. England, Mar. 6, 1917. s. David (dec.) and Sophia (Zassman) C. Edn.: B.Sc., Victoria Univ. of Manchester, England, 1937; M.B., Ch.B., Manchester Univ., England, 1940; D.P.M., Royal Coll. of Physicians and Surgeons, London, England, 1942; M.D., Manchester Univ., England, 1945. m. Ann Siebenberg, Mar. 29, 1942. c.: Ruth. Exp.: Psychiatrist, Birmingham Mental Hosp., Birmingham, Eng., 1940-43; Deputy Med. Supt., Swansea Mental Hospital, Swansea, Eng., 1943-45; Staff Psychiatrist, Tavistock Clinic, London, Eng., 1945-48; Advisor in Psychiatry, Chf., Mental Health Servs., Ministry of Health, Jerusalem, Israel, 1948-49; Psychiatric Dir., Lasker Mental Hygiene and Child Guidance Ctr., Jerusalem, Israel, 1949-52; Assoc. Prof. of Mental Health, Harvard Schl. of Publ. Health, 1952—. Hon. Pos.: Chmn., Committee on Preventive Psychiatry of Group for Advancement of Psychiatry; Treas., Internatl. Assn. for Child Psychiatry and Allied Professions. Mem.: Am. Publ. Health Assn.; Am. Psychiatr. Assn.; Am. Orthopsychiatric Assn.; Delta Omega. Author: Concepts of Mental Health and Consultation, 1959; An Approach to Community Mental Health, 1961. Editor: Emotional Problems of Early Childhood; Prevention of Mental Disorders in Children. Contbr. to: Mental Hygiene; The Am. Jour. of Orthopsychiatry; Children; Med. Soc. Work; Psychosomatic Medicine; Psychiatry; Publ. Health Reports; Am. Jour. of Publ. Health; British Med. Jour.; Megamot; Jour. of A.M.A. Serv. Rec.: Royal Air Force, 1942-43. Areas of Rsch.: Community Mental Health; Social Psychiatry; Child Psychiatry; Psychoanalysis; Preventive Psychiatry; Development and Evaluation of Consultation Techniques.

CAPEK, Milic (Ph.D.), Prof. of Philos, Boston Univ., Boston, Mass. Home Add.: 143 Hobart St., Hingham, Mass. PHILOSOPHY AND HISTORY OF SCIENCE (PHYSICS). b. Trebechovice, Bohemia, Czecholovakia, Jan. 26, 1909. s. Joseph and Elisabeth (Sebesta) C. Edn.: M.A., King Charles Univ., Prague, 1935; Ph.D., ibid., 1935; M.Sc., ibid., 1936. m. Stephanie Rezabek, June 24, 1947. c.: Stella Milica. Exp.: Librn., Dept. of Philos., Univ. of Prague, Prague, Czechoslovakia, 1935-36; Instr., Univ. of Nebr., Lincoln, Nebr., 1944-46; Lectr. in Phys., Univ. of Olmutz, Czechoslovakia, 1946-47; Prof., Carleton, Coll., 1948-62; Prof. of Philos., Boston Univ., 1962. Mem.: Am. Assn. for the Adv. of Sci.; Am. Philos. Assn.; Peirce Soc. Author: Bergson and the Trends of Contemporary Physics, 1938; Philosophical Impact of Contemporary Physics, 1961. Contbr. to: Philos. and Phenomenol. Rsch.; Jour. of Philos.; Philos. Rev.; Philos. of Sci.; The Rev. of Metaphys.; Jour. of the History of Ideas; Revue Philos.; Bull. de la Societe francaise de Philosophie; Revue de Metaphysique et de Morale. Areas of Rsch.: Philosophy and Methodology of Science, especially Physics; History of Science.

CAPPANNARI, Stephen Clement (Ph.D.), Assoc. Prof., Dept. of Psychiatry, Vanderbilt Univ. Schl. of Med., Nashville, Tenn. Home Add.: 721 Georgetown Dr., Nashville, Tenn. ANTHROPOLOGY. b. Plymouth, Mass., July 16, 1917. s. Joseph and Argia (Breta) C. Edn.: B.A., Univ. of Mich., 1940; Ph.D., Univ. of Calif., Berkeley, Calif., 1950. m. Lael Putman, 1944. c.: Paul; Daniel. Exp.: Tchng. Asst., Univ. of Calif., 1946-49; Instr., Wayne Univ., 1950-53; Instr., San Jose St. Coll., 1952; Instr., San Francisco St. Coll., 1952; Visiting Asst. Prof., Univ. of Mich., summer, 1956; Visiting Asst. Prof., Univ. of Calif., Spring, 1957; Assoc. Prof., Wayne St. Univ., 1958-60; Assoc. Prof., Vanderbilt Univ. Schl. of Med., 1960—. Hon. Pos.: Hd., Div. of Human Behavior, Dept. of Psychiatry, Vanderbilt Univ. Schl. of Med. Mem.: Am. Anthropological Assn., Fellow; A.A.A.S., Fellow; Am. Ethnological Soc.; The Italian Assn. of Soc. Sci.; Sigma Xi; Phi Sigma; Phi Kappa Phi; Fellow, Royal Anthropol. Insit. of Gr. Britain and Ireland. Contbr. to: Scientific Monthly; Southwestern Jour. of Anthropology; Rivista di Anthropologia; Am. Anthropologist; Anthropological Quarterly Jour. of Am. Folklore; Jour. of Am. Folklore; Ency. Americana. Serv. Rec.: U. S. Navy, 1942-45. Gen. Int.: Fulbright Am. Rsch. Scholar, Italy, 1954-55. Areas of Rsch.: Ethnology of N. Am. West of Rockies and Italy.

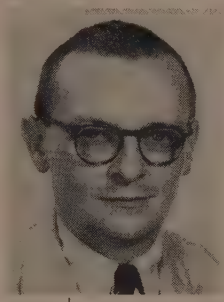


CAPPS, Richard Brooks (M.D.), Physician, Assoc. Clin. Prof. of Med., Univ. of Ill. Med. Schl.; Sr. Attending Physician, Presbyterian-St. Luke's Hosp., Chicago, Ill. Home Add.: 21 Woodley Rd., Winnetka, Ill. INTERNAL MEDICINE WITH SUBSPECIALIZATION IN LIVER DISEASE AND CARDIOVASCULAR DISEASE. b. Chicago, Ill., Mar. 14, 1906. s. Joseph A., M.D., and Christy (Brooks) C. Edn.: B.S., Princeton Univ., 1927; M.D., Harvard Med. Schl., 1931. m. Mary F. Grulee, July, 1930. c.: R. Brooks, Jr. Exp.: Med. Intern, Mass. Gen. Hosp., Boston, Mass., 1931-33; Asst. Resident, Thorndike Mem. Lab., Boston City Hosp., ibid., 1933-35; Assoc. and Instr. in Med., Northwestern Univ. Med. Schl., Chicago, Ill., 1936-40; Asst. Prof. of Med., ibid., 1940-50; Assoc. Prof. of Med., ibid., 1950-59; Assoc. Clin. Prof. of Med., Univ. of Ill. Med. Schl., 1959—. Hon. Pos.: Pres., Chicago Soc. of Internal Med., 1954; Pres., Am. Assn. for the Study of Liver Disease, 1959. Mem.: Assn. of Am. Physicians; Am. Soc. for Clin. Investigation; Central Soc. for Clin. Rsch.; Am. Clin. and Climatol. Assn.; Phi Beta Kappa; Alpha Omega Alpha; Sigma Psi; Univ. Club, Chicago, Ill. Contbr. to: Jour. of Clin. Investigation; Arch. of Internal Med.; Jour. of Lab. and Clin. Med.; Jour. Am. Med. Assn.; Am. Jour. of Med. Scis.; Oxford Loose-Leaf Med. Serv. Rec.: U. S. Army Med. Corp., 1942-46. Areas of Rsch.: Cardiovascular Disease and Liver Disease.

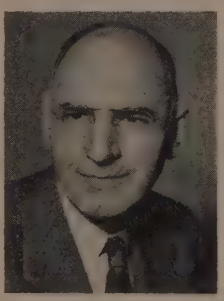


CAPURRO, Pietro Ubaldo (M.D.), Dir. of Labs., Alton Memorial Hosp., Alton, Ill. Home Add.: 28 LaDue Dr., Belmont Village, Godfrey, Ill. PATHOLOGY. b. Genoa, Italy, Oct. 14, 1925. s. Armando and Clelia (Gaggino) C. Edn.: M.D., Univ. of Genoa Med. Schl., Genoa, Italy, 1951. m. Dorothy Spagnuolo, Nov. 15, 1958. c.: Claudia; Christopher. Exp.: Resident, Pathol., N. Y. St. Univ., 1953-54; Res., Pathol., Mt. Sinai Hosp., Cleveland, Ohio, 1955-57; Instr., Pathol., Albert Einstein Coll. of Med., 1958-59; Asst. Prof., Univ. of Ill., Coll. of Med., 1959-60; Asst. Prof., Washington Univ., St. Louis, Mo., 1960—. Mem.: Fellow, Am. Geriatrics Soc.; A.A.A.S.; Coll. of Am. Pathologists. Areas of Rsch.: Metaplasia; Cancer Rsch.; Histochemistry.

CARBERRY, James John (D.Engr.), Assoc. Prof. of Chemical Engrng., Univ. of Notre Dame, Notre Dame, Ind. Home Add.: 1114 N. Michigan St., South Bend, Ind. CHEMICAL ENGINEERING—KINETICS, CATALYSIS, TRANSPORT PHENOMENA; COMPUTER SIMULATION OF RATE PROCESSES AND REACTORS. b. Brooklyn, N. Y., Sept. 13, 1925. s. James T. A. and Alice T. (McConnin) C. Edn.: B.S., Univ. of Notre Dame, 1950; M.S., ibid., 1951; D.Engr., Yale Univ., 1957. m. Judith Ann Bower, Sept., 1959. c.: Alison Ann. Exp.: Process Engr., Explosives Dept., DuPont Co., Gibbstown, N. J., 1951-53; Tchng. Fellow, Yale Univ., 1953-55; Rsch. Fellow, ibid., 1955-57; Consultant, Olin-Mathieson Chemical Corp., New Haven, Conn., 1954-57; Sr. Rsch. Engr., Engrng. Rsch. Lab., DuPont Co. Exptl. Sta., Wilmington, Del., 1957-61; Asst. Prof., Univ. of Notre Dame, 1961-62; Assoc. Prof., ibid., 1962—. Mem.: Sigma Xi; A.A.A.S.; Am. Chemical Soc.; Am. Inst. Chem. Engrng.; Albertus Magnus Guild; Yale Engr. Assn.; N. Y. Acad. of Scis.; Delaware Soc. of Prof. Engrs.; A.A.U.P. Editor: Chemistry of Nitric Acid Manufacture, 1958. Contbr. to: Jour. of Am. Inst. of Chem. Engrs.; Chem. Engrng. Sci.; Nature; Canadian Jour. of Chem. Engrng.; Jour. of Am. Chem. Soc.; Jour. of Chem. Physics; Industrial and Engrng. Chem.; Chem. Engrng. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Transport and Kinetic Factors in Heterogeneous Catalysis; Chemical Reactor Design; Digital Computer Simulation; Fluid Mechanics and Heat Transfer.



CARD, Dana G(eorge), (Ph.D.), Prof. of Agri. Econ., Ky. Agri. Exp. Sta.; Lexington, Ky. AGRICULTURAL PRICES AND STATISTICS. b. Apr. 28, 1898, Lincoln, Neb. s. Fred Wallace and Addie M. Williams. Edn.: B.S., 1919, M.S., 1925, Ph.D., 1939, Cornell Univ. m. Helen L. Jones of E. Troy, Pa., Aug. 5, 1927. d. John R. and Blonde (Calkins) Jones. Exp.: Extension Specialist in Mktg., Ky. Agri. Exp. Sta., 1920-22; Rsch. Asst. in Agri. Mktg., ibid., 1922-28; Asst. Prof. of Agri. Econ., Univ. of Ky., Coll. of Agri., 1928-39; Assoc. Prof. Agri. Econ., ibid., 1939-47; Prof. of Agri. Econ. and Econ. in Agri. Prices, ibid., 1947-59; Prof. of Agri. Econ., ibid., 1960—. Mem.: Am. Farm Econ. Assn.; Alpha Zeta; Am. Statistical Assn.; Phi Kappa Phi; A.A.U.P.; Sigma Xi; Rsch. Club, Univ. of Ky. Author: Agri. and Forestry, 1945; Ky. Agri. Exp. Sta. Bulls. Ph.D. Dissertation: The Market Price of Burley Tobacco. War Record: S.A.T.C., 1918. Hobbies: Churchwork; Gardening; Statistical Rsch. Listed in: R. U. S.; W. W. in Ky.; Am. Men of Sci.; W. W. in Am. Special Int.: Agril. Marketing; Prices; Statistical Methods in Agril. Rsch.



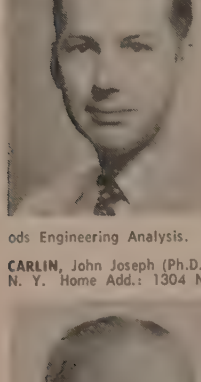
CARDER, Clarence Allison (Ed.D.), Prof., Chmn. Dept. of Edn. and Psychology, Carson Newman Coll., Jefferson City, Tenn. PSYCHOLOGY. b. Johnson City, Tenn., December 12, 1913. s. Rev. Mace Herbert and Nana Elizabeth (Butler) C. Edn.: B.A., Tusculum Coll., 1938; Th.M., Sou. Baptist Theol. Sem., 1943; Ed.D., Univ. of Tenn., 1955. Exp.: Tchr., Elem. Schls. of Tenn., 1935-37; Eng. Tchr., McDonald H.S., Greene Co., 1938-40; Associational Field Worker, Holston Assn. of Baptists, Johnson City, Tenn., 1943; Minister of Music and Religious Edn., First Baptist Ch., Elizabethton, 1944-46; Prof., N. T. Greek, Milligan Coll., Tenn., 1945-46; Instr. of Bible and Psychol., Baylor Univ., Tex., 1946-47; Chmn., Dept. of Psychol. and Dir. of Audio-Visual Edn., East Tenn. St. Coll., Johnson City, Tenn., 1947-57; Dir. of Elem. Edn., Brevard Co. Schls., Titusville, Fla., 1957-58; Div. of Ext., Rsch. and Field Servs., Appalachian St. Tchrs. Coll., 1958-60; Assoc. Prof., Carson Newman Coll., 1960-62; Prof., ibid., 1962—. Hon. Pos.: Secy. and Treas., East Tenn. Div. of Student Tchng. Assn.; Pres., East Tenn. Chapt. Am. Guild of Organists; Chmn., Audio-Visual Section, East Tenn. Edn.

Assn. and Tenn. Edn. Assn. Mem.: Tenn. Acad. Sci.; Am. Assn. of Univ. Profs.; Internatl. Coun. for Exceptional Children; N.E.A.; E. Tenn. Edn. Assn.; Tenn. Edn. Assn.; Kappa Delta Pi; Alpha Psi Omega; Kiwanis; Masons; Phi Delta Kappa; Lambda Chi Alpha; N. C. Edn. Assn. Author: A Study of Tchr. Edn. in Sou. Bapt. Colls. and Univs., 1955; Tchrs. as Supervisor-Aides Schl. Executive. Editor: Curriculum Guides Grades on Through Six for Brevard Co. Schls. Travel: Latin Am. Hobbies: Music; Golf; Swimming. Listed in: W. W. in S. and S.W.; A.M.S.; W. W. in Music Internatl.; Ldrs. in Sci.

CARDENAS, Raul R., Jr. (Mr.), Rsch. Scientist, N. Y. Univ., Rsch. Div., Coll. of Engrng., N. Y. 53, N. Y. Home Add.: 428 E. 81st, N. Y. 28, N. Y. MICROBIOLOGY—BIOCHEMISTRY. b. Galveston, Tex., Feb. 5, 1930. s. R. R., Sr. and Clementine (Munoz) C. Edn.: B.A., Univ. of Tex., 1951. m. Mary Gaglio, Nov., 1961. Exp.: Rsch. Asst., Biochemistry, Univ. of Tex. Med. Branch, 1954-55; Tchng. Asst., Bacteriology, Univ. of Tex., 1955-58; Biologist-Chemist, Rsch. Scientist, N. Y. Univ., 1961—. Mem.: Soc. of Am. Microbiologists; A.A.A.S. Contbr. to: Jour. of Nutrition; Proc. Soc. Exptl. Biol. and Medicine. Serv. Rec.: U. S. Army, 1952-53. Areas of Rsch.: Space Ecology; Sanitary Science.

CARDWELL, Alvin Boyd (Ph.D.), Hd. Dept. of Physics and Dir., Bur. of Gen. Rsch., Kans. St. Univ., 1502 N. 10th St., Manhattan, Kans. PHYSICS. b. Tenn., Oct. 16, 1902. s. John Wesley and Martha (Duff) C. Edn.: B.S., Univ. of Chattanooga, 1925; M.S., Univ. of Wis., 1927; Ph.D., ibid., 1930; D.Sc., Univ. of Chattanooga, 1961. m. Edna Zirkle of Tenn., Dec. 27, 1930. d. Dr. and Mrs. G. P. Zirkle. c.: Nancy; Charles Evan. Exp.: Asst. in Phys., Univ. of Chattanooga, 1923-25; Asst. in Phys., Univ. of Wis., 1925-29; Fellow in Phys., Univ. of Wis., 1929-30; Asst. Prof. Phys., Tulane Univ., 1930-34; Assoc. Prof. Phys., ibid., 1934-36; Prof. Phys., Kans. St. Univ., 1936; Hd. Dept. of Phys., ibid., 1937-53, 1956—; (On leave of absence, 1944-45-46, as Rsch. Physicist, Clinton Engr. Works, Tenn. Eastman Corp.); Physicist in Charge, Kans. Agri. Exp. Sta., 1947-53: 1957—; Physicist in Chg. Engrng. Exptl. Sta., 1937-53, 1957—; Assoc. Dean, Schl. of Arts and Sci., Kans. St. Univ., 1952-55; Dir. Bur. of Gen. Rsch., 1953—. Mem.: Fel., Am. Physics Soc.; Fel., A.A.A.S.; Sigma Xi; Phi Kappa Phi; Gamma Alpha; Gamma Sigma Delta. Author: Kans. Climate and Weather, 1942. Contbr. to: Proc. Am. Soc. Hart Cereal Chem.; Am. Jour. of Phys.; Physical Rev.; Proc. of Natl. Acad.; Transactions Kans. Acad. of Sci.; Cereal Chemistry; Proc. Am. Soc. Hort. Ph.D. Dissertation: Photoelectrical and Thermionic Properties of Iron. Listed in: Am. Men of Sci.; W. W. in Am. Special Int.: Solid State Physics.

CARGILL, Burton F. J. (Ph.D.), Exec. Chmn., THE TECHNORAMA, Mich. St. Univ., E. Lansing, Mich. Home Add.: 634 Division St., E. Lansing, Mich. AN ANIMAL SHELTER ENGINEERING INTEREST IN AGRICULTURAL ENGINEERING. b. Hart, Mich., Apr. 12, 1922. s. F. J. and Frances E. (Barber) C. Edn.: B.S., Mich. St. Coll., 1947; M.S., ibid., 1952; Ph.D., Univ. Missouri, 1960. m. L. Jeanne Macomber, 1946. c.: David M.; Jaclynn Ann. Exp.: Rsch. Instr., Mich. St. Coll., 1947-54; Asst. Prof., Mich. St. Univ., 1954-57; Instr. (part-time), Univ. Mo., 1957-60; Exec. Chmn., THE TECHNORAMA, Mich. St. Univ., 1960—. Mem.: Am. Soc. Agricl. Engrs.; A.A.A.S.; Gamma Sigma Delta; Theta Chi. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Animal Shelter Layout and Design; Materials Handling; Methods Engineering Analysis.



CARLIN, John Joseph (Ph.D.), Asst. Prof., Fordham Univ., N. Y. C., N. Y. Home Add.: 1304 New York Ave., Brooklyn 3, N. Y. INORGANIC CHEMISTRY. b. N. Y. City, Mar. 1, 1897. s. Joseph and Sarah (Mitchell) C. Edn.: B.S., Fordham Univ., 1947; M.S., ibid., 1950; Ph.D., ibid., 1955. m. Dr. Kathryn Scanlon, June, 1953. Exp.: H. S. Tchr. of Chem., St. Peter's Prep., Jersey City, 1944-45; Instr. in Chem., Fordham Univ., 1949-56; Asst. Prof. in Chem., ibid., 1956—. Mem.: A.C.S.; A.A.A.S.; Albertus Magnus Guild; Catholic Roundtable of Sci.; The New England Assn. of Chem. Tchrs.; Phi Lambda Upsilon. Contbr. to: Jour. of Chem. Edn.; Jour. of the U. S. Dept. of Health, Edn. and Welfare. Serv. Rec.: U. S. Army, W.W. I. Areas of Rsch.: Inorganic Chemistry and Science Education.

CARLSON, Raymond Ernest (Mr.), Chemist, Best Foods, Div. of Corn Prod. Co., 5725 Highway #7, Minneapolis 16, Minn. Home Add.: 2039 Sheridan Ave., S. Minneapolis 5, Minn. AGRICULTURAL BIOCHEMISTRY. b. Belle Plaine, Minn., July 18, 1918. s. Ernest T. and Virginia (Olson) C. Edn.: B.A., Gustavus Adolphus Coll., 1939; M.S., Univ. of Minn., 1941. m. Shirley Fisher Cates, 1945. c.: Marjorie Lee; Vicki Jean; Geraldine Aimee; Gail Virginia; Blake Arnett. Exp.: Chemist, Good Foods, Inc., 1945-55; Chemist, Skippy Peanut Butter, Div. of Best Foods, Inc., 1955-58; Chemist, Best Foods, Div. of Corn Prod. Co., 1959—. Mem.: Inst. of Food Technologists; Am. Oil Chemists Soc.; Minn. Acad. of Sci.; A.A.A.S., Fellow; A.F. and A.M.; Scottish Rite; Shriner; Lambda Sigma; Rotary.

CARLSON, J(ames) Gordon (Ph.D.), Hd., Dept. of Zool. and Ent., Univ. of Tenn., Knoxville, Tenn. Home Add.: 2134 Island Home Blvd., Knoxville 20, Tenn. EXPERIMENTAL CYTOLOGY. b. Port Allegany, Pa., Jan. 24, 1908. s. James August and Mabel (Johns) C. Edn.: A.B., Univ. of Pa., 1930; Ph.D., ibid., 1935. m. Elizabeth Shirley, Dec. 24, 1936. c.: Shirley Johns; Bette Walker; James Marvin. Exp.: Asst. in Zool., Univ. of Pa., Phila., Pa., 1929-30; Demonstr., Bryn Mawr Coll., Bryn Mawr, Pa., 1930-31; Instr., Biol., ibid., 1931-35; Instr., Zool., Univ. of Ala., Tuscaloosa, Ala., 1935-39; Asst. Prof., ibid., 1939-45; Assoc. Prof., ibid., 1945-46; Sr. Biolt., U. S. Pub. Health Serv., Bethesda, Md., 1946-47; Prof. and Hd. ,Zool., Univ. of Tenn., 1947 ; Dir., Inst. of Rad. Biol., ibid., 1956—. Hon. Pos.: Consult., Biol. Div., Oak Ridge Natl. Lab., 1947—; Vice Pres., A.A.A.S., 1955; Pres., Tenn. Acad. of Sci., 1961. Mem.: Am. Soc. of Cell. Biol.; Am. Inst. Biol. Scis.; Am. Assn. of Univ. Profs.; Am. Soc. of Nats.; Am. Soc. Zoolts.; Assn. Southeastern Biolts.; Rad. Rsch. Soc.; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi. Contbr. to: Biol. Bull.; Jour. of Morphol.; Jour. of Cellular and Comp. Physiol.; Exptl. Cell Rsch.; Chromosoma; Cytologia. Areas of Rsch.: Effects of Chemical Agents and Radiations on Mitosis and Cell Morphology.

CARLTON, Peter Lynn (Ph.D.), Sr. Rsch. Scientist, E. R. Squibb and Sons, New Brunswick, N. J. Home Add.: 50 Linden Lane, Princeton, N. J. PHYSIOLOGICAL PSYCHOLOGY; PSYCHOPHARMACOLOGY. b. Rochester, Ind., Sept. 4, 1931. s. Francis Dunlap and Margaret (Bryant) C. Edn.: B.A., Grinnell Coll., 1952; M.A., St. Univ. of Ia., 1954; Ph.D., ibid., 1955. m. Sydell Terris, Mar. 2, 1957. Exp.: Rsch. Asst., St. Univ. of Ia., 1952-55; Sr. Rsch. Scientist, Squibb Inst. for Med Rsch., New Brunswick, N. J., 1957—. Hon. Pos.: Adjutant Staff Mem., Rutgers Univ. Mem.: Sigma Xi; Am. Psychological Assn.; N. Y. Acad. of Sci.; Behavioral Pharmacology Soc.; A.A.A.S.; Eastern Psychological Assn.; Psychonomic Soc.; Friars, Grinnell Coll. Contbr. to: Jour. of Pharmacol. and Exptl. Therapeutics; Jour. of Exptl. Analysis of Behavior; Psychopharmacologia; Sci. Serv. Rec.: U. S. Army, 1955-57. Areas of Rsch.: Control of Behavior by the Brain; The Behavioral Effects of Drugs.

CARMICHAEL, Dan J. (Mr.), Asst. Dir., Marketing Rsch. Div., Continental Oil Co., Houston, Tex. BUSINESS MANAGEMENT; MARKETING AND STATISTICS. b. Apr. 13, 1911, Davenport, Ia. s. Joe and Florence (Lynch) C. Edn.: B.C.S., Drake Univ., 1932; M.B.A., Harvard Univ., 1934. m. Mary Virginia Moran of Melrose, Ia., Sept. 8, 1937. d. Dr. and Mrs. T. A. Moran. c.: Shirley M.; Linda C.; Sheila M.; Kathleen; Nancy. Exp.: Hd. Econ. Dept., Dowling Jr. Coll., Ia., 1934-36; Prof. Bus. Admin., Hd. Dept. Marketing, Coll. of Bus. Admin., Drake Univ., Des Moines, Ia., 1936-40; Prof. of Marketing and Hd. Dept., Boston Coll., Chestnut Hill, Mass., 1940-46; Leave of Absence, Lt. Comdr., S. C., U. S. Navy, 1943-45; Lectr., Marketing, Coll of Bus. Admin., Drake Univ., 1947; Rsch. Assoc., Meredith Publishing, Des Moines, Ia., 1947-56; Chmn. of Forward Planning Com., ibid., 1956—; Asst. Dir., Mktng. Rsch. Div., Continental Oil Co., Houston, Tex. Mem.: Am. Statistical Assn.; Am. Marketing Assn.; Alpha Tau Omega; Des Moines Advertising Club. Contbr. to: Jour. of Marketing. War Record: (see above). Listed in: A.M.S. Special Int.: Marketing Rsch. and Statistics.

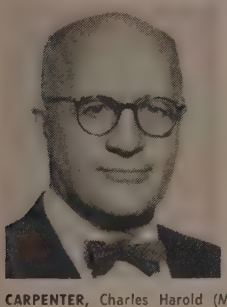
CARMICHAEL, David Burton, Jr. (M.D.), Cardiologist, 773 Herschel Ave., La Jolla, Calif. Home Add.: 8333 Calle de Cielo, La Jolla, Calif. DISEASE OF THE CARDIOVASCULAR SYSTEM. b. Santa Ana, Calif., Sept. 12, 1923. s. David Burton and Phyllis Ann (Adams) C. Edn.: B.A., State Univ. of Iowa, 1946; M.D., ibid., 1946. m. Ava Smith, Dec. 26, 1944. c.: Catherine Ann; Heather Sue; Linda Louise. Exp.: Chief, Dept. of Cardiol., U. S. Naval Hosp., Great Lakes, Ill., 1951-53; Chief, Dept. of Cardiol., U. S. Naval Hosp., San Diego, Calif., 1953-55; Dir., Heart Ctr., Sharp Mem. Hosp., ibid., 1956-57; Chief, Dept. of Med., Scripps Mem. Hosp., La Jolla, Calif., 1960—; Clin. Assoc., Scripps Clinic and Rsch. Fdn., ibid., 1962—. Hon. Pos.: Past Pres., San Diego Soc. of Internal Med.; Past Pres., San Diego Heart Assn.; Past Pres., San Diego Biol. Med. Rsch. Inst.; Consultant in Cardiol., U. S. Naval Hosp., San Diego, Calif.; Consultant in Cardiol., U. S. Vet. Admin. Mem.: Fellow, Am. Coll. of Physicians, Life; Fellow, Am. Coll. of Cardiol.; Fellow, Am. Coll. of Chest Physicians; San Diego Zool. Soc.; Phi Beta Pi; Alpha Omega Alpha. Contbr. to: Am. Heart Jour.; Circulation; Geriatrics; Am. Jour. of Cardiol. Serv. Rec.: U. S. Naval Med. Corps, 1942-55. Areas of Rsch.: Diseases of the Cardiovascular System.

CARMICHAEL, Leonard (Ph.D.), Secy., Smithsonian Institution, Washington 25, D. C. Home Add.: 4520 Hoban Rd., N.W., Washington 7, D. C. PSYCHOLOGY. b. Germantown, Philadelphia, Pa., Nov. 9, 1898. s. Thomas Harrison and Emily Henrietta (Leonard)

Edn.: B.S., Tufts Coll., 1921; D.Sc., ibid., 1937; Ph.D., Harvard Univ., 1924; LL.D., ibid., 1952; LL.D., Boston Univ., 1938; Litt.D., Portia Univ., 1939; L.H.D., Univ. of Me., D.Sc., Brown Univ., 1952; D.C.L., Dickinson Coll., 1955; D.Sc., Lowell Inst. of Technol., 1955. m. Pearl Kidston, June 20, 1932. c.: Martha. Exp.: Instr. Biol., Tufts Coll., 1923-24; Instr., Psychol., Princeton Univ., 1924-26; Asst. Prof., ibid., 1926-27; Assoc. Prof., Psychol., Brown Univ., 1927-28; Prof., ibid., 1928-36; Dir. of Psychol. Lab., ibid., 1927-36; Dir., Lab. Sensory Physiol., ibid., 1934-36; Chmn., Dept. of Psychol., Dean, Faculty of Arts and Scis., Univ. of Rochester, 1936-38; Pres., Tufts Coll., Dir., Lab. Sensory Psychol. and Physiol., 1938-52; Secy., Smithsonian Institution, 1953—. Hon. Pos.: Trustee, Brookings Instn.; Trustee, N. Eng. Ctr. Hosp.; Life Trustee, Natl. Geog. Soc.; Chem., Standing Com., Fed. Coun. for Sci. and Technol.; Mem., Bd. of Sci. Dirs., Yerkes Labs. of Primate Biol.; Mem., Bd. of Dirs., Roscoe B. Jackson Mem. Lab.; Mem., Harvard Bd. of Overseers Comms. to Visit: Dept. of Astronomy; Dept. of Psychol. and Psychol. Labs.; Museum of Comparative Zool.; Mem., Johns Hopkins Univ. Visit. Com. for Biol. Sci.; Mem., Princeton Advisory Coun., Dept. of Psychol. Mem.: Am. Acad. of Arts and Scis., Fellow; A.A.A.S.; Am. Philos. Soc.; Natl. Acad. of Scis.; Natl. Rsch. Coun.; Soc. Exptl. Biol. and Med.; Sons of the Am. Revolution; Soc. of the Cincinnati Am. Legion; Newcomen Soc.; Literary Soc.; Phi Beta Kappa; Sigma Xi; Theta Delta Chi; Ergonomics Rsch. Soc. of England. Co-Author: Special Disabilities in Learning to Read and Write, 1925; Elements of Human Psychology, 1930; Origin and Prental Growth of Behavior, 1933; The Response Mechanism, 1935, 2nd Ed., 1939; Reading and Visual Fatigue, 1947; Ontogenetic Development, 1951; The Physiological Correlates of Intelligence, 1940; Basic Psychology, 1957. Co-Editor: The Selection of Military Manpower, 1952. Assoc. Editor: Jour. of Genetic Psychol.; Genetic Psychol. Monographs; British Jour. Edn'l. Psychol.

CARNAHAN, Howard Leon (Ph.D.), Rsch. Agronomist, Agriculture Expt. Station, Univ. of Nev., Reno, Nev. Home Add.: 1650 Royal Dr., Reno, Nev. PLANT BREEDING AND GENETICS. b. Erie, Kans., Mar. 25, 1920. s. Lee and Olive (Houghton) C. Edn.: B.S., Kans. St. Univ., 1942; M.S., Univ. of Minn., 1947; Ph.D., ibid., 1949. m. Shirley Wallace, Feb. 8, 1945. c.: Lew Wallace; Timothy Leon. Exp.: Asst. Prof., The Pa. St. Univ., 1949-52; Rsch. Agronomist, U. S. Reg. Pasture Res. Lab., A.R.S., U.S.D.A., University Park, Pa., 1953-57; Agronomist in Chg., ibid., 1957-60; Rsch. Agronomist, A.R.S., U.S.D.A., Reno, Nev., 1961—. Mem.: Am. Soc. of Agronomy; Crop Sci. Soc. of Am.; Am. Genetic Assn.; Farm House; Alpha Zeta; Phi Kappa Phi; Sigma Xi; Gamma Sigma Delta; Gamma Alpha; Elks; Little League Baseball. Contbr. to: Agronomy Jour.; Crop Sci.; Botanical Rev.; Botanical Gazette; Jour. of Heredity; U.S.D.A. Techn. Bull. Serv. Rec.: U. S. Naval Reserve, 1942-45. Areas of Rsch.: Plant Breeding; Genetics; Agronomy; Pathol.; Entomol.; Statistics.

CARNEY, Edward Seaton (Ph.D.), Asst. Prof., Carroll Coll., Waukesha, Wis. Home Add.: 230 N. Charles St., Waukesha, Wis. PHYSICAL AND INORGANIC CHEMISTRY.



b. Jackson, Mich., July 28, 1901. s. Henry M. and Amanda (Grossman) C. Edn.: A.B., Kalamazoo Coll., 1923; M.A., Clark Univ., 1924; Ph.D., Brown Univ., 1928. m. Margaret Farley, Sept. 4, 1955. Exp.: Instr., Keystone Jr. Coll., 1946-47; Assoc. Prof., La. Poly. Inst., Ruston, La., 1947; Assoc. Prof., Hartwick Coll., 1947-49; Prof., Shurtleff Coll., Alton, Ill., 1949-51; Prof., Seton Hall Univ., N. J., 1951-54; Prof., Shorter Coll., Ga., 1954-56; Prof., Westminster Coll., Pa., 1956-59; Asst. Prof., Montclair St. Coll., 1959-60; Asst. Prof., Carroll Coll., 1960—. Mem.: Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.

CARPENTER, Charles Harold (Mr.), Faculty of Dept. of Soc. Sci., Clemson Coll., Box 364, Clemson, S. C. Home Add.: 48 East Main St., Maiden, N. C. HISTORY; GEOGRAPHY; POLITICAL SCIENCE. b. Maiden, N. C., July 27, 1924. s. Clyde Henry and Alma Mae (Hoover) C. Edn.: B.A., Lenoir Rhyne Coll., 1945; M.A., George Peabody Coll., 1946; Univ. of Chicago, 1948-49; Univ. of N. C., 1949-50, summers 1949, '50, '56. Exp.: Faculty, Dept. of Soc. Sci., Clemson Coll., S. C., 1946— Hon. Pos.: Secy. Libr. Comm., 1954; Secy., Soc. Sci. Dept.; Dir. of Coll. Geography. Mem.: Natl. Coun. for Geog. Edn.; S. C. Hist. Assn.; Southern Hist. Assn.; Am. Hist. Assn.; Acad. of Pol. Sci.; Am. Assn. of Geographers, S.E. Div.; Pi Gamma Mu; Kappa Delta Pi; A.A.A.S. Author: Syllabus in Geopolitics, 1959; Syllabus in Economic Geography, 1959; The Presidential Campaign and Election of 1824; Advisor in revision, Industrial and Commercial Geography. Listed in: W. W. in Am. Edn.; W. W. in S. and S.W. Gen. Int.: Lecturers to Superior R.O.T.C. Sr.; Judge, Arnold Air Force Soc. Debates; Judge, Trustee Medal in Oratory at Clemson; Pioneer in "Geopolitics" in College Teaching; Survey Geography Curricula, Leading Colleges and Universities; Selected and Taught First Courses in Geography, in Social Sciences Department.

CARPENTER, Irvin Watson, Jr. (Ph.D.), Assoc. Prof. of Botany, Appalachian State Coll., Boone, N. C. Home Add.: 103 Reynolds Rd., Boone, N. C. BOTANY, PLANT ANATOMY, ECOLOGY. b. Wash., D. C., Nov. 29, 1923. s. Capt. Irvin W. and Ruth (McCord) C. Edn.: B.S., Purdue Univ., 1948; M.S., ibid., 1950; Ph.D., ibid., 1952. m. Jessie Smith, Aug. 11, 1948. c.: Kim Jean; Ruth Ann; Carol Ernistine. Exp.: Instr., Purdue Univ., 1952-53; Assoc., Prof., Appalachian St. Coll., 1953—. Hon. Pos.: Regional Vice Pres., Tri-Beta. Mem.: Sigma Xi; Xi Sigma Pi; Phi Delta Kappa; Sigma Pi; Rotary; Masons. Contbr. to: Jour. of Forestry. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Plant Genetics; Ecology of Sou. Appalachians; Morphology of Seedling Roots of Quercus.

CARR, Albert Bernard (Ed.D.), Asst. Prof. of Edn., Consult. in Sci., Univ. Elem. Schl., Univ. of Hawaii, Honolulu 14, Hawaii. Home Add.: 1750 Correa Rd., Honolulu 14, Hawaii. SCIENCE EDUCATION. b. N. Y., N. Y., Nov. 29, 1930. s. Albert and Sarine (Scaffa) C. Edn.: B.S., Iona Coll., 1950; M.A., Columbia Univ., 1951; Ed.D., ibid., 1958. m. Norma Gomez, 1954. c.: Lorrie; Linda Jo; Kevin. Exp.: Sci. Tchr., N.Y.C. Pub. Schls., 1951-54; Sci. Tchr., Eastchester H. S., Tuckahoe, N. Y., 1956-57; Asst. Prof. of Edn. and Consult. in Elem. Sci., Univ. of Hawaii, 1958—. Hon. Pos.: Fellow, Sci. M-Power Project, Columbia Univ., 1957-58; Dir., Student Sci. Seminar, Hawaiian Acad. of Sci., 1959—; Chmn., Hawaii Conf. of Coun. for Elem. Sci., Internatl., 1959. Mem.: A.A.A.S.; A.A.U.P.; Assn. for Edn. of Tchrs. in Sci.; Coun. for Elem. Sci., Int.; Hawaiian Acad. Sci.; Hawaiian Edn. Assn.; Natl. Edn. Assn.; Natl. Sci. Tchrs. Assn.; Phi Delta Kappa. Contbr. to: Proc. Hawaiian Acad. of Sci.; Sci. Edn.; Edn'l. and Psychol. Measurement; Classroom Sci. Bull.; Edn'l. Perspectives. Serv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Air Pollution; Elem. Sci. Edn.; Test Construction.

CARR, Marvin St. Clair (Ph.D.), Prof. of Chem., Eastern Mich. Univ., Ypsilanti, Mich. CHEMICAL ENGINEERING. Home Add.: 1205 Roosevett Blvd., Ypsilanti, Mich. b. Whitehall, Mich., Dec. 13, 1894. s. Harrison and Susie (Stearns) C. Edn.: A.B., Mich. St. Normal Coll., 1922; B.S.E., Ch.E., Univ. of Mich., 1926; Ph.D., ibid., 1929. m. Helen E. Hornberger of Ann Arbor, Mich., Sept. 17, 1921. d. John J. and Kathryn Hornberger. c.: Robert Stearns. Exp.: 1914-16, 1917-18, Supt. of Schl., Ida, Mich., 1916-17, Instr. Sci., Gaylord, Mich.; 1918, Signal Officers Res. Corps, 2nd Lt., Aviation Sect.; 1921-25, Hdmaster. Hudson Schl. for Boys, Detroit Inst. of Tech.; 1925-29, Instr., Dept. Chem. Engrng., Univ. of Mich., Ann Arbor; 1929-47, Rsch. and Dev. Engr., Electrochem. Dept., E. I. duPont de Nemours and Co.; 1947-49, Asst. to Dir., Rsch. Devel. Dept., Wyandotte Chem. Corp.; 1949—, Appointed Prof. of Chem., Eastern Mich. Univ. Mem.: Am. Chem. Soc.; Engrng. Soc. of Detroit; Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon; Iota Alpha; Phi Delta Pi; Alpha Chi Sigma; Kiwanis; M.E.A.; N. Y. Acad. of Scis. Ph.D. Dissertation: Gaseous Explosions—Effect of Tetraethyl Lead on Rate of Rise of Pressure. War Record: W.W. I: Enlisted Jan., 1918; Commissioned 2nd Lt. Sig. Officers Res. Corps, Avn. Sect. Travel: Can.; Brit. Isles; Europe; Mexico. Gen. Int.: Rsch. for Ind. Corp. Along Lines of Electrodeposition of Sodium from Molten Salt Baths; Prepn. of Vinyl Cyanide; Conversion of Furfural to Adiponitrile via Furane and Tetrahydrofurane and Other Indusl. Rsch. Projects. Hobbies: Clocks; Fishing; Bowling. Listed in: A.M.S.; W. W. in the Chem. Indus.; W. W. in Engrng.

CARRINGTON, Evelyn M(aurine) (Ph.D.), Private Practice, 4025 Stanford St., Dallas 25, Tex. PSYCHOLOGY. b. Austin, Tex., Aug. 30, 1898. d. William Leonidas and Bertha Bartlett (Gray) C. Edn.: B.A., Univ. of Tex., 1919; M.A., ibid., 1920; Ph.D., ibid., 1930. Exp.: Tchr. of Latin, Belton H. S., Tex., 1919-22; Instr., N. Dallas H. S., Tex., 1922-28; Instr., Edn'l. Psychol., Univ. of Tex., 1928-30; Prof., Edn'l. Psychol., Sam Houston St. Tchrs. Coll., 1930;41; Prof., Psychol., Tex. St. Coll. for Women, 1941-48, 1949-52; Assoc. Prof., Edn'l. Psychol., Univ. of Tex., 1948-49; Admin. Dir., Children's Development Center, Dallas, Tex., 1952-53; Psychologist and Dir. of Instrn., Shady Brook Schls., Tex., 1953-55; Staff Psychologist, Children's Med. Ctr., Dallas, Tex., 1956—; Lectr. in Child Psychol., Baylor Univ. Coll. of Dentistry, 1956—. Hon. Pos.: Bd. of Dirs., E. D. Farmer Found.; Mem., Dallas Citizen Comn. for Action on Aging, 1961—; Mem. of Health Comm., Dallas Coun. of Social Agencies; Former Pres., Internatl. Coun. of Women Psychologists; Former Pres., Texas Div., Am. Assn. of Univ. Women; Advisory Bd., Hogg Found. of Mental Health. Mem.: Fellow, Am. Psychol. Assn.; Fellow, Internatl. Coun. of Women's Psychologist; Texas Psychol. Assn.; Dallas Psychol. Assn.; Delta Kappa Gamma; Pi Lambda Theta; Kappa Delta Pi. Author: Peripheral Vision in the Silent Reading of Children, 1919; Mental Health of Older People, 1946; The Exceptional Child: His Nature and Needs, 1952. Contbr. to: Today's Health; Edn'l. Forum; Southwestern Musician; Psychol. Mono.; Am. Jour. of Dietetics, and others. Areas of Rsch.: Child Psychology; Geriatrics; Psychological Evaluation and Therapy.

CARRICK, Carey Walton (Mr.), Prof. Emer., Poultry Sci., Purdue Univ., Lafayette, Ind. Home Add.: 1531 Northwestern Ave., West Lafayette, Ind. POULTRY NUTRITION. b. Lexington, N. C., July 6, 1893. s. Thomas and Mary (Bain) C. Edn.: B.A., Wake Forest Coll., 1915; M.A., ibid., 1916; M.S., Cornell Univ., 1917. m. Grace Council, Oct. 11, 1922. c.: Grace Anne. Exp.: Instr., Norfolk County Agri. Schl., Walpole, Mass., 1916-18; Asst. Agri. Extension, Purdue Univ., 1918-21; Assoc. Poul. Husb., Agri. Exp. Sta., ibid., 1922-26; Prof. of Poul. Sci., ibid., 1926—. Hon. Pos.: Pres., Poultry Sci. Assn., 1929; Fellow, Poultry Sci. Assn., 1951. Mem.: Am. Soc. of Animal Production; Fellow, A.A.A.S.; Am. Inst. of Nutrition; World's Poultry Sci. Assn.; Sigma Xi; Kiwanis Club. Contbr. to: Poul. Sci.; Jour. Biol. Chem.; Jour. of Nutrition. Gen. Int.; Golden Egg Award, State Poul. Assn. of Ind. Areas of Rsch.: Poultry Nutrition: Vitamins, Protein, Minerals, Amino Acids, Unidentified Growth Factors, Antibiotics, Environmental Temperature Effects on Nutritional Requirements.

CARROLL, Clifford Andrew (Rev.), S.J., Regent, Schl. of Econ. and Bus. Admin., Gonzaga Univ., Spokane 2, Wash. ECONOMICS; LABOR. b. Duluth, Minn., Apr. 23, 1906. s. Andrew P. and Nellie (Beladeau) C. Edn.: A.B., Gonzaga Univ., 1933; A.M., ibid., 1934; S.T.L., Alma Coll., 1942; Ph.D., St. Louis Univ., 1946. Exp.: Instr., Seattle Coll., 1935-38; Dean, Schl. of Econ. and Bus. Admin., Gonzaga Univ., 1945-53; Regent, Schl. of Econ. and Bus. Admin., ibid., 1953—. Hon. Pos.: Pres., NUBAC, 1958. Mem.: Am. Econ. Assn.; Am. Arbitration Assn.; Catholic Econ. Assn.; Royal Econ. Soc. Gen. Int.: Founded the Institute of Indusl. Relations, 1946. Areas of Rsch.: Labor Relations.

CARROLL, Thomas J. (Rev.), The Catholic Guild for the Blind Archdiocese of Boston, 770 Centre St., Newton 58, Mass. Home Add.: 770 Centre St., Newton 58, Mass. b. Gloucester, Mass., Aug. 6, 1909. s. Thomas J. and Katherine A. (Smith) C. Edn.: A.B., Holy Cross Coll., 1932. Exp.: Asst. Dir., The Catholic Guild for the Blind, Boston, Mass., 1938-46; Dir., The Catholic Guild for the Blind Archdiocese, Boston, Mass., 1946—. Hon. Pos.: Mem., Natl. Adv. Coun. on Voc. Rehabilit., Dept. of Hlth., Edn., and Welf.; Past Mem., Hon. Civil. Adv. Comm., Prog. for the War Blinded of the U. S. Army; White House Conf. on Aging; Mem., World Comn. on Rsch. in Rehabilit., Internatl. Soc. for Rehabilit. of Disabled; Mem., Bd. of Sponsors, Boston Eye Bank; Mem., Social Serv. Adv. Comm., Mass. Eye and Ear Infirmary; Mem., Sect. on Psychol. and Social Scis., Gerontol. Soc., Inc.; Mem., Adv. Coun., Natl. Liturgical Conf., Natl. Chaplain, Blinded Vet. Assn. Author: The Lost Day of Holy Week, 1957; Blindness, What It Is, What It Does, and How to Live with It, 1961. Contbr. to: Proc. Natl. Confraternity of Christian Doctrine; Natl. Catholic Almanac; A.A.W.B. Procs.; The Home Tchr.; Jour. of the Assn. for Physical and Mental Rehabilit.; The New Outlook for the Blind; Blinded Veterans Assn. Bull.; I.P.M.R.; Rehabilitation Rec.; Procs. Natl. Liturgical Conf.; The Liturgical Press. Gen. Int.: Certificate of Appreciation, U. S. War Dept. for Outstanding Service to the Army and to the Blinded Soldiers of W.W. II; B.V.A. Certificate of Appreciation; Migel Award, Am. Foundation for the Blind; Bay St. Award, Mass. Coun. of Organizations for the Blind; Natl. Rehabilit. Assn. Award; Bell Greve Award, Natl. Rehabilit. Conf., Okla. City, Okla.; Morgan Memorial Award; Louis Braille Award, Philadelphia Assn. for the Blind.

CARSTATER, Eugene Debs, (Ph.D.), Spec. for Meas. and Eval. Instr., Stds. and Materials Div., Bur. of Naval Pers., Wash., 25, D. C.

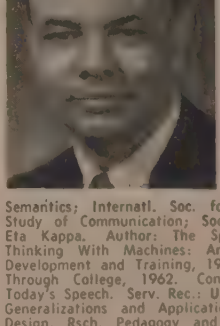
Home Add.: 606 Jackson Dr., Falls Church, Va. EDUCATION; EDUCATIONAL AND PERSONNEL PSYCHOLOGY. b. Mill Hall, Pa., June 28, 1905. s. John Hartman and Bertha Ellen (Cowling) C. Edn.: A.B., Bucknell Univ., 1926; M.A., ibid., 1930; Ph.D., Univ. of Minn., 1937. m. C. Marie Helwig, Sept. 20, 1930. c.: Joan Arlene C. Davey; David Helwig; John Richard. Exp.: Tchr. of Social Studies, Jersey Shore, Pa., H. S., 1926-27; Prin., Lykens Valley Vocl. Schl., Berrysburg, Pa., 1927-29; Instr. in Govt. Wash. Sq. Coll., N. Y. Univ., 1930-31; Fellow in Ednl. Rsch., Univ. of Minn., 1931-35; Vocl. Rehabilit. Counselor, Minn. St. Dept. of Edn., St. Paul, 1935-38; Admin. Asst. to Commnr., ibid., 1938-39; Dir. of Vocl. Edn., ibid., 1939-41; Coord. of Student Personnel, Hampton Inst., 1941-43; Dir. of Vocl. Rehabilit., Minn. St. Dept. of Edn., 1943-44; Hd., Trng. Rsch. Br., Personnel Rsch. Div., BuPers, 1946-58; Trng. Rsch. Advisor, ibid., 1958-60; Spec. for Meas. and Eval. Instr. Stds. and Materials Div., 1960—. Hon. Pos.: Trustee, Bucknell Univ., 1960-65. Mem.: Am. Ednl. Rsch. Assn.; Am. Psychol. Assn.; A.A.A.S.; Human Factors Soc.; Am. Acad. Polit. and Soc. Sci.; Phi Delta Kappa; Soc. for Personnel Administration; Theta Chi; Pi Delta Epsilon; Phi Mu Alpha; Kappa Phi Kappa; Dist. Comm. of Boy Scouts of Am. Contbrng. Author: Personnel Research and Test Development in the Bureau of Naval Personnel, 1947. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Differential Achievement Testing; Curr. Design for Tech. and Technological Occupations; Admin. of Personnel and Trng. Rsch. Programs.

CARRUTHERS, Maurice E. (Mr.), Dir., Stainless Steel Rsch., 703 Curtis St., Middletown, Ohio. Home Add.: 500 Euclid St., Middletown, Ohio. METALLURGICAL RESEARCH. b. Rochester, Ind., Mar. 23, 1912. s. Alonzo J. and Daisy (Harness) C. Edn.: B.S., Purdue Univ., 1934; M.S., ibid., 1936. m. Nila Ambler, Oct. 3, 1934. c.: Peter A.; Sally A. Exp.: Rsch. Assoc., Purdue Univ., 1934-36; Rsch. Asst., Armco Steel Corp., Middletown, Ohio, 1936-37; Rsch. Engr., ibid., 1937-40; Supvrng. Metallurgist, ibid., 1941-58; Dir., Stainless Rsch., ibid., 1959—. Hon. Pos.: Chmn., High Alloys Com., Welding Rsch. Coun.; Chmn., Ad Hoc Comm. for Materials Advisory Bd. to the Natl. Acad. of Scis. Mem.: Am. Soc. for Metals; Soc. for Aircraft Material and Process Engrs.; Am. Welding Soc.; Am. Ordnance Assn.; N.A.S.A. Special Comm. on Materials for Mach 3 Transports; A.I.S.I. Subcomm. on Steels for Aircraft and Missiles; M.A.B. Rolling Panel; Am. Soc. for Quality Control; Sigma Xi; Phi Lambda Upsilon; Kappa Phi Sigma. Contbr. to: Aero Space Engrng., Inst. of Aeronautical Scis.; Welding Jour., Am. Welding Soc.; Trans., Am. Soc. for Metals; Proc., Air Rsch. and Dev. Command; Proc., Aircraft Standards Assn.; Metal Progress. Areas of Rsch.: Stainless Steel Research and Development.

CARTER, Bettina Bush (Mrs. Daniel F. Jackson), Assoc. Prof., Natural Scis., and Rsch. Assoc., Dept. of Pathol., Coll. of Med., Univ. of Louisville, Louisville, Ky. b. Woburn, Mass., Sept. 4, 1910. d. Arthur Dermont and Ethel (Brown) Bush. Edn.: A.B., Univ. of Mich., 1929; M.S., ibid., 1945; Ph.D., Univ. of Pittsburgh, 1951. m. Daniel F. Jackson, Dec. 15, 1951. c.: Bettina de Weeger; Anthony; Lawrence. Exp.: Lab. Technician, N. Y. Div. of Labs. and Rsch., 1937-40; Chf. Serologist, La. St. Dept. of Health, 1940-41; Chf. Serologist, Ky. St. Dept. of Health, 1941-43; Chf. Serologist, Chicago Branch Lab., Ill. Dept. of Health, 1943-44; Rsch. Immunologist, Inst. of Pathol., West Pa. Hosp., Pittsburgh, Pa., 1944-53; Med. Rsch. Dir., Veterans Admin. Hosp. and Asst. Prof. of Bacteriol., Coll. of Med., State Univ. of N. Y., Syracuse, N. Y., 1953-55; Asst. Prof. Biol. Sci., Western Mich. Univ., 1955-59; Assoc. Prof., ibid., 1959; Basic Sci. Bd., St. of Mich., 1957-59; Rsch. Assoc., Dept. of Pathol., Coll. of Med., Univ. of Louisville, 1959-60; Assoc. Prof., Natural Scis., Liberal Arts, 1960—. Mem.: Phi Beta Kappa; Phi Kappa Phi; Delta Phi Alpha; Sigma Xi; A.A.A.S.; Am. Chem. Soc.; N. Y. Acad. of Med. Contbr. to: Jour. Immunology; Am. Jour. Clinical Pathol.; Experientia; Am. Jour. Obstet. and Gynecol., etc. Gen. Int.: Isolation of the Rh hapten; Gerber Award in Biochem., 1956. Special Int.: Rh Factor; Humoral Antibodies; Hemolytic Disease of the Newborn; Haptens and Antigens; Complement-fixation.

CARTER, Edgar B(rock) (Mr.), Consult., Abbott Lab., N. Chicago, Ill. Home Add.: 30 So. Sheridan Rd., Lake Forest, Ill. CHEMISTRY. BACTERIOLOGY. b. Elkinsville, Ind., Apr. 22, 1886. s. Tobe Wilford and Nannie E. (Brock) C. Edn.: A.B., Ind. Univ., 1911. m. 1st wife, Susie Field Huffines (dec.), June 4, 1914. 2nd wife, Ruth Ann Cheney, June 17, 1922. c.: John Robert; Carol R. Carter Clark. Exp.: Asst. Chem., Chf. Chem., Cunningham Sugar o., Sugarland, Tex., 1908-10; Analys., Cons. Chem., Landen C. Moore, Dallas, Tex., 1911-15; Dir., Biol. Lab., Dir. Scientific Work, Swan-Myers Co., Indianapolis, Ind., 1915-31; Dir., Biol., Assoc. Dir. of Rsch., Exec. Dir., Abbott Lab., N. Chicago, Ill., 1931-52; Consult., ibid., 1952—. Fellow: Royal Soc. of Hlth.; Am. Pub. Hlth. Assn.; A.A.A.S.; A.I.C. Mem.: Soc. Am. Bacteriologists; Am. Chem. Soc.; Alpha Chi Sigma; Sigma Xi. Areas of Rsch.: Methods of Sterilization.

CARTER, Elton Stewart (Ph.D.), Assoc. Prof. of Speech, Pa. State Univ., University Park, Pa.



Home Add.: 872 N. Allen St., State College, Pa. RESEARCH DESIGN, RESEARCH PEDAGOGY (HEURISTIC) AND TRAINING. b. Castle Hill, Me., May 6, 1919. s. Percy C. and Gertrude (Haines) C. Edn.: B.A., Univ. of Me., 1941; M.A., Ind. St. Tchrs. Coll., 1947; Ph.D., Northwestern Univ., 1950. m. Miriam Erickson, June 1946. c.: Sandra Lee; Stanley Bruce. Exp.: Travelling Hearing Consultant, Ind. St. Tchrs. Coll., 1941-42, 1945-46; Asst. and Assoc. Prof. of Speech, Pa. St. Univ., 1950-; Staff Engr., Consultant, HRB-Singer, Inc., State Coll., Pa., 1951—. Hon. Pos.: Chmn., Advisory Coun. of Gen. Semantics Interest Group, Speech Assn. of Am. Mem.: Speech Assn. of Eastern Sts.; Inst. of Gen. Semantics; Internatl. Soc. for Gen. Semantics; Natl. Soc. for Study of Communication; Soc. for General Systems Rsch.; Phi Eta Kappa. Author: The Speech Designer's Handbook, 1962; Thinking With Machines: An Approach to Systematic Design, Development and Training, 1961. Co-Author: Learning Your Way Through College, 1962. Contbr. to: General Semantics Bull.; Today's Speech. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Generalizations and Applications of Modern Heuristic in Rsch. Design, Rsch. Pedagogy and Training.

CARTER, Homer L. J. (Mr.), Dir., Psycho-Edn'l. Clin., Western Mich. Univ., Kalamazoo, Mich. Home Add.: 1800 Ind. Ave., Kalamazoo, Mich. PSYCHOLOGY. b. Bath, Mich., Apr. 4, 1894. s. L. D. and Jennie (Hallett) C. Edn.: B.S., Wayne St. Univ., 1926; M.A., Ohio St. Univ., 1931. m. Winifred Gage, June, 1914. c.: Homer Lee; Joan Elizabeth; Duncan Gage. Exp.: Grade Supvr., Dir. Rsch., Royal Oak, Mich., Pub. Schls., 1918-28; Assoc. Dir., Rsch., Western Mich. Univ., 1928-32; Dir., Psychol-Edn'l. Clinic, ibid., 1932—; Assoc. Prof., Psychol., ibid., 1941-47; Prof., Psychol., ibid., 1947—. Mem.: Am. Psychol. Assn.; Midwestern Psychol. Assn.; Mich. Psychol. Assn.; Mich. Acad. Sci., Arts and Ltrs.; A.A.A.S.; Internatl. Reading Assn.; Psi Chi; Alpha Psi Delta; Phi Delta Kappa. Author: Reading Manual and Workbook, 1949; Building a Successful Coll. Career, 1950; Learning to Read, 1953; Effective Reading for Coll. Students, 1957; Building a Successful Coll. Career (Rev. Ed.), 1958; Teaching Individuals to Read, 1962. Contbr. to: Jour. of Consulting Psychol.; Jour. of Applied Psychol.; Jour. of Edn'l. Rsch.; Elem. Schl. Jour.; Edn'l. Rsch. Bull. Areas of Rsch.: The Use of PGR in Studying Locus of Emotional Conflicts and Relative Importance of Each; Developmental and Corrective Reading at the Adult Level; Academic Maladjustment.

CARTER, Hugh (Sevier) (Ph.D.), Chf., Marriage and Divorce Statistics Br., Natl. Vital Statistics Div., U. S. Dept. of Health, Edn. and Welf., Washington, 25, D. C. Home Add.: 2039 New Hampshire Ave., N.W., Wash. 9, D. C. SOCIOLOGY, STATISTICS. b. San Antonio, Tex., Apr. 5, 1895. s. David Wendel and Cornelia Stanley (Keith) C. Edn.: B.A., Southwestern Univ., 1916; M.A., Univ. of Minn., 1922; Ph.D., Columbia Univ., 1927. m. Isabel Gordon, June 22, 1925. c.: Mrs. Eleanor Jean C. Brome; Janet Gordon. Exp.: Instr., Asst. Prof., Univ. of Pa., 1924-45; Statistician, Comm. on the Cost of Med. Care, 1929-30; Chief, General Rsch., Immigration and Naturalization Serv., U. S. Dept. of Justice, Wash., D. C., 1945-52; Chf., Marriage and Divorce Statistics Br., Natl. Vital Statistics Div., U. S. Dept. of Hlth., Edn. and Welf., Wash., D. C., 1952—. Mem.: Am. Sociological Assn., Fellow; Am. Pub. Health Assn., Fellow; Am. Statistical Assn.; A.A.A.S.; Natl. Coun. on Family Relations; Wash. Acad. of Scis., Cosmos. Author: Social Theories of L. T. Hobhouse, 1927. Contbr. to: Am. Sociological Rev.; Jour. of the Am. Statistical Assn.; Marriage and Family Living; Pub. Health Reports; Am. Jour. of Sociol.; Rural Sociol.; Estadistica; Annals of the Am. Polit. and Soc. Sci. Service Record: U. S. Army, 1918-19. Areas of Rsch.: Statistics of Marriages, Divorces and Families; Social Statistics; Demography.

CARTER, James Cedric (Ph.D.), Plant Pathologist and Hd. Sect. of Applied Botany and Plant Pathol., Ill. Natural History Survey, 385 Natural Resources Bldg., Urbana, Ill. Home Add.: P. O. Box 116, Savoy, Ill. PLANT PATHOLOGY. b. Wingate, Ind., Oct. 25, 1905. s. Robert Nelson and Emma Lucinda (Bittle) C. Edn.: B.S., Purdue Univ., 1928; M.S., ibid., 1932; Ph.D., ibid., 1934. m. Margaret Lucile Rogers, Aug. 18, 1934. c.: Robert Roger. Exp.: Vocl. Agric. Tchr., Green Twp. H. S., Judson, Ind., 1928-30; Asst. in Plant Pathol., Purdue Univ., 1931-34; Spec. Rsch. on Fungicides for Crop Protection Inst., Univ. of Del., summers, 1931-32; Asst. Botanist, Ill. Natural History Survey, 1934-46; Assoc. Botanist, ibid., 1946-47; Plant Pathologist, ibid., 1947-55; Hd. and Plant Pathologist, ibid., 1955—; Prof. of Plant Pathol., Univ. of Ill., 1955—. Hon. Pos.: Vice-Pres., Natl. Shade Tree Conf., 1960; Pres., Natl. Shade Tree Conf., 1961; Vice-Pres., Midwestern Chapt. Natl. Shade Tree Conf., 1947; Pres., ibid., 1948. Mem.: Am. Phytopathol. Soc.; Ill. Acad. of Sci.; Ill. Tech. Forestry Assn.; Sigma Xi; Gamma Sigma Delta; Phi Mu Delta. Contbr. to: Ill. Nat. Hist. Surv. Bull.; Wetwood of Elms; Ill. Nat. Hist. Surv. Circ.; Phytopathol.; Sci.; U.S.D.A. Plant Dis. Reporter; Arborist's News; Am. Nurseryman; Trees Mag.; Park Maintenance; Proc. Internatl. Shade Tree Conf.; Proc. Midwestern Shade Tree Conf. Gen. Int.: Awarded Citation by Natl. Arboristsʼs Assn. for Work on Wetwood Dis. of Elm as Outstanding Rsch. During 1945 on Shade Tree Preservation. Areas of Rsch.: Diseases of Shade and Ornamental Trees; Fungicides; Antibiotics.

CARTER, Jerry W., Jr. (Ph.D.), Chief Clin. Psychologist, Community Services Br., Natl. Inst. of Mental Health, Bethesda, Md. Home Add.: 7801 Glenbrook Rd., Bethesda, Md. PSYCHOLOGY. b. Canton, N. C., Oct. 2, 1908. s. Jerry W. and Mary Frances (Holifield) C. Edn.: A.B.E., Univ. of Fla., 1932; M.A., Ind. Univ., 1934, Ph.D., ibid., 1938. m. Dorrice Snyder, Apr. 30, 1938. c.: Jerry W., III; John Marion; Bruce Louttit. Exp.: Jr. Clin. Psycholst., Ind. Univ. Med. Center, 1935-36; Sr. Clin. Psycholst., ibid., 1936-40; Lectr., Ind. Univ. Extension Center, 1937-40; Consultant in Psychol., Indianapolis Pub. Schls., 1936-37; Consultant in Psychol., Wichita Guid. Center, Kans., 1940-41; Dir., Wichita Guid. Center, ibid., 1941-48; Consultant, serving as Branch Chief Clin. Psycholst., Vet. Admin., St. Louis, Mo., 1947; Chief Clin. Psycholst., Community Services Branch, Natl. Inst. of Mental Health, 1948—. Hon. Pos.: Diploma in Clin. Psychol., Am. Bd. of Examiners in Prof. Psychol.; Editorial Bd., Jour. of Clin. Psychol., 1945—; Consulting Editor, Psychological Monographs, 1948-57; Secy., Conf. of Chief Psychologists in State Mental Health Programs, 1950—; Chmn., Md. Bd. of Examiners of Psycholst., 1957-58; Mem., ibid., 1957-60. Mem.: Am. Assn. for Adv. Sci., Fellow; Am. Pub. Hlth. Assn., Fellow; Am. Psychol. Assn., Fellow; Am. Orthopsychiatric Assn., Fellow; Soc. for Rsch. in Child Dev., Fellow; Southeastern Psychol. Assn.; Midwestern Psychol. Assn.; Md. Psychol. Assn.; Sigma Chi; Sigma Xi; P.T.A. Contbr. to: Sci.; The Am. Psychologist; Jour. of General Psychol.; Psychological Record; Jour. of Clinical Psychol.; Jour. of Consulting Psychol.; Jour. of Orthopsychiatry. War Record: Commissioned Officer Corps, U. S. Pub. Health Service, 1948—. Areas of Rsch.: Behavior Mechanisms; Psychopathology, Mental Public Health.

CARTER, Ralph Herbert (Mr.), Chemical and Fermentation Consult. Home Add.: 140-G Howard Dr., Bergenfield, N. J. FERMENTATION AND ORGANIC CHEMISTRY. b. Clarksboro, N. J., Feb. 4, 1904. s. S. Mason and A. Blanche (Somers) C. Edn.: B.S., Pa. St. Univ., 1928; M.S., Iowa State Univ., 1929. m. Cornelia Buzby, 1927. c.: Edythe; Elmer. Exp.: Microbiologist, Chas. Pfizer & Co., Brooklyn, N. Y., 1928-42; Dir. of Rsch., Wannamaker Chemical Co., Orangeburg, S. C., 1942-46; I.R.F. Matarazzo, Amalia, Estado Sao Paulo, Brazil, 1946-49; Consultant, Scientific Design, Inc., 2 Park Ave., N. Y., N. Y. and Moury & Van der Lande, Deventer, Holland, 1950—. Mem.: Soc. Am. Bacteriologists; Am. Chem. Soc.; A.A.A.S. Gen. Int.: Industrial Synthesis of Ascorbic Acid, a New Process for Citric Acid in Holland, Gluconic Acid Patent. Areas of Rsch.: Fermentation and Organic Chemistry.

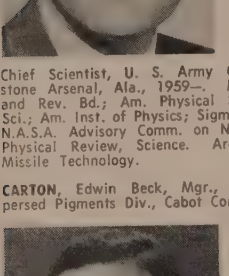
CARTER, Robert Clifton (Ph.D.), Prof. of Animal Genetics, Va. Poly. Inst., Blacksburg, Va. Home Add.: 405 Hemlock Dr. Blacksburg, Va. ANIMAL BREEDING. b. Gate City, Va., June 29, 1909. s. Charles C. and Mary L. (Moore) C. Edn.: B.S., Va. Poly. Inst., 1931; M.S., Iowa State Coll., 1939; Ph.D., ibid., 1956. m. Alyce W. Rose, Nov. 20, 1940. Exp.: Asst. County Agent, Va. Agric. Ext. Div., 1931-33; Co. Agric. Agent, ibid., 1934-47; Secy., Va. Beef Cattle Assn., Richmond, Va., 1947-48; Prof., Va. Poly. Inst., 1948—. Mem.: Am. Soc. of Animal Production; A.A.A.S.; Am. Genetic Assn.; Genetics Soc. of Am.; The Biometric Soc.; Phi Kappa Phi; Sigma Xi. Contbr. to: Jour. of Animal Sci.; Jour. of Heredity. Serv. Rec.: U. S. Army, 1940-42. Areas of Rsch.: Inheritance of Quantitative Characters, Effects of Inbreeding, Heterosis, Methods of Selection in Domesttic Mammals.

CARTER, Sam Frank, Jr. (Mr.), Asst. Works Mgr., American Cast Iron Pipe Co., P. O. Box 2603, Birmingham 2, Ala. Home Add.: 711 Vestavia Lake Dr., Birmingham 16, Ala. METALLURGY. b. Bessemer, Ala., Dec. 14, 1918. s. Sam Frank and Cora (Thomason) C. Edn.: B.S., Birmingham Southern, 1940; M.S., Univ. of Wis., 1941. m. Eulette Francis, 1943. c.: Sam Frank, III; Susan; Thomas. Exp.: Plant Metallurgist, Am. Cast Iron Pipe Co., Birmingham, Ala., 1952-54; Melting Supt., ibid., 1954-56; Asst. Works Mgr., ibid., 1956—. Hon. Pos.: Chmn., Am. Soc. for Metals; Chmn., Am. Foundrymen's Soc. Mem.: Am. Inst. of Mining Metallurgical and Petrol. Engrs.; Am. Soc. for Metals; Am. Foundrymen's Soc.; Am. Ordnance Assn.; Phi Beta Kappa; Omicron Delta Kappa. Contbrng. Author: The Cupola and Its Operation, 1954. Contbr. to: Jour. of Metals; Trans. Am. Foundrymen's Soc., Modern Castings, The Foundry, Trans. Electrochem. Soc., Trans. Am. Soc. Mechan. Engrs. Gen. Int.: National Gold Medal of American Foundrymen's Soc., 1960. Areas of Rsch.: Improved practice in Electric Furnace Steel Making and in Cupola Melting of Cast Iron; Pioneer work on Basic Cupola Melting and Metallurgy of Ductile Iron.

CARTER, William W. (Ph.D.), Chief Scientist, U. S. Army Ordnance Missile Command, Redstone Arsenal, Ala. Home Add.: 2904 Garth Rd., S.E., Huntsville, Ala. PHYSICS. b. Pensacola, Fla., Nov. 7, 1921. s. Eugene H. (dec.) and Nannie (Ledyard) C. Edn.: B.S., Carnegie Inst. of Tech., 1943; M.S., Calif. Inst. of Tech., 1948; Ph.D., ibid., 1949. m. Elizabeth Dedick, June 11, 1945. c.: Carolyn; Susan; Judy; Paul. Exp.: George Westinghouse Scholar, Carnegie Inst. of Tech., 1939-43; Radar Wave Propagation Rsch. at Naval Rsch. Labs. and Pacific Area., U. S. Navy, Washington, D. C., 1944-46; Tchng. Fellow in Physics, Calif. Inst. of Tech., 1946-49; Nuclear and Thermonuclear Weapons Rsch. and Develop. and Test, Los Alamos Scientific Labs., Los Alamos, New Mexico, 1949-59; Ordnance Missile Command, Redstone Arsenal, Ala., 1959—.

Chief Scientist, U. S. Army Mem.: Missile Systems Inspection and Rev. Bd.; Am. Physical Soc.; Am. Assn. for Advanc. of Sci.; Am. Inst. of Physics; Sigma Xi; Phi Kappa Phi; Tau Beta Pi; N.A.S.A. Advisory Comm. on Nuc. Energy Systems. Contbr. to: Physical Review, Science. Areas of Rsch.: Nuclear Weapons; Missile Technology.

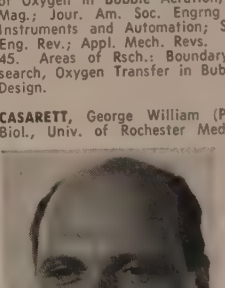
CARTON, Edwin Beck, Mgr., Rsch. and Devel., Acheson Dispersed Pigments Div., Cabot Corporation, Phila., Pa. Home Add.: 9 Dorset Drive, Broomall, Pa. ORGANIC CHEMIST; POLYMERS AND RESINS, PAPER CHEMISTRY. b. Baltimore, Md., Apr. 27, 1927. s. Jacob G. and Gertrude (Beck) C. Edn.: B.A., Johns Hopkins Univ., 1949; M.S., Univ. of Md., 1952; Ph.D., Pa. State Univ., 1955. m. Lonnie Caming, June 19, 1949. c.: Evan Bruce; Deborah Ann; Paula Bette. Exp.: Grad. Asst., Univ. of Md., 1950-51; Rsch. Fellow, Pa. St. Univ., 1951-52; Tchng. Asst., ibid., 1952-55; Rsch. Chemist, Scott Paper Co., Chester, Pa., 1955-58; Rsch. Project Ldr., ibid., 1958-60; Mgr., Rsch. and Devel., Acheson Dispersed Pigments Div., Cabot Corp., Phila., Pa., 1960—. Hon. Pos.: Chmn., Finance, Budget, and Audit Com., Phila. Sect., Am. Chem. Soc., 1961 and 1962. Mem.: Am. Chem. Soc.; Am. Assn. Adv. of Sci.; N. Y. Acad. of Scis.; Alpha Epsilon Pi; Phi Lambda Upsilon; Lawrence Park Civic Assn. Contbr. to: Jour. Am. Chem. Soc. Serv. Rec.: U. S. Army Air Force, 1945-46; Inactive Reserve, 1946-49. Gen. Int.: New Treatment methods for polyolefin films and coatings thereto; Polyurethane color stabilization. Areas of Rsch.: Wet Strength resins for paper; Synthesis of polyesters and of Polyurethane foams; Polyolefin research and product development; Plastics coatings; Paper coatings; Heat seal adhesives for paper and plastic films; Plastics Dispersions.



CARVER, Gail Luke (D.Sc.), Prof. Biol., Hd. Dept., Mercer Univ., Macon, Ga. CONSERVATION OF NATURAL RESOURCES ESPECIALLY TIMBER AND WILD ANIMAL LIFE. b. Feb. 4, 1879, Climax, Mich. s. Chester A. and Rozelia (Hungerford) C. Edn.: Grad., Mich. State Nor. Coll., State Life Certificate, 1900; A.B., Univ. of Mich., 1907; A.M., ibid., 1908; Grad. and Rsch., Columbia Univ., 1912-13; Summers, Univ. of Chicago; Univ. of Mich.; Marine Biol. Lab., Woods Hole, Mass.; Puget Sound Biol. Lab., Wash.; Biol. Lab., Mt. Lake, Va. Hon. Deg.: D.Sc., Mercer Univ., 1954. m. Nettie Pratt of Minneapolis, Minn., Dec., 1913 (dec.). m. Julia Webb of Miami, Fla., Nov., 1941. c.: Robert Elrod (by second wife). Exp.: Dist. and Grade Schl., Mich. Prin. and Tchr., Village Schl., Rutledge, Minn., 1900-01; Civil Engr., Seattle, Wash., 1901-02; Supt. of Schls., Buckley, Wash., 1902-05; Co. Bd. of Edn., Pierce Co., Wash., 1903-05; Act. Prof., Phys. and Astron., Mercer Univ., Macon, Ga., 1907-08; Prof. Biol., ibid., 1908-18; Wesleyan Coll., 1920-24; Prof. Biol., Hd. Dept. Biol., Chmn. Div. Pre-Med. and Pre-Dental Studies, Mercer Univ., 1924-54; Prof. Emer., Ibid., 1954—. Mem.: Sigma Xi; Marine Biol. Assn.; A.A.C.A.; A.A.U.P.; A.S.B.T.; N.E.A.; Forest Products Rsch. Soc.; Southern Assn. Sci. and Industry; Amer. Forestry Assn.; Natl. Soc. Biol.; Am. Genetics Assn.; Am. Nature Study Assn.; Soc. of Am. Foresters; Ecol. Soc. of Am.; Am. Soc. of Human Genetics; A.A.A.S.; Rotary; Exec., C. of C.; Men's Garden Club; Music Club; etc. Author: Spec. Articles on Conservation. Contbr. to: Biol. Bull. Ph.D. Dissertation: Studies in Fertility and Heredity of Drosophila Melanogaster. Travel: U. S.; Can.; Mex. Hobbies: Travel; Hunting; Farm Interests. Listed in: A.M.S.; Who's Who in South and Southwest; Am. Naturalists. Special Int.: Genetics, Hygiene and Forestry; Who's Who in Edn.; Am. Men of Sci.

CARVER, Charles Ellsworth, Jr. (Sc.D.), Prof. of Civil Engrng., Univ. of Mass., Amherst, Mass. Home Add.: 15 Sunset Ave., Amherst, Mass. FLUID MECHANICS. b. Burlington, Vt., May 27, 1922. s. Charles Ellsworth and Etta (Chapman) C. Edn.: B.S., Univ. of Vt., 1947; M.S., Mass. Inst. of Tech., 1949; Sc.D., ibid., 1955. m. Florence Mallory, Sept. 23, 1950. c.: Beth Anne; Lynne Mallory; Charles, III. Exp.: Rsch. Asst., Mass. Inst. of Tech., Cambridge, Mass., 1947-49; Rsch. Asst., ibid., 1951-55; Instr., Johns Hopkins Univ., Balt., Md., 1955-56; Sr. Hydrody. Engr., Glenn L. Martin Co., Balt., Md., 1955-56; Rsch. Assoc., Woods Hole Oceanog. Inst., 1956-58; Assoc. Prof. of Civil Engrng., Univ. of Mass., 1958-62; Prof., ibid., 1962—. Mem.: Am. Soc. of Civil Engrs.; Am. Soc. Engrng. End.; Am. Geophys. Union; Am. Ordn. Assn.; Internatl. Assn. for Hydraulic Rsch.: Phi Beta Kappa; Sigma Xi; Tau Beta Pi; Phi Delta Theta. Contbrng. Author: Absorption of Oxygen in Bubble Aeration, 1956. Contbr. to: Civil Engrng. Mag.; Jour. Am. Soc. Engrng. Edn.; Undersea Technol.; Ordn.; Instruments and Automation; Sewage and Indust. Wastes; Aero Eng. Rev.; Appl. Mech. Revs. Serv. Rec.: U. S. Air Force, 1943-45. Areas of Rsch.: Boundary Layer Control, Ocean Wave Research, Oxygen Transfer in Bubble Aeration, Underwater Weapon Design.

CASARETT, George William (Ph.D.), Assoc. Prof. of Radiation Biol., Univ. of Rochester Med. Schl., Rochester, N. Y. Home Add.: 107 French Rd., Rochester 18, N. Y. RADIATION PATHOLOGY AND RADIATION BIOLOGY. b. Rochester, N. Y., Aug. 17, 1920. s. George W. and Carolina (Rocco) C. Edn.: Ph.D., Univ. of Rochester, 1952. m. Marion Wells, June 12, 1944. c.: Leslie Gay; Vicki Wells. Exp.: Scientist, Univ. of Rochester Med. Schl., 1941-53; Instr., ibid., 1953-57; Asst. Prof., ibid., 1957-59; Assoc. Prof., ibid., 1959—. Mem.: A.A.A.S.; A.A.U.P.; Am. Assn. of Anat.; Am. Soc. Exptl. Pathol.; A.I.B.S.; Gerontological Soc.; Fellow; N. Y. Acad. of Scis.; Fellow; N. Y. St. Soc. Med. Rsch.; Radiation Rsch. Soc.; Soc. Exptl. Biol. Med.; Sigma Xi. Author: Histopathology of Alpha Radiation, 1952. Contbr. to: Federation Proc.; Jour. of Biological Chem.; Sci.; Arch. of Biochemistry; Stain Technol.; Arch. of Pathol.; Jour. of Gerontol.; Am. Jour. Roentgenol.; British Jour. of Radiology; Radiation Rsch.; Am. Jour. Physiol.; Cancer Rsch. Areas of Rsch.: Pathologic and Hematologic Effects of Radiations and Radioactive Substances; Radiation Biol.; Gerontol. Reproduction.



CASE, Harry Walter (Ph.D.), Prof. of Engrng. and Psychol., Univ. of Calif., Los Angeles 24, Calif. Home Add.: 3627 West 104th St., Inglewood, Calif. PSYCHOLOGY AND ENGINEERING. Searchlight, Nev., July 21, 1908. s. Harry Walter and Jane Elizabeth (Plowman) C. Edn.: B.A., U.C.L.A., 1935; M.A., Ibid., 1937; Ph.D., ibid., 1940. m. Margaret Trumbull, 1946. Exp.: Assoc., Univ. of Ill., 1941-42; Asst. Personnel Mgr., Engr., Douglas Aircraft, El Segundo, 1942-45; Mgr., Personnel Rsch. Div., Safeway Stores, Los Angeles, 1945-46; Asst. Prof., U.C.L.A., 1946-47; Assoc. Prof., ibid., 1947-53; Prof., ibid., 1953—; Chm., Service Comnr., Los Angeles Co., 1954-55; Consultant, Ibid., 1956—; Diplomate Status, Indus. Psychol., Am. Bd. of Psychol. Examiners. Mem.: Am. Psychol. Assn.; Western Psychol. Assn.; Calif. Psychol. Assn.; Am. Soc. for Engrng. Edn.; Phi Theta Kappa; Phi Delta Kappa; Phi Gamma Mu; Sigma Xi; Psi Chi. Co-Author: Psychology of Military Leadership, 1943. Contbr. to: Jour. of Applied Psychl.; Jour. of Consulting Psychol.; Jour. of Gen. Psychol.; Jour. of Edn'l. Tests and Measurements; Jour. of Engrng. Edn. Areas of Rsch.: Industrial Psychology, Traffic, Automated Learning, Engineering Education.

CASKEY, Albert Leroy (Ph.D.), Assoc. Prof., Chem., Southeast Mo. State Coll., Cape Girardeau, Mo. Home Add.: 1530 Grandview Dr., Cape Girardeau, Mo. ANALYTICAL CHEMISTRY INORGANIC AND CHELATE COMPLEXES. b. Wichita, Kans., Nov. 26, 1931. s. Wilber Reid and Julia S. (Stroetker) C. Edn.: B.S., Southeast Mo. State Coll., 1953; M.S., Ia. State Univ., 1955; Ph.D., ibid., 1961. m. Nancy Joan Currie, Dec. 29, 1957. c.: Brian James. Exp.: Grad. Asst., Ia. State Univ., Ames, Ia., 1953-58; Asst. Prof., Southeast Mo. State Coll., 1958-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Chem. Soc.; Soc. for Applied Spectroscopy; Phi Lambda Upsilon. Contbr. to: Analyt. Chem. Areas of Rsch.: Chelation, Organic Reagents for Quantitative Analysis, Microanalysis, Spectrophotometry (UV-visible).

CASKEY, James Edward, Jr. (Mr.), Chf., Editorial Office, U. S. Weather Bureau, Wash., D. C. Home Add.: 5300 Pender Ct., Alexandria, Va. METEOROLOGY. b. Heath Springs, S. C., Mar. 13, 1918. s. James E. and Mary (Mobley) C. Edn.: B.S., Furman Univ., 1939; M.A., Duke Univ., 1940; Univ. of Chicago, Cert. of Prof. Meteorol., 1942. m. Mamie Collins, May 29, 1942. c.: James E., III; Nancye Beth. Exp.: Jr. Observer, U. S. Weather Bureau, S. C., 1941; Meteorologist, U. S. Weather Bureau, Wash., D. C., 1946; Asst. Prof., Furman Univ., 1946-48; Meteorol., U. S. Weather Bureau, Wash., D. C., 1948—. Hon. Pos.: U. S. Mem. of Comm. on Bibliogr. and Publs., World Meteorol. Organ., 1954-59; U. S. Delegate to Second Sess., Comn. on Bibliog. and Pubs., WMO, Paris, France, 1957. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union. Contbr. to: Monthly Weather Rev.; Jour. of Meteorol. Serv. Rec.: U. S. Army Air Corps, 1941-46; U. S. Air Force Reserve, 1946—. Areas of Rsch.: Meteorological Literature; Synoptic and Dynamic Meteorology.

CASNER, Evelyn Wiggin (Ph.D.), Prof. of Maths., Randolph-Macon Woman's Coll., Lynchburg, Va. MATHEMATICS. b. Stratham, N. H., Mar. 1, 1900. d. George Herbert Wiggin and Margie (Green) W. Edn.: B.A., Wellesley Coll., 1921; M.A., Brown Univ., 1923; Ph.D., Univ. of Chicago, 1936. m. Sidney Casner, 1956. Exp.: Tchng. Asst., Brown Univ., Providence, R. I., 1921-23; Asst. Prof., Hood Coll., 1923-28; Fellow, Math., Univ. of Chicago, Chicago, Ill., 1928-29; Lectr., Wellesley Coll., Wellesley, Mass., 1943-44; Prof. of Math., Randolph-Macon Women's Coll., 1927—. Mem.: Phi Beta Kappa; Sigma Xi; Math. Assn. of Am.; Am. Assn. Univ. Profs.; Am. Assn. Univ. Women; Appalachian Trail Club. Author: Boundary Avlue Problem in Calculos of Variations, 1937.

CASSIDY, Carl Eugene, Sr. (M.D.), Asst. Prof. of Med., Tufts Univ. Schl. of Med. and Asst. Physician, New England Center Hosp., 171 Harrison Ave., Boston 11, Mass. Home Add.: 1 Chatham Circle, Wellesley Hills, Mass. MEDICINE. b. Salineville, Ohio, Dec. 4, 1924. s. Clifford and Dorotha (Lance) C. Edn.: A.B., Kenyon Coll., 1946; M.D., Western Reserve Univ., 1948. m. Ruth Collord, Dec. 21, 1961. c.: George L. Collord III; Frederick P. Collord. Exp.: Fellow in Med., Cleveland Clinic Found., Ohio, 1951-54; Asst. in Med., Tufts Univ. Schl. of Med., 1954-56; Clin. Instr. in Med., ibid., 1956-58; Instr. in Med., ibid., 1958-59; Asst. Physician, N. England Ctr. Hosp., Boston, 1956—; Sr. Instr. in Med., Tufts Univ. Schl. of Med., 1959—. Mem.: Endocrine Soc.; Royal Soc. of Med., London; Am. Fed. for Clin. Rsch.; A.A.A.S. Author: Hormones in Blood, 1957; Clinical Endocrinology I, 1960. Contbr. to: Jour. Clin. Endocrinol. and Metabolism; Cleveland Clinic Quart.; Jour. Clin. Investigation; New England Jour. of Med.; Les Congres et Colloques de l'Universite de Liege; Metabolism; Jour. Am. Med. Assn. Serv. Rec.: U.S.N. Med. Corps, 1949-51. Area of Rsch.: Endocrinology.

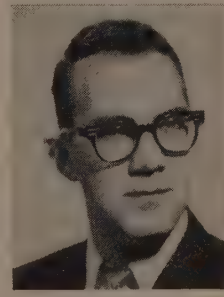
CASS, Leo Joseph (M.D.), Physician, Harvard Univ. Health Servs., Dir., Law Schl. Health Servs., Cambridge, Mass.; Pres., Cass Rsch. Assn., 87 Chestnut St., Boston, Mass. Home Add.: 4 Myopia Hill Rd., Winchester, Mass. INTERNAL MEDICINE AND BIOMEDICAL RESEARCH. b. Medford, Mass., Dec. 17, 1908. s. John W. and Eleanor (Baldwin) C. Edn.: A.B., Harvard Coll., 1933; M.D., Harvard Med. Schl., 1938. m. Victoria Maxwell, Aug. 11, 1941. c.: Leo; Victoria B. Exp.: Private Practice, Boston, Mass., 1942—; Physician, Univ. Health Serv., Harvard Univ., 1942—; Dir., Law Schl. Health Servs., ibid., 1947—; Acting Chf. of Medicine, Assoc. Dir., ibid., 1960; Pres., Cass Rsch. Assocs., Boston, Mass., 1959—; Pres., San Jorge Rsch. Inst., San Juan, P.R., 1960—; Consultant, Coun. on Drugs, A.M.A., Boston, Mass., 1960; Assoc. Editor, Current Therapeutic Rsch., N. Y., N. Y., 1960—; Co-dir., Chandler Hovey Unit for Rsch. and Treatment of Multiple Sclerosis, Brookline, Mass, 1961—. Hon. Pos.: Pres. of Staff, L. I. Hosp., Boston, Mass.; Chf. of Medicine, Brooks Hosp., Brookline, Mass.; Chmn., Exec. Comm., Ibid. Mem.: A.M.A.; Mass. Med. Soc.; Am. Therapeutic Soc.; Am. Coll. of Chest Physicians; N. Y. Acad. of Scis.; Am. Coll. Health Assn.; Aero Space Med. Assn.; Harvard Club; Mass. Orchid Soc.; Winchester Country Club; Millwood Hunt; Pan-Am. Soc. Contbr. to: J.A.M.A.; Bull. Natl. Rsch. Coun.; Natl. Insts. of Health; Am. Jour. of Med. Sci.; Geriatrics; N.E. Jour. of Med.; Jour. of Lab. & Clin. Medicine; Am. Jour. of Gastroenterol.; Annals of Internal Medicine; Arch. of Internal Medicine; Antibiotic Medicine & Clin. Therapy; Am. Practitioner & Digest of Treatment; Canadian Med. Assn. Jour.; Current Therapeutic Rsch.; The Jour. Lancet; Med. Times; N. Y. St. Jour. of Medicine. Serv. Rec.: U. S. Army, 1943-47. Areas of Rsch.: Therapeutic Rsch.; Testing of Drugs for efficacy and toxicity; Refining of techniques in quantitating drug analysis; Studies of addiction; Steroid and Chemical Lab and Clinical investigations.

CASTORO, Paul Louis (Mr), Audiovisual Dir., Menlo Atherton H. S., Atherton, Calif. Home Add.: 1538 Carmel Dr., San Jose, Calif. ZOOLOGY AND ENTOMOLOGY; EDUCATION. b. San Jose, Calif., Sept. 6, 1921. s. Louis B. Castoro and Margaret J. (DeCorte) Crema. Edn.: A.B., San Jose St. Coll., 1948; M.S., Kans. St. Univ., 1950. m. Bonnie Black, Aug. 29, 1953. c.: Paul S.; Patricia L. Exp.: Sci. Inst., Grant Union H. S., Sacramento, Calif., 1952-55; Sci. Instr., Menlo Atherton H. S., Atherton, Calif., 1955—. Hon. Pos.: Coordinator of Sacramento Sci. Fair; Chmn., Sequoia Lab. Sci. Curriculum Comm.; Commissioner, Boy Scouts. Mem.: A.A.A.S.; Calif. Tchrs. Assn.; Theta Chi; Knights of Columbus; Calif. Acad. of Sci. Contbr. to: Wilson Jour. Serv. Rec.: U. S. Army, 1942-45; U.S.A.R. Med. Dept., from 1949—. Areas of Rsch.: Behavior of Vertebrates; Anatomy and Physiology.

CASWELL, Robert Little (Mr.), Chemist, Rm. 103 S. Lab. Bldg., Beltsville, Md. Home Add.: 11626 35th Pl., Beltsville, Md. CHEMISTRY—DEVELOPMENT OF CHEMICAL METHODS OF ANALYSIS FOR PESTICIDES. b. San Francisco, Calif., Jan. 27, 1918. s. Roy Harris and Imelda (Puttkamer) C. Edn.: B.S., Univ. of Calif., 1939. m. Ellen Wilson, Sept. 28, 1957. c.: Charles Robert. Exp.: Chemist, U. S. Dept. of Agriculture, Insecticide Div., San Francisco, Calif., 1941-42, 1946-48; Chemist, U. S. Dept. of Agriculture, Pesticides Regulation Div., Beltsville, Md., 1948—. Hon. Pos.: Referee for Pesticides, A.O.A.C. Mem.: Am. Chemical Soc.; A.A.A.S.; A.O.A.C.; Insecticide Soc. of Wash. Contbr. to: Jour. of A.O.A.C.; Jour. of Agricultural and Food Chem. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Development of Chemical Methods of Analysis for Pesticides.

CATENHUSEN, John Bernard (Ph.D.), Chmn., Div. of Nat. Scis. and Prof. of Biol., Hillsdale Coll., Hillsdale, Mich. Home Add.: Baw Beese Heights, Route 3, Hillsdale, Mich. ECOLOGY; COMPARATIVE ANATOMY; HUMAN EMBRYOLOGY. b. Elk Creek, Nebr., June 17, 1909. s. Victor Herman and Mary (Peterson) C. Edn.: Ph.B., Univ. of Wis., 1937; Ph.M., ibid., 1939; Ph.D., ibid., 1947. m. Carolyn Wolff, June 14, 1941. c.: Jane Ann; Janet Clare. Exp.: Biolt., Univ. of Wis., Madison, Wis., 1941-43; Asst. Div. Mgr., SHADA, Haiti, 1943-44; Rsch. Bot., Firestone Plantations Co., Liberia, W. Africa, 1944-51; Consult., Wis. Conservat. Dept., Madison, Wis., 1951-52; Assoc. Prof., Coll. of Steubenville, Steubenville, Ohio, 1952-55; Chmn. of the Div. of Nat. Scis. and Hd. of the Biol. Dept., Prof. of Biol., Hillsdale Coll., 1955—. Mem.: Sigma Xi; Phi Sigma; Gamma Alpha; Am. Men of Sci.; Delta Sigma Phi; Omicron Delta Kappa. Contbr. to: Wis. Acad. of Scis.; The Jour. of Wildlife Mgt.; Rsch. Reps. to the Firestone Plants. Areas of Rsch.: Natural History of Birds; Human Embryology.

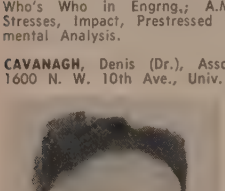
CATHEY, Everett Henry, Jr. (Mr.), Physicist, Radioisotope Services, V. A. Hosp., 300 E. Roosevelt, Little Rock, Ark. Home Add.: 73 South Meadow Cliff, Little Rock, Ark. NUCLEAR PHYSICS. b. Little Rock, Ark., Jan. 9, 1931. s. Everett Henry and Margaret Elizabeth (Avera) C. Edn.: B.A., Univ. of Ark., 1956; M.S., ibid., 1960. m. Brenda Gloe Updike, Feb. 3, 1961. c.: Kellie Ann. Exp.: Instr., Little Rock Univ., Little Rock, Ark., 1958-62; Physicist, V. A. Hospital, 1961—. Mem.: Am. Physical Soc.; Am. Assn. of Physics Tchrs.; Am. Assn. for Adv. of Sci.; Sigma Pi Sigma. Contbr. to: Jour. of the Acoustical Soc. of Am.; Ark. Acad. of Sci.; Bull. of the Am. Physical Soc. Areas of Rsch.: Loudness Measurements, Instrumentation, Activation Analysis, Cosmic Ray Bursts.



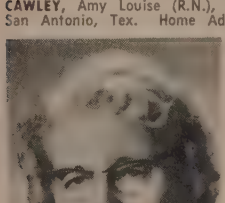
CAUGHEY, Robert Andrew (Mr.), Prof., Civil Engrng., Iowa St. Univ., Ames, Ia. STRESSES AND STRAINS IN STRUCTURAL MEMBERS. b. Aug. 12, 1885, McKeesport, Pa. s. Joseph Young and Mary (McClure) C. Edn.: B.S. in C.E., Pa. State Univ., 1907; C.E., ibid., 1916. m. Elva Bradshaw of Dravosburg, Pa., Dec. 27, 1911. d. Mr. and Mrs. A. S. Bradshaw. Exp.: Pa. Railroad,

Rodman, N. Y. Tunnel Extension, 1907-08; State of N. Y. in Chg. of Highway Construction on L. I., June-Dec., 1908; Instrumentman, A. G. Shaw, Pittsburgh, Pa., 1909, Feb.-May; Draftsman, Amer. Bridge Co., Ambridge, Pa., 1909-10; Pa. St. Univ.; Instr. in Civil Engrng., 1910-14; Asst. Registrar, part time, 1911-13; Asst. Prof. of Civil Engrng., 1914-18; Assoc. Prof. C.E., 1918-19; Iowa St. Univ.: Assoc. Prof. of Structural Engrng., 1919-30; Prof. of Civil Engrng., 1930—; Various summer jobs with Bridge and Bldg. Cos. Hon. Pos.: Sec., Ia. State Chpt., Phi Kappa Phi, 1930-32; Vice-Pres., Ia. State Chapt., ibid., 1933-34; Pres., Ia. State Chapt., ibid., 1934-35; Sigma Xi; Treas., 1933-35; Tau Beta Pi; Am. Soc. of Civil Engrs.; Ia. Engrng. Soc.; Am. Concrete Inst. and A.S.E.E.; S.A.R. Author: Reinforced Concrete, 1936; Papers to Various Publications. Contbr. to: Am. Soc. C. E., Trans.; Structural Engr., London; Co-author, Ia. Engrng. Exp. Sta. Bull., No. 75, 172, and 176. Travel: U. S.; Rail and Auto. Gen. Int.: Reading; Walking; Auto Travel. Listed in: Who's Who in Engrng.; A.M.S. Special Int.: Indeterminate Stresses, Impact, Prestressed Concrete— Theoretical and Experimental Analysis.

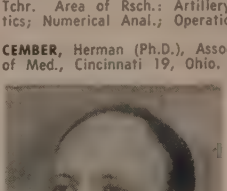
CAVANAGH, Denis (Dr.), Assoc. Prof., Dept. Obst. and Gyn., 1600 N. W. 10th Ave., Univ. of Miami, Miami 36, Fla. Home Add.: 1001 Wallace St., Coral Gables, Fla. OBSTETRICS AND GYNECOLOGY. b. Paisley, Scotland, Dec. 27, 1923. s. Bernard and Agnes (Johnston) C. Edn.: M.B.Ch.B., Univ. of Glasgow, Scotland, 1952. m. Margaret M. McNab, 1951. c.: Bernard. Exp.: Rsch. Fellow, Am. Cancer Soc., Univ. of Tex., M. D. Anderson Hosp., Houston, Tex., 1958-59; Asst. Prof., Univ. of Miami, 1959-61; Assoc. Prof., ibid., 1961—. Mem.: Balt. City Med. Soc. and Med. and Chirur. Faculty State of Md. F.M.A.; Fla. Obst. and Gynec. Soc.; Am. Acad. Adv. Sci.; Am. Med. Assn.; So. Med. Assn.; Am. Assn. Univ. Profs.; Intern. Corresp. Soc. of OB-GYN.; Diplomate of Am. Bd. of Obstets. and Gynecol.; Fellow, Am. Coll. of OB-GYN.; Miami Aesculapian Soc. Author: "Obstetrical Emergencies", 1961. Contbr. to: Am. Jour. Obst. and Gynec.; Obst. and Gynec.; Jour. Am. Med. Assn.; So. Med. Jour.; Am. Jour. of Surg.; Brain. Serv. Rec.: British R.A.F., 1942-47. Areas of Rsch.: Obstetrical Emergencies, Gynecological Cancer, Endotoxin Shock.



CAWLEY, Amy Louise (R.N.), Asst. Prof., Incarnate Word Coll., San Antonio, Tex. Home Add.: 736 East Woodlawn, San Antonio, Tex. PUBLIC HEALTH EPIDEMIOLOGY. b. Arrington, Kans., August 15, 1911. d. Thomas Francis and Mary (McAsey) C. Edn.: M.P.H., Yale Univ., 1955; B.S., St. Louis Univ., 1941; R.N., St. Mary's Hosp. Schl. of Nurs., 1936. Exp.: Comm. Ofc., USPHS, 1941-51; Consultant, Kans. State Bd. of Health, Salina, Kans., 1955-58; Asst. Prof., Univ. of Missouri, Columbia, Mo., 1958-59; Asst. Prof., Incarnate Word Coll., Tex., 1959—. Hon. Pos.: Past Chmn., P.H.N. Sec.; Past Chmn., Prof. Societies Offices Section, Kans. State Nurses Assn.; Past Chmn., PHN Sec., Kans. Pub. Health. Mem.: Am. Nurses Assn.; Natl. League for Nursing; Am. Assn. of Industrial Nurses; Natl. Council of Catholic Nurses; A.A.U.P.; A.A.A.S.; Fellow, A.P.H.A. Contbr. to: Kans. Nurses; Pub. Health Reports. Serv. Rec.: U. S. P.H.S., 1941-51. Gen. Int.: Polio Survey Participant Hidalgo Co., Tex.; Multiphasic Screening Survey, Atlanta, 1948. Areas of Rsch.: Salmonellosis-Shigellosis; Polio Industrial Survey Methods.

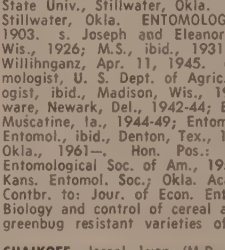


CELL, John Wesley (Ph.D.), Hd. Dept. of Math., N. C. State Coll., Raleigh, N. C. Home Add.: 3114 Darien Dr., Raleigh, N. C. MATHEMATICS. b. Kans. City, Mo. s. John F. and Mary Florence (Musson) C. Edn.: A.B., Univ. of Ill., 1928; M.A., ibid., 1929; Ph.D., ibid., 1935. m. Mary Louise Keith, Apr. 3, 1931. c.: John Whitson; Howard Robert; Mary Linn. Exp.: Asst. Instr., Univ. of Ill., 1928-29; Asst. Prof., Applied Math., Southern Meth. Univ., Tex., 1929-32; Asst. Instr., Univ. of Ill., 1933-35; Instr., Math., N. C. State Coll., 1935-36; Asst. Prof., ibid., 1936-38; Assoc. Prof., ibid., 1938-46; Prof., ibid., 1946-57; Hd. of Math. Dept., ibid., 1957—; Chmn., Math. Div., A.S.E.E., 1947; Chmn., Southeastern Sect., Am. Math. Assn., 1948-49. Mem.: A.A.A.S. Fellow; Am. Math. Soc.; Math. Assn. of Am.; S.I.A.M.; Am. Soc. of Engrng. Edn.; Sigma Xi; Am. Rocket Soc.; Am. Ordnance Soc.; Phi Kappa Phi; Pi Mu Epsilon. Author: Engineering Problems Illustrating Mathematics, 1943; Analytic Geometry, 1950, 1951, 1960. Contbr. to: Duke Math. Jour.; Bull. Am. Soc.; Am. Math. Monthly; The Math Tchr. Area of Rsch.: Artillery Rocket Rsch. in Exterior Ballistics; Numerical Anal.; Operational Math.; Differential Equations



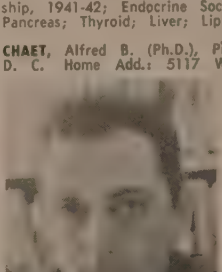
CEMBER, Herman (Ph.D.), Assoc. Prof., Univ. of Cincinnati College of Med., Cincinnati 19, Ohio. Home Add.: 7966 Greenland Pl., Cincinnati 37, Ohio. BIOPHYSICS HEALTH PHYSICS. b. Brooklyn, N. Y., Jan. 14, 1924. s. Arthur and Lilly (Shuster) C. Edn.: B.S., City Coll. of N. Y., 1949; M.S., Univ. of Pittsburgh, 1952; Ph.D., ibid., 1960. m. Sylvia Brudner, Dec. 5, 1943. c.: Michael A., Marilyn B. Exp.: Rsch. Assoc., Univ. of Pittsburgh, 1950-54; Asst. Prof., ibid., 1954-59; Assoc. Prof., ibid., 1960; Assoc. Prof., Univ. of Cincinnati, 1960—. Mem.: Radiation Rsch. Soc.; A.A.A.S.; Health Physics Soc.; Am. Indust. Hyg. Assn.; Am. Nuclear Soc.; Sigma Xi. Contbr. to: A.M.A. Archives Indust. Health; Am. Indust. Hyg. Assn. Jour.; Nucleonics; Radiation Rsch. Gen. Int.: Certified Health Physicist. Areas of Rsch.: Health Physics, Biological Effects of Radiation, Expti. Lung Cancer, Radiation Toxicol.

CHADA, Harvey Lorenzo (Ph.D.), Res. Entomologist, Ent. Res. Div., U.S.D.A. and Associate Prof., Dept. of Entomology, Okla. State Univ., Stillwater, Okla. Home Add.: 711 South Ridge Rd., Stillwater, Okla. ENTOMOLOGY. b. Kewaunee, Wis., Nov. 7, 1903. s. Joseph and Eleanor (Neitz) C. Edn.: B.S., Univ. of Wis., 1926; M.S., ibid., 1931; Ph.D., ibid., 1947. m. Mariana Willihnganz, Apr. 11, 1945. c.: Robert Lawrence. Exp.: Entomologist, U. S. Dept. of Agric., Toledo, Ohio, 1927-32; Entomologist, ibid., Madison, Wis., 1933-42; Ext. Ent., Univ. of Delaware, Newark, Del., 1942-44; Entomologist, U. S. Dept. of Agric., Muscatine, Ia., 1944-49; Entomol., ibid., Weslaco, Tex., 1949-51; Entomol., ibid., Denton, Tex., 1951-61; Entomol., ibid., Stillwater, Okla., 1961—. Hon. Pos.: Vice-Chmn., Southwestern Branch Entomological Soc. of Am., 1957. Mem.: Entomol. Soc. of Am., Kans. Entomol. Soc.; Okla. Acad. of Sci.; Phi Sigma; Sigma Xi. Contbr. to: Jour. of Econ. Entomol.; Crop Sci. Areas of Rsch.: Biology and control of cereal and forage insects. Development of greenbug resistant varieties of small grains.



CHAIKOFF, Israel Lyon (M.D., Ph.D.), Prof., Dept. of Physiol., Univ. of Calif., Berkeley 4, Calif. Home Add.: 1595 La Vereda, Berkeley 8, Calif. METABOLISM AND ENDOCRINOLOGY. b. London, England, July 2, 1902. s. Hyman and Mary (Albert) C. Edn.: B.A., Univ. of Toronto, 1924; M.A., ibid., 1925; Ph.D., ibid., 1927; M.D., ibid., 1930. m. Isabelle Rawls, Nov. 17, 1949. Exp.: Instr., Dept. of Physiology, Univ. of Calif., 1930-31; Asst. Prof., ibid., 1931-39; Assoc. Prof., ibid., 1939-42; Prof., ibid., 1942—. Mem.: A.A.A.S.; Am. Diabetes Assn.; Am. Physiol. Soc.; Am. Soc. for the Study of Arteriosclerosis; Endocrine Soc.; Soc. for Exptl. Biol. and Med.; Press and Union League Club, San Francisco. Contbr. to: Jour. of Biol. Chem.; Archives of Biochem. and Biophysics; Biochimica et Biophysica Acta; Archives of Pathology; Jour. of Lipid Rsch.; Endocrinology; Jour. of Neurochem. Gen. Int.: Guggenheim Memorial Fellowship, 1941-42; Endocrine Soc. Medal, 1958. Areas of Rsch.: Pancreas; Thyroid; Liver; Lipid Metabolism.

CHAET, Alfred B. (Ph.D.), Prof. of Biol., Am. Univ., Washington, D. C. Home Add.: 5117 Wehawken Rd., Wash. 16, D. C. PHYSIOLOGY. b. Boston, Mass., June 7, 1927. s. Joseph and Viola (Ellis) C. Edn.: B.S., Univ. of Mass., 1949; M.S., ibid., 1951; Ph.D., Univ. of Pa., 1953. m. Shirley Rice, Sept. 2, 1950. c.: Douglas Lee. Exp.: Rsch. Asst., Univ. of Pa., Dept. of Biol., 1951-53; Grad. Asst., Univ. of Pa. Schl. of Med., 1953; Instr. of Zool., Univ. of Me., 1953-56; Consultant, Me. Sea and Shore Fish., Orono, Me., 1953-56; Indep. Rsch. Investigator, Marine Biol. Lab., Woods Hole, Mass., 1953—; Asst. Prof. of Physiol., Boston Univ. Schl. of Med., 1956-58; Rsch. Assoc., Boston City Hosp. Dermat., Boston, Mass., 1956-59; Assoc. Prof. of Biol., Am. Univ., 1958-61; Prof. of Biol., ibid., 1961—; Lectr., Sibley Mem. Hosp., Wash., D. C., 1960—. Hon. Pos.:



I.S.F. Panels; Pres., Univ. Faculty Rsch.; Pres. Mar. Biol. ab. Club; Asst. Dir., Physiol. Workshop; Corp. Mem., Mar. iol. Lab. Mem.: D. C. Soc. Expt. Biol and Med.; Am. Physiol. oc.; Soc. Gen. Physiol.; Am. Soc. Zool.; Biophys. Soc.; Cell iol. Soc.; Sigma Xi; Wash. Acad. of Sci. Contbr. to: A.I.B.S. ublication; Proc. Soc. Exptl. Biol. and Med.; Biol. Bull.; Am. ool.; Am. Jour. Zool.; Fed. Proc.; Anat. Rec.; Physiol. Zool. erv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Toxic Sub-tances in Burned Animals; Physiologically Active (Shedding) laterial in Neural Tissue of Marine Invertebrates; Electron licroscopy of Starfish Adhering Mechanism; Antimitotic Sub-tances; Thiaminase.

HALMERS, Douglas (Mr.), Pres., General Mgr., Founder, Golden tate Rubber and Latex Corp., 1538 West 132nd St., Gardena, Calif. Home Add.: 3404 Marcus Street, Newport Beach, Calif. RUBBER CHEMISTRY AND TECHNOLOGY. b. Manchester, N. H., Feb. 13, 1913. s. Thomas, D. D. and Maude Virginia (Smith) C. Edn.: S.B., Mass. Inst. of Tech., 1936; Grad. work, Univ. of Colo. and Univ. of Denver, 1945-49. m. Betty Beetley, Feb. 11, 1939. c.: Martha Jo. Exp.: Quality Control and Asst. Chf. Chemist, Alfred Hale Rubber Co., N. Quincy, Mass., 1936-37; Asst. Rsch. Dir. and Chf. Chemist, The Gates Rubber Co., Denver, Colo., 1939-49; Founder, Pres., and Gen. Mgr., Golden State Rubber and Latex Corp., Gardena, Calif., 1950—. Hon. Pos.: Chmn. Copolymer Technical Advisory Com., Baton Rouge,

a., 1947-48; Dist. Chmn., The Natl. Federation of Independent us. Mem.: A.S.T.M.; A.A.A.S.; Acad. of Polit. Sci.; The Am. nst. of Mgmt.; The Los Angeles Rubber Gr.; The Am. Inst. of hem. Engrs.; Kappa Sigma; U. S. Power Squadron; Palm Springs anch Club, Calif. Author: Rubber Product Manufacturing, 1949. ontbr. to: India Rubber World; Rubber Age; Refrigeration; Bull., he Colo. Soc. of Engrs.; TLARGI, Annual of the Los Angeles ubber Gr. Serv. Rec.: U. S. Army Air Corps, 1937-39. Gen. nt.: War II Natural Rubber conservation, reclaimed rubber tilization, and synthetic rubber development and adaptation rogram, 1942-49; Presented Paper at Xth Internatl. Cong. of list. of Sci., Am. Philosophical Soc., Philadelphia, Pa., 1962. reas of Rsch.: The Application of all types of Natural and ynthetic Rubber to Close Tolerance Applications for packings, eals, mountings, fluid connectors and bellows, and Medical pplications. Engineered rubber products and process develop-ent involving special elastomeric forms.

HAMBERLAIN, Joseph Miles (Ed.D.), Chmn., American Museum-layden Planetarium, N. Y. 24, N. Y. Home Add.: Apt. 1913, 5700 192nd St., Fresh Meadow's, Queens, N. Y. ASTRONOMY. . Peoria, Ill., July 26, 1923. s. Maurice S. and Roberta Miles) C. Edn.: B.S., U. S. Merchant Marine Acad., 1944; .A., Bradley Univ., 1947; M.A., Tchrs. Coll., Columbia Univ., 950; Ed.D., ibid., 1962. m. Paula Bruninga, Dec. 12, 1945. c.: anet Ann; Susan Louise; Barbara Jean. Exp.: Instr., U. S. Merchant Marine Acad., Kings Pt., N. Y., 1947-50; Asst. Prof., bid., 1950-52; Asst. Astronomer, Am. Museum-Hayden Plane-arium, N. Y., 1952-53; Chmn., ibid., 1953—. Hon. Pos.: Chmn. om. on Edn. in Astronomy, Am. Astronomical Soc., 1956—; ean, Coun. of the Scientific Staff, Am. Museum of Nat. Hist., 960-61. Mem.: Am. Astronomical Soc.; A.A.A.S.; Royal As-ronomical Soc.; Phi Delta Kappa; Kappa Delta Pi; Explorers Club; utch Treat Club; YMCA. Author: Planets, Stars, and Space, 957. Contbr. to: Sky and Telescope Mag.; Natural Hist. Mag. erv. Rec.: U. S. Navy, 1945-47. Gen. Int.: Participated in clipse Expeditions to James Bay, Can., 1954, and to Ceylon, 955. Areas of Rsch.: Leader of Geodetic Expeditions to rctic Canada, 1956 and 1957 and to Greenland, 1958.

HAMBERS, James Richard (Ph.D.), Prof. of Chem., Walla Walla oll., College Place, Wash. Home Add.: 36 N.E. Ash, College Pl., Wash. ORGANIC CHEMISTRY. b. Birmingham, Ala., Aug. 20, 1914. s. J. R. and Eddie Clyde (Garrett) C. Edn.: B.A., Washington Missionary Coll., 1939; M.S., Western Reserve Univ., 1949; Ph.D., The A. and M. Coll. of Tex., 1958. m. Helen Gates of Warren, Pa., Aug. 27, 1939. d. Mr. and Mrs. George H. Gates. c.: Harry Donald. Exp.: Lab. Instr., Washington Missionary Coll., 1939-41; Prin., Nashville Jr. Acad., Tenn., 1941-42; Chf. Chemist, DPC Aviation Gasoline Plant, operated by the Pennzoil Co., 1942-46; Hd. of Chem. Dept., Atlantic Union Coll., 1946-54; Instr. of Chem., Southwestern Jr. Coll., 1954-56; Rsch. Fellowship and Tchng. Asst., The A.

nd M. Coll. of Tex., 1956-58; Hd. of Sci. Dept., Southwestern r. Coll., 1958-60; Assoc. Prof. of Chem., Walla Walla Coll., 960-61; Prof. of Chem., ibid., 1961—. Mem.: Sigma Xi; Phi Lambda Upsilon; The Am. Chem. Soc. Contbr. to: Jour. of Polymer Sci. Ph.D. Dissertation: Preparation of Some Amino Phosphonic Acids. Listed in: A.M.S. Areas fo Rsch.: Organic Chemistry.

CHAMBERS, Jack Allen (Mr.), Dir., Personnel Services, Univ. of S. Fla., Tampa, Fla. Home Add.: Rt. 2, Box 740, Lutz, Fla. PSYCHOLOGY. b. Hamilton, Ohio, Feb. 26, 1932. s. Glen S. and H. Edna (McCormick) C. Edn.: A.B., Univ. of Miami, 1954; M.A., Univ. of Cincinnati, 1955. m. A. Ruth Coe, Aug. 24, 1957. c.: Melissa Ann. Exp.: Grad. Res. Advisor, Mich. State Univ., 1956-57; Psychometrist, Bd. of Edn., Lansing, Mich., 1957-59; Dir. Personnel Services, Univ. of S. Fla., 1960—. Mem.: Am. Psychol. Assn.; Fla. Psychol. Assn.; Am. Assn. for Adv. of Sci.; Sigma Chi; Psi Chi. Contbr. to: Exceptional Child Jour.; Jour. of Coll. and Univ. Personnel Assn. Areas of Rsch.: Studies of Creativity in the Sciences and Personnel Selection.

CHAMBERS, Merritt Madison (Ph.D.), Exec. Dir., Mich. Coun. of Sta. Coll. Pres., 705 Stoddard Building, Lansing 23, Mich. Home Add.: Capitol Pk. Hotel, 501 Townsend St., Lansing, Mich. POLITICAL SCIENCE, EDUCATIONAL ADMINISTRATION. b. Mt. Vernon, Ohio, Jan. 26, 1899. s. Rufus Ward and Etta Amelia (Miller) C. Edn.: B.S., Ohio Wesleyan Univ., 1922; M.A., Ohio State Univ., 1927; Ph.D., ibid., 1931. Exp.: Project Dir., Carnegie Fdtn. in Cooperation with Purdue Univ., 1931-33; Project Dir., Brookings Instn., 1923-34; Rschr. and Later Project Dir., Am. Coun. on Edn., Wash., D. C., 1934-51; Owner-Operator, Lafayette Farms, Mt. Vernon, Ohio, 1951-57; Prof., Higher Edn., Univ. of Mich., 1958-61. Mem.: Fellow, A.A.A.S.; Am. Edn'l. Rsch. Assn.; A.A.U.P.; Alpha Sigma

Phi; Delta Sigma Rho; Phi Delta Kappa. Author. Charters of Philanthropies, 1948; The Colleges and the Courts, 1936, 1941, 1946, 1952; Universities of the World Outside U.S.A., 1950; The Campus and the People, 1960. Contbr. to: Schl. and Soc.; Coll. and Univ. Bus.; Jour. of Higher Edn.; Edn'l. Record; Rev. of Edn'l. Rsch.; etc. Serv. Rec.: U.S.A.A.F., 1942-46. Areas of Rsch.: Financing Higher Edn.; Univ. Admin.; Legal Aspects of Higher Edn.

CHAMBERS, Randall M(arion), (Ph.D.), Head, Human Factors Branch, Aviation Med. Acceleration Lab., U. S. Naval Air Devel. Center, Johnsville, Pa. Home Add.: 39 Home Rd., Hatboro, Pa. PHYSIOLOGICAL AND EXPERIMENTAL PSYCHOLOGY; HUMAN FACTORS IN SPACE TRAVEL; SPACE FLIGHT SIMULATION. b. Vincennes, Ind., Feb. 26, 1927. s. Frank Earl and Elizabeth (Randall) C. Edn.: A.B., Ind. Univ., 1948; M.A., Univ. of Mo., 1951; Ph.D., Western Reserve Univ., 1954. m. Mary Jane Fisher, Sept. 7, 1949. c.: Mark Randall; Craig Franklin. Exp.: Rsch. Psychologist, Rsch. and Serv. Center, Western Reserve Univ., Cleveland, Ohio, 1951-53; Physiol. Psychologist, Jackson Meml. Lab., Bar Harbor, Me., 1953-55; Assoc. Prof. of Psychol., Dept. of Psychol., Rutgers Univ., 1957-58; Assoc. in Psychol. and

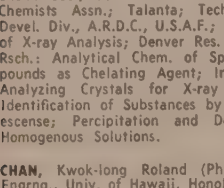
Physiol., Dept. of Physiol., Schl. of Med., Univ. of Pa., 1958—; Hd., Human Factors Branch, Aviation Med. Acceleration Lab., U. S. Naval Air Devel. Center, Johnsville, Pa., 1958—. Mem.: Am. Psychol. Assn.; AeroSpace Med. Assn.; Am. Statistical Assn.; Am. Inst. of Biol. Sci.; A.A.A.S.; Am. Sociol. Assn.; Psychometric Soc.; Am. Ecol. Soc.; Soc. of Systematic Zool.; N. Y. Acad. of Sci.; Sigma Xi; Psi Chi; Alpha Pi Zeta; Sigma Phi Epsilon; Sigma Theta Epsilon; Reserve Officers Assn. of U.S.A. Contbr. to: Jour. of Comparative and Physiol. Psychol.; Psychol. Reports; Jour. of Psychosomatic Med.; Am. Rocket Soc. Jour.; Aerospace Med. Serv. Rec.: U. S. Air Force, 1955-57. Areas of Rsch.: Physiological and Experimental Psychol.; Engineering Psychology; Human Factors in Space Travel; Space Flight Simulation; Psychopharmacology.

CHAMPIE, Clark Lafayette (Mr.), Owner, El Paso Cactus Gardens, P.O. Box 133, Anthony, New Mexico-Tex. Home Add.: P.O. Box 133, Anthony, New Mex.-Tex. BOTANY; THE STUDY OF CACTI AND OTHER SUCCULENTS. b. Eden, Tex., Sept. 11, 1916. s. Sam H. and Nora (Sorrell) C. Edn.: B.S., New Mex. State Univ., 1951. m. Wanda Hunger, June, 1948. c.: Marlene; Clark L., Jr.; Lisette; Brion. Exp.: Tchr., El Paso Public Schls., El Paso, Tex., 1954-59; Owner, El Paso Cactus Gardens, 1959—. Hon. Pos.: Lifetime Hon. Mem., Tokyo Cactus Club. Mem.: Am. Assn. Adv. Sci.; El. Paso Cactus and Rock Club. Contbr. to: Cactus and Succulent Jour. of Am.; El Paso Cactus and Rock Club Bull., Editor. Serv. Rec.: U. S. Air Force, 1941-45; 1951-53. Areas of Rsch.: Experiments with Colchicine on Cactus

Seeds and Seeds of Other Desert Species of Plants; Gibberellic Acid on Cactus Seeds and Seeds of Other Desert Species of Plants; Observations of Effects of High Temperature on Blooming Periods of Various Species of Cacti; Comparison of Blooming Periods of Identical Species of Cacti Inside and Out of Greenhouse with Geographical Origin of Plants Taken into Consideration; Experiments on Germination Factors in Cactus Seeds.

CHAN, Frank L(ai-ngi), (Sc.D.), Rsch. Chemist, Chemistry Rsch. Lab., Aeronautical Rsch. Lab., Wright-Patterson Air Force Base, Ohio. Home Add.: 3228 Ravenwood Rd., Fairborn, O. ANALYTICAL CHEMISTRY. b. Swatow, China, June 25, 1905. s. Cheng-tsang and Che-tsu (Chang) C. Edn.: B.S., Univ. of Wash., 1929; M.S., ibid., 1930; Sc.D., Univ. of Mich., 1932. m. Susan Pek Chang, July 27, 1935. c.: John Paul; Bing Chieh-ming; Sue Sukwan. Exp.: Asst. Prof., Lingnan Univ., Canton, China, 1933-36; Sr. Asst. Chemist and Acting Chief Chemist, Works Dept., Shanghai Internatl. Settlement, 1937-45; Analytical Chemist, Northwest Lab., Seattle, Wash., 1946-48; Rsch. Assoc., Navy Project, Univ. Oregon, Eugene, Ore., 1949-50; Rsch. Assoc., Oregon St. Univ., Corvallis, Ore., 1950-56; Rsch. Chemist, Chemistry Rsch. Lab., ARL, W-PAFB, Ohio, 1956—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Crystallographic Assn.; Soc. for Applied Spectroscopy; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Lingnan Sci. Jour.; Jour. Am. Chem. Soc.; Jour. Am. Leather Chemists Assn.; Jour. Am. Oil Chemists Assn.; Talanta; Technical Publication of Wright Air Devel. Div., A.R.D.C., U.S.A.F.; Procs. of Annual Conf., Application of X-ray Analysis; Denver Res. Inst., Univ. of Denver. Areas of Rsch.: Analytical Chem. of Special Alloy Metals; Organic Compounds as Chelating Agent; Inorganic or Organic Substances as Analyzing Crystals for X-ray Fluorescence; Determination and Identification of Substances by X-ray Diffraction and X-ray Fluorescense; Percipitation and Determination of Substances from Homogenous Solutions.

CHAN, Kwok-long Roland (Ph.D.), Asst. Prof., Dept. of Elec. Engrng., Univ. of Hawaii, Honolulu 14, Hawaii. Home Add.: 1637 Anapuni St., Apt. 2, Honolulu 14, Hawaii. TEACHING AND IONOSPHERE STUDY. b. Shanghai, China, Oct. 18, 1933. s. Tsing Hua and Violet (Yih) Chen. Edn.: B.Sc., Univ. of Hong Kong, 1956; M.S., Stanford Univ., 1958; Ph.D., Stanford Univ., 1962. Exp.: Rsch. Asst., Stanford Univ., 1958-62. Asst. Prof., Dept. of Elec. Engrng., Univ. of Hawaii, 1962—. Mem.: Inst. of Radio Engrs.; Am. Geophys. Union; Sigma Xi. Contbr. to: Jour. of Geophys. Rsch. Areas of Rsch.: Study of Ionosphere by Radio Waves.



CHANCE, Franklin S., Jr. (Ph.D.), Dir., Pfizer Internatl., Chas. Pfizer and Co., 235 East 42nd St., N. Y. 17, N. Y. Home Add.: 88-40 192 St., Hollis 23, N. Y. CHEMICAL ENGINEERING, ELASTOMERS AND PHARMACEUTICALS. b. Springfield, Tenn., Sept. 3, 1915. s. F. S. and Gertrude (Randolph) C. Edn.: B.S., in Ch.E., Univ. of Tenn., 1937; Ph.D., ibid., 1951. m. Melba Greer, Nov. 12, 1939. c.: F. S., III; John Randolph; Ethel Allison. Exp.: Chem. Engr., Tenn. Eastman, Kingsport, Tenn., 1934-37; Chem. Engr., DuPont, Wilmington, Del., 1939-48; Various positions of Pfizer Co. to Dir.,, Pfizer Internatl., N. Y., 1951—. Mem.: A.I.Ch.E.; A.C.S.; A.A.A.S.; Alpha Chi Sigma; Phi Eta Sigma; Tau Beta Pi; Phi Kappa Phi; Phi Sigma Kappa; Sigma Xi. Contbr. to: I. and E.C. Areas of Rsch.: Patents in Elastomers and Plastics.

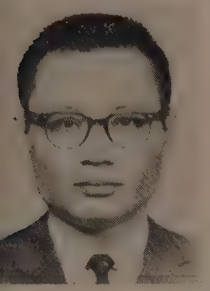
CHANDLER, Edgar Ted (M.D.), Physician, 219 N. Center St., Hickory, N. C. Home Add.: 1029 16th Ave. Pl. N.W., Hickory, N. C. GENERAL MEDICINE. b. Madison County, N. C., Dec. 27, 1927. s. Baxter and Mamie (McIntosh) C. Edn.: B.S., Wake Forest Coll., 1951; M.D., Univ. of N. C., 1955. m. Frances Edinger, 1947. c.: Lynn; Steve. Exp.: Asst. Resident in Med Bowman Gray Schl., Winston-Salem, N. C., 1956-58; Privat Practice of Med., Hickory, N. C., 1958-62. Hon. Pos.: Pres Staff of Hickory Memorial Hosp., 1960. Mem.: Am. Med. Assn Southern Med. Assn.; Am. Assn. for Adv. of Sci.; Natl. Geograph Soc.; N. C. Med. Soc.; Catawba Co. Med. Soc.; Phi Beta Kappa Alpha Omega Alpha; Civitan Internatl.; Catawba Valley Exe Clubs. Contbr. to: N. C. Med. Jour. Serv. Rec.: U. S. Nav 1946-47. Gen. Int.: Morehead Scholar, Univ. of N. C., 1951-55.

CHANEY, Alan (Ph.D.), Rsch. Supvr., Central Rsch. Lab., Allie Chemical Corp., Morristown, N. J. Home Add.: 12 Dartford Rd Morris Plains, N. J. ORGAN CHEMISTRY. b. Lakewood, Ohi July 14, 1925. s. Edwin H. a Mary A. (Snively) C. Edn.: B.A Oberlin Coll., 1946; M.Sc. Ca Inst. of Technol., 1950; Ph.D Ohio State Univ., 1960. m. Hel A. Pollock, Feb. 23, 1946. c Helen L.; David H.; Steven W Brian H. Exp.: Rsch. Chemis Natl. Carbon Co., Cleveland, Ohi 1946-47; Rsch. Assoc., Ohio Sta Univ. Rsch. Fdtn., 1950-54; Assc Rsch. Supvr., ibid., 1954-60; Gr Ldr., Tex. U. S. Chem. Co., 196 61. Research Supvr., Allie Chemical Corp., 1962—. Mem Sigma Xi; Am. Chem. Soc.; A.A A.S. Contbr. to: Jour. of t Am. Chem. Soc.; Jour. of Organ Chemistry; Analytical Chemistr Areas of Rsch.: Nitrate Ester Chemistry, Synthetic Rubb Carbohydrate Chemistry, Organic Analytical Methods, Plastics.

CHANG, Chieh Chien (Ph.D.), Rsch. Prof. and Dir. of Plasm Space Sciences Lab., Catholic Univ. of Am., Washington 17, D. Home Add.: 9312 Piney Br. R Silver Spring, Md. PLASMA PHY ICS, FLUID MECHANICS, THERM NUCLEAR FUSION, ELASTICIT AND APPLIED MATHEMATICS. Peiping, China, July 21, 191 Edn.: B.S., Natl. Northeast Uni 1933; M.S., Calif Inst. of Techno 1941; Ph.D., ibid., 1947. Ex Design Engr., U. S. Plywood Cor N. Y., 1942-43; Design Rsch. Eng Glenn Martin Co., Bltmr., M 1937-43; Assoc. Prof. of Aerospa Sci., Johns Hopkins Univ., 1947-5 Consultant, ARDC, USAF, Office Scientific Rsch., 1951-52; Rs Contr. Dir., Johns Hopkins Uni 1951-53; Rsch. Prof., Univ. Md., 1952-54; Prof., Univ. Minn., 1954-61; Sr. Staff Scient Aerospace Corp., Los Angel Calif., 1961—. Hon. Pos.: Founder, Past Pres., Am. Rocket So Twin City; Advisor, Sigma Gamma Tau; Editor, Jour. of Ae space Scis. Mem.: Am. Physics Soc.; Sigma Xi; Internatl. C gress of Applied Mechanics; Internatl. Congress of Math.; ternatl. Congress of Ionization Phenomena in Gases; Inst. Combustion; Am. Geophys. Union; Soc. of Rheology; Inst. Aerospace Scis. Contbr. to: Am. Rocket Soc. Jour.; Jour. Aerospace Sci.; Quarterly of Applied Math.; Jour. of Phys Fluids; Jour. of Fluid Mechanics; Jour. of Nuclear Instrume and Methods; Jet Propulsion Jour.; Jour. of Mathematical Phys Jour. of Physics in Medicine and Biology; Jour. of Basic Engrn Physical Rev. Letters; Jour. of Expt. Stresses. Areas of Rsc Fluid Mechanics; Magnetohydrodynamics and Plasama Dynam

CHANG, Stephen Szu-Shiang (Ph.D.), Prof., Department of F Sci., Rutgers St. Univ., New Brunswick, N. J. Home Add.: Stockton Rd., Franklin Park, N CHEMISTRY OF LIPIDS, CHEM TRY OF FOOD FLAVORS. b. king, China, Aug. 15, 1918. Z. K. and H. F. (Yuan) C. Ed B.S., Natl. Chi-ran Univ., Ch 1940; M.S., Kans. St. Univ., 19 Ph.D., Univ. of Ill., 1952. Lucy Ding, 1952. Exp.: R Assoc. Univ. of of Ill., 1952 Rsch. Chemist, Swift and Chicago, Ill., 1954-57; Sr. R Chemist, A. E. Staley Mfg. Decatur, Ill., 1957-60; As Prof., Dept. Food Sci., Rutgers Univ., 1960-62; Prof., ibid., 1 —. Mem.: A.C.S.; Inst. F Technol.; Am. Oil Chem. S Sigma Xi; Phi Lambda Upsi Gamma Sigma Delta; Phi Sigma. Contbr. to: Jour. Am. Chemists' Soc.; Analytical Chem.; Applied Spectroscopy. Area Rsch.: Chem. and Technol. of Edible Fats and Oils, particul in the Autoxidation, and Deterioration of Lipids; Chem. of F Flavors, particularly in the Isolation and Chemical Identifica of Components of Food Flavor.

HANG, Tsueng-Hsing (Ph.D.), Asst. Radiobiologist, Rad. Biol. ab., Tex. Engrng. Expt. Sta., College Station, Tex. Home Add.: 809 A Haswell Dr., Bryan, Tex. ANIMAL GENETICS (RADIATION EFFECTS). b. Taiwan, Formosa, China, Sept. 28, 1931. s. Pih-ken and Luan (Tseng) C. Edn.: B.S., Natl. Taiwan Univ., Taiwan, China, 1955; M.S., Univ. of Ark., 1958; Ph.D., Univ. of Tex., 1960. Exp.: Tchng. Asst., Dept. of Zool., Natl. Taiwan Univ., Taipei, Taiwan, 1955-56; Rsch. Asst., Dept. of Zool., Univ. of Ark., 1956-57; Rsch. Asst., Dept. of Zool., Univ. of Tex., 1957-60; Postdoc. Rsch. Fellow, Dept. of Biol., M. D. Anderson Hosp., 1960-61; Asst. Radiobiol., Radiation Biol. Lab., Tex. Engrng. Expt. Sta., 1961—. Mem.: The Genetics Soc. of Am.; The Genetics Soc. of Japan; Am. Assn. Adv. Sci.; Sigma Xi; Phi



igma Soc. Contbr. to: Natl. Acad. of Scis., U. S.; Genetics; The niv. of Tex. Publication. Serv. Rec.: Chinese Army Reserves, 954—. Areas of Rsch.: Drosophila genetics, the modification f mutation frequencies; Radiation biology of the laboratory ice and rats, the effects of chronic irradiation on the re-roductive capacities of these animals.

HANG, William Shen Chie (Ph.D.), Assoc. Prof. and Assoc. upvr., Dept. of Elect. Engrng., The Ohio State Univ., Columbus, Ohio. Home Add.: 3311 Grasmere Ave., Columbus 24, Ohio. ELECTRICAL ENGINEERING AND APPLIED PHYSICS: MICROWAVES, LASERS, MASERS, ELECTROMAGNETIC THEORY. b. China, Apr. 4, 1931. s. Tung Wu and Rheobe (Chow) C. Edn.: B.S.E., Univ. of Mich., 1952; M.S.E., ibid., 1953; Ph.D., Brown Univ., 1957. m. Margaret Kwei, Nov. 26, 1955. c.: Helen Nai-yee. Exp.: Instr. and Rsch. Asst., Brown Univ., Providence, R. I., 1953-57; Lectr. and Rsch. Assoc., Stanford Univ., Palo Alto, Calif., 1957-59; Asst. Prof. and Assoc. Supvr., The Ohio St. Univ., 1959-62; Assoc. Prof., ibid., 1962—. Mem.: Instit. of Radio Engrs.; A.S.E.E.; Am. Phys. Soc.; Opt. Soc. of Am.; Tau

eta Psi; Eta Kappa Nu; Sigma Xi. Contbr. to: Proc. of .R.E.; Trans. of I.R.E.; Proc. of I.E.E.; Appl. Optics; Jour. of lectronics and Control. Areas of Rsch.: EM Theory; Quantum lectronics; Plasma.

HAO, Jowett (Ph.D.) Assoc. Rsch. Zoologist, Univ. of Calif., os Angeles 24, Calif. Home Add.: 228 S. Palm Dr., Beverly ills, Calif. PARASITOLOGY AND ENTOMOLOGY. b. Meikee, heckiang, China, Nov. 16, 1915. s. Chien Chun and Ming Tsao) C. Edn.: B.S., W. China Union Univ., Chengtu, China, 939; M.S., Natl. Central Univ., Chungking, China, 1942; Ph.D., ornell Univ., 1949. m. Cherie Chow, 1939. c.: Victoria Cherie. xp.: Chemistry Tchr., The Putney Schl., Purney, Vt., 1947-48; hemist, Vitaminerals, Inc., Glendale, Calif., 1948-54; Rsch. oologist, Univ. of Calif., 1954—. Mem.: Am. Soc. of Parasitol-gists; Am. Soc. of Tropical Medicine and Hygiene; Entomological oc. of Am.; A.A.A.S.; Am. Inst. of Biol. Scis.; Am. Mosquito ontrol Assn.; Sigma Xi; Beverly Hills Art League; Hollywood owl Assn. Contbr. to: The Jour. of Parasitol.; Exptl. Parasitol.; our. of Insect Pathol.; The Am. Jour. of Tropical Medicine and lygiene; Annals of the Entomological Soc. of Am.; Sci. Areas f Rsch.: Exptl. Avian Malariology; Exptl. Mosquito Biol.

HAO, Yuen Ren (Ph.D.), Agassiz Prof. of Oriental Langs. and it., Emer., Univ. of Calif., Berkeley 4, Calif. Home Add.: 1059 Cragmont Ave., Berkeley 8, Calif. CHINESE DIALECTOLOGY; COMMUNICATION THEORY. b. Tientsin, China, Nov. 3, 1892. s. Heng Nien and Lai Sun (Feng) C. Edn.: B.A., Cornell Univ., 1914; Ph.D., Harvard Univ., 1918. Hon. Deg.: Litt.D., Princeton Univ., 1946. m. Buwei Yang, June 1, 1921. c.: Mrs. Rulan C. Pian; Mrs. Nova C. Huang; Mrs. Lensey C. Namioka; Mrs. Bella C. Chiu. Exp.: Instr. in Physics, Cornell Univ., 1919-20; Interpreter to Bertrand Russell, Natl. Peking Univ., 1920-21; Instr. in Philosophy and Chinese, Harvard Univ., 1921-24; Rsch. Prof., Natl. Tsing Hua Univ., 1925-32; Rsch. Fellow, Chf. Linguistics, Academia Sinica, 1929—; Visiting Prof., Lectr., Hawaii, Yale, and Harvard Univs., 1938-47; Prof. of Oriental Langs., Univ. of Calif., 1947—. Hon. Pos.: Co-founder, Sci. Soc. of China; Pres., Linguistic Soc. of Am., 1945; Pres., Am. Oriental Soc., 1960. Mem.: Acoustical Soc. of Am.; Am. Acad. of Arts and Scis.; Am. Anthropol. Assn., Fellow; A.A.A.S., Fellow;

Assn. for Asian Studies; Hist. of Sci. Soc.; Linguistic Soc. of Am.; Phi Beta Kappa; Sigma Xi; Commonwealth Club. Author: Studies in Modern Wu Dialects, 1928; Survey of Hupeh Dialects, 1948; Mandarin Primer, 1948; Cantonese Primer, 1947. Co-author: Concise Dict. of Spoken Chinese, 1947. Contbr. to: Bull. of Inst. of Hist. and Phil., Academic Sinica; Harvard Jour. of Asiatic Studies; Language. Serv. Rec.: Civ. in charge of Chinese program in ASTP, Harvard Univ., 1943-44. Gen. Int.: Translated into Chinese, Alice's Adventures in Wonderland, Shanghai, 1922; Composed (14) Songs of Contemporary Poems, Shanghai, 1928, 2nd Ed., 1960. Areas of Rsch.: Chinese Dialectology; Communication Theory.

CHAPIN, Daryl Muscott (Sc.D.), Mem. Tech. Staff, Bell Tel. Labs., Murray Hill, N. J. Home Add.: Lyons Pl., Basking Ridge, N. J. PHYSICS. b. Ellensburgh, Wash., July 21, 1906. s. Luther John and Nellie E. (Muscott) C. Edn.: A.B., Willamette Univ., 1927; M.S., Univ. of Wash., 1929. Hon. Deg.: Sc.D., Willamette Univ., 1956. m. Tirzah S. Walker, Nov. 5, 1932. c.: Audrey; Mark; Elizabeth. Exp.: Physics Instr., Ore. St. Coll., 1929-30; Mem., Tech. Staff, Bell Tel. Labs., Murray Hill, N. J., 1930—. Mem.: A.F.A.S.E. Gen. Int.: Co-inventor of Bell Solar Battery; March, 1957, received the John Scott Award for work on Bell Solar Battery. Areas of Rsch.: Magnetic Materials, Magnetic Recording, Underwater Sound, Solar Energy Conversion; Simulated Speech; Pulse Code Transmission.

CHAPMAN, Homer Dwight (Ph.D.), Prof. of Soils and Plant Nutrition, Univ. of Calif., Riverside, Calif. Home Add.: 830 University Dr., Riverside, Calif. SOILS AND PLANT NUTRITION. b. Darlington, Wis., Oct. 4, 1898. s. Faithful W. and Finetta (Merriam) C. Edn.: B.Sc., Univ. of Wis., 1923; M.Sc., ibid., 1925; Ph.D., ibid., 1927. m. Daisy Ernst, Mar. 10, 1927. Exp.: Asst. Prof., Soils, Univ. of Wis., 1927-27; Asst. Chemist, Assoc. and Prof., Soils and Plant Nutrition, Univ. of Calif., Riverside, Calif., 1927—; Chairman, Department of Soils and Plant Nutrition, ibid., 1937-61. Mem.: Amer. Soc. of Agron.; Soil Sci. Soc. of Am.; Internatl. Soc. Soil Sci.; Western Soc. oil Sci.; Am. Soc. Horticultural Sci.; Alpha Gamma Rho; Sigma Xi; Phi Sigma; Phi Lambda Upsilon; Kiwanis. Co-Author: Methods of

Analysis For Soils, 1961. Contbr. to: Soil Sci.; Proc. Soil Sci. Soc. of Am.; Agronomy Jour.; Proc. Am. Soc. Hort. Sci. Serv. Rec.: U. S. Army, W.W. I. Areas of Rsch.: Citrus Tree Nutrition; Soil Management.

CHAPMAN, Velma Jeffrey (Mrs.), Food Specialist, Human Nutrition Rsch. Div., Food Quality, U.S.D.A., Rsch. Ctr., Beltsville, Md. Home Add.: 35 F. Ridge Rd., Greenbelt, Md. FOOD QUALITY. b. Homer City, Pa., June 6, 1917. d. Thomas J. and Fleda (Hilliard) Jeffrey. Edn.: B.S., Pa. State Univ., 1939. m. Nelson S. Chapman, Mar., 1943 (dec.). c.: Thomas Jeffrey. Exp.: Dietitian, Pa. State Dept. of Health, Mont Alto Sanitorium, 1940-41; Chf. Dietitian, Kings Daughters Hosp., Martinsburg, W. Va., 1941-43; Med. Dept. Dietitian, U. S. Army, 1943-45; Food Specialist, U.S.D.A. Rsch. Ctr., Beltsville, Md., 1948—. Mem.: Inst. of Food Technol.; Am. Home Econs. Assn.; Organization Professional Employees of Dept. of Agric. Contbr. to: Food Technol.; Agriculture and Food Chem.; Jour. of Home Econs.; Jour. of Am. Dietetics Assn. Areas of Rsch.: Schl. Lunch Mgmt. Studies; Quantity Food Serv. Recipe Development; Dried Egg Rsch., Quality Rsch. of Fruits and Vegetables.

CHAPPELL, Buford Souter (M.D.), Physician, 2011 Hampton St., Columbia, S. C. Home Add.: 1373 Kathwood Dr., Columbia, S. C. UROLOGIST. b. Bookman, S. C., July 28, 1914. s. Oscar and Belva (Lever) C. Edn.: M.D., Medical Coll. of S. C., 1938. m. Marjorie Cooper, Nov. 8, 1940. c.: Buford S., Jr.; Mary Susan; Richard F.; Pamela Ann. Exp.: Asst. Physician, S. C. St. Hosp., 1939-40; Asst. Resident, Res. Urology, Univ. of Va. Univ., 1945-47; Res., Urology, Veteran's Hosp., Columbus, S. C., 1948; Priv. Prac. Urology, 1949—; Consultant Urology, Veteran's Hosp., 1950—; Consultant Urology, S. C. St. Hosp., 1953—. Mem.: Am. Urological Assn.; Diplomate, Am. Bd. of Urology, Inc.; Fellow and Diplomate, Internatl. Coll. of Surgeons. Editor: The Record, 1957-59. Contbr. to: The Recorder; Jour. of the S. C. Med-

ical Assn.; Jour. of Urology. Serv. Rec.: U. S. Army, 1940-46.

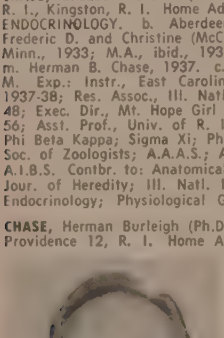
Areas of Rsch.: Reconstruction of External Genitalia Surgery of External Genetalia, Anamolies of External Genitalia; Urinary Tract Infections.

CHARLEY, Philip James (Ph.D.), Vice-Pres., Truesdail Lab., Inc., 4101 No. Figueroa, Los Angeles 65, Calif. Home Add.: 1365 Andenes Dr., Glendale 8, Calif. BIOCHEMISTRY AND ENGINEERING. b. Melbourne, Australia, Aug. 18, 1921. s. Walter G. and Constance (Macdonald) C. Edn.: B.S., Univ. of Wis., 1943; M.S., Univ. of Sou. Calif., 1947; Ph.D., ibid., 1960. m. Katherine T., Jan. 31, 1948. c.: James; Linda; William. Exp.: Lead Engr., Calif. Rsch. and Development, 1949-52; Engr., Standard Oil Co., San Francisco, Calif., 1949-55, 1947-49; Vice-Pres., Truesdail Lab., Inc., Los Angeles, Calif., 1955—. Mem.: Am. Assn. for Adv. of Sci.; Am. Soc. for Testing Materials; Am. Soc. Mech. Engrs.; Beta Theta Pi; Sigma Xi; Tau Beta Pi; Phi Kappa Phi; Pi Tau Sigma. Contbr. to: Trace Metals in Med.; Arch. of Biochem. and Biophysics; Jour. of Biol. Chem. Serv. Rec.: Royal Canadian Electrical and Mech. Engrs., 1943-45. Areas of Rsch.: Air Pollution; Strength of Materials; Analytical Mechanics; Organometallic Compounds; Trace Metal Metabolism.

CHARLTON, John Wood (Mr.), Plant Pathologist, U. S. Dept. Agri., Forest Service, 4 P. O. Bldg., Gloversville, N. Y. Home Add.: 147 Prospect Ave., Gloversville, N. Y. FOREST PATHOLOGY—WHITE PINE BLISTER RUST CONTROL. b. Brooklyn, N. Y., Dec. 11, 1897. s. John M. and E. Lazalle (Wood) C. Edn.: B.S., Coll. of Wooster, 1922; Grad. Study, New York State College of Forestry, 1922-23. m. Eloise B. Durham, Oct. 22, 1927. c.: Mrs. Richard P. Lawler. Exp.: Asst., Dept. of Forest Botany and Pathology, N. Y. St. Coll. of Forestry, 1922-23; Prin. and Instr. in Math., Biology, Physics and Physical Geog., Brookfield H. S., Brookfield, N. Y., 1923-26; Agent, U.S.D.A., Bur. of Plant Industry, Gloversville, N. Y., 1926-35; Pathologist, U.S.D.A. Bur. of Ent. and Plant Quar., ibid., 1935-53; Plant Pathologist, U.S.D.A. Forest Service, ibid., 1933—. Mem.: Mohawk Valley Hist. Assn.; Fulton Co., N. Y. Hist. Soc.; Van Epps-Hartley Chap. N. Y. Archeological Soc.; Pewter Collectors Club of Am.; A.A.A.S.; Ecol. and Geol. Sec.; F. and A.M.; Am. Legion Co-author: Ribes of New York State, 1939. Serv. Rec.: U. S. Navy, 1918. Areas of Rsch.: Forest Botany and Ecology; Ribes Taxonomy and Ecol.; White Pine Blister Rust Control Studies; Relations of Climate to Blister Rust; Blister Rust Hazard Mapping.

CHASE, Elizabeth Brown (Ph.D.), Asst. Prof. of Zool., Univ. of R. I., Kingston, R. I. Home Add.: 175 Ferris Ave., Rumford, R. I. ENDOCRINOLOGY. b. Aberdeen, S. Dak., Dec. 29, 1910. d. Frederic D. and Christine (McCaslin) Brown. Edn.: B.A., Univ. of Minn., 1933; M.A., ibid., 1935; Ph.D., Univ. of Chicago, 1937. m. Herman B. Chase, 1937. c.: Elizabeth S.; Anne L.; Catharine M. Exp.: Instr., East Carolina Tchrs. Coll., Greenville, N. C., 1937-38; Res. Assoc., Ill. Natl. Hist. Survey, Urbana, Ill., 1945-48; Exec. Dir., Mt. Hope Girl Scout Coun., E. Prov., R. I., 1952-56; Asst. Prof., Univ. of R. I., Kingston, R. I., 1958—. Mem.: Phi Beta Kappa; Sigma Xi; Phi Sigma; Sigma Delta Epsilon; Am. Soc. of Zoologists; A.A.A.S.; Am. Assn. of Anatomists; A.A.U.P.; A.I.B.S. Contbr. to: Anatomical Record; Am. Jour. of Morphology; Jour. of Heredity; Ill. Natl. Hist. Publication. Areas of Rsch.: Endocrinology; Physiological Genetics.

CHASE, Herman Burleigh (Ph.D.), Prof., Biol. Dept., Brown Univ., Providence 12, R. I. Home Add.: 175 Ferris Ave., Rumford 16, R. I. GENETICS. b. New Hampton, N. H., May 7, 1913. s. Edwin Elmer and Ada (Burleigh) C. Edn.: A.B., Dartmouth Coll., 1934; Ph.D., Univ. of Chicago, 1938. m. Elizabeth Brown, Aug. 30, 1937. c.: Elizabeth; Anne; Catharine. Exp.: Instr. in Zool., Univ. of Ill., 1938-42; Asst. Prof. of Zool., ibid., 1942-48; Assoc. Prof. of Biol., Brown Univ., 1948-52; Prof. of Biol., ibid., 1952—; Special Rsch. Fellow, Natl. Cancer Inst., Mt. Vernon Hosp., England, 1956-57. Hon. Pos.: The Robert P. Brown Prof. of Biol., 1960—. Mem.: Genetics Soc. of Am.; Radiation Rsch. Soc.; Am. Soc. Zoologists; Am. Soc. Human Genetics; Soc. for Growth; Soc. for Study of Evolution; Am. Naturalist Soc. Contbr. to: Jour. Morphol.; Genetics; Anat. Rec.; Physiol. Rev.; Jour. Aviation Med.; Jour. Invest. Dermatol.; Radiation Rsch. Areas of Rsch.: Physiological Genetics and Radiobiology.



CHASE, Grafton D. (Ph.D.), Assoc. Prof. of Chem., Philadelphia Coll. of Pharm. and Sci., Philadelphia, Pa. Home Add.: 5046 Larchwood Ave., Philadelphia 43, Pa. RADIOISOTOPES IN RESEARCH; PHYSICAL CHEMISTRY; ELECTRONICS. b. Camden, N. J., May 2, 1921. s. Walter E. and Margaret M. (Weiland) C. Edn.: B.Sc., Phila. Coll. of Pharm. and Sci., 1943; M.A., Temple Univ., 1951; Ph.D., ibid., 1955. m. Alice Devanmater, Sept., 1952. Deborah Jane; Leslie Ann; Grafton D., Jr. Exp.: Instr., Phila. Coll. of Pharm. and Sci., 1946-48, 1949-55; Asst. Prof., ibid., 1956-57; Assoc. Prof., ibid., 1957—. Mem.: Am. Chemical Soc.; Am. Pharmaceutical Assn.; Franklin Inst.; A.A.A.S.; Sigma Xi; Rho Chi; Phi Delta Chi; Y.M.C.A. Author: Principles of Radioisotope Methodology, 1st Ed., 1959, 2nd Ed., 1962. Asst. Editor: Remington Practice of Pharmace, 1961. Contbr. to: Sci.; Atompraxis. Serv. Rec.: U. S. Navy, 1943-45. Areas of Rsch.: Radiation Detection Equipment; Radioisotope Applications.

CHASEN, William Henry (M.D.), Chf., Arthritis Clinic, Boston V.A., Boston, Mass. Home Add.: 111 Cedar St., Newton Centre 59, Mass. ARTHRITIS. b. Augusta, Germany, May 31, 1907. s. Samuel and Leah (Adlerstein) C. Edn.: M.D., Univ. of Lausanne, Switzerland, 1937. m. Mignon C. Charney, Apr. 10, 1942. c.: Barbara Zeta; Laura Ruth. Exp.: Chf., Arthritis Clinic, V.A., Boston, Mass., 1949—; Clin. Instr. in Medicine, Boston Univ. Schl. of Med., 1961—. Hon. Pos.: Pres., Mass. Acad. of Gen. Practice; Mental Hygiene Committee, Mass. Med. Soc.; Med. and Scientific Comm., New England Arthritis and Rheumatism Found. Mem.: Am. Rheumatism Assn.; N. Y. Acad. of Sci.; A.A.A.S.; A.M.A.; Assn. Milit. Surgeons of U. S.; Health Club; Y.M.C.A. Contbr. to: Fed. Proc.; Jour. Clin. Investigation; Rheumatism; New England Jour. of Med.; Boston Med. Quarterly; British Jour. of Cancer. Serv. Rec.: U. S. Army, 1941-46, Col., U. S. Army Res. Areas of Rsch.: Arthritis.

CHATAS, Angelos Thomas (Mr.), Petrol. Engr., Chatas Engrng. Co., 2570 S. Harvard Ave., Tulsa, Okla. Home Add.: 3148 So. 88th E. Ave., Tulsa, Okla. PETROLEUM ENGINEERING. b. Chicago, Ill., Mar. 9, 1921. s. Tom Tsatas (dec.) and Stella (Marinos) C. Edn.: B.Sc., The Univ. of Tex., 1951. m. Zoe Shropulos, Nov. 22, 1951. c.: Katherine Lucia; Stephany Maria. Exp.: Jr. Technolt., Tex. Petrol. Rsch. Com., Austin, Tex., 1950-51; Petrol. Technolt., Magnolia Petrol. Co., Dallas, Tex., 1951-53; Petrol. Engr., Socony Mobil Oil Co., Caracas, Venezuela, 1953-56; Petrol. Engr., Reservoir Analysts, Dallas, Tex., 1956-59; Petrol. Engr., Chatas Engrng. Co., 1959— Mem.: Soc. of Petrol. Engrs. of AIME; Am. Assn. Adv. Sci.; Soc. of Am. Milit. Engrs.; Okla. City Geol. Soc.; Tau Beta Pi; Sigma Tau Epsilon; AHEPA. Contbr. to: The Petrol. Engr.; The Jour. of Petrol. Technol.; Fifth Venezuelan Engrng. Congress. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Nonsteady-State Flow of Fluids Through Porous Media; Petroleum Reservoir Engineering.

CHAUNCEY, Henry (Sc.D.), Pres., Edntl Testing Service, Princeton, N. J. Home Add.: Rosedale Rd., Princeton, N. J. EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT. b. Brooklyn, N. Y., Feb. 9, 1905. s. Egisto Fabbri and Edith Lockwood (Taft) C. Edn A.B., Harvard Coll., 1928. Hon. Deg.: Sc.D., Tufts Coll., 1952. m. Lucy Lawrence Worcester, July 22, 1954. c.: William Egisto; Henry C., Jr.; Ann; Donald; Susan Taft; Caroline Train; Deborah Lawrence. Exp: Tchr. of Hist., Wm. Penn Charter Schl., 1927-29; Asst. Dean, Harvard Coll., 1929-43; Asst. to the Dean of Faculty, Chmn., Comm. on Scholarship, ibid., 1943-45; Asst. Dir., Army-Navy Coll. Qualifying Tests, College Entrance Exam. Bd. (on leave from Harvard Coll.), 1943-45; Assoc. Secy., Acting Exec. Secy., ibid., 1945-46; Dir., ibid., 1946-48; Pres., Edntl. Testing Service, 1948—. Mem.: Am. Psychol. Assn.; Am. Edntl. Rsch. Assn.; Psychometric Soc.; Am. Assn. Adv. Sci.; A.A.S.A.; Century Assn.; Harvard Club of N. Y.; Cosmos Club of Wash.; Nassau Club of Princeton. Areas of Rsch.: Edntl. and Psychological Tests.

CHEATHAM, Thomas Edward, Jr. (Mr.), Pres., Computer Associates, Inc., 44 Winn St., Woburn, Mass. Home Add.: 1 Ardley Pl., Winchester, Mass. MATHEMATICS. b. Robinson, Ill., Sept. 20, 1929. s. Thos. E. and Eva (McGuigan) C. Edn.: B.S., Purdue Univ., 1951; M.S., ibid., 1953. m. Mary Johnson, Oct. 25, 1951. c.: Daniel; Stephen. Exp.: Deputy Dir., Project Omega, Technical Operations, Inc., Washington, D. C., 1959-60; Mgr., Programming Techniques Gr., Technical Operations, Inc., Burlington, Mass., 1960-61; Pres., Computer Associates, Inc., Woburn, Mass., 1961—. Hon. Pos.: Chmn., Assn. for Computing Machinery Comm. on Programming Languages. Mem.: Math. Assn. Am.; Soc. Indust. and Appl. Math.; Assn. for Comp. Machinery; Cybernetica; Am. Math. Soc.; Sigma Phi Epsilon. Contbr. to: Communication of the Assn. for Computing Machinery; Jour. Am. Rocket Soc. Serv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Theory of Formal Languages, Computer Programming Techniques, Artificial Intelligence.

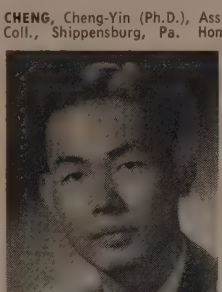
HEN, Leslie Hung (D.Sc.), Chf. of Basic Engrng., Div., R and . Gen. Dynamics, Electric Boat, Groton, Conn. Home Add.: R.F.D. No. 1, Chesterfield Rd., Niantic, Conn. MECHANICAL ENGINEERING. b. Canton, China, Nov. 22, 1923. s. King-Ming and May (Wong) C. Edn.: B.S., Natl. Chiaotung Univ., China, 1946; M.M.E., Univ. of Del., 1948; D. Sc., Harvard Univ., 1950. m. Pauline Hsu, Dec. 22, 1947. c.: Phyllis; Doreen; Robert. Exp.: Mechanical Engr., Jackson and Moreland, Inc., Boston, Mass., 1950-51; Asst. Prof., Univ. of Notre Dame, 1951-52; Sr. Engr., Sverdrup and Parcel, St. Louis, Mo., 1952-56; Hd., Applied Mechanics Sect., Gen. Dynamics/Electric Boat, Groton, Conn., 1956-62; Chf., Basic Engrng. Div., ibid., 1962 . Mem.: A.A.A.S.; A.S.M.E.; Pi Tau Sigma. Contbrng. Author: Thermodynamic and Transort Properties of Gases, Liquids and Solids, 1959. Contbr. to: rans., A.S.M.E. Areas of Rsch.: Underwater Technol., Structure-luid Interactions.

HEN, Philip Stanley (Ph.D.), Prof. of Chem., So. Lancaster, Mass. ome Add.: So. Lancaster, Mass. ORGANIC CHEMISTRY. b. Shanghai, China, Aug. 17, 1903. s. Kwen Yung and Siu Ying (Chang) C. Edn.: B.S., Emmanuel Missionary Coll., 1929; M.S., Mich. St. Univ., 1931; Ph.D., ibid., 1933. m. Helen Y. C. Feng, Aug. 3, 1931. c.: Philip, Jr.; Helen D.; John E.; George D.; Ruth Ann; Samuel M. Exp.: Analyst, Mich. Agri. Exptl. Sta., 1930-31; Prof. of Chem., Madison Coll., 1933-38; Prof. of Chem., Atlantic Union Coll., 1938-45; Rsch. Chemist, Graton & Knight Co., Worcester, Mass., 1945-49; Rsch. Chem., Bay State Abrasive Products Co., Westboro, Mass., 1950-53; Rsch. Chemist, Monomer-Polymer, Leominster, Mass., 1953-54; Prof. of Chem., Atlantic Union Coll., 1954—. Hon. Pos.: Chmn., Div. of Biol. and hem., Atlantic Union Coll. Mem.: Am. Chem. Soc.; Am. Soybean ssn.; Sigma Xi. Author: The Chemical Elements Wall Chart, 933; Syntans and Newer Methods of Tanning, 1950; 500 Syntan atent Abstracts: 1911-50, 1950; Soybeans for Health, Longevity, nd Economy, 1956; Heart Disease—Cause, Prevention, and Recov-y, 1958; A New Look at God, 1962. Contbr. to: Jour. of Am. hem. Soc.; Jour. of Chem. Edn.; Chinese Med. Jour.; Jour. Am. Leather Chemists Assn.; Information Please Almanac; he Chem. of Leather Manufacture; The Soybean Digest. Areas Rsch.: Syntans and Newer Methods of Tanning; Soybean as Human Food.

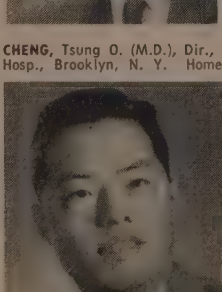
HENEY, Ralph Holt (Sc.D.), Prof. of Biol. (Physiol.), Brooklyn oll., Brooklyn 10, N. Y. Home Add.: Winter Add.: 612 Ocean Ave., Brooklyn 26, N. Y. Summer Add.: MBL, Woods Hole, Mass. BIOLOGY (PHYSIOLOGY). b. Maynard, Mass., June 3, 1896. s. Levi Raymond and Mary Elizabeth (Billington) C. Edn.: B.S., Boston Univ., 1918; A.M., ibid., 1919; M.S., Harvard Univ., 1922; Sc.D., ibid., 1923. Hon. Deg.: D.Sc., L. I. Univ., 1962. m. Agnes Gray, June 11, 1924. Exp.: Tchng. Fellow, Boston Univ., 1918-21; Tchng. Fellow, Radcliffe and Harvard Coll., 1921-22; Instr., Western Reserve Univ., 1923; Asst. Professor, New York University, 1923-29; Professor and Chairman, Biol. Dept., Long Island Univ., 1929-46; Prof. of Biol. Scis., Brooklyn Coll. of Pharm., Long Island Univ., 1932—; Assoc. Prof., ooklyn Coll., 1946-48; Prof., Biol., ibid., 1949—. Hon. Pos.: onsult., Food, Beverage and Drug Indus., 1925—; Investigator Physiol. and Pharm., Marine Biol. Lab., 1929—; Emer. Chmn., ect. of Biol., Coun. Mem. and Vice-Pres., N. Y. Acad. of Sci.; rustee, Am. Inst. of the City of N. Y.; Trustee, Boston Univ. ub of N. Y. Scholarship Fund; Advisory Editor, Econ. Botany, 947-57; Am. Collaborator, Acta Phytotherapeutica Amsterdam, etherlands, 1952—; Am. Editor, Quarterly Jour. of Crude Drug sch. 1961—. Mem: A.A.A.S. (fellow); N. Y. Acad. of Sci. (fellow); Soc. Gen. Physiol.; Soc. Exptl. Biol. and Med.; Am. Soc. harmacol.; N. Y. State and Natl. Soc. for Med. Rsch.; Am. Soc. Zool.; Am. Soc. Plant Physiol.; Botanical Soc. of Am.; orrey Bot. Club; Marine Biol. Lab. Corp.; Phi Beta Kappa; ssoc's. Sigma Xi; Phi Alpha Mu. Author: Scientific Monograph the Econ. Species of the Genus Coffea, 1925. Contbr. to: iological Bull.; Jour. of Cellular and Comparative Physiol.; our. of Gen. Physiol.; Exptl. Cell. Rsch.; Jour. Exptl. Zool.; roc. of the Soc. for Exptl. Biol. and Med.; Archives Internatl. de Pharmacodynamie et de Therapie; Jour. Lab. and Clin. Med.; Jour. Exptl. Psychol.; Am. Jour. Bot.; Bull. of the Torrey Botanical Club; World Sci. Rev., London; Econ. Botany; Acta Phytotherapeutica Amsterdam, The Netherlands. War Record: W. W. I. Areas of Rsch.: Cellular Pharmacology and Cytomorphology in Problems of Fertilization and Growth with Special Reference to the Action of the Methylated Dioxypurines (Caffeine, Theobromine, Theophyline). Comparative Effects and Antagonisms of Drug Action on Neuro-Muscular and Cardiac Physiology and the Central Nervous System; Beverage Effects Upon Man; Botanic Drug Sources and Use; Radiation Biology.

CHEN, William Y. (M.D.), Medical Officer in Chg., Environmental Cancer Field Rsch. Lab., Natl. Cancer Inst., 1300 Pennsylvania Ave., Hagerstown, Md. Home Add.: 5014 Adrian St., Aspen Hill Park, Rockville, Md. CANCER EPIDEMIOLOGY; PREVENTIVE MEDICINE AND PUBLIC HEALTH. b. Amoy, China, Mar. 4, 1912. s. M. H. and K. H. (Hwang) C. Edn.: M.D., Natl. Sun-Yat-sen Univ. Med. Coll., China, 1938; M.P.H., Johns Hopkins Univ., 1947. m. Maying Wong, Jan. 30, 1940. c.: David H.; Linda Y.; William Y.; Jasmine Y. Exp.: Asst. Prof. of Preventive Med., Natl. Defense Med. Coll., Kweiyang, China, 1940-46; Sr. Publ. Health Physician, N. Y. St. Health Dept., Albany, N. Y., 1951-52; Chf. Preventive Med. Officer, S.-W. Command, U. S. Army, Kyoto, Japan, 1953-55; City Health Dir., City of Middletown, Conn., 1956-57; Dir., Environmental Cancer Field Rsch. Lab., Natl. Cancer Inst., Hagerstown, Md., 1957—. Mem.: A.M.A.; Publ. Health Cancer Assn. of Am.; Congress of Governmental Industrial Hygienists; Internatl. Congress of Industrial Med.; A.A.A.S., Fellow; Am. Publ. Health Assn., Fellow; Kiwanis Internatl. Author: Manual on Army Field Med. Serv., 1943. Contbr. to: Jour. of Natl. Cancer Inst.; Jour. of Am. Publ. Health Assn.; U. S. Publ. Health Reports; The China Quarterly. Serv. Rec.: Chinese Army, W.W. II, U. S. Army, 1953-55. Areas of Rsch.: Causation of Cancer, Especially Related to Environmental Factors, Such as Radiation, Viruses and Human Ecology.

CHENG, Cheng-Yin (Ph.D.), Asst. Prof. of Chem., Shippensburg St. Coll., Shippensburg, Pa. Home Add.: 23 Richards Ave., Shippensburg, Pa. ANALYTICAL CHEMISTRY. b. Hsinpu, Formosa, Jan. 29, 1930. s. Shu-Hsien and Hsi-Mei (Chen) C. Edn.: B.S., Berea Coll., 1955; M.S., Univ. of Ill., 1956; Ph.D., ibid., 1960. m. Mary E. Harlow, July 29, 1961. Exp.: Rsch. Asst., Univ. of Ill., Urbana, Ill., 1955-60; Instr., Wilson Coll., Chambersburg, Pa., 1960-61; Asst. Prof., Shippensburg St. Coll., 1961—. Mem.: Sigma Xi; Gamma Sigma Delta; Am. Chem. Soc.; Agron. Soc. of Am.; Am. Assn. of Univ. Profs. Areas of Rsch.: Diffusion Processes; Instrumental Methods of Chemical Analysis and Plant Nutrients.



CHENG, Tsung O. (M.D.), Dir., Cardiopulmonary Lab., The Brooklyn Hosp., Brooklyn, N. Y. Home Add.: 69-66 182nd St., Flushing, N. Y. INTERNAL MEDICINE AND CARDIOPULMONARY PHYSIOLOGY. b. Shanghai, China, Mar. 30, 1925. s. K. S. and Fanny W. (Wang) C. Edn.: B.S., St. John's Univ., 1947; M.D., Pa. Med. Schl., 1950; M.Med. Sci., Univ. of Pa., 1956. m. Marie Ellen Roe, June 18, 1955. c.: Mark Dudley; Yvonne Joyce. Exp.: Res., Internal Med., Cook Co. Hosp., Chicago, 1952-55; Fellow in Cardiology, Geo. Wash. Univ. Med. Schl., 1955-56; Instr. in Cardiology, Mass. Gen. Hosp., 1956-57; Fellow in Med., Johns Hopkins Hosp., 1957-59; Asst. Prof. of Med., State Univ. of N. Y. Med. Schl., Downstate Med. Ctr., 1959—. Hon. Pos.: Co-Chf., Ped. Cardiac Clin, Chf., Adolescent Cardiac Clinic, Physician, Adult Cardiac Clinic, Attending Physician, The Brooklyn Hosp., Brooklyn, N. Y.; Hon. Advanced Rsch. Fellow, Am. Heart Assn., 1958-59. Mem.: Am. Heart Assn.; Am. Fed. for Clin. Rsch.; N. Y. Heart Assn.; Am. Assn. Adv. Sci.; N. Y. St. Med. Soc.; A.M.A. Contbr. to: Am. Heart Jour.; Am. Jour. of Cardiol.; Am. Jour. of Med.; Bull. of N. Y. Acad. of Med.; Circulation; Fed. Proc.; Jour. Am. Med. Assn.; Jour. Applied Physiol. Gen. Int.: Cert. by the Am. Bd. of Internal Med., 1961. Areas of Rsch.: Cardiopulmonary Pathophysiology.



CHENG, Hwei-Hsien (Ph.D.), Rsch. Assoc., Univ. of Ill., Urbana, Ill. Home Add.: 505 E. Green, Champaign, Ill. SOIL CHEMISTRY. b. Shanghai, China, Aug. 13, 1932. s. Chi-Pao and Anna (Lan) C. Edn.: B.A., Berea Coll., 1956; M.S., Univ. of Ill., 1958; Ph.D., ibid., 1961. Exp.: Rsch. Asst., Univ. of Ill., 1956-58, 1960-61; Rsch. Assoc., ibid., 1961—. Mem.: A.A.A.S.; Am. Soc. of Agronomy; Soil Sci. Soc. of Am.; Internatl. Soc. of Soil Sci.; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Beta Beta Beta. Contbr. to: Jour. of Agricultural and Food Chem.; Agronomy Abstract. Areas of Rsch.: Analytical Chem. of Soil Nitrogen, N^{15} Tracing Studies, Denitrification, Determination of Soil Magnesium, Soybean Response to Phosphorus, Soil Sampling.

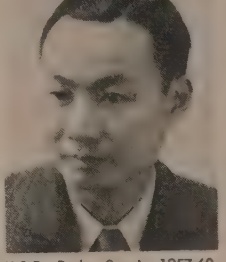
CHENKIN, Theodore (M.D.), Physician, 606 Roosevelt Ave., Carteret, N. J. Home Add.: 29 East Oak St., Carteret, N. J. PRACTICE OF MEDICINE, RESEARCH ON BLOOD CLOTTING. b. Brooklyn, N. Y., Oct. 1, 1921. s. Meyer and Jennie (Rosen) C. Edn.: A.B., Cornell Univ., 1943; M.D., N. Y. Univ., 1949. m. Freda Goldstein, June 11, 1948. c.: David Victor; Michael Phillip. Exp.: Internship, Queens Gen. Hosp., L. I., N. Y., 1949-51; Resident, N. Y. U. Rsch. Serv., Goldwater Memorial Hosp., Welfare Is., N. Y., 1951-52; Rsch. Fellow, N. Y. Rsch. Serv., ibid., 1952-54; Resident, V. A. Hosp., Brooklyn, N. Y., 1954-55; Rsch. Fellow, N. Y. U. Rsch. Serv., Goldwater Hosp., Welfare Is., N. Y., 1955; Private Practice of Med., 1955—. Mem.: A.M.A.; N. J. State and Union Co. Soc. of Med.; N. J. Acad. Med.; Am. Geriatric Soc.; N. Y. Acad. of Sci.; Am. Fed. Clin. Rsch.; A.A.A.S.; Sigma Xi. Contbr. to: Jour. Biol. Chem.; Jour. Pharm. and Exp. Ther.; Fed. Proc.; Proc. Soc. Exp. Biol. and Med.; Jour. Clin. Invest.; Am. Jour. Med.; Am. Jour. Med. Sci.; Exp. Med. and Surg. Serv. Rec.: U.S.P.H.S. Areas of Rsch.: Effect of Nutritional Factors and Drugs on Blood Clotting.

CHERNOV, Alexander Pavlovich (Mr.), Assoc. Prof., Briar Cliff Coll., Sioux City, Ia. Home Add.: 500 N. Mich. Ave., Pasadena 4, Calif. CHEMISTRY: ORGANIC, FOOD, QUANTITY, PHYSICAL; PHYSICS; MICROBIOLOGY. b. Novospasovka, the Ukraine, Aug. 30, 1899. s. Paul S. and Tatiana (Protasenko) C. Edn.: M.S., Rutgers Univ., 1957; B.S., Kharkov Univ., 1930. Exp.: Chf. of Chem. Lab., Chem. Polytechn. of Basic Indust., Kharkov, Ukraine, 1930-35; Chemist Analyt. Sta. Alkaloid Plant, Moscow, Russia, 1935-37; Tchr. of Chem., Phys., H. Schls., Gorlovka, Mariupol, Ukraine, 1940-44; Chemist, Rschr., Louis Blumer Chem. Plant, Zwickau, Germany, 1944-45; Rsch. Lab. Asst., Microbiol. Inst. of Rutgers Univ., New Brunswick, N. J., 1954-57; Asst. Prof., Presbyt. Jr. Coll., Maxton, N. C., 1957-58; Assoc. Prof., Briar Cliff Coll., 1958—. Mem.: Am. Chem. Soc.; Mem., Stand. Comm. for Chem. Reagents at Ministry of Heavy Indust. and Moscow Univ., Moscow, Russia. Contbr. to: Chemico-Pharmacl. Rsch. Inst. (Moscow, Russia). Areas of Rsch.: Technology of Confectionery Products; Technology of Drugs and Chemical Reagents at Alkaloid Plant; Emulsions and Water Soluble Varnishes and Paints; Research of Antibiotics and Steroid Transformation; Studies of Proteins, Cholesterol, Alkaloids.

CHERNY, Oleg George (Mr.), Chmn., E.D.P. Comm. on Finance, Calif., Tex. Oil Corp.; Budget Coordinator, American Overseas Petroleum, Ltd., New York, N. Y. Home Add.: 128 Corona Ave., Pelham, N. Y. MANAGEMENT ENGINEERING, FINANCE AND PLANNING. b. Sevastopol, Russia, Nov. 4, 1920. s. Col. George V. and Prof. Tatiana Ostroumova (Mitchell). Edn.: A.B., Columbia Univ., 1948; B.S., ibid., 1949; M.S., ibid., 1962. m. Nathalie Drozdoff, April 17, 1944. c.: Alexis O.; Nathalie. Exp.: Process Engr., Cities Serv. Co., 1949-50; Economist, Petrol. Advisers, Inc., Subsidiary of Cities Serv. Co., ibid., 1950-52; Operations Supvr., Caltex Oil Co., Ltd., 1952-57; Budget Coordinator, Am. Overseas Petroleum, Ltd., N. Y., 1957-60; Chmn., E.D.P. Comm. on Finance, Calif. Tex. Oil Corp., 1960—. Hon. Pos.: Advisory Edntl. Com. of Laura Spelman Rockefeller-endowed Russian Stud. Fund, Inc.; Comm., Forward Planning. Mem.: Inst. of Mgmt. Scis., College of Planning; Am. Assn. Adv. Sci.; Acad. of Polit. Sci.; Phi Lambda Upsilon; Forward Planning. Service Record: U. S. Army Air Corps and Command and General Staff Coll., World War II. Gen. Int.: Guest speaker at Am. Mgmt. Assn. seminars and for Systems and Procedures Assn. on financial planning and managerial control, Y.M.C.A. Conf. on Peace and War. Areas of Rsch.: Short-term and long-range corporate, direction and financial planning. Managerial control.

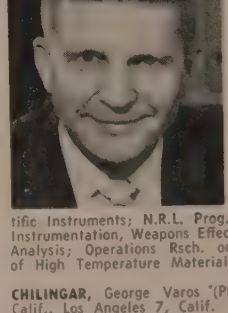
CHERRY, Frank Talley (Mr.), Prof. and Chmn., Div. of Social Sci., Albany State Coll., Albany, Ga. Home Add.: 658 Alston Ave., Memphis 5, Tenn. SOCIOLOGY. b. Memphis, Tenn., Dec. 4, 1925. s. Frank Talley, Jr. and Jimmie L. (Parks) C. Edn.: B.S., Ala. State Coll., 1951; M.A., Fisk Univ., 1953. m. Sammie L. Williams, 1959. Exp.: Instr., Soc. Sci., Dillard Univ., 1953; Prof. of Sci., ibid., 1953; Interne in Coll. Tchng., Univ. of Chicago, 1953-54; Prof. of Sci., ibid., 1953-54; Prof. and Chmn., Div. of Soc. Sci., Albany State Coll., 1960—. Mem.: Am. Assn. Adv. Sci.; Am. Assn. Univ. Prof.; Am. Sociological Assn.; Southern Sociol. Assn.; African Studies Assn.; Intern African Inst.; Southwestern Soc. Sci. Assn. Serv. Rec.: U.S.N., 1944-46. Areas of Rsch.: Urbanization; African Society and Culture.

CHIH, Chung-Ying (Ph.D.), Assoc. Prof. of Physics, Middlebury Coll., Middlebury, Vt. Home Add.: 2 Park St., Middlebury, Vt. NUCLEAR PHYSICS. b. Yuki, Fukien, China, Dec. 11, 1916. s. Lai Sui and Sung-Yee (Lin) C. Edn.: B.Sc., Natl. Tsing Hua Univ., China, 1937; Ph.D., Univ. of Calif., 1954. m. Alice Yuen, 1955. Exp.: Instr. in Physics, Fukien Med. Coll., China, 1937-40; Instr. Assoc. Prof., Fukien Tchrs. Coll., China, 1940-44; Prof. of Physics, Natl. Chi-Nan Univ., China, 1944-45; Prof., Kiangsu Coll., China, 1945-48; Physicist, Radiation Lab., Univ. of Calif., 1953-54; Asst. Prof. of Physics, Middlebury Coll., 1954-57; Physicist, Radiation Lab., Univ. of Calif., summer, 1956; Assoc. Prof. of Physics, Middlebury Coll., 1957—. Mem.: Am. Physical Soc.; Sigma Xi. Contbr. to: The Physical Rev. Gen. Int. Areas of Rsch.: Neutron Proto



N.S.F. Rsch. Grant, 1957-60. Scattering; Elem. Particles.

CHILDERS, H. Malcolm (Mr.), Technical Dir., Gen. Technologies Corp., 802 S. Columbus St., Alexandria, Va. Home Add.: 4440 Venable Ave., Alexandria, Va. NUCLEAR PHYSICS AND PHYSICAL CHEMISTRY. b. Shawnee, Okla., Feb. 2, 1921. s. James Monroe, Jr. and Leila Paulin (Peek) C. Edn.: B.S., Univ. of Md., 1950. m. Mary L. Berger, 1950. c.: Barbara E.; James Monroe IV; Andrew A.; Edwin Malcolm Clayton. Exp.: Nuclear Physicist, Naval Rsch. Lab., Wash., D. C., 1950-56; Tech. Dir., Am. Mach. & Fdry. Co., Alexandria, Va., 1956-61; Tech. Dir., Gen. Technologies Corp., Alexandria, Va., 1961—. Mem.: A.A.A.S.; Am. Inst. of Physics; Am. Physical Soc.; Health Physics Soc.; Philosophical Soc. of Wash., D.C. Contbr. to: The Physical Rev.; Radiation Rsch.; Rev. of Scientific Instruments; N.R.L. Prog. Reports. Areas of Rsch.: Nuclear Instrumentation, Weapons Effects, Shielding Dosimetry and Hazard Analysis; Operations Rsch. on War Games; Physical Properties of High Temperature Materials and Re-entry Physics.



CHILINGAR, George Varos (Ph.D.), Assoc. Prof., Univ. of So. Calif., Los Angeles 7, Calif. Home Add.: 101 S. Windsor Blvd., Los Angeles 4, Calif. PETROLEUM ENGINEERING AND GEOLOGY. b. Tbilisi, Ga., July 22, 1929. s. Dr. Varos and Klavdia (Gorchakova) Chillingarian. Edn.: B.E., Univ. of Sou. Calif., 1949; M.S., ibid., 1950; Ph.D., ibid., 1956. Hon. Deg.: Doctoris, Academia Studiorum Minerva, 1959. m. Yelena Salmeron, June 12, 1953. c.: Modesto George; Eleanore Elizabeth; Mark Steven. Exp.: Tchng. Asst., Univ. of Sou. Calif., 1953-54; Chief of Petroleum and Chem. Lab., Wright Field, Wright-Patterson AFB, 1954-56; Asst. Prof., Univ. of Sou. Calif., 1956-59; Assoc. Prof., ibid., 1959—. Mem.: A.I.M.E.; A.A.P.G.; A.G.U.; G.S.A.; A.S.E.E.; S.E.P.M.; Geochem. Soc.; Tau Beta Pi; Pi Epsilon Tau; Sigma Gamma Epsilon; Phi Kappa Phi; Sigma Xi. Contbr. to: Am. Assn. Petrol. Geol. Bull.; Jour. Sedimentary Petrolog

S.A.; A.G.U.; A.G.I.-I.G.R.; Compass; Petrol. Engr.; Bol. Asoc. Mexicana de Geol. Petrol.; Sci. Engr. Serv. Rec.: U.S.A.F.R., 1954-56; Reserves, 1956—. Areas of Rsch.: Compaction of Sediments; Carbonate Rocks; Drilling Fluids; Fluid Mechanics; Petroleum and Products analysis; Interrelationship between fundamental and mass properties of sediments and rocks.

CHILDS, Henry Everett, Jr. (Ph.D.), Hd., Life Sci. Dept., Cerritos Coll., Norwalk, Calif. Home Add.: 15053 Neartree Rd., La Mirada, Calif. VERTEBRATE ECOLOGY. b. Providence, R. I., Jan. 8, 1924. s. Henry E. and Judith (Hopkins) C. Edn.: A.A., Univ. of Calif., Berkeley, 1947; A.B., ibid., 1949; M.A., ibid., 1951; Ph.D., ibid., 1959. m. Mary E. Baeck, March 14, 1947. c.: Stephanie Hopkins; Eric Leslie. Exp.: Rsch. Biologist, Univ. of Calif., 1951-54; Instr., Compton Coll., 1954-57; Hd., Biol. Dept., Cerritos Coll., 1957—. Hon. Pos.: Vice-Pres., Cooper Ornithological Soc. Mem.: Soc. Study Evolution; Wildlife Soc.; Cooper Ornithological Soc.; Soc. Calif. Acad. Sci.; Wildlife Disease; Am. Soc. Mammalogists; Ecological Soc.; T.K.E.; Sigma Xi. Co-author: Laboratory Manual for Introductory Life Sciences. Contbr. to: Condor; Jour. Mammalogy; Evolution; Bull. So. Calif. Acad. Sci.; U. S. National Museum Bull.; Jour. Range Man; Bird-Banding. Serv. Rec.: U.S.C.G.R., 1943-46. Gen. Int.: Natl. Sci. Foundation Faculty Fellow, 1960-61; Res. Participant, Oak Ridge Inst. Nuclear Studies, 1961-62. Areas of Rsch.: Ecology of Arctic Birds and Mammals; Effects of Chronic Irradiation on Native Small Mammals.

CHIPP, Rodney Duane (Capt. U.S.N.R.), Consulting Engr., Rodney D. Chipp & Assocs., 15 Ward St., Bloomfield, N. J. Home Add.: 212 Lorraine Ave., Upper Montclair, N. J. ELECTRONICS. b. New Rochelle, N. Y., May 16, 1910. s. Rodney Denistoun and Julia (Winne) C. Edn.: B.S., McKinley Roosevelt, 1944. m. Beatrice Alice Hicks, Aug. 1948. c.: Robert Peaslee. Exp.: Engr., Natl. Brdcstg. Co., N. Y. C., 1933-38; TV Development Engr., ibid., 1938-41; Radio Facilities Engr., Am. Brdcstg. Co., N. Y. C., 1946-48; Dir. of Engrng., DuMont TV Network, N. Y. C., 1948-55; Dir. of Engrng., Allen B. DuMont Labs., Inc., Clifton, N. J., 1955-57; Mgr., System Engrng., I.T.T. Labs., Nutley, N. J., 1957-58; Assoc. Lab. Dir., ibid., 1958-59; Dir. of Engrng., I.T.T. Communication Systems, Inc., Paramus, N. J., 1959-60; Dir. of Engrng. Planning, I.T.T. Labs., Nutley, N. J., 1960-61; Consulting Engr., Rodney D. Chipp & Assocs., Bloomfield, N. J., 1961—. Hon. Pos.: Chmn., New York Sect., Inst. Radio Engrs.; Pres., Tech. Soc. Coun. of N. Y. Mem.: A.A.A.S., Fellow; I.R.E., Fellow; A.I.E.E.; S.M.P.T.E.; N.S.P.E.; Delta Kappa Epsilon. Co-author: Closed Circuit Television, 1957; Pattern for Television Profit, 1952. Contbr. to: S.M.P.T.E. Jour.; Engr. News Record; The Am. Engr.; I.R.E. Trans. Serv. Rec.: U. S. Navy, 1941-46; Rec. Commendation by Sec. Navy for Radar Design. Gen. Int.: Rec. N.S.P.E. "Project Ambassador," Chmn. Study Group IXB CCIR. Mem., U.S.A.F. Winter Study Group. Areas of Rsch.: Acoustics, Communication Systems, Broadcast Systems, TV Systems, Transmission Standards; Engrng. Econs.; Engrng. Mgmt.

CHIRLIAN, Paul Michael (Eng.Sc.D.), Assoc. Prof. of Electrical Engrng., Stevens Inst. of Technol., Hoboken, N. J. Home Add.: 2160 Center Ave., Fort Lee, N. J. ELECTRICAL ENGINEERING, CIRCUIT THEORY ELECTRONICS. b. N. Y. C., Apr. 29, 1930. s. Gustave and Leonora (Morrison) C. Edn.: B.E.E., N. Y. Univ., 1950; M.E.E., ibid., 1952; Eng.Sc.D., ibid., 1956. m. Barbara Schein, Aug. 27, 1961. Exp.: Grad. Asst., Instructor, Asst. Prof., N. Y. Univ., 1950-60; Assoc. Prof., Stevens Inst. of Technol., 1960—. Hon. Pos.: Chmn., Basic Sci. Div., N. Y. Sect., Am. Inst. of Electrical Engrs. Mem.: Inst. of Radio Engrs.; Am. Mathematical Soc.; Am. Physical Soc.; Am. Soc. for Engrng. Edn.; Sigma Xi; Eta Kappa Nu. Co-Author: Electronics, 1961. Contbr. to: Proc. of I.R.E.; Quarterly of Applied Math.; I.R.E. Trans. on Circuit Theory; I.R.E. Trans. on Component Parts; I.R.E. Trans. on Electronic Computers. Areas of Rsch.: Circuit Theory; Cryogenic Electronics; Medical Electronics.

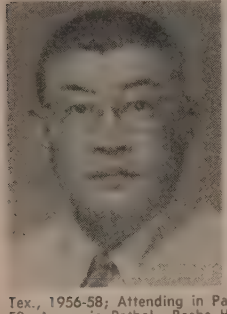
CHITWOOD, Benjamin Goodwin (Ph.D.), P. O. Box 29, Cent. Wash. NEMATOLOGY. b. Chicago, Ill., Dec. 21, 1907. s. (Stepfather) Richard M. and Eleanor M. (McCombie) C. Edn.: B.A., The Rice Inst., 1928; M.S., George Washington Univ., 1929; Ph.D., ibid., 1931. c.: Edward M.; Marie Diana; Huarani-Lynn. Exp.: Jr. Nematologist, Division of Nematology, U. S. Dept. of Agric., Bur. Plant Ind., 1928-29; Field Asst., Div. Small Fruits, Bur. of Plant Ind., USDA, 1930; Asst. Zoologist, Zool. Div., Bur. Anim. Ind., ibid., 1931-37; Assoc. Nematologist, Div. of Nemat., ibid., 1937-50; Assoc. Prof., Zool., The Catholic Univ. of Am., 1950-52; Consultant, Univ. of Ky., Tobacco Lab. and Dept. of Ent., Mich. State Coll., 1953; Chief, Nematologist, Fla. State Plant Bd., 1954-58; Rsch. Scientist, Labr. Comp. Biol., Kaiser Foundtn. Rsch. Inst., Richmond, Calif., 1958-61; Plant Pathol., Univ. Hawaii, 1961-62. Hon. Pos.: Pres., Helminth. Soc., Wash., 1949. Mem.: Helminthol. Soc., Wash.; Am. Phytopath. Soc.; Am. Micro. Soc.; Soc. Systematic Zool.; A.A.A.S.; A.I.B.S.; Soc. European Nematol.; Torrey Bot. Club; N. Y. Acad. of Sci.; Am. Soc. Nematol.; Am. Soc. for Microbiol. Author: Introduction to Nematology, 1937, 1938, 1940; Rev. Edn. Sect. I, Anatomy, 1950. Contbr. to: Proc. Helminth. Soc. Wash.; Nematologica; Jour. Wash. Acad. of Sci.; Phytopath.; Bull. Zool. Nomencl.; North Am. Vet.; Ztchr. Parasitenk; Ztschr. Zellforsch; Jour. Am. Med. Assn.; U.S.D.A. Circular; Tex. Jour. Sci.; Annual Rev. Microbiol.; U. S. Bur. Fisheries Bull.; Indian Vet. Jour.; Systematic Zool. Areas of Rsch.: Nematol., Systematics of Nemata; Nematomorpha, Kinorhyncha, Tardigrada, Soil Fumigation, Nemic population, Host Parasite relations, Comparative Histology and Physiological Chemistry; Subdivision of genus "Meloidogyne" (root-knot nemas equal "nematodes"); Classification of Nemata (Nematoda sensu restricto.)

CHOLLAR, Robert GaNun (Mr.), Vice Pres., Rsch. and Devel., and Tech. Asst. to Pres., The Natl. Cash Register Co., Dayton 9, Ohio. Home Add.: 4472 Lotz Rd., Dayton 29, Ohio. CHEMISTRY. b. Syracuse, N. Y., Feb. 10, 1914. s. Walter Edward and Estelle (GaNun) C. Edn.: Dartmouth, Hanover, N. H., 1933; Antioch Coll., 1935. m. Thelma Holt, Sept. 22, 1934. c.: Charles Edward; Brian Holt; Richard Robert. Exp.: Rsch. Chemist, Natl. Cash Register Co., Dayton, Ohio, 1933-37; Hd., Chem. Rsch. Dept., ibid., 1937-46; Dir. of Rsch., ibid., 1946-54; Vice Pres., Rsch., ibid., 1954-59; Vice Pres., Rsch. and Devel., Dir. of Co., ibid., 1959—; Tech. Asst. to Pres., ibid., 1962—. Hon. Pos.: Past Pres. of Indust. Rsch. Inst., Inc.; Bd. of Trustees of C. F. Kettering Found. and Antioch Coll.; Chmn. of the Secretariat of Techn. Comm. 97 on Data Processing of the Internatl. Standards Org.; Past Pres. of Soc. of Plastics Engrs., Inc.; Coordinating Comm. for Task Force for Ohio R. & D.; Mem., Scientific Rsch. Study Comm., Ohio Legislative Serv. Comm. Mem.: Industrial Rsch. Inst., Inc.; C. F. Kettering Foundation; Bus. Equipt. Mfrs. Insts.; Internatl. Organ. for Standardization; Natl. Assn. of Mfrg.; Natl. Soc. of Prof. Engrs.; Am. Ord. Assn.; Chi Phi; Dayton Art Inst.; Tau Beta Pi. Contbr. to: Rubber Age; Indust. and Engrng. Chem.; Mod. Plastics; A.S.T.M. Bull. Gen. Int.: Award from Ohio River Valley Water Sanitation Comn. for Outstanding Serv. Areas of Rsch.: Data Processing Techniques and Systems; Advanced Electronics and Mechanical Engineering Development; Solid State Physics; Chemistry, Metallurgy; Mathematics; Porous Rubber, Printing Principles, No-Carbon Required Paper.

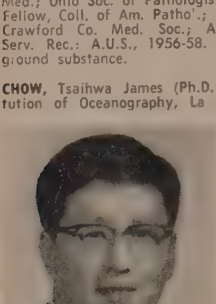
CHOPRA, Kuldip Prakash (Ph.D.), Rsch. Asst. Prof. of Astronautics, Polytech. Inst. of Bklyn., Bklyn., N. Y. Home Add.: 382 Cent. Pk. W., N. Y. City, N. Y. PHYSICS. b. Srinagar (Kashmir), India, Mar. 25, 1932. s. M. G. and Shanti (Handa) C. Edn.: B.Sc., Delhi Univ., India, 1951; M.Sc., ibid., 1953; Ph.D., ibid., 1960. Exp.: Rsch. Asst., Univ. of Md., Coll. Pk., Md., 1957-58; Rsch. Assoc., ibid., 1958; Rsch. Scient. and Visit. Asst. Prof., Univ. of Sou. Calif., 1958-60; Rsch. Asst. Prof. of Astronautics, Polytech. Inst. of Bklyn., 1960—. Mem.: Fellow, Am. Phys. Soc.; Fellow, Indian Phys. Soc.; Sr. Mem., Am. Astronaut. Soc.; Am. Geophys. Union. Contbr. to: Revs. of Mod. Phys.; Jour. of Geophys. Rsch.; Planetary and Space Sci.; Jour. of Astronaut. Scis.; Zeitschrift fur Physik; Indian Jour. of Phys.; Pubs. of Astronomical Soc. of Japan; Procs. of Natl. Inst. of Scis., India; Phys. Tchr., India. Areas of Rsch.: Interactions of Rapidly Moving Objects in Space; Magnetohydrodynamics and Plasma Physics; Atmospheric and Space Physics; Cosmical Magnetism.

CHOU, David Yuan-Pin (Ph.D.), Chmn., Dept. of Chem., Lenoir Rhyne Coll., Hickory, N. C. Home Add.: 229 24th Ave., N.E., Hickory, N. C. CHEMISTRY. b. China, Mar. 5, 1922. s. Ee-En and Su (Yu) C. Edn.: B.Engr., Tokyo Inst. of Technol., 1948; M.S., Univ. of Tokyo, 1951; Ph.D., The Ohio State Univ., 1954. m. Mary Ann Sung, Sept. 26, 1953. c.: Timothy; Stephen; Michael. Exp.: Hd., Dept. of Chem., St. Augustine's Coll., Raleigh, N. C., 1954-56; Prof. & Chmn., Dept. of Chem., Lenoir Rhyne Coll., 1956—. Mem.: The Am. Chem. Soc.; A.A.A.S.; Chi Beta Phi. Contbr. to: Chem. Abstracts. Areas of Rsch.: Analytical and Inorganic Chemistry.

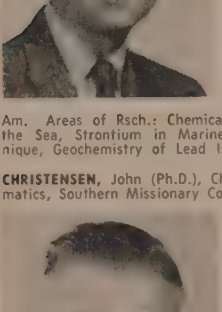
CHOW, Johnson Hsiangsheng (M.D.), Dir. of Clinical Lab. and Pathologist Galion Community Hosp., Galion, Ohio. Home Add.: South State Circle, Galion, Ohio. PATHOLOGY. b. Shanghai, China, Dec. 7, 1920. s. Ming-Yu and Lucy (Chang) C. Edn.: M.D., St. John's Univ. Med. Schl., 1946. m. Pauline Trechock, June 20, 1953. Exp.: Intern, St. Barnabas Hosp., Newark, N. J., 1947-48; Resident, Grant Hosp., Columbus, Ohio, 1948-49; Resident, Newell Hosp., Chattanooga, Tenn., 1949-50; Resident, Stevens Clinic Hosp., Welch, W. Va., 1950-53; Fellow in Pathol., Grad. Schl. of Med., Univ. of Penn., 1953-55; Resident in Pathol., Phila. General Hosp., Phila., Pa., 1954-55; Resident in Pathol., Temple Univ. Med. Center, Phila., Pa., 1955-56; Asst. Chf., Lab. Serv., Wm. Beaumont Army Hosp., El Paso, Tex., 1956-58; Attending in Pathol., V.A. Hosp., Phila., Pa., 1956-58; Assoc. in Pathol., Beebe Hosp., Lewes, Dela., 1958-59; Assoc. in Pathol., Milford Memorial Hosp., Milford, Dela., 1958-59; Consulting Pathologist, Kent General Hosp., Dover, Dela., 1958-59; Dir. of Labs. and Pathologist, Galion Community Hosp., Bucyrus Comm. Hosp. and Morrow Co. Hosp., Galion, Ohio, Bucyrus, Ohio and Mt. Gilead, Ohio, 1959—. Hon. Pos.: Diplomate of Natl. Bd. of Med. Examiners; Diplomate of Am. Bd. of Pathol. Mem.: Ohio State Med. Assn.; Am. Med. Assn.; Assn. of Milit. Surgs. of the U. S.; Internatl. Acad. of Pathol.; Fellow, Am. Geriatric Soc.; Am. Assn. of Blood Banks; Soc. of Nuclear Med.; Ohio Soc. of Pathologist; Central Ohio Soc. of Pathologists; Fellow, Coll. of Am. Pathol.; Fellow, Am. Soc. of Clinical Pathol.; Crawford Co. Med. Soc.; A.A.A.S. Contbr. to: Inflammation. Serv. Rec.: A.U.S., 1956-58. Areas of Rsch.: Inflammation and ground substance.



CHOW, Tsaihwa James (Ph.D.), Asst. Rsch. Chem., Scripps Institution of Oceanography, La Jolla, Calif. Home Add.: 8115 El Paseo Grande, La Jolla, Calif. CHEMICAL OCEANOGRAPHY, GEOCHEMISTRY. b. Shanghai, China, Oct. 13, 1924. Edn.: B.S., Natl. Chiaotung Univ., 1946; M.S., Wash. St. Coll., 1949; Ph.D., Univ. of Wash., 1953. Exp.: Instr., Natl. Chiaotung Univ., 1946-48; Rsch. Assoc., Univ. of Wash., 1953-55; Rsch. Fellow, Calif. Inst. of Tech., 1955-59; Asst. Rsch. Chem., Scripps Instn. of Oceanography, 1959—. Mem.: Chem. Soc. (Japan); Oceanographical Soc. of Japan; A.A.U.P.; A.A.A.S.; Am. Geophysical Un.; Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Analytical Chem.; Biol. Bull.; Geochimica et Cosmochimica Acta; Deep Sea Rsch.; Jour. Marine Rsch.; Bull. Geol. Soc. of Am. Areas of Rsch.: Chemical Oceanography, Trace Elements in the Sea, Strontium in Marine Organisms, Microanalytical Technique, Geochemistry of Lead Isotopes; Geochronology.

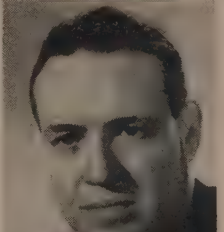


CHRISTENSEN, John (Ph.D.), Chmn., Div. Natural Sci. and Mathematics, Southern Missionary Coll., Collegedale, Tenn. Home Add.: Box 7, Collegedale, Tenn. BIOCHEMISTRY. b. Mahtowa, Minn., June 19, 1908. s. Christ and Dorothy (Christensen) C. Edn.: B.A., Union Coll., Lincoln, Nebr., 1939; M.A., Univ. of Nebr., 1946; Ph.D., Mich. St. Univ., 1956. m. Ella McCrillis, Oct. 17, 1932 (dec., Mar. 4, 1961). c.: Clarice; Eunice. Exp.: Sci. Tchr., Shelton Acad., 1939-41; Asst., Chemistry, Union Coll., 1941-45; Instr. to Asst. Prof., Chem., Emmanuel Missionary Coll., Berrien Springs, Mich., 1945-55; Prof. Chem. and Chmn. Div. Natural Sci. and Mathematics, Sou. Missionary Coll., Collegedale, Tenn., 1955—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi. Areas of Rsch.: Periodate Oxidations.



CHREST, Clarence Peter (M.D.), 458 W. South St., Kalamazoo, Mich. Home Add.: 2740 Bronson Blvd., Kalamazoo, Mich. MEDICAL RADIOLOGICAL DIAGNOSIS AND TREATMENT. b. Green Bay, Wis., Dec. 1, 1916. s. Anton and Anna (Schoonenberg) C. Edn.: B.A., Univ. of Wis., 1941; M.D., ibid., 1943. m. Thelma E. Fluke, Nov. 20, 1943. c.: Dianne; Laura; Charles P.; Janet. Exp.: Intern, St. Mary's Hosp., Duluth, Minn., 1943-44; Asst. Resident, Radiol., Univ. of Mich. Hosp., Ann Arbor, Mich., 1944-45; Instr. Radiol., ibid., 1946-48; Radiologist, Kalamazoo, Mich., 1948—. Hon. Pos.: Sect. Chf., Borgess Hosp., Dept. of Radiol., Kalamazoo, Mich.; Past Sect. Chf., Bronson Hosp., Dept. of Radiol., Kalamazoo, Mich. Mem.: Am. Radium Soc.; Radiological Soc. of N. Am.; Soc. of Nuclear Medicine; Chicago Roentgen Soc.; Kalamazoo Acad. of Med.; Mich. St. Med. Soc.; A.M.A.; Mich Assn. of the Professions; Phi Chi; Phi Kappa Phi; Am. Legio Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Radiol.; N clear Medicine.

CHRISTIAN, John Edward (Ph.D.), Head, Bionucleonics Dept., Pu due Univ., Lafayette, Ind. Home Add.: 1301 Woodland Ave W. Lafayette, Ind. APPLICATIO OF THE PRINCIPLES OF NUCLEA PHYSICS TO BIOLOGY (BIONUCL ONICS). b. Indianapolis, Ind July 12, 1917. s. George E. a Okel K. (Waltz) C. Edn.: B.S Purdue Univ., 1939; Ph.D., ibid 1944. m. Catherine E. Spoone July 1948. c.: Linda Kay. Exp Control Chemist, Upjohn Co., Kal mazoo, Mich., 1939-40; Rsch. Fe low, Purdue Univ., 1940-44; Po Doctorate Rsch. Fellow, ibid 1944-45; Asst. Prof., ibid., 194 47; Assoc. Prof., ibid., 1947-5 Coordinator of Bionucleonics Rsch ibid., 1948—; Prof., Pharm. Chem ibid., 1950—; Head, Dept. Radi logical Control, ibid., 1956- Head, Bionucleonics Dept., ibid 1959—; Chmn., Trace Level Rsc Inst., ibid., 1960—. Hon. Pos.: Treas. and Pres., Purdue Chp Sigma Xi; Mem., Exec. Coun. of Rho Chi; Comm. of the A Pharml. Assn.; Mem. of the U. S. Pharm. Rev. Comn. Mem Am. Pharm. Assn.; Am. Chem. Soc.; A.A.A.S., Fellow; Tchn Sec. Am. Assn. Coll. Pharm.; Ind. Acad. Sci., Fellow; Am. N clear Soc.; Am. Soc. Bact.; Health Phys. Soc.; A.A.U.P.; Sign Xi; Rho Chi; Phi Lambda Upsilon; Sigma Pi Sigma; Torch; Elk Author: Quantitative Pharmaceutical Analysis, 1957. Contbr. t Jour. Am. Pharm. Assn.; Sci.; Annals of the N. Y. Acad. Scis.; Jour. of Dairy Sci.; Poultry Sci.; Am. Jour. of Phar Edn.; Endocrinol.; Canadian Pharmaceutical Jour.; Anal. Chem Jour. of Applied Radiation and Isotopes; Jour. Analytical Che Gen. Int.: Sigma Xi Award, 1950; Chilean Iodine Edntl. Br., In Award, 1956; Ebert Medal, 1957; Julius Sturmer Award, 195 Justin L. Powers Award, 1962. Areas of Rsch.: Anal. of Dru and Chem.; Instrumental Methods of Anal.; Application of Isotop to the Mechanism of Action of Drugs, Analysis and to Pharm Ind. Processes; Activation and Isotope Dilution Analyses; An of Isotopes; Determ. of the Significance of Applications to Anal sis and Medicine of Existing Levels of Radioactivity in Livi Specimens, Including Man.



CHU, David C. (Ph.D.), Lab. Dir., Monte Sano Hosp., 2834 Gle dale Blvd., Los Angeles, Calif. Home Add.: 1945 Lucile Av Los Angeles 39, Calif. MICROB OLOGY, IMMUNOCHEMISTRY. Foochow, China, Feb. 10, 191 s. F. C. and Mayflower (Chao) Edn.: A.B., Cascade Coll., 195 M.S., Ore. Med. Schl., 195 Ph.D., Calif. Coll. of Med., 196 m. Dorothy Yeh, May, 1957. Exp Asst. Bacteriol., Lester Ins Shanghai, China, 1937; Inst Med. Tech., Inst. of Hosp. Tec China, 1938; Chf., Mobile La Unit, anti-epidemic Corps, Na Pub. Hlth. Serv., China, 1938-4 Instr., Med. Bacteriol., Kwan Med. Schl., 1942-45; Assoc. Rsc Cedars of Lebanon Hosp. La 1952-54; Lab. Dir., Monte Sa Hosp. Lab., 1954—. Mem.: A Soc. of Bacteriol.; Am. Assn. Pu Health; Am. Assn. Bioanalyst Am. Assn. Adv. Sci.; Am. Assn. Med. Tech.; Calif. Assn. Cl Labs. Contbr. to: Bull. Chinese Med. Tech.; Chinese Southw Med. Jour.; Jour. Chinese Microbiol.; Jour. of Hyg., Br.; Jou Chinese Med. Assn.; Chinese Jour. Internal Med.; Jour. of A Chem. Soc. Areas of Rsch.: Immunology; Immunochemistry.

CHUNG, Choong Wha, (Ph.D.), Chief, Med. Chemical Un Medical Lab. Section, Communicable Disease Center, U. Pub. Health Serv., Atlanta 22, G Home Add.: 1514 Montevallo Ci Decatur, Ga. BIOCHEMISTRY, I MUNOCHEMISTRY. b. Korea, Au 14, 1918. s. Yee Young a Kyung Bin (Lee) C. Edn.: B. Keio Univ., Tokyo, Japan, 194 M.D., ibid., 1946; Ph.D., Rutg Univ., 1953. m. Kay H. Lee, Fe 1950. c.: Laura G. Exp.: Rs Asst., Seoul Natl. Univ., Schl. Med., Seoul, Korea, 1946-49; Rs Fellow, Rutgers Univ. Inst. of M crobiol., 1949-53; Instr., Joh Hopkins Univ. Schl. of Medici 1953-55; Instr., Univ. of Co Schl. of Medicine, 1955-56; Inst Dept. of Chem., Ind. Univ., 19 60; Supvry. Chemist, Communi ble Disease Ctr., U. S. Pub. Hea Serv., Atlanta, Ga., 1960—. H

Pos.: Chmn., Radiation Safety Comm., Communicable Disease C Atlanta, Ga. Mem.: Creek Park and Leafmore Hills Club. Coo

o: Jour. Biol. Chem.; Jour. Am. Chem. Soc.; Fed. Proc.; Am. Jour. f Botany. Areas of Rsch.: Quantitative Immunochemistry; Antibody Protein Biosynthesis; Microbial Biochemistry; Metabolism f Nucleic Acids.

CHUPP, Edward Lowell (Ph.D.), Assoc. Prof. of Physics, University of N. H., Durham, N. H. PHYSICS-NUCLEAR PHYSICS; COSMIC RAY PHYSICS. b. Lincoln, Neb., May 14, 1927. s. William W. and Marie (Moller) C. Edn.: A.B., Univ. of Calif., Berkeley, 1950; Ph.D., ibid., 1954. m. Mary Miklos, Dec. 15, 1950. c.: Timothy Edward; Christine Anne. Exp.: Staff Mem., Lawrence Radiation Lab., Univ. of Calif., Livermore, 1954-59; Chf., Geo-Space Physics Unit, Aerospace Div., Boeing Co., Seattle, 1959-62; Assoc. Prof. of Physics, Univ. of N. H., 1962—. Mem.: Am. Physical Soc.; Sigma Xi; Phi Beta Kappa. Contbr. to: Physical Rev.; Rev. of Scientific Instruments. Serv. Rec.: U.S.N.R., 1945-46. Areas of Rsch.: Low Energy Nuclear Physics; Cosmic Ray Physics; Nuclear Weapon Physics.

HURCH, Aloysius S. (M.D.), Psychiatrist, Recorder's Court, Psychiatric Clinic, Detroit, Mich. Home Add.: 19570 Bretton Drive, Detroit, Mich. PSYCHIATRY. b. Detroit, Mich., Feb. 4, 1909. s. James J. and Josephine (Suchy) C. Edn.: B.A., Wayne St. Univ., 1932; M.B., ibid., 1936; M.D., ibid., 1937. m. Elizabeth Kormendy, Sept. 11, 1937. c. Elizabeth Maria; Aloysius Stanislaus; Michael Joseph. Exp.: Med. Dir., Lincoln Hall, Westchester Co., N. Y., 1941-45; Asst. Med. Dir., St. Joseph's Retreat, Dearborn, Mich., 1945-62; Admin. Psychiatrist, Bd. of Edn., City of Detroit, Mich., 1945—; Psychiatrist, Recorder's Court, Psychiatric Clinic, ibid., 1962—. Mem.: Acad. of Psychosomatic Med.; Am. Psychiatric Assn.; Am. Geriatrics Soc.; Am. Publ. Health Assn.; Am. Rocket Soc., Inc.; Am. Med.

ssn.; Assn. of Am. Phys. and Surg.; Natl. Acad. of Rel. and lental Health; Catholic Physicians Guild; Med. Correctional Assn.; lich. Soc. of Gerontology; Internatl. Counc. for Exceptional Chil. ren; Detroit Hist. Soc.; Rotary Club; Detroit Museum of Art ounders Soc.; Phi Chi. Contbr. to: Med. Aspects of Delinquency; . Y. St. Med. Jour.; Nervous Child; Catholic Charities Jour. reas of Rsch.: Psychiatry and Mental Hygiene.

HURCH, Lloyd Eugene (Ph.D.), Clin. Instr., Anat., The George Vash. Univ., Univ. of Med. Schl., Wash., D. C. Home Add.: 7005 Glenbrook Rd., Bethesda 14, Md. ORAL SURGERY, ANATOMY OF HEAD AND NECK; BONE. b. Littleton, W. Va., Sept. 25, 1919. s. Howard and Mary Naomi (Henderson) C. Edn.: A.B., W. Va. Univ., 1942; D.D.S., Univ. of Md., 1944; M.S., Geo. Wash. Univ., 1953; Ph.D., ibid., 1960. Exp.: Interne, Oral Surg., Bellevue Hosp., N. Y. City 1944-45; Instr., Oral Surg. and Anesthesia Dental Schl., Med. Coll. of Va., 1945-46; Resident, Oral Surgery, ibid., Hosp., 1945-46; Private Practice of Oral Surgery, Bethesda, Md., 1948—; Tchng. Fellow, Anatomy, George Wash. Univ., 1951-52; Clin. Instr., Anatomy, ibid., 1952-60. Hon. Pos.: Chmn., Ref. Comm. on Rsch., 1959 and Chmn., Comm. on

sch., 1960, Am. Soc. of Oral Surgeons; Secy-Treas., 1955, Vice-res., 1956, Pres. Elect, 1957, Pres., 1958, of Middle Atlantic oc. of Oral Surgeons; Dental Rep., Med. Care Adv. Comm. of lontgomery Co., Md., 1953-57; Dental Chmn., Md. Div. of Am. ancer Soc., 1954-55; Mem., Bd. of Dirs., ibid., 1960; Program hmn., Geo. Wash. Univ. Alumni, 1959; Regional Chmn., Sponsor f Univ. of Md. Alumni, 1959-60; Cmdr., Bethesda Chapt., Milit. rder of World Wars, 1960; and many others. Mem.: Am. Assn. natomists; Am. Dental Assn.; Assn. Milit. Surgeons of U. S.; ellow, Am. Assn. Adv. Sci.; Am. Soc. Exptl. Biol. and Med.; m. Acad. Oral Roentgenology; Am. Dental Soc. Anesthesiology; nternatl. Assn. for Dental Rsch.; N. Y. Acad. Scis.; Sigma Xi; atl. Geographic Soc.; Life Mem., Geo. Wash. Univ. Alumni Assn.; iwanis; Phi Delta Theta; Psi Omega; Shrine; and many others. ontbr. to: Jour. Oral Surg.; Poultry Sci.; etc. Serv. Rec.: U. S. rmy Dental Corps, 1946-48. Gen. Int.: Recd. Navy Grant for sch. at Armed Forces Inst. of Path., Wash., D. C., 1956-59; ecd. Grant from Natl. Inst. of Health, 1959; Certified by State ds. of Md., W. Va. and Va. Areas of Rsch.: Bone Anatomy and hysiology; Bone Development; Development of Head and Neck.

CHUTE, A(aron) Hamilton (Ph.D.), Prof. of Mktg. Admin., Univ. of Tex., 702 Bas-Eco Bldg., Austin 12, Tex. Home Add.: 5000 Shoal Creek Blvd., Austin 5, Tex. SOCIAL SCIENCES-MARKETING, ECONOMICS (RELATIONS WITH SOCIOLOGY, PSYCHOLOGY, ANTHROPOLOGY). b. Toledo, Ohio, Oct. 30, 1891. s. George Maynard and Grace Belle (Hamilton) C. Edn.: B.A., Univ. of Mich., 1916; M.A., Ohio State Univ., 1931; Ph.D., ibid., 1935. m. Ruth Lyle Wells, June 30, 1917. c.: George Merrill; Elizabeth Marie Chute Bishop. Exp.: Lab. Technician and Vice-Pres., Chem. Supply Co., Toledo, Ohio, 1916-18; Cost Mg., Machine-tool Co., Toledo, Ohio, 1918-22; Controller, Dept. Stores, Toledo and Columbus, Ohio, 1922-30; Instr. and Rsch. Assoc., Ohio State Univ., 1930-36; Assoc. Prof., Univ. of Minn., 1936-43; Special

Trng. Dir., War Food Admin., Wash., D. C., 1943-45; Prof., Biarritz Am. Univ., 1945-46; Prof. of Mktg. Admin., Univ. of Tex., 1947—. Mem.: Am. Assn. Adv. Sci.; Am. Acad. Polit. and Social Sci.; Am. Econ. Assn.; Am. Mktg. Assn.; Am. Stat. Assn.; Southwestern Social Sci. Assn.; A.A.U.P.; Phi Beta Kappa; Beta Gamma Sigma; Delta Sigma Pi. Author: Marketing of Burned-Clay Products, 1937; Pharmacist in Retail Distribution, 1953-55, 1960. Areas of Rsch.: Development of Retailing Institutions; Marketing Aspects of Community Development.

CHUTE, Harold LeRoy (D.V.M.), Prof., Animal Pathol., Univ. of Me., Orono, Me. Home Add.: R.F.D. #1, Bangor, Me. VETERINARIAN; PATHOLOGIST; VIROLOGIST. b. Winnipeg, Manitoba, Can., Sept. 4, 1921. s. Kenneth K. and Hilda M. (Stoddart) C. Edn.: D.V.M., Univ. of Toronto, 1949; M.Sc., Ohio State Univ., 1953; D.V.Sc., Univ. of Toronto, 1955. m. Marion B. Baker, Aug. 9, 1947. c.: Pamela Dianne; Hazel Lee; Cameron Carl. Exp.: Asst. Poultry Promoter, Nova Scotia, Can., 1942-44; Animal Pathol., Nova Scotia Agri. Coll., 1949; Asst. Prof., Animal Pathol., Univ. of Me., 1949-51; Prof., ibid., 1952-55; Prof., Animal Pathologist, ibid., 1955-58; Dir., Pul-Typhoid Testing Agency, 1958—. Hon. Pos.: Northeast Region and Inter-regional Chmn., Control of Respiratory Diseases of Poultry in U. S. Mem.: A.V.M.A.; Me. Vet. Med. Assn.; Phi Zeta; A.A.A.S.; Sigma Xi; Phi Kappa Phi; Soc. of Am. Bact.; Omega Tau Sigma; Mason. Contbr. to: Canad. Jour. of Comparative Med. and Vet. Sci.; Am. Jour. Vet. Rsch.; Am. Vet. Med. Assn. Jour.; Jour. Mammalogy; Southwestern Vet.; Me. Farm Rsch. Gen. Int.: Am. Vet. Med. Assn. Fellow, Ohio State Univ., 1952-53. Areas of Rsch.: Pathol. and Virology of Animal and Poultry Disease; Bact. of Bovine Mastitis.

CIRINO, Elizabeth M. (Ph.D.), Prof., State Coll. at Bridgewater, Bridgewater, Mass. Home Add.: 14 Baker Rd., Raynham, Mass. MARINE ECOLOGY (INTERTIDAL). b. Taunton, Mass., Oct. 28, 1917. d. John and Alice (Rothwell) Fahey. Edn.: B.S., State Teachers Coll., 1940; M.A., Boston Univ., 1951; Ph.D., ibid., 1958. m. Dominic P. Cirino, Feb., 1953. c.: Mary Elizabeth. Exp.: Instr. to Prof., State Coll. at Bridgewater, Bridgewater, Mass., 1952—. Mem.: A.A.A.S.; N. Y. Acad. Sci.; Am. Soc. of Limnology and Oceanography; Ecological Soc. of Am.; Phycological Soc. of Am.; AAUP; NEA; AHE; Sigma Xi; Delta Kappa Gamma. Co-Author: General Biology Laboratory Manual, 1961. Contbr. to: Biological Bull.; Bull. of Ecological Soc. of Am.; Rhodora. Areas of Rsch.: Intertidal Population Studies; Succession in Marine Lit-

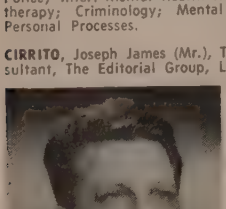
toral Associations.

CHWAST, Jacob (Ph.D.), Private Practice, 30 Fifth Ave., New York 11, N. Y.; Dir., Mental Health Consultation Service, The Educational Alliance, 197 East Broadway, New York 2, N. Y. Home Add.: 422 Quentin Rd., Brooklyn 23, N. Y. PSYCHOLOGY, PSCHOTHERAPY, MENTAL HEALTH CONSULTATION, CRIMINOLOGY. b. New York, N. Y., Oct. 23, 1915. s. Isidore and Sarah (Maisels) C. Edn.: B.S., City Coll. of N. Y., 1937; M.S., ibid., 1941; Ph.D., N. Y. Univ., 1956. m. Ethel Schaeffer, Sept. 3, 1944. c.: Robert; Bonnie. Exp.: Dir., Planning and Trg. and Super. Psychologist, Juv. Aid Bur., Police Dept., New York, N. Y., 1952-60; Dir., Mental Health Consultation Services, The Edn. Alliance, ibid., 1960—; Mental Health Consultant, N.Y.C. Community Mental Health Bd., N.Y.C., 1961—. Mem.: Fel-

low, A.A.A.S.; Sec.-Treas., Am. Soc. of Crim.; Am. Psychol. Assn.; Am. Orthopsychiatric Assn.; Am. Grp. Psythpy. Assn.; Am. Soc.

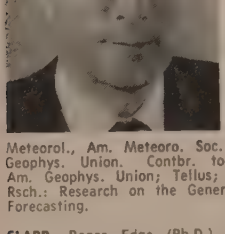
of Gp. Psythpy. and Psychodrama; N. Y. State Psychol. Assn.; Eastern Psychol. Assn. Contbr. to: Jour. of Crim. Law; Crim. and Pol. Sci.; Fed. Probation; Children; Social Casework; Archives of Criminal Psychodynamics; Am. Jour. of Psychotherapy; Jour. of Offender Therapy; N.P.P.A. Jour.; Crime and Delinquency; Police; Inter. Mental Health Newsletter. Areas of Rsch.: Psychotherapy; Criminology; Mental Health Consultation; Social and Personal Processes.

CIRRITO, Joseph James (Mr.), Technical Documentalist, Assoc. Consultant, The Editorial Group, Ltd., 1317 Pine Ave., Niagara Falls, N. Y. Home Add.: 303 Seventh St., Niagara Falls, N. Y. GEOGRAPHY AND TECHNICAL DOCUMENTATION. b. Caltavuturo, Italy, June 21, 1926. s. Bartolo and Mary (Cuccia) C. Edn.: B.A., Mexico City Coll., 1954. Exp.: Res. Analyst, Dept. of Air Force, Aero Chart and Info Ctr., St. Louis, Mo., 1957-59; Technical Documentalist, Consultant, Niagara Falls, N. Y., 1959-60; Tech. Documentalist, The Editorial Group, Ltd., Niagara Falls, N. Y., 1960—. Mem.: AAAS; Assn. of Am. Geographers; Am. Ordnance Assn.; Am. Geographical Soc.; Royal Canadian Geog. Soc.; Am. Rocket Soc.; Gamma Theta Upsilon. Contbr. to: The Professional Geographer; TEGL Newsletter; The P-D News.



Gen. Int.: Recd. an Award from the Dept. of Air Force for originating an improved technique used in data handling, 1959-61; Received several letters of commendation from corp. for completion of difficult assignments on technical crash programs. Areas of Rsch.: Rsch. in cartographic data handling techniques and general documentation. Designed improved documentation systems and data handling techniques for cartographic analysis, electronic equipment, missile systems, and industrial equipment.

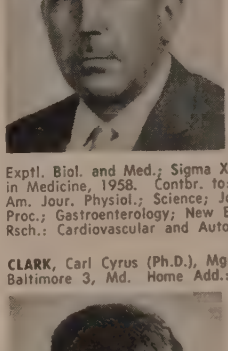
CLAPP, Philip Fanshawe (Mr.), Rsch. Supvr., Extended Forecast Br., U. S. Weather Bureau, Wash., D. C. Home Add.: RFD 1, Box 102-D, Annapolis, Md. RESEARCH METEOROLOGIST, EXTENDED RANGE WEATHER FORECASTING. b. Cambridge, Mass., Apr. 4, 1912. s. James Ford, Sr. and Leonora (Fanshawe) C. Edn.: B.A., Harvard Coll., 1935; M.S., Mass. Inst. of Tech., 1940; Fil. Lic., Univ. of Stockholm, 1952. m. Evelyn McMahon, June 1, 1939. c.: Anne Fanshawe; John McMahon. Exp.: Asst. Dispatcher, United Airlines, Cheyenne, Wyo., 1936-37; Jr. Statistician, U. S. Dept. of Agric., Bur. Agri. Econ., Wash., D. C., 1937-38; Meteorolt., U. S. Dept. of Commerce, Weather Bureau, Wash., D. C., 1938—. Hon. Pos.: Editor, Meteorol., Trans., Am. Geophys. Union; Assoc. Editor, Jour. of Meteorol., Am. Meteoro. Soc. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union. Contbr. to: Jour. of Meteorol.; Trans. of Am. Geophys. Union; Tellus; Bull. Am. Meteor. Soc. Areas of Rsch.: Research on the General Circualtion and Extended Range Forecasting.



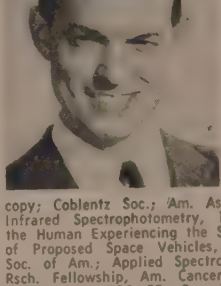
CLAPP, Roger Edge (Ph.D.), Consulting Physicist, 234 Brattle St., Cambridge 38, Mass. THEORETICAL PHYSICS. b. Cleveland, Ohio, Oct. 9, 1919. s. Raymond F. and Evelyn (Edge) C. Edn.: A.B., Harvard Univ., 1941; M.A., ibid., 1942; Ph.D., ibid., 1949. m. Anne De Coursey, Dec. 28, 1957. c.: Katherine; Alexander. Exp.: Staff Mem., M.I.T. Radiation Lab., 1942-46; Post-Doctoral Fellow, M.I.T., 1949-50; Sr. Physicist, Snow and Schule, Inc., Cambridge, Mass., 1950-52; Contractor and Consultant, Cambridge, Mass., 1952—. Mem.: Am. Physical Soc.; I.R.E.; Am. Geophys. Union; Phi Beta Kappa. Contbr. to: Physical Rev.; Annals of Physics. Areas of Rsch.: Nuclear Theory; Elem. Particle Theory; Microwaves, Antennas, Electromagnetic Wave Propagation.

CLARE, Stewart (Ph.D.), Prof. and Chmn., Dept. of Biol., Missouri Valley Coll., Marshall, Mo. Home Add.: 503½ E. Eastwood, Marshall, Mo. BIOLOGY (COMPARATIVE PHYSIOLOGY-BIOCHEMISTRY). b. Montgomery Co., Mo., Jan. 31, 1913. s. William Gilmore and Wardie (Stewart) C. Edn.: B.A., Univ. of Kans., 1935; M.S., Iowa State Coll. of Agri., 1937; Ph.D., Univ. of Chicago, 1949. m. Lena Glenn Kaster of Olathe, Kans., Aug. 4, 1936. d. Mr. and Mrs. E. R. Kaster. Exp.: Dist. and Survey Supvr., Grasshopper Control and Survey, U. S. Civil Service Comm., Bur. Entomol. and Plant Quarantine, summers, 1937-40; Tech. Consult., White-Fringed Beetle Project, ibid., 1941-42; Jr. Instr., Meteorol., Army Weather Schl., ibid., 1942-43; Rsch. Biologist, Midwest Rsch. Inst., Kans. City Mo., 1945-46; Postgrad. Rsch. and Study, Univ. Kans. City and K. C. Art Inst., 1946-49; Instr. in Zool., Univ. of Alberta, Edmonton, Can., 1949-50; Asst. Prof. of Zool. and Instr. Sci. of Color, Dept. of Fine Arts, ibid., 1950-53; Asst. Prof., Dept. Physiol.-Pharmacol., K. C. Coll. Osteopathy and Surg. (Spec. Appt., Sept.-Dec., 1953); Lectr. in Zool., Univ. of Adelaide, S. Australia, 1954-55; Sr. Rsch. Officer, Entomol., Ministry of Agri., Sudan Govt., Khartoum, Sudan, N. Africa, 1955-56; Sr. Entomol., Klipfontein Organic Products Corp., Chloorkop via Johannesburg, Union S. Africa, 1957; Prof., Hd., Dept. of Biol., Union Coll., 1958-59; Chmn., Div. of Sci., Prof. and Hd., Dept. of Biol., ibid., 1959-61; Prof. and Chmn., Dept. of Biol., Mo. Valley Coll., 1961—. Hon. Pos.: Student Asst. in Entomol., Univ. of Kans., 1931-35; Rockefeller Rsch. Fellow in Entomol., Iowa State Coll., 1935-36; Tchng. Fellow, Entomol.-Zool., ibid., 1936-37; Tchng. Fellow in Zool., Univ. of Chicago, 1937-40. Contbr. to: Numerous Periodicals and Scientific Libraries (United States, Canada, Australia, Europe, Africa, South America). Monographs: (1) "Distribution of Moisture and Sodium Arsenite in Porous Media" (3 vols., 1948-50); (2) 'Biochemical Studies on Copper and Iron in the Invertebrates" (1949); (3) "Capillary Movement in Porous Materials" (1950); (4) "Circulation in the Wings of Insects" (1951-53); (5) "Biology and Control of Certain Insects of South Africa" (1957). Ph.D. Dissertation: Quantitative Estimation of Copper and Iron in Insects and Certain Other Invertebrates. Mem.: Am. Assn. Adv. of Sci.; A.I.B.S.; Am. Assn. of Univ. Profs.; Am. Soc. Prof. Biol.; N.E.A.; M.S.-T.A.; Sigma Xi; Inter-Soc. Color Council. Serv. Rec.: U.S.N.R., (Malaria Rsch. and Control), 1943-45. Travel: Can.; Mex.; Australia; Br. Isles; Scandinavia; Iceland; Finland; Soviet Union; E. and W. Europe; Africa; Near, Middle, and Far East Asia; (extensively throughout the world). Areas of Rsch.: Comparative Physiology-Biochemistry; Trace Elements in Invertebrates; Circulation in Insects; Capillary Movement of Solutes-Solvents in Porous Materials; Plant Gums, Mucilages, Extractives and Other Extraneous Materials; Biometeorology; Theory-Science of Color-Design; History of Science and Role in Society. Hobbies: Color; Design; Painting; Photography; Philately; Numismatics. Listed in: A.M.S.; W.W.A.E.; W.W. in Am. Art.; Naturalist's Directory.

CLARK, Byron Bryant (Ph.D.), Dir., Pharmacology and Chemotherapy, Mead Johnson Rsch. Ctr., Evansville, Ind. Home Add.: 701 S. Boeke Rd., Evansville, Ind. PHARMACOLOGY. b. Temple, Tex., Apr. 5, 1908. s. Oscar Wilder and Ida (Hanson) C. Edn.: B.A., Baylor Univ., 1930; M.S., State Univ. of Iowa, 1932; Ph.D., ibid., 1934. m. Gladys Lawson, Jan. 26, 1931. c.: Barbara Gene; Jack Bryant; Kenneth Edward. Exp.: Asst. Prof. Physiol. and Pharm., Albany Med. Coll., 1939-40; Assoc. Prof., ibid., 1940-47; Prof. of Pharm., Chmn. of Dept., Tufts Univ. Schl. of Med., 1947-57; Dir., Pharm. Rsch. Ctr., Mead Johnson & Co., Evansville, Ind., 1957-58; Dir. of Pharm. and Chemotherapy, Mead Johnson Rsch. Ctr., 1958—. Mem.: N. Y. Acad. Scis.; Fellow, A.A.A.S.; Am. Soc. for Pharmacol. and Exptl. Therapeutics; Soc. for Exptl. Biol. and Med.; Sigma Xi. Contbrng. Author: Pharmacology in Medicine, 1958. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Physiol.; Science; Jour. Pharm. and Exptl. Ther.; Fed. Proc.; Gastroenterology; New England Med. Jour.; etc. Areas of Rsch.: Cardiovascular and Autonomic Nervous System.



CLARK, Carl Cyrus (Ph.D.), Mgr., Life Sciences Dept., Martin Co., Baltimore 3, Md. Home Add.: 5617 Old Lawyers Hill Rd., Elkridge, Md. BIOPHYSICS. b. Manila, Philippine Islands, Apr. 23, 1924. s. Edward Leeds and Eleanor (Fowle) C. Edn.: B.S., Worcester Polytech. Inst., 1944; M.S., Columbia Univ., 1947; Ph.D., ibid., 1950. m. Elizabeth Taylor, Dec. 20, 1947. c.: Roger; Austen; Andrew; Amy. Exp.: Rsch. Assoc., Cornell Med. Coll., 1947-51; Asst. Prof. of Zool., Univ. of Ill., 1951-55; Assoc. of Physiology, Asst. Prof., Univ. of Pa. Schl. of Medicine, 1955-61; Hd., Biophysics Div., Naval Aviation Med. Acceleration Lab., Johnsville, Pa., 1955-61; Mgr., Life Sciences Dept., Martin Co., Baltimore, Md., 1961—. Mem.: Aerospace Med. Assn.; Am. Rocket Soc.; Optical Soc. of Am.; Soc. for Applied Spectroscopy; Coblentz Soc.; Am. Assn. Adv. Sci.; Sigma Xi. Author: Infrared Spectrophotometry, 1955; Restraint and Protection of the Human Experiencing the Smooth and Oscillating Accelerations of Proposed Space Vehicles, 1961. Contbr. to: Jour. Optical Soc. of Am.; Applied Spectroscopy; Aerospace Med. Gen. Int.: Rsch. Fellowship, Am. Cancer Soc., 1948-50; Rsch. Grant, Am. Cancer Soc., 1954-55; Superior Accomplishment Awards, U. S. Naval Air Devel. Ctr., 1958-59; Civil Servant of the Year Award, Philadelphia Civil Serv. Assn., 1958. Areas of Rsch.: Molecular cytology, infrared and X-ray diffraction studies of biochemicals, effects on humans of acceleration, space flight simulation.



CLARK, Eugenie (Dr.), Dir. of Cape Haze Marine Lab., Sarasota, Fla. Home Add.: Point of Rocks Rd., Sarasota, Fla. ICHTHYOLOGY. b. N. Y. C., May 4, 1922. d. Charles and Yumico (Mitomi) C. Edn.: B.A., Hunter Coll., 1942; M.S., N. Y. Univ., 1946; Ph.D., ibid., 1950. m. Ilias Konstantinu, June 21, 1951. c.: Hera; Iris; Themistokles; Nikolas. Exp.: Rsch. Asst., Scripps

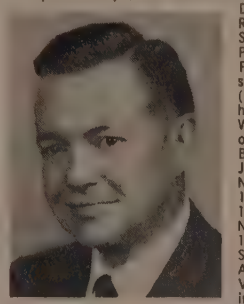
st. of Oceanography, 1946-47; Rsch. Assoc., Animal Behavior, n. Museum Natural Hist., N. Y. C., 1950—; Dir., Cape Haze arine Lab., Sarasota, Fla., 1955—. Hon. Pos.: Leader of S. Delegation on Israel South Red Sea Expedition. Mem.: n. Soc. of Ichthyologists and Herpetologists; Soc. of Women ographers. Author: Lady With A Spear, 1953. Contbr. to: n. Naturalist; Am. Antiquity; Anatomical Records; Physiological ol.; Am. Museum Novitates; Bull., Am. Museum of Natural st.; Copeia; Nature; Natural Hist.; Sci.; Zoologica; Quarterly ur., Fla. Acad. of Sci.; Publ. of Marine Biol. Sta. Al Ghardaqa, d Sea. Areas of Rsch.: Ichthyol.; Reproductive Behavior of shes; Morphol. and Taxonomy of Plectognath Fishes; Isolating echanisms of Poeciliid Fishes; Behavior of Sharks; Fishes of d Sea and Fla.

.ARK, Don Beldon (Mr.), Dir., Electronics Div., U. S. Naval Civil igrng. Lab., Port Hueneme, Calif. Home Add.: 4656 Student St., Ventura, Calif. ELECTROMAGNETIC INTERFERENCE; R. & D. IN INSTRUMENTATION, MATERIALS, TECHNIQUES IN MEASUREMENT, CONTROL AND ELIMINATION, STANDARDS AND CALIBRATION. b. Levan, Utah, Aug. 31, 1926. s. Heber D. and Lilly (Card) C. Edn.: B.S., Univ. of Utah, 1949; M.S., ibid., 1950. m. Catherine Annette Bennion, Apr. 12, 1947. c.: Steven S.; Catherine C.; James L. Exp.: Instr., Electrical Measurements Lab., Univ. of Utah, 1949-51; Instr. of Electronics, Lowry Air Force Base, Denver, Colo., 1951; Electronic Scientist, Dugway Proving Ground, Tooele, Utah, 1951-53; Project Engr. Rocket Devel. Dept., Naval Ordnance Testing Station, Port Hueneme, Calif., 1953-54; Supvry. Electronic Scientist, ibid., 1954-56; upvry. Rsch. Engr., Head, Mechanical Optical Sect., Acting Hd., ata Reluction Sect., Ballistics Div., ibid., 1957-58; Physicist, hysics and Electronics Div., ibid., 1958-60; Dir., Electronics iv., Naval Civil Engrng. Lab., Port Hueneme, Calif., 1958, 960—. Mem.: I.R.E.; R.E.S.A.; Toastmasters Internatl. Contbr. : I.R.E. Proc. Serv. Rec.: U. S. Navy, 1944—, Ledr., U.S.N.R. en. Int.: N.O.T.S. Fellowship, Univ. of Utah, 1956-57. Areas of sch.: Electromagnetic Field Attenuation; Noise Generation and uppression.

LARK, Herbert Mottram (Ph.D.), Prof., Rensselaer Polytech. nst., Troy, N. Y. Home Add.: 2326 15th St., Troy, N. Y. HYSICAL AND NUCLEAR CHEMISTRY. b. Derby, Conn., Sept. 3, 918. s. Herbert and Annie E. (Mottram) C. Edn.: B.S., ale Univ., 1940; Ph.D., ibid., 1944. Exp.: Instr., Yale Univ., 942-46; Asst. Prof., Rensselaer Polytech. Inst., 1946-49; Assoc. rof., ibid., 1949-51; Prof., ibid., 1951—. Mem.: Am. Chem. oc.; Am. Phys. Soc.; Fellow, N. Y. Acad. Sci.; A.A.A.S.; Am. oc. Elect. Engrs.; Phi Beta Kappa; Sigma Xi; Phi Lambda psilon. Co-Author: Radioisotope Techniques, 1960. Contbr. : Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Chem. dn.; Jour. Chem. Phys.; Sci.; Jour. Chim. Phys. Areas of sch.: Nuclear Chemistry; Solvent Extraction; Thermodynamics.

LARK, Kenneth Lawrence (M.D.), Med. Consult., Disability etermination Sect., W. Va. Div. of Voc. Rehab., 408 People's Bldg., 179 Summers St., Charleston, W. Va. Home Add.: 6-D Chilton Manor, Charleston 4, W. Va. INFECTIOUS DISEASES AND ANTIBIOTIC THERAPY; MANAGEMENT OF RESPIRATORY INSUFFICIENCY; DISABILITY EVALUATION. b. Charleston, W. Va., June 19, 1924. s. Frank N. and Ruth (Wood) C. Edn.: B.S., W. Va. Univ., 1948; M.D., Med. Coll. of Va., 1950. m. Nancy Ellen Williamson, June 7, 1958. Exp.: Rotating Intern, Univ. of Cinn., Cinn. Gen. Hosp., Cinn., Ohio, 190-51; Jr. Res., Med. Coll. of Va. Hosps., Richmond, Va., 1951-52; Rsch. Fellow, Int. Med., Univ. of Cinn., Cinn. Gen. Hosp., 1952-53; Sr. Res., Int. Med., ibid., 1953-54; Instr. and Rsch. Fellow, Int. Med., id., 1954-55; Asst. Prof., Int. Med. and Fellow, Chest Dis. and nfectious Dis., Univ. of Cin., Dept. of Int. Med., Cin., Ohio, 957-59; Asst. Prof. of Int. Med. and of Rehabilitation, Baylor niv., Coll. of Med., Houston, Tex., 1959-60; Medical Consult., isability Deter. Sect., BOASI, W. Va. Div. of Voc. Rehab., 1961—. lem.: Sigma Xi; Chi Beta Phi; Am. Fed. for Clin. Rsch.; Am. ssn. Adv. of Sci.; Phi Chi; Am. Civil Liberties Union; Natl. ehab. Assn.; Kanawha Co. Med. Soc.; W. Va. Med. Assn.; m. Med. Assn. Contbr. to: Trans. of the Am. Clin. and Climatol. ssn.; Antibiotics Annual; Jour. Infect. Dis.; Am. Med. Assn. rchives of Int. Med.; Jour. Lab. and Clin. Med. Serv. Rec.: . S. Air Force, 1955-57. Areas of Rsch.: Infectious Diseases nd Antibiotic Therapy.

CLARK, John Fulmer (Ph.D.), Assoc. Dir. and Chief Sci., Office of Space Scis., Natl. Aeronautics and Space Admin., Wash. 25, D. C., Home Add.: 10709 Kinloch Rd., Silver Spring, Md. SPACE SCIENCES—PHYSICS OF ATMOSPHERES OF EARTH AND OTHER PLANETS. b. Penn., Dec. 12, 1920. s. John F., Sr. and Edith Dix (Long) C. Edn.: B.S. in E.E., Lehigh Univ., 1942; M.S., George Wash. Univ., 1946; Ph.D., Univ. of Md., 1956. m. Virginia Anne Bell, Oct. 2, 1943. c.: Linda J.; James C. Exp.: Electronic Phys., Nav. Rsch. Lab., Wash., D. C., 1942-47; Asst. Prof., Lehigh Univ., 1947-48; Atmos. Elect. Br. Hd., Nav. Rsch. Lab., Wash., D. C., 1948-58; Assoc. Dir. and Chief Sci., Nat. Aeronaut. and Space Admin., ibid., 1958—. Hon. Pos.: Vice Chmn., NASA Sp. Scis. Steering Comm.; Chmn., Ionospheres Subcomm.; Mem., U. S. Nat. Comm., URSI. Mem.: Am. Rocket Soc.; Am. Geophys. Union; Am. Assn. Phys. Tchrs.; Inst. Radio Engrs.; Wash. Philos. Soc.; Sci. Rsch. Soc. Am.; Sigma Xi; Phi Beta Kappa; Tau Beta Pi; Phi Eta Sigma; Sigma Pi Sigma; Pi Mu Epsilon; Sigma Phi Epsilon. Contbrng. Author: Recent Advances in Atmospheric Electricity, 1959. Contbr. to: Jour. Geophys. Rsch.; Trans. Am. Geophys. Union; Instrums.; Jour. Atmos. and Terrestrial Phys.; Jour. Acad. Sci.; Jour. Meteorol. Serv. Rec.: U.S.N.R., 1944-45. Gen. Int.: 5 patents in Elect. Circuits and Systems. Areas of Rsch.: Space Sciences; Planetary Atmospheres and Ionospheres; Atmospheric Electricity.



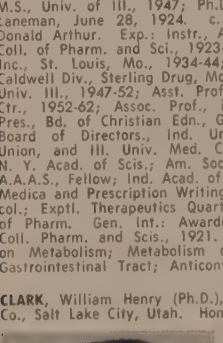
CLARK, Mary Benedict (Miss), Chf., Med. Technologist, (ASCP), Barnes Med. Labs., 612 Heyburn Bldg., Louisville 2, Ky. Home Add.: 301 McCready Ave., Louisville 6, Ky. MEDICAL TECHNOLOGY, CHEMISTRY, RH AND PATERNITY WORK. b. Spencer Co., Ky., Sept. 15, 1907. d. Joseph Augustus Head Clark and Louise Bertha (Willett) C. Edn.: A.B., Nazareth Coll., 1929. Exp.: Med. Technologist, Dr. Oscar Berghausen, Cincinnati, Ohio, 1931-39; Chemist, Med. Technologist, Good Samaritan Hosp., Cincinnati, Ohio, 1939-43; Chemist, Chf. Med. Technologist, Nichols Gen. Hosp., Louisville, Ky., 1943-46; Chemist, Chf. Med. Technologist, Weeter Clinical Lab., Louisville, Ky., 1946-60; Chemist, Chf. Med. Technologist, Barnes Med. Labs. (Successor to Weeter Clin. Lab.), Louisville, Ky., 1960—. Hon. Pos.: Pres., Greater Cincinnati Soc. of Med. Technologists; Pres., Ky. State Soc. Med. Technologists; Gen. Chmn., Convention of A.S.M.T., 1953; Natl. Trustee, Gov. of Ky. Chapt., Regent of Louisville Circle, I.F.C.A.; Vice-Pres., Nazareth Coll. Alumnae Assn. Mem.: Ky. Acad. of Sci.; A.A.A.S.; Louisville Soc. of Med. Technologists; Ky. St. Soc. of Med. Technologists; Am. Soc. of Med. Technologists; Kappa Gamma Pi; Alpha Mu Tau. Contbr. to: Bull. of Ky. St. Soc. of Med. Technologists; Am. Jour. of Med. Technologists. Gen. Int.: A.S.M.T. 3rd Award Paper; Recipient of Corning Certificate of Merit, Ky. Med. Technologist, 1961-62.

CLARK, Ralph Leigh (Mr.), Asst. Dir., Defense Rsch and Engrng. (Communication), Pentagon, Wash. 25, D. C. Home Add.: 4307 39th St. N., Arlington 7, Va. ELECTRONICS; TELECOMMUNICATIONS AND RESEARCH AND DEVELOPMENT ADMINISTRATION. b. East Jordan, Mich., June 2, 1908. s. Earl H. and Ethel (Nowland) C. Edn.: B.S., Michigan State Coll., 1930. m. Dorothy Webster, Dec. 24, 1930. c.: Roy E.; Dale A.; Ruth E.; David W. Exp.: Radio Inspector, Radio Div., U. S. Dept. of Commerce, Federal Radio Commn. and Federal Communications Comm., Detroit, Mich., 1930-35; Radio Engr., Federal Communication Comm., Wash., D. C., 1935-41; Partner, Ring and Clark Consulting Radio Engrs., 1941-47; Dir., Programs Div., Rsch. and Develop. Bd., Dept. of Defense, Wash., D. C., 1946-49; Consultant to Govt. Agencies, 1949-57; Mgr., Washn. Ofc., Stanford Rsch. Inst., 1957-59; Asst. Dir., D.D.R.E., 1959—. Hon. Pos.: Staff Dir., President's Advisory Com. on Telecommunications, 1954-55. Mem.: Fellow, Inst. of Radio Engrs.; Mem., Armed Forces Comm. and Electronics Assn.; Coun. on Foreign Relations; A.A.A.S.; Am. Acad. Soc. and Pol. Sci.; Lambda Chi Alpha; Tau Beta Pi; Phi Lambda Tau. Serv. Rec.: Lt. to Cmdr., U.S.N.R., 1942-46. Areas of Rsch.: Telecommunications and Electronic Weapons; Admin. of Rsch. Listed in: W.W. in A.; W. W. in Engrng.; A.M.S.

CLARK, Rupert Edward (Ph.D.), Assoc. Prof., Southeastern Substation, N. Mex. Sta. Univ., Artesia, N. Mex. SOIL SCIENCE; PLANT PHYSIOLOGY AND CROP PRODUCTION. b. Chgo., Ill., July 24, 1921. s. Rupert Peter and Ruth (Mackway) C. Edn.: B.S., Purdue Univ., 1942; M.S., Cornell Univ., 1949; Ph.D., ibid., 1952. m. Paule Emanuelli, June 20, 1946. c.: Philippe Edward; Anne Marie. Exp.: Soil Rsch. Supvr., Green Giant Co., Le Sueur, Minn., 1953-57; Supt., N. Mex. State Univ., 1957-62; Assoc. Prof., ibid., 1962—. Mem.: Agron. Soc.; Soil Sci. Soc.; Crop Sci. Soc.; Biometrics Soc.; Sigma Xi; Internatl. Soil Sci. Soc.; Artesia Rotary Club, Pres., 1962-63. Contbr. to: Agron. Jour.; Soil Sci. Soc. Proc. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Sears Roebuck Scholarship, 1939; Danforth Fellow, Purdue Univ., 1940. Areas of Rsch.: Development of Roots in Soil with Radio Phosphorus, Fertilizer Response of Canning Peas, Sweet Corn, Alfalfa, Sorghum, Cotton; Mineralization of Soil Organic Phosphorus; Rapid Chemical Methods of Soil and Plant Testing.

CLARK, William Clarence (Ph.D.), Assoc. Prof. of Pharmacol., Ind. Univ. Med. Ctr., 1100 W. Michigan St., Indianapolis 7, Ind. Home Add.: 2030 N. Moreland Ave., Indianapolis 22, Ind. PHARMACOLOGY, DRUG METABOLISM, EFFECT OF DRUGS ON METABOLISM. b. Paynesville, Mo., Dec. 13, 1901. s. Edward C. and Eunice Elizabeth (Wade) C. Edn.: Ph.G., St. Louis Coll. of Pharm. and Scis., 1924; Ph.C., ibid., 1930; B.S., ibid., 1934; M.S., Univ. of Ill., 1947; Ph.D., ibid., 1952. m. Agnes Louise Laneman, June 28, 1924. c.: Edith Eunice; William Edward; Donald Arthur. Exp.: Instr., Asst. Prof., Assoc. Prof., St. Louis Coll. of Pharm. and Sci., 1923-34; Chf. Chemist, Jas. F. Ballard, Inc., St. Louis, Mo., 1934-44; Chf. Chemist, Ballard Products, Caldwell Div., Sterling Drug, Monticello, Ill., 1944-46; Rsch. Asst., Univ. Ill., 1947-52; Asst. Prof. of Pharmacol., Ind. Univ. Med. Ctr., 1952-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Mem., Pres., Bd. of Christian Edn., Grace Lutheran Schl.; Pres., Mem., Board of Directors., Ind. Univ. Med. Center Federal Credit Union, and Ill. Univ. Med. Ctr. Federal Credit Union. Mem.: N. Y. Acad. of Scis.; Am. Soc. Pharmacol.; Exptl. Therapeutics; A.A.A.S., Fellow; Ind. Acad. of Scis.; Sigma Xi. Author: Materia Medica and Prescription Writing, 1962. Contbr. to: Jour. Pharmacol.; Exptl. Therapeutics Quarterly; Jour. Stud. Alc.; Am. Jour. of Pharm. Gen. Int.: Awarded Alumni Gold Medal, St. Louis Coll. Pharm. and Scis., 1921. Areas of Rsch.: Effect of Drugs on Metabolism; Metabolism of Ethanol.; Drugs Affecting the Gastrointestinal Tract; Anticonvulsant Drugs.

CLARK, William Henry (Ph.D.), Physicist, Utah Rsch. and Devel. Co., Salt Lake City, Utah. Home Add.: Box 759, Park City, Utah. SPACE TRAVEL, NUCLEAR AND OTHER UNCONVENTIONAL POWER SOURCES. b. Randall County, Tex., Mar. 2, 1929. s. A. A. and Mary (Harris) C. Edn.: B.S., Tex. Technolo. Coll., 1950; Ph.D., Univ. of Utah, 1960. Exp.: Physicist, U. S. Bur. of Standards, Wash., D. C., 1950-53; Physicist, Utah Rsch. and Develop. Co., Salt Lake City, Utah, 1960—. Mem.: Alpha Chi; Sigma Xi; Natl. Speleological Soc.; AAAS. Contbr. to: Bull. of Atomic Scientists; Utah Sci. and Engrg.; Hypervelocity Symposia.



CLARK, Willis W. (Ed.D.), Executive Vice-Pres., Calif. Test Bur., Del Monte Rsch. Park, Monterey, Calif. Home Add.: Box 494, Pebble Beach, Calif. EDUCATIONAL AND PSYCHOLOGICAL TESTS MEASUREMENTS. b. Ancona, Ill., Mar. 26, 1895. s. Winfield Scott and Nellie (Brown) C. Edn.: B.A., Univ. of So. Calif., 1916; M.A., ibid., 1918; Ed.D., ibid., 1941. m. Ethel M. King, 1918. c.: June Duran. Exp.: Calif. Bur. of Juvenile Rsch., Whittier St. Schl., Sociologist, 1917-22; Asst. Dir. of Rsch. and Guidance, Los Angeles City Schls., 1922-31; Lectr. in Edn. and Soc., Univ. of Calif., 1922-51; Dir. of Rsch. and Guidance, Los Angeles Co. Schls., 1931-44; Dir. of Rsch., Calif. Test Bur., Los Angeles, Calif., 1944-51; Certified Psychologist, State of Calif. Mem.: Am. Ed. Res. Assn.; Am. Psychol. Assn.; A.A.A.S.. Author: Calif. Tests of Mental Maturity, 1957; Calif. Achievement Tests, 1957; Calif. Tests of Personality, 1951. Contbr. to: Jour. of Juvenile Delinquency; Jour. of Edn. Rsch.; Calif. Jour. of Educational Rsch.; Educational Rsch. Bull.; Education. Areas of Rsch.: Standardized Objective Tests in School Subjects; Intelligence; Aptitudes, Interests and Personality Adjustment.

CLARKE, Beverly L. (Ph.D.), Consult. Off. of Exec. Sec., Am. Chem. Soc., Wash., D. C. Home Add.: 4600 Conn. Ave., N.W., Wash. 8, D. C. ANALYTICAL CHEMISTRY; SCIENTIFIC ADMINISTRATION. b. Nashville, Tenn., Sept. 30, 1900. s. Thos. H. and Ida Cly (Gallegher) C. Edn.: B.S., Geo. Washington Univ., 1921; M.A Columbia Univ., 1923; Ph.D., ibid., 1924. m. Ruth Johnsto 1930. c.: Thomas; James. Exp.: Am.-Scandinavian Fellow Sweden, 1921-22; NRC Fellow in Chem., Stanford Univ., Cali Palo Alto, Calif., 1925; Mem. of Tech. Staff, Bell. Tel. Labs., Y. C., 1926-45; Dir. of Chem. Control, Merck & Co., Inc., Rahwa N. J., 1945-60; Asst. to Vice-Pres. (operations), 1960-61; Consul Office of Exec. Sec., Am. Chem. Soc., Wash., D. C. 1961—; C sultant, U. S. Dept. of State, 1940-45; U. S. Dept. of Defens 1945—. Hon. Pos.: Am. Chem. Soc.; Chmn., N. Y. Sect., Chm Anal. Div., Am. Chem. Soc. Mem.: Am. Chem. Soc.; A.A.A.S Soc. Chem. Ind.; Am. Pharm. Assn.; N. Y. Acad. Sci.; Sigma X Phi Lambda Upsilon; Canoe Brook Country; Chemists of N. Author: The Romance of Reality, 1927; Marvels of Mod. Chem 1932. Contbr. to: Jour. Am. Chem. Soc.; Anal. Chem.; S Monthly; Microchemie. Serv. Rec.: U. S. Navy, W. W. I; Cap N. Y. Guard, W.W. II. Gen. Int.: Army-Navy Certif. of Appreci tion, W.W. II. Areas of Rsch.: Anal. Chem.; Phys. Chem.; S Admin.

CLARKE, Walter Vernon (Mr.), Pres., Walter V. Clarke Assoc., In East Providence, R. I. Home Add.: 503 Sowams Rd., Barringto R. I.; 1429 S.E. 14th St., Lauderdale, Fla. INDUSTRIA PSYCHOLOGY. b. New York, N. July 26, 1905. s. A. Vernon a Mary (Shepard) C. Edn.: A. Columbia Univ., 1928; M.A., ibi 1930. m. Emily Mayer Dec. 1932. Exp.: Asst. to Vice-Pre Consolidated Gas Co., N. Y., 193 35; Mgr., Employee Test Di R. H. Macy & Co., N. Y., 192 37; U. S Soc. Sec. Bd., 1940-4 Personnel Dir., Universal Wind Co., 1943-48; Pres., Walter Clarke Assoc., Inc., 1948—. Mem A.A.A.S.; N. Y. Acad. of Sc Diplomate, Am. Bd. of Examine Am. Psychol. Assn.; Fla. Psych Assn.; Delta Phi. Contbr. Jour. of Psychol.; Jour. of Appl Psychol.; Psychol. Reports; grng. and Indusl. Psychol. Areas of Rsch.: Rsch. in Personal Theory and Measurement.

CLARKE, Wilbur Bancroft (Ph.D.), Prof. of Chem., Sou. Un Baton Rouge, La. ORGANIC CHEMISTRY. b. Colon, Panam July 22, 1929. s. Joseph B croft and Lilly Agatha (Thom C. Edn.: B.S., Xavier Univ., N Orleans, La., 1950; M.S., ib 1953; Ph.D., Ind. Univ., 1961. Neola Mae Lewis, June 6, 19 c.: Ursula Rene. Exp.: Instr. Dean of Men, Xavier Univ., N Orleans, La., 1950-53; Chem Northern Regional Labs., Peo Ill., Summers, 1957, 1958; L Asst., Ind. Univ., 1956-58; Pr Sou. Univ., Baton Rouge, 1960—. Hon. Pos.: Comm. Chm Phi Lambda Upsilon. Mem.: A.C A.A.A.S.; Chem. Soc. of Lond Sigma Xi; Newman Club. Con to: Jour. A.C.S. Serv. Rec.: U. Army, 1953-55. Gen. Int.: D Fellowship, Musical Key, Mot Catherine Award, Xavier Un Sterling-Winthrop Fellowship, Ind. Univ. Areas of Rsch.: F of Nitrogen and Sulfur Compounds; Anti-Viral Agents; Phys Organic Work on Ion-Exchange Fuel Cells.

CLARKSON, Merton Robert (D.V.M.), Assoc. Admin., Agri. R Service, U. S. Dept. of Agri., Wash. 25, D. C. Home Add.: 5 N. 16th St., Arlington 5, VETERINARY MEDICINE. b. F dale, Wash., July 25, 1908. Joseph and Mary Belle (Fa worth) C. Edn.: D.V.M., S Coll. of Wash., 1930; B.S., ib 1930; LL.B., Georgetown U 1942. m. Eva Marie Petter Oct. 6, 1930. c.: Kathleen M Laura Ellen; Jill Marie. E Jr. Veterinarian, Bur. of Ani Industry, U. S. Dept. of A Sioux Falls, S. Dak., 1930 Jr. Veterinarian, ibid., New Y N. Y., 1932-35; Inspector Charge, ibid., Madison, Ind., 1 39; Asst. Chief, Trade Label Meat Inspection Div., Wash., 1939-42; Asst. to Chief, Inspection Div., War Food Adm U. S. Dept. of Agri., ibid., 1 44; Chief, Trade Label Sec., Meat Inspection Div., ibid., 1 Asst. Chief, Meat Inspection Div., Bur. of Animal Industry, 1944-47; Chief, Inspection and Quarantine Div., Bur. of An Industry, ibid., 1947-51; Asst. to the Admin. for Defense P Agri. Rsch. Service, ibid., 1951-52; Deputy Admin., Agri. R Service, ibid., 1952-59; Assoc. Admin., ibid., 1959—. Hon.

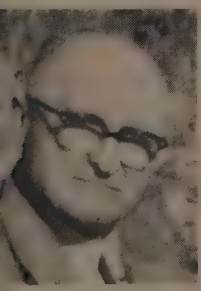
low, Am. Assn. for the Adv. of Sci. Mem.: Am. Vet. Med. n.; U. S. Livestock San. Assn.; Dist. of Columbia Vet. Med. n.; Natl. Assn. of Fed. Veterinarians; Entomological Soc. of .; Am. Forestry Assn.; Am. Phytopathological Soc.; Soil Conservation Soc. of Am.; Am. Inst. of Biol. Scis.; Cosmos Club; of the Supreme Court of the U. S.; Alpha Gamma Rho; Alpha ; Elder, Presby. Ch. Gen. Int.: Recipient of Distinguished v. Award, U. S. Dept. of Agri., 1956; XIIth Internatl. erinary Cong. Prize, 1962. Areas of Rsch.: Developement Procedures for and the Admin. of Programs to Control and dicate Diseases and Pests of Livestock and Crops.

AUSEN, Johs. (Johannes) (Dr.), Rsch. Administr., The Training ol. at Vineland, Vineland, N. J. Home Add.: 14 Columbia Ave., eland, N. J. PSYCHOLOGY. b. Bergen, Norway, Aug. 19, 13. s. Ivar Mikal and Jenny (Johannesen) C. Edn.: Magilster tium, Univ. of Oslo, 1939; Dr. Philos., ibid., 1956. m. Martha Maclin, Nov. 5, 1949. c.: Jo; Elizabeth Maclin; Kathryn nes. Exp.: Dept. Asst. and Lectr., Psychol. Dept., Univ. of lo, 1945-47; Norwegian Govt. Fellow, 1947-48; Rsch. Fellow, lumbia Univ., 1948-50; Rsch. Fellow, Norwegian Rsch. Council, 50-52; Assoc. Scientist, N. Y. State Psychiatric Inst., 1952-55; ief of Psychol. Rsch., The Training Schl. at Vineland, N. J., 55—. Mem.: A.A.A.S.; A.P.A.; E.P.A. Contbr. to: Am. Jour. ychol.; Jour. Appl. Physiol.; Jour. Comp. Physiol. Psychol.; ur Exptl Psychol; Jour. Gen. Psychol.; Jour. Nerv. Ment. Dis.; ur. Psychol.; Train. Schl. Bull. Areas of Rsch.: Sensory Proces; Exp.: Psychology as Applied to Psychopathology.

AYTON, John Charles (Hastings) (Ph.D.), Sr. Scientist, Bettis omic Power Lab., Westinghouse Atomic Power Div., P. O. Box 1468, Pittsburgh 30, Pa. Home Add.: 5453 Youngridge Dr., Apt. 24, Pittsburgh 36, Pa. INORGANIC CHEMISTRY OF NUCLEAR MATERIALS. b. Pittston, Pa., June 15, 1924. s. Charles Conrad and Madeleine Eleanor (Hastings) C. Edn.: B.S., St. Joseph's Coll. (Phila.), 1949; M.S., Univ. of Pa., 1950; Ph.D., ibid., 1953. Exp.: Post-Doctoral Fellow, Univ. of Pa., 1952-54; Sr. Scientist, Bettis Atomic Power Lab., Pittsburgh, Pa., 1954—. Mem.: Am. Assn. Adv. Sci.; Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Am. Youth Hostel. Contrbtg. Author: Properties and Nuclear Applications of UO_2, 1961. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Preparation and

aracterization of Nuclear Fuels; Diffusion of Inert Gases in ids.

EMENT, Benjamin Edwin (Mr.), Retired Mine Owner and Operor. Now Mineral Dealer, Fluorite Specialist, Sturgis Rd., Box 69, Marion, Ky. GEOLOGY AND MINING. b. Humboldt, Tenn., Sept. 6, 1891. s. William A. and Lillian (Smith) C. Edn.: B.S., Vanderbilt Univ., 1915; S.M.A., Univ. of Tex., 1918. m. Edith Vaughan Lewis, 1938. c.: Mrs. Charles D. Mason; Sarah W.; Ben E. Exp.: Hd., Dept. of Sci., Barrett Manual Schl., Henderson, Ky., 1920-21; Fluorspar Industry, Marion, Ky., 1921—. Mem.: WPB, Wash., D. C.; A.A.A.S.; Kiwanis. Contbr. to: Earth Sci.; Rocks and Minerals; Earth Sci. News; Gems and Minerals; The Ky. Naturalist; Ultraviolet Guide to Minerals. Serv. Rec.: U. S. A. Gen. Int.: Collector of the Largest and Most Complete Fluorite Collection in the World. Areas of Rsch.: Flu-



te Minerals.

EMENTS, John Richard (Mr.), Research Officer, Petawawa rest Experimental Station, Chalk River, Ontario, Canada. FOREST ECOLOGY, SILVICS, AND SILVICULTURE. b. Welland, Ont., Can., Feb. 21, 1931. s. Orline and Alice (Buchannan) C. Edn.: B.S., Univ. of Mich., 1957; M.F., ibid., 1958. m. Frances M. Krauss, May, 1960. c.: Ellen Therese. Exp.: Cruiser, Compiler Ontario Paper Co., Heron Bay South, Ont., Can., 1955-56; Rsch. Asst., Univ. of Mich., 1957-61; Tchng. Asst., ibid., 1961-62; Rsch. Off., Petawawa Forest Expt. Stn., Chalk River, Ont., Canada, 1962—. Mem.: Soc. of Am. Foresters; Ecological Soc. of Am.; Soc. of the Sigma Xi; A.I.B.S.; A.A.A.S.; Phi Kappa Phi; Phi Sigma; XI Sigma Pi. Areas of Rsch.: Microenvironments of Forest Tree Seedlings; Silvical Characistics of Northern Conifers; Ecological Effects of Forest Fires.

CLEMENCE, Gerald Maurice (D.Sc.), Scientific Dir., U. S. Naval Observatory, Wash. 25, D. C. ASTRONOMY. b. Greenville, R. I., Aug. 16, 1908. s. Richard R. and Lora E. (Oatley) C. Edn.: Ph.B., Brown Univ., 1929. Hon. Deg.: D.Sc., Case Inst. of Technol., 1954; Dr., Universidad de Cuyo, Argentina, 1961. m. Edith M. Vail, 1929. c.: Gerald Vail; Theodore Grinnell. Exp.: Astronomer, U. S. Naval Observatory, Wash., D. C., 1930-45; Dir., Nautical Almanac, ibid., 1945-58; Scientific Dir., ibid., 1958—. Mem.: U. S. Natl. Acad. of Scis.; Am. Acad. of Arts and Scis.; Am. Astronomical Soc.; Sigma Xi. Co-Author: Methods of Celestial Mechanics, 1961. Contbr. to: Astronomical Jour.; Sci.; Monthly Notices Royal Astronomical Soc. Areas of Rsch.: Celestial Mechanics; Measurement of Time.

CLEMMER, John Jasper (M.D.), Dir., Bender Hygienic Lab., 136 S. Lake Ave., Albany 8, N. Y. Home Add.: 6 Tudor Rd., Albany, N. Y. PATHOLOGY. b. Marshalltown, Ia., June 10, 1905. s. John J. and Maude (Rathert) C. Edn.: B.S., Univ. of Ia., 1927; M.D., ibid., 1930. m. Edna Stockig, June 3, 1931. c.: Jay C.; Karen. Exp.: Assoc. Dir., Bender Hygienic Lab., Albany, N.Y., 1933-34; Dir., ibid., 1934—; Assoc. Prof. of Clinical Pathol., Albany Med. Coll.; Prof. of Pathol., and Bacteriol., Albany Coll. of Pharm.; Diplomate, Am. Bd. of Pathol. in Pathologic Anatomy, and Clin. Pathol. and Forensic Pathol.; Examiner in Pathol. on Bd. of Med. Examiners, Dept. of Edn., State of N. Y., 1953-59. Hon. Pos.: Pres., Med. Soc. of Co. of Albany, 1948; Pres., N. Y. St. Soc. of Pathol., 1949-50; Pres., Blood Banks Assn. of N. Y. State, 1952; Pres., Am. Soc. of Clin. Pathologists, 1959-60; Founding Fellow of the Coll. of Am. Pathols. and Mem. of the Bd. of Govs., 1954-56; Chmn., Sect. on Pathol., Med. Soc. of State of N. Y., 1952, Sect. Delegate, 1961. Mem.: Am. Coll. of Physicians; Am. Publ. Health Assn.; Am. Assn. of Pathols. and Bacteriols.; Alpha Omega Alpha; Sigma Xi; Delta Upsilon. Contbr. to: Ia. St. Med. Jour.; Archives of Pathol.; Am. Jour. of Obst. and Gyn.; Am. Jour. of Surg.; N. Y. St. Jour. of Med.; Am. Jour. Clin. Pathol. Areas of Rsch.: Pathology.

CLENCH, William James (Ph.D.), Curator of Mollusks, Museum of Comparative Zoology, Cambridge 38, Mass. MOLLUSKS. b. Brooklyn, New York, October 24, 1897. s. Joseph and Harriette May (Donaldson) C. Edn.: B.S., Michigan State Coll., 1921; M.S., Harvard Univ., 1923; Ph.D., Univ. of Mich., 1953. Hon. Deg.: D.Sc., Mich. State Univ., 1953. m. Julia V. Helmick of E. Lansing, Mich., Sept. 17, 1924. c.: Harry K.; Carleton W. Exp.: Fellow, Univ. Mich., 1922-25; Asst. Mus. of Zool., ibid., 1925; Custodian of Collections, Kent Scientific Inst., Grand Rapids, Mich., 1925-26; Curator of Mollusks, Mus. of Comparative Zool., Harvard Univ., 1926—; Lectr. on Zool., Harvard Univ., 1930-35; Spec. Ed., Webster's Int. Dict., 1930-32; Collabor., World Book Ency., 1944-45; Spec. Ed., Quarrie Corp., Chicago, 1944-45; Rsch. Assoc., Am. Mus. Nat. Hist., New York, 1947—. Hon Pos.: Pres., Am. Malacological Union, 1934-35; Yale-Bishop, Mus. Fellow, 1941-42; Pres., Boston Malacological Club, 1943-44; Fellow, Soc. Cubana Historia Natural. Consultant: Pacific War Memorial, 1946—. Mem.: Mich. Acad. of Sci.; Am. Malacological Union; Boston Soc. of Nat. Hist.; A.A.A.S. (Fellow); Phi Sigma; Sigma Xi; Gamma Alpha; Edt.: Johnsonia, 1941—; Occasional Papers on Mollusks, 1944—. Contbr. to: Johnsonia; Occasional Papers on Mollusks; Bull. Bishop Museum; Revista Soc. Malacoloigica; Nautilus; Jour. of Conchology. Serv. Rec.: Pvt., U. S. Army, 1918; Lt., Mass. State Guard, 1943-46. Travel: West Indies; So. U. S.; Hawaii. Hobbies: Biol. Survey of So. Rivers; Books on Mollusks. Listed in: A.M.S.; W. W. in Mass.. Special Int.: Southern U. S.; West Indies; Islands of the Western Pacific.

CLENDENNING, Kenneth Andrew (Ph.D.), Assoc. Rsch. Biologist, Univ. of Calif., La Jolla, Calif. Home Add.: 8115 El Paseo Grande Ave., La Jolla, Calif. BIOCHEMISTRY AND PHYSIOLOGY. b. Gananoque, Ont., Canada, May 11, 1915. s. Campbell Herman and Anna May (McNeely) C. Edn.: B.A., Queen's Univ., Kingston, Ont., 1936; M.A., ibid., 1937; Ph.D., Univ. of Toronto, 1941. Exp.: Rsch. Biochemist, Natl. Rsch. Coun. of Canada, Ottawa, Canada, 1941-52; Rsch. Biochemist, Charles F. Kettering Fdtn., Yellow Springs, Ohio, 1952-56; Rsch. Biochemist, Univ. of Calif., 1957—. Mem.: Am. Chem. Soc.; Sigma Xi; Am. Soc. of Limnol. and Oceanogr.; Phycol. Soc. of Am.; Internatl. Phycol. Soc.; Japanese Soc. of Plant Physiol.; Am. Soc. of Plant Physiol.; Scand. Soc. for Plant Physiol. Contbr. to: Archives of Biochem. and Biophys.; Biochimica et Biophysica Acta; Canadian Jours. of Rsch.; Chem. in Canada; Sci.; Analyst; Biol. Bull.; Physiol. Plantarum; Botanica Marina; Annual Rev. of Plant Physiol.; Encyclo. of Plant Physiol. Areas of Rsch.: Industrial Utilization of Agricultural Surpluses; Starch Polarimetry, Manufacture, Hydrolysis; Antifreeze Chemicals; Plant Enzymes; Mechanism of Photosynthesis; Marine Food-Chains; Coastal Pollution.

CLINE, Ervin Laughlin (Mr.), Sci. and Math. Instr., Veteran H. S., Veteran, Wyo. Home Add.: P. O. Box 70, Veteran, Wyo. PHYSICS AND MATHEMATICS. b. Colorado Springs, Colo., July 25, 1928. s. Harold T. and M. (Edgerton) C. Edn.: B.A., Univ. of Denver, 1956. Exp.: Sci. and Math. Instr., H.S., Arriba, Colo., 1953-60; Sci. and Math. Instr., H.S., Veteran, Wyo., 1961—. Mem.: A.A.A.S.; N.C.T.M.; W.M.S.T.A.; N.E.A.; W.E.A.; G.C.T.A.;

Am. Legion. Author: Introductory Physics, 1960. Serv. Rec.: U. S. Army, 1950-53. Areas of Rsch.: Physics; Secd. Edn. in Sci. and Math.

CLEVEN, Gale W. (Col.), U.S.A.F. Home Add.: 8205 Morrow Rd. N.E., Albuquerque, N. M. ASTRONOMY, ELECTRONIC COMPUTERS.

b. Perkins Co., S. D., Dec. 27, 1918. s. James and Bertha V. (Mahoney) C. Edn.: B.A., Univ. of Wyo., 1946; M.B.A., Harvard Univ., 1949; M.A., Univ. of Wyo., 1956; Ph.D., Georgetown Univ., Wash., D. C., 1962. m. Esther Lee Athey, June 11, 1954. Exp.: Weapon Devel., Atomic Energy, AFSWP, Sandia Base, N. M. and West Coast, 1949-56; Student, Air War Coll., Montgomery, Ala., 1956-57; Chief Rsch. Develop., Atomic Energy, Wash., D. C., 1957-58; Chf., Data Processing Div., DCS/C, Wash., D. C., 1958-60; Student, Armed Forces Indust. Coll., Wash., D. C., 1960-61; Deputy for Systems Mgmt., Space Systems Div., A.F.S.C., Los Angeles, Calif., 1962—. Mem.: Sigma Xi; A.A.A.S.; Am. Rocket Soc.; Br. Interplanetary Soc.; Assn. for Computing Machinery; Br. Astronomical Assn.; Astronomical Soc. of the Pacific; Am. Astronomical Soc.; Gold Key Soc.; Jesuit Honor Soc.; Alpha Sigma Nu; Phi Delta Theta; Mason. Serv. Rec.: U.S.A.F., 1940—. Areas of Rsch.: Statistical Studies with Geological Processes; Astrometrical Studies Utilizing Electronic Computers.

CLUFF, Leighton Eggertsen (M.D.), Assoc. Prof. of Med., Johns Hopkins Hosp., Balt. 5, Md. Home Add.: 2307 Pot Springs Rd., Lutherville, Md. ALLERGY AND INFECTIOUS DISEASES. b. Salt Lake City, Utah, June 10, 1923. s. Lehi Eggertsen and Lottie (Brain) C. Edn.: M.D., George Wash. Univ., 1949. m. Beth Allen, Aug. 19, 1944. c.: Claudia Beth; Patricia Leigh. Exp.: Visit. Invest., Rockefeller Inst., N. Y., N. Y., 1952-54; Instr., Johns Hopkins Univ., Schl. of Med., 1954-55; Asst. Prof., ibid., 1955-57; Assoc. Prof., ibid., 1957—. Hon. Pos.: Mem., AFEB, Comm. on Strep. and Staph. Dis.; Consult., Balt. City Hlth. Dept., Lab. Servs.; Mem., Comm. on Postgrad. Edn., Am. Acad. of Allergy; Consult. Army Chem. Corps, Biol. Lab.; Markle Schlr. in Med. Scis. Mem.: Am. Soc. Clin. Investn.; Assn. Am. Phyns.; Soc. Exptl. Biol. and Med.; Am. Assn. Immunolts.; Am. Fed. Clin. Rsch.; Harvey Soc.; N. Y. Acad. of Sci.; Am. Acad. of Allergy; Southern Soc. Clin. Rsch.; Am. Coll. of Phyns.; Phi Delta Theta; Phi Sigma. Contbrng. Author: Drugs of Choice, 1962; Harrison's Textbook of Med., 1962; Cecil and Loeb's Textbook of Med., 1963. Contbr. to: Jour. of Exptl. Med.; Bacteriol. Revs.; Jour. of Immunol.; Anns. of Internal Med.; Archives of Internal Med.; Procs. of the Soc. for Exptl. Biol. and Med. Serv. Rec.: U. S. P. H. Serv., 1955-57. Areas of Rsch.: Elucidation of the Role of Psychologic Factors in Convalescence from Acute Infection; Studies of the Epidemiology of Staphylococcal Infections; Studies on the Pathogenesis of Staphylococcal Infections; Pathogenesis of Fever Due to Bacterial Pyrogens; Mechanism of Host Injury in Infection.

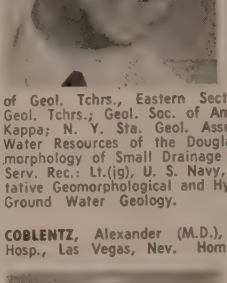
COAD, Peter (Ph.D.), Head, Div. of Natural Sci., Prof. of Chem., Chapman Coll., Orange, Calif. Home Add.: 1409 E. Mayfair Ave., Orange, Calif. PHYSICAL ORGANIC CHEMISTRY. b. San Francisco, Calif., Oct. 17, 1926. s. John F. and Mary (Davis) C. Edn.: B.S., Univ. of Calif., 1948; M.S., ibid., 1949; Ph.D., Ore. St. Univ., 1953. m. Raylene Adams, 1950. c.: Elizabeth Anne; Peter, Jr.; Michael Davis; Patrick Morgan. Exp.: Instr., Univ. of San Francisco, 1952-54; Instr., Coll. of San Mateo, 1954-56; Assoc. Prof., Chapman Coll., 1956-58; Prof., ibid., 1958 . Mem.: A.C.S.; Sigma Xi. Contbr. to: Jour. Chem. Edn.; Jour. A.C.S.; Jour. Org. Chem. Serv. Rec.: U. S. Army, 1945. Gen. Int.: N.S.F. Sci. Tchng. Fellowship, 1958-60. Areas of Rsch.: Synthetic and Theoretical Organic Chem.; Heterocyclic Chem.; Pyridazines.

COAD, Raylene Adams, (Ph.D.), Asst. Prof. of Chem., Chapman Coll., Orange, Calif. Home Add.: 1409 E. Mayfair, Orange, Calif. ORGANIC CHEMISTRY. b. S. Pasadena, Calif., Apr. 11, 1926. d. Mr. C. Donald and Dorothy (Morgan) Adams. Edn.: B.S., Univ. of Calif., 1947; M.S., ibid., 1947; M.A., Radcliffe Coll., 1949; Ph.D., Univ. of Calif., 1950. m. Peter Coad, 1950. c.: Elizabeth Anne; Peter, Jr.; Michael Davis; Patrick Morgan. Exp.: Rsch. Assoc., Ore St. Univ., 1950-52; Instr., San Jose St. Coll., 1954-55; Asst. Prof., Chapman Coll., 1957—. Mem.: A.C.S. Contbr. to: Jour. A.C.S.; Jour. Chem. Edn. Gen. Int.: Thomas Dana Fellow at Radcliffe Coll., 1948. Areas of Rsch.: Medicinal Chem.; Synthetic Organic Chem.; Pyridazines.

COBB, W. Montague (M.D.), Prof. and Hd., Dept. of Anatomy, Howard Univ. Coll. of Med., Wash. 1, D. C. Home Add.: 1219 Girard St., N.W., Wash. 9, D. C. ANATOMY AND PHYSICAL ANTHROPOLOGY. b. Washington, D. C., Oct. 12, 1904. s. William Elmer and Alexzine (Montague) C. Edn.: A.B., Amherst Coll., 1925; M.D., Howard Univ., 1929; Ph.D., Western Reserve Univ., 1932. Hon. Deg.: Sc.D., Amherst Coll., 1955. m. Hilda B. Smith, June 26, 1929. c.: Carolyn Elizabeth; Hilda Amelia. Exp.: Instr., Embryol., Howard Univ., 1928-29; Asst. Prof., Anat., 1932-34; Assoc. Prof., ibid., 1934-42; Prof., Anat., ibid., 1942—; Hd. of Dept. and Prof. of Anat., ibid., 1947—. Hon. Pos.: Pres., Am. Assn. of Physical Anthropologists, 1957-59; Pres., Anthropological Soc. of Wash., 1949-51; Pres., Medico-Chirurgical Soc. of Dist. of Columbia, 1945-47; Vice-Pres. and Chmn., Am. Assn. for the Adv. of Sci., 1955; Secy., Anatomical Bd. of the Dist. of Columbia, 1951—. Mem.: Am. Heart Assn.; Am. Eugenics Soc.; Natl. Assn. Adv. of Colored People; N.A.A.C.P.; Anatomical Soc. of Great Britain and Ireland; Am. Assn. of the Hist. of Med.; Assn. for the Study of Negro Life and Hist.; Sigma Xi; Alpha Omega Alpha. Contbr. to: Am. Jour. of Phys. Anthropol.; Problems of Aging; The First Negro Med. Soc.; The Crisis; Jour. of the Natl. Med. Assn.. Areas of Rsch.: Anatomy and Physical Anthropology.

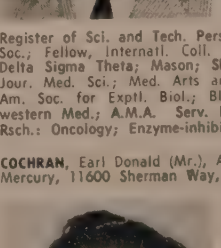
COATES, Donald Robert, (Ph.D.), Chmn., Dept. of Geol., Harpur Coll., Binghamton, N. Y. Home Add.: 212 Edgewood Rd., Vestal, N. Y. GEOLOGY—GEOMORPHOLOGY AND HYDROLOGY. b. Grand Island, Nebr., July 23, 1922. s. Frank Jefferson and Harriet (Ferris) C. Edn.: B.A., Coll. of Wooster, 1944; M.A., Columbia Univ., 1948; Ph.D., ibid., 1956. m. Jeanne Grandison, March 18, 1944. c.: Cheryl Diane; Eric Donald; Lark Janine. Exp.: Asst. Prof., Earlham Coll., Richmond, Ind., 1948-51; Geol. and Prof. Chf., U. S. Geol. Survey, Tucson, Ariz., 1951-54; Assoc. Prof. Chmn. Geol. Dept., Harpur Coll., 1954—; Visit. Prof., Cornell Univ. summers, 1958, 1960, 1961. Hon. Pos.: Mem., Symposium on Quantitative Terrain Studies, A.A.A.S., 1960; Pres., N. Y. Sta. Geol. Assn., 1962; Pres., Natl. Assn. of Geol. Tchrs., Eastern Sect., 1962. Mem.: Natl. Assn. of Geol. Tchrs.; Geol. Soc. of Am.; Am. Geophys. Union; Phi Beta Kappa; N. Y. Sta. Geol. Assn. Author: Geology and Ground Water Resources of the Douglas Basin, 1955; Quantitative Geomorphology of Small Drainage Basins of Southern Indiana, 1958. Serv. Rec.: Lt.(jg), U. S. Navy, 1943-46. Areas of Rsch.: Quantitative Geomorphological and Hydrological Study of River Systems; Ground Water Geology.

COBLENTZ, Alexander (M.D.), Physician, S. Nevada Memorial Hosp., Las Vegas, Nev. Home Add.: 1609 South 6th St., Las Vegas, Nev. MEDICAL SCIENCE



b. N. Y., N. Y., June 21, 1907. s. David J. and Ida Mae (Chazen) C. Edn.: M.D., N. Y. Med. Coll., Flower Hosp., 1932; M.M.Sc., Coll. of Med. Evangelists, 1956. m. Thelma Mamlet, June 5, 1938. c.: David Ray; Suzanne J. Fell; Jonathan. Exp.: Clin. Instr., Urology, N. Y. Med. Coll., 1934-36; Chief Resident Surgeon, City of Hope Med. Center, 1953-55; Dir. Los Angeles Co. P-G Med. Sch. Los Angeles, Calif., 1950-56; Chf. of Surg., So. Nevada Mem. Hosp., Las Vegas, Nev., 1959-60; Chf. of Staff, So. Nevada Mem. Hosp., ibid., 1960-62; Physician, ibid., 1962—. Mem.: Fellow, Fed. Am. Scientists; Am. Assn. Adv. Sci.; N. Y. Acad. of Sci.; Natl. Register of Sci. and Tech. Personnel; A.M.A.; Am. Gerontologic Soc.; Fellow, Internatl. Coll. of Angiology; Sigma Omega Psi; Delta Sigma Theta; Mason; Shriner; Kiwanis. Contbr. to: Am. Jour. Med. Sci.; Med. Arts and Sci.; Am. Fed. Cl. Rsch.; Fed. Am. Soc. for Exptl. Biol.; Blood; New England J. M.; Southwestern Med.; A.M.A. Serv. Rec.: U.S.A.R., 1934-39. Areas of Rsch.: Oncology; Enzyme-inhibitor effects upon the human.

COCHRAN, Earl Donald (Mr.), Asst. Systems Engrng. Mgr., Project Mercury, 11600 Sherman Way, N. Hollywood, Calif. Home Add.: 8100 Irvine Ave., N. Hollywood, Calif. ELECTRONIC ENGINEERING

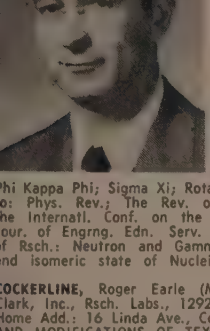


b. Safford, Ariz., Mar. 2, 1921. s. Wallace C. D. and E. Jane (Goff) C. Edn.: B.A., Los Angeles State Coll., 1955; B.E., Univ. So. Calif., 1957. m. Dorothy Sullivan, 1950. c.: E. Dennis, Steven D. Exp.: Radar Instr., San Bernardino Air Serv. Cmd., 1943-44; Radar Flight Checkout, Natl. Lockheed Serv. Center, Van Nuys, Calif., 1944-45; Chemist, Lockheed Aircraft, Burbank, Calif., 1946-47; Engr., Aviation Mail Corp., Van Nuys, Calif., 1948-49; Gen. Mgr., Ramold Enterprises, Glendale, Calif., 1949-50; Engr., Qualitron, Burbank, Calif., 1950-51; Sr. Engr., Bendix Pacific, N. Hollywood, Calif., 1951-Mem.: Inst. of Radio Engrs.; Am. Assn. Adv. Sci.; Am. Chem. Soc.; Am. Rocket Soc. Areas of Rsch.: Data Transmission & Information Theory.

COCHRAN, John Arthur (Ph.D.), Prof. of Econs., Chmn. of Econs. Dept., Ariz. State Univ., Tempe, Ariz. MONETARY-MACRO ECONOMICS. b. Des Moines, Ia., Sept. 25, 1921. s. Arthur John and Lena (McCowen) C. Edn.: A.B., Drake Univ., 1943; A.M., Harvard Univ., 1948; Ph.D., ibid., 1949. m. Mary Leffler, July 10, 1943. c.: Jacquelyn Sue; Cynthia Elizabeth; Catherine Edna. Exp.: Tchng. Asst., Econs., Mass. Inst. of Technol., Cambridge, Mass., 1947-48; Tchng. Fellow, Harvard Univ., Cambridge, Mass., 1948-49; Asst. Prof. of Econs., Univ. of Ill., Urbana, Ill., 1949-57; Econt., Fed. Reserve Bank of N. Y., N. Y., 1956-57; Assoc. Prof., Econs., Sou. Ill. Univ., Carbondale, Ill., 1957-62; Prof. of Econs., Ariz. State Univ., 1962—. Hon. Pos.: Chmn., Econs. Dept., Ariz. State Univ., Tempe, Ariz., 1962—. Mem.: Am. Econs. Assn.; Am. Finance Assn.; Midwest Econs. Assn., Secy.-Treas., 1960-62; Phi Beta Kappa; Kappa Delta Pi; Alpha Epsilon Pi. Author: Money, Banking and the Economy, 1962. Contbr. to: The Jour. of Finance; Current Econ. Comment; Am. Econ. Rev.; Economia Internazionale. Areas of Rsch.: Money and Banking with Special Attention to Federal Reserve Policy.

COCHRAN, John Lamar, Jr. (Mr.), Hd., Magnetic Defense Sect., Bureau of Ships, Navy Dept., Wash., D. C. Home Add.: 1411 Noland Rd., Falls Church, Va. ELECTRICAL ENGINEERING. b. Atlanta, Ga., June 10, 1920. s. John Lamar, Sr. and Ellen Margaret (Crowley) C. Edn.: B.S., Ga. Inst. of Tech., 1942. m. Miriam Idelle Murphy, June 21, 1948. Exp.: Engr., Am. Tel. and Tel. Co., Atlanta, Ga., Charlotte, N. C., 1946-47; Ranging Engr., U. S. Naval Degaussing Stan., Norfolk, Va., 1947-49; Supvry. Engr., Bureau of Ships, Navy Dept., 1949—. Hon. Pos.: Chmn., Official Bd., Graham Rd., Methodist Ch., Falls Church, Va.; U. S. Navy Rep., NATO Degaussing Symposium, Germany, 1959; England, 1961. Mem.: Am. Soc. of Naval Engrs.; Am. Inst. of Elect. Engrs.; Assn. of Sr. Engrs. of the Bureau of Ships; Naval Reserve BUShips Spect. Unit.; So. Woodley Civic Assn. Serv. Rec.: U. S. Naval Reserve, Lcdr., 1942—. Areas of Rsch.: Electrical Engineering (Marine Shipboard) and Magnetism (Magnetic Protection of Ships).

COCHRAN, Robert Glenn, Sr. (Ph.D.), Prof. and Hd., Dept. of Nuclear Engrng., Tex. A. and M. Coll., College Station, Tex. Home Add.: 515 Kyle St., College Station, Tex. NUCLEAR SCIENCE AND ENGINEERING. b. Indianapolis, Ind., July 12, 1919. s. Lucien G. and Daisy H. (Wachstetter) C. Edn.: B.A., Ind. Univ., 1948; M.S., ibid., 1950; Ph.D., The Pa. State Univ., 1957. m. Mary O. Worland, 1944. c.: Robert Glenn, Jr. Exp.: Nuclear Physicist and Gr. Leader, Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1950-54; Assoc. Prof. and Dir. of Rsch. Reactor, Pa. State Univ., 1955-59; Prof. and Hd., Dept. of Nuclear Engrng., Tex. A. and M. Coll., 1959—. Hon. Pos.: Chmn., Subcomm. on Rsch. Reactors, Natl. Acad. of Scis., Natl. Rsch. Coun. Mem.: Am. Nuclear Soc.; Am. Phys. Soc.; Phi Kappa Phi; Sigma Xi; Rotary Club of Bryan Coll. Sta. Contbr. to: Phys. Rev.; The Rev. of Scientific Instruments; Proc. of the Internatl. Conf. on the Peaceful Uses of Atomic Energy; Jour. of Engrng. Edn. Serv. Rec.: U. S. Navy, 1942-45. Areas of Rsch.: Neutron and Gammaray Spectroscopy, Decay schemes and isomeric state of Nuclei; Nuclear reactor physics.



COCKERLINE, Roger Earle (Mr.), Sr. Rsch. Chemist, Coats & Clark, Inc., Rsch. Labs., 1292 McCarter Highway, Newark, N. J. Home Add.: 16 Linda Ave., Colonia, N. J. CHEMICAL FINISHING AND MODIFICATIONS OF TEXTILE FIBERS, PETROLEUM CHEMISTRY AND INFRARED ABSORPTION SPECTROSCOPY. b. Newark, N. J., Mar. 31, 1929. s. William Roy and Ellen A. (Gordon) C. Edn.: B.S., Seton Hall Univ., 1952. m. Patricia E. Torppey, Mar. 5, 1952. c.: Deborah Lea; Mark Roger; Glenn Curtis; Dean Gordon; Janet Lynn; Dorothy Ellen. Exp.: Chemist, M. W. Kellogg & Co., Jersey City, N. J., 1952, 1954-55; Sr. Rsch. Chemist, Coats & Clark, Inc., Rsch. Labs., Newark, N. J., 1955—. Mem.: Am. Chemical Soc.; A.A.A.S.; Am. Assn. of Textile Chemists and Colorists. Serv. Rec.: U.S.N.R., 1948-54; U. S. Navy, 1952-54. Areas of Rsch.: Chemical Finishing and Modification of Textile Fibers and Related Materials.

COGGESHALL, Lowell Thelwell (M.D.), Frederick H. Rawson Prof. of Med. and Vice Pres. of the Univ., Univ. of Chicago, 5801 Ellis Ave., Chicago 37, Ill. MEDICAL EDUCATION; ADMINISTRATION. b. Saratoga, Ind., May 7, 1901. s. William Evart and Flossie Ann (Warren) C. Edn.: A.B., Ind. Univ., 1922; A.M., ibid., 1923; M.D., ibid., 1928. Hon. Deg.: LL.D., Ind. Univ., 1948; L.H.D., Jefferson Medical College, 1956; LL.D., Lake Forest College, 1961; D.Sc., Chicago University, 1962. m. Louise Holland, May 15, 1930. c.: Richard Edwin; Diane; Carol. Exp.: Instructor in Zool., Ind. Univ., 1922-23; Instr. in Anatomy, ibid., 1924; Instr. in Anatomy and on Biol. Staff, Extension Div., ibid., 1925; Special Staff Mem., Rockefeller Foundation Internatl. Health Board., 1924-26; Malariologist, Ga. State Bd. of Health, 1928; Intern, Univ. of Chgo. Hosp., 1928-29; Instr. in Med., Univ. of Chgo., 1930-34; Asst. Prof. of Med., ibid., 1934-35; Staff Mem., Internatl. Health Div., Rockefeller Found., 1935-41; Prof. of Epidemiol. and Chmn., Dept. Trop. Diseases, Schl. of Public Health, Univ. of Mich., 1941-42; Leave of Absence, ibid., 1942-46; Sr. Med. Off. for Pan-Am. Africa Airlines, later Trans-Africa Ferry Route, 1942-44; Capt., USNR Med. Corps, Klammath Falls, Ore., 1944-46; Prof. and Chmn., Dept. of Med., Univ. of Chicago, 1946-49; Prof. and Chmn., Dept. of Med., and Dean, Div. of Biol. Sci., ibid., 1947-49; Frederick H. Rawson Prof. of Med. and Dean, Div. of Biol. Sci., ibid., 1949-60; Vice Pres., Univ., ibid., 1960—; Special Asst. for Health and Med. Affairs, Dept. of Health, Edn. and Welfare, 1956. Mem.: Chicago Med. Soc.; Chicago Soc. Internal Med.; Inst. Med. of Chicago, Pres., 1956; Billings Med. Club; Ill. State Med. Soc.; A.M.A.; Am. Pub. Health Assn.; Am. Coll. Physicians; Assn. Am. Physicians; Assn. Am. Med. Colls.; Central Soc. for Clinical Rsch.; Central Interurban Clinical Club; Am. Soc. for Clinical Investigation; Soc. for Exptl. Biol. and Med.; A.A.A.S.; Natl. Acad. Sci.; Am. Philos. Soc.; Harvey Soc.; Am. Epidemiol. Soc.; Am. Acad. Tropical Med.; Am. Found. for Tropical Med.; Am. Soc. for Tropical Med.; Natl. Malaria Soc.; World Med. Assn.; Bd. of Dirs., Pres., Am. Cancer Soc., 1958; Josiah Macy, Jr. Found.; Museum Sci. and Industry; Abbott Labs.; World Hlth. Organ; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Delta Omega. Editorial Bd.: Mem.; Proc. Soc. for Exptl. Biol. and Med.; Jour. Med. Edn. Special Int.: Tropical Diseases; Med. Edn.; Administration.

COFFMAN, Moody Lee (Ph.D.), Prof. and Head, Dept. of Physics, Oklahoma City Univ., Oklahoma City, Okla. Home Add.: 1832 N.W. 17th St., Oklahoma City 6, Okla. THEORETICAL PHYSICS. b. Abilene, Tex., July 25, 1925. s. Jesse Lee and Mattie (Moody) C. Edn.: B.A., Abilene Christian Coll., 1947; M.A., Univ. of Okla., 1949; M.S., ibid., 1949; Ph.D., A. & M. Coll. of Tex., 1954. m. Marjorie Echols, March 30, 1947. c.: Kenneth Lynn; Donald Wayne; Paul Edward; Sharon Kay. Exp.: Instr., Physics, East Tex. St. Coll., 1949-51; Instr., Physics and Math., A. & M. Coll. of Tex., 1951-54; Rsch. Fellow, ibid., 1952-53; Adjunct Prof. of Physics, Tex. Christian Univ., 1954-55; Senior Nuclear Engr., Convair, Fort Worth Div., Gen. Dynamics Corp., Fort Worth, Tex., 1954-55; Consultant to Theoretical Nuclear Gr., Convair, ibid., 1955-58; Physicist, Theoretical Propulsion Sect., Chance-Vaught Aircraft Corp., s.s., Dallas, Tex., 1958; Assoc. Prof. of Physics and Head of the Dept., Abilene Christian Coll., 1955-60; Visiting Prof. of Physics, Baylor Univ., s.s., 1959; Sr. Physicist, Missiles and Space Systems Dept., Hamilton Standard Div., United Aircraft Corp., and Adjunct Assoc. Prof. of Physics, Hartford Grad. Ctr., Rensselaer Poly. Inst., 1960-61; Prof. and Head, Dept. of Physics, Okla. City Univ., 1961—; Vice Pres., and Dir., Acoustic Control, Inc., Abilene, Tex., 1960—. Hon. Pos.: Vice Pres., Phys. Sci., Tex. Acad. of Sci., 1960; Secy.-Treas., Tex. Sec., Am. Assn. of Physics Tchrs., 1958-60. Mem.: Fellow, Tex. Acad. of Sci.; Am. Phys. Soc.; Am. Math. Soc.; Am. Geophys. Union; Math. Assn. of Am.; Am. Assn. of Physics Tchrs. Contbr. to: Am. Jour. of Physics; Jour. of the Optical Soc.; Jour. of Chem. Physics; Bull. of Am. Phys. Soc.; Am. Math. Monthly; Schl. Sci. and Math. Serv. Rec.: U. S. Navy, 1943-46; U. S. Navy Reserves, 1946—. Gen. Int.: Awarded U. S. and Canadian patent on Acoustic Control Unit, 1962. Areas of Rsch.: Infrared Instrumentation; Electromagnetic Theory, Classical Mechanics; Molecular Structure, Nuclear Shielding; Atmospheric Electricity, Theoretical Physics; Acoustics; Space Physics.

COGSWELL, George Wallace, (Ph.D.), Proj. Coord., A. E. Staley Mfg. Co., Decatur, Ill. Home Add.: R. R. #1, Box 158, Decatur, Ill. ORGANIC CHEMISTRY. b. N. Y., N. Y., Feb. 8, 1923. s. Charles Wallace and Anna C. (Rean) C. Edn.: B.S., The Coll. of the City of N. Y., 1953; M.S., Fordham Univ., 1955; Ph.D., ibid., 1959. m. Helen Elizabeth Conrad, Nov. 26, 1949. c.: Ann Elizabeth; Steven Charles; Janet Louise. Exp.: Jr. Chemist, Colgate Palmolive Co., Jersey City, N. J., 1949-53; Grad. Asst., Fordham Univ., Bronx, N. Y., 1953-57; Rsch. Asst., Cornell Univ., Med. Coll., N. Y., 1957-58; Sr. Devel. Chemist and Proj. Coord., A. E. Staley Mfg. Co., 1958—. Mem.: Am. Chem. Soc.; N. Y. Acad. of Sci.; Am. Assn. Adv. Sci.; Am. Oil Chemists Soc.; Am. Assn. of Textile Chemists and Colorists; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Ed.; Chem. and Industry; Jour. Pharm. and Exp. Therapts. Serv. Rec.: U. S. Army, 1942-46; U. S. Army Reserve, 1946-49. Areas of Rsch.:

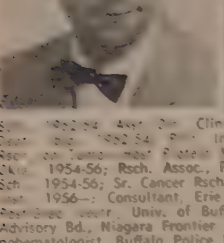
Polymer Div., Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Ed.; Chem. and Industry; Jour. Pharm. and Exp. Therapts. Serv. Rec.: U. S. Army, 1942-46; U. S. Army Reserve, 1946-49. Areas of Rsch.:

Development Studies; Emulsion and Solution Polymers; Ozonation Reactions of Polycyclic Hydrocarbons; Neuro-Muscular Structure Activity Studies.

COHEN, Arthur Edwin (M.D.), Urologist. Keene Clinic., Keene, N.H. Home Add.: 48 Hancock St., Keene, N. H. UROLOGY. b. Lowell, Mass., Nov. 13, 1928. s. Nathan Edward and Alice Eleanor (Ziskind) C. Edn.: B.S., Tufts Coll. Liberal Arts, 1948; M.S., Ga. Inst. of Tech., 1950; M.P.H., Univ. of Okla., 1951; M.D., Tufts Univ. Med. Sch., 1954. m. Ruth Jane Nesbitt, Aug. 24, 1952. c.: Steven Edward; Bruce Ethan. Exp.: S. A. Surg. (R), U. S. Pub. Health Serv., 1955-58; Res. in Urol., V.A. Hosp., New Orleans, 1958; Superintendent, V.A. Hosp., N. Chelmsford, Mass., 1958-61; Present Position since 1961. Mem.: A.A.A.S.; Phi Delta Epsilon; Tufts Alumni; Ga. Tech. Alumni; Mason; A.E.F. Comm. Officers Assn. of U.S.P.H.S. Contbr. to: Am. Indust. Hyg. Assn. Quart.; A.M.A. Arch. Indust. Health; Biochem. Biophys. Acta; Am. Assn. Indust. Hyg. Jour.; Jour. of Urol.; Trans. S.E. Sect. of Am. Urol. Assn. Areas of Rsch.: Biochem. Mechanisms of Carbon Disulfide Toxicity; Radioactive Renograms of Renal Pathology; Work in Urology, Particularly Cancer of Prostate, Testicle and Bladder.

COHEN, Elias (Ph.D.), Sr. Cancer Research Scientist, Roswell Park Memorial Inst., Buffalo 3, N. Y. Home Add.: 78 Thistle Ave., Tonawanda, N. Y. IMMUNOLOGY; PHYSIOLOGICAL AND IMMUNOGENETICS; DEVELOP., COMPAR., GENERAL AND MAMMALIAN PHYSIOLOGY AND BIOCHEMISTRY. b. Baltimore, Md., Sept. 17, 1920. s. [illegible] C. Edn.: B.S., Univ. of Md., 1942; M.A., The Johns Hopkins Univ., 1949; Ph.D., Rutgers Univ., 1952. m. Kathleen Janet Grossman, Jan. 7, 1949. c.: Jonathan; Mary Helen. Exp.: Biologist, The Johns Hopkins Sch. Hyg. and Pub. Hlth., 1946-47; Jr. Instr. in Biol., The Johns Hopkins Univ., 1947-49; Tchng. Asst. and Instr., Col. Pharm., Rutgers Univ., 1949-50; Tchng. Asst. and Instr., Zool. Dept., ibid., 1950-52; Instr., Pathol. Dept., Univ. of Okla. Med. Sch., 1952-54; Asst. Dir. Clinical Lab. and Blood Bank, Pathol. Dept., ibid., 1952-54; Res. Investigator in Charge of In Vivo Research on Tumor and Protein Metabolism, Noble Fdtn., Ardmore, Okla., 1954-56; Rsch. Assoc., Pathol. Dept., Univ. of Okla. Med. Sch., 1954-56; Sr. Cancer Rsch. Scientist, Roswell Park Memorial Inst., 1956—; Consultant, Erie Co. Pub. Hlth. Lab. Hon. Pos.: Asst. Surg., Univ. of Buffalo; Lectr., Erie Co. Tech. Inst.; Advisory Bd., Niagara Frontier Soc. of Med. Technologists; Immunohematologist, Buffalo Police Dept. Mem.: Sigma Xi; Am. Soc. Hematology; Am. Rheum. Assn.; N. Y. Acad. of Sci.; Am. Pub. Hlth. Assn.; N. Y. State Assn. Pub. Hlth. Lab.; Am. Assn. Blood Banks; A.A.A.S.; Phi Delta Kappa. Contbr. to: Am. Jour. Clin. Pathol.; Proc. Soc. Exptl. Biol. and Med.; Jour. Immunol.; Arch. Inter-Am. Rheumatology; Am. Jour. Clin. Nutrition; Sci.; Am. Jour. Med. Technol.; Proc. N. Y. State Assn. of Pub. Hlth. Lab.; Cancer Research. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Studies of Mechanisms and Biomedical Applications of Hemagglutination Reactions of Human and Lower Vertebrate Erythrocytes. Areas of Rsch.: Immunohematology—With Special Studies of Rheumatoid Factors and Leukocytes Antibodies.

COHEN, Jerome Bernard (D.Sc.), Assoc. Prof. of Materials Scis., The Technological Inst., Northwestern Univ., Evanston, Ill. Home Add.: 362 Jackson, Glencoe, Ill. METALLURGY, MATERIALS SCIENCE. b. Brooklyn, N. Y., July 16, 1932. s. David I. and Sylvia (Silverman) C. Edn.: B.S., Mass. Inst. of Technol., 1954; D.Sc., ibid., 1957. m. Lois Nesson, Sept. 15, 1957. c.: Elissa Diane. Exp.: Sr. Scientist, AVCO Corp., Wilmington, Mass., 1957-59; Asst. Prof., Northwestern Univ., 1959-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: S.A.E. Iron & Steel Technical Comm.; A.I.M.E. Structure Committee, Metallurgical Society Committee, Metallography Committee, Metallurgical Society Committee, Metallography Committee, Am. Soc. for Testing Materials Committee, Metallography Committee, Am. Inst. of Met. Mining & Petroleum Engrs.; Am. Soc. of Metals; A.A.U.P.; Alpha Epsilon Pi; Tau Beta Pi; Sigma Xi; Phi Lambda Upsilon. Contbrng. Author: American People's Encyclopedia Yearbook, 1961; Physical Chemistry in Aerodynamics and Space Flight, 1961. Contbr. to: Trans. A.I.M.E.; Act Met.; Jour. Applied Physics; Nature; Nondestructive Testing; Rev. of Scientific Instruments; Welding Jour.



COHEN, Leonard Arlin (Ph.D.), Head, Dept. of Physiol., Albert Einstein Med. Ctr., Tabor and York Rds., Phila. 41, Pa. Home Add.: 224 Old Lancaster Rd., Merion, Pa. PHYSIOLOGY. b. Brooklyn, N. Y., Mar. 4, 1924. s. Abraham S. and Alice Spiegel C. Edn.: B.A., Univ. of Conn., 1948; Ph.D., Yale Univ., 1952. m. I. Sheila Gold, June 25, 1950. c.: Seth David; Jared Ben. Exp.: Instr., Asst. Prof., Assoc. Prof. Univ. of Pennsylvania, Dept. of Physiology, 1952-58; Fulbright Fellow, Oxford Univ., Oxford, England, 1956-58; Head, Dept. of Physiol., Albert Einstein Med. Ctr., 1958; Adjunct Assoc. Prof., Univ. of Pa., 1961—. Mem.: Am. Physiol. Soc.; Assoc. of Am. Med. Colls.; N. Y. Acad. of Sci.; Aerospace Med. Assn.; Am. Rocket Soc.; A.A.A.S.; A.A.U.P.; Sec., Inter-Scholastic Committee of Philadelphia, 1958; Pres., Pharmacol. Assn. of Philadelphia, 1961; Am. Physiol. Soc. Comm. to Visit Univ. of Nebraska, 1961; Yale Soc. of Physiol., Jour. of Hist. of Med. and Allied Sciences, Biol. and Med.; Jour. of Applied Physiol. and Sci. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: James Hudson Brown Award, Yale Univ., 1950. Areas of Rsch.: Function of the Nervous System with Special Emphasis on Reflexes, Spinal Cord Activity, Mechanisms of Body Orientation, Motor Coordination, Space Physiol., Hist. of Sci.

COHEN, Martin Joseph (Ph.D.), Vice-Pres., Mem. of Bd. of Dir., Franklin Systems Inc., West Palm Beach, Fla. Home Add.: 381 Paseo Navarra, West Palm Beach, Fla. EXPERIMENTAL NUCLEAR PHYSICS. b. Brooklyn, N. Y., May 6, 1921. s. Selig S. and Frances (Cinkin) C. Edn.: B.A., Brooklyn Coll., 1942; M.A., Princeton Univ., 1948; Ph.D., ibid., 1951. m. Elizabeth Lent, Sept. 17, 1945. c.: Douglas; Alice Elizabeth; Marcia Jane. Exp.: Staff Mem., Radiation Lab. of M.I.T., 1942-45; Rsch. Asst., Physics Dept., Princeton Univ., 1945-49; Staff Physicist, R.C.A., Rsch. Lab., Princeton, N. J., 1949-52; Prin. Physicist, Radiation Rsch. Corp., W. Palm Beach, Fla., 1952-54; Consultant Physicist, Self-Employed, Washington, D. C., 1955-57; Vice-Pres., Franklin Systems Inc., W. Palm Beach, Fla., 1957—. Contbr. to: Physical Rev.; Rev. of Scientific Instruments; Proc. Inst. of Radio Engrs. Areas of Rsch.: Microwave Instrumentation, Electronics, Physics, Experimental Nuclear Physics and Cosmic Rays, Scintillation Techniques, Measurement of Sub-Atomic Particles, Solid State Circuitry.

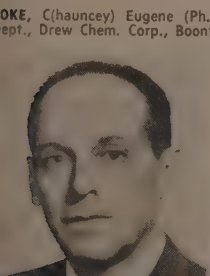
COHEN, Sanford Irwin (M.D.), Prof. Psychiatry and Head of Div. Psychophysiological Rsch., Dept. Psychiatry, Duke Univ. Med. Ctr., Durham, N. C. Home Add.: 110 Woodburn Rd., Durham, N. C. MEDICINE; PSYCHIATRY; (CLINICAL AND EXPERIMENTAL PSYCHOPHYSIOLOGY). b. N. Y., N. Y., Sept. 5, 1928. s. George A. and Gertrude (Slater) C. Edn.: A.B., N. Y. Univ., 1948; M.B., M.D., Chicago Med. Schl., 1952; Diplomate, Am. B. Psychiatry, 1958. m. Jean Stein Bruecker, Nov. 5, 1952. c.: Jeffrey Allan; Deborah Sue. Exp.: Rsch. Fellow, Psychosomatic Med., Dept. Psychiatry, Duke Univ. Med. Ctr., Durham, N. C., 1955-57; Consultant, Stress and Fatigue Sec., Aeromedical Lab., Wright Air Dev. Ctr., U.S.A.F., Dayton, O., 1957; Consultant, Psychopharmacology Sec., Dept. Psychiatry, Duke Univ. Med. Ctr., 1957—; Assoc. Prof., Psychiat., Duke Univ. Med. Ctr., 1957—; Assoc. Prof., Psychiat., Duke Univ. Schl. Nursing, 1957—; Attending Psychiatrist, V. A. Hosp. and Sr. Staff Psychiatrist, Duke Hosp., Durham, N. C., 1957—. Hon. Pos.: Markle Scholar in Med. Scis., 1957; Sr. Fellowship, Foundations Fund for Rsch. in Psychiatry, 1957. Mem.: Am. Med. Assn.; Am. Psychiatric Assn.; Am. Psychosomatic Soc.; Am. Fed. Clin. Rsch.; Soc. Biological Psychiat.; A.A.A.S.; A.A.U.P.; Am. Geriatrics Soc.; Phi Beta Kappa; Sigma Chi; Sigma Chi Sigma; Psi Chi; Beta Lambda Sigma; Caduceus Soc.; Sigma Delta; Phi Lambda Kappa. Author: Manual of Psychosomatic Medicine, 1955. Contbrng. Author: Sensory Deprivation, 1961; Hallucinations, 1961. Contbr. to: Jour. Nervous & Mental Disease; Jour. Am. Psychiatric Assn.; Psychosomatic Med.; Jour. Psychosomatic Rsch.; Psychiatric Rsch. Reports;

rchives Neurol. and Psychiat.; Jour. Aviation Med.; New England our. Med.; Jour. General Systems; Am. Practitioner; Jour. rojective Techniques; Jour. Gerontology. Serv. Rec.: U.S.A.F., 955-57. Gen. Int.: Hormonal and Physiological Correlates of motional States; Studies, Selection Techniques for Future Space rews and Studies Related to Psychologic Stresses of Space ravel; Studies Interrelationship Specific Hormones and Psycho- igical Factors and Peptic Ulcers. Areas of Rsch.: Psychophysio- igical Mechanisms of Stress Responsivity; Effects of Isolation nd Sensory Deprivation on Central Nervous System Activity; ormonal and Physiological Changes with Conditioning and Drug echniques to Predict and Control Behavior; Brain Mechanisms nvolved in Memory, Preception, Learning and Decision Making ith Conditioning Techniques and Bioelectrical Measures of CNS ctivity.

OHN, Benedict (Mr.), Mgr. and Scientific Advisor to Vice res., Rsch. and Devel., Sou. Calif. Office, Boeing Co., P.O. ox 90707, Los Angeles 9, Calif. Home Add.: 3629 Sheridge r., Sherman Oaks, Calif. AERONAUTICAL ENGINEER AND AERO- YNAMICS. b. Bucharest, Rumania, Mar. 21, 1913. s. Lazar nd Tzipa (Silberman) C. Edn.: B. Aero Engr., Univ. of Minn., 934; M.S., N. Y. Univ., 1936. m. Margaret Benezra, 1938. c.: inda Ann; Arthur; Judith. Exp.: Chf. Wind Tunnel Opr., N. Y. niv., 1934-36; Stress Engrng., Boeing Aircraft, Seattle, Wash., 936-38; Aerodynamicist-Chf., Wind Tunnel Oper., Chief Aerody- amics, ibid., 1938-51; Tech. Staff Asst., ibid., 1951-53; Pilotless ircraft, Chf. Preliminary Design, ibid., 1953-55; Cal. Engr. Rep. or VP/Egnt., ibid., 1955-61; Mgr., Dir., Sou. Calif. Office, Boeing o., Los Angeles, Calif., 1961—; Scientific Advisor to Vice res., Rsch. and Devel., ibid., 1962—. Mem.: I.A.S., Fellow; Am. ocket Soc.; A. F. Communications and Electronics Assn.; Sigma lpha Sigma; Tau Beta Pi. Areas of Rsch.: Wind Tunnel Tech- iques and Airplane and Missile Aerodynamic Design.

OHN, Victor Edward (Mr.), Sci. Reporter, The Minneapolis ribune, 425 Portland, Mpls. 15, Minn. Home Add.: 4845 Irving ve., S., Mpls. 9, Minn. SCIENCE REPORTER. b. Mpls., Minn., ug. 4, 1919. s. Louis and Lillian (Bessler) C. Edn.: B.A., Univ. f Minn., 1941. m. Marcella Rigler, Aug. 30, 1941. c.: effrey; Deborah; Phyllis. Exp.: Editor, Minn. Daily, Univ. of Minn., Mpls., Minn., 1940-41; Desk Man, Mpls. Star, 1941-42; opyreader, Mpls. Tribune, 1946; Reporter, ibid., 1946-47; Sci. eporter, ibid., 1947—. Hon. Pos.: Pres., Natl. Assn. of Sci. Vriters, 1961-62; Mem., Bd. of Incorps., Coun. for the Adv. of ci. Writing, 1960—. Mem.: Am. Assn. Adv. Sci.; Phi Beta appa; Am. Newspaper Guild; Minn. Press Club. Author: 1999: ur Hopeful Future, 1956. Contbr. to: Bull. of the Atomic cients. Serv. Rec.: U. S. Navy, 1942-45. Gen. Int.: Recipient, eorge Westinghouse Award, A.A.A.S. for Dist. Sci. Writing, 951, 1960; Dist. Serv. Award for Newspaper Reporting, Sigma elta Chi, 1952-56-59; Albert Lasker Med. Journalism Award, 958.

OKE, C(hauncey) Eugene (Ph.D.), Technical Dir., Textile Chems. ept., Drew Chem. Corp., Boonton, N. J. Home Add.: 37 Ball Rd., Mtn. Lakes, N. J. CHEMISTRY. b. Ignace, Ontario, Can., July 27, 1905. s. C. Eugene and Edith May (Redman) C. Edn.: B.Sc., Manitoba, 1927; M.Sc., ibid., 1929; M.A., Toronto, 1930; Ph.D., Leeds, 1938. m. Sally B. Tolmie, 1941. Exp.: Asst. Organic Chem., Yale, 1928-29; Natl. Rsch. Coun., Canada Scholar, Toronto, 1929-31; Asst. Phys. Chem., ibid., 1931-32; Lectr., Phys. Chem., McMaster Univ., 1931-33; Rsch. Fellow, Ont. Rsch. Fdtn., Canada, 1932-36; Worshipful Co. Clothworkers Scholar, Leeds Univ., England, 1936-38; In Charge, Rsch., Courtaulds, (Can.) Ltd., 1939-42; Dir. of Rsch. and Devel., Guaranty Dyeing & Fin. Co., 1946-48; Mgr., Ind. Yarn Sales & Devel., Courtaulds (Can.) Ltd., 1948-54; Mgr., Dev. Dept., ibid., 1954-59; ir. of Rsch. and Devel., Hartford Fibres Co., 1959-62; Tech. Dir., extile Chems. Dept., Drew Chem. Corp., 1962—. Hon. Pos.: lem. of Coun., Canadian Assn. Textile Colourists and Chems., uebec, 1950-54, Vice-Pres., 1954-57, Pres. 1957-59; Pres., The nst. of Textile Sci., Can., 1958-59; Chmn., Can. Adv. Comm. on SO/TC38, Textiles, 1957-59; Canada Natl. Comm. on ISO, 1959; lem. of Coun., Chem. Inst. of Can., 1959-62; Dir., Textile Tech. ed. of Canada, 1954-59; Natl. Governor, Am. Assn. for Textile ech., 1961, First Vice-Pres., 1962—. Mem.: Fellow, Royal Inst. Chem.; Gr. Britain; Fellow, The Textile Inst., Gr. Britain; ellow, The Soc. of Dyers and Colourists, Gr. Britain; Fellow, hem. Inst. of Canada; Fellow, A.A.A.S.; Life Mem., N. Y. Acad. Scis.; Mem.: A.A.T.C.C.; C.A.T.C.C.; A.A.T.T.; The Inst. of extile Sci., Canada; The Fiber Soc.; The Chemists' Club, N.Y.C. ontbrng. Author: Advances in Textile Processing, 1961. Contbr. : Trans. of the Faraday Soc.; Jour. of the Soc. of Dyers and olourists; Canadian Textile Jour.; Textile Jour. of Australia; he Textile Mfr., Gr. Brit.; Can. Chem. Processing; Chem. in anada; The Textile Recorder, Gr. Brit.; Proc. of the Perkin Cen- ennial; Chem. and Ind., Gr. Brit.; Am. Dyestuff Reporter. Serv. ec.: Royal Canadian Air Force, 1942-46, Pilot Officer to Squadron eader, (Maj.). Areas of Rsch.: Organic, Physical and Cellulose hem.; Equilibrium; Mfr. of Man-Made Cellulosic Fibers, Physical roperties, Performance Characteristics, Processing into Fabrics, nd-Use Developments.



COKER, Samuel Terry (Ph.D.), Dean, Schl. of Pharm., Auburn Univ., Auburn, Ala. Home Add.: 1017 McKinley Ave., Auburn, Ala. PHARMACOLOGY. b. Evergreen, Ala., Nov. 29, 1926. s. Zollie Watson and Lillie (Anthony) C. Edn.: B.S., Auburn Univ., 1951; M.S., Purdue Univ., 1953; Ph.D., ibid., 1955. m. Carolyn Sue Ridnour, Aug. 15, 1954. c.: Ann Louise; Susan Teri. Exp.: Instr., Univ. of Pittsburgh, 1953-54; Assoc. Prof., Univ. of Miss., 1955-56; Assoc. Prof., Univ. of Kans. City, 1956-59; Dean, Schl. of Pharm., Auburn Univ., 1959—. Mem.: Rho Chi; Sigma Xi; The Scientific Rsch. Soc. of Am.; A.A.A.S.; The Am. Pharmaceutical Assn.; Phi Sigma; Kappa Psi; Phi Delta Chi; Toastmasters Internatl. Contbr. to: Jour. of Pharmaceutical Scis.; Am. Jour. of Pharmaceutical Edn. Serv. Rec.: U. S. Army, Oct. 1945-Apr. 1957. Areas of Rsch.: Cellular Pharmacol. and Detoxification Mechanisms.

COLE, Leland Gordon (Ph.D.), Vice Pres., Rsch. & Engrng., Telecomputing Corp., Los. Angeles, Calif. PHYSICS, CHEMISTRY AND ADMINISTRATION OF RESEARCH AND DEVELOPMENT. b. Niagara, Wis., July 19, 1920. s. Gordon Manley and Sadye (Dumke) C. Edn.: B.S., Ore. St. Coll., 1942; M.A., ibid., 1944; Ph.D., Univ. of Wis. and Ore. St. Coll., 1946. c.: Gordon N.; Donald E. Exp.: Dir., Rocket Propl. Lab., Univ. of Mich., 1952-54; Dir., Dynamics Lab., Robertshaw-Fulton Engr. Rsch. Inst., Anaheim, Calif., 1954-55; Chf. Rsch. Chemist, Consolidated Electro, Pasadena, Calif., 1955-59; Vice Pres., Rsch., Beckman Instruments, Inc., Fullerton, Calif., 1959-62; Vice Pres., Rsch. & Engrng., Telecomputing Corp., Los Angeles, Calif., 1962—. Hon. Pos.: Dir., Detroit Sect., Am. Rocket Soc.; Chmn., Arrangements Comm., ibid. Mem.: Alpha Chi Sigma; Sigma Xi; Phi Lambda Upsilon; Sigma Pi Sigma; Gamma Alpha. Contbr. to: Jour. of Chemical Physics; Jour. of the A.C.S.; Analytical Chem. Areas of Rsch.: Thermo Chem.; Thermo Dynamics; Propellent Chem.; Propulsion; Combustion; Internal Ballistics; Pneumatics; Hydraulics; Electromechanics; Electronic Components; Analytical and Process Control Instrumentation; Analogue & Digital Computer Components and Systems; Rsch. & Development Administration.

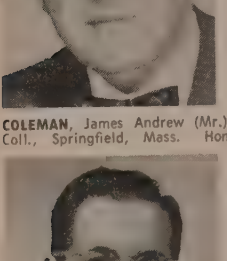
COLE, Wayne (Ph.D.), Rsch. Chemist, Abbott Labs., N. Chicago, Ill. Home Add.: 1224 Norman Lane, Deerfield, Ill. CHEMISTRY. b. Indianapolis, Ind., Nov. 5, 1913. s. John C. and Blanche (Tully) C. Edn.: A.B., DePauw Univ., 1935; A.M., Univ. of Ill., 1936; Ph.D., ibid., 1938. m. Marion Haynes, 1936. c.: Christine; Stephen; David; John; Forrest. Exp.: Asst., Univ. of Ill., 1935-37; Fellow, Univ. of Mich., 1938-39; Rsch. Chemist, Glidden Co., Chicago, Ill., 1939-58; Rsch. Chemist, Abbott Labs., N. Chicago, Ill., 1958—. Hon. Pos.: Chmn., Chicago Sect., Am. Chem. Soc. Mem.: A.A.A.S.; Swiss Chem. Soc.; Soc. Chemical Industry; Ill. Acad. of Sci.; Am. Oil Chemists Soc.; Sigma Xi; Phi Beta Kappa; Phi Lambda Upsilon; Boy Scouts of Am. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem. Areas of Rsch.: Organic Chem. of Natural Products; Steroids and Carcinogenic Substances.

COLE, William Frederick (Ph.D.), Visiting Prof. of Ceramic Technol., Pa. Sta. Univ., University Pk., Pa. Home Add.: 829 N. Thomas St., Sta. Coll., Pa. X-RAY CRYSTALLOGRAPHY IN THE FIELDS OF MINERALOGY AND CERAMICS. b. Narrogin, W. Australia, July 26, 1917. s. Henry Edward and Muriel Anne (Ruffin) C. Edn.: B.Sc., Univ. of W. Australia, 1939; M.Sc., ibid., 1941; Ph.D., Univ. of Cambridge, England, 1949. m. Margaret Ward Gandy, March 16, 1946. c.: Adrienne Joy; Ian Francis; Brian Leslie; Alan Peter; Ivan Stuart. Exp.: Physicist, Munitions Supply Lab., Maribyrnong Victoria, Australia, 1942-46; Rsch. Student, Crystall. Lab., Cavandish Lab., Cambridge, England, 1946-49; Prin. Rsch. Officer, C.S.I.R.O. Aust. Div. of Bldg. Rsch., Melbourne, Victoria, Australia, 1949-62; Visiting Prof., Dept. of Ceramic Technol., Pa. Sta. Univ., 1961—. Mem.: Inst. of Phys., Brit.; Inst. of Ceramics; Brit.; Royal Soc. of W. Australia. Contbrng. Author: The Differential Thermal Investigation of Clays, 1957. Contbr. to: Royal Soc. of W. Australia; Acta Crystallographica; Aust. Jour. of Technol.; Austral. Jour. of Chem. and Appl. Sci.; Nature; Jour. of Am. Ceramic Soc. Areas of Rsch.: Application of and Differential Thermal Analysis and X-Rays to Problems in Mineralogy, Ceramics and Building Research; Application of Mineralogy to Ceramics; X-Ray Structural Analysis.

COLE, Wilbur V. (D.O.), Dir. Rsch., Anat., Kans. City Coll. of Osteopathy and Surgery, 2105 Independence, Kans. City 24, Mo. Home Add.: 3717 Windsor Ave., Kans. City 23, Mo. HISTOLOGY AND NEUROANATOMY. b. Waterville, Me., Jan. 19, 1913. s. Wilbur V. and Elsie (Lakin) C. Edn.: B.A., Univ. of N. H., 1935; D.O., Kirksville Coll. of Osteopathy, 1943; M.A., Northeast Mo.

State Tchrs. Coll., 1954. m. Julia Whitaker of Prospect Harbor, Me., 1936. d. 1. S. and Iva Whitaker. c.: Wilbur V. Cole, III; Dorothy E.; James Whitaker. Exp.: Instr., Embryology and Histology, K.C.O.S., 1943-45; Asst. Prof., Anat., K.C.O.S., 1945-47; Rsch. Dept., K.C.O.S., 1943-47; Burns Osteopathic Rsch. Lab., Coll. of Osteopathic Phys. and Surg., L. A., Calif., 1949-51; Assoc. Prof., Anat., Kans. City Coll. of Osteopathy and Surgery, 1949-51; Dir. Rsch., ibid., 1951—. Hon. Pos.: Chmn., Scientific Exhibits, Am. Osteopathic Assn. Mem.: A.A.A.S.; A.A.U.P.; Am. Osteopathic Assn.; Assoc. Mem., Mo. Radiological Assn.; Sigma Sigma Phi; Acad. of Applied Osteopathy; Masonic Order; Am. Microscopical Soc.; Biological Photographic Assn.; Scientific Rsch. Soc. Am.; Fellow, Am. Coll. Neuropsychiatry. Contbr. to: Jour. of Am. Osteo. Assn.; Anatomical Record; Jour. of Osteopathy; Stain Technology; Jour. Comparative Neurol.; Jour. Biological Photographic Assn.; Trans. Am. Micro. Assn. Special Int.: Histological Demonstration Motor Endings. Areas of Rsch.: Morphology Junction; Nerve and Muscle.

COLEMAN, George William (Sc.D.), Metallurgist, A Street, Southborough, Mass. FERROUS METALLURGY. b. Watertown, Mass., July 4, 1900. s. William P. and Julia (Lucey) C. Edn.: B.S., Tufts Coll., 1923; M.S., M.I.T., 1937; Sc.D., Temple Bar Coll., 1939. m. Sophia Stankievtz, July 15, 1944. c.: Emily. Exp.: Waltham Watch Co., 1923-33; Metallurgist, M.I.T., Cambridge, Mass., 1938-39; Parker Mfg. Co., Worcester, Mass., Metallurgist, 1939—. Mem.: Am. Chem. Soc.; Fellow, A.I.C.; Fellow, A.A.A.S.; A.I.M.E.; N. Y. Acad. of Sci.; 32° Mason; Shriner. Contbr. to: Jour. Am. Chem. Soc. Special Int.: Fabrication and Finishing of Ferrous Materials; Electropolishing.



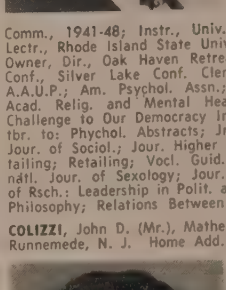
COLEMAN, James Andrew (Mr.), Prof. of Physics, Am. Internatl. Coll., Springfield, Mass. Home Add.: 73 Mary Coburn Rd., Springfield, Mass. PHYSICS AND ASTRONOMY. b. Niagara Falls, N. Y., Mar. 11, 1921. s. John and Marie (Thompson) C. Edn.: B.A., N. Y. Univ., 1946; M.A., Columbia Univ., 1947. m. Ruth Anderson, Sept. 6, 1947. c.: Diana; Carol. Exp.: Assoc. Physicist, Applied Physics Lab., Johns Hopkins Univ., 1947-50; Instr. of Physics and Astronomy, Connecticut Coll., 1950-57; Prof. of Physics, Am. Internatl. Coll., 1957—. Mem.: Am. Physical Soc.; Am. Astronomical Soc.; Am. Assn. for the Adv. of Sci.; Am. Assn. of Physics Tchrs.; Natl. Assn. of Sci. Writers. Author: Relativity for the Layman, 1954; Modern Theories of the Universe, 1962. Serv. Rec.: U.S.N.R., 1942-44. Areas of Rsch.: Guided Missiles, Relativity, Cosmology.

COLEMAN, Jules Victor (M.D.), Clin. Prof. of Pub. Health and Psychiatry, Yale Univ. Schl. of Med., New Haven, Conn. Home Add.: 105 E. Rock Road, New Haven 11, Connecticut. MEDICINE (PSYCHIATRY AND PSYCHOANALYSIS). b. Brooklyn, N. Y., Nov. 2, 1907. s. Louis and Yetta (Lipschutz) C. Edn.: A.B., Cornell Univ., 1928; M.D., Univ. of Vienna, 1934. m. Victoria Anne Schwanfeldt, 1932. c.: Ann Helene; Jeremy Jon. Exp.: Psychiatrist, Pleasantville Cottage Schl., N. Y., 1937-40; Dir., E. Harlem Unit, Bur. of Child Guid., N. Y. C., 1940-42; Hd., Ment. Hyg. Div., Univ. of Colo. Med. Ctr., 1946-50; Chf. Psychiatric Clinic, Grace-New Haven Comm. Hosp., 1952-62; Clin. Prof. of Pub. Health and Psychiatry, Yale Univ. Schl. of Med., 1962—. Hon. Pos.: Chmn., St. of Conn. Commn. on Alcoholism, 1959-61; Diplomate in Psychiatry, Am. Bd. of Psychiatry and Neurology; Pres., Am. Assn. of Psychiatric Clinics for Children, 1949-51. Mem.: Am. Acad. Child Psychiatry; Am. Psychiatric Assn.; Am. Psychoanalytic Assn.; Group for the Adv. of Psychiatry; Am. Orthopsychiatric Assn. Serv. Rec.: U. S. Army, 1942-45.

COLEMAN, Roger Dixon (Ph.D.), Dir., Long Beach Clinical Lab., 806 Security Bldg., 110 Pine Ave., Long Beach 2, Calif. Home Add.: 5646 Naples Canal, Long Beach 3, Calif. CLINICAL LABORATORY. b. Rockwell, Iowa, Jan. 18, 1915. s. Major C. and Hazel (Johnston) C. Edn.: A.B., Univ. of Calif., Los Angeles, 1937; M.S., Univ. of Sou. Calif., 1952; Ph.D., ibid., 1957. m. Emily Helfrich, 1939. c.: Casey; Michael. Exp.: Sr. Lab. Tech., Napa State Hosp., Calif., 1939-42; Dir., Long Beach Clin. Lab., Calif., 1946—. Hon. Pos.: Mem., Calif. State Clin. Lab. Comm., 1953-57; Pres., Alpha Alpha Chapt. of Phi Sigma, 1954. Mem.: Am. Soc. for Microbiol.; Am. Chem. Soc.; Am. Assn. Bioanalysts; Am. Assn. Clin. Chem.; A.A.A.S.; Calif. Assn. Clin. Labs.; Sigma Xi; Phi Sigma; Univ. Club of Long Beach. Contbr. to: Am. Jour. Syph. Gon. & V.D.; E.T.O. Med. Bull.; Am. Jour. Med. Tech. Br. Jour. Ven. Dis.; Jour. Dental Rsch. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Clinical Bionalysis, Serology of Syphilis.

COLEMAN, Paul Evans (Ph.D.), Founder, Owner, Oak Haven, Fairmont, Minn. PHYSICAL SCIENCE (CHEMISTRY); SOCIAL SCIENCE (PSYCHOLOGY). b. Lebanon, Ohio, Dec. 25, 1888. s. Charles F and Adah (Evans) C. Edn.: B.S., Ohio Wesleyan Univ., 1912; B.E., Univ. of Cincinnati, 1924; M.A., Univ. of Chicago, 1934; Ph.D., N. Y. Univ., 1933. Exp.: Employee Secy., Pittsburgh Employers' Assn., 1915-17; Employ Mgr., ibid., 1917-19; Tchng., Fellow, Univ. of Cincinnati, 1923-25; Instr., Northeastern Univ., 1925-26; Prof. of Econs. and Sociol., Guilford Coll., 1926-28; Instr., Univ. of Detroit, 1930-31; Instr., Physchol. and Econ., Bergen Jr. Coll., 1933-36; Organizer and Sec'y, Metropolitan Jr. Coll. Comm., 1938-40; Instr. of Econs., Rogers Univ., 1941; Vocl. and Psychol. Counselor, N. J. Reh. Comm., 1941-48; Instr., Univ. of Bridgeport, 1948-49; Visiting Lectr., Rhode Island State Univ., 1949; Author, 1950—; Founder, Owner, Dir., Oak Haven Retreat, Mid West Silver Lake Writers' Conf., Silver Lake Conf. Clergy and Laymen, 1952—. Mem.: A.A.U.P.; Am. Psychol. Assn.; Am. Acad. Polit. and Soc. Sci.; Acad. Relig. and Mental Health; A.A.A.S.; etc. Author: Challenge to Our Democracy Inside and Outside USA, 1961. Contbr. to: Phychol. Abstracts; Jr. Coll. Jour.; Nation's Schls.; Am. Jour. of Sociol.; Jour. Higher Edn.; Personnel Jour.; Jour. of Retailing; Retailing; Vocl. Guid. Mag.; Jour. of Bus. Edn.; International. Jour. of Sexology; Jour. Engrng. Edn.; and others. Areas of Rsch.: Leadership in Polit. and Church Affairs; Religion; Ethics; Philosophy; Relations Between Men and Women.

COLIZZI, John D. (Mr.), Mathematics Tchr., Triton Regional H. S., Runnemede, N. J. Home Add.: 320 Jefferson St., Norristown, Pa. MATHEMATICS AND SCIENCE. b. Norristown, Pa., Jan. 2, 1926. s. Quintino and P. (Romano) (dec.) C. Edn.: B.S., West Chester St. Coll., 1953; M.A., Villanova Univ., 1962. Exp.: Engr., Philco Corp., Lansdale, Pa., 1953-56; Tchr., Upper Dublin H. S., Upper Dublin, Pa., 1958-59; Tchr., Triton Regional H. S., Runnemede, N. J., 1959—. Mem.: Natl. Council of Tchrs. of Math.; Natl. Sci. Tchrs. Assn.; Am. Assn. for the Adv. of Sci.; N. J. Edn. Assn.; Academy of Natural Scis. of Phila.; Assn. for Math. Tchrs. of N. J.; Natl. Geographic Soc.; Y.M.C.A. Serv. Rec.: U. S. Army Air Force, 1944-46. Areas of Rsch.: Electron Tube Design, Development, and production.

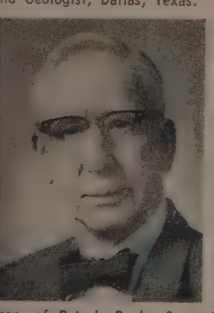


COLES, Harold William (Ph.D.), Rsch. Coordinator and Admin., Pioneering Rsch. Div., QM R. and E. Center, Natick, Mass. Home Add.: 22 Bellefontaine Ave., Framingham, Mass. CHEMSTRY. b. Liverpool, Ohio, July 25, 1[illegible] s. William Gratz and Gertrude (Agner) C. Edn.: B.S., Syracuse Univ., 1923; M.S., Iowa State Coll., 1926; Ph.D., ibid., 1928. m. Esther Ohrbeck, June 18, 1927. c.: Virginia Mary; Elinor Gertrude; Marjorie Ann. Exp.: Instr. in Chem., Iowa State Coll., 1926-27; Organic Chem., Lilly Rsch. Labs., Indianapolis, Ind., 1927-33; Sr. Fellow, Mellon Inst. Ind. Rsch., Pittsburgh, 1933-37; Chf., Plastics and Organic Sect., Bausch & Lomb Optical Co., Rochester, 1942-48; Chf., Chem. Br., Quartermaster Gen. Labs., Philadelphia, 1948-54; Chf., Chem. Br., Picatinny Arsenal, Dover, N. J., 1954-57; Rsch. Div., Quartermaster R. and E Center, Natick, Mass., 1954-57; Rsch. Coordinator and Admnstr., ibid., 1957—. Mem.: Am. Chem. Soc.; A.A.A.S.; Soc. of Am.; Alpha Chi Sigma; Sigma Xi; Phi Lambda Upsilon; Gamma Sigma Delta. Contbr. to: Jour. Am. Chem. Soc.; Jour. Opt. Soc. of Am.; Mod. Plastics; Science; T.A.P.P.I.; Jour. Lab. and Clin. Med.; Current Researches in Anesthesia & Analgesia; Iowa State Coll. Jour. of Sci.; Am. Jour. Pub. Health; Ind. and Engrng. Chem.; etc. Gen. Int.: Developed local anesthetic, Metycaine and optical cements for lenses. Areas of Rsch.: Optical Properties of Plastics; Fermentation By-products; Isolated Carbohydrates; Migration of Plasticizers.

COLLAGAN, Robert Bruce (Mr.), Asst. Prof., Morgan State Coll., Baltimore 12, Md. Home Add.: 1426 Walker Ave., Baltimore 12, Md. STRATIGRAPHIC DIFFERENTIATION OF BLACK SHALES BY INORGANIC ANALYSES: i.e. X-RAY DIFFRACTION OF CLAYS; HEAVY MINERAL ANALYSIS, COMBUSTIBLE CONTENT DETERMINATION, AND INSOLUBLE RESIDUE STUDIES. b. Quincy, Mass., Jan. 15, 1933. s. Edward Haskell and Helen (White) C. Edn.: B.S., Univ. of Mass., 1955; M.S., Univ. of Nev., Mackay Schl. of Mines, 1958. m. Patricia Parkhurst, Mar. 13, 1954. c.: Michael David; Kathleen Dea. Exp.: Res. Engr., Commonwealth of Mass., Middleboro, Mass., 1955-56; Grad. Asst., Univ. of Nev., 1956-58; Physics Tchr., Baltimore Co. Bd. of Edn., Towson, Md., 1958-61; Instr. of Physical Sci., Morgan State Coll., 1961 . Hon. Pos.: Exec. Bd. Mem., Tchrs. Assn., Baltimore Co.; Pres., Sigma Gamma Epsilon. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Sci. Tchrs. Assn.; Natl. Edn. Assn.; Am. Assn. of Physics Tchrs.; Am. Geological Inst.; Am. Assn. of Petroleum Geologists; Md. Acad. of Sci.; Sigma Alpha Epsilon; Sigma Xi; B.P.O.E. Gen. Int.: Am. Legion Scholarship, 1950-51; Lotta Crabtree Scholarship, 1952-53; Mackay Schl. of Mines Scholarship, Univ. of Nev. Areas of Rsch.: Stratigraphic Differentiation of Black Shales by Inorganic Analyses.

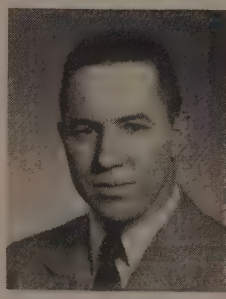
COLLIAS, Eugene Evans (Mr.), Sr. Oceanogr., Univ. of Wash., Dept. of Oceanogr., Seattle 5, Wash. Home Add.: 4318 First Ave., N.E., Seattle 5, Wash. OCEANOGRAPHY, CHEMICAL AND DESCRIPTIVE. b. Cumberland, Wash., Feb. 3, 1925. s. Evans Eugene and Lucy May (Sherwood) C. Edn.: B.S., Univ. Wash., 1946; M.S., Chem., ibid., 1950; M.S., Oceanogr., Univ. of Calif., 1959. m. Dorothy Mae Rigg, June 19, 1949. c.: Rebecca Lynn; Rachel Leanne. Exp.: Jr. Rsch. Oceanographer, Univ. of Wash., 1948-52; Rsch. Instr., ibid., 1953-56; Rsch. Asst., U.C.L.A., Scripps Inst. Oceanogr., 1956-58; Sr. Oceanogr., Univ. of Wash., 1959—. Mem.: Am. Geophys. Union; Geochem. Soc. Contbr. to: Pour. Marine Rsch.; Jour. Sedimentary Petrol. Areas of Rsch.: Chemical Oceanographic Methods; Descriptive Oceanography of Puget Sound and Adjacent Regions; Data Processing; Oceanographic Field Methods.

COLLINGWOOD, Douglas Moore (Dr.), Consultant, Petroleum Engr. and Geologist, Dallas, Texas. Home Add.: 5323 Falls Rd., Dallas 20, Tex. BEHAVIOUR OF FLUIDS IN UNDERGROUND POROUS MEDIA. b. Wimbledon, London, England, Nov. 4, 1887. s. Maj. General Clennell and Annie (Oakes Moore) C. Edn.: B.S., Nova Scotia Tech. Coll., 1911. Hon. Deg.: D.Engr., Nova Scotia Tech. Coll., 1959. m. Margaret Georgia Stewart, Nov. 23, 1935. Exp.: Topographer, Supt. of Const., Mining Engr., Various Companies, N. B., N. S. and Ont., Can., 1909-13; Geologist and Petrol. Engr., Ill. State Geological Survey, Urbana, Ill., 1919-24; Geol., Geophysicist and Petrol. Engr., Sun Oil Co., Dallas, Tex., 1924-54; Independent Petroleum Consultant, 1955—. Mem.: Soc. of Pet. Engr. of A.I.M.E.; A.A.A.S., Fellow; Am. Assn. of Petrol. Geol.; Soc. of Expl. Geophysicists; Dallas Geol. Soc.; Dallas Geophysical Soc.; Sigma Xi; Alpha Sigma Phi. Contbr. to: Ill. Acad. of Sci.; Ill. Geol. Survey Bull.; A.A.P.G. Bull.; A.I.M.E. Trans.; Jour. of Petrol. Tech. Serv. Rec.: Can. Engrs., 1914-19; M.C., Major. Areas of Rsch.: Economic Increase in Oil Recovery by Extraneous Energy from Fluid Injection.



COLLINS, Donald Clark (M.D.), Emer. Asst. Prof. of Surg., Loma Linda Univ., Los Angeles, Calif. GENERAL SURGERY, GYNECOLOGY, GASTROENTEROLOGY. b. Phila., Pa., Jan. 7, 1902. s. Foster Kyle and Pearl (Clark) C. Edn.: B.A., Univ. of Calif., 1923; M.D., Univ. of Calif. Med. Schl., 1927; M.S., Univ. of Minn. Post-Grad. Schl., 1932; M.S., ibid., 1934. Hon. Deg.: D.Sc., Calif., 1947. m. Marion Brandt, Dec. 29, 1928. c.: Ruth Evamay. Exp.: Resident in Surg., Univ. of Calif. Service, 1927-28; Resident-Physician, in Chg. of Entire Hosp., San Francisco City and County Hosp., San Francisco, Calif., 1928-29; Fellow in Pathol. and Surg., The Mayo Fdtn., The Mayo Clinic, Rochester, Minn., 1929-35; Resident-Surgeon, Colonial Hosp., Rochester, Minn., 1933-34; Private Practice as a Consulting Surgeon, Los Angeles, Calif., 1935-40; Entered on Extended Active Duty with the U. S. Army and U. S. Army Air Forces, 1940-45; Private Practice Surg., L. A., Calif., 1945—; Formerly Asst. Prof. of Surg., Coll. of Med. Evangelists, Los Angeles, Calif. Hon. Pos.: Western Regional Repr. of Sect. on Surg. of the Am. Med. Assn., 1961-63; 1st Vice Chmn. of Am. Coll. Proctology, 1961—; Founder-Fellow and Treas., Am. Coll. of Post-Grad. Studies, 1961—; Mem. Adv. Coun. on Surg. Edn. of Am. Soc. of Abdominal Surgs., 1960—, Pres. Elect, 1962-63; Founder-Mem., Am. Med. Writers, 1961—; Pres., Hollywood Exchange Club, 1948; Past Post Comdr., Hollywood Post No. 591, The Am. Legion, Hollywood, Calif., 1949; Past Grand Medicin Grand Voiture of Calif., 40/8, 1952-54; Past Comdr., Hollywood Post No. 2515, V.F.W., 1952-53; Post Comdr., Motion Picture Chapt. No. 1898, Milit. Order of Purple Heart, Hollywood, Calif., 1953-54; The Surgeon, Dept. of Calif., V.F.W., 1953-55; The Surgeon, 5th Dist., V.F.W., Department of Calif., 1952-54; The Sr. Vice-Comdr., Department of Calif. Military Order Purple Heart, 1953-54 and 1955-56; Comdr., So. Calif. Commandery of the Loyal Leg. of The U. S.; Vice-Comdr. of The West, Old Guard, City of Philadelphia; Dir., The Am. Acad. of Appld. Nutri., Pres., 1961-62; Fellow, Am. Coll. of Nutri.; Chf. of Surg., Sunset Blvd. Hosp., 1961—; Former Mem., Surg. Comm., Hollywood-West Hosp. (Both of Hollywood, Calif.); Mem., Sr. Attend. Surgical Staff, and Vice-Chmn. of Surgical Comm., Hollywood-Presbyterian Hosp., L. A., 1936-62; The Natl.-Surgeon, The Milit. Order of The Purple Heart; Pres. of The Hollywood Acad. of Med., 1959; Mem.: Fellow, Am. Coll. of Surg.; Editor-in-Chf., Jour. of Applied Nutrn, 1961—; Mem., Editorial Advisory Bd., Jour. of Abdominal Surg., 1961—; Fellow, Internatl. Coll. of Surg.; Fellow, Internatl. Acad. Proctology, Pres., 1954-55; Fellow, Am. Coll. of Cardiol.; Fellow, A.A.A.S.; Fellow, Natl. Gastroenterol. Assn.; Fellow, Am. Coll. of Gastroenterol., Mem., Bd. of Trustees, 1953-61, 1st V-Pres., 1962, 2nd V-Pres., 1961-62; 3rd V-Pres., 1960-61; Surgeon, Los Angeles Co. Coun., V.F.W., 1956-57; Chef de Train, Pacific Sunset Voiture, 40/8, Hollywood, Calif., 1956-57; Mem., Am. Soc. for Cell Biol., 1961—; Sigma Xi; Phi Sigma; Sigma Delta Chi; Phi Beta Kappa; Diplomate, Internatl. Bd. of Surg.; Sigma Pi; Phi Beta Pi; Beta Beta; Blue "C" of U.C.L.A.; The Loyal Leg. of The U. S.; The Air Force Assn.; World Med. Assn.; Pan-Pacific Surg. Assn.; The Orders and Medals Soc. of Am.; Fellow, N. Y. Acad. of Scis.; Fellow, Royal Anthropological Inst. of Gt. Britain and Ireland; The Centennial Leg. of Historic Milit. Commands, Inc.; Sr. Mem., L. A. Surg. Soc.; Am. Tropical Assn.; Natl. Philatelic Soc.; The Am. Philatelic Soc.; The Soc. of Philatelic Americans; Cmdr., Dept. of Calif., The Milit. Order of the Purple Heart, 1956-57; Sr. Mem., Soc. of Tech. Writers; The Am. Med. Writers Assn.; The Miss. Valley Med. Assn.; Fellow, The Acad. of Psychosomatic Med.; Founder-Diplomate and Internatl. Secy.-General of the Internatl. Bd. of Applied Nutrition; Diplomate, Natl. Bd. of Med. Exam.; Licentiate, The Royal Med. Coun. of Can.; Fellow, Am. Coll. of Angiol.; Fellow, Gerontological Soc.; Fellow, Internatl. Coll. of Angiology; Fellow, Am. Coll. of Nutrition; Founder-mem., Am. Bd. of Abdominal Surg., #14, 1959. Author: Prelude to Peace, 1948. Contbr. to: Am. Surg.; Canadian Med. Assn. Jour.; British Med. Jour.; etc. Gen. Int.: One of 30 Leading Men of Los Angeles, 1960; Founder-Fellow, No. 11, and Internatl. Secy.-General of the Internatl. Coll. of Applied Nutrn., 1960—; Founder and Permanent Internatl. Secy.-Gen. of "El Centuro" Honor Scientific Soc.; Fellow, The Royal Soc. of Med., 1961—. Special Int.: Diseases of the Vermiform Appendix; Peptic Ulcers; The Incan Civilization; Renal Agenesia; Pseudocysts of the Pancreas.

COLLINS, Galen Franklin (Ph.D.), Section Chf., Norwich Products Devel., Norwich Pharmacal Co., Norwich, N. Y. Home Add.: R.D. 1, Sharmen Dr., Norwich, N. Y. PHARMACEUTICAL RESEARCH AND DEVELOPMENT, CLINICAL DIAGNOSTICS, PHARMACEUTICAL CHEMISTRY. b. Winona Lake, Ind., Dec. 29, 1927. s. Harry F. and Elsie (Bahney) C. Edn.: B.S., Purdue Univ., 1949; M.S., ibid., 1952; Ph.D., ibid., 1954. m. Ann Elizabeth Averitt, Sept. 30, 1956. c.: Galen Robert; Amelia Lynn. Exp.: Grad. Asst., Purdue Univ., 1949-52; Rsch. Fellow, ibid., 1952-53; Pharmaceutical Chemist, Miles Labs., Inc., 1953-58; Asst. to Dir., Miles-Ames Pharm. Rsch. Lab., 1958-59; Sr. Rsch. Scientist, and Sect. Hd., Ames Sect., Pharm. Rsch. Lab., Miles Labs., Inc., 1959-60; Section Chf., Norwich Products Development, Norwich Pharmacal Co., Norwich, N. Y., 1960—. Mem.: Am. Chem. Soc.; A.Ph.A.; Fellow, A.A.A.S.; Fellow, Am. Inst. of Chemists; Sigma Xi; Rho Chi; Phi Lambda Upsilon; B.P.O.E. Contbr. to: Clin. Chem.; Jour. of A.P.H.A.; Sci. Edn. Gen. Int.: U. S. Patents on Clinical Diagnostics and Stabilization of Drugs, Simple Colorimetric Test for Proteinuria. Areas of Rsch.: Clinical Diagnostics, Pharmaceutical Formulations, Antiperspirants.

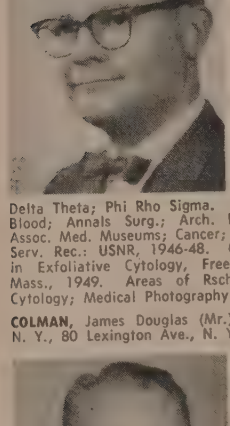


COLLINS, J. Forrest, Jr. (Mr.), Area Mgr., Texaco Inc., Box 1722, Atlanta 1, Ga. Home Add.: 3958 Land O'Lakes Drive, N.E., Atlanta 5, Ga. RESEARCH AND TECHNICAL APPLICATION OF PETROLEUM AND ITS PRODUCTS. b. Hartford, Ala., Oct. 17, 1905. s. Jesse F. and Bessie (Voss) C. Edn.: B.S., Auburn Univ., 1927. m. Minnie Ruth Edge, Dec. 31, 1929. c.: Shari; Wayne. Exp.: Chem. Engr., Texaco Inc., Port Arthur, Tex., 1929-36; Technologist, ibid., New York, N. Y., 1936-43; Sr. Technologist, ibid., Houston, Tex., 1943-55; Area Mgr., ibid., Atlanta, Ga., 1955—. Hon. Pos.: Pres., Jr. Chamber Commerce; Pres., Reserve Officers Assn.; Chmn., Soc. of Automotive Engrs. Mem.: Am. Assn. Adv. of Sci.; Am. Inst. of Chemists; Soc. of Automotive Engrs.; Natl.

Geographic Soc.; Am. Soc. Lubrication Engrs.; Tech. Assn. Pulp and Paper Industry; Phi Delta Chi; Gamma Sigma Epsilon; Kappa Kappa Psi; Lion's Club. Serv. Rec.: U.S.A.R., 1924-38. Areas of Rsch.: Fuels and Lubricants—Manufacture and Application.

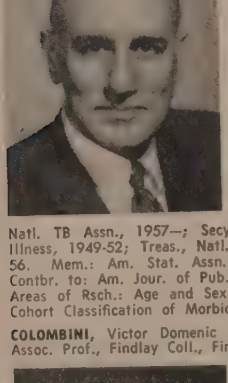
COLLINS, Leonard Leon (Mr.), Mem., Rsch. Staff, Nortronics, Div. of Northrop Corp., Rsch. Park, Palos Verdes Estates, Calif. Home Add.: 23532 Dolores St., Wilmington, Calif. ASTROPHYSICS AND CELESTIAL MECHANICS. b. Detroit, Mich., Jan. 7, 1937. s. C. L. and Engelina (Schnur) C. Edn.: A.A., El Camino J. C., 1957; B.A., U.C.L.A., 1959. m. Deanna Zesiger, Feb. 1, 1960. c.: Leonard Alan. Exp.: Jr. Engr., Northrop Corp., Hawthorne, Calif., summers, 1954-58; Assoc. Engr., Nortronics, Div. of Northrop Corp., ibid., 1959-60; Rsch. Staff, ibid., Palos Verdes, Calif., 1960. Hon. Pos.: Mem. of Bd. of Engrng. Club of El Camino Jr. Coll., 1955-56. Mem.: Am. Rocket Soc.; The Optical Soc. of Am.; Astronomical Soc.. of the Pacific; Sigma Pi Sigma. Areas of Rsch.: Astrophysics and Celestial Mechanics.

COLLINS, William Thomas (M.D.), Dir. of Lab., Lima Memorial Hosp., Lima, Ohio. Home Add.: 1524 Fairway Dr., Lima, Ohio.



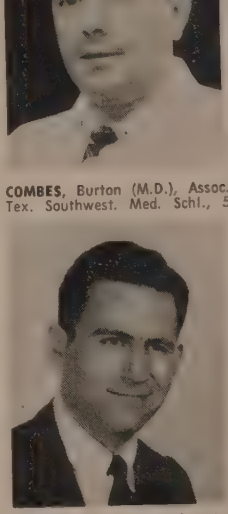
MEDICINE-PATHOLOGY. b. Omaha, Nebr., Feb. 21, 1922. s. John M. and Elizabeth (Ewing) C. Edn.: B.S., Univ. of Ky., 1942; M.D., Univ. of Mich., 1944. m. Ann Adams, May 30, 1942. c.: William T., Jr.; Carol; John M.; Donald B. Exp.: Instr., Univ. of Cincinnati Coll. of Med., 1948-50; Asst. Prof., ibid., 1950-55; Pathologist, Good Samaritan Hosp., Cincinnati, Ohio, 1952-55; Assoc. Pathologist, Blodgett Mem. Hosp., Grand Rapids, Mich., 1956-57; Dir. of Lab., Lima Memorial Hosp., Lima, Ohio, 1957—. Mem.: Am. Soc. Clin. Pathol.; Am. Assn. Path. and Bact.; Coll. Am. Path.; Internatl. Acad. Pathol.; Diplomate, Am. Bd. Path.; Sigma Xi; AAAS; Ohio Acad. of Sci.; Phi Delta Theta; Phi Rho Sigma. Contbr. to: Ohio State Med. Jour.; Blood; Annals Surg.; Arch. Derm. and Syph.; Bull. Internatl. Assoc. Med. Museums; Cancer; Surg. Gyn. and Ob.; Jour. Urology. Serv. Rec.: USNR, 1946-48. Gen. Int.: Am. Cancer Soc. Fellow in Exfoliative Cytology, Free Hospital for Women, Brookline, Mass., 1949. Areas of Rsch.: Surgical Pathology, Exfoliative Cytology; Medical Photography.

COLMAN, James Douglas (Mr.), Pres., Associated Hosp. Serv. of N. Y., 80 Lexington Ave., N. Y. 16, N. Y. Home Add.: 59 Drake Rd., Scarsdale, N. Y. MORBIDITY STATISTICS. b. N.Y.C., Apr. 20, 1910. s. Cecil and Margaret (Plenderleith) C. Edn.: M.E., Cornell Univ., 1932. m. Ruth Baldwin, 1935. c.: Ann Elizabeth; Jane Carol. Exp.: Mgr. of Med. Hosp. and Dental Div., New Jersey Emergency Relief Admin., 1932-35; Exec. Secy., Hosp. Coun. of Essex County, N. J.; Exec. Dir. of Hosp. Serv. Plan of N. J., 1935-37; Exec. Dir., Md. Hosp. Serv., Inc. and Md. Med. Serv., Inc., 1937-51; Vice-Pres., Johns Hopkins Univ. and Hosp., 1951-57; Vice-Pres. and Secy., Natl. Blue Cross Assn., Inc., 1957-60; Pres., Associated Hosp. Serv. of N. Y., 1960—. Hon. Pos.: Chmn., Natl. Blue Cross Comm., 1947-50; Treas., Natl. TB Assn., 1957—; Secy.-Treas., Natl. Comm. on Chronic Illness, 1949-52; Treas., Natl. Comm. on Chronic Illness, 1952-56. Mem.: Am. Stat. Assn.; Am. Pub. Hlth. Assn. (Fellow). Contbr. to: Am. Jour. of Pub. Health; Jour. of Am. Hosp. Assn. Areas of Rsch.: Age and Sex Variations in Hospital Utilization; Cohort Classification of Morbidity Data.



COLOMBINI, Victor Domenic (Ph.D.), Hd., Dept. of Earth Sci., Assoc. Prof., Findlay Coll., Findlay, Ohio. Home Add.: 532½ S. Main, Findlay, Ohio. GEOMORPHOLOGY, CRYSTALLOGRAPHY, ECONOMIC GEOLOGY, PHYSICAL AND REGIONAL GEOGRAPHY. b. Boston, Mass., Feb. 2, 1924. s. Joseph and Grace (Brancaccio) C. Edn.: A.B., Boston Univ. Coll. of Liberal Arts, 1950; A.M., Boston Univ. Grad. Schl., 1952; A.M., ibid., 1953; Ph.D., ibid., 1961. Exp.: Geologist, U. S. Atomic Energy Comm., Albuquerque, New Mex., 1955; Asst. Prof. of Geol., La. Polytech. Inst., 1956-61; Acting Asst. Prof. of Geol., Univ. of Miss., 1961; Assoc. Prof. of Earth Sci., Head Dept., Findlay Coll., 1961—. Mem.: G.S.A.; Mineralogical Soc.; Am. Geochem. Soc.; Assn. of Geol. Tchrs.; Am. Assn. of Petroleum Geography; Assn. of Am. Geographers; A.A.A.S.; Soc. of Econ. Paleontols. and Mineists.; Sigma Gamma Epsilon; Alpha Phi Delta. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Geomorphology (Glacial), Crystallography, Petrography.

COLON, Paul Leslie (Mr.), Rsch. Asst., Mallory Inst. of Pathology, 784 Mass. Ave., Boston, Mass. Home Add.: 689 Washington St., Dorchester 24, Mass. GASTROINTESTINAL RESEARCH. b. Boston, Mass., June 1, 1929. s. Warren Burton and Mildred Viola (Jeffery) C. Edn.: A.B., Boston Univ., 1958. m. Patricia M. Corcoran, June 24, 1950. c.: Paul A.; Donna M. Exp.: Rsch. Asst., Mallory Inst. of Pathol., Boston, Mass., 1957—; Consultant, Leary Lab., Boston, Mass., 1962—. Mem.: Am. Assn. for the Advancement of Science; Animal Care Panel. Contbr. to: Jour. of Lab. and Clin. Med.; The Am. Jour. of Digestive Diseases; Gastroenterol.; The Armed Forces Bull. Serv. Rec.: U.S.N., 1946-48, 1950-52. Areas of Rsch.: The Physiology of the Gastrointestinal Tract.



COMBES, Burton (M.D.), Assoc. Prof. of Internal Med., Univ. of Tex. Southwest. Med. Schl., 5323 Harry Hines, Dallas 35, Tex. Home Add.: 3541 Greenbrier, Dallas, Tex. INTERNAL MEDICINE. b. N.Y.C., June 30, 1927. s. Nathan and Helen (White) C. Edn.: A.B., Columbia Coll., 1947; M.D., Columbia Univ. Coll. of Physicians and Surgeons, 1951. m. Mollie Hart Allensworth, June 3, 1948. c.: Burton, Jr.; Hilary Elizabeth; Rustin Bradley. Exp.: U. S. Pub. Health Serv., Postdoctorate Rsch. Fellow, Dept. of Med., Columbia Univ. Coll. of Physicians and Surgeons, 1953-55; Rsch. Fellow of Am. Heart Assn., Dept. of Med., ibid., 1955-56; Rsch. Fellow of Am. Heart Assn., Dept. of Med., Univ. Coll. Hosp. Med. Schl., London, England, 1956-57; Established Investigator, Am. Heart Assn., 1957-62; Instr. in Internal Med., The Univ. of Tex. Southwestern Med. Schl., 1957-59; Asst. Prof. of Internal Med., ibid., 1959-62; Assoc. Prof. of Internal Med., ibid., 1962—. Mem.: Alpha Omega Alpha; Sigma Xi; Am. Federation for Clinical Rsch.; Am. Diabetes Assn.; Am. Heart Assn.; Am. Med. Assn.; Am. Assn. for the Study of Liver Disease; Nu Sigma Nu; So. Soc. for Clin. Rsch.; Cent. Soc. for Clin. Rsch.; Am. Soc. for Clin. Invest.; Diplomate, Am. Bd. of Internal Med. Contbr. to: Jour. of Clin. Invest.; Jour. of Lab. and Clin. Med.; Sci.; New Eng. Jour. of Med.; Metabolism; Annals of the N. Y. Acad. of Sci.; Clin. Sci. Serv. Rec.: U. S. Navy, 1945-47. Gen. Int.: Rsch. Career Devel. Award, U.S.P.H.S., 1962. Areas of Rsch.: Liver Metabolism and Disease; Renal Physiology; Diabetes and Carbohydrate Metabolism.

COMBS, William F. (Ph.D.), Asst. Prof. of Psychol., Otterbein Coll., Westerville, Ohio. Home Add.: 27 Logan Ave., Westerville, Ohio. SOCIAL PSYCHOLOGY. b. Keystone, W. Va., Mar. 6, 1924. Edn.: B.A., W. Va. Univ., 1948; M.A., ibid., 1949; Ph.D., Univ. of Okla., 1957. m. Charlotte Richardson, Dec. 28, 1949. Exp.: Visiting Asst. Prof., Univ. of Tulsa, 1957-58; Asst. Prof., Otterbein Coll., 1960—. Mem.: A.A.A.S.; Am. Psychol. Assn.; Phi Beta Kappa; Sigma Xi; Psi Chi; Am. Assn. of Univ. Profs. Contbr. to: Sociometry. Areas of Rsch.: Ego Stability of the Blind as Affected by the Structuredness of Social and Physical Space Conditions; Personality Organization as Affected by Perceptual and Conceptual Factors; The Consequences of Psychological Stability of Forced Changes in the Self-concept Issuing from Social and Physiological Handicaps.

COMISH, Newel Howland (Ph.D.), Prof. Emeritus of Bus. Admin., Univ. of Ore., Eugene, Ore. ECONOMICS: SPECIALTY, MARKETING. b. Mountain Home, Utah, Jan. 30, 1888. s. Nephi Robert and Emma Jane (Howland) C. Edn.: B.S., Utah State Univ., 1911; M.S., Univ. of Wis., 1915; Ph.D., ibid., 1929. m. Louise Larson, May 8, 1913. c.: Dr. Alison Thorne; Mrs. Elaine Scott; Dr. Newel William; Conrad Howland. Exp.: Instr. in Economics, Ore State Coll., 1915-17; Asst. Prof., ibid., 1917-18; Assoc. Prof., ibid., 1918-20; Prof., ibid., 1920-32; Prof of Bus. Admin., Univ. of Ore., 1932-53; Consultant in Mgt., Selling and Buying, Eugene, Ore., 1953-58; Prof. Emeritus of Bus. Admin., Univ. of Ore., 1959—. Hon. Pos.: Pres., Ore. State Coll. Chap., Phi Kappa Phi, 1931-32. Mem.: Am. Assn. for the Adv. of Sci.; Am. Econ. Assn.; Am. Marketing Assn.; Pi Kappa Phi; Alpha Kappa Delta; Eta Mu Pi; Lions Club. Author: The Standard of Living

Elements of Consumption, 1923; The Marketing of Agricultural Products, 1929; The Marketing of Manufactured Goods, 1935; Small Scale Retailing, 1946. Contbr. to: Jour. of Marketing; Jour. of Retailing; Dun's Rev. and Mod. Industry; Phi Kappa Phi Jour. Areas of Rsch.: Marketing.

COMMONER, Barry (Dr.), Prof. of Plant Physiol., Washington Univ., Seattle, Wash.

COMPERE, Edgar Lattimore (Ph.D.), Sr. Chemist, Reactor Chemistry Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn. PHYSICAL CHEMISTRY. b. Hamburg, Ark., Jan. 23, 1917. s. Ebenezer Lattimore and Emma Lucille (Hawkins) C. Edn.: B.A., Ouachita Coll., 1938; M.S., La. State Univ., 1940; Ph.D., ibid., 1943. m. Maria Luz Perez, Aug. 16, 1945. c.: Alicia Lucille; Margaret Sue; Maria Teresa. Exp.: Chemist, Esso Standard Oil Co., La. Div., Baton Rouge, La., 1942-46; Asst. Prof. of Chem., La. State Univ., Baton Rouge, La., 1946-51; Assoc. Prof. of Chem., ibid., 1951; Sr. Chemist, Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1951—; Asst. Chief, Reactor Materials Rsch. Sect., Reactor Chem. Div., 1955; Chief, Blanket (Slurry), Materials Sect., 1958. Mem.: Sigma Xi; Phi Kappa Phi; Phi Lambda Upsilon; Am. Chem. Soc.; A.A.A.S.; Am. Nuclear Soc.; Natl. Assn. of Corrosion Engrs.; Alpha Chi Sigma. Contbr. to: Jour. Am. Chem. Soc.; Indusl. and Engrng. Chem.; Reactor Sci. and Technology (Classified); Jour. Physical Chem; Nucleonics. Special Int.: Gas and Solution Reaction Kinetics; Solvent Extraction; Distillation; High Vacuum; High Pressure; Corrosion; Nuclear Reactor Chem.; Aqueous Slurries.

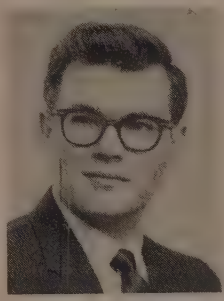
COMPTON, Ell Dee (Ph.D.), Appl. Rsch. Dir., Maumee Chem. Co., 1310 Expressway Dr., Toledo 8, Ohio. Home Add.: 4569 Indian Ridge Rd., Sylvania, Ohio. CHEMISTRY; CHEMICAL ENGINEERING; LEATHER; STATISTICS. b. Wilmington, Ohio, Mar. 16, 1916. s. R. L. and Evalena (Bliss) C. Edn.: Ch.E., Univ. of Cincinnati, 1939; M.S., ibid., 1940; Ph.D., ibid., 1942. m. Rowena Gregory, Mar. 4, 1944. c.: Olivia B. Exp.: Rsch. Assoc., Tanners' Coun. Lab., Univ. of Cincinnati, 1942-43; Gr. Leader, Monsanto Chem. Co., Everett, Mass., 1943-52; Rsch. Dir., Eagle Ottawa Leather Co., Grand Haven, Mich., 1952-60; Rsch. Gr. Leader, Maumee Chem. Co., Toledo, Ohio, 1960—. Mem.: Sigma Xi; A.A.A.S.; Am. Chem. Soc.; Phi Lambda Upsilon; Alpha Chi Sigma; Triangle. Contbr. to: Jour. of the Am. Leather Chem. Assn. Areas of Rsch.: Leather; Statistics.

CONGDON, M(erritt) Stanley (Ph.D.), Dean of Graduate School, Prof. of Basic Sci., Trinity Coll., Clearwater, Fla. PSYCHOLOGY AND PHILOSOPHY OF SCIENCE. b. Washington Mills, N. Y., Feb. 25, 1897. s. Rev. Merritt J. and S. Grace (Anderson) C. Edn.: B.Ped., Pikes Peak Sem., 1932; A.B., Burton Coll., 1937; S.T.D., ibid., 1939; M.A., Webster Univ., 1940; Ph.D., ibid., 1944; Sc.D., ibid., 1946. m. Helen Edith Bollenback, Aug. 30, 1944. Exp.: Prof. of Psychol., Burton Coll., 1940-50; Dean, Prof. of Psychol., Sci. and Lang., Immanual Coll. of the Bible, W. Va., 1951-53; Prof. of Sci. and Lang., Trinity Coll., 1953-57; Registrar, ibid., 1954-57; Tech. Advisor and Chmn. of Curr. Comm., Univ. of Tarpon Springs, Fla., 1960-61; Spec. Lectr., Philos. of Sci., Trinity Coll., Clearwater, Fla., 1961-62; Dean, Grad. Schl., ibid., 1963—; Presbyterian Minister, 1924—. Mem.: Am. Assn. Adv. of Science; Am. Scientific Affiliation; Natl. Sci. Tchrs. Assn.; N.E.A.; Assn. for Higher Edn.; Natl. Assn. of Biblical Instrs.; N. Y. Acad. of Scis.; Soc. of Bib. Lit. and Exeg.; Am. Schls. of Oriental Rsch.; Evang. Theol. Soc.; Mediaeval Acad. of Am.; Rotary. Author: Problem Counselor, 1941; Philosophy of Sci., 1949; Biblical Rsch., 1949. Contbrng. Author: The Evidence of God in an Expanding Universe, 1958. Areas of Rsch.: Phobocentrism in Psychogenic Maladiustments; The Psychology of Aurelius Augustinus; A Christian Philosophy of Science; The Historicity and Permanent Values of the Isaianic Theology.

CONN, Howard Franklin (M.D.), Pres., Rsch. Inst. for Medical Diagnosis, 239 McClellandtown Rd., Uniontown, Pa. Home Add.: 125 Brownfield Rd., Uniontown, Pa. MEDICAL EDITOR, ELECTRO ENCEPHALOGRAPHY, RESEARCH IN MEDICAL DIAGNOSIS. b. Smithfield, Pa., Dec. 24, 1908. s. Ash F. and Anna (Brown) C. Edn.: B.S., W. Va. Univ., 1935; M.D., Johns Hopkins Med. Schl., 1939. m. Elouise Ross, June 8, 1943. c.: Mary Katherine; Sue Elouise; William Howard; Thomas James. Exp.: Asst., Johns Hopkins Med. Schl., Baltimore, Md., 1939-40; Fellow, Baylor Schl. of Med., Houston, Tex., 1955-56; Pres., Rsch. Inst. for Med. Diagnosis, Uniontown, Pa., 1962—. Mem.: Am. Diabetes Assn.; Am. Assn. for Adv. of Sci.; Aerospace Med. Assn.; Johns Hopkins Med. and Surgical Soc.; Am. Soc. of Electroencephalography; Am. Med. Assn.; Alpha Zeta; Alpha Kappa Kappa. Editor: Current Therapy. Co-Editor: The Specialties in General Practice, 1957. Contbr. to: Med. Clin. of North Am. Serv. Rec.: AUS, 1942-46. Areas of Rsch.: Medical Diagnosis; Electroencephalography; Medical Editing.

CONN, John Ferguson (Ph.D.), Prof. of Chem., John B. Stetson Univ., DeLand, Fla. Home Add.: 121 W. Wisconsin Ave., DeLand, Fla. ORGANIC CHEMISTRY. b. Franklin, Ky., Mar. 13, 1899. s. Notley Thompson and Ella Belle (Ferguson) C. Edn.: B.S., Georgetown Coll., 1920; M.S., Univ. of Chicago, 1924; Ph.D., Univ. of Pittsburgh, 1926. m. Morton Rice Welborn, Jan. 1, 1922. c.: John Morton. Exp.: Instr., Georgetown Coll., 1920-21; Prof., S.W. Baptist Coll., Bolivar, Mo., 1921-23; Grad. Asst., Univ. of Pittsburgh, 1923-26; Prof., Judson Coll., 1926-29; Prof., Stetson Univ., 1929—. Hon. Pos.: Secy., Fla. St. Bd. of Examiners in the Basic Scis.; Lt. Gov., Fla. Kiwanis Club. Mem.: Am. Chem. Soc.; Fla. Acad. of Scis.; Phi Lambda Upsilon; Gamma Sigma Epsilon. Contbr. to: Jour. Am. Electrochemical Soc. Areas of Rsch.: Electrolytic Oxidations of Organic Compounds.

CONNELLY, Robert James (Mr.), Chmn., Biol. Dept., Finneytown H.S., Cincinnati 31, Ohio. Home Add.: 2840 Pine Grove Ave., Cincinnati 8, Ohio. BIOLOGY AND SCIENCE EDUCATION. b. Columbus, Ohio, Nov. 20, 1933. s. Kenneth Austin and Margaret (Dunnick) C. Edn.: B.A., Bowling Green St. Univ., 1955; B.S., ibid., 1955; M.A., St. Coll. of Ia., 1959. Exp.: Sci. Tchr., Woodward H.S., Cincinnati Bd. of Edn., Cincinnati, Ohio, 1955-61; Chmn., Biol. Dept., Curr. Coordinator of TV Sci. Prog., Finneytown H.S., Cincinnati, Ohio, 1961—. Hon. Pos.: Vice-Pres., Southwest Sect., Ohio Sci. Edn. Assn. Mem.: A.A.A.S.; Am. Inst. of Biolog. Scis.; Natl. Biol. Tchrs. Assn.; Ohio Acad. of Sci.; Natl. Sci. Tchrs. Assn.; N.E.A.; Ohio Edn. Assn.; Phi Delta Kappa; Beta Beta Beta; Phi Kappa Psi; Cincinnati Schlmasters Club. Contbr. to: Am. Biol. Tchr. Areas of Rsch.: Investigating Effectiveness of Team-Tchng. with Closed Circuit TV in Jr. H. S. Curriculum; Gregarine Parasites of Grasshoppers.



CONRAD, Agnes (M.D.), Physician, 1726 M St., N.W., Wash. 6, D. C. Home Add.: 3700 Mass. Ave., N.W., Wash. 16, D. C. PSYCHIATRY AND PSYCHOANALYSIS. b. Clinton, Mo., Jan. 31, 1891. d. Cuthbert Powell and Sara Eugenia (Harris) C. Edn.: B.S., Univ. of Ariz., 1915; M.S., Univ. of Wis., 1919; M.D., Johns Hopkins Univ. Med. Schl., 1925. Exp.: Rsch. Asst. in Psychology, Univ. of Wis., 1920-21; Student Asst. in Anatomy, ibid., 1921-22; Intern, Med. Surgery and Psychiatric, St. Elizabeth Hosp., Wash., D. C., 1925-27; Asst. Med. Officer, ibid., 1927-29; Assoc. Attending Psychiatrist, Vanderbilt Clinic and Assoc. in Med., Presby. Hosp., 1929-46; Assoc. in Psychiatry, Coll. of Physicians and Surgeons, Columbia Univ., 1929-46; Senior Psychiatrist, V.A., D. C. Regional Mental Hyg. Clin., 1947-49. Hon. Diplomate, Am. Bd. of Psychiatry and Neurology in Psychiatry. Mem.: Life Fellow, Am. Psychiatric Assn.; N. Y. Acad. of Med.; Fellow, A.M.A.; Fellow, A.A.A.S.; Med. Soc. D. C.; Med. Soc. St. Elizabeth's Hosp.; Assn. Milit. Surgeons; N. Y. Acad. of Scis. Contbr. to: Jour. N. & M. Dis.; Am. Jour. Psychiatry; Psychoanalytic Rev.; Am. Jour. Orthopsychiatry; Ann. Meeting Med. Soc. of St. Elizabeth's Hosp., 1957, 1959. Serv. Rec.: LCDR-MC—U.S.N.R., 1944-46. Areas of Rsch.: Psychiatric Problems in Medical and Surgery Practice; Brief Therapy in Naval Service and Out-Patient Clinics; Differentiation and Discrimination in Psychoanalysis.

CONRAD, John P(eter) (Ph.D.), Agric. Advisor to the Univ. of Panama under Univ. of Tenn. contract with U.S.A.I.D.-Panama c/o Univ. of Panama, Apartado 3277, Panama, Rep. de Panama. SOIL AND PLANT INTER-RELATIONS. b. Rialto, Calif., Oct. 29, 1893. s. Francis and Sarah (Adams) C. Edn.: B.S., Univ. of Calif., 1917; Ph.D., ibid., 1933. m. Marion Louise Andrews of Norwalk, Ohio, June 22, 1921. d. Americus and Edna Andrews. c.: John P., Jr. Exp.: Tchr. of Agric., Marysville H.S., Calif., 1920-21; Asst. and Assoc. in Agry., Univ. of Calif., 1921-27; Asst. Agron. in the Exptl. Sta., 1927-31; Assoc., ibid., 1931-43; Lectr. in Agry., 1935-39; Assoc. Prof. of Agry., 1939-43; Prof. of Agry. and Agron. in the Exptl. Sta., Univ. of Calif., 1943-59; Temp. Specialist in Agron. under Univ. of Calif. Contract in Chile, 1957; Prof. of Agry., Emer. and Agron. in The Exptl. Sta.,

Emer., Univ. of Calif., Davis, 1959. Hon. Pos.: Hon. Fellow, Ohio State Univ. and Univ. of Minn., 1934. Mem.: Am. Soc. of Agron.; Fellow, Am. Soc. of Agron.; Soil Sci. Soc. of Am.; Western Soc. of Soil Sci.; Am. Soc. of Plant Physiol.; Am. Chem. Soc.; Alpha Gamma Rho; Alpha Zeta; Sigma Xi; Phi Beta Kappa. Contbr. to: Soil Sci.; Plant Physiol.; Jour. of Agri. Rsch.; Jour. of Am. Soc. of Agry.; Soil Sci. Soc. of Am., Proc. Ph.D. Dissertation: The Relation of Colloid Dispersion in Soils to Chem. Changes Induced by Biological Transformations of Organic Materials. Travel: Can.; S. Africa; Belgian Congo; E. Africa; Egypt; Asia Minor; Europe; S. Am. Gen. Int.: Elected Faculty Rsch. Lectr. at Davis for 1948. The lecture was given Mar. 16, 1948, entitled, "Crop Residues and Humus in Relation to the Supply of Plant Nutrients." Listed in: A.M.S.; Who Knows—and What; W. W. in the Pacific Coast. Special Int.: Enzymes in Soil and Plant Interrelations; Effect of Crops and Crop Residues upon the Soil and upon Following Crops.

CONRAD, Marion L. (Mrs.), U.S.A.I.D., Box 'J', Balboa, Canal Zone. NUTRITION, ALLERGY SPECIALTY AS CONSULTING DIETITIAN. b. Norwalk, Ohio, Aug. 8, 1894. d. A. V. and Edna (Hayden) Andrews. Edn.: Attended, Simmons Coll., Boston, Mass., 1912-15; Home Econ. Cert., Santa Barbara State Coll., 1915-16. m. Dr. John P. Conrad, June 22, 1921. c.: John P., Jr. Exp.: Hd. of Canteen and Nutrition Classes, Am. Red Cross, Pasadena, Calif., 1917-18 and Imperial Valley, Calif., 1919-20; Dietetics, Physiol., and Lunch Room Mgr., Pasadena H. S., Pasadena, Calif., 1920-21; Consulting Dietitian on Allergy Diets, Davis and Sacramento, Calif. area, 1921—. Mem.: Am. Home Econ. Assn.; Calif. Home Econ. Assn.; Women's Forum of Sacramento; Am. Women of Chile; Inter-Am. Club, Panama City. Author: Allergy Cooking, 1955; Food Allergy Work Book, 1961. Contbr. to: Ferreting out Food Allergies. Areas of Rsch.: Food testing from a Basic Diet by means of charts and records to determine sensitivities causing allergic disturbances and reproducing results for people along with their own doctors.

CONWELL, John William (Mr.), Supt. Chemical Engrng. Sect., Rsch. and Devel. Dept., DX-Sunray Oil Co., Tulsa, Okla. Home Add.: 1421 S. Baltimore, Tulsa, Okla. CHEMICAL ENGINEERING; PETROLEUM REFINING; PETROCHEMICAL DEVELOPMENT. b. Council Bluffs, Ia., Dec. 26, 1910. s. Eugene C. and Cora M. (Powell) C. Edn.: B.S., Ia. St. Coll., 1932; M.S., ibid., 1934. m. Bessie May Plexco, Aug. 31, 1940. c.: John W.; Jene W. Exp.: Tide Water Assoc. Oil Co., Drumright, Okla., Supvr. Exptl. Lab., 1936-39; Process Engr., Engrng. Dept., ibid., Bayonne, N. J., 1939-46; Tech. Coordinator, Staple Devel. Dept., Am. Viscose Corp., Nitro, W. Va., 1946-51; Supt. Process Lab., Devel. and Rsch. Dept., Continental Oil Co., Ponca City, Okla., 1951-58; Supt., Chemical Engrng. Sect., Rsch. Devel. Dept., DX-Sunray Oil Co., 1958—. Mem.: Am. Chem. Soc.; Sigma Xi; Am. Inst. of Chem. Engrs.; Am. Assn. Adv. Sci.; Okla. Acad. of Sci.; Phi Lambda Upsilon. Contbr. to: Numerous Jour. and patents. Areas of Rsch.: Chemical Engrng.; Devel. in Petrol. Refining Processing and Petrochemicals.

CONSTANT, Clinton (Mr.), Mgr., Fla. Rsch. Div., Armour Agric. Chemical Co., P.O. Box 1218, Bartow, Fla. Home Add.: 901 Avon Ave., Lakeland, Fla. FLUORIDE CHEMISTRY AND CHEMICAL ENGINEERING. b. March 20, 1912, Nelson, B. C., Canada. s. Vasile and Annie C. Naturalized U. S. Cit., 1942. Edn.: S.B. (Honors), Univ. of Alberta, Edmonton, Alberta, 1935; Postgraduate, ibid., 1936; Doctorate Training, Western Reserve Univ., Cleveland, Ohio, 1936-39. m. Mary E. (Betty) Dunlap, April 21, 1950. Exp.: Asst. in Physics, Univ. of Alberta, Edmonton, Alberta, 1931-32; Instr. in Chem., ibid., 1934-35; Grad. Instr., Chem., ibid. 1935-36; Develpmt. Engr., Harshaw Chemical Co., Cleveland, Ohio, 1936-38; Acid Plant, Foreman and Engr., ibid., 1938-43; Acid Plant Supt. and Engr., Nyotex Chemicals Inc., Houston, Tex., 1943-47; Chf. Develpment. Engr., ibid., 1947-48; Sr. Chem. Engr., Semi-Works Dept., Harshaw Chemical Co., Cleveland, Ohio, 1948-50; Mgr. of Engrng., Ferro Chemical Corp., Bedford, Ohio, 1950-52; Tech. Asst. Mfg. Dept., Armour Agril. Chem. Co., Bartow, Fla., 1952-61; Mgr., Fla. Rsch Div., Armour Agril. Chemical Company, Bartow, Fla., 1961—. Mem.: Am. Inst. Chem. Engrs.; Am. Chem. Soc.; Am. Rocket Soc.; Fellow, Am. Assn. Adv. of Sci.; Am. Astron. Soc.; Astron. Soc. of the Pacific; Royal Astron. Soc. of Canada. Contbr. to: Canadian Jour. Rsch.; Private Communications. Sci. Fiction Writer: Author, War of the Universe; The Martian Menace; etc. Achievement: Designed and Engineered Fully Automatic Continuous "Push Button" Napalm Manufacturing Plant of Ferro Corp. at Bedford, Ohio, in 1951. Specialty: Anhydrous HF, Its Chemistry, Rsch. and Production, Including Fluorine Cmpds. Special Int.: Engrng. Design and Automatic Control; Astronomy (Surface Conditions of the Planets); Musician (Concert Pianist); Bible Rsch. Listed in: W. W. in Engrng.; W. W. in the South and Southwest; Chem. Who's Who; Who Knows—and What; Natl. Roster of Scientific and Specialized Personnel; Natl. Social Directory.

CONWELL, Bess Plexco (Mrs), Music Therapist and Spec. Edn. Tchr., Sunny Side Schl. of the Children's Med. Ctr., 4900 S. Lewis, Tulsa, Okla. Home Add.: 1421 So. Baltimore, Tulsa 19, Okla. EDUCATIONAL PSYCHOLOGIST; MUSIC THERAPIST FOR RETARDED AND EMOTIONALLY DISTURBED CHILDREN. b. Sherman, Tex., Jan. 26, 1917. d. Lawson Carpenter Plexco and Bessie Mae (Short) P. Edn.: Okla. St. Univ., 1940; Univ. of Tulsa, 1958. m. John William Conwell, Sr., Aug. 31, 1940. c.: John William, Jr.; Jene Wesley. Exp.: Elem. Instr., Milfey Elem. Schl., Milfey, Okla., 1938-39; Elem. and Music Instr., DePew Elem., DePew, Okla., 1939-41; Music Instr., Ponca City Elem., Ponca City, Okla., 1951-58; Music Therapist, Sunny Side Schl., 1958—. Hon. Pos.: Okla. Sta. Jr. Music Counselor. Mem.: Natl. Assn. for Music Therapy, Inc.; Music Educators Natl. Conf.; Okla. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Tulsa Coun. for Mentally Retarded; The Coun. for Excepti. Children; Natl. Assn. for Retarded Children; Am. Assn. of Univ. Women; Am. Assn. on Mental Deficiency; Okla. Music Educators Assn.; Natl. Fed. Music. Contbr. to: Today's Child. Gen. Int.: Designing Equipment, Classrooms, and Schools for Mentally Retarded and Handicapped; Developing a Curriculum for Trainable Mentally Retarded with Emphasis on Occupti. Skill Trng. Incorp. into Classroom Acts. from the Pre-Schl. Level through the Pre-Voctl. Trng. Level. Areas of Rsch.: Differential Use of Music Therapy When Applied to Mentally Retarded or the Emotionally Disturbed; Theory of Learning (Including Method and Procedure) for the Trainable Mentally Retarded, with I.Q.'s Below 50.

COOK, Addison Gilbert (Ph.D.), Asst. Prof., Dept. of Chem., Valparaiso Univ., Valparaiso, Ind. Home Add.: 254 Meadow Lane, Valparaiso, Ind. ORGANIC CHEMISTRY. b. Caracas, Venezuela, April 1, 1933. s. Harold R. and Florence S. (Hosie) C. Edn.: B.S., Wheaton Coll., 1955; Ph.D., Univ. of Ill., 1959. m. Nancy L. Spriggs, Aug., 1956. c.: Virginia Lynn; Shirley June. Exp.: Rsch. Assoc., Cornell Univ., 1959-60; Instr. to Asst. Prof., Valparaiso Univ., Ind., 1960—. Mem.: Am. Chem. Soc.; The Chem. Soc. (London); Phi Mu Epsilon; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. of Am. Chem. Soc.; Chem. and Industry. Areas of Rsch.: Heterocyclic Chemistry.

COOK, Gilbert Richard (Ph.D.), Mem. of the Techn. Staff, Aerospace Corp., P.O. Box 95085, Los Angeles 45, Calif. Home Add.: 5679 Beaumont St., La Jolla, Calif. EXPERIMENTAL PHYSICS; VACUUM ULTRAVIOLET RADIATION PHYSICS. b. Wash., D. C., Apr. 7, 1916. s. Gilbert R. Cook, Sr. and Doris Adair (Frederick) C. Edn.: B.S., E.E., Carnegie Inst. of Technol., 1940; M.S., Univ. of So. Calif., 1954; Ph.D., ibid., 1959. Exp.: Rsch. Asst., Univ. of So. Calif., L. A., Calif., 1952-59; Mem. of the Techn. Staff, Space Technol. Lab., L. A., Calif., 1959-61; Mem. of the Techn. Staff, Aerospace Corp., 1961—. Mem.: Am. Phys. Soc.; Am. Geophys. Union; Opt. Soc. of Am.; Pi Kappa Alpha. Contbr. to: Jour. Opt. Soc. of Am.; Jour. Chem. Phys.; B. Am. Phys. Soc. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Spectroscopy of Vacuum Ultraviolet Region; Mass Spectroscopy; Photoionization and Photoelectric Phenomena.

COOK, Jackson Hancock (Mr.), Pres., Chatham Marine Electronics Lab., Inc., 420 Main, Chatham, Mass. Home Add.: 420 Main St., Chatham, Mass. ELECTRONIC NAVIGATION AND INSTRUMENTATION. b. Phila., Pa., Dec. 15, 1914. s. Chester S. and Florence (McCabe) C. Edn.: B.S., Mass. Inst. of Tech., 1936. m. Olga Lupinovich, Nov. 27, 1939. c.: Robin Alexandra; Deborah Sheldon. Exp.: Resc. Assoc., Mass. Inst. Tech., EE Dept. and Rad. Lab., 1937-45; Sr. Engr., USN Buships, Washington, D. C., 1942-43; Mem. Tech. Staff, Bell Telephone Lab., Whippany, N. J., 1943-51; Proj. Engr., Lab. for Electronics, Boston, Mass., 1951-55; Dept. Hd., Hermes Electronics Co., Cambridge, Mass., 1955-61; Pres., Chatham Marine Electr. Lab., Chatham, Mass., 1961 —. Mem.: A.I.E.E.; I.R.E.; A.A.A.S.; Sigma Xi. Contbr. to: Jour. of Acoustical Soc.; Proc. Inst. of Radio Engrs.; Bell Labs. Record. Gen. Inst.: Consultant OSRD WW2; Project leadership AN/APS-4 Radar equipment, Nike missile guidance system and various military and civilian radar systems Asst. Dir. for Hermes Elec. Co. of Project ACE-HIGH, SHAPE Comm. System. Areas of Rsch.: Radar, Communications, Marine Navigational Aids, Instrumentation.

COOK, Lloyd Myron (Ed.D.), Coordinator of Math., Acting Dean of Instrn., Chico St. Coll., Chico, Calif. Home Add.: 1408 Broadway, Chico, Calif. MATHEMATICS. b. Princeton, Ida., Aug. 27, 1905. s. Elwood Siler and Arvilla Pearl (Cisney) C. Edn.: A.B., Chico St. Coll., 1929; M.A., Univ. of Calif., 1935; Ed.D., ibid., 1951. m. Emma Alberta Loomis, June 7, 1929. c.: Joseph Elbert; Daniel James. Exp.: Instr., Chico State Coll., 1932-33; Asst. Prof., ibid., 1933-51; Assoc. Prof., ibid., 1951-54; Prof., ibid., 1954 -; Acting Dean of Instrn., ibid., 1961 —. Mem.: Math. Assn. of Am.; A.A.A.S.; Am. Math. Soc.; Phi Delta Kappa; Kappa Delta Pi; Epsilon Pi Tau; Pi Mu Epsilon. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: The Determination of the Factual Base for A Program of Terminal Vocational Edn. in a State Coll.

COOK, Melvin Alonzo (Ph.D.), Dir. Inst. of Metals and Explosives Rsch., Prof. of Metallurgy, Univ. of Utah; Pres., Intermountain Rsch. and Engrng. Co., Inc., Salt Lake City; Pres., Mesabi Blasting Agents, Inc., Biwabik, Minnesota. Home Add.: 919 South 12th East, Salt Lake City, Utah. EXPLOSIVES. b. Garden City, Utah, Oct. 10, 1911. s. Alonzo L. and Alice Maud (Osmond) C. Edn.: B.S., Univ. of Utah, 1933; M.S., ibid., 1934; Ph.D., Yale Univ., 1937. m. Wanda Garfield, June 17, 1935. c.: Barbara; M. Garfield; Virginia; Merrill; Krehl. Exp.: Rsch. Chemist, E. I. DuPont de Nemours, Willimington, 1937-47; Prof. Metallurgy, Univ. Utah, 1947 —; Consultant on explosives, reaction kinetics, catalysis. Hon. Pos.: Chmn., Salt Lake Sect., Am. Chem. Soc., 1951. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Faraday Soc. (Grt. Britain); A.I.M.E.; Sigma Xi. Author: The Science of High Explosives, 1958, and publications in national and foreign scientific journals. Contbr. to: Jour. Am. Chem. Soc.; Jour. Appl. Phys.; Jour. Phys. Chem.; Trans. Fara. Soc.; Proc. Psy. Soc. Gen. Int.: Loomis Fellowship, Yale Univ., 1937; Utah Acad. Science Award, 1954; Reynolds Lecturer, Univ. Utah, 1952; "Utah Award," Salt Lake Section, Am. Chem. Soc., 1961. Areas of Rsch.: Explosives; Solid State Physics; Geological Chronomentry; Ion Exchange; Flotation; Adsorption of Gases on Solids; Gravitation; Continental drift.

COOK, Roy Herbert (Ph.D.), Dean, Pratt Instit., Schl. of Engrng., Bklyn. 5, N. Y. Home Add.: 183 Steuben St., Bklyn. 5, N. Y. MATHEMATICS AND PHYSICS. b. Marshalltown, Ia., July 9, 1911. s. Roy Herbert and May (Cook) C. Edn.: B.S., Ia. Sta. Coll., 1934; M.S., ibid., 1936; Ph.D., ibid., 1940. m. Lillian Fleischer, 1951. c.: Roy H., III; David O. Exp.: Grad. Asst., Ia. Sta. Coll., 1934-36; Instr., Math., S. D. Schl. of Mines and Tech., Rapid City, S. D., 1936-37; Instr., Maths., Ia. Sta. Coll., 1937-40; Instr., Maths., Pa. Sta. Coll., 1940-41; Instr., Maths. and Supvr., ESMWT, ibid., 1941-42; Asst. Prof., Maths., S. D. Schl. of Mines and Technol., 1942-44; Asosc. Prof., ibid., 1944-46; Prof., ibid., 1946-50; Prof. and Chmn., Phys. and Dir. of Faculty Rsch., ibid., 1950-55; Sr. Rsch. Engr., White-Rodgers Co., Armament Div., St. Louis, Mo., 1955; Chf. Rsch. Engr., ibid., 1955-56; Mgr. of the Engrng. Divis., ibid., 1956-57; Chmn., Math. Dept. and Prof., Maths., Pratt Instit., 1957-58; Chmn., Maths. and Phys. Dept., and Prof. Maths. and Phys., ibid., 1958-59; Dean of Engrng., ibid., 1959—. Mem.: Am. Math. Assn.; Am. Math. Soc.; Am. Inst. of Phys.; Am. Assn. of Phys. Tchrs.; Am. Soc. for Engrng. Edn.; Am. Ordn. Soc.; Am. Rocket Soc.; S. D. Acad. of Sci.; Pi Mu Epsilon; Sigma Pi Sigma; Sigma Xi; Sigma Tau; Phi Kappa Phi; Tau Beta Pi. Author: Introductory Mathematics. Co-author, 1942. Contbr. to: Schl. Sci. and Maths.; Procs. Am. Assn. of Phys. Tchr. and Phys. Colloquim; Abstr. Math. Monthly; Procs. S. D. Acad. of Sci.; A.S.E.E. Jour. Areas of Rsch.: Physics.

COOKE, Samuel Leonard, Jr., (Ph.D.), Assoc. Prof., Ala. Coll., Montevallo, Ala. Home Add.: College Apts., Montevallo, Ala. PHYSICAL CHEMISTRY. b. Atlanta, Ga. Nov. 30, 1931. s. Samuel Leonard and Helen (Anderson) C. Edn.: B.S., Univ. of Richmond, 1952; M.S., ibid., 1954; Ph.D., Baylor Univ., 1957. m. Barbara McGehee, Aug. 21, 1954. c.: Cynthia Lynette; Samuel Leonard, III. Exp.: Rsch. Chemist, E. I. duPont, Wilmington, Del., 1957-58; Instrument Designer, Interscience, Richmond, Va., 1958-61; Assoc. Prof., Ala. Coll., 1961—. Mem.: Electrochem. Soc.; Inst. of Radio Engrs.; Am. Chem. Soc. Contbr. to: Jour. Am. Chem. Soc.; Jour. Electrochem. Soc. Areas of Rsch.: Electrochemistry, Chemical Education.

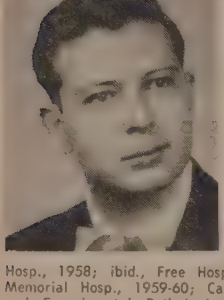
COOLEY, William Edward (Ph.D.), Dir. of Trng., Pacific Missile Range, Point Mugu, Calif. Home Add.: 4408 Westmont, Ventura, Calif. PSYCHOLOGY. b. Wingo, Ky., April 8, 1917. s. Mark L. and Rubye E. (Sills) C. Edn.: A.B., W. Ky. State Coll., 1940; M.A., Ariz. State Coll., 1955; Ph.D., Univ. of Denver, 1960. m. Elsa Jensen, Jan. 13, 1950. c.: Anna Kirsten. Exp.: Rsch. Staff Mem., Mass. Inst. of Tech., 1957-58; Project Dir., U. S. Naval Personnel Rsch. Activity, San Diego, Calif., 1960-61; Dir. of Trng., Pacific Missile Range, Point Mugu, Calif., 1961—. Mem.: Am. Psychol. Assn.; Am. Sociol. Assn.; Am. Assn. Adv. of Sci.; Psi Chi; Phi Delta Kappa. Serv. Rec.: U. S. Coast Guard, 1942-45; Reserves, 1945— Areas of Rsch.: Stress Behavior; Learning; Group Processes.

COOLIDGE, Edgar D. (D.D.S.), Dentist, 726 Seward St., Evanston, Ill. DENTISTRY AND EDUCATION. b. Galesburg, Ill., July 15, 1881. s. James Henry and Ellen Frances (Brown) C. Edn.: D.D.S., Chicago Coll. of Dental Surgery, 1906; B.S., Lewis Inst., 1925; M.S., Northwestern, 1930. Hon. Degrees: LL.D., Loyola Univ., 1948; D.Sc., ibid., 1959. m. Laura M. Richelsen, July 21, 1909. c.: Ellen; Edgar David; John Walter. Exp.: Instr., Chicago Coll. of Dental Surgery, 1906-13; Prof. of Materia Medica and Therapeutics, Univ. of Ill., 1913-23; Prof. of Oral Hygiene, Preventive Dentistry and Therapeutics, Chicago Coll. of Dental Surgery, Dental Schl. of Loyola Univ., 1927-48. Hon. Pos.: Chmn., Found. of Dental Rsch., Loyola Univ., 1945-48; Callahan Memorial Award, 1947. Mem.: Am. Dental Assn.; Ill. State Dental Soc.; Chi. Dental Soc.; The Odontographic Soc. of Chi.; Inst. of Med. of Chi.; A.A.A.S.; Am. Acad. of Oral Path.; Am. Acad. of Periodontology; Am. Assn. of Endodontists; Honorary Pres., 1959; Internatl. Assn. for Dental Rsch., Honorary Vice Pres., 1958; Am. Acad. of History; Historical Soc. of Chi. and Evanston; Am. Coll. of Dentists; Xi Psi Phi; Delta Kappa Upsilon. Author: Clinical Pathology and Treatment of the Pulp and Periodontal Tissue, 1939, 1946; Endodontia, 1950. Co-Author: Periodontia, 1951, 1954; Endodontology, 1956; Periodontology, 1958. Contbr. to: Jour. Am. Dent. Assn.; Ill Dental Jour.; Ohio State Dent. Jour.; Jour. of Am. Acad. of Periodontology; Jour. Dent. Rsch.; The Bur.; Internatl. Dental Congress, 1951, 1956; Encyclopaedia Britannica. Gen. Int.: Distinguished Service Award by Ill. Interprofessional Council, 1959; Achievement Award, Knox Coll., 1960; Award for Leadership in Periodontology, Tufts Univ. Schl. of Dental Medicine, 1961; The William John Gier Award in recognition of leadership and meritorious services to his profession, Am. College of Dentists, 1961. Areas of Rsch.: Histological Structures of the Dental Pulp and the Periodontal Tissues in Health and Disease. Teaching and Clinical Practice to Save the Teeth and Maintain the Integrity of their Supporting Structures.

COON, Julius Mosher (M.D.), Prof. and Hd., Dept. of Pharmacol., Jefferson Med. Coll., Phila. 7, Pa. PHARMACOLOGY AND TOXICOLOGY. b. Liberty, Mo., Oct. 29, 1910. s. Raymond Huntington and Mayme (Bryan), (Mary Emma Byran) C. Edn.: A.B., Ind. Univ., 1932; Ph.D., Pharmacol., Univ. of Chicago, 1938; M.D., Univ. of Ill., 1945. m. Mary Elizabeth Bond, July 26, 1947. c.: James Starner; Margaret Bryan. Exp.: Asst. in Pharm., Univ. of Chicago, 1936-38; Instr. in Pharmacol., Univ. of Chicago, 1939-45; Pharmacologist P-5, Food and Drug Admin., Wash., D. C., 1945-46; Pharm., Asst. Prof., Univ. of Chicago, 1946-47; Assoc. Prof. Pharmacol., 1947-53; Dir., Univ. of Chicago Toxicity Lab., 1948-51; Dir., U.S.A.F. Radiation Lab., Univ. of Chicago, 1951-53; Prof. and Hd., Dept. of Pharmacol., Jefferson

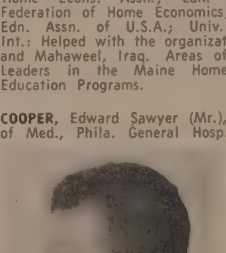
Med. Coll., 1953—. Hon. Pos.: Ed. Bd., Jour. Pharm. and Exptl. Therap., 1954-57; Pharmacol. Test Com., Natl. Bd. of Med. Examrs., 1954-57; Food Protection Com., Natl. Rsch. Coun., 1954—; Toxicology Sub-com. of the Food Protection Com., 1951—, Chmn., 1959—; Membership Com., Soc. of Pharmacol. and Exptl. Therapeutics, 1955-58, Chmn., 1958; Toxicol. Study Sect., Natl. Inst. of Health, U.S.P.H.S. Mem.: Soc. for Pharmacol. and Exptl. Therap.; Soc. for Exper. Biol. and Med.; Am. Ind. Hyg. Assn.; Radiation Rsch. Soc.; N. Y. Acad. of Sci.; Soc. of Toxicol.; Coll. of Physicians of Philadelphia; Philadelphia Physiol. Soc.; Soc. of Sigma Xi; A.A.A.S.; Chaos Club; Sigma Alpha Epsilon; Alpha Chi Sigma. Contbr. to: Jour. of Pharm. and Experimental Therapeutics; Proceeding of the Soc. for Experimental Biol. and Med.; Archives of Industrial Hyg. and Occupation Med.; Archives Inter. de Pharmacodynamie et de Therapie; Current Rsch. in Anesthesia and Analgesia; Jour. of Anesthesiology; Jour. of Investigative Dermatology. War Rec.: Non Military Service, Chem. Warfare Toxicologic Rsch. at Univ. of Chicago Toxicity Lab. under Auspices of Office of Scientific Rsch. and Dev. Special Int.: Autonomic pharmacology; toxicology; medical education. Listed in: Am. Men of Sci.; W. W. in the East.

COOPER, Alan Bruce (Captain), Chief of Research and Training, Am. Registry of Pathol., Armed Forces Inst. of Pathol., Washington 25, D. C. Home Add.: 256 Haviland Road., Stamford, Conn. EXPERIMENTAL ANATOMIC PATHOLOGY AND CLINICAL PATHOLOGY BACTERIAL AND IMMUNOGENETICS; EXPERIMENTAL DESIGN. b. N. Y., N. Y., Aug. 19, 1928. s. Harold and Florence (Zeisler) C. Edn.: B.A., Wesleyan Univ., 1949; M.A., ibid., and Columbia, 1951; M.D., N. Y. Med. Coll., 1955. m. Corinne Faith Gordon, Sept. 4, 1956. c.: Nanette Michele; Robin Angele. Exp.: Internship, Lenox Hill Hosp., N. Y., 1955-56; Diplomate of Natl. Bd. of Med. Examiners; Tchng. Fellow in Clinical Pathol., N. Y. Med. Coll., 1956-58; Tchng Fellow, Harvard Med. Schl., 1958-59; Chief Resident Pathologist, Boston Lying-In Hosp., 1958; ibid., Free Hosp. for Women, 1959; ibid., Mass. Memorial Hosp., 1959-60; Captain, USAF Med. Corp Consulting and Experimental Pathologist Toxic Hazards Sect. Aero Space Med. Rsch. Laboratory, Sept., 1960-62; Chf. of Rsch. and Trng., Am. Registry of Pathol., Armed Forces Inst. of Pathol., Wash., D. C., 1962—. Hon. Pos.: Exec. Comm., Boston Pathol. Residents Soc.; Editor, U.S.A.F. Toxicol. Newsletter. Mem.: Air Force Assn.; Assn. of Military Surgeons of the U. S.; A.A.A.S.; A.M.A.; Mass. Memorial Hospital Med. and Surgeons Soc.; A.C.S.; New York Acad. of Science; Montgomery County Med. Soc.; Stamford, Darien, New Canaan Heart Assn.; Sigma Xi; Cor et Manus; Phi Delta Epsilon; John Wesley Club. Author: Elements of Diagnostic Pathology, in preparation. Contbr. to: Conn. Med. Jour.; Am. Jour. of Psy.; Proc. Fed. of Am. Soc. of Exptl. Biol. Serv. Rec.: USAF Med. Corps. Areas of Rsch.: Pathology; Clinical Pathology, Bacteriology, Immuno-Genetics, Hematologic Disease, Toxin Metabolism, Radio—Isotope Techniques, Antidotal Methodology in Toxicology, Urinary Excretion of Toxic Materials, Quantitative Identification of Toxic Materials.



COOPER, Belle Bacon (Miss), Tchr. of Sci., (Ret.), The Westminster Schls., Atlanta, Ga. and Atlanta Publ. Schls., Atlanta, Ga. Home Add.: 700 Darlington Circle, N.E., Atlanta 5, Ga. SCIENCE EDUCATION, CHEMISTRY AND BIOLOGY. b. Rome, Ga., Dec. 27, 1892. d. Walter G. and Belle Walton (Bacon) C. Edn.: B.A., Agnes Scott Coll., 1918; M.A., Columbia Univ., 1936. Exp.: Sci. Tchr., Osceola H. Schl., Kissimmee, Fla., 1918-20; Tchr. of Sci., Fulton H. Schl., Atlanta, Ga., 1920-30; Tchr. of Sci., N. Fulton H. Schl., Atlanta, Ga., 1930-31; Hd. of Sci. Dept., N. Fulton H. Schl., Atlanta, Ga., 1932-58; Tchr. of Sci., (Ret.), The Westminster Schls., 1958—. Hon. Pos.: Chmn., Sci. Div. 5th Div., Edn. Assn. Ga., 1953; Chmn. of Sta. Sci. Fair, Sponsored by Ga. Acad. of Sci., 1952; Chmn., Regn. Comm., N.S.T.A. Convention, 1955. Mem.: Am. Assn. Adv. Sci.; Ga. Acad. of Sci.; Natl. Sci. Tchrs. Assn.; Phi Beta Kappa; Delta Kappa Gamma; N. Side Woman's Club, Atlanta, Ga.; Darlington Garden Club, Atlanta, Ga. Co-Author: Study Guide to Biology. Contbr. to: Sci. Tchng. Ideas. Gen. Int.: Tchr. of the Year for the City of Atlanta and Fifth Dist. of Ga., 1958; Summer Fellowship for Sci. Tchrs., M.I.T., 1951; Summer Fellowship for Sci. Tchrs., Columbia Univ., Tchrs. Coll., 1957. Areas of Rsch.: Teaching of High School Chemistry and Biology, Science Fairs, Science Club, and Science Projects for High School Students.

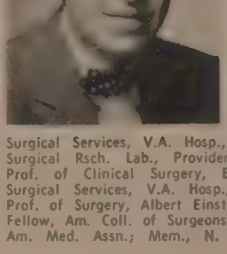
COOPER, Constance Elaine (Miss), Home Demonstration Agent, Univ. of Maine, Orono, Maine. Home Add.: 91 Bennoch Rd., Orono, Maine. HOME ECONOMICS. b. Buckfield, Maine, July 2, 1924. d. Charles William and C. Mae (McKinney) C. Edn.: B.S., Univ. of Maine, 1946; M.S., Cornell Univ., 1950. Exp.: Home Demonstration Agent, Piscataquis Co., Univ. of Maine, 1946-47; Dist. Home Demonstration Agent, Univ. of Maine, 1947-49, Dist. Home Demonstration Agent, ibid., 1950-51; Field Supvr., Div. of Adult Edn., Dept. of Edn., St. John's Newfoundland, 1951-53; Community Devel., Home Econ., Internatl. Coop. Admin., Iraq, 1954-56; Field Supvr., Div. of Adult Edn., Dept. of Edn., Newfoundland, 1956-58; Home Demonstration Agent Leader, Univ. of Maine, 1958—. Hon. Pos.: Internatl. Chmn., Maine Home Econs. Assn., 1950, 1962; Area Chmn., Maine Home Econs. Assn., 1958, 1959; Host on Pre-conference Tour, Internatl. Home Econs. Conf.; Advisor to Women of Maine Ext. Assn. when hosts to Natl. Home Demonstration Coun. 25th Annual Meeting, Aug., 1961. Mem.: Am. Home Econs. Assn.; Can. Home Econs. Assn.; Internatl. Federation of Home Economics; Am. Assn. Univ. Women; Adult Edn. Assn. of U.S.A.; Univ. of Maine Alumni Assn. Gen. Int.: Helped with the organization of 4-H Clubs in Newfoundland and Mahaweel, Iraq. Areas of Rsch.: Training and Use of Lay Leaders in the Maine Home Demonstration Program; Adult Education Programs.



COOPER, Edward Sawyer (Mr.), Asst. Attending Physician, Dept. of Med., Phila. General Hosp., Phila., Pa. Home Add.: 6710 Lincoln Dr., Philadelphia, Pa. INTERNAL MEDICINE AND CARDIOLOGY. b. Columbia S. C., Dec. 11, 1926. s. H. H. and Ada (Sawyer) C. Edn.: A.B., Lincoln Univ., 1946; A.B., Meharry Med. Coll., 1949. m. Jean Wilder C., March, 1951. c.: Lisa Marie; Edward Sawyer; Jan Ada; Charles Wilder. Exp.: Intern, Philadelphia Gen. Hosp., 1949-51; Resident in Medicine, ibid., 1951-54; Natl. Heart Inst. Trainee in Cardiology, ibid., 1956-57; Assoc. in Medicine, Univ. of Pa., 1958—; Asst. Attending Physician, ibid., 1957—; Senior Attending Physician, Mercy-Douglas Hosp., 1957—. Hon. Pos.: Editorial Bd., Jour. of the Natl. Med. Assn. Mem.: Fellow, Coll. of Physicians of Philadelphia; Am. Coll. of Chest Physicians; Am. Coll. of Physicians; Am. Federation for Clinical Rsch.; Am. Heart Assn.; A.A.A.S.; Kappa Pi; Omega Psi Phi. Contbr. to: Am. Jour. of Medicine; Am. Jour. of the Med. Sci.; Jour. of the Am. Med. Assn.; Jour. of the Natl. Med. Assn.; Jour. of the Philadelphia Gen. Hosp. Serv. Rec.: U.S.A.F. Gen. Int.: Charles Nelson Gold Medal, Meharry Medical Coll., 1949; Burr Prize, Best Rsch., Phil. Gen. Hosp., 1954. Areas of Rsch.: Cardiovascular and Cerebrovascular Interrelationships.

COOPER, Irving S. (Dr.), St. Barnabas Hospital, New York, N. Y.

COOPER, Philip (M.D.), Chief of Surgical Services, Vet. Admin. Hosp., Bronx, N. Y.; Clinical Prof. of Surgery, Albert Einstein Coll. of Med., N. Y., N. Y. Home Add.: 130 West Kingsbridge Rd., Bronx 68, N. Y. GENERAL AND THORACIC SURGERY. b. Boston, Mass., Nov. 11, 1908. s. Samuel and Ida C. Edn.: A.B., Boston Univ. Coll. of Liberal Arts, 1930; M.D., Harvard Med. Schl., 1934. m. Dorothy M. Barth, Sept. 16, 1934. c.: Nathanial Warren. Exp.: Intern, Pathol., Beth Israel Hosp., Boston, Mass., 1935; Intern, Michael Reese Hosp., Chicago, Ill., 1936-37; Resident Surgeon, Mt. Sinai Hosp., New York, N. Y., 1937-38; Chief of Surgical Services V.A. Hosp., White River Junction, Vt., 1943-47; Chf. of Surg. Servs., ibid., Wichita, Kans., 1947-50; Assoc. in Surgery, Kans. Univ. Med. Schl., 1950-53; Chief of Surgical Services, V.A. Hosp., Providence, R. I., 1950-57; Dir. Surgical Rsch. Lab., Providence V.A. Hosp., 1950-57; Assoc. Prof. of Clinical Surgery, Boston Univ., 1953-57; Chief of Surgical Services, V.A. Hosp., Bronx, N. Y., 1957—; Clinical Prof. of Surgery, Albert Einstein Coll. of Med., 1957—. Mem.: Fellow, Am. Coll. of Surgeons; Fellow, Mass. Med. Soc.; Mem., Am. Med. Assn.; Mem., N. Y. Surgical Soc.; A.A.A.S.; Life

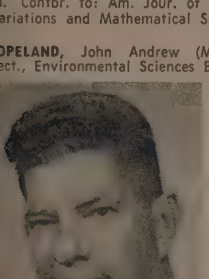


:m., Wichita Found. of Med. Rsch.; Phi Beta Kappa. Contbr. : Archives of Pathol.; New England Jour. of Med.; Urologic d Cutaneous Revue; Jour. of the Kansas Medical Soc.; Rhode and Medical Jour.; Surgery; Jour. of Thoracic Surgery; Arch. Surgery; Am. Jour. of Surgery; Am. Rev. of Tuberculosis and lmonary Diseases; Jour. Plastic Reconstructive Surgery; Gas- enterology; Jour. N. Y. Med. Soc. Serv. Rec.: MCAUS, 1944-46. n. Int.: Tchng. Prog. for Residents and Med. Students; Estab- hment of Rsch. Labs. for Gen. Surgical Rsch. and Tissue lture. Areas of Rsch.: Research in Gastro-Intestinal Physiology; ripheral Vascular Disease; The Extracorporeal Circulation; Tis- e Culture and Pulmonary Function.

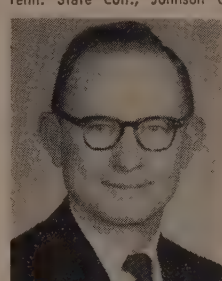
IPE, Alfred Haines (Ph.D.), Asst. Dean, Coll. of Liberal Arts, of. of Polit. Sci. and Citizenship, Syracuse Univ., Syracuse 10, N. Y. Home Add.: 1002 Ackerman Ave., Syracuse 10, N. Y. POLITICAL SCIENCE AND CITIZENSHIP, BUSINESS ADMINISTRATION, PERSONNEL ADMINISTRATION. b. Oakbourne, Pa., May 29, 1912. s. Joseph and Ellen (Fussell) C. Edn.: A.B., Earlham Coll., 1934; Ph.D., Univ. of Pa., 1948. m. Ruth Balderston, Aug. 23, 1937. Exp.: Agent, Equitable Life Ins., 1934-36; Dir., Am. Friends Serv. Comm., Chicago, Ill., 1936-38; War Relief Admin., ibid., Spain, 1938-39; Admin. Asst., Inst. Local and State Govt., Univ. of Pa., 1940-42; Sr. Admin. Aid., U. S. Civil Service Comm., Philadelphia, Pa., 1942-43; Instr., Univ. of Pa., 1946-48; Asst. Prof., Syracuse Univ., 1949-51; Assoc. Prof., id., 1951-56; Asst. Dean and Prof. of Citizenship, Utica Coll. f Syracuse Univ., 1956-60; Asst. Dean of Coll. of Liberal rts and Prof. Citizenship, Syracuse Univ., 1960—; Prof. of Polit. ci., ibid., 1962—. Mem.: Am. Assn. Adv. Sci.; Am. Soc. for ubl. Admin.; Friends Hist. Soc.; Natl. Edn. Assn.; Assn. for igher Edn.; Pi Gamma Mu; Phi Delta Kappa; Torch Internatl. uthor: Adm. of Civil Service in Cities of the Third Class in a., 1948; Current Defense of the U. S., 1954; The Dixon- ates Contract and the National Power Policy, 1955; Franklin . Roosevelt and The Supreme Court, co-author, 1952. Contbr. : Annals of the Am. Acad. of Political and Social Sci. Serv. ec.: U. S. Army, 1943-46. Areas of Rsch.: Civil Service dministration, Publ. Admin. and Admin. Law, Publ. Finance, olitical Theory, Internatl. Relations, Am. Government.

OPE, Thomas Freeman (Ph.D.), Prof., Chmn., Math., Queens oll., Flushing, N. Y. MATHEMATICS. b. Dallas, Tex., Nov. 25, 900. s. Willis Henry and Victoria (Doll) C. Edn.: B.S., Tulane niv., 1923; M.S., ibid., 1925; Ph.D., Univ. of Chicago, 1927. . Frances Thorndike, June 29, 1929. c.: Freeman Widener; lizabeth Frances; Mary Thorndike. Exp.: Instr., Math., Tulane niv., 1923-25; Instr., Math., Western Reserve, 1926-27; Instr., ath., Chicago Univ., 1927-28; Natl. Rsch. Fellow, Harvard niv., 1928-29; Instr., ibid., 1929-30; Asst. Prof., Marietta oll., 1930-31; Hd., Dept., ibid., 1930-37; Prof., ibid., 1931-37; sst. Prof., Math., Queens Coll., 1937-39; Assoc. Prof., ibid., 939-48; Prof., 1948—; Chmn., Dept., ibid., 1937-50, 1952—. em.: Am. Math. Soc.; Math. Assn. of Am.; Am. Statist. Assn.; st. Math. Statist.; A.A.A.S. (Fellow); Phi Beta Kappa; Sigma i. Contbr. to: Am. Jour. of Math. Areas of Rsch.: Calculus of ariations and Mathematical Statistics.

OPELAND, John Andrew (Mr.), Chief, Atmospheric Sciences ect., Environmental Sciences Br., Rsch. Div., R. & D. Directorate, U. S. Army Materiel Command, Washington, D. C. Home Add.: 131 N. Wayne St., Arlington, Va. METEOROLOGY AND ATMOSPHERIC PHYSICS. b. Rogers, Tex., Nov. 20, 1908. s. John A. and Sally Jane (Fox) C. (both dec.). Edn.: B.A., Daniel Baker Coll., Tex., 1928; M.A., Tex. Technol. Coll., 1933. m. Virginia Ernestine Hendrick, Dec. 24, 1934. c.: Sulta Lenoir Copeland Yates. Exp.: Meteorologist, U. S. Weather Bur., Washington, D. C., 1937-54; Tech. Dir., Meteorol. Dept., U. S. Army Electronic Proving Ground, Ft. Huachuca, Ariz., 1954-59; Chf., Meteorol. Sect., Signal Rsch. Office, Office of the Chief Signal Officer, Dept. of the Army, Washington, D. C., 1959-62; Chief, tmospheric Sci. Sect., Environmental Sci. Br., Rsch. Div., R. & D. rectorate, U. S. Army Materiel Command, ibid., 1962—. Hon. os.: Chmn., Army Meteorol. Rsch. & Dev. Com. Mem.: Am. eteorol. Soc.; Am. Geophys. Union. Gen. Int.: Dept. of Com- erce, Meritorious Civ. Serv. Award, 1950; Dept. of the Army eritorious Civilian Serv. Award, 1962. Areas of Rsch.: Meteor- ogy; Atmospheric Physics; Climatology, especially Military pplication of these scientific fields.



COPELAND, Thompson Preston (Ph.D.), Assoc. Prof. Biol., East Tenn. State Coll., Johnson City, Tenn. Home Add.: 503 West Pine St., Johnson City, Tenn. ENTOMOLOGY. b. Arkansas, Mar. 11, 1921. s. H. P. and Pearl (Thompson) C. Edn.: B.S., Ouachita Coll., 1947; M.A., George Peabody Coll., 1950; Ph.D., Univ. of Tenn., 1962. m. Jean Scott, 1950. c.: Rebecca Jean; David Scott. Exp.: Instr., Ouachita Coll., 1947-49; Guest Prof., Union Univ., summers, 1951-52; Assoc. Prof., East Tenn. State Coll., 1950—. Mem.: Tenn. Edn. Assn.; East Tenn. Edn. Assn.; Tenn. Acad. of Sci.; Assn. of Southeastern Biol.; Am. Assn. for the Adv. of Sci.; Soc. of Systematic Zoologists; Am. Acad. of Arts and Scis.; Entomological Soc. of Am.; Sigma Xi. Contbr. to: Jour. of the Tenn. Acad. of Sci.; Entomological News. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Ecology and Taxonomy of Protura and Collembola.



COPSON, David A. (Ph.D.), Prof., Univ. of Puerto Rico, Puerto Rico Nuclear Center, Radiobiology, Biophysics, Mayaguez, Puerto Rico. Home Add.: P. O. Box 3637, Mayaguez, Puerto Rico. TEACHING AND RESEARCH, RADIOBIOLOGY, BIOPHYSICS, INDUSTRIAL MICROBIOLOGY, MICROWAVES, FREEZE-DEHYDRATION. b. Boston, Mass., June 16, 1918. s. David H. and Alvina M. (Webb) C. Edn.: Ph.D., Mass. Inst. of Technol., 1953. Exp.: Field Supvr., Birds Eye Division, Gen. Foods, Rochester, N. Y., 1941-48; Grad. Student, Mass. Inst. of Technol., Cambridge, Mass., 1948-53; Mgr. of Food Labs., Rsch. Div., Raytheon Co., Waltham, Mass., 1952-58; Pres., Forum Corp., Cohasset, Mass., 1958-60; Prof., Univ. of Puerto Rico Biol. Dept. and Puerto Rico Nuclear Center, 1960—. Hon. Pos.: Pres., Camp Dorchester Assn.; Pres., Capt. Hammond Chap., Reserve Officers Assn.; Pres., Sigma Xi Club of Univ. of Puerto Rico, 1961. Mem.: Phi Tau Sigma; Sigma Xi; A.A.A.S.; Inst. of Radio Engrs.; Biophysical Soc.; Certified Profl. Engr.; Phi Sigma Kappa. Author: Microwave Heating, 1962. Editor: Forum Rev. Contbr. to: Proc. of the Group of Med. Electronics; Digest of the 1961 Internatl. Conference on Medical Electronics; Food Rsch.; Food Technol.; Agric. and Food Chem.; Jour. of Home Ec. Serv. Rec.: U. S. Navy, W.W. II; Current Rank, Commander, U.S.N.R. Gen. Int.: Interdisciplinary Developments, Natl. Engrs. Week TV Speaker A.S.M.E., 1956, Domestic and Foreign Patents in Electronics. Areas of Rsch.: Biology of Ionizing Radiation, Microwaves, Freeze-Drying of Foods and Biologicals, Nuclear Technology.

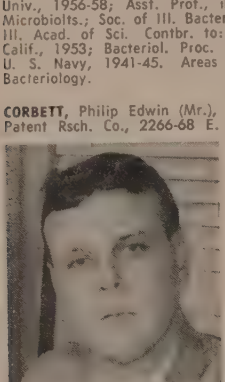
CORBAN, Eula Bee (Mrs.), Assoc. Prof., Queens Coll., Flushing 67, N. Y. Home Add.: 254-11 Morgan St., Little Neck 63, N. Y. NUTRITION. b. Omaha, Neb., Dec. 16, 1910. d. Edward W. W. Martin and Catherine (Schaub) M. Edn.: B.S., Univ. of Neb., 1931; M.A., Columbia Univ., 1939. m. Thomas S. Corban, Mar. 8, 1938. c.: Thomas Jr.; Edward. Exp.: Dietitian, New England Baptist Hospital, Boston, Mass., 1932-38; Summer Instr., Columbia Univ., summer, 1943; Tutor, Instr., Queens Coll., 1940-48; Asst. Prof. and Assoc. Prof., ibid., 1948—. Hon. Pos.: Chmn., Queens Nutrition Comm.; Consultant, Child Serv. League. Mem.: Am. Dietetic Assn.; Am. Home Econ. Assn.; A.A.A.S.; A.A.U.P.; Omicron Nu; Iota Sigma Pi; Pi Lambda Theta. Author: Food Value Tables Expressed in Circle Graphs, 1952. Contbr. to: Forecast for Home Econ.; Am. Dietetic Assn. Jour. Areas of Rsch.: Visual Aids for Nutrition Edn.; Development of New Type of Nutrition Food Value Table.

CORAK, William Sydney (Ph.D.), Mgr., Special Products Semiconductor Div., Westinghouse Electric Corp., Youngwood, Pa. Home Add.: 1349 Towerlawn Dr., Pitcairn, Pa. SEMICONDUCTOR MATERIALS; SOLID STATE PHYSICS; LOW TEMPERATURE PHYSICS. b. Philadelphia, Pa., Mar. 10, 1922. s. Henry H. G., Minnie (Barofsky) C. Edn.: B.S., Univ. of Pa., 1943; M.S., Ohio State Univ., 1947; Ph.D., Univ. of Pittsburgh, 1955. m. Hilda Ivker, June, 1946. c.: Seth (dec.); David; Jonathan; Steven; Eric. Exp.: Chem. Control Engr., Davidson Chem. Corp., Curtis Bay, Md., 1943-44; Field Engr., C. Y. War Project, Johns Hopkins Univ., Baltimore, Md., 1944-45; Rsch. Assoc., Ohio State Univ. Rsch. Foundation, 1945-46; Univ. Fellow, ibid., 1946-47; Sr. Engr., Westinghouse Rsch. Labs., Pittsburgh, Pa., 1947-55; Mgr.,

Westinghouse Semiconductor Div., Youngwood, Pa., 1955—. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Electrochem. Soc.; A.A.A.S.; Am. Soc. for Testing Materials; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Physical Rev.; Rev. of Sci. Insts. Areas of Rsch.: Materials Sciences; Low Temperature Physics; Solid State Physics; Cryogenic Engrng.

CORBETT, Jules John (Mr.), Asst. Prof., Biol. Dept., Roosevelt Univ., Chicago, Ill. Home Add.: 8318 S. Komensky St., Chicago 52, Ill. BACTERIOLOGY. b. Natrona, Pa., Apr. 12, 1919. s. Anthony and Theodosia (Kuczynski) C. Edn.: B.S., Univ. of Chicago, 1950; M.S., Ill. Inst. of Tech., 1957. m. Gabriella Ann Wengel, June 24, 1950. c.: Brian Lee; Alan Jeffery; Christine Marie. Exp.: Med. Technologist, St. Bernard Hosp., Chicago, Ill., 1947-49; Bacteriologist, Englewood Hosp., ibid., 1949-52; Instr. in Microbiol. and Chem., Englewood Hosp. Schl. of Nursing, 1949-52; Dir. of Instrns., Chicago Coll. of Lab. Tech., 1953-54; Dir. of Labs., Beverly Med. Arts Bldg., Chicago, Ill., 1954-55; Bacteriologist, The Borden Co., ibid., 1955—; Instr. in Bacteriol., Roosevelt Univ., 1956-58; Asst. Prof., ibid., 1958—. Mem.: Am. Soc. of Microbiolts.; Soc. of Ill. Bacteriol.; A.A.A.S.; Sigma Xi; A.A.U.P.; Ill. Acad. of Sci. Contbr. to: S.A.B. Convention, San Francisco, Calif., 1953; Bacteriol. Proc. Serv. Rec.: U. S. Army, 1937-39; U. S. Navy, 1941-45. Areas of Rsch.: Immunology and Dairy Bacteriology.

CORBETT, Philip Edwin (Mr.), Pres. and Dir. of Rsch., Industrial Patent Rsch. Co., 2266-68 E. Main St., Columbus, Ohio. Home Add.: 466 N. Columbia Ave., Columbus 9, Ohio. ANALYSIS AND PREPARATION OF TECHNICAL INFORMATION FOR INDUSTRY. b. July 31, 1930, Columbus, Ohio. s. Edwin Perry and Marguerite Cecilia (O'Toole) C. Edn.: B.Sc., Ohio State Univ., 1954. Exp.: Tech. Information Specialist, Battelle Memorial Rsch. Inst., Columbus, Ohio, 1956-58; Pres. and Dir. of Rsch., Industrial Patent Rsch. Co., Columbus, Ohio, 1958—; Pres. and Gen. Mgr., Techno-Scribe Co., Columbus, Ohio, 1960—. Mem.: Am. Management Assn.; A.A.A.S.; N.A.A.S. Serv. Rec.: U.S.N.A.R., 1950-57. Areas of Rsch.: Patent Abstracts, Unique Codification-Retrieval Systems for Patent Data Files, Creative Writing Techniques Applied to All Phases of Technical Literature, Technical Literature Research Techniques (bibliographies, abstracts and data systems).



CORCORAN, William Harrison (Ph.D.), Prof. of Chem. Engrng., Calif. Inst. of Tech., Pasadena, Calif.; Scientific Dir., Don Baxter, Inc., Glendale 1, Calif. CHEMICAL ENGINEERING AND APPLIED CHEMISTRY. b. Los Angeles, Calif., Mar. 11 1920. s. William H. and Enid Winchester (Heffelfinger) C. Edn.: B.S., Calif. Inst. of Tech., 1941; M.S., ibid., 1942; Ph.D., ibid., 1948. m. Martha Nell Rogers, Nov. 7, 1942. c.: Sally Kay; William Owen. Exp.: Chem. Engrng., Cutter Labs., Berkeley, Calif., summers, 1941-42; Rsch. Supvr. and Devel. Engr., 1942-46, O.S.R.D.; Dir. of Tech. Devel., Cutter Labs., Berkeley, Calif., 1948-52; Assoc. Prof. of Chem., Engrng., Calif. Inst. of Tech., Pasadena, Calif., 1952-57; Prof., ibid., 1957—; Vice Pres. and Scientific Dir., Don Baxter, Inc., Glendale, Calif., 1957-59; Scientific Dir., ibid., 1959—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Soc. of Mech. Engrs.; Am. Ord. Assn.; Am. Soc. for Engrng. Edn.; Tau Beta Pi; Sigma Xi. Co-Author: Momentum Transfer in Fluids, 1956; Introduction to Chemical Engineering Problems, 1960. Contbr. to: Indusl. and Engrng. Chem.; Chem. Engrng. Progress; A.I.Ch.E. Jour.; Jour. Phys. Chem. Special Int.: Heat Transfer; Reaction Kinetics; Chem. Engrng.; Ballistics of Rocket Motors; Process Development in Mfg. of Biol. and Pharmaceuticals.

CORNATZER, William Eugent (M.D.), Prof., Hd. of Dept. of Biochem. and Dir. of Ireland Rsch. Lab., Univ. of N. D., Grand Forks, N. D. Home Add.: 307 Park Ave., Grand Forks, N. Dak. BIOCHEMISTRY. b. Mocksville, N. C., Sept. 23, 1918. s. William Pinkston and Stella Agusta (Volger) C. Edn.: B.S., Wake Forest Coll., 1939; M.S., Univ. of N. C., 1941; Ph.D., ibid., 1944; M.D., Bowman Gray Schl. of Med., 1951. m. Margaret Virginia Freeman, Mar. 30, 1946. c.: Nancy Freeman; William Eugene, Jr. Exp.: Student Asst. in Zool., Wake Forest Coll., 1937-38; Student Asst. in Physical Chem., ibid., 1938-39; Grad. Asst. in Biol. and Food Chem., Univ. of N. C., 1939-41; Fels Rsch. Fellow, ibid., 1941-45; Asst. Prof. of Biochem., Bowman Gray Schl. of Med., 1946-51; Prof., Hd. of Dept. of Biochem. and Dir., Ireland Rsch. Lab., Univ. of N. D., 1951—. Hon. Pos.: N. D. Acad. Sci. (Pres., 1956). Mem.: Fellow, A.C.P.; Am. Bd. Clin. Chem.; Am. Assn. Clin. Chemists; Am. Assn. for Study of Liver Diseases; Central Soc. for Clin. Rsch.; Radiation Rsch. Soc.; Am. Chem. Soc.; Am. Soc. Biol. Chem.; Sou. Soc. for Clin. Rsch.; Am. Fedn. for Clin. Rsch.; Soc. Exptl. Biol. and Med.; Am. Inst. of Nutrition; A.A.A.S.; Fellow, N. Y. Acad. Sci.; Am. Assn. Univ. Profs.; N. D. Diabetic Assn.; Sigma Xi; Alpha Omega Alpha; Royal Soc. Med. (affiliate). Contbr. to: Fed. Proc.; Jour. of Lab. and Clin. Med.; Jour. Pharmacol. and Exptl. Therapy; Jour. Biol. Chem.; Jour. Natl. Malaria Soc.; Proc. Exptl. Biol. and Med.; Am. Jour. Surg.; Jour. Clin. Investigation; Gastroenterology Jour.; Am. Jour. Phy.; Etc. Areas of Rsch.: Research in Properties of Protein; Quinine Metabolism and Absorption; Anti-Malarial Testing; Phospholipide Metabolism; Biol Effects of Radiation and Liver Disease.

CORNBLEET, Theodore (M.D.), Prof. of Dermatology, Univ. of Ill. Coll. of Med., 30 N. Michigan Ave., Chicago 2, Ill. Home Add.: 3204 Sheridan Rd., Chicago, Ill. PHYSIOLOGY; DERMATOLOGY. b. St. Louis, Mo., Mar. 10, 1899. s. Morris and Sarah (Metz) C. Edn.: B.S., Univ. of Mo., 1921; M.D., St. Louis Univ. Schl. of Med., 1923; M.S. Univ. of Ill., 1935; Ph.D., ibid., 1937. m. Dea Tietelbaum, 1935. c.: Suzanne Beverly; David Henry. Exp.: Asst. in Dermatology, Washington Univ., St. Louis, 1925-26; Instr., Dermat., Univ. of Ill., 1926-29; Assoc. in Derm., ibid., 1929-32; Asst. Prof., ibid., 1932-35; Assoc. Prof., ibid., 1935-39; Prof., ibid., 1939—. Hon. Pos.: Chmn., Dept. Dermatology, Cook County Hosp., Chicago; Pres., Soc. for Investigative Derm.; Bd. of Dirs., Am. Acad. Derm. Mem.: Am. Assn. Adv. Sci.; Am. Acad. Derm.; Soc. for Investigative Derm.; N. Y. Acad. of Med.; Sigma Xi; Alpha Omega Alpha. Co-Author: Dental Science and Art, 1938; Medical Uses of Soap, 1940. Contbr. to: Archives of Derm.; Jour. of Investigative Derm.; Jour. Am. Med. Assn.; New England Jour. Med.; Antibiotic Med.; Jour. Lancet; Science. Serv. Rec.: U. S. Army, 1917-18. Areas of Rsch.; Biochemistry and Physiology of the Skin.

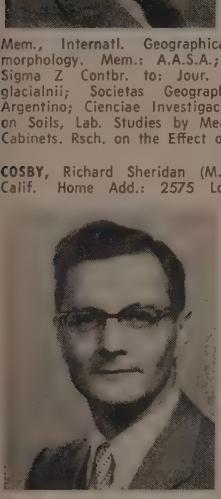
CORNELL, Robert Witherspoon (D.Engr.), Hd. of Applied Mech. and Math., Hamilton Standard, Div. of United Aircraft Corp., Windsor Locks, Conn. Home Add.: 40 Belknap Rd., West Hartford, Conn. MECHANICAL ENGINEERING; APPLIED MECHANICS. b. Orange, N. J., Aug. 16, 1925. s. Edward S. and Helen L. (Lawrence) C. Edn.: B.S., Yale Univ., 1945; M.E., ibid., 1947; D. of Engr., ibid., 1950. m. Patricia D. Plummer, June 24, 1950. c.: Richard Woodling; Delight W.; Elizabeth P.; Roberta Shelton. Exp.: Mech. Engr., Naval Rsch. Lab., Washington, D. C., 1945-46; Instr. in Math., New Haven Jr. Coll., Conn., 1947-48; Anal. Engr., Pratt and Whitney Aircraft, East Hartford, Conn., 1947; Instr. Engr., Hillyer Coll., Hartford, Conn., 1955; Analy. Engr., Tech. Asst. to Chf. Mech. Mst. and Vibration, Hd. Special Problems Gp., Hd. of Stress Analysis, Hd. of Applied Mech. and Math., Hamilton Standard, Div. of United Aircraft Corp., Windsor Locks, Conn., 1948—. Mem.: Sigma Xi; Tau Beta Pi; A.S.M.E.; S.E.S.A.; Yale Engrng. Assn.; Hartford Golf Club. Contbr. to: Jour. of Applied Mech.; Yale Scientific; A.S.T.M. Proceedings. Serv. Rec.: U.S.N., 1943-45. Areas of Rsch.: Stress Analysis-Experimental and Theoretical, Vibration; Applied Mechanics in General, Computers, Fatigue.

CORRIGAN, John Raymond (Ph.D.), Dir., Organic Chem. Development, Mead Johnson and Co., Evansville, Ind. Home Add.: 225 Cherry Lane, Evansville, Ind. ORGANIC CHEMISTRY. b. Fargo, N. D., Apr. 28, 1919. s. Hilary F. and M. Frances (Hogan) C. Edn.: B.S., Univ. of Portland, 1940; M.S., Univ. of Notre Dame, 1942; Ph.D., ibid., 1949. m. Barbara Barrett, Sept. 22, 1951. c.: Ann Elizabeth; Martha Jean; John Barrett; Stephen Francis. Exp.: Grad. Asst., Univ. of Notre Dame, 1941-43; Rsch. Assoc. Frederick Stearns Div., Sterling Drug, 1943-47; Rsch. Fellow, Sterling-Winthrop Rsch. Inst., 1947-49; Rsch. Assoc., ib:d., 1949-51; Rsch. Assoc., Merck-Sharp and Dohme, 1951-55; Sr. Chemist, Group Leader, Asst. Dept. Dir., Dept. Dir., Mead Johnson and Co., 1955—. Mem.: Am. Chem. Soc.; A.A.A.S.; R.E.S.A. Contbr. to: Jour. Am. Chem. Soc.; Jour Org. Chem. Areas of Rsch.: Process Research and Development Synthetic Organic Medicinal

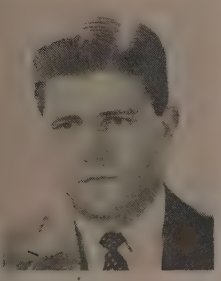
CORRIGAN, Thomas Edward (Ph.D.), Assoc. Prof., Chem. Engrng. Dept., Ohio State Univ., Columbus, Ohio. Home Add.: 917 W. Tenth Ave., Columbus, Ohio. b. Mar. 1, 1918, Cleveland, Ohio. s. Edward and Estelle (Bole) C. Edn.: B.S., Fenn Coll., 1941; M.S., Univ. of Mich., 1942; Ph.D., Univ. of Wis., 1949. m. Margery Dudley of Winchester, Ind., June 4, 1944. d. Carl and Wa Dudley. c.: Edward Carl; Jo Dudley. Exp.: Engr., Barrett Di Allied Chem. and Dye, Phila., P 1942-43; Rsch. Engr., Wyandott Mich., 1943-45; Asst. Prof., Che Engrng., W. Va. Univ., 1948-5 Process Design Engr., Vulcan Co per and Supply Corp., Cincinna Ohio, 1951-53; Rsch. Eng Mathieson Chem. Corp., Niag Falls, N. Y., 1953-54; Mgr. Dev., Hydrocarbon Chemicals Di Olin Mathieson Chem. Cor Brandenburg, Ky., 1954-59; Assoc. Prof., Chem. Engrng. Dep Ohio State Univ., 1959—. Mem.: Sigma Xi; Phi Lambda Upsilo Sigma Gamma Epsilon; A.C.S.; Tau Beta Pi; Am. Inst. of Che Engrs. Ph.D. Dissertation: The Kinetics of the Dealkylation Isopropyl Benzene. Travel: U. S. Hobbies: Outdoor Activiti Special Int.: Thermodynamics and Kinetics.

CORTE, Arturo Eduardo (Dr.), Contract Scientist, U.S.A. Cold Regions Rsch. and Engrng. Lab., Hanover, N. H. Home Add.: 32 Valley Rd., Hanover, N. H. BASIC RESEARCH ON FROST ACTION ON SOILS LABORATORY AND FIELD TECHNIQUES. b. Salta Argentina, Oct. 27, 1919. s. Francisco and Mansueta (Fontana) C. Edn.: Bachellor, Natl. College, 1940; Licenciat, Cordoba Univ., 1944; Dr., ibid., 1945. m. Rosa Figueres, Dec. 21, 1946. c.: Arturo; Elizabeth. Exp.: Chief, Ground Water Rsch., Mendoza, Argentina, 1945-48; Ext. Prof. Rsch., Cuyo Univ., ibid., 1950-55; Chief Scientist Antarctic Expedition, Buenos Aires, Argentina, 1952-53; Contract Scientist, U.S.A. Cold Regions Rsch. and Engrng. Lab., Hanover, N. H., 1955—. Hon. Pos.: Pres., Comm. for Cuaternary Rsch. in Latin Am. Argentina; Mem., Internatl. Geographical Union Commission Periglacial morphology. Mem.: A.A.S.A.; A.A.P.C.; G.S.A.; I.G.U.; A.G.U.; Sigma Z Contbr. to: Jour. of Geophysical Rsch.; Bull. Periglacialnii; Societas Geographica Feniae; Instituto Antartico Argentino; Cienciae Investigacion. Areas of Rsch.: Frost Action on Soils, Lab. Studies by Means of Specially Designed Freezing Cabinets. Rsch. on the Effect of the Ice-water Particles.

COSBY, Richard Sheridan (M.D.), 111 Congress St., Pasadena, Calif. Home Add.: 2575 Lombardy Rd., San Marino, Calif. CARDIOLOGY. b. N. Y., N. Y., July 6, 1913. s. Charles R. and Mildred (Freeman) C. Edn.: A.B., Harvard Coll., 1934; M.D., Harvard Med. Schl., 1938. m. Mary Mayo Cosby, May 8, 1948. Exp.: Instr. in Med., Univ. Sou. Calif., Schl. of Med., 1946-48; Asst. Clin. Prof. of Med., ibid., 1948-54; Assoc. Prof. of Med., ibid., 1954—. Hon. Pos.: Secy., Los Angeles Co. Heart Assn., 1957-58. Mem.: Fellow, Am. Coll. of Physicians; Am. Coll. of Chest Physicians; Fellow, Am. Coll. of Cardiology; Am. Med. Assn.; Calif. Med. Assn. Contbr. to: Am. Heart Jour.; Circulation; Am. Jour. of Med.; Jour. of Applied Physiology. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Research in Clinical Cardiology and Cardio-pulmonary Physiology.

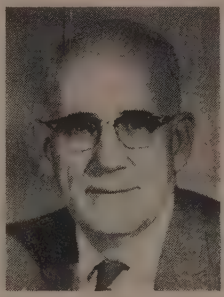


COSMIDES, George James (Ph.D.), Pharmacologist, Psychopharmacology Service Center, Natl. Inst. of Mental Health, Bethesda 14, Md. Home Add.: 639 Crocus Dr., Rockville, Md. PSYCHOPHARMACOLOGY; PRECLINICAL AND CLINICAL DRUG EVALUATION. b. Pittsburgh, Pa., July 23, 1926. s. James G. and Catherine (Palogaris) C. Edn.: B.S., Univ. of Pittsburgh, 1952; M.S., Purdue Univ., 1954; Ph.D., ibid., 1956. m. Nasia Murlas, Sept. 12, 1948. c.: Leda Demitra. Exp.: Pharmacist and Intern, Stutz Pharmacy, Pittsburgh, Pa., 1950-52; Lab. Supvr., Lectr., Purdue Univ., 1952-56; Sr. Scientist, Smith Kline and French, Philadelphia, Pa., 1956-57; Asst. Prof. of Pharmacol., Univ. of Rhode Island, 1957-59; Pharmacologist, Natl. Inst. of Mental Health, Bethesda, Md., 1959—. Hon. Pos.: Executive Secy., Pharmaceutical Soc. of Southern Rhode Island; Consultant on Scientific Criminal Investigation to Attorney General, State of R. I. Mem.: Am. Chem. Soc.; Fellow, Am. Assn. Adv. Sci.; Am. Pharmaceutical Assn.; N. Y. Acad. Scis.; Univ. of R. I. Criminalists Association; Am. Inst. of Hist. of Pharm.; Am. Soc. of Pharmacognosy; Kappa Psi; Phi Sigma; Rho Chi; Alpha Epsilon Delta; Phi Lambda Upsilon; Sigma Xi; Atheneum. Contbr. to: Jour. of Am. Pharmaceutical Association; Journal of Pharmacology and Exptl. Therapeutics; Am. Jour. Pharmaceutical Edn.; Dissertation Abstracts; Chemical Abstracts (Abstractor); Federation Proc. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Participated on project teams which: 1) developed some of the first psychotropic drugs; 2) performed first human open-heart surgery in Rhode Island; 3) organized first poison information center in Rhode Island. Areas of Rsch.: Consultant toxicologist and criminologist; Psychopharmacology; Cardiovascular pharmacology; Bioassay; Preclinical and clinical drug evaluation; Cross-Cultural Phytopharmacology.



COTHRAN, John Cleveland (Ph.D.), Prof. Emeritus, Chmn., Sci. and Math. Div., Duluth Branch, Univ. of Minn., (Retired June 17, 1954). Home Add.: 104 High St., Lockport, N. Y. INORGANIC CHEMISTRY. b. Ransomville, N. Y., Nov. 16, 1885. s. Daniel Vanvalsen and Emma (Silsby) C. Edn.: A.B., Cornell Univ., 1908; Ph.D., ibid., 1931. m. Evelyn Belle Cochran, Nov. 8, 1910. c.: Raymond John. Exp.: Asst. Instr. of Chem., Cornell Univ., Ithaca, N. Y., 1908-10; Chemist, Genl. Elec. Co., Harrison, N. J., 1910-11; Chemist, Albany Lubricating Co., N. Y. C., 1911-12; Treas., Cochran Box and Mfg. Co., Inc., Lockport, N. Y., 1912-25; Asst. Instr. of Chem., Cornell Univ., Ithaca, N. Y., 1927-31; Act. Hd. Chem. Dept., Bethany Coll., Bethany, W. Va., 1931-32; Resident Dr., Cornell Univ., Ithaca, N. Y., 1932-33; Hd., Phys. Sci., Duluth State Tchrs. Coll., Duluth, Minn., 1933-44; Prof. of Chem., ibid., 1944-45; Visiting Prof. of Chem., Elmira Coll., Elmira, N. Y., 1945-46; Chmn., Sci. and Math. Div., Duluth State Tchrs. Coll., Duluth, Minn., 1946-47; Chmn., Sci. and Math. Div., Duluth Branch, Univ. of Minn., Duluth, Minn., 1947-54 (Ret. 1954); Lectr. in Physical Sci., Kan. State Tchrs. Coll., Emporia, Kans., 1954-56, (Ret. 1956); Visiting Prof. of Chem., Washington Coll., Chestertown, Md., 1956-57; Lectr. in Phys. Sci., (special 2/3 time), Kans. State Tchrs. Coll., Emporia, Kan., 1957-59; Ret., 1959. Hon. Pos.: Past Counc. and Chmn., Lake Superior Sect. of Am. Chem. Soc.; Past Chmn., Phys. Sci. Sect., N. E. Minn. Edn. Assn.; Fellow, Am. Inst. of Chem.; A.A.A.S.; Am. Geog. Soc. of N. Y. Mem.: Am. Physics Tchrs.; Am. Math. Soc.; Math. Assn. of Am.; Minn. and N. Y. Academy of Sci.; Minn. Edn. Assn.; Am. Assn. on Emeriti; A.A.U.P.; Rocks and Minerals Assn.; Am. Forestry Assn.; Northern Nut Growers Assn.; Am. Scientific Affiliation; Duluth Engrs. Club; Kan. State Tchrs. Assn.; Kappa Delta Pi, Hon. Mem.; Mason. War Rec.: Lockport, N. Y. Battalion Home Guards, W.W. I.

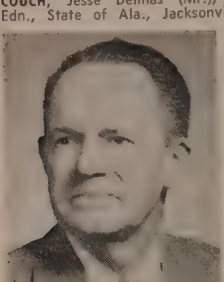
COTTAM, Clarence (Ph.D.), Dir., Rob and Bessie Welder Wildlife Foundation, Sinton, Tex. Home Add.: Welder Foundation, P. O. Box 1396, Sinton, Tex. WILDLIFE MANAGEMENT, ORNITHOLOGY AND BIOLOGY. b. St. George, Utah, Jan. 1, 1899. s. Thomas P. and Emmaline (Jarvis) C. Edn.: B.S., Brigham Young Univ., 1926; M.S., ibid., 1927; Ph.D., George Washington Univ., 1936. m. Margery Brown, May 20, 1920. c.: Glenna Clair; Margery B.; Josephine; Carolyn. Exp.: Various and Chf. of Rsch., U. S. Fish and Wildlife Serv., Wash., D. C., 1929-46; Asst. Dir., U. S. Fish and Wildlife Serv., ibid., 1946-54; Dean, Coll. of Biol. and Agric., Brigham Young Univ., Provo, Utah, 1954-57; Dir., Welder Wildlife Found., Sinton, Tex., 1955—. Hon. Pos.: Pres., Natl. Parks Assn.; Vice Pres., Tex. Acad. of Sci.; Comm. Natl. Acad. of Sci. A.O.U.; Intr. Assn. Game, Fish and Cons. Comm. and Wildlife Soc.; Pres., Southwest Fdns.; Pres., Wildlife Soc. Mem.: A.A.S.; Tex., Utah and Wash., D. C. Acad. of Sci.; Am. Fishery Soc.; Am. Ornithological Soc.; Cooper and Wilson Orni. Soc.; Ecological Soc.; Conservation Soc.; Mammal Soc.; Wildlife Soc.; Biol. Soc. of Wash.; Sigma Xi; C. of C. Co-Author: The Bobwhite Quail, 1939; Insects, 1951. Contbr. to: Jour. Wildl. Mgt.; Wilson Bull.; Condor; Gov. Printing Office; Jour. of Mammalogy; Plant Disease Reporter; London Field; Atlantic Naturalist Gazette. Gen. Int.: Leopold Award of Wildlife Soc.; Distinguished Serv. Award, Utah St. Univ.; Cons. Award, S. Tex. C. of C.; Sinton C. of C. Award; Natl. Audubon Cons. Award; Garden Club of Am.; Francis H. Hutchinson Cons. Award. Areas of Rsch.: Economic status of birds, mammals and other vertebrates; bird migration; wildlife management; conservation.



COTTER, David James (Ph.D.), Assoc. Prof. Biol. Dept., Alabama Coll., Montevallo, Ala. Home Add.: 140 Crestview Dr., Montevallo, Ala. BIOLOGY—ECOLOGY. b. Glens Falls, N. Y., July 24, 1932. s. Harold Francis and Helen (Maher) C. Edn.: B.S., Univ. of Ala., 1952; A.B., ibid., 1953; M.S., ibid., 1955; Ph.D., Emory Univ., 1958. m. Joann Wood, Aug. 21, 1953. c.: David Barry; Mark Wood; John Walter. Exp.: Rsch. Assoc., Atomic Energy Comm., Emory Univ., Atlanta, Ga., 1957-58; Asst. Prof. Biol. Dept., Alabama Coll., Montevallo, Ala., 1958-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Pres., Ala. Coll. Chapter, A.A.U.P.; Vice-Pres., Ala. Coun., A.A.U.P.; Editor of Ala. Acad. of Sci. Newsletter. Mem.: Ala. Acad. of Sci.; Assn. of Southeastern Biologists; Am. Inst. of Biol. Sci.; Botanical Soc. of Am.; Ecological Soc. of Am.; Beta Beta Beta; Phi Sigma; Sigma Xi. Contbr. to: A.S.B. Bull.; Ecology. Areas of Rsch.: Plant Ecology; Radiation Ecology.

COTTINGHAM, Charles (Ph.D.), Prof. of Bot., Box 25, Sta. Coll., Orangeburg, S. C. Home Add.: Rowland, N. C. BOTANY AND PLANT PATHOLOGY. b. Rowland, N. C., June 12, 1921. s. Charlie L. and Margaret (Barnes) C. Edn.: B.S., N. C. Agric. and Tech. Coll., 1952; M.S., Mich. Sta. Univ., 1953; Ph.D., ibid., 1958. m. Laura Newton, Nov. 2, 1946. c.: Winthrop Eugene; Vernard Therone. Exp.: Hd., Dept. of Agron., Alcorn Coll., Lorman, Miss., 1958-60; Prof. of Bot., S. C. Sta. Coll., 1960—. Mem.: Sigma Xi; Ecol. Soc. of Am.; Am. Assn. of Univ. Profs. Serv. Rec.: U. S. Army, 1942-47. Areas of Rsch.: Chemical Weed Control; Plant Breeding for Resistance to Diseases; Experiments on Development of Teleutospores of Ustilago hordei Grown on Culture Media.

COUCH, Jesse Delmas (Mr.), Edn., State of Ala., Jacksonville State Coll., Jacksonville, Ala. Home Add.: 1306 Forest Lane, Anniston, Ala. PHYSICS. b. Winfield, Ala., Feb. 3, 1907. s. Alex Thomas and Julia (Estes) C. Edn.: B.S., Univ. of Ala., 1930; M.A., ibid., 1951. m. Frances Beck, June 15, 1934. c.: Frances Evelyn; Jane Ellen. Exp.: Hd. of Sci. Dept., Anniston H. S., Anniston, Ala., 1947-58; Physics Inst., Air Force, Maxwell Field, Ala., 1943-47; Sci. Tchr., Anniston H. S., Anniston, Ala., 1934-43; Sci. Tchr., Elmore Co. H. S., Eclectic, Ala., 1930-34, 1934; Sci. Consultant, Ala. State Dept. of Edn., Jacksonville State Coll., 1958—. Mem.: Natl. Sci. Tchrs. Assn.; Natl. Sci. Supvr. Assn.; Natl. Assn. for the Adv. of Sci.; Ala. Edn. Assn.; Natl. Edn. Assn. Author: Laboratories for Learning, co-author, 1960; Junior High School Science Bulletin, co-author, 1961. Serv. Rec.: U. S. Air Force, 1943-47. Areas of Rsch.: Supervision of Instruction, Science.



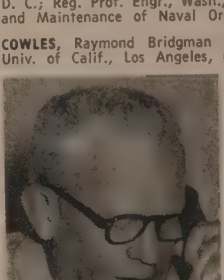
COULOMBRE, Alfred Joseph (Ph.D.), Hd. Section of Neuroembryology, N.I.N.D.B., Natl. Inst. of Health, Bethesda 14, Md. Home Add.: 4890 Battery Lane, Apt. 303, Bethesda 14, Md. EMBRYOLOGY. b. Boston, Mass., Aug. 15, 1922. s. Charles Alfred and Cecelia (Greene) C. Edn.: B.S., Catholic Univ. of Am., 1947; M.S., ibid., 1949; Ph.D., Johns Hopkins Univ., 1953. m. Jane L. Lacy, June 26, 1948. Exp.: Instr., Wabash Coll., 1948; Instr., Yale Univ. Schl. of Med., 1953-56; Asst. Prof., ibid., 1956-61; Hd. of Sec., Natl. Inst. Health, Bethesda, Md., 1961—. Mem.: A.A.A.S.; Am. Assn. of Anatomists; Sigma Xi; Assn. for Rsch. in Ophthalmology; Cajal Club; Phi Beta Kappa. Contbr. to: Am. Jour. Anat.; Anat. Rec.; Jour. Exper. Zool.; Internatl. Rev. of Cytol.; Jour. of Embryol. and Exper. Morophol.; Am. Jour. Ophthalmol.; Am. Archives of Ophthalmol. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Experimental Embryology of Eye, Brain, Skull, Intestine; Development of Corneal Transparency; Neuropharmacology of Embryos.

COULSON, Kinsell LeRoy (Ph.D.), Mgr., Geophysics, General Electric Co., Missile and Space Vehicle Dept., Philadelphia, Pa. Home Add.: 10 Revere Rd., Berwyn, Pa. METEOROLOGY. b. Hatfield, Mo., Oct. 7, 1916. s. Charles and Nora Madge (Swank) C. Edn.: B.S., Mo. State Coll., 1942; M.A., U.C.L.A., 1952; Ph.D., ibid., 1959. m. Vera Vivien Vainer, 1947. Exp.: Meteorologist, U. S. Weather Bureau, Chicago, Ill., 1942-43; Naval Officer, U. S. Navy, 1943-47; Meteorologist, U. S. Navy, China Lake, Calif., 1949-51; Rsch. Meteorologist, University of California, 1951-59; Research Meteorologist, Stanford Research Institute, Menlo Park, Calif., 1959-60; Mgr., Geophysics, General Elec. Co., Philadelphia, Pa., 1960—. Mem.: Am. Geophysical Union; Am. Meteorological Soc.; Am. Assn. for the Adv. of Sci; Chi Epsilon Pi Meteorological Frat. Franklin Inst. Author: Tables Related to Radiation Emerging from a Planetary, Atmosphere with Rayleigh Scattering, co-author, 1960. Contbr. to: Jour. of Planetary and Space Sci. Serv. Rec.: U. S. Naval Offices, 1943-47. Areas of Rsch.: Atmospheric Radiation, Atmospheric Physics.

COULTER, Elizabeth Jackson (Ph.D.), Chief Statistician, Ohio Dept. of Health, Columbus, Ohio. Home Add.: 297 Canyon Dr., Columbus 14, Ohio. ECONOMICS; STATISTICS. b. Balt., Md., Nov. 2, 1919. d. Waddie Pennington Jackson and Bessie (Gills) J. Edn.: A.B., Swarthmore, 1941; A.M., Radcliffe Coll., 1946; Ph.D., ibid., 1948. m. N. A. Coulter, Jr., 1951. c.: Robert Jackson. Exp.: Rsch. Analyst, Milbank Mem. Fund, N. Y., 1948-51; Rsch. Analyst, Children's Bureau, U. S. Dept. of Health, Education and Welfare, 1952-53; Statn., Ohio Dept. of Health, 1954-55; Lectr., Economics, Ohio Sta. Univ., 1954-55; Adjunct Asst. Prof., Biostats., Univ. of Pittsburgh, Grad. Schl. of Pub. Hlth., 1958—; Chf. Statistician, Ohio Dept. of Hlth., 1955—. Mem.: Am. Econs. Assn.; Am. Pub. Hlth. Assn.; Am. Stat. Assn.; Am. Sociol. Assn.; Am. Assn. Adv. Sci.; Am. Acad. for Polit. and Social Sci.; Biometrics Soc. Contbr. to: Am. Jour. of Pub. Hlth.; Jour. of the Am. Stat. Assn.; Jour. of the Natl. Cancer Instit.; Milbank Mem. Fund Quart. Areas of Rsch.: Economics; Statistics.

COURTNEY, Ralph Liady (Mr.), Asst. Sec. Hd. and Sec. Engr., Nuclear Weapons Sec., Bureau of Naval Weapons, Dept. of Navy, Wash., D. C. Home Add.: 1900 Columbia Pike, Arlington, Va. ENGINEERING, NUCLEAR ORDNANCE. b. Clarksburg, W. Va., Nov. 15, 1908. s. William Foley and Annie Laurie (Liady) C. Edn.: B.A., George Wash. Univ., 1943. m. Lora Reed, Apr. 20, 1935. Exp.: Hd., Production Engrng. Unit, Bureau of Ordnance, Dept. of Navy, Wash., D. C., 1951-55; Engr. for Nuclear Energy Applications, Material Div., Bureau of Ordnance, ibid., 1953-55; Asst. Sec. Hd. and Sec. Engr., Nuclear Weapons Sec., Bureau of Naval Weapons, Dept. of Navy, Wash., D. C., 1955—. Mem.: A.A.A.S.; Assn. of Engrs. and Scientists, Bureau of Naval Weapons; Am. Ordnance Assn.; Wash. Soc. of Engrs.; Bibliographical Soc. of Univ. of Va.; Univ. Club, Wash., D. C.; Reg. Prof. Engr., Wash., D. C. Areas of Rsch.: Production and Maintenance of Naval Ordnance.

COWLES, Raymond Bridgman (Ph.D.), Prof. of Zool., Emeritus, Univ. of Calif., Los Angeles, Calif. Home Add.: 855 Cambridge Ave., Santa Barbara, Calif. ZOOLOGY (PHYSIOLOGICAL ECOLOGY), HERPETOLOGY. b. Adams Mission Station, Natal, S. Africa, Dec. 1, 1896. s. G. B. and Amy (Bridgman) C. Edn.: B.A., Pomona Coll., 1921; Ph.D., Cornell Univ., 1928. m. Elizabeth Borncamp, 1929. c.: Catherine C. Woolsey; Dereth C. Godar. Exp.: Instr., Cornell Univ., 1923-25; Rsch., Natal and Zululand, S. Africa, 1925-27; Instr., Asst. Prof., Assoc. Prof., Prof., Prof. Emeritus, Univ. of Calif., 1929—. Hon. Pos.: Bd. of Trustees, Natl. Parks Assn. Mem.: Am. Soc. Ichthy. and Herpetologists; Cooper Ornithological Soc.; A.A.A.S.; A.I.B.S.; Am. Nat. Soc. for Study of Evolution; Herpetologists League; Gamma Alpha; Sigma Xi. Author: Zulu Journal, 1959. Contbr. to: Sci.; Am. Naturalist; Evolution; Copeia; Herpetologica; Condor. Serv. Rec.: U.S.N.R.F., W.W. I. Areas of Rsch.: Effects of High Temperatures in Reptiles and Other Animals; Temperature Control and Avoidance Mechanisms, Temperature in Evolution, The Somatic-Reproductive Thermal Hiatus.



COWLEY, Clement William (Mr.), Linde Co., Tonawanda, N. Y. Home Add.: 2109 Parker Blvd., Tonawanda, N. Y. MECHANICAL ENGINEERING. b. Whaddon, England, Oct. 3, 1924. s. Henry and Ellen (Watson) C. Edn.: B.S., Columbia Univ., 1951. m. Dorothy Nestlen, Sept. 14, 1946. c.: Anne. Exp.: Engr., Linde Co., Tonawanda, N. Y., 1951-61; Group Leader, ibid., 1961—. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Biophysical Soc.; Tau Beta Pi. Contbr. to: Trans. Am. Soc. Lubrication Engrng.; Ind. and Engr. Chem.; Biodyamica; Advances in Cryogenic Engrng. Areas of Rsch.: Heat Transfer, Cryobiol.; Cryogenics.

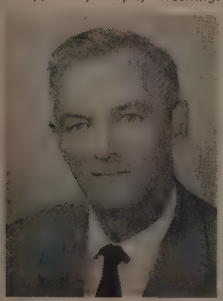
COWPERTHWAITE, Irving Archibald (Ph.D.), Rsch. Engr., Thompson Wire Co., 41 Mildred Ave., Boston 26, Mass. PHYSICAL CHEMISTRY. b. Worcester, Mass., Oct. 28, 1904. s. Allan Leigh and Edith Echo (Ring) C. Edn.: B.S., Mass. Int. of Tech., 1926; Ph.D., Columbia Univ., 1931. m. Fae Irene Poore, June 10, 1931. Exp.: Fellow, Rockefeller Inst. of Med. Rsch., New York, N. Y., 1926-28; Asst., ibid., 1928-30; Instr. in Chem., Columbia Univ., N. Y. C., 1930-37; Chf. Engr., Thompson Wire Co., Boston, Mass., 1937—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; Assn. of Iron and Steel Engrs.; Am. Soc. for Metals; Am. Sci. Affiliation; Instrument Soc. of Am.; Sigma Xi; Phi Lambda Upsilon; Epsilon Chi. Contbr. to: Jour. Am. Chem. Soc.; Trans. Faraday Soc.; Proc. Natl. Acad. of Sci.; Jour. Chem. Edn. Special Int.: Phys. Chem. of Solutions; Ferrous Metallurgy.

COX, Charles Raymond (Mr.), Retired Sanitary Engineer, World Health Organization, Geneva and Pakistan. Home Add.: 4740 Connecticut Ave., N.W., Washington 8, D. C. SANITARY ENGINEERING AND ENVIRONMENTAL SANITATION, WITH SPECIAL EMPHASIS ON PUBLIC WATER SUPPLY. b. Lutherville, Md., Dec. 31, 1892. s. Charles Owens and Emma L. (Bruehl) C. Edn.: B.S., Johns Hopkins Univ., 1921. Hon. Deg.: Hon. Prof., Univ. of Minas, Gerais, Brazil. m. Esther L. Considine, 1934. Exp.: Asst. Engr., Md. Health Dept., Baltimore, Md., 1914-18; San. Engr., Rockefeller Found., N. C. and Miss., 1921-22; Chief Chemist, Bureau of Water Supply, Reading, Pa., 1922-24; Assoc. Engr. and Chief, Bur. of Water Supply, N. Y. State Dept. of Health, Albany, N. Y., 1924-54; San. Engr. Consultant, Administration for Internatl. Develop., Brazil and Jamaica, 1954-60; San. Engr. Consultant, World Health Organization, Geneva and Pakistan, 1960-61. Hon. Pos.: Hon. Mem., Past Dir. and Secy., Water Purification Div., Am. Water Works Assn.; Chmn., N. Y. Section, A.W.W.A.; Tech. Advisory Bd., Internati. Joint Comm. on Boundary Waters. Fellow: Am. Assn. Adv. of Sci.; Am. Soc. of Civil Engrs.; Am. Publ. Health Assn. Mem.: Am. Water Works Assn.; Am. Acad. of San. Engr.; New England Water Works Assn.; N. Y. Water Pollution Control Assn.; Inter-Am. Assn. of San. Engrng. Author: Laboratory Control of Water Purification, 1942; Water Supply Control, 1934; Operation and Control of Water Treatment Processes, 1962. Contbr. to: Jour. A.W.W.A.; Am. Publ. Health Assn.; Public Works; Water and Sewage Works Jours. Areas of Rsch.: Water Purification, Water Quality Standards.

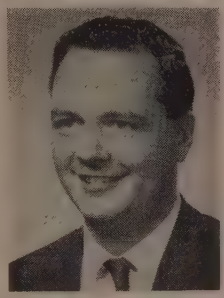
COX, Eleanor Harriet (Miss), Assoc. Prof. of Sci. and Math., Stout State Coll., Menomonie, Wis. Home Add.: 120 12th St., Menomonie, Wis. CHEMISTRY, ORGANIC, BIOCHEMISTRY AND INORGANIC. b. Madison, Wis., Oct. 4, 1899. s. Edward S. R. and Minna (Lorenz) C. Edn.: B.A., Univ. of Wis., 1921; M.A., ibid., 1939. Exp.: Instr., H. S., East Troy, Walworth and Stoughton, Wis., 1921-26; Instr., H. S., Baraboo, Wis., 1926-42; Instr., Assoc. Prof., Stout State Coll., 1942—. Hon. Pos.: Wis. Sci. Testing Comm., W.E.A.; Pres., S.W.E.A. Mem.: A.A.A.S.; A.A.U.P.; A.C.S.; N.E.A.; W.E.A.; N.W.T.A.; N.S.T.A.; A.H.-E.A.; C.A.S.M.T.; Wis. Acad. of Sci., Arts and Letters; A.A.U.W.; Kappa Delta; Pi Lambda Theta; O.E.S.; Wesleyan Guild; B. and P.W.; A.A.U.W. Art Group. Contbr. to: W.E.A. Jour. Listed in: Who's Who in the Midwest; Am. Men of Sci.; Who's Who in Am. Edn. Areas of Rsch.: Biochem.

COX, Lionel A. (Ph.D.), Vice-Pres., Research and Engrng. and Dir. of Rsch., Personal Products Corp., Milltown, N. J. Home Add.: 111 Fairway Dr., Princeton, N. J. ORGANIC AND PHYSICAL CHEMISTRY. b. Winnipeg, Manitoba, Sept. 1, 1916. s. Harry Audley and May Juliet (Racine) C. Edn.: B.A., Univ. of British Columbia, 1941; M.A., ibid., 1943; Ph.D., McGill University, 1946. m. Evelyn Juliet Bavis, Sept. 1, 1942. c.: Victoria Margaret Racine; Christopher Bruce Racine; David Allan Racine. Exp.: Tchr., Univ. Schl., Victoria, B. C., 1935-40; Chief Chemist, Sidney Roofing and Paper Co., ibid., 1941-44; Lecturer Gen. and Organic Chem., Univ. of Brit. Col., 1943-44; Rsch. Chem., Am. Viscose Corp., Marcus Hook, Pa., 1946-53; Dir. of Rsch., Johnson and Johnson Ltd., Montreal, Can., 1953-61; Vice-Pres. and Dir. of Rsch., Personal Products Corp., Milltown, N. J., 1961—. Mem.: Am. Chem. Soc.; Tech. Assn. of Pulp and Paper Indus.; The Fiber Soc., Inc.; N. Y. Academy of Sci.; Sigma Xi. Contbr. to: Indus. and Engrng. Chem.; Chem. Tech.; Canadian Textile Jour.; Canadian Chem. Processing; Canadian Med. Assn. Jour. Serv. Rec.: Canadian Reserve Forces, 1940-43. Areas of Rsch.: High Polymers Such as Cellulose, Cellulose Derivatives; Pulp and Paper; Surgical and Catamenial Dressings.

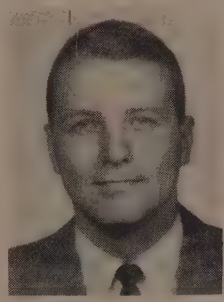
COYLE, John Patterson (Mr.), Sr. Scientist, Operations Evaluation Group, Navy Dept., Washington 25, D. C. Home Add.: 4706 North 36th St., Arlington 7, Va. OPERATIONS RESEARCH. b. Kingston, Pa., May 24, 1917. s. David Cushman and Isadore (Douglas) C. Edn.: B.S., Antioch Coll., 1938. m. Jo Ann Swedlund, Aug. 21, 1953. c.: Sarah Louise; David Lloyd. Exp.: Rsch. Dir., Antioch Found., Co., Yellow Springs, Ohio, 1938-39; Jr. Metallurgist, Cerro de Pasco Copper Corp., La Oroya, Peru, 1940-43; OEG Rep. on Staff, Numerous Major Navy Comm., U. S. Mediterranean, Far East, 1950-54; U. S. Operations Rsch. Groups, Liaison Rep., US Embassy, London, Engl., 1954-55; Mem., Operations Evaluation Gp., Navy Dept., Wash., D. C., 1943—. Hon. Pos.: Commissioner, Arlington Co. Planning Comm., 1959. Mem.: Operations Rsch. Soc. of Am.; Operational Rsch. Soc.; Inst. for Management Sci.; A.A.A.S.; Am. Soc. of Planning Officials. Contbr. to: Proceedings of Electrochemical Soc.; Proceedings of Second Internatl. Conf. on Operational Rsch. Gen. Int.: Received Ordnance Development Award, U. S. Navy, 1946. Areas of Rsch.: Military Weapons and Tactics, Strategy, Military Planning and City Planning.



CRABBE, Francis Johnston (Mr.), Design Engr., 1455 California Ave., Palo Alto, Calif. Home Add.: 1586 Nuthatch Lane, Sunnyvale, Calif. SYSTEMS ENGINEERING. b. Newark, N. J., June 11, 1929. s. Francis Johnston and Helen Marie (Klingel) C. Edn.: B.S., Royal Tech. Coll., Scotland, U. K., 1950. m. Edith Antonie Dumschat, Sept. 12, 1959. c.: Roland Ian; Eileen Ingrid. Exp.: Electrical Engr., General Elec. Co., Schenectady, N. Y., 1951-55; Proj. Engr., N. V. Caltex Pacific, Petroleum Mij., Pakanbaru, Sumatra, Indonesia, 1955-59; Staff Engr., Philco Corp., Palo Alto, Calif., 1959-61; Design Engr., Aetron, Blume, Atkinson, Palo Alto, Calif., 1961—. Hon. Pos.: Chmn., San Francisco C. of C., 1957-58; Mem., Bd. of Dirs., English Speaking Union Y.M.G., 1959. Mem.: Inst. of Radio Engrs.; Am. Inst. of Elec. Engrs.; Soc. of Am. Military Engrs.; Am. Soc. of Heating, Refrigerating and Air Conditioning Engrs.; Am. Assn. for the Adv. of Sci.; Permanent Internatl. Assn. of Navigational Congresses. Serv. Rec.: British Army, 1947-49. Areas of Rsch.: Simplex Method, PERT, and Critical Path Techniques in Analysis of Engrng. Problems in Control Systems.



CRADDOCK, John Campbell (Ph.D.), Assoc. Prof. of Geol., Univ. of Minn., Minneapolis 14, Minn. Home Add.: 3340 48th Ave, S. Minneapolis 6, Minn. GEOLOGY. b. Chicago, Ill., Apr. 3, 1930. s. John, Jr. and Bernice (Campbell) C. Edn.: B.A., DePauw Univ., 1951; M.A., Columbia Univ., 1953; Ph.D., ibid., 1954. m. Dorothy Dunkelberg, June 13, 1953. c.: Susan Elizabeth; John Paul. Exp.: Tchng. Asst., DePauw Univ., 1950-51; Higgins Fellow, Columbia Univ., 1951-52; Field Geologist, New York State Museum, Albany, N. Y., 1952-53; N.S.F. Fellow, Columbia Univ., 1952-53; Tchng. Asst., ibid., 1953-54; Geologist, Shell Oil Co., N. Mex., Tex., Colo., Wyo., 1954-56; Consultant, U. S. Army Corps of Engrs., Omaha, Neb., 1957-58; Asst. Prof., Univ. of Minn., 1956-60; Assoc. Prof., ibid., 1960—. Hon. Pos.: Geol., U. S. Airborne Traverse, Antarctica, 1959-60; Geol., U. S. Bellingshausen Sea Expedition, Antarctica, 1960; Leader, Univ. of Minn. Expedition, Jones Mtns., Antarctica, 1960-61; Chmn., Lake Superior Inst. on Geol., 1959; Univ. Comm. on Polar Rsch. Mem.: Fellow, Geological Soc. of Am.; Am. Geophysical Union; Am. Assn. of Petroleum Geologists; Seismological Soc. of Am.; Geologische Vereinigung; Fellow, Am. Assn. for Adv. of Sci.; Sigma Xi; Phi Beta Kappa; Phi Eta Sigma. Contbr. to: Bull. of Geological Soc. of Am.; Report of the Internatl. Geological Congress, XXI Session; Science. Areas of Rsch.: Structural Geology, Antarctic Geology.



CRAIG, Louis Elwood (Ph.D.), Dir. of Rsch. and Technical Serv., John Deere Chemical Co., Pryor, Okla. Home Add.: 1412 Willow Rd., Pryor, Okla. CHEMISTRY. b. Clifton Hill, Mo., Dec. 10, 1921. s. Clyde Allen and Elsie (Metcalf) C. Edn.: A.B., Central Coll., Fayette, Mo., 1943; Ph.D., Univ. of Rochester, N. Y., 1948. m. Virginia Higgins, 1943. c.: James; David; Margaret; Barbara. Exp.: Rsch Chemist, Am. Cyanamid Co., Stamford, Conn., 1943-46; Rsch. Fellow, Univ. of Rochester, 1946-48; Rsch. Chemist, Gen. Aniline and Film Corp., Easton, Pa., 1948-54; Dir. of Rsch., John Deere Chemical Co., Pryor Okla., 1954-61; Dir. of Rsch. and Technical Serv., ibid., 1961—. Hon. Pos.: Chmn., Tulsa Sect., Am. Chem. Soc. Mem.: Am. Inst. of Chemists; A.A.A.S.; Mo. Archaeological Soc.; Okla. Anthropological Soc.; Rotary Club. Contbr. to: Jour. of the Am. Chemical Soc.; Chemical Reviews; Jour. of Industrial and Engrng. Chem. Areas of Rsch.: Organic Chem.; Acetylene Chem.; Nitrogen Chem.; Fertilizers; Mkt. Rsch. and Development.

CRAIG, Cecil Calvert (Ph.D.), Prof. of Math., and Dir. of Statistical Rsch. Laboratory, Univ. of Mich., Ann Arbor, Mich. MATHEMATICAL STATISTICS. b. Apr. 14, 1898, Otwell, Ind. s. Harley E. and Lula (Abbott C. Edn.: A.B., Ind. Univ., 1920; A.M., ibid., 1922; Ph.D., Univ. of Mich., 1927. m. Ruth Swan of Plainville, Ind., 1927. c.: Mary Elizabeth. Exp.: Instr. of Math., Ind. Univ., 1920-22; Instr. of Math., Univ. of Mich.,

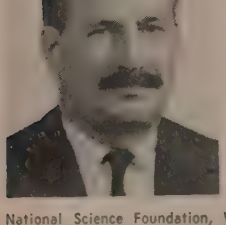
1922-24, 1925-29; Asst. Prof. of Math., ibid., 1931-36; Assoc. Prof. of Math., ibid., 1936-42; Prof. of Math., 1942—; Dir., Statistical Rsch. Laboratory, ibid., 1946—. Mem.: Fellow, Am. Soc. of Quality Control; Math. Assn. of Am.; Am. Math. Soc.; Fellow, Am. Statistical Assn.; Fellow, Inst. of Math. Statistics; Sigma Nu; Phi Beta Kappa; Sigma Xi; Pres., Inst. of Math. Stat., 1942-44; Biometric Soc. Ph.D. Dissertation: An Application of Thiele's Semi-Invariants to the Sampling Problem. Contbr. to: Annals of Math. Statistics; Metron; Biometrika; Annals of Math.; Am. Math. Monthly; Jour. of Am. Stat. Assn.; Indus. Qtly. Control. War Record: S.A.T.C., Officers Training School, 1918. Exp.: Year as Fellow of Am.-Scandinavian Foundation at Lund, Sweden, 1924-25; Natl. Res. Coun. Fellow in Math., Princeton Univ., 1929-30; Stanford Univ. 1930-31; Fellow of the Rockefeller Foundation, Univ. of London, 1937-38. Special Int.: Statistical Theory and Methodology; Statistical Quality Control. Gen. Int.: Shewhart Medalist, Am. Soc. for Quality Control.

CRAMER, Harrison Emery (Sc.D.), Rsch. Meteorol., Mass. Inst. of Technol., Round Hill, So. Dartmouth, Mass. Home Add.: 25 Fremont St., So. Dartmouth, Mass.

ATMOSPHERIC TURBULENCE AND DIFFUSION - MICROMETEOROLOGY. b. Johnstown, Pa., May 27, 1919. s. Frank W. and Ella Field (Emery) C. Edn.: A.B., Amherst Coll., 1941; S.M., Mass. Inst. of Tech., 1943; Sc.D., ibid., 1948. m. Virginia Viets, Dec. 22, 1942. c.: Anne; Dorothy; Nancy; William. Exp.: Lab. Instr. and Rsch. Assoc., Mass. Inst. of Tech., Cambridge, Mass., 1942-48; Rsch. Meteorolt., Mass. Inst. of Tech., 1949—; Sr. Prin. Scientist, Geophys. Corp. of Am., Bedford, Mass., 1962—; Rsch. Meteorol., Mass. Inst. of Technol., Round Hill, So. Dartmouth, Mass., 1962—. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; Am. Assn. Adv. Sci.; Royal Meteorol. Soc.; Phi Beta Kappa; Sigma Xi; Delta Tau Delta. Contbr. to: Jour. of Meteorol.; Bull. of the Am. Meteorol. Soc.; Quarterly Jour. of the Royal Meteorol. Soc.; Meteorol. Monographs; Am. Indust. Hyg. Assn. Quart.; Jour. of the Air Polution Control Assn.; Adv. in Geophys. Serv. Rec.: U. S. Naval Reserve, 1944-46. Gen. Int.: Practical Technique for Predicting the Dispersal of Airborne Materials; Consult. in Applications of Knowledge of Wind and Temperature Structure to Sound Transmission, Air Pollution Problems Wind Loadings on Structures and Aircraft Operation. Areas of Rsch.: Structure of Low Level Atmospheric Turbulence, Atmospheric Diffusion Processes, Air Pollution, Energy Exchange Processes in the Atmospheric Boundary Layer.

CRANDALL, Earle Ellsworth (M.D.), Fellow, Neurosurgery, Mayo Fdtn., Rochester, Minn. NEUROSURGERY AND NEUROENDOCRINOLOGY. b. Chicago, Ill., Feb. 17, 1933. s. Theodore Anton and Jeannette (Eisenberg) C. Edn.: B.S., Univ. of Ill., 1955; M.S., ibid., 1956; M.D., ibid., 1956; Ph.D., Univ. of Minn. (cand.). Exp.: Med. Student, Instr., Fellow of Grad. Coll., Rsch. Asst., Univ. of Ill., Coll. of Med., Chicago., Ill., 1952-56; Intern, Univ. of Ill. Hosp., Chicago, Ill., 1956-57; Fellow, Neurosurg., Mayo Fdtn., Rochester, Minn., 1957—. Mem.: Sigma Xi; Phi Delta Epsilon; Phi Eta Sigma; Omega Beta Pi. Contbr. to: Circulation; Circul. Rsch.; Am. Jour. of Physiol.; Jour. of Lab. and Clin. Investn. Gen. Int.: Mayo Alumnus Award for Outstanding Research. Areas of Rsch.: Neurosurgery; Neuroendocrinology; (Hypothalamus-Pituitary); Hypertension.

CRARY, Albert Paddock (Ph.D.), Chf. Scientist, U. S. Antarctic Rsch. Program, Natl. Sci. Foundation, Washington 25, D. C. Home Add.: 2400 19th St., N.W., Washington 9, D. C. GEOPHYSICS; SEISMOLOGY, GRAVITY, MAGNETICS, OCEANOGRAPHY, POLAR REGIONS. b. Pierrepont, N. Y., July 25, 1911. s. Frank J. and Ella (Paddock) C. Edn.: B.S., St. Lawrence Univ., 1931; M.S., Lehigh Univ., 1933. Hon. Deg.: Ph.D., St. Lawrence Univ., 1959. Exp.: Grad. Asst., Lehigh Univ., 1931-35; Independent Exploration Co., Houston, Tex., 1935-41; Project Scientist, Woods Hole Oceanographic Inst., Mass., 1941-42; Party Chf. Oil Exploration, United Geophysical Co., Pasadena, Calif., 1942-46; Project Scientist, Air Force Cambridge Rsch. Center, Bedford Mass., 1946-60; Chief Scientist, Antarctic Programs, National Science Foundation, Washington, D. C., 1959—. Mem.: Am. Geographical Society; Seismological Soc. of Am.; Soc. Exploration Geophysics; Arctic Institute of North Am.; Am. Geophysical Union; Br. Glaciological Soc.; Am. Assn. Adv. Sci.; Phi Beta Kappa. Contbr. to: Trans. Am. Geophysical Union; Arctic; Jour. of Meterology; Bull., Seismological Soc. of Am.; Jour. Geophysical Rsch.; Science. Gen. Int.: Civil Servant of the Year of Greater Boston, 1959; Navy Distinguished Public Service Award, 1959; Am. Geographical Soc. Cullum Medal, 1960; Department of Defense Distinguished Civilian Service Award. Areas of Rsch.: Earth Geophysics in Polar Regions.



CRANE, George Elliott (M.D.), 685 West End Ave., New York, N. Y. PSYCHIATRY - PSYCHOPHARMACOLOGY. b. Trieste, Italy, Jan. 30, 1912. s. Ernest and Bianca (Castelli) C. Edn.: M.D., Univ. of Milano, Italy, 1936. m. Div. c.: Stephen. Exp.: M.D., Pilgrim State Hosp., Brentwood, N. Y., 1946-50; Priv. Practice, New York, 1950-60; M.D., Monteflore Hosp., New York, 1952-60; Staff Psychiatrist, V.A. Hosp., Brockton, Mass., 1960-62; M.D., N.I.H., St. Elizabeth Hosp., Washington, D. C., 1962—. Mem.: Am. Psychiatric Assn.; A.A.A.S. Contbr. to: Am. Jour. of Psychiatry; Jour. of Nervous and Mental Disease; N. Y. State Jour. of Medicine. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Clinical Studies of Drug Effects on Psychiatric Disorders. Areas of Rsch.: Clinical Psychiatry and Psychopharmacology.

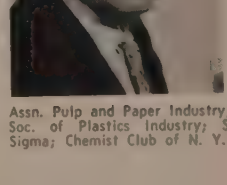
CRARY, Dorcas Delabarre (Mrs.), Professional Asst., R. B. Jackson Memorial Lab., Bar Harbor, Maine. Home Add.: R.F.D. #1, Bar Harbor, Maine. GENETICS AND MORPHOLOGY. b. Providence, R. I., May 4, 1916. d. Edmund Burke and Dorothea (Cotton) Delabarre. Edn.: A.B., Pembroke Coll., 1938; M.Sc., Brown Univ., 1941. Exp.: Technician, Woods Hole Oceanographic Inst., Woods Hole, Mass., 1941-44; Rsch. Asst., Brown Univ., 1946-47; Rsch. Asst., R. B. Jackson Memorial Lab., Bar Harbor, Maine, 1947—. Mem.: A.A.A.S.; Am. Genetic Assn.; Natl. Geographic Soc.; Natl. Audubon Soc.; Natl. Parks Assn.; Am. Forestry Assn.; Sigma Xi; Sigma Delta Epsilon; Bar Harbor Garden Club; Mt. Desert Is. Bird Club. Contbr. to: Am. Jour. of Anatomy; Am. Jour. Physical Anthropol.; Anatomical Record; Behavior; Genetics; Growth; Jour. Exptl. Zool.; Jour. Heredity; Stain Technol. Areas of Rsch.: Normal Growth and Development, Morphological Genes, Teratology.

CRARY, James Herbert (Ph.D.), Electronic Engr., Natl. Bur. of Standards, Boulder, Colo. Home Add.: Rt. 3, Box 223D, 33 Crestmoor Dr., Boulder, Colo. VERY LOW FREQUENCY PROPAGATION, WHISTLERS. b. Denver, Colo., Sept. 4, 1928. s. John Howard, Jr. and Lucille (Jaeger) C. Edn.: B.S., Univ. of Denver, 1950; M.S., Stanford Univ., 1951; Ph.D., ibid., 1961. m. Beth Jackson, Sept. 6, 1949. c.: Susan Grace; Nancy Jeanne; Anne Louise. Exp.: Rsch. Engr., Radio Sci. Lab., Stanford Univ., 1951-61; Electronic Engr., Natl. Bur. of Standards, Boulder, Colo., 1961—. Mem.: Sigma Xi; R.E.S.A.; Tau Beta Pi; I.R.E.; Am. Geophysical Union; A.A.A.S.; Sigma Phi Epsilon. Contbr. to: Jour. of Geophysical Rsch. Areas of Rsch.: VLF Propagation, Atmospherics, Whistlers.

CRAVER, Bradford North (M.D.), Dir. of Pharmacology, Squibb Inst. for Med. Rsch., New Brunswick, N. J. Home Add.: 805 Mountain Ave., Westfield, N. J.

PHARMACOLOGY. b. Geneva, N. Y., Aug. 21, 1910. s. David H. and Eva (North) C. Edn.: A.B., Cornell Univ., 1932; M.S., Boston Univ., 1936; Ph.D., ibid., 1941; M.D., Wayne Coll. of Med., 1944. m. Elena Borikova, Aug. 17, 1933. c.: David; Frederick; Charles. Exp.: Instr., Am. Coll. of Sofia, Sofia, Bulgaria, 1933-34; Res. Assoc., Wayne Coll. of Med., 1941-44; Res. Assoc., Manhatten Eng. Proj., Rochester Univ., 1944-45; Sr. Pharmacol., Ciba Pharmaceu. Prod., Summit, N. J., 1945-51; Dir. Res. Found., Johnson and Johnson, New Brunswick, N. J., 1951-54; Dir. Pharmacology, Squibb Inst. Med. Res., ibid., 1954—. Mem.: N. Y. Acad. of Sci.; Am. Med. Assn.; Assn. Food and Drug Officials of the U. S.; A.A.A.S.; Assn. Am. Univ. Prof.; Natl. Soc. Med. Res.; Am. Soc. Pharmacol. and Exptl. Therapeu.; Soc. Exptl. Biol. and Med. Contbr. to: Science; Jour. Pharm.; Jour. Am. Pharm. Assn.; Arch. Int. Pharmacod.; Proc. Soc. Exptl. Biol. Med.; Annals N. Y. Acad. Sci.; Jour. Allergy; Am. Jour. Digest Diseases; Arch. Industrial Hygiene and Occupational Med.; Toxicology and Applied Pharm. Areas of Rsch.: Antihistaminics, Cardiovascular Agents, and Lab. Methods.

CRAVER, John Kenneth (Mr.), Monsanto Chem. Co., Advanced Org. Res., 1700 S. 2nd St., St. Louis, Mo. Home Add.: 101 E. Essex, Kirkwood, Mo. APPLIED RESEARCH, FLUIDS, POLYMERS, PLASTICIZERS, PAPER CHEMICALS, COMMERCIAL CHEMICAL DEVELOPMENT. b. Jonesboro, Ill., May 1, 1915. s. John Franklin and Esther (Powers) C. Edn.: B.Ed., Sou. Ill. Univ., 1937; M.S., Syracuse Univ., 1938. m. Eileen Brock, 1939. c.: Mary; Carole; Iris; John K. Exp.: Chemist, Monsanto, St. Louis, Mo., 1938-54; Dev. Dir., General Mills, Minneapolis, Minn., 1955-56; Dev. Mgr., Monsanto, Dayton, Ohio, 1956-60; Advanced Org. Res., Monsanto Chem. Co., St. Louis, Mo., 1960—. Hon. Pos.: Chmn. Org. Coatings and Plastics Div. of A.C.S.; Dir., Commercial Chem. Development Assn. Mem.: Am. Chem. Soc.; A.A.A.S.; Tech. Assn. Pulp and Paper Industry; Commercial Chem. Develop. Assn.; Soc. of Plastics Industry; Soc. of Plastic Engrs.; Alpha Xi Sigma; Chemist Club of N. Y. Areas of Rsch.: Phosphate Esters

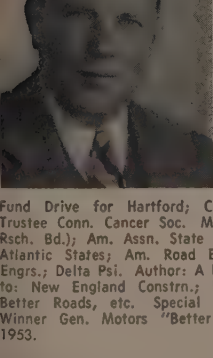


atty Acids and Esters Gasoline Additives, Hydraulic Fluids, Paper hemicals, Organic Coatings, Polymers.

RAWFORD, Arthur Lorenzo (Mr.), Asst. Dir., Utah Geol. and Mineralogical Survey, 200 Mines Bldg., Univ. of Utah, Salt Lake City 12, Utah. Home Add.: 1067 East Fifth South St., Salt Lake City, Utah. GEOLOGY. b. Washington, Washington Co., Utah, Apr. 10, 1899. s. Arthur D. and Mary Johanna (Bastian) C. Edn.: A.B., Brigham Young Univ., 1924; M.A., Stanford Univ., 1926. m. Vesta Pierce, Apr. 3, 1924. c.: Marian C. Anderson. Exp.: Asst. in Mineralogy and Petrography, Stanford Univ., 1925-26; Instr. in Geol. and Petrography, Brigham Young Univ., 1926-27; Consulting Crystallographer, Crocker Rsch. Lab., San Francisco, Calif., 1927; Instr. in Geol. and Mineralogy, Univ. of Wyo., 1927-28; Asst. Microscopist, Met. Rsch. Dept., Univ. of Utah, 1928-30; Microscopist, Coop. Ore Dressing

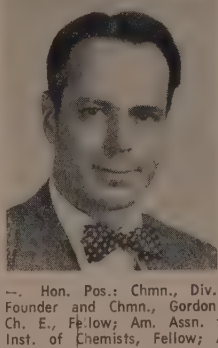
Minoscopie Lab., Maintained at the Univ. of Utah by Mining Industry, 1930-32; Geologist and Mineral Technolst., Utah Eng. Expt. Station, Univ. of Utah, 1932-44; Asst. Prof., Ore Dressing Microscopy, Univ. of Utah, 1932-44; Raw Materials Eng., Geneva Steel Co., Salt Lake City, Utah, 1944-45; Commissioner, Raw Materials Div., Dept. of Publicity and Indust. Development, State of Utah, Salt Lake City, Utah, 1946-49; Dir., Utah Geol. and Mineralogical Survey, ibid., 1949-61; Asst. Dir., ibid., 1961—. Hon. Pos.: Vice Chmn., of Bd., Utah Cooperatvie Wholesale Assn.; Chmn. of Physical Sci. Sect., Utah Acad. of Sci., Arts and Letters; Vice Chmn., Utah State Self-help Bd.; Sect., Treas., Utah Geol. Soc. Mem.: Utah Geol. Soc.; Mineralogical Soc. of Am.; Utah Acad. of Sci., Arts and Letters; Am. Assn. Adv. Sci.; Associates of the Geol. and Miner. Dept. of Stanford Univ.; Geol. of Am. (Fellow); Seismological Soc. of Am.; Am. Assn. Petroleum Geolsts.; Intermountain Assn. of Petroleum Geol.; Rocky Mountain Assn. of Petroleum Geol.; Utah Ednl. Assn.; Utah Historical Soc.; Sigma Xi; Phi Kappa Phi; Natl. Council of Atlantic Union Com. Contbr. to: Am. Mineralogist; Mining and Metallurgy; Guidebooks to the Geol. of Utah; Proc. of the Utah Acad. of Scis., Arts and Letters. Serv. Rec.: U. S. Army, W.W. I. Areas of Rsch.: Geology, Mineralogy, Petrography, Ore Dressing Microscopy, Mineral Technology.

CREAMER, Warren M. (Mr.), Chief, Staff Services, Conn. State Hwy. Dept., 24 Walcott Hill Rd., Wethersfield, Conn. HIGHWAYS AND BRIDGES, DESIGN, CONSTRUCTION, MAINTENANCE AND RESEARCH. b. Williamsport, Pa., July 18, 1894. s. Warren Emerson and Margaret (Bunnell) C. Edn.: B.S., Trinity Coll., 1917. m. Elizabeth Loomis Glazier, Oct. 20, 1923. c.: Warren Milton, Jr., (dec.); Cordelia Glazier (Mrs.) Benjamin T. Richards, Jr.). Exp.: Constrn. and Maintenance Engr., Pa. R.R., Phila., Pa., 1917-20; Asst. Engr., Pa. State Hwy., 1920-22; Asst. Engr., Sr. Hwy. Engr., Engr. of Design, Dir. Engrng. and Constrn., Prin. Engr., Chf. Engr., Chf. Staff, Conn. State Hwy. Dept., Hartford, Conn., 1922—. Hon. Pos.: Pres., Conn. Soc. of Civil Engrs.; Dir., Conn. Soc. Profl. Engrng.; Chmn., Conn. Cancer Soc. Fund Drive for Hartford; Chmn. for Farmington Fund Drive; Trustee Conn. Cancer Soc. Mem.: Natl. Acad. of Sciences (Hwy. Rsch. Bd.); Am. Assn. State Hwy. Officials; Hwy. Officials of N. Atlantic States; Am. Road Builder Assn.; Conn. Soc. of Prof. Engrs.; Delta Psi. Author: A Road Menders Rhymes, 1948. Contbr. to: New England Constrn.; Engrng. News Record; Hwy. Mag.; Better Roads, etc. Special Int.: Hwy. Traffic Econ.; Finance. Winner Gen. Motors "Better Highways" Award-State of Conn., 1953.

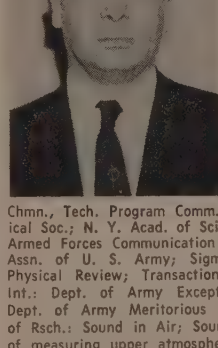


CREEGAN, Robert Francis (Ph.D.), Prof. of Philosophy, State Univ. of N. Y., Coll. at Albany, N. Y. Home Add.: 28 Wellington Rd., Delmar, N. Y. PHILOSOPHY OF SCIENCE, PSYCHOLOGY, EDUCATION. b. Battle Creek, Mich., Mar. 27, 1915. s. Charles Cole and Harriet Miriam (Stephenson) C. Edn.: B.A., Marietta Coll., 1936; M.A., Duke Univ., 1937; Ph.D., ibid., 1939. m. Doris Ryan, Dec. 27, 1940. c.: Charles Louis. Exp.: Instr., William and Mary, 1939-40; Instr., Cumberland Univ., 1940-43; Instr., Univ. of Miss., 1943-44; Instr., Bucknell Univ., 1944-45; Instr., Whitman Coll., 1945-47; Instr., Carlston Coll., 1947-48; Instr., Ohio Univ., 1948-52; Prof. of Philos., State Univ. of N. Y., Albany, 1952—. Hon. Pos.: Dir., Albany Planned Parenthood Assn.; Assoc. Editor, Conflict Resolution. Mem.: A.A.A.S.; Am. Philos. Assn.; Am. Psychol. Assn.; A.A.U.P. Author: The Shock of Existence, 1954. Contbrng. Author: Present Day Psychology, 1955; Encyclopedia of Psychology, 1946. Contbr. to: Jour. of Philos.; Jour. of Abnormal and Soc. Psychol.; Am. Psychologist; Am. Jour. of Soc.; Ednl. Theory; Schl. and Soc. Areas of Rsch.: Shock Methods in Edn.; Belief Doubt Steady State Theory; Theory of Knowledge; Ritualistic Factors in Proof.

CREELMAN, George Douglas (Mr.), Consultant, Richardson, Bellows, Henry and Co., Inc., 355 Lexington Ave., N. Y. 17, N. Y. Home Add.: 2 Iselin Terr., Larchmont, N. Y. CHEMICAL ENGINEERING AND PHYSICS. b. Winsted, Conn., Nov. 18, 1908. s. George W. and Helen (Douglas) C. Edn.: A. B., Harvard Univ., 1931. m. Jo Braun, Mar. 21, 1959. c.: Douglas; Stewart; Katherine; Peter. Exp.: Chem. Engr., The M. W. Kellogg Co., N. Y., 1931-42; Rsch. Engr., Monsanto Chem. Co., St. Louis, Mo., 1943-44; Adm. Asst., Instit. of Gas Tech., Chicago, Ill., 1944-45; Dir., Rsch., M. A. Hanna Co., Cleveland, Ohio, 1946-54; Pres., Creelman Assoc., Consultants, Cleveland, Ohio, 1954-58; Tchr., Hotckiss Schl., Lakeville, Conn., 1958-60; Consultant, Richardson, Bellows, Henry and Co., Inc., N. Y., 1960—. Hon. Pos.: Chmn., Div. of Fuel Tech., Am. Chem. Soc.; Founder and Chmn., Gordon Rsch. Conf. on Coal. Mem.: Al Ch. E., Fellow; Am. Assn. for the Adv. of Sci., Fellow; Am. Inst. of Chemists, Fellow; Am. Chem. Soc.; Am. Phys. Soc.; A.I.M.E.; O.R.S.A.; T.I.M.S.; Soc. Gen. Systs.; Newcomen Soc.; Chemists' Club, N. Y. Contbr. to: Am. Mining Congress Jour. Areas of Rsch. Fuels Conversion and Processing, Chemical Process Engineering, Coal Pipeline Transportation, Operations Research, Group Dynamics and Industrial Research Management.



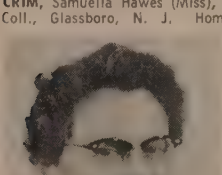
CRENSHAW, Craig Moffett (Ph.D.), Chf. Scientist for Rsch. and Development for the Chf. Signal Officer, Dept. of Army, Washington 25, D. C., Attn: SIGRD-2. Home Add.: 5003 Waggaman Circle, McLean, Va. PHYSICIST, SOUND IN AIR. b. Chinkyiang China, Sept. 24, 1916. s. Rev. J. Crawford and Mrs. May Craig (Moffett) C. Edn.: B.S., Southwestern at Memphis, 1937; Ph.D., N. Y. Univ., 1942. m. Florence F. Wade, Aug. 12, 1942. c.: Craig M., Jr.; Florence Elizabeth; David S.; William Crawford. Exp.: Grad. Asst., N. Y. Univ., 1937-41; Asst., ibid., 1941-42; Physicist, U. S. Signal R&D Lab., Ft. Monmouth, N. J., 1942-56; Dir., Phys., ibid., 1956-57; Chief Scientist for Ofc. of CSO, Washington, D. C., 1957-62; Chief Scientist, Army National Command, Wash., D. C., 1962—. Hon. Pos.: Chmn., Tech. Program Comm., Milecon, 1960. Mem.: Am. Physical Soc.; N. Y. Acad. of Sci.; Industrial Radio Engrs.; A.A.A.S.; Armed Forces Communication Elect. Assn.; Am. Inst. of Physics; Assn. of U. S. Army; Sigma Xi; Chi Beta Phi. Contbr. to: Physical Review; Transactions of Special Libraries Assn. Gen. Int.: Dept. of Army Exceptional Civilian Serv. Award, 1958; Dept. of Army Meritorious Civilian Serv. Award, 1959. Areas of Rsch.: Sound in Air; Sound Ranging; Rocket gernade method of measuring upper atmospheric meterological parameters.



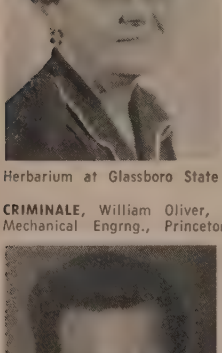
CRESSMAN, Harry Edward (Mr.), Tchr., Chmn., Pilot Sci. Prog., Hicksville Pub. Schl. Administration Annex, Hicksville, N. Y. Home Add.: 11 Field Ave., Hicksville, N. Y. SCIENCE EDUCATION. b. Catasaugua, Pa., Sept. 23, 1913. s. Herbert W. and Isabella I. (Dotterer) C. Edn.: B.S., Muhlenberg Coll., 1935; M.Ed., Temple Univ., 1950. m. Barbara E. Zimmerman, June 15, 1945. c.: Barry Edward; Susan Lynn; Pamela Ann. Exp.: Supvr. in Inspection Dept., Glen L. Martin, Baltimore, Md., 1941-44; Tchr., Moses Brown Private Schl. for Boys, Providence, R. I., 1944-45; Head, Sci. Dept., Merchantile H. S., Merchantville, N. J., 1945-56; Tchr., Chmn., Pilot Sci. Prog., Hicksville Pub. Schls., Hicksville, N. Y., 1956—; Supvr. in Sci., Kindergarten to 12th grade, Hicksville Schl. Dist., ibid., 1962—. Mem.: Natl. Sci. Tchrs. Assn.; A.A.A.S.; Kappa Phi Kappa. Contbr. to: The Sci. Tchr.; Sci. Edn. Gen. Int.: Awarded G. E. Sci. Fellowship, summer, 1950; Sci Fellowship, Rutgers Univ., summer, 1957.

CRIDER, Marion Elizabeth (Miss), Assoc. Prof., Acting Chmn., Math. Dept., W. Ga. Coll., Carrollton, Ga. Home Add.: 409 Dixie St., Carrollton, Ga. MATHEMATICS. b. Carrollton, Ga., Aug. 18, 1904. d. John N. and Viola (Bostain) C. Edn.: A.B., Ga. St. Coll. for Women, 1925; M.A., Univ. of Ga., 1936; Grad. Study: Emory Univ., Univ. of Miami, Univ. of Colo., Univ. of S. C., Washington and Jefferson Coll., Washington, Pa. Exp.: Math. Tchr., Lancaster H. S., Lancaster, S. C., 1925-28; Math. Tchr., H. S., Thomasville, N. C., 1928-34; Math. Tchr., H. S., LaGrange, Ga., 1934-40; Math. Tchr., H. S., Ft. Lauderdale, Fla., 1940-42; Adm. Asst., Fort Monmouth (War Dept.), New Jersey, 1942-44; Assoc. Prof., W. Ga. Coll., 1945—. Hon. Pos.: Past Pres., Ga. Math. Coun. Mem.: Ga. Coun. of Math. Tchrs.; Am. Mathematical Assn.; Natl. Coun. of Math. Tchrs.; Sunset Hills Country Club; Lit Mu. Areas of Rsch.: Training of Tchrs. in Math.

CRIM, Samuella Hawes (Miss), Asst. Prof. of Sci., Glassboro State Coll., Glassboro, N. J. Home Add.: 209 A-S, Woodbury St., Pitman, N. J. BIOLOGY. b. New Market, Va., Oct. 21, 1914. d. Jacob Clinedinst and Behethland Penn (Fitzpatrick) C. Edn.: B.S., Madison Coll., 1935; M.A., George Peabody Coll. for Tchrs., 1947. Exp.: Tchr. of Biol. and Guid. Counselor, Va. Pub. Schls., 1935-59; Asst. Prof. of Sci., Glassboro State Coll., 1959—. Hon. Pos.: Chmn., Sci. Tchrs. Sec., Va. Acad. of Sci.; N.A.B.T. State Chmn.; N.A.B.T. Conservation Comm. Mem.: N.E.A.; A.A.A.S.; A.A.U.P.; N.A.B.T.; Kappa Delta Pi; Garden Club. Contbr. to: Handbooks for Tchng. Conservation and Resource Use, 1955; Lab. and Field Studies in Biology, 1958; Hist. of the Va. Acad. of Sci. Areas of Rsch.: Plant Anatomy and Taxonomy, Starting a Herbarium at Glassboro State Coll.

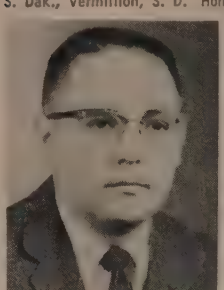


CRIMINALE, William Oliver, Jr. (Ph.D.), Asst. Prof., Dept. of Mechanical Engrng., Princeton Univ., Princeton, N. J. Home Add.: Lakeside Apts., Apt. 3L Faculty Rd., Princeton, N. J. FLUID MECHANICS AND APPLIED MATHEMATICS. b. Mobile, Ala., Nov. 29, 1933. s. William Oliver and Vivian Gertrude (Sketoe) C. Edn.: B.S., Univ. of Ala., 1955; Ph.D., The Johns Hopkins Univ., 1960. m. Ulrike Irmgard Wegner, June 7, 1962. Exp.: Tchng. Asst., Univ. of Ala., 1954-55; Rsch. Physicist, Allison Div. of Gen. Motors, Indianapolis, Ind., 1955; Rsch. Asst., The Johns Hopkins Univ., 1956-60; Rsch. Engr., Martin Co. of Baltimore, Baltimore, Md., 1956; NATO Postdoc. Fellow, Inst. of Applied Math., Univ. of Freiburg, Germany, 1960-61; Sr. Visitor, Dept. of Applied Math. and Theoretical Physics, Cambridge Univ., England, 1961; Asst. Prof., Dept. of Mech. Engrng., Princeton Univ., 1962—; Consultant, Aeronautical Rsch. Associates of Princeton, N. J., 1962—. Mem.: Am. Phys. Soc.; Sigma Xi; Sigma Pi Sigma. Contbr. to: Jour. of Fluid Mechanics; Arch. for Rational Mechanics and Analysis; Zeitschrift fur Angewandte Mathematik und Mechanik; AGARD; Applied Mechanics Revs. Serv. Rec.: U. S. Army, 1961-62. Gen. Int.: Recipient of Boris A. Bakhmeteff Mem. Fellowship in the mechanics of fluids. Areas of Rsch.: Viscous fluids, hydrodynamic stability, non-linear mechanics, non-Newtonian fluids.



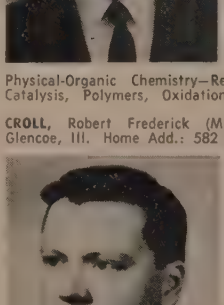
CRITIDES, Leon (Mr.), Chf. Chemist, J. H. Meyer Bros., Brooklyn, N. Y. Home Add.: 160 Palisade Ave., Cliffside Park, N. J. ORGANIC CHEMISTRY. b. Newark, N. J., Mar. 22, 1927. s. Ernest (dec.) and Sophia (Arnides) C. Edn.: B.S., Seton Hall Univ., 1950; M.S., ibid., 1961. m. Kathleen Caulfield, Nov. 16, 1957. c.: Mark A. Exp.: Rsch. Chem., Cities Serv. Oil Co., Hillside, N. J., 1951-53; Tchng. Asst., Univ. of Kans., 1953-54; Rsch. Asst., Seton Hall Univ., 1954-56; Hd. Chem. Dept., Seton Hall Prep., 1956-57; Instr. of Chem., Seton Hall Univ., 1957-58; Hd. Tech. Dept., J. H. Meyer Bros., 1958—. Mem.: Am. Chem. Soc.; A.A.A.S. Serv. Rec.: U.S.N., 1945-46. Areas of Rsch.: Pyridine Chemistry; Organic Mechanisms; Metallo-Urea Complexes; Coatings and Plastics; Specialty Pigments.

CRITZ, Jerry Burdette (Ph.D.), Asst. Prof. of Physiol., Univ. of S. Dak., Vermillion, S. D. Home Add.: 13 Campus Court, Vermillion, S. D. PHYSIOLOGY. b. Boonville, Mo., Apr. 9, 1934. s. LaVern and Phyllis Jean (Hayden) C. Edn.: B.S., Univ. of Mo., 1956; M.A., ibid., 1958; Ph.D., ibid., 1961. m. Geraldine Ernst, June, 1955. Exp.: Asst. Prof., Univ. of S. D., 1961—. Mem.: Am. Physiological Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Am. Jour. of Physiol.; The Physiologist; Jour. of Applied Physiol.; Proceedings of the Soc. for Experimental Biol. and Med. Areas of Rsch.: Physiol. of Exercise and Effects on Enzymes.

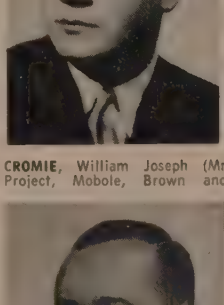


CROCE, Louis J. (Ph.D.), Mgr., Rsch. Petro-Tex. Chemical Corp., FMC R. and D. Center, P. O. Box 8, Princeton, N. J. Home Add.: 6 Whitehall Rd., East Brunswick, N. J. PHYSICAL-ORGANIC CHEMISTRY. b. New York City, N. Y., Sept. 17, 1921. s. Louis and Catherine (Gentile) C. Edn.: B.S., St. Johns Univ., 1948; Ph.D., N. Y. Univ., 1952. m. Virginia Muir, June 26, 1948. c.: James; Jean. Exp.: Rsch. Chem., Socony-Mobil Co., Paulsboro, N. J., 1952-55; Group Leader, FMC Labs., Princeton, N. J., 1955-60; Supvr., ibid., 1960-61; Dept. Mgr., Petro-Tex. Chem. Corp., ibid., 1961—. Hon. Pos.: Dir., Catalysis Club, N. Y., 1961-62. Mem.: Am. Chem. Soc.; Am. Assn. for Adv. of Sci.; Sigma Xi; Roger Bacon Soc.; Lincoln Club. Contbr. to: Jour. of Am. Chem. Soc. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Physical-Organic Chemistry—Reaction Mechanisms and Kinetics; Catalysis, Polymers, Oxidations.

CROLL, Robert Frederick (Mr.), Rsch. and Consulting Work, Glencoe, Ill. Home Add.: 582 South Ave., Glencoe, Ill. AUTOMOTIVE ENGINEERING AND TRANSPORTATION ECONOMICS AND HISTORY. b. Evanston, Ill., Feb. 3, 1932. s. Frederick Warville and Florence Isobel (Campbell) C. Edn.: B.S.B.A., Northwestern Univ., 1954; M.B.A., Univ. of Mich., 1956. Exp.: Instr., Ind. Univ., 1956; Economist and Consultant, Self-employed, Glencoe, Ill., 1959—. Hon. Pos.: Bd. of Dir., Young Am. for Freedom, Inc. Mem.: Soc. of Automotive Engrs.; Am. Econ. Assn.; Am. Inst. of Mgt.; Soc. for the Adv. of Mgt.; Sigma Pi; Beta Gamma Sigma; Phi Kappa Phi; Phi Delta Kappa; Pi Sigma Alpha; Delta Sigma Pi. Areas of Rsch.: Automotive Hist.; Business Economics; Political Theory.



CROMIE, William Joseph (Mr.), Publ. Information Officer for Project, Mobole, Brown and Root, Inc., 705 San Jacinto Building, Houston 2, Texas. OCEANOGRAPHY AND GEOPHYSICS. b. Long Island, N. Y., Mar. 12, 1930. s. Henry J. and Margaret (Terrifoy) C. Edn.: B.S., Columbia Univ., 1956. m. Alicia M. Connors, Dec. 28, 1958. Exp.: Glaciologist, Arctic Inst. of North Am., 1956-58; Oceanographer, Lamont Geological Observatory, Columbia Univ., 1958; Geophysicist, ibid., 1959-60; Publ. Information Officer, Mobole, Brown and Root, Inc., Houston, Tex., 1960—. Mem.: A.A.A.S.; Am. Geophysical Union. Contbr. to: Proceeding of the Arctic Planning Sessions; Proceedings of the First Internatl. Symposium on Arctic Geology. Serv. Rec.: U. S. Naval Reserve, 1948-53. Gen. Int.: Participated in the Ross Ice Shelf Traverse, Antarctica, 1957-58; Served on Arctic Ocean Drift Station Charlie, 1959; Sloan-Rockefeller Sci. Writing Fellow, 1960-61. Areas of Rsch.: Arctic and Antarctic.



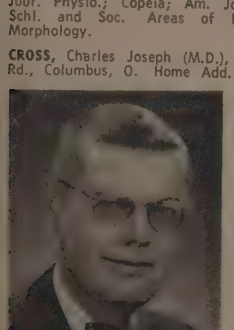
CROSBY, John Albert (Ph.D.), Assoc. Prof. of Geog., Fresno St. Coll., Fresno, Calif. Home Add.: 3459 E. Bellaire Way, Fresno, Calif. CARTOGRAPHY AND AIR PHOTO INTERPRETATION. b. Chicago, Ill., Feb. 2, 1921. s. Rev. Kenneth Owen and Mary

Helen (Staley) C. Edn.: B.S., Univ. of Chicago, 1943; M.A., Univ. of Wash., 1951; Ph.D., ibid., 1959. m. Betty Louise Manring, Sept. 4, 1951. c.: Kenneth; Cathy; Barbara; Terry. Exp.: Instr., E. Wash. Coll. of Edn., 1951-52; Lectr., Univ. of Toronto, 1953-56; Assoc. Prof., Fresno St. Coll., 1956—. Hon. Pos.: Chmn., No. Calif. Coun. of Soc. Studies, 1962; Chmn., Citizens Comm. for Redevelop., Fresno, Calif., 1961; Pres., Calif. Coun. on Geog. Tchrs., 1961-62. Mem.: Am. Assn. Geogrs.; Assn. of Pac. Coast Geogrs.; Calif. Coun. of Geog. Tchrs.; Calif. Coun. of Soc. Studies; Sigma Xi; Am. Assn. Univ. Profs.; Assn. of Calif. St. Coll. Profs.; Psi Upsilon; Pi Gamma Mu. Contbr. to: Can. Geogr.; Soc. Forces; Yrbk. of Assn. of Pac. Coast Geogrs.; Calif. Geogr. Serv. Rec.: U. S. Army Air Corps, 1943-46. Gen. Int.: Drew Maps for various geog. texts; Consult. on maps to Johns Hopkins Climatol. Lab., Seabrook, N. J., 1955; Consult. on Urban Geog., Fresno Co. Planning Dept., 1961-62. Areas of Rsch.: Urban Geography; Map and Photo Interpretation and Cartography.

CROMWELL, Norman Henry (Ph.D.), Howard S. Wilson Prof. of Chem., Univ. of Neb., Lincoln, Neb. Home Add.: 3710 S. 20th St., Lincoln, Neb. ORGANIC CHEMISTRY. b. Terre Haute, Ind., Nov. 22, 1913. s. Henry and Ethyl Lee (Harkleroade) C. Edn.: B.S., Rose Polytechnic Inst., 1935; Ph.D., Univ. of Minn., 1939. m. Grace M. Newell, Jan. 29, 1955. c.: Christopher Newell; Richard Earl. Exp.: Instr., Univ. of Neb., 1939-42; Asst. Prof., ibid., 1942-45; Assoc. Prof., ibid., 1945-48; Prof., ibid., 1948-60; Regents' Prof., ibid., 1960—. Hon. Pos.: Consultant, U.S.P.H.S.; Chmn., Medicinal Chem. Study Sect., N. I. H.; Dir., N.S.F. Cooperative Coll. Tchr. Development Program of Neb.; Councilor, Dist. IV, A.A.U.P.; Trustee, Nebr. Art Assn.; Hon. Rsch. Assoc., Univ. Coll. London, Calif. Inst. of Technol. Mem.: A.C.S.; Chemical Soc. of London; A.A.A.S.; Sigma Xi; Phi Lambda Sigma Tau; Alpha Chi Sigma; Gamma Alpha; Tau Nu Tau; Alpha Tau Omega; Round Table of Lincoln, Nebr. Contbrng. Author: Heterocyclic Compounds, 1957. Contbr. to: Jour. A.C.S.; Jour. Org. Chem.; Proc. of Chem. Soc. of London; Chem. and Industry, London; Chem. Revs.; Rec. of Chem. Progress. Gen. Int.: Guggenheim Fellow, 1950, 1958; Fulbright Adv. Rsch. Scholarship, 1950-51. Areas of Rsch.: Organic Reaction Mechanisms; Organic Drugs; Cancer Chemotherapy; Stereochem. of Three-Membered Ring Compounds; Synthesis of Poly-cyclic Heterocyclic Compounds.

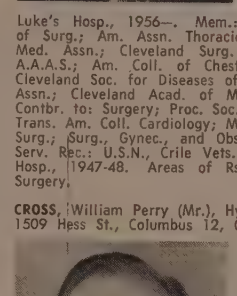
CROSMAN, Arthur Marston (Ph.D.), Prof. of Biol., Chmn., Advisement Coun., N. Y. Univ., Washington Square Coll., Wash. Square East., New York, N. Y. Home Add.: 270 Hardenburg Avenue, Demarest, N. J. MORPHOLOGY. b. Monmouth, Me., Sept. 18, 1902. s. Arthur Bounds and Grace (Chandler) C. Edn.: B.S., Dartmouth Coll., 1924; M.A., Columbia Univ., 1927; Ph.D., Cornell Univ., 1935. m. Virginia Appel, July 30, 1947. c.: Edward; Rosemary; Robert; John. Exp.: Instr. Biol., N. Y. U. Wash. Sq. Coll., 1925-37; Asst. Prof., ibid., 1937-48; Assoc. Prof., ibid., 1948-59; Prof., ibid., 1959—; Chmn. Advisement Coun., ibid., 1938—. Mem.: Am. Assn. Univ. Prof.; N. J. Acad. of Sci.; A.A.A.S.; Am. Soc. of Zoologists; Am. Coll. Personnel and Guid. Assn.; Natl. Vocational and Guid. Assn.; N. Y. Acad. of Sci.; Sigma Xi; Alpha Tau Omega; Rep. Club. Contbr. to: Am. Jour. Physio.; Copeia; Am. Jour. Obst. and Gyn.; Counseling; Schl. and Soc. Areas of Rsch.: Guidance and Counseling Morphology.

CROSS, Charles Joseph (M.D.), Physician, 3545 Olantongy River Rd., Columbus, O. Home Add.: 2671 Charing Rd., Columbus, O. INTERNAL MEDICINE. b. Columbus, Ohio, Feb. 22, 1919. s. Joseph A. and Addie (Roberts) C. Edn.: B.A., Ohio State Univ., 1940; M.D., Jefferson Med. Coll., 1944. m. Marcia Clark Wilson, 1962. c.: Sarah Roberts; Elizabeth Hunter. Exp.: Instr., Ohio State Univ. Coll. of Med., Columbus, Ohio, 1950-62; Physician, Columbus, Ohio, 1951—. Hon. Pos.: Diplomate, Am. Bd. of Internal Med.; Chmn., Dept. of Med., Riverside Methodist Hosp., Columbus, Ohio. Mem.: Am. Coll. of Phyns.; Med. Symposium; Am. Heart Association; Arthritis and Rheumat. Fdtn.; Chi Phi; Alpha Kappa Kappa. Contbr. to: Archives of Internal Med.; Am. Jour. of Nursing. Serv. Rec.: A.U.S., 1945-47. Areas of Rsch.: Internal Medicine; Cardiology.

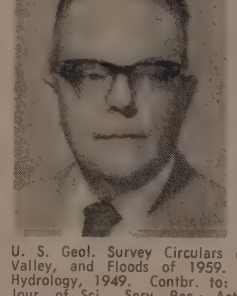


CROSS, Frederick S. (M.D.), Dir., Div. of Surgery, St. Luke's Hosp., Cleveland 4, Ohio. Home Add.: 2960 Morley Rd., Shaker Heights, Cleveland 22, Ohio. THORACIC AND CARDIOVASCULAR SURGERY. b. Detroit, Mich., Aug. 20, 1920. s. Samuel P. and Marie Katherine (Schmidt) C. Edn.: A.B., Oberlin Coll., 1942; M.D., Western Res. Univ., 1945; Ph.D., Univ. of Minn., 1953. m. Priscilla Baker, Aug. 16, 1944. c.: Leslie Marie; Barbara Sue; Laurie Ann; Steven Frederick; David Brian. Exp.: Intern, Minneapolis Gen. Hosp., 1945-46; Surg. Res., Dept. of Surg., Univ. of Minn., 1948-53; Rsch. Fellow, U.S.P.H.S., ibid., 1949-51; Damon Runyan Clin. Rsch. Fellow, ibid., 1951-53; Instr. in Surg., Univ. of Minn., 1952-53; Asst. Clin. Prof. of Surg., Western Reserve Univ., 1957—; Dir., Div. of Surg., St. Luke's Hosp., 1956—. Mem.: Alpha Omega Alpha; Am. Coll. of Surg.; Am. Assn. Thoracic Surg.; Cent. Surg. Assn.; Am. Med. Assn.; Cleveland Surg. Assn.; Ohio State Med. Assn.; A.A.A.S.; Am. Coll. of Chest Physicians; Am. Thoracic Soc.; Cleveland Soc. for Diseases of the Chest; Cleveland Area Heart Assn.; Cleveland Acad. of Med.; Nu Sigma Nu; and others. Contbr. to: Surgery; Proc. Soc. Exptl. Biol. and Med.; S. Forum; Trans. Am. Coll. Cardiology; Mod. Med.; J.A.M.A.; Jour. Thoracic Surg.; Surg., Gynec., and Obst.; Clin. Med.; Arch. Surg.; etc. Serv. Rec.: U.S.N., Crile Vets. Hosp., 1946-47; Brecksville Vets. Hosp., 1947-48. Areas of Rsch.: Cardiovascular and Thoracic Surgery.

CROSS, William Perry (Mr.), Hydraulic Engr., U. S. Geol. Survey, 1509 Hess St., Columbus 12, Ohio. Home Add.: 306 N. Liberty St., Delaware, Ohio. HYDROLOGY. b. Delaware, Ohio, Dec. 27, 1907. s. John W. and Bertha (Stephen) C. Edn.: B. of C.E., Ohio State Univ., 1930; C.E., ibid., 1935; M.Sc., ibid., 1948. m. Catherine Boring, Dec. 29, 1935. c.: Nancy; John; Patricia. Exp.: Hydraulic Engr., U. S. Geol. Survey, Washington, D. C., 1930; Hydraulic Engr., ibid., Indianapolis, Ind., 1930-31; Hydraulic Engr., ibid., Albany, N. Y., 1932-38; Hydraulic Engr., ibid., Miami, Fla., 1939-42; Hydraulic Engr., ibid., Columbus, Ohio, 1945—. Mem.: Fellow, Am. Soc. C.E.; Mem., Natl. Soc. Prof. Engrs.; Am. Geophys. Union; Fellow, Ohio Acad. of Sci.; Sigma Xi; Kiwanis; Am. Legion; Mason. Author: U. S. Geol. Survey Circulars on Water Resources of Mahoning Valley, and Floods of 1959. Co-Author: Elements of Applied Hydrology, 1949. Contbr. to: Trans. Am. Geophys. Union; Ohio Jour. of Sci. Serv. Rec.: Active Duty, USAR, 1942-46; NGUS, 1952-55. Areas of Rsch.: Surface-water Hydrology.



CROSSER, Paul (Ph.D., Econ.D.), Prof. of Econ., Adelphi Coll., Garden City, N. Y. Home Add.: Box 32, 139th St., Convent Ave., New York 31, New York. SOCIAL SCIENCE, in PARTICULAR, METHODOLOGY of ECONOMICS. b. Windau, Latvia, Aug. 11, 1902. s. Julius and Rose (Kossovski) C. Edn.: D.Econ., Univ. of Berlin, 1932; Ph.D., Columbia Univ., 1942. m. Frances Schiller, Apr. 23, 1943. Exp.: Economist, Publ. Housing Bank, Berlin, Germany, 1930-33; Economist, U. S. Project on Techn. Unemployment, Washington, D. C., 1936-39; Lecturer, Univ. of the City of N. Y., 1939—; Prof., Adelphi Coll., 1956—. Mem.: Am. Philosophical Assn.; British Royal Inst. of Philos.; Am. Assn. for the Adv. of Sci.; Am. Econ. Assn.; British Econ. Hist. Soc.; Pi Gamma Mu; Phi Delta Kappa; English Speaking Union. Author.: Ideologies and American Labor, 1941; The Nihilism of John Dewey, 1955; Economic Fictions, 1957; State Capitalism in the Economy of the United States, 1960; War Is Obsolete, 1962. Contbr. to: Jour. of Social Philos.; Soc. Forces; Political Sci. Quart.; Schl. and Soc.; Proceedings: First Internatl. Conference of Econ. Hist.; XII Internatl. Congress of Philos., 1960 Congress for Methodol. and Philos. of Sci. Serv. Rec.: U. S. War Dept., W.W. II. Areas of Rsch.: Methodology of the Social Sciences.

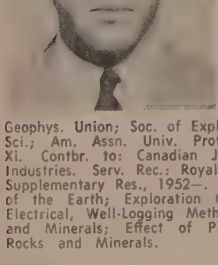


CROSS, Ephraim (Ph.D.), Assoc. Prof., Romance Lang., The City Univ. of N. Y., New York 31, N. Y. Home Add.: 215 West 98th St., New York 25, N. Y. LINGUISTICS, ROMANCE LINGUISTICS, LAW, ANTHROPOLOGICAL LINGUISTICS. b. Boston, Mass., Mar. 6, 1893. s. Abraham and Rose (Vandenberg) C. Edn.: B.A., Coll. of the City of N. Y., 1913; A.M., Columbia Univ.,

1914; J.D., N. Y. Univ., 1929; Ph.D., Columbia Univ., 1930. m. Mary Hochlerner, 1940. Exp.: Instr., Rutgers Univ. and N. J. Coll. for Women, 1920-21; Tchr., Foreign Langs., H. S., New York, N. Y., 1922-31; Instr., Asst. Prof., Assoc. Prof., The City Univ. of N. Y., 1931—. Hon. Pos.: Delegate, Internatl. Linguistic Congresses; Representative, Am. Fed. of Tchrs.; Exec. Comm., Linguistic Circle of N. Y. Mem.: Am. Assn. for the Adv. of Sci.; Am. Assn. of Univ. Profs.; Am. Name Soc.; Am. Oriental Soc.; Am. Assn. of Tchrs. of French; Linguistic Soc. of Am.; Mod. Lang. Assn. of Am.; Natl. Lawyers Guild. Author: Your Name; Its Origin and History, 1927; Syncope and Kindred Phenomena in Latin Inscriptions; Facts in the Case Against Professor Knickerbocker of The City College of New York. Contbr. to: Am. Name Soc.; Mod. Lang. Notes; Mod. Lang. Jour.; Language; P.M.L.A.; Romanic Rev. Serv. Rec.: Customs Intelligence Service, 1917-18; Recommended for Commission in Intelligence Service of U. S. Army, 1918. Areas of Rsch.: Language, Romance Linguistics, Indo-European and Semitic Languages; Law.

CROW, Wayman Joseph (Ph.D.), Assoc. Dir., Western Behav. Scis. Inst., 1010 Torrey Pines, La Jolla, Calif.; Assoc. Prof., San Diego St. Coll., San Diego 15, Calif. Home Add.: 2606 Ocean Front, Del Mar, Calif. SOCIAL PSYCHOLOGY. b. Waterbury, Conn., June 29, 1923. s. Wayman J. and Mary (Gilchrist) W. Edn.: B.A., Univ. of Colo., 1948; M.A., ibid., 1951; Ph.D., ibid., 1954. m. Evelyn Rehnberg, 1948. c.: Kevin. Exp.: Rsch. Assoc., Univ. Colo., 1954-57; Asst. Prof., San Diego St. Coll., 1957-60; Assoc. Prof., ibid., 1960—; Assoc. Dir., Western Behav. Scis. Inst., Ja Jolla, Calif., 1959—. Mem.: Am. Psychol. Assn.; Wes. Psychol. Assn.; A.A.U.P.; A.A.A.S.; Sigma Xi. Contbrng. Author: Teaching Comprehensive Medical Care, 1959. Contbr. to: Jour. of Abnormal and Soc. Psychol.; Jour. of Consult. Psychol.; Jour. of Expt. Psychol. Serv. Rec.: U. S. Navy Reserve, 1941-46. Gen. Int.: Distinguished Flying Cross; Air Medal with four clusters. Areas of Rsch.: Person Perception; Group Processes; Inter-nation Simulations.

CROWE, Christopher (Ph.D.), Asst. Prof. of Geophysics, Dept. of Geophysics and Geochem., The Pa. State Univ., University Park, Pa. Home Add.: 407 Glenn Rd., State College, Pa. GEOPHYSICS, PHYSICS. b. London, England, Dec. 4, 1928. s. George Kenneth and Dorothy Mowat (Duff) C. Edn.: B.Sc., Univ. of Western Ontario, London, 1952; Ph.D., ibid., 1956. m. Janet Marilyn Adsett, July 12, 1952. c.: Brian Charles; Rodger Thomas. Exp.: Tchr., Ontario Dept. of Edn., Kenilworth, Ontario, 1946-47; Overseas Scholar of Royal Commission for the Exhibition of 1851, Dept. of Geodesy and Geophysics, Univ. of Cambridge, England, 1956-58; Asst. Prof., Dept. of Geophysics and Geochem., The Pa. State Univ., 1958—. Mem.: The Inst. of Physics and The Phys. Soc., London; Canadian Assn. of Physicists; Am. Geophys. Union; Soc. of Exploration Geophysicists; Pa. Acad. of Sci.; Am. Assn. Univ. Profs.; Am. Assn. Adv. Sci.; Sigma Xi. Contbr. to: Canadian Jour. of Technol.; Nature; Mineral Industries. Serv. Rec.: Royal Canadian Artillery, Canadian Army Supplementary Res., 1952—. Areas of Rsch.: The Thermal State of the Earth; Exploration Geophysics (Gravitational, Magnetic, Electrical, Well-Logging Methods); Physical Properties of Rocks and Minerals; Effect of Pressure on Physical Properties of Rocks and Minerals.

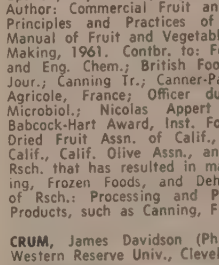


CROWELL, John C. (Ph.D.), Prof. of Geol., Univ. of Calif., Los Angeles, Calif. Home Add.: 10574 Wellworth Ave., Los Angeles 24, Calif. STRUCTURAL GEOLOGY. b. State Coll., Pa., May 12, 1917. s. James W. and Helen Hunt (Chambers) C. Edn.: B.S., Geol., Univ. of Tex., 1939; M.A., Meterol., Univ. of Calif., L. A., 1946; Ph.D., Geol., ibid., 1947. m. Betty Marie Bruner, Nov. 22, 1946. c.: Martha Lynn. Exp.: Field Geol., Shell Oil Co., Ventura, Calif., 1941-42; Instr. to Prof. of Geol., Univ. Colif., L. A., Calif., 1947—. Hon. Pos.: Chmn., Dept. of Geol., UCLA, 1957-60. Mem.: Geol. Soc. Am.; Am. Geophys. Union; Am. Assn. for the Adv. of Sci.; Petrol. Geols.; Natl. Assn. Geol. Tchrs.; Seismol. Soc. Am.; Calif. Reg. Petrol. Engr.; Sigma Xi. Contbr. to: Bull. Geol. Soc. Am.; Bull. Am. Assn. Petrol. Geols.; Jour. Geol. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Study of Major Faults in California, Such as the San Andreas Fault; Tectonics of California; Interpretation of Sedimentary Rocks.

CROWLEY, Daniel John (Ph.D.), Assoc. Prof. of Anthropol. and Art, Univ. of Calif., Davis, Calif. Home Add.: 709 M St., Davis, Calif. CULTURAL ANTHROPOLOGY. b. Peoria, Ill., Nov. 27, 1921. s. Michael B. and Elsie (Schnebelin) C. Edn.: A.B., Northwestern Univ., 1943; M.A., Bradley Univ., 1948; Ph.D., Northwestern Univ., 1956. m. Pearl R. Ramcharan, Feb. 4, 1958. c.: Peter Mahendranath; Eve Lakshmi; Magdalene Lilawati. Exp.: Instr., Bradley Univ., 1948-50; Tutor, Univ. Coll. of W. Indies, Port of Spain, 1953-56; Instr., Northwestern Univ., 1956-57; Asst. Prof., Univ. of Notre Dame, 1958-60; Asst. Prof., Univ. of Calif., Davis, Calif., 1961—. Hon. Pos.: Co. Chmn., Colloquia on Internatl. Agric. Mem.: Am. Anthro. Assn.; Am. Folklore Soc.; Am. Soc. for Aesthetics; Soc. for Ethnomusicol.; Royal Anthro. Assn.; Am. Folk Music Coun.; African Studies Assn.; Trinidad Ethnographic Soc.; Tanganyika Soc.; Calif. Folklore Soc.; Southwest Anthro. Assn.; Sigma Xi. Contbr. to: Man; Caribbean Quart.; Ethnomusicol.; Am. Anthropolt.; Jour. of Am. Folklore; Jour. of Aesthetics and Art Criticism; Presence Africaine. Serv. Rec.: U. S. Naval Reserve, 1942-46. Areas of Rsch.: Analysis of Folklore, Graphic and Plastic Arts, Processes of Creativity, The Artist in Culture; Multicultural Societies.

CRUESS, William Vere (Ph.D.), Prof. Emeritus, Food Technology, Berkeley, Calif. Home Add.: 951 Cragmont Ave., Berkeley, Calif. TECHNOLOGY, CHEMISTRY AND MICROBIOLOGY OF FRUIT AND VEGETABLE PRODUCTS. b. San Miguel, Calif., Aug. 8, 1886. s. William V. and Lucy (May) C. Edn.: B.S. Univ. of Calif., 1911; Ph.D., Stanford Univ., 1931. Hon. Deg.: LL.D., Univ. of Calif., 1960. m. Marie Gleason, June 4, 1917. Exp.: Asst. in Zymology, Univ. of Calif., 1911-14; Asst. Prof., ibid., 1914-18; Assoc. Prof. of Fruit Products, ibid., 1918-34; Prof., Food Technology, ibid., 1934-55; Prof. of Food Technol., Emeritus, 1955—. Hon. Pos.: Past Chmn., Dept. of Food Technol., Univ. of Calif.; Past Pres., Inst. of Food Technol. Mem.: Am. Chem. Soc.; Soc. Am. Bact.; Inst. of Food Technol.; Inst. Microbiol.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon; Alpha Zeta; Sigma Phi; Alpha Chi Sigma; Faculty Club. Author: Commercial Fruit and Vegetable Products, 1948, 1957; Principles and Practices of Wine Making, 1948, 1960; Lab. Manual of Fruit and Vegetable Products, 1923; Technol. of Wine Making, 1961. Contbr. to: Food Technol.; Food Rsch.; Industrial and Eng. Chem.; British Food Mfgs.; Food Engrng; Fruit Prod. Jour.; Canning Tr.; Canner-Packer. Awards: Chevalier du Merite Agricole, France; Officer du Merite Agricole; Am. Acad. of Microbiol.; Nicolas Appert Award of Inst. Food Technol.; Babcock-Hart Award, Inst. Food Technol.; Awards of Merit from Dried Fruit Assn. of Calif., Fig Growers Assn., Farm Bur. of Calif., Calif. Olive Assn., and Calif. Raisin Growers. Gen. Int.: Rsch. that has resulted in marked improvements in olive processing, Frozen Foods, and Dehydration and Wine making. Areas of Rsch.: Processing and Preservation of Fruit and Vegetable Products, such as Canning, Freezing, Drying, Juicing, etc.

CRUM, James Davidson (Ph.D.), Asst. Prof., Dept. of Chem., Western Reserve Univ., Cleveland 6, Ohio. Home Add.: Booth Rd., Kirtland Hills, Mentor, Ohio. ORGANIC CHEMISTRY. b. Ironton, Ohio, July 29, 1930. s. Walter James and Frances Louise (Davidson) C. Edn.: B.S., Ohio State Univ., 1952; M.S., Marshall Univ., 1953; Ph.D., Ohio State Univ., 1958. m. Anne Kanode, Sept. 2, 1956. c.: Leslie Anne; James Davidson, Jr. Exp.: Asst. Instr., Ohio State Univ., 1955-57; Charles F. Kettering Fellow, Ohio State Univ., 1957-58; Postdoctoral Fellow, Harvard Univ., 1958-59; Instr., Western Reserve Univ., 1959-60; Asst. Prof., ibid., 1960—. Mem.: Fellow, Am. Inst. of Chem.; Am. Chem. Soc.; Br. Chem. Soc.; Am. Assn. Adv. Sci.; Ohio Acad. Sci.; W. Va. Acad. of Sci.; Alpha Phi Omega; Gamma Alpha; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Organic Chem.; Proc. W. Va. Acad. of Sci. Areas of Rsch.: Carbohydrates, Steroids, Terpenes, Alkaloids and Related Natural Products.



CRUM, Floyd Maxilas (Mr.), Prof. of Elec. Engrng., Lamar State Coll. of Technol., Beaumont, Tex. Home Add.: 1905 Prairie St., Beaumont, Tex. ELECTRICAL ENGINEERING, ELECTRONIC ENGINEERING. b. Baton Rouge, La., Apr. 28, 1922. s. George M. and Pearl Beulah (Carpenter) C. Edn.: B.S., La. State Univ., 1947; M.S., ibid., 1951. m. Betty May Cook, Oct., 1944. c.: George Thomas; Richard Floyd; James Timothy; David Alan. Exp.: Assoc. Prof. of Elec. Engrng., La. State Univ., 1947-55; Music Dir., Rosedale Bapt. Ch., Beaumont, Tex., 1957—; Consult

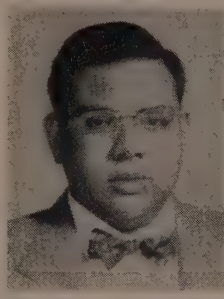
ing Elec. Engr., Sun Oil Geophys. Lab., ibid., 1955–; Electronic Scientist, Boeing Aircraft, Seattle, Wash., 1955; Prof. of Elec. Engrng., Lamar State Coll. of Technol., 1955–. Hon. Pos.: Chmn., Edn. Com. of IRE Region 6, 1959-60. Mem.: Am. Inst. of Elec. Engrs.; Inst. of Radio Engrs.; Eta Kappa Nu. Serv. Rec.: U. S. Army Air Corps, W. W. II. Gen. Int.: Registered Prof. Engr., La. and Tex. Areas of Rsch.: Circuits, Etc.

CRUMB, Edgar A. (Mr.), Exec. Dir., Army Chemical Corps, Dept. of the Army, Washington 25, D. C. Home Add.: 1832 Kenyon St., N. W., Washington, D. C. MECHANICAL ENGINEERING. b. Cape Charles, Va., July 5, 1916. s. Edgar A. and Nell (Howlett) C. Edn.: New Mex. Schl. of Mines, 1936-38; Mech. Engr., Industrial Coll. of the Armed Forces, 1954-55; A.A., Geo. Wash. Univ., 1958; B.A., ibid., 1959; M.B.A., ibid., 1961. Exp.: Chf. Draftsman, Office Chf. Chem. Corps, 1939-41; Chf., Mechl. Engr. Br., ibid., 1941-42; Asst. Chf., Engrng. Br., ibid., 1942; Asst. Chf. Engrng. Div., ibid., 1943-47; Chf. Engr., Engrng. Div., ibid., 1947-48; Asst. Deputy Chf., Rsch. and Dev., ibid., 1948-49; Asst. Chf., Rsch. and Dev., ibid., 1949-51; Civilian Deputy, Chem. Corps Rsch. and Engrng. Command, 1951-53; Exec. Dir., ibid., 1953-55; Exec. Dir., Army Chem. Corps, Dept. of the Army, Washington, D. C., 1955–. Hon. Pos.: Vice Pres., Alumni Assn. of Industrial Coll. of the Armed Forces. Mem.: Am. Chem. Soc.; Am. Assn. Adv. of Sci.; Am. Soc. of Mechanical Engrs.; Am. Inst. of Mining and Metallurgical Engrs.; Engineer's Club, Washington, D. C.; Chem. Engrs. Club, Washington, D. C.; Am. Ord. Assn.; Assn. of the U. S. Army; Armed Forces Chem. Assn.; Res. Officers' Assn.; Marine Corps Assn.; Army-Navy Country Club, Washington, D. C.; Mt. Vernon Meth. Ch., Wash., D. C. Serv. Rec.: Lt. Col., U.S.A. Marine Corps Officer, 1944-47; U. S. Army Reserve, 1947–. Listed in: Am. Men of Sci.; W.W. in Engrng.; W.W. in S. and S.W. Areas of Rsch.: Design Development and Production of Chemical Corps material.

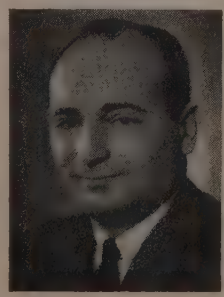
CRUME, (Mary) Margaret (Mrs.), Author, Lectr., Tchr., 264 W. 73rd St., N. Y. City 23, N. Y. OLD KINGDOM EGYPTIAN HIEROGLYPHICS; ARITHMOLOGY, CYCLES. b. Union City, Ind., Sept. 17. d. William and Ida (Frick) Clear. Edn.: Rsch., Natl. Univ. of Athens, Greece, 1933; Study of Sanskrit Lang., 1936. m. William Crume (dec.), Aug. 21, 1917. c.: Gregg. Exp.: Tchr., Arithmol., Pythagorean Schl. of Cycles, Dayton, Ohio, 1926-31; Tchr., Greek and Oriental Philos., Passaic Pub. Lib., Passaic, N. J., 1940-42; Tchr., Greek and Oriental Philos., Schl. of Sci.-Philos., Orange-Paterson, N. J., 1937-61; Lectr., Pythagorean Soc., Hotel Lucerne, N. Y., 1948-52; Tchr.-Founder, Plato-Pythagorean Coun., Inc., Univ. of the State of N. Y., 1953-62; Lectr., Metropolitan Museum, New York, 1962–. Hon. Pos.: Spec. Advisor, The Fdn. for the Study of Cycles; Advisor, Tibetan Art Museum, Staten Island, N. Y. Mem.: The N. Y. Acad. of Sci.; Archaeol. Inst. of Am.; Geog. Fellow; Author's Guild; Woman's Press Club of N. Y. City; Engl. Speaking Union; Metropolitan Museum of Art; Woman's Natl. Rep. Club; Community Opera; Correctional Inst. of N. Y.; Natl. Assn. for Am. Composers and Conductors. Author: Pythagorean Philosophy, Radio Scripts, 1936; Booklet on Color and Cycles, Botany, Inc., 1941; Pythagorean Philosophy, Textbooks, 1941-62; Bhagavad Gita, Druid Taliesan, 1948. Contbr. to: Your Mag.; Woman's Digest; Raised Voices. Listed in: W.W. in N. Y.

CRUNDEN, Allan B., Jr. (M.D.), 26 Harrison Ave., Montclair, N. J. Home Add.: 30 Porter Place, Montclair, N. J. OBSTETRICS, GYNECOLOGY. b. Chicago, Ill., Feb. 19, 1912. s. Allan B. and Belinda (Howe) C. Edn.: A.M., Columbia Univ., 1938; M.D., Temple Univ., 1938. m. Marjorie Morse, July 10, 1937. c.: Robert Morse; Joan Morse. Exp.: Interne, Jersey City Med. Ctr., Jersey City, N. J., 1938-40; Resident, Chicago Lying-in Hosp. and Disp., Chicago, Ill., 1941; Resident, Chf. Resident, Margaret Hague Maternity Hosp., Jersey City, N. J., 1946-48; Assoc. Clin. Prof., Obstetrics and Gynecol., Seton Hall Coll. of Medicine, 1958-60; Attg. Staff, Mountainside Hosp., St. Vincent's Hosp., Montclair, N. J., 1948–; Sr. Aviation Med. Examiner, Fed. Aviation Agency, Montclair, N. J., 1949–. Mem.: A.A.A.S., Fellow; Am. Astronautical Soc., Fellow; Aerospace Med. Assn., Assoc. Fellow; Am. Coll. of Surgeons, Fellow; Am. Coll. of Obst. and Gynecol., Fellow; Am. Publ. Health Assn., Fellow; N. Y. Acad. of Medicine, Fellow; Am. Med. Writers Assn., Fellow; New England Obst. and Gynecol. Soc.; Inst. Aeronautical Scis.; Am. Soc. for Study of Sterility. Editor: Jour. of Astronautics, 1956-58; Bull. of Margaret Hague Maternity Hosp., 1950-59. Legion of Merit, 1945; Secy. War Commendation with 3 OLC, 1945. Military Serv.: Flight Surgeon, 1942-46. Areas of Rsch.: Infertility, Aviation Medicine.

CRUZ, Primitivo T. (M.D.), Pathologist and Dir. of Labs., Chenango Mem. Hosp., Norwich, N. Y. Home Add.: 53 Locust St., Norwich, N. Y. PATHOLOGY. b. Manila, Philippines, July 23, 1923. s. Tomas and Maxima (Tinoco) C. Edn.: A.A., Univ. of the Philippines, 1943; M.D., ibid., 1949. m. Theresa Holleran, June 30, 1951. c.: Catherine; Victoria; John; Kevin; Bernard. Exp.: Asst. Instr. in Pathol., Univ. of Philippines, 1949-50; Fellow and Res. in Pathol., Pa. Hosp., 1950-52; Instr. in Pathol., Ohio State Univ., 1952-54; Acting Asst. Prof., Univ. of Philippines, 1954; Rsch. Assoc. Pathol., Kent Gen. Hosp., Dover, Del., 1954-56; Asst. Pathol., Guthrie Clinic, Robert Packer Hosp., Sayre, Pa., 1956-57; Pathol. and Dir. of Labs., Chenango Mem. Hosp., Norwich, N. Y., 1957–; Consulting Pathol., Sidney Hosp., Sidney, N. Y., 1957–; Rsch Consult., Norwich Pharmacal Co., Norwich, N. Y., 1958-60. Hon. Pos.: Pres., Chenango Co. Med. Soc., 1960-61; First Pres., Chenango Co. Chapt. of Am. Cancer Soc., 1960-61. Mem.: Fellow, Coll. of Am. Pathol.; Internatl. Acad. of Pathol.; A.M.A.; N. Y. State Med. Soc.; Chenango Co. Med. Soc.; N. Y. State Soc. of Pathol.; N. Y. State Assn. of Pub. Health Labs.; Rsch. Soc. of Am.; A.A.A.S.; Am. Ger. Soc.; Eastern Chapt. of Am. Assn. of Bacteriol.; Elks; Phi Kappa Phi; Rotary. Contbr. to: Am. Jour. Pathol.; Ayer Bull. of Pa. Hosp.; Del. State Med. Jour.; Diseases of the Chest; Proc., Phila. Pathol. Soc.; Acta Medica Philippina. Gen. Int.: Certified by Am. Bd. of Pathology, 1953. Areas of Rsch.: Exptl. Pathology-Renal Nephropathies; Medico-Legal Pathology; Mycology-Nocardiosis; Parasitology; Oncology.

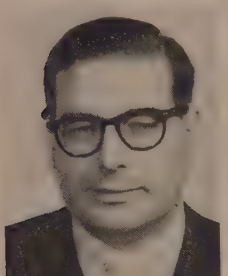


CSANYI, Ladis H. (Mr.), Prof. of Civil Engrng., Iowa State Univ., Ames, Iowa. Home Add.: 427 N. Franklin Ave., Ames, Iowa. HIGHWAY ENGINEERING; BITUMINOUS PAVING TECHNOLOGY. b. Budapest, Hungary, Mar. 28, 1903. s. Henry and Magdaline (Csentes) C. Edn.: C.E., Poly. Inst. of Brooklyn, 1937; M.C.E., ibid., 1940. m. Carrie C. Sohl, May 25, 1931. Exp.: Chem. Rsch., H. C. Labs., N. Y., 1924-29; Civil Engr., City of N. Y., 1929-46; Consult. Engr., Own Bus., N. Y., 1941-48; Assoc. with Edwards and Kelcey, Newark, N. J., 1946–; Prof., Civil Engrng., Iowa State Univ., 1949–. Hon. Pos.: Pres., Mun. Engrs. of N. Y. C.; Pres., Story Co. Engrs. Club. Mem.: Am. Soc. Civil Engrs.; Inst. of Traffic Engrs.; Am. Rd. Builders Assn.; Assn. of Asphalt Paving Technologists; Hwy. Rsch. Bd.; Am. Soc. of Engr. Educators; Am. Pub. Work Assn.; Tau Beta Pi; Sigma Xi; Natl. Defense Exec. Reserve; Elks. Contbr. to: Hwy. Rsch. Bd.; Proc. of Assn. Asphalt Paving Technologists; Public Works; Rds. and Sts.; Proc. Am. Soc. Civil Engrs.; Traffic Engrng. Gen. Int.: New Process of Producing Bituminous Paving Mixtures and Soil Stabilization, 4 Patents. Areas of Rsch.: Rsch. in Composition of Asphalts; Rsch. in Use of Ungraded Aggregates in Bituminous Mixes; Traffic Engrng. Rsch.



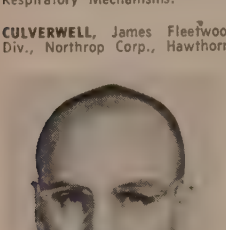
CSENDES, Ernest (Ph.D.), Dir. of Rsch., Armour Agric. Chemical Co., 350 Hurt Bldg., Atlanta, Ga. Home Add.: 1293 Fairview Rd. N. E., Atlanta 6, Ga. ORGANIC AND POLYMER CHEMISTRY. b. Satu-Mare, Rumania, Mar. 2, 1926. s. Edward and Sidonia (Littman) C. Edn.: B.A., Protestant Coll., Hungary, 1944; B.S., Univ. of Heidelberg, W. Germany, 1948; M.S., ibid., 1951; Ph.D., ibid., 1951. m. Catharine Vera Tolnai, Feb. 7, 1953. c.: Audrey Carol; Robert A. Edward. Exp.: Rsch. Asst., Heidelberg, W. Germany, 1951; Rsch. Assoc., Biochem., Tulane Univ., 1952; Fellow, Harvard Univ., 1952-53; Rsch. Chemist, E. I. duPont de Nemours and Co., Organic Chem. Dept., Wilmington, Del., 1953-56; Research Chemist, ibid., Elastomer Chemical Dept., ibid., 1956-61; Dir. of Rsch., Armour Agric. Chem. Co., Atlanta, Ga., 1961–. Mem.: Fellow, A.A.A.S.; Fellow, Am. Inst. Chem.; Am. Chem. Soc.; Am. Ordnance Assn.; N. Y. Acad. Sci.; Chem. Soc., London; Faraday Soc.; German Chem. Soc. Contbr. to: Berichte; Jour. Am. Chem. Soc. Areas of Rsch.: Organic Synthesis; Peptides; Chelates; Tautomerism; Organometallics; Chemistry of Blood; Dyes and Intermediates; High Polymers, Elastomers and Rubber Chemicals; Phosphates. Plant Nutrients and Pesticides.

CUCCI, Cesare E. (M.D.), Dir., Cardio Pulmanary Lab., St. Joseph's Hosp. for Chest Diseases, Bronx, N. Y. Add.: 45 East 62nd St., New York City, N. Y. PEDIATRIC CARDIOLOGIST AND CARDIO-PULMONARY PHYSIOLOGIST. b. Italy, Dec. 22, 1925. s. Ottorino and Anna (Morelli) C. Edn.: M.D., St. Univ. of Perugia, Italy, 1949. m. Margaret Roberts, 1949. c.: Susanna O. Exp.: Asst. Clinical Prof. of Pediatrics, N. Y. Univ. Coll. of Medicine, 1960—. Mem.: Am. Acad. of Pediatrics, Fellow; Am. Coll. of Cardiol., Fellow; Am. Coll. of Chest Physicians, Fellow; A.A.A.S.; N. Y. Acad. of Scis.; N. Y. Univ. Faculty Club. Contbr. to: Am. Heart Jour.; Diseases of Chest; Jour. of Pediatrics. Areas of Rsch.: Pediatric Cardiol.; Pulmonary Function; Cardiac Physiol.



CULLUMBINE, Harry (M.D.), Pres., Air-Shields, Inc., Hatboro, Pa. Home Add.: 541 W. Moreland Ave., Phila. 18, Pa. PHARMACOLOGY; TOXICOLOGY. b. Rotherham, England, Dec. 29, 1912. s. Henry and Mary (Knowles) C. Edn.: B.Sc., Univ. of Sheffield, England, 1933; M.Sc., ibid., 1934; M.B., ibid., 1937; M.D., ibid., 1945. m. Mary Catherine Fox, Jan. 27, 1959. c.: Diana Pauline. Exp.: Prof., Hd. Dept. Physiol. and Pharmacol., Univ. of Ceylon, 1947-51; Chf. Med. Officer Rsch., Chem. Defense Exptl. Establishment, England, 1952-56; Prof. Hd., Dept. of Pharmacol., Univ. of Toronto, Can., 1956-58; Exec. Vice-Pres. and Med. Dir., Air-Shields, Inc., 1958-60; Pres., ibid., 1960—. Hon. Pos.: Lectr. Grad. Schl. of Med., Univ. of Pa., 1958—; Consultant, Army Council, Britain, 1948-57; Defense Rsch. Bd., Canada, 1956—. Mem.: Soc. Pharmacol.; Can. Physiol. Soc.; Can. Pharmacol. Soc.; Physiol. Soc., London; British Pharmacol. Soc.; British Nutrit. Soc.; Savage Club, London; Cricket Club, Phila. Contbr. to: Jour. Applied Physiology; British Jour. Pharmacol. and Chemotherapy; Jour. Pharmacol. and Expti. Therapeutics; Toxicology and Applied Pharmacol., etc. Serv. Rec.: Lt. Col., R.A.M.C., 1939-45. Areas of Rsch.: Anticholinergic; Anticholinesterase Agents; Toxicology; Atmospheric Pollution; Physiology of Respiratory Mechanisms.

CULVERWELL, James Fleetwood, Engrng. Specialist, Nortronics Div., Northrop Corp., Hawthorne, Calif. Home Add.: P. O. Box 701, Hawthorne, Calif. CHEMICAL ENGINEERING. b. Englewood, New Jersey, Oct. 10, 1922. s. Francis James and Annabelle (Krebs) C. Edn.: B.S., Bucknell Univ., 1949; M.S., ibid., 1950; Ph.D., Northwestern Univ., 1955. Exp.: Field Engr., E. I. duPont de Nemours, Inc., Wilmington, Del., 1951-52; Sales Engr., Griscom Russell Co., Chicago, 1954-55; Engr., C. F. Braun and Co., Alhambra, Calif., 1955-56; Process Engr., Holmes and Narver, Inc., Los Angeles, 1956; Consulting, Self-employed, 1956-58; Engrng. Specialist, Nortronics Div., Northrop Corp., Hawthorne, Calif., 1958—. Mem.: Am. Inst. Chem. Engrs.; Am. Assn. Adv. Sci.; Natl. Soc. of Prof. Engrs.; Profl. Engr. (Calif.); Alpha Chi Sigma; Sigma Xi; Phi Lambda Upsilon; Sigma Pi Sigma; Engrs. Club. Contbr. to: A.I.Ch.E. Jour., Vol. 2, No. 4; Proc. Natl. Electronics Confs., Vol. 15. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Heat Transfer and Fluid Flow.

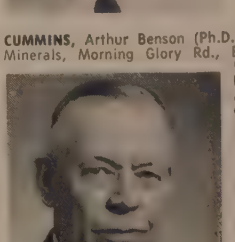


CUMMINGS, Harold Neff (Mr.) (dec.), Consult. Engr., Curtiss-Wright Propeller Div., Caldwell, N. J. Home Add.: 695 Grove St., Upper Montclair, N. J. ENGINEERING—FATIGUE OF METALS. b. Oxford, Maine, Dec. 30, 1884. s. Charles Sumner and Carrie Abbie (Neff) C. Edn.: A.B., Bates Coll., 1906; S.B., Mass. Inst. of Tech., 1910; M.Engrg., Edn., Newark Coll. of Engrng., 1960. m. Katherine Taaffe, June 11, 1912. c.: Charles Sumner, II. Exp.: Prof. Newark Coll. of Engrng., 1920-41; Vice-Pres., ibid., 1942-50, (Retired); Engineer, Curtiss-Wright Propeller Div., 1952-55 (Ret.); Consulting Engr., ibid., 1955—. Hon. Pos.: Past Pres., Essex Co., Mosquito Exterm. Comm. Mem.: Fellow, Am. Soc. Civil Engrs.; Am. Soc. for Testing Materials; Am. Soc for Engrng.; Edn.; Fellow, Am. Assn. for Adv. of Sci.; Phi Beta Kappa; Phi Beta Kappa Associates; Tau Beta Pi; Chi Epsilon. Contbr. to: Proc., Am. Soc. for Testing Materials; Wright Air Devel. Center Tech. Reports. Areas of Rsch.: Engineering Education; Fatigue of Metals—Research, and Statistical Analysis of Same.

CUMMINGS, Milton Curtis (Ph.D.), Specialist Adult Edn., U. S. Office of Edn., Wash., D. C. Home Add.: 3722 N. Wakefield, Arlington 7, Va. SOCIAL SCIENCE AND EDUCATION. b. Lancaster, Kan., May 14, 1901. s. Clarence L. and Anna (Maude) C. Edn.: B.A., Univ. of Kan., 1923; M.A., ibid., 1926; Ph.D., Yale Univ., 1934. m. Lela Belt, 1925. c.: Milton Curtis, Jr. Exp.: Dir., Adult Edn., State of Conn., 1934-36; Hd., Social Sci. Dept., N. Y. State Coll., Brockport, N. Y., 1936-41; Asst. Dir., Coun. of Intergovernmental Relations, 1941-47; Mem., White House Conf. Planning Staff, 1948-49; Fulbright Prof., Land Econs., Univ. of Philippines, 1950-51; Pres., Farmers and Merchants State Bank, 1952-56 (active), inactive, 1956-62; Specialist, Adult Edn., U. S. Off. of Edn., 1956—. Mem.: Fellow, A.A.A.S.; Soil Conservation; Soc. of Am. Acad. Polit. Sci.; Adult Edn. Assn. of U. S.; Delta Sigma Rho; Phi Delta Kappa; Am. Assn. Schl. Adminstrs.; A.A.U.P. Contbr. to: Schl. and Sci.; N. Y. State Edn. Jour.; Bankers' Jour. Gen. Int.: Appointed by Gov. as member of State Water Bd., State of Kan. Areas of Rsch.: Econs. and Adult Edn.

CUMMINGS, William Winn (Mr.), Assoc. Prof., Lambuth Coll., Jackson, Tenn. Home Add.: 1303 Martin St., Jackson, Tenn. CHEMISTRY. b. Birmingham, Ala., Sept. 23, 1925. s. James Winn and Janie P. (Watson) C. Edn.: B.S., Univ. of Ala., 1952; M.A., ibid., 1955. m. Nancy A. Martin, June 24, 1955. c.: Martin Winn. Exp.: Student Metallurgist, T.C.I. and R.R. Co., Birmingham, Ala., 1951-52; Sci. Tchr., Leeds H. S., Leeds, Ala., 1952-53; Assoc. Prof. of Chem., Lambuth Coll., 1956 Hon. Pos.: Chmn., Collegiate Div., Western Div., Tenn. Acad. Sci. Mem.: Div. of Chem. Edn., Am. Chem. Soc.; Am. Assn. Univ. Prof.; Delta Sigma Phi; Kiwanis. Contbr. to: Jour. of Chem. Edn. Serv. Rec.: U. S. Naval Reserve, 1944-46.

CUMMINS, Arthur Benson (Ph.D.), Technical Consultant, Industrial Minerals, Morning Glory Rd., Bound Brook, N. J. INDUSTRIAL RESEARCH, TECHNOLOGY OF DIATOMITE AND NON-METALLIC MINERALS; SILICATES. b. Los Angeles, Calif., June 6, 1895. s. Lon C. and Anna (Lancaster) C. Edn.: B.S., Univ. of Chicago, 1920; Ph.D., Univ. of Calif., 1926. m. Teresa Elizabeth Haines, 1940. c.: Thelma Alice; Ann Marie; Arthur B., Jr.; Edgar John. Exp.: Asst. Chem., Univ. of Calif., 1920-24; Rsch. Chem., Celite Co., 1925-26; Devel. Engr., ibid., 1926-27; Rsch. Engr., ibid., 1927-29; Mgr., Celite Rsch., Johns-Manville, Manville, N. J., 1930-43; Mgr., Rsch. Dept., ibid., 1948-61; Tchn. Consult. Indust. Minerals, Morning Glory Rd., 1961—. Hon. Pos.: Chmn., Indust. Minerals Div. and Dir., A.I.M.E., 1951; Western Governors Advisory Coun. Mineral Policy,; Pres., 1960, Soc. of Mining Engrs., A.I.M.E.; Dir. and Vice-Pres., A.I.M.E., 1961. Mem.: Am. Chem. Soc.; Am. inst. Chem. Engrs.; Soc. Chem. Indus. (British); Am. Inst. Mining Engrs.; A.A.A.S.; Am. Ceramic Soc.; Am. Min. Soc.; Geochem. Soc.; Mineral Society (London). Contbrng. Author: "Diatomite" and "Mineral Fillers"; Industrial Minerals and Rocks, A.I.M.E., 1st, 2nd and 3rd Editions; "Filtration" in "Techniques of Organic Chemistry," Interscience Publishers, N. Y., 1st. and 2nd Editions. Contbr. to: Jour. Indusl. and Engrng. Chem.; Jour. Agri. Scj.; Modern Plastics; Facts About Sugar, Oil and Soap, etc. Gen. Int.: Technology of Diatomite, Asbestos, Mineral Fillers, Indusl. Minerals, etc. Special Int.: Silica, Silicates, Diatomite, Asbestos, Indusl. Minerals, Filtration, Mineral Fillers, Heat Insulations, Magnesium Carborates, Air Classification, Indusl. Rsch., Consultant Mineral Technology.



CUMMISKEY, Bro. Charles J., S.M., Chmn., and Assoc. Prof. Dept. of Chem., St. Mary's Univ., 2700 Cincinnati Ave., San Antonio 28, Tex. INORGANIC CHEMISTRY. b. St. Louis, Mo. Feb. 12, 1924. s. Charles J. and Sarah M. (Hickey) C. Edn.: B.S., Univ. of Dayton, 1943; M.S., Northwestern Univ., 1952; Ph.D., Univ. of Notre Dame, 1956. Exp.: Seed Schl. Tchr., Parochial Schls., Detroit, Mich., and St. Louis, Mo., 1944-45; Jr. Coll. Tchr., Provencher Collegiate, St. Boniface, Man., Can., 1946-47; Jr. Coll. Tchr., Maryhurst Normal, Kirkwood, Mo., 1947-52; Assoc. Prof., St. Mary's Univ., 1955—. Mem.: A.C.S., Sigma Xi; Albertus Magnus Guild. Contbr. to: Jour. of Inorganic and Nuclear Chem.; Chemical Abstracts. Areas of Rsch.: Chemical Effects of Radioactive Decay; Complex Anionic Species; Ion exchange Methodology.

CUNNIEN, Ann L. Hadden (Mrs.), Assoc. Prof., State Univ. Agric. and Tech. Inst., Canton, N. Y. Home Add.: 15 Harrison St., Canton, N. Y. DIETETICS, FOODS SCIENCE, NUTRITION, FOOD SERVICE ADMINISTRATION. b. Primghar, Iowa, Feb. 1, 1905. d. William J. Hadden, Sr. and Anna L. (Christensen) H. Edn.: B.S., Iowa State Univ., 1932; M.S., Kans. State Univ., 1940. m. William J. Cunnien, 1959. Exp.: Hd. Dept. Food Service, Kans. Union, Lawrence, Kans., 1947-48; Assoc. Prof. and Hd. Institution Mgt., Stout Coll., 1939-47; Instr., Cornell Univ., 1948-49; Assoc. Prof., State Univ. Agric. and Tech. Inst., 1949—. Mem.: Am. Dietetics Assn.; A.A.A.S.; Am. Schl. Food Serv. Assn.; Am. Assn. of Jr. Coll.; Omicron Nu; Phi Kappa Phi. Contbr. to: Jr. Coll. Jour. Areas of Rsch.: Personnel Management as Related to Institution Management Research, Knowledge, Institution Management Areas and Food Sci. and Nutrition.

CUNNINGHAM, Burris Bell (Ph.D.), Prof. of Chem., Dept. of Chem., Univ. of Calif., Berkeley, Calif. Home Add.: 144 Bret Harte Rd., Berkeley 8, Calif. CHEMISTRY OF THE TRANSURANIUM ELEMENTS. b. Springer, N. Mex., Feb. 16, 1912. s. Charles C. and Lora C. (Dunlavy) C. Edn.: B.Sc., Univ. of Calif., 1935; Ph.D., ibid., 1940. m. Irene Charlotte Metcalf, Aug. 1, 1936. c.: Susan; Bruce; Joseph. Exp.: Rsch. Assoc., Biochem., Univ. of Calif., 1940-42; Rsch. Assoc., Chem., Office of Sci. Rsch. and Devel., Chicago, Ill., 1942; Group Ldr., Asst. Sect. Chf., Manhattan Proj., 1942-46; Asst. Prof. of Chem., Univ. of Calif., 1946-48; Assoc. Prof. of Chem., ibid., 1948-53; Prof. of Chem., ibid., 1953—. Hon. Pos.: Tech. Advisor, U.S. Delegation to Geneva Conf. on Peaceful Uses of Atomic Energy, 1955; Guggenheim Fellow, 1956. Mem.: Am. Chem. Soc.; Am. Assn. Adv. of Sci.; Am. Assn. of Univ. Profs.; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Phys. Rev.; Jour. Chem. Phys.; Mikrochemie; Jour. Gen. Physiol.; Analytical Chem.; Rev. Sci. Instruments; Nucleonics. Gen. Int.: First Isolation Plutonium, with L. B. Werner, 1942; Americium, 1945; Berkelium, with S. G. Thompson, 1958. Areas of Rsch.: Chemistry of Transuranium Elements, Ultramicrochemical Methods of Research.

CUNNINGHAM, Frank Willis (Mr.), Chmn. of Sci. Div., Northeastern Okla. A. and M. Coll., Miami, Okla. Home Add.: 227 C St., N.E. Miami, Okla. CHEMISTRY, ANALYTICAL. b. LeCompton, Kan., Nov. 19, 1896. s. Frederick B. and Cora Mabel (Day) C. Edn.: B.A., Kans. Wesleyan Univ., 1921; M.S., Kans. State Coll., 1936. m. Edna Kirk, June 14, 1923. c.: Willis C.; Charlotte Daniels. Exp.: Sci. Instr., Lebanon H.S., Lebanon, Kans., 1931-37; Prin. of H. S., Riverton, Kans., 1937-42; Chr. Sci. Div., N.E.O. A. and M. Coll., Miami, Okla., 1942—. Hon. Pos.: Edn. Comm., A.C.S. S.E. Kans. Sci.; Consultant in Sci. Edn. under the Okla. Frontiers of Sci. Mem.: Am. Chem. Soc.; A.A.A.S.; A.A.U.P.; N.E.A.; Phi Kappa Delta; Pi Gamma Mu. Serv. Rec.: A.U.S., W.W. I. Gen. Int.: Danforth Scholar Sou. Methodist Univ., 1952; N.S.F. Fellow, Ind. Univ., 1955. Areas of Rsch.: Investigation of lead and zinc deposits in this area. Work with the Civil Defense in the investigation of radioactive fallout.

CUNNINGHAM, Floyd F. (Ph.D.), Prof. of Geo., So. Ill. Univ., Carbondale, Ill. GEOGRAPHY. b. Dec. 24, 1899, Flat Rock, Ill. s. Carl Homer and Lillie Alberta (Seitzinger) C. Edn.: B.Ed., Ill. State Normal Univ., 1926; A.M., Clark Univ., 1928; Ph.D., Clark Univ., 1930. m. Helen Blanche Epsy, Sept. 1, 1925. c.: Jo Ann; Floyd E. Exp.: Principal, Emerson Schl., Berwyn, Ill., 1925-27; Visiting Prof. of Geo., George Peabody Coll., Nashville, Tenn., Summer, 1935; Instr. Geog., Biarritz Am. Univ., Biarritz, France, 1945; Lectr., Geog., Lect. Bur., Information and Edn., U. S. Army at Frankfurt, Wiesbaden, Bremen, Berlin, Munich, Karlsruhe, Mannheim, Augsburg, Giessen, Kassel in Germany and Vienna and Salsburg in Austria, 1946; Prof. and Hd. Dept. of Geog., State Coll., Florence, Ala., 1929-47; Chmn., Dept. of Geog. and Geol., Southern Ill. Univ., 1947-55; Chmn., Dept. of Geog., ibid., 1955-59; Prof. of Geog., ibid., 1959—; Fulbright Lectr. in Geog., Ain Shams Univ., Cairo, Egypt and the Am. Univ. at Cairo, 1953-54. Hon. Pos.: Delegate, Internatl. Geographical Congress, Warsaw, Poland, 1934; Sec., Pres., Natl. Council for Geographic Edn. Mem.: Natl. Council for Geographic Edn.; Assn. of Am. Geog.; Am. Geographic Soc.; Natl. Geographic Soc.; Natl. Council of Ednl. Travel; Ill. Geographic Soc.; Ill. Acad. of Sci.; Kappa Delta Pi; Gamma Theta Upsilon; Kiwanis Club. Author: Lab Manual in the Geog. of North Am., 1930. Co-Author: Lab. Manual in the Geog. of S. A., 1932. Contbr. to: Jour. of Geog. Ph.D. Dissertation: The Relation of Forest Invasion and Succession to the Major Soil Types of the Central Mass. Upland. Hobbies: Farming; Photography. Listed in: A.M.S.; Who Knows—and What; W.W. in the Middle West; W.W. in Am. Edn.; W.W. in Am.; Internatl. World W.W.

CUNNINGHAM, Robert Morton (Sc.D.), Chief Cloud Physics Br., Air Force Cambridge Rsch. Lab., L. G. Hanscom Field, Bedford, Mass. Home Add.: Rockwood Lane, Lincoln, R.F.D. 1, Concord, Mass. METEOROLOGY-CLOUD PHYSICS. b. Boston, Mass., July 1, 1919. s. William Hayes and Mildred G. (Pilpel) C. Edn.: S.B., Mass. Inst. of Tech., 1942; Sc.D., ibid., 1952. m. Claire Steinhardt, June 3, 1945. c.: Peter; James; William. Exp.: Instr., Rsch. Asst., Mass. Inst. of Tech., 1942-46; Rsch. Assoc., ibid., 1946-52; Proj. Scientist, Air Force Cambridge Rsch. Labs., Bedford, Mass., 1952-61; Branch Chief, ibid., 1961—. Hon. Pos.: Past Mem., NACA Icing Subcom.; Past Chmn., Am. Meteorology Soc. on Admissions. Mem.: Am. Meteorol. Soc.; Royal Meteorol. Soc.; Am. Geophys. Union; Sigma Xi; RESA. Contbrng. Author Handbook of Geophysics, 1957; Artificial Stimulation of Rain, 1957; Recent Advances in Atmospheric Electricity, 1958; Physics of Precipitation, 1960. Contbr. to: Jour. of Meteorology; Bull. A.M.S. Quart.; Jour. Royal Meteorol. Soc. Areas of Rsch.: Cloud Physics; Particle Size, Airborne Meteorological Instrumentation. Weather effects on Radio Propagation.

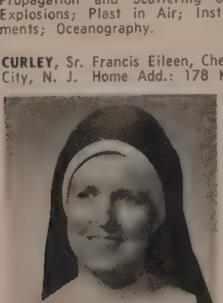
CUNNINGHAM, Theodore W. (Mr.), Asst. Prin., Lakewood H. S., Lakewood 7, Ohio. Home Add.: 20361 Bonniebank Blvd., Rocky River 16, Ohio. SCIENCE EDUCATION. b. Marion, Ohio, Sept. 14, 1909. s. Theodore Marshall and Miriam (DeWolfe) C. Edn.: A.B., Bluffton Coll., 1930; M.S., Univ. of Mich., 1936. m. Elizabeth Baumgartner, Aug. 4, 1932. c.: Theodore W., Jr.; Mrs. Nancy Busey. Exp.: Biol. Tchr., Painesville Harvey T. S., Painesville, Ohio, 1930-36; Biol. Tchr., H. S., Lakewood, Ohio, 1936-60; Chmn., Dept. of Biol., ibid., 1943-60; Asst. Prin., ibid., 1960—. Hon. Pos.: Pres., Lakewood Tchrs. Assn.; Secy., Northeastern Div., Ohio Acad. of Sci. Mem.: A.A.A.S.; Fellow, Ohio Acad. of Sci.; Am. Museum of Natural Hist.; Natl. Sci. Tchrs. Assn. Gen. Int.: Outstanding Teacher Award by N. E. Region of Ohio Academy of Science for 1960. Areas of Rsch.: H. S. Biol.

CUNOV, Carl Henry (Ph.D.), Mfg. Project Dir., Smith Kline and French Labs., Phila., Pa. Home Add.: 1923 Acorn Lane, Abington, Pa. ORGANIC CHEMISTRY (CYCLOBUTANE DERIVATIVES, MILLS-NIXON EFFECT, DRUGS); CHEMICAL AND PHARMACEUTICAL MANUFACTURING; ANALYTICAL CHEMISTRY. b. Detroit Mich., Feb. 19, 1918. s. Charles and Hilda (Otto) C. Edn.: B.S., Wayne State Univ., 1941; Ph.D., ibid., 1951. m. Margaret Van Dixon, 1942. c.: Carolyn; Mary; Robert. Exp.: Drug Analyst, Jamieson Pharmacal Co., Detroit, Mich., 1939-42; Asst. Chf. Chemist, ibid., 1942-45; Chief Chem., ibid., 1945-46; Chief Chemist, McKay-Davis Co., Toledo, Ohio, 1946-47; Tchng. and Rsch. Fellow, Wayne State Univ., 1947-50; Asst. Plant Tech. Dir., Smith Kline and French Labs., 1950-54; Plant Tech. Dir., ibid., 1954-58; Process Dept. Mgr., ibid., 1958-60; Mfg. Project Dir., ibid., 1960—. Mem.: Am. Chem. Soc.; Am. Pharmaceutical Assn.; A.A.A.S.; Pa. Acad. of Sci.; Pharmaceutical Mfgs. Assn.; Mich. Acad. of Pharm.; Phila. Organic Chem. Club; Phila. Pharmaceutical Production Forum; Sigma Xi; Phi Lambda Upsilon; Tau Kappa Epsilon; Christian Businessmen's Assn.; Pa. Temperance League; Lord's Day Alliance; Y.M.C.A. Contbr. to: Dissertation Abstracts; Jour. Am. Chem. Soc.; Proc. Am. Pharm. Mfgrs. Assn.; etc.

CURL, Gilbert H(arold) (Ph.D.), Coordinator for Ocean Scis., U. S. Navy Electronics Lab., San Diego 52, Calif. Home Add.: 1152 Mona Dr., San Diego 7, Calif. PHYSICS, UNDERWATER SOUND. b. Pierson, Iowa, Jan. 30, 1911. s. Arthur and Mabel A. (Paddock) C. Edn.: A.B., Univ. of Calif., 1932; Ph.D., Cath. Univ. of Am., 1946. m. Constance A. Pash, Aug. 10, 1936. c.: Virginia H.; Robert A. Exp.: Physicist, Natl. Bur. of Standards, Wash., D. C., 1938-39; Physicist, Taylor Model Basin (Navy), 1939-1946; Physicist, Consult. Staff, U. S. N. Electronics Lab., San Diego, Calif., 1946-49; Sect. Hd., ibid., 1950-51; Hd., Underwater Propagation Br., ibid., 1951-59; Assoc. Hd., Signal Propagation Div., ibid., Dec., 1959-62; Coordinator for Ocean Scis., ibid., 1962—. Fellow: A.A.A.S.; Acous. Soc. Am. Mem.: Am. Physical Soc.; Am. Inst. of Physics; Inst. of Radio Engrs.;

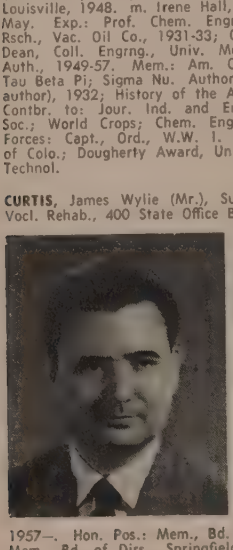
Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon. Areas of Rsch.: Propagation and Scattering of Underwater Sound; Underwater Explosions; Plast in Air; Instrumentation for Dynamic Measurements; Oceanography.

CURLEY, Sr. Francis Eileen, Chem. Tchr., St. Aloysius H. S., Jersey City, N. J. Home Add.: 178 Kensington Ave., Jersey City, N. J. EDUCATION. b. Boston, Mass., Nov. 10, 1917. d. Peter J. and Anne McHugh C. Edn.: B.A., Coll. of St. Elizabeth, 1947; M.S., Notre Dame Univ., 1957. Exp.: Chem. Tchr., St. Peter H. S., New Brunswick, N. J., 1945-59; Chem. Tchr., St. Aloysius H. S., Jersey City, N. J., 1959—. Hon. Pos.: Committee Chmn., Chem. Sect., N. J. Sci. Tchrs. Assn.; Coordinator, Hudson Co. Sci. Fair. Mem.: Am. Chemical Soc.; N. J. Sci. Tchrs.; Natl. Sci. Tchrs.; Secd. Tchrs.; N. J. Ednl. Assn. Gen. Int.: N.S.F. Summer Rsch. Grant, A.E.C. Summer Rsch. Grant, Univ. of Notre Dame; N.S.F. Grant, Cornell Univ. Areas of Rsch.: Chelation.



CURTIS, Harry Alfred (Ph.D.), Retired. Home Add.: 3730 Dellwood Dr., Knoxville 19, Tenn. CHEMISTRY AND CHEMICAL ENGINEERING. b. Douglas Co., Colo., Feb. 16, 1884. s. Frederick Alfred and Lydia (Cramer) C. Edn.: B.S., Univ. of Colo., 1908; M.A., Univ. Colo., 1910; Ph.D., Univ. Wis., 1914. Hon. Deg.: Sci.D., Univ. Colo., 1930; Sci.D., Univ. Wis., 1937; Dr. Engrng., Univ. Louisville, 1948. m. Irene Hall, 1911. c.: Jeanne Carol; Patricia May. Exp.: Prof. Chem. Engrng., Yale Univ., 1923-31; Dir. Rsch., Vac. Oil Co., 1931-33; Chf. Chem. Engr., TVA, 1933-38; Dean, Coll. Engrng., Univ. Mo., 1938-49; Dir., Tenn. Valley Auth., 1949-57. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Tau Beta Pi; Sigma Nu. Author: Fixed Nitrogen (editor and part author), 1932; History of the Alpha Chi Sigma Fraternity, 1928. Contbr. to: Jour. Ind. and Engrng. Chem.; Jour. Am. Chem. Soc.; World Crops; Chem. Engrng.; Am. Jour. of Edn. Armed Forces: Capt., Ord., W.W. I. Gen. Int.: Norlin Award, Univ. of Colo.; Dougherty Award, Univ. Tenn. Areas of Rsch.: Chem. Technol.

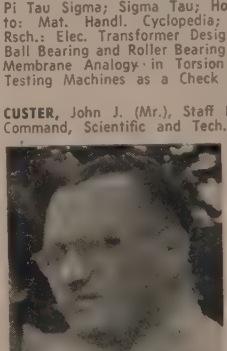
CURTIS, James Wylie (Mr.), Supvrng. Psychologist, Ill. Div. of Vocl. Rehab., 400 State Office Bldg., Springfield, Ill. Home Add.: 2117 Noble Ave., Springfield, Ill. INDUSTRIAL AND COUNSELING PSYCHOLOGY; NUMISMATIC RESEARCH; EGYPTOLOGY (PARTICULARLY COMMERCE AND MEDIA OF EXCHANGE). b. Madison, Ind., July 3, 1913. s. Col. Wylie Ralph and Gertrude (Allison) C. Edn.: A.B., Univ. of Ky., 1937; M.S., ibid., 1938. m. Mildred Fisher, Apr. 29, 1942. c.: James Wylie, II; Carol Ann. Exp.: Rsch. Psychol., U. S. Forest Serv., Winchester, Ky., 1938-39; Hd., Dept. of Psychol., Pikeville Coll., Ky., 1939-41; Supvrng. Psychol., Ill. Div. of Vocl. Rehab., Springfield, 1947—; Staff Psychol., Memorial Hosp. Schl. of Nursing, Springfield, 1955—; Personnel Consult., Capitol Bank of Springfield, 1957—. Hon. Pos.: Mem., Bd. of Govs., Am. Numismatic Assn.; Mem., Bd. of Dirs., Springfield Personnel Assn. Mem.: Fellow, A.A.A.S.; Am. Psychol. Assn.; Midwestern Psychol. Assn.; Ill. Psychol. Assn.; Egypt Exploration Soc.; Fellow, Royal Numismatic Soc.; Numismatic Soc. of India; Am. Numismatic Soc.; Sociedad Numismatica de Mex.; Am. Rsch. Center in Egypt; Pi Kappa Alpha. Author: The Tetradrachms of Roman Egypt, 1957; The Coinage of Roman Egypt; A Survey; Published Psychol. Tests; The Curtis Completion Form, 1953; The Curtis Interest Scale, 1958; The Cross Reference Test, 1958; The Curtis Object-Completion Test, 1960; The Curtis Space-Form Test, 1960. Contbr. to: Psychol. Bull.; Jour. Exptl. Psychol.; Ednl. and Psychol. Measurements; Jour. Egyptian Archaeol.; Jour. Numis. Soc. of India; The Numismatic. Serv. Rec.: U.S.A.F., 1941-47. Gen. Int.: Aide-de-Camp (Colonel) to Gov. of Ky. Areas of Rsch.: Evaluation of Personality by Semi-Projective Techniques; Development of Aptitude Tests; Selection Techniques for Student Nurses; Commerce asd Exchange in Ancient Egypt.



CURTIS, Wesley Edmond (Mr.), Chf., Operations Analysis Br., Combat Operations Rsch. Grp., Fort Belvoir, Va. Home Add.: 6753 Greeley Blvd., West Springfield, Va. PHYSICS, OPERATIONS RESEARCH. b. Westfield, N. Y., Aug. 25, 1918. s. Edward James and Annie Maybell (Walker) C. Edn.: B.S., Alfred Univ., 1940. m. Janet Austin, May 29, 1949. c.: Mark Austin Curtis; Kipp Allen. Exp.: Rsch. Assoc., Woods Hole Oceanogr. Inst., Woods Hole, Mass., 1944-47; Supvry., Physicist, Ballistic Rsch. Labs., Aberdeen Proving Ground, Md., 1947-56; Chf. Operations Analyst, Combat Operations Rsch. Grp., U. S. Continental Army Command, 1956—. Mem.: Am. Assn. Adv. Sci.; Operations Rsch. Soc. of Am.; Rsch. Soc. of Am.; Am. Ordn. Assn. Gen. Int.: Proj. Leader, Joint Task Force One, Joint Task Force Three and Joint Task Force Seven. Areas of Rsch.: Shock Tube Research; Nuclear Weapon Phenomenology.

CUSHMAN, Paul Allerton (Sc.D.), Chief Engr., L and S Bearing Co., P. O. Box 995, Oklahoma City, Okla. Home Add.: 121 Marlboro Lane, Oklahoma City 16, Okla. BALL AND ROLLER BEARING TESTING AND DESIGN. b. Harverhill, Mass., Jun 15, 1889. s. Charles Horace and Ada (Colby) C. Edn.: S.B. Mass. Inst. of Tech., 1911; S.M., ibid., 1927; Sc.D., Univ. o Mich., 1932. m. Ottilie Davis, 1932. Exp.: Instr., Engr. Drawing Trinity Coll., 1911-13; Pac. T. and T. Co. and Am. Tel. an Tel. Co., 1913-16; Instr. of Steam and Elec. Pr. Plant, Went worth, Instr., 1916-18; Asst. Prof. Mech. Engr., Pa. Stat Coll., 1918-19; Asst. Prof. Mech. Engr., Poly. Inst., Brooklyn 1919-24; Prof. Hd. Mech. Engr., Univ. of Ark., 1924-25; Grad Student at M.I.T. and Gen. Elec. Co., 1925-27; Assoc. Prof., Univ of Neb., 1927-28; Prof. Hd. Mech. Engr., Vanderbilt Univ., 1928 31; Grad. Student, Univ. of Mich., 1931-32; Prof. of Mech Engr., ibid., 1932-33; Prof. and Hd. of Mech. Engr., Valparais Univ., 1933-39; In Chg. of Metall., Tes., and Die Des., Bearin and Casting Divs. of McGill Mfg. Co., Valparaiso, Ind., 1939-47 Chief Engr., L and S Bearing Co., Oklahoma City, Okla., 1948— Prof. of Mech. Engrng., Univ. of Okla., 1949-59; Prof., Emer ibid., 1959—; Assoc. Dir. of Rsch., ibid., 1959—; Pres Valparaiso Foreman's Club, 1942; Pres., Kiwanis Youth Ce ter, 1943-47; Pres., Valparaiso Comm. Concerts, 1943-4 Mem.: Am. Soc. of Metals; Am. Soc. of Mech. Engrs.; A.A.A.S Pi Tau Sigma; Sigma Tau; Hon. Knight of St. Patrick. Contb to: Mat. Handl. Cyclopedia; Eng. Edn.; A.S.M.E. Areas Rsch.: Elec. Transformer Design, Spur Gear-Gear Strength, Buil Ball Bearing and Roller Bearing Load-Speed-Time Testing Machine Membrane Analogy in Torsion and Bending; Built Ball Bearin Testing Machines as a Check of Production and Final Analysi

CUSTER, John J. (Mr.), Staff Engr., U.S.A.F., Air Force Systen Command, Scientific and Tech. Liaison Office, 111 E. 16th S N. Y. 3, N. Y. Home Add.: 4 55 Kissena Plvd., Flushing 5 N. Y. ANALYTICAL CHEMISTR MATERIALS—METALLIC AND NO METALLIC AND CHEMICAL ENG NEERING. b. Brooklyn, N. Y March 19, 1911. s. Ma M. and Celia (Fast) Edn.: B.S., Coll. of City of N. Y 1931; M.A., N. Y. Univ., 193 M.S., Brooklyn Coll., 1950; Ch.E Cooper Union, 1956. m. Natal Natelson, June 30, 1935. Barbara G.; Victoria A.; Carol Exp.: Sr. Rsch. Engr., Melpar Rsc Dept., Boston, Mass., 1957-5 Asst. Mgr., Quality Control Engrn Lab., Ford Instrument Corp., Lo Island City, N. Y., 1958; Physic Chem., Picatinny Arsenal, Dov N. J., 1958-59; Gen. Engr., U. Naval Supply Rsch. and Devl. Facility, Bayonne, N. J., 1959-6 Staff Engr., U.S.A.F., Air Force Systems Command, N. Y. Re Off., N. Y., 1960. Mem.: N. Y. Acad. Scis.; Soc. Am. Mil Engrs.; A.A.A.S.; Am. Chem. Soc.; Am. Inst. Chem. Engr Tau Delta Mu; Merit Badge Counselor, Boy Scouts of Am Com. Off. Assn., Lt. Cmdr., U.S.P.H.S., Res. Contbr. to: Jo Analytical Chemistry. Areas of Rsch.: Analytical Chemistr Trace Elements and Advanced Instrumentation; Physical Chem try—Semiconductor Materials, Intermetallics, Transistion E ments; Chemical Engineering—Processes, Chemical Operations.

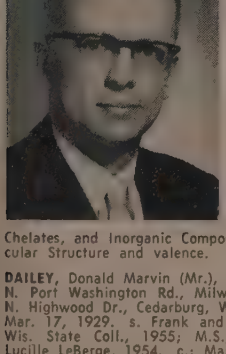


CUTSHALL, Alden (Denzel) (Ph.D.), Prof. of Geography, Un of Ill., Chicago, Ill. Home Add.: 667 N. Elizabeth St., Lomba Ill. GEOGRAPHY OF SOUTHEAST ASIA, ESPECIALLY PHILIPPIN ECONOMIC GEOGRAPHY, ESPECIALLY THE HUMID TROPICS. Olney, Ill., Apr. 12, 1911. s. George O. and Ethel (Slichenmy C. Edn.: B.E., Eastern Ill. St., 1932; M.A., Univ. of Ill., 193 Ph.D., The Ohio State Univ., 1940. m. Freda Dolton, 19 c.: Freda Arlene; Alden, Jr. Exp.: Faculty Mem. to Prof. Geog., Univ. of Ill., 1940—. Mem.: A.A.A.S.; Assn. of A Geographers; Natl. Coun. for Geog. Edn.; Ill. Geog. Sc Chicago Geog. Soc.; Phil. Geog. Soc.; Sigma Xi; Ill. St. Ac of Sci. Assoc. Author: World Political Geography, 1948, re 1957. Co-Author: World Patterns and World Problems, 19 rev., 1953. Contbr. to: Econ. Geography; Jour. of Geograp Scientific Monthly; Philippine Geographical Jour.; The Prof sional Geographer; Geographical Rev.; Trans. Ill. St. Acad. Sci.; Current Hist.; Agricultural Hist.; Ill. Bull. of Geograp Ind. Magazine of Hist.; Econ. Botany; Am. Schl. Bd. Jo Silliman Jour.; The Edn. Quarterly; Proc. of Ninth Pac Sci. Cong. Gen. Int.: Fulbright Rsch. Grant, 1950-51; Fulbri Lectr. Grant, 1957-58; S.S.R.C. Convention Travel Grant, 19 U.N.E.S.C.O. Lectrs. in India and Turkey, 1951. Areas of Rsc Agricultural Land, Utilization in the Tropics; Southeast A especially Philippines; Midwestern U.S.A., especially Lo Wabash Valley; Political Geog.

DACSO, Michael M., (M.D.), Dir., Dept. of Physical Medicine and Rehabilitation, Goldwater Memorial Hosp., Welfare Island, N. Y. Home Add.: 56 Middle Neck Rd., Roslyn 2, N. Y. REHABILITATION MEDICINE. b. Tovaros, Hungary, June 25, 1909. s. Laszlo and Hedvig (Bauer) D. Edn.: M.D., Royal Hungarian Univ. of Budapest, Hungary, 1934. m. Magda Rona, June 6, 1936. Exp.: Intern and Resident, Goldwater Memorial Hosp., N. Y. Univ. Med. Div., 1941-44; Clinical Asst. in Medicine, N. Y. Univ. Med. Schl., 1944-51; Assoc. Visiting Physician in Medicine, Goldwater Memorial Hosp., N. Y. Med. Div., 1945-52; Attending Physician, N. Y. Univ. Hosp., 1948; Visiting Physician, Bellevue Hosp., N. Y. Univ. Div., 1948; Asst. Prof. of Clinical Physical Medicine and Rehabil., N. Y. Univ. Med. Schl., 1949-54; Dir., Dept. of Physical Medicine and Rehabilitation, Goldwater Mem. Hosp., 1949—; Assoc. Prof. of Physical Medicine and Rehabilitation, N. Y. Univ. Med. Schl., 1953—; Assoc. Prof. of Clinical Physical Medicine and Rehabilitation, ibid., 1954-58; Consultant, St. Barnabas Hosp., 1954. Hon. Pos.: Vice Pres., Natl. Coun. on Aging, 1960; Advisory Com. on Pub. Health Nursing Project, Community Service Soc., 1959; Mem., Med. Adv. Bd., Peabody Home, 1962; Mem., Tech. Advisory Com., Fdtn. for Med. Tech., 1962; Natl. Rehab. Assn. Com. on Aging, 1962, and many others. Mem.: N. Y. Univ. Club; Knickerbrocker Yacht Club; Am. Hosp. Assn.; Community Coun. of Greater N. Y.; Community Serv. Soc.; Am. Med. Assn.; Am. Fed. for Clin. Rsch.; Am. Congress of Phys. Med. and Rehab.; Am. Pub. Health Assn.; N. Y. Soc. of Phys. Med. and Rehab.; Assn. of Am. Med. Coll. Contbr. to: Am. Jour. Dig. Diseases; Chronic Disease Newsletter; Proc. of Univ. of Mich. Conference on Aging; Am. Jour. of Physical Medicine; Arch. of Physical Medicine and Rehabilitation; N. Y. St. Jour. of Medicine; Geriatrics; Modern Medicine; Jour. of the A.M.A.; Am. Geriatrics Soc. Jour.; Jour. of Chronic Diseases; Conn. Health Bull.; Public Health News; Bull. of the N. Y. Acad. of Medicine; N. Y. State Jour. of Medicine; Life Magazine; Jour. of the Me. Med. Assn.; Jour. of Rehab. in Asia; Med. Clinics of N. Am.

DAGGS, Ray Gilbert (Ph.D.), Exec. Secy.-Treas., Am. Physiological Soc., 9650 Wisconsin Ave., Washington 14, D. C. Home Add.: 5013 Alta Vista Court, Bethesda 14, Md. PHYSIOLOGY. b. McKees Rocks, Pa., June 26, 1904. s. Murvyn Dorsa and Clara Etta (Wolstoncroft) D. Edn.: B.S., Bucknell Univ., 1926; Ph.D., Univ. of Rochester, 1930. Hon. Deg.: D.Sc., Bucknell Univ., 1955. m. Mary Agnes Dwyer, 1929. c.: Vertie Marie Kunkle; William David. Exp.: Fellow to Asst. Prof., Univ. of Rochester, 1927-36; Asst. Prof. to Hd. of Dept., Univ. of Vt. Coll. of Med., 1936-41; Dir. of Rsch., U. S. Rsch. Lab., Ft. Knox, Ky., 1946-56; Exec. Secy.-Treas., Am. Physiological Soc., Wash., D. C., 1956—. Mem.: Am. Physiological Soc.; Am. Inst. of Nutrition; A.A.A.S.; Phi Beta Kappa; Sigma Xi. Contbr. to: Physiol. Rev., Assoc. Editor; The Physiologist, Editor; Am. Jour. Physiol.; Jour. of Nutrition; Jour. of Gen. Physiol.; Science; Jour. Indust. and Engrng. Chem.; Jour. Am. Dental Assn. Serv. Rec.: U. S. Army, 1941-46. Areas of Rsch.: Environmental Physiology; Nutrition; Grad. Education.

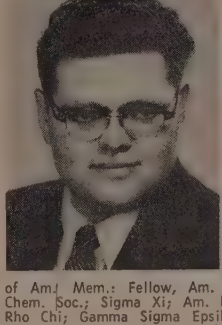
DAHL, Lawrence Frederick (Ph.D.), Asst. Prof. of Chem., Univ. of Wisconsin, Madison 6, Wis. Home Add.: 27 Sherman Terr., Madison, Wis. PHYSICAL AND INORGANIC CHEMISTRY. b. Evanston, Ill., June 2, 1929. s. Lawrence G. and Anne (Stuessey) D. Edn.: B.S., Univ. of Louisville, 1951; Ph.D., Ia. State Univ., 1956. m. June Lomnes, Sept., 1956. Exp.: Post Doc. Fellow, Ames Lab., A.E.C., Ames, Ia., 1957; Instr., Univ. of Wis., Madison, Wis., 1957-59; Asst. Prof. of Chem., ibid., 1959—. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Am. Crystallographic Assn.; A.A.A.S.; Sigma Xi; Alpha Chi Sigma; Phi Kappa Phi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Physics; Acta Crystallographica; Jour. Inorg. Nucl. Chem. Areas of Rsch.: Structural Chem. of Organo-Metallics, Metal Chelates, and Inorganic Compounds; X-ray Crystallography; Molecular Structure and valence.



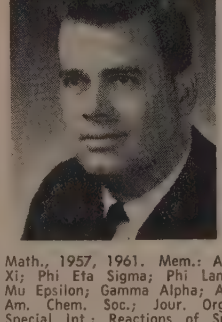
DAILEY, Donald Marvin (Mr.), Physics Instr., Nicolet H. S., 6701 N. Port Washington Rd., Milwaukee 17, Wis. Home Add.: 856 N. Highwood Dr., Cedarburg, Wis. PHYSICS. b. Ladysmith, Wis., Mar. 17, 1929. s. Frank and Selma (Sandquist) D. Edn.: B.S., Wis. State Coll., 1955; M.S., The Univ. of Wis., 1960. m. Lucille LeBerge, 1954. c.: Marie; Mark; Kathleen. Exp.: Instr., Lincoln H. S., Park Falls, Wis., 1955-59; Instr., Nicolet H. S., Milwaukee, Wis., 1960—. Hon. Pos.: Secy., Milwaukee Suburban Sci. Tchrs. Assn. Mem.: A.A.A.S.; Am. Assn. of Physics Tchrs.; N.E.A.; Wis. Edn. Assn.; Wis. Soc. of Sci. Tchrs.; Milwaukee Suburban Sci. Tchrs. Assn.; Natl. Sci. Tchrs. Assn. Serv. Rec.: U. S. Army, 1951-52.

DAILEY, Joseph Patrick (Ph.D.), Dir. of Rsch., Armour Pharmaceutical Co., Box 511, Kankakee, Ill. Home Add.: 959 Country Club Drive, Kankakee, Ill. ORGANIC CHEMISTRY. b. Penfield, Ill., Nov. 14, 1922. s. Joseph M. and Ida (Skeffington) D. Edn.: B.S., Univ. of Ill., 1944; Ph.D., Univ. of Notre Dame, 1950. m. Mary E. Torney, June 16, 1951. c.: Thomas; William; John; Mary Catherine; Joseph. Exp.: Rsch. Chemist, General Aniline and Film Corp., Easton, Pennsylvania, 1944-46; Rsch. Chemist, Armour Pharmaceutical, Kankakee, Ill., 1949—; Rsch. Dir., ibid., 1959—. Mem.: A.C.S.; A.A.A.S.; Coun. on Atherosclerosis of Am. Heart Assn.; Royal Soc. of Med. Contbr. to: Jour. Am. Chem. Soc.; Am. Jour. of Clin. Nutrition; Jour. of Nervous and Mental Diseases. Areas of Rsch.: Organic and Biochemistry, Physiological Activity of Synthetic and Natural Products.

DALE, Jack Kyle (Ph.D.), Hd. Vet. Rsch. and Devel. Sect., The Upjohn Co., Kalamazoo, Mich. Home Add.: 4316 Lake Forest Dr., Kalamazoo, Mich. PHARMACEUTICAL CHEMIST. b. Manhattan, Kans., Apr. 6, 1921. s. Neil Edwin and Hazel (Kiser) D. Edn.: B.S., Pharm., Univ. of Fla., 1943; M.S., Pharm., ibid., 1944; Ph.D., ibid., 1947. m. Rosalind N. Miller, Aug. 1, 1947. c.: Inez; Jack; Neil, II. Exp.: Grad. Asst. Pharm., Univ. of Fla., Gainesville, Fla., 1943-45; Grad. Asst., Chem., ibid., 1945-46; Grad. Fellow, ibid., 1946-47; Pharml. Chemist, The Upjohn Co., 1947—; Hd., Vet. Rsch. and Devel. Sect., ibid., 1961—. Hon. Pos.: Chmn., Sect. on Pharml. Technol., Am. Pharml. Assn.; Chmn., First and Second Symposia on Incompatibilities of Mfr'd. Pharmls., 1961-62; Mem. of Exec. Bd. Fruit Belt Coun., Boy Scouts of Am.; Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Sigma Xi; Am. Pharml. Assn.; Sigma Phi Epsilon; Rho Chi; Gamma Sigma Epsilon; Kappa Kappa Psi; Phi Kappa Phi. Co-Author: Pharmaceutical Dispensing, 1959. Contbr. to: Jour. of the Am. Pharml. Assn.; Scientific Edn. and Pract. Edn. Gen. Int.: Recipient Silver Beaver, Boy Scouts of Am., 1961; Named Kalamazoo Young Man of the Year, 1955. Areas of Rsch.: Drug Incompatibilities; Pharmacy of Hormones, Antibiotics; Vitamins and Pharmacologic Agents; Veterinary Pharmaceuticals.



DALE, Wesley John (Ph.D.), Prof. of Chem., Old Chemical Bldg., Univ. of Mo., Columbia, Mo. ORGANIC CHEMISTRY. b. Milwaukee, Wis., Aug. 8, 1921. s. Colin B. and Irma M. (Pohl) D. Edn.: B.S., (with Highest Honors), Univ. of Ill., 1943; Ph.D., Univ. of Minn., 1949. m. Pattie Surine, Aug. 20, 1949. c.: Claudia Jean. Exp.: Grad. Student and Tchng. Asst., Univ. of Minn., 1943; Rsch. Chemist, Govt. Synthetic Rubber Rsch. Program, ibid., 1943-46; Grad. Student and Natl. Rsch. Council Predoctoral Fellow in Chem., ibid., 1946-49; Asst. Prof. of Chem., Univ. of Mo., Columbia, Mo., 1949-53; Assoc. Prof. of Chemistry, ibid., 1953-58; Prof. of Chemistry, ibid., 1958—; Asst. to Dean, Coll. of Arts and Sci., 1954-55; Chmn., Dept. of Chem., ibid., 1961; Dir., Summer Inst. for H. S. Tchrs. of Chem., Physics, and Math., 1957, 1961. Mem.: Am. Chemical Soc.; A.A.A.S.; Sigma Xi; Phi Eta Sigma; Phi Lambda Upsilon; Phi Kappa Phi; Pi Mu Epsilon; Gamma Alpha; Alpha Chi Sigma. Contbr. to: Jour. Am. Chem. Soc.; Jour. Organic Chem.; Jour. Polymer Sci. Special Int.: Reactions of Substitute Styrenes.



D'ALELIO, Gaetano Francis (Ph.D.), Rsch. Prof., Dept. Chem., Notre Dame Univ., Notre Dame, Ind. Home Add.: 2011 E. Cedar St., South Bend 17, Ind. HIGH POLYMER AND ORGANIC CHEMISTRY; RESEARCH ADMINISTRATION INVENTOR. b. Charlestown, Mass., Dec. 26, 1909. s. Severino and Francesca (Polcari) D'A. Edn.: B.A., Boston Coll., 1931; Ph.D., Johns Hopkins Univ., 1935. m. Josephine M. McCarthy, Sept. 5, 1932. c.: Denny; Ellen; Jane; William. Exp.: Rsch. Chem., Gen. Elec. Co., Pittsfield, Mass., 1936-39; Dir. of Plastic Labs., ibid., 1939-43; Dir. of Rsch., Pro-phylac-tic Brush Co., Northampton, Mass., 1943-44; Vice Pres. in Chg. of Rsch., ibid., 1944-46; Mgr., High Polymer Rsch., Indus. Rayon Corp., Cleveland, Ohio., 1946-47; Asst. Dir. of Rsch., Koppers Co., Inc., Pittsburgh, Pa., 1947-49; Vice Pres. and Mgr. of Rsch., ibid., 1949-54; Hd., Dept. of Chem., Notre Dame Univ., 1955-60; Rsch. Prof., Notre Dame Univ., 1960—. Hon. Pos.: Bd. of Dirs. of Transition Metals and Chemicals, Inc., N. Y., N. Y., 1961; Consultant to Engrng. Com-

mand, Chem. Warfare Serv., 1960—; Mem., Advisory Comm. on Materials of the Natl. Aeronautic and Space Admin., 1961—; Bd. of Dirs., Dal-Mon Inc., Cleveland, Ohio, 1960—. Mem.: Phi Lambda Upsilon; Phi Beta Kappa; Sigma Xi; Am. Chem. Soc.; A.A.A.S.; Am. Inst. of Chemists; N. Y. Acad. of Sci.; Textile Inst.; Natl. Farm Chemurgic Council; Soc. of Chem. Industries of London; Internatl. Mark Twain Soc.; Hist. of Sci. Soc.; Am Ordnance Assn.; Am. Inst. of Chem. Engrs.; Armed Forces Chemical Assn.; Ind. Acad. of Sciences, 1961—. Author: A Lab. Manual of Plastics and Synthetic Resins, 1943; Exptl. Plastics and Synthetic Resins, 1946; Substancias Plasticas Experimentaley y Resinas Sinteticas, 1948; Fundamental Principles of Polymerization. Contbr. to: Mod. Plastics; Jour. of Am. Chem. Soc.; Am. Jour. of Pharm.; Jour. of Organic Chem.; Chimia; Makromoleculare Chemie; Kunstoffe Plastics and Jour. of Polymer Sci. Spec. Int.: Rsch. Admin. and Organization; Organic Syntheses; Plastics; Synthetic Fibers, Ion-Exchange Resins; Liquid and Solid High Energy Fuels and Propellants (354 issued U. S. Patents in These Fields).

DALTON, Patrick Daly, Jr. (Ph.D.), Range and Forestry Spec., Uniconsuh, Inc., Lafayette, Calif. Home Add.: P. O. Box 1014, Laie, Oahu, Hawaii. PLANT ECOLOGY AND RANGE MANAGEMENT. b. Salt Lake City Utah, Oct. 11, 1922. s. Patrick Daly, Sr. and Ora (Johnson) D. Edn.: B.S., Ariz. State Univ., 1949; M.S., Utah State Univ., 1951; Ph.D., Univ. of Ariz., 1961. m. Lela Jesperson, Dec. 20, 1948. c.: Tanya. Exp.: Rsch. Asst., Utah State Univ., 1949-51; Range Conservationist, S.C.S., U. S. Dept. of Agriculture, Toole, Utah, 1951-52; Range Mgr., B.L.M., U.S.D.I., Price, Utah, 1952-53; Instr., Liohona Coll., 1953-55; Asst. Prof., Church Coll. of Hawaii, 1955-58; Rsch. Asst., Univ. of Ariz., 1958-61; Asst. Prof., Univ. of Nev., 1961-62; Forestry Spec., Uniconsuh, Inc., 1962—. Mem.: Sigma Xi; A.A.A.S.; Ecology Soc. of Am.; Am. Soc. of Range Management; Arizona Acad. of Sci.; California Bot. Soc.; Hawaiian Acad. of Sci.; Hawaiian Bot. Soc.; A.A.U.P.; Alpha Gamma Rho; Alpha Phi Omega; Lambda Delta Sigma; Alpha Zeta; Beta Beta Beta; Xi Sigma Pi; Blue Key; Boy Scouts of Am.; Am. Legion. Author: Natural Resources of Arizona, A Guide for Improved Teaching, 1950; The Effects of Feeding Different Phosphorus Compounds to Sheep on the Desert Range in West Central Utah, 1951; The Spread of Lehmann Lovegrass as Affected by Mesquite and Native Perennial Grass, 1959; Ecology of the Creosote Bush, 1961, 1962. Contbr. to: Ecology; Jour. of Range Mgmt.; Progressive Agriculture in Ariz. Serv. Rec.: U. S. Navy, 1942-45. Areas of Rsch.: Ecology and Range Management on the Western Ranges of the U. S.

DALTON, S. Eugene (M.D.), Physician-Surgeon, 101 S. Surrey Ave., Ventnor City, N. J. OTORHINOLARYNGOLOGY AND BRONCHOESOPHAGOLOGY. b. Springville, Utah, Aug. 13, 1894. s. Simon Eugene and Elizabeth Jane (Huntington) D. Edn.: B.A., Brigham Young Univ., 1918; B.S., Univ. of Utah, 1922; M.D., Jefferson Medical Coll., 1924. m. Hellen Barnett (dec.), 1933. c.: Sandra Barnett Denny. Exp.: Physician-Surgeon, Ventnor City, N. J. Hon. Pos.: Past Pres., Atlantic City Hosp. Staff; Chf. Bronchoesophagology Shore Mem. Hosp.; N. J. State Hosp. at Aneora; Chf., Childrens Seashore House; Chf., Atl. Co. Hosp. for TB Diseases. Mem.: Chmn., Comm. on Conservation of Hearing and Speech, Med. Soc. of N. J., 1954-61; Med. Soc. of Atlantic Co., Pres., 1959; A.M.A.; Am. Acad. Ophthalmology and Otolaryngology; Am. Broncho Esophagological Assn.; New Jersey Coll. Surgeons; Philadelphia Laryngological Soc.; Am. Coll. Surgeons; International Coll. Surgeons; A.A.A.S.; Kiwanis; National Travel Club; International Bronchoesophagological Assn. Author: Kodochrome Motion Picture of the Epipharynx and Accompaning Paper, 1941; Diseases of the Thyroid, 1948; New Method for the Control of Lymphoid Hyperplasia, 1948; Boecks Sarcoid, Diagnosis and Treatment, 1952. Contbr. to: Am. Hearing and Speech Mag.; Am. Museum Natl. Hist.; Science; A.M.A. Jour.; Med. World News; Phila. Medicine; Hearing News; Deafness, Speech and Hearing Abstracts; Archives of Otolaryngology; Med. Econs. Serv. Rec.: U.S.N. W.W. I. Areas of Rsch.: Photographing the inside of lungs and tracheobronchial tree for research for cancer of the lungs.

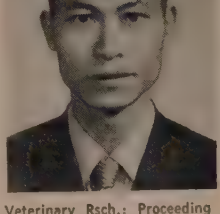
DALZELL, Robert Clinton (Ph.D.), Asst. Prof., Morehead St. Coll., Morehead, Ky. Home Add.: 3056 Earlsmere Ave., Pittsburgh 16, Pa. MICROBIOLOGY—IMMUNOLOGY; VIROLOGY; BIOLOGICAL PRODUCTION. b. Pittsburgh, Pa., Aug. 31, 1919. s. J. Clinton and Hilda M. (Graff) D. Edn.: B.S., Univ. of Pittsburgh, 1941; M.S., Pa. State Univ., 1956; Ph.D., ibid., 1957. m. Ethel Virginia Carson, Sept. 23, 1944. c.: Robert C., Jr.; Hollace Anne; Douglas C. Exp.: Scientific Admin., Biol. Operations, Pine Bluff, Ark., 1957-58; Chief Biol. Branch, Chem. Corps Schl., Ft. McClellan, Ala., 1958-59; Tech. Adv., Sec., U. S. Army CBR Weapons Orientation Course, Dugway, Utah, 1959-62; Asst. Prof., Morehead St. Coll., 1962—. Hon. Pos.: Pres., Beta Alpha Chapt. Phi Sigma Biol. Soc. Mem.: Soc. of Am. Bacteriols.; A.A.A.S.; Armed Forces Chem. Assn.; Phi Sigma; Sigma Xi; Phi Epsilon Phi Contbr. to: Jour. of Bacteriol.; Phytopathol. Jour. Serv. Rec.: U. S. Army Serv., 1942-62, Lt. Col., Ret., 1961. Gen. Int.: Exposure of Eubacteriales to Ultrasonic and Sonic Sound Fields; Serol. Studies of Plant Virus Diseases. Areas of Rsch.: Microbiology—Immunology; Virology; Biological Production Development.

DALY, Nelson Beardsley (Ph.D.), Rsch. Chem., Du Pont Exptl. Sta., Wilmington 98, Del. ORGANIC CHEMISTRY. b. Sept. 13, 1919, Waterbury, Conn. s. Frank J. and Helen (Beardsley) D. Edn.: B.S., Yale Univ., 1941; Ph.D., ibid., 1947. m. Evelyn Silvers, Mar. 24, 1945. c.: Terrill Ann; Nelson B., Jr. Exp.: Rsch. Chem., du Pont Central Rsch. Dept., Wilmington, Del., 1943—; Rsch. Chem., Patent Liaison, ibid., 1947—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; R.E.S.A.; Gamma Alpha; U. S. Naval Inst. Special Int.: Addition and Condensation Polymers, Fluorocarbon Chemistry; Tech. Side of Chem. Patent Practice.

D'AMICO, John Joseph (Ph.D.), Scientist, Monsanto Chem. Co., Nitro, W. Va. Home Add.: 2407 East Washington St., Charleston, W. Va. ORGANIC CHEMISTRY. b. Maynard, Ohio, Apr. 24, 1915. s. Emil and Vittoria (Contaldi) D. Edn.: B.S., W. Va. Univ., 1938; M.S., ibid., 1940; Ph.D., Univ. of Tex., 1951. m. Irene Audia, June 7, 1947. c.: Irene "Sunshine." Exp.: Chem. Engr., War Dept., 1940-47; Pilot Plant Supvr., U. S. Bur. of Mines, Pittsburgh, Pa., 1945-47; Tchr. Fellow, Univ. of Tex., 1947-48; Scientist, Monsanto Chem. Co., Nitro, W. Va., 1951—. Mem.: Am. Chem. Soc.; Sigma Xi; Sigma Gamma Epsilon; Phi Lambda Upsilon; N. Y. Acad. of Sci. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem.; Rubber World, Patents. Listed in: Am. Men. of Sci. Areas of Rsch.: Organic Chem. of Nitrogen and Sulfur; Accelerators and Vulcanizing agents for Rubber. Herbicides and Fungicides.

DAMM, Charles C., Lawrence Radiation Lab., Univ. of Calif., Los Angeles, Calif.

DANG, Hung Chen (Peter) (Ph.D.), Rsch. Asst., Univ. of Chicago, Chicago 37, Ill. Home Add.: 6060 S. Drexel Ave., Chicago 37, Ill. PHARMACOLOGY. b. Kwongsi, China, Sept. 7, 1918. s. Yin-Chow and Chen-si (Chen Mei-Ying) D. Edn.: B.S., Natl. Central Univ., China, 1944; M.S., Mont. St. Coll., 1959; Ph.D. Cand., Univ. of Chicago, 1963. m. Ay-Fang Wang, Oct. 5, 1947. c.: Kao-Yu; Shiang; Tze-Yu; Tze-Tze. Exp.: Instr., Pai Sha Coll., Chunking, China, 1944-45; Rsch. Assoc., Ordnance Rsch. Inst., Taipei, China, 1946-56; Rsch. Asst., Vetnry. Rsch. Lab., Bozeman, Mont., 1956-58; Rsch. Asst., Univ. of Chicago, Chicago, Ill., 1958—. Mem.: Chinese Chem. Soc.; Chinese Natl. Improvement Soc.; Soc. of Sigma Xi; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci. Contbr. to: Chinese Sci.; Am. Jour. of Veterinary Rsch.; Proceeding of Soc. for Experimental Biol. and Medicine. Areas of Rsch.: Enzymology and Pharmacology, especially, Toxicity, Physiological and Pharmacological of Urease.



DANIEL, Eubert Jonathan (Ph.D.), Assoc., Dept. of Pathol., Duke Univ. Schl. Med., Durham, N. C. Home Add.: 27 Park Ave.. W., So. Weymouth, Mass. CELLULAR AND MOLECULAR BIOPHYSICS. b. New Britain, Conn., Nov. 3, 1930. s. Jonathan and Alice (dec.) D. Edn.: B.S., Valparaiso Univ., Ind., 1954; M.S., Univ. of Chicago, 1955; Ph.D., ibid., 1959. m. Carolyn Pine Wardle, Dec. 18, 1959. c.: Monica. Exp.: Instr. in Biol., Valparaiso Univ., 1954; Rsch. Asst. in Pathology, Univ. of Chicago, 1954-55; Rsch. Asst. in Anatomy, ibid., 1956-58; Spectrochemist, U. S. Steel, Chicago, Ill., 1958-59; Rsch. Fellow in Orthopedics, Harvard Univ., Mass. Gen. Hosp., Boston, Mass., 1959-61; Tchng. Asst. in Med., Dept. of Med., Boston Univ. Schl. of Med., 1961-62; Biophysicist, Medical, Mass. Meml. Hosp., Boston, Mass., 1961-62; Assoc. Biophysi., Dept. of Pathol., Duke Univ. Hosp. and Consul. Biophysics, Veterans Administration Hospital, 1962—. Mem.: A.A.A.S.; New England Arthritis and Rheumatism Soc.; Electron Microscope Soc. of Am.; Am. Assn. Spectrographers; Founding Mem., Internatl., Organ. for Vacuum Tech. and Sci. Contbr. to: Jour. of Applied Phys.; Jour. of Molecular Biol.; Jour. of Biol. Chem.; Jour. of Develop. Biol.; Jour. of Bone and Joint Surg. Gen. Int.: Cryobiology of single cells and hydrated systems. Reversible ionic, thermal, anesthetic alterations and cellular ultrastructure; Biochemical and molecular analysis of isolated fetal enamel membranes. Areas of Rsch.: Medical Biophysics and Molecular Biol. Study of interactions of fluid, organic, Mineral components of Cells and Organic Matrices as related to chemical composition, enzymic activities and distribution of trace elements in normal and diseased tissues.

DANIEL, Richard Irvine (Mr., Dir. of Rsch. and Engr., Daisy Mfg. Co., Rogers, Ark. Home Add.: Twin Lakes Dr., Rogers, Ark. ELECTRICAL AND MECHANICAL ENGINEERING. b. Detroit, Mich., Nov. 7, 1926. s. Leslie I. and Margaret (Sheffler) D. Edn.: B.S.

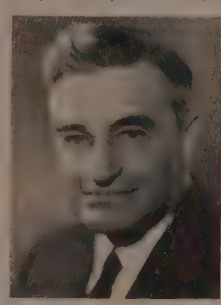
in E.E., Univ. of Mich., 1948. m. Jane Ann Lyons, April 3, 1948. c.: Richard C.; Lawrence Lyons; Andrew Paul. Exp.: Engr., King Seeley Corp., Ann Arbor, Mich., 1948-52; Engr., Daisy Mfg. Co., Rogers, Ark., 1952—. Mem.: Engr. Soc. of Detroit; Mich. Soc. of Profl. Engr.; Tau Beta Pi; Eta Kappa Nu; Rotary. Serv. Rec.: U.S.N., 1944-46.

DANIEL, Walter Green (Ph.D.), Prof. of Edn., Howard Univ., Washington, D. C. Home Add.: 1206 Lamont St., N.W., Washington 10, D. C. PSYCHOLOGY APPLIED TO TEACHING AND CURRICULUM OR EDUCATION AND PSYCHOLOGY. b. Ettrick, Va., June 21, 1905. s. Charles James and Carrie (Green) D. Edn.: A.B., Va. Union Univ., 1926; Ed.B., Univ. of Cincinnati, 1927; A.M., ibid., 1928; Ph.D., Columbia Univ., 1941. m. Theodora Williams, June 22, 1935. Exp.: Dir., Student Tchng., St. Tchrs. Coll., Winston-Salem, N. C., 1927-29; Asst. Prof., Librn., Prof. of Edn., Howard Univ., 1929-51; Specialist, Higher Edn., U. S. Office of Edn., Washington, D. C., 1951-53; Dir., Div. of Edn. and Psychol., Va. Union Univ., 1958-61; Prof. of Edn., Howard Univ., 1961—. Hon. Pos.: Chrmn., Va. Tchrs. Assn. Commission for the Study of Africa. Mem.: A.A.A.S., Fellow; Natl. Soc. of Coll. Tchrs. of Edn.; A.A.U.P.; N.E.A.; Assn. for Childhood Edn. Internatl.; Phi Delta Kappa; Kappa Delta Pi; Alpha Phi Alpha; Lamont Neighborhood of Washington, D. C. Author: The Reading Interests and Needs of Negro College Freshmen Regarding Social Science Materials, 1941; Juvenile Delinquency in Sociology of Crime, 1961. Contbr. to: Jour. of Edn'l. Sociol.; Jour. of Negro Edn.; Schl. Life; Coll. and Rsch. Librs. Areas of Rsch.: Psychology Applied to Tchng. and Curriculum-Human Relations, Juvenile Delinquency, Improving Learning Behavior.

DANIELS, Edgar E. (Mr.), Psychoanalyst, 2565 Pacific Ave., Long Beach 6, Calif. Home Add.: 3780 Olive Ave., Long Beach 7, Calif. PSYCHO-ANALYSIS. b. Elkins, W. Va., May 8, 1908. s. Dorsey M. and Erna N. (Ray) D. Edn.: B.A., Univ. of Sou. Calif., 1930; M.A., ibid., 1931; Ph.D., Univ. of Vienna, Austria, 1934. m. Yvonne Williams, Nov., 1942. c.: Katherine; Joan and Jane (twins); Richard. Exp.: Private Practice of Psychoanalysis, Hollywood, Calif., 1934-42; Consultant, U. S. Govt. and Private Industry, Wash., D. C., and Calif., 1944-49; Private Practice of Psychoanalysis, Long Beach, Calif., 1949 . Hon. Pos.: Pres., Acad. of Applied Psychoanalysis; Dir., Acad. of Applied Psychoanalysis. Mem.: Natl. Psychol. Assn. for Psychoanalysis; A.A.A.S.; Coun. of Psychoanalytic Psychotherapists; Am. Group Psychoterap.; Am. Psyhol. Assn.; Internatl. Acad. of Religion and Mental Health; Chi Phi; Psi Chi; Petroleum Club of Long Beach; Calif. Soc. Sons of the Am. Revolution; Pacific Coast Club. Author: Dark Destiny, 1954. Contbr. to: Jour. of Applied Psychol. War Rec.: U. S. Army, 1942-43. Areas of Rsch.: Trng. Analysis Received at Sigmund Freud's Vienna Psychoanalytical Inst., Vienna, Austria.

DANIELS, Edward William (Ph.D.), Assoc. Scientist, Div. of Biol. and Med. Rsch., Argonne Natl. Lab., Argonne, Ill. Home Add.: 626 S. Wright St., Naperville, Ill. BIOLOGY. b. Tracy, Minn., Jan. 19, 1917. s. Azro A. and Nellie (Bundy) D. Edn.: B.A., Cornell Coll., 1941; M.S., Univ. of Ill., 1947; Ph.D., ibid., 1950. m. Harriet C. Zimmerman, 1943. c.: Edward B.; Paul; Thomas; Lynell Kay. Exp.: Sci. Tchr., H. S., Sheffield, Ill., 1941-43; Asst. Prof., Dept. Physiol., Univ. of Chicago, 1950-54; Rsch. Assoc., Toxicology Lab. and U. S. Air Force Radiation Lab., ibid., 1950-54; Assoc. Scientist, Div. of Biol. and Med. Rsch., Argonne Natl. Lab., Ill., 1954—. Hon. Pos.: Exec. Com., Soc. of Protozool. Mem., A.A.A.S.; AIBS; Am. Soc. of Zool.; Soc. of Protozool.; N. Y. Acad. of Scis.; State Microscopial Soc. of Ill.; Radiation Rsch. Soc.; Ill. Soc. for Med. Rsch.; Natl. Soc. for Med. Rsch.; Am. Assn. for Cancer Rsch.; Sigma Xi; PESA; Phi Sigma; Phi Kappa Phi,. Contbr. to: Jour. of Expmtl. Zool.; Radiation Rsch.; The Jour. of Protozool.; Annals of the N. Y. Acad. of Scis.; Internatl. Conf. on the Peaceful Uses of Atomic Energy. War Record: U. S. Navy, 1943-46. Gen. Int.: Rsch. which has shown that nonirradiated cytoplasm of a species of giant amoeba will prevent death if injected into other cells of the same species given supralethal doses of X-rays, fission-neutrons or Ultraviolet radiation. Areas of Rsch.: Radiobiology; Cellular Physiology; Protozoology, Effects of Various Ionizing and Ultraviolet Radiatins on Living Systems; Problems of Recovery Following Lethal Exposure. Effects of Radiomimetic Drugs on Living Organisms.

DANIELS, Farrington (Ph.D.), Prof. Emer. of Chem., Univ. of Wis., Madison, Wis. Home Add.: 1129 Waban Hill, Madison 5, Wis. PHYSICAL CHEMISTRY; CHEMICAL KINETICS; PHOTOCHEMISTRY; SOLAR ENERGY; ATOMIC ENERGY. b. Minneapolis, Minn., March 8, 1889. s. Franc B. and Florence L. (Farrington) D. Edn.: B.S., Univ. of Minn., 1910; M.S., ibid., 1911; Ph.D., Harvard Univ., 1914. Hon. Deg.: D.Sc., Univ. of R. I., 1953; D. Sc., Univ. of Minn., 1958; D.Sc., Univ. of Dakar, 1960. m. Olive M. Bell., Sept. 15, 1917. c.: Dorin S.; Farrington, Jr.; Florence M. Drury; Miriam O. Ludwig. Exp.: Instr. and Asst. Prof., Worcester Poly. Inst., 1914-17; U. S. Nitrogen Electro Rsch. Lab., 1919; Asst. Prof., Univ. of Wis., 1920-24; Assoc. Prof., ibid., 1924-28; Prof., ibid., 1928-59; Chmn., Chem. Dept., ibid., 1952-59; Dir., Metallurgical Lab., Atomic Energy, Chicago, Ill., 1945-46; Prof. Emer., Univ. of Wis., 1959—. Hon. Pos.: Pres., Amer. Chem. Soc., 1953; Vice-Pres., Natl. Acad. of Scis., 1959-61; Pres., Geochem. Soc., 1958. Mem.: Natl. Acad. of Scis.; Am. Philos. Soc.; Am. Chem. Soc.; Am. Acad. of Arts and Scis.; Geochem. Soc.; Am. Assn. Adv. Sci.; Sigma Xi; Phi Beta Kappa; Alpha Chi Sigma; Alpha Delta Phi. Author: Mathematical Preparation for Physical Chemistry, 1928; Chemical Kinetics, 1938; Co-author: Physical Chemistry; Challenge of Our Times; Solar Energy Research. Contbr. to: Jour. Am. Chem. Soc.; Jour. of Phys. Chem.; Jour. Chem. Physics. Serv. Rec.: U. S. Army, 1918-19. Gen. Int.: Outstanding Achievement Award, Univ. of Minn.; Willard Gibbs Medal Award; Priestly Medal Award; Norris Award. Areas of Rsch.: Physical Chemistry; Chemical Kinetics; Photochemistry; Utilization of Solar Energy; Atomic Energy; Geochemistry; Thermoluimene-science of Crystals.



DANIELS, Fred Bryan (Ph.D.), Physicist, U. S. Army Elect. R. & D. Lab., Ft. Monmouth, N. J. Home Add.: 243 Branch Ave., Red Bank, N. J. IONOSPHERIC PHYSICS; RADIO PHYSICS; ACOUSTICS. b. Grand Rapids, Mich., June 30, 1901. s. Charles Albert and Harriet Rose (Bryan) D. Edn.: A.B., Univ. of Nebr., 1933; A.M., ibid., 1934; Ph.D., Univ. of Tex., 1938. m. Ruth Jellin, Oct. 29, 1943. Exp.: Physicist, U. S. Army Elect. R. & D. Lab., 1940 . Mem.: Acoust. Soc. of Am.; Am. Geophys. Union; Inst. of Radio Engrs.; Internatl. Scient. Radio Union; Phi Beta Kappa; Pi Mu Epsilon; Sigma Xi. Contbr. to: Jour. of Geophys. Rsch.; Jour. of the Acoust. Soc. of Am.; Jour. of the Franklin Inst.; Nature; Phys. Rev.; Rev. of Scient. Instruments. Areas of Rsch.: Radar Studies of Lunar and Planetary Surfaces, Measurement of Ionospheric Electron Content, Infrasonic Instrumentation.

DANIELS, George E. (M.D.), Special Lecturer in Psychiatry, Columbia Univ., 129 E. 69th St., N. Y., N. Y. b. May 17, 1896, Fitchburg, Mass. s. John Herbert and Florence Russell (Dwinnell) D. PSYCHIATRY AND PSYCHOANALYSIS. Edn.: B.S., Dartmouth Coll., 1918; M.D., Harvard Med. Schl., 1922; Grad. Work in Neuroanatomy with Constantin von Monakow, Zurich, Switzerland, 1924; Grad. Work in Psychoanalysis at the Berlin Psychoanalytic Inst., 1927-28. m. Helen Margaret Schaeffer, Mar. 1, 1930. c.: John G.; Robert D. Exp.: Instr. in Psychiatry, Coll. of Physicians and Surgeons, Columbia Univ., N. Y. C., 1928-31; Asst. Physician, Presbyterian Hosp., N. Y. C., 1931-39; Asst. Attending Physician, ibid., 1939-45; Assoc. Attending Physician, ibid., 1945—; Attending Psychiatrist, Presbyterian Hospital; Clinical Prof. of Psychiatry, Columbia Univ., N. Y. City, 1931—; Dir., Psychoanalytic Clinic for Training and Rsch., Col. Univ., 1957—; Assoc. Attending Physician, 1945-53; Attending Psychiatrist, 1953-61; Consultant in Psychiatry, Presby. Hosp., 1961—; Clin. Prof. of Psychiatry, 1931-61; Dir., Psychoanalytic Clinic for Training and Rsch., Columbia Univ., 1957-61. Mem.: Assn. for Psychoanalytic Med.; N. Y. Psychiatric Soc.; Am. Med. Assn.; Fellow, Am. Psychiatric Assn.; Am. Psychosomatic Soc.; Fellow, N. Y. Acad. of Med.; Alpha Kappa Kappa; Am. Psychoanalytic Assn. Contbr. to: Numerous Journals of Psychiatry; Med.; and Gastroenterol. Special Int.: Psychiatry; Psychoanalysis and Psychosomatic Med.

DANIELS, Roswell George (M.D.), Chf., Occupational Health Branch (Preventive Med. Div. Professional Serv. Dir.), Office of The Surgeon General, Dept. of Army, Washington 25, D. C. Home Add.: 2508 Cameron Mills Rd., Alexandria, Va. PUBLIC HEALTH AND OCCUPATIONAL MEDICINE. b. Watertown, N. Y., Sept. 15, 1924. s. George B. and Amelia C. (Schwing) D. Edn.: M.D., Univ. of Rochester Schl. of Med., 1947; Dr.PH, Pittsburgh Grad. Schl. of Pub. Health, 1960. m. Beverly J. Radley, Aug. 7, 1949. c.: Bruce A.; Elaine M. Exp.: Group Surgeon, 19th Eng. Combat Gp., Korea, 1950-51; Chf. Occ. Health Div., U. S. A. Environmental Health Lab., Md., 1951-53; Consultant Prev. Med. and Occ. Med., 6th Army in Utah Area, 1954-55; Prev. Med. Officer, Surgeon's Office, Hdq. U. S. Army, Ryukyus Islands, 1955-58; Chf., Occ. Health Branch, Office of Surgeon General Dept. of Army, Wash., D. C., 1961—. Mem.: A.P.H.A.; Ind. Med. Assn.;

Am. Conf. of Governmental Ind. Hygienists; A.M.A.; Assn. of Milit. Surgeons; A.A.A.S. Contbr. to: Military Medicine. Areas of Rsch.: Public Health and Occupational Medicine.

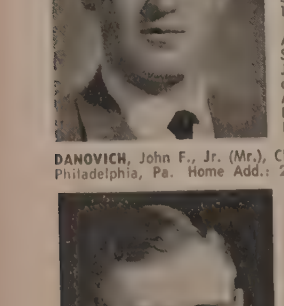
DANIELS, Virginia A. (Miss), Tchr. of Biol., Latrobe High Schl., Latrobe, Pa. Home Add.: 627 Main St., Latrobe, Pa. THE BIOLOGICAL SCIENCES. b. Oconee, Ga., April 6, 1907. d. Thomas M. (dec. and Virginia Dare (McAdoo) D. Edn.: B.A., Univ. of Pittsburgh, 1929; M.A., Columbia Univ., 1939. Exp.: Tchr., Ligonier H. S., Ligonier, Pa., 1929-32; Tchr., Latrobe H. S., Latrobe, Pa., ibid., 1933—. Hon. Pos.: Sci. Tchrs. Comm., Buhl Planetarium, Pittsburgh, Pa.; Future Scientists of Am. Steering Com. for Natl. Standing Com. Science Educ. Activities for Youth, Part of the NSTA Sci. Program; Past Pres., Delta Kappa Gamma (Honorary Tchrs. Soc.); Mem., Natl. Sci. Foundation Fellowship, Univ. of Pittsburgh (two years); Originator and Dir. of Latrobe Day Camp; Co-Chmn. of Sci. Night Program

Latrobe H. S. Mem.: Natl. Sci. Tchrs. Assn.; Natl. Assn. Biol. Tchrs.; Am. Inst. for Adv. of Sci.; Future Scientists of Am.; Natl. Edn. Assn.; Pa. State Edn. Assn.; Natl. Business and Professional Women's Club; Natl. Fed. of Music Clubs. Contbr. to: The Latrobe Bulletin. Gen. Int.: Received the Dale Carnegie Club Internatl. Human Relations Award for Work with Young People, 1958; Named Woman of the Year, Latrobe Business and Professional Women's Club, 1950; Won a Number of Citations for Inspirational Teaching; Won the $100 Slogan Contest Sponsored by Latrobe C. of C. Areas of Rsch.: Having Students Prepare Research Papers in Biology Class and Preparing to Submit Them to the Future Scientsts of Am. Awards Program.

DANIELSON, Ralph R. (Mr.), Ceramic Consultant. Home Add.: 120 Richmond Terrace, Rahway, N. J. CERAMIC ENGINEERING. b. Chicago, Ill., June 3, 1892. s. Christopher E. and Wilhelmina (Amundson) D. Edn.: B.S., Ceramic Engrng., Univ. Ill., 1914; M.S., ibid., 1916. Hon. Deg.: D.Sc., Rutgers Univ., 1953. m. Grace Campbell, Mar. 27, 1916. Exp.: Asst. Instr., Univ. Ill., Urbana, Ill., 1914-16; Cer. Engrng., Benjamin Electric Co., Des Plaines, Ill., 1916-19; Sect. Chf., Enameled Metals, Natl. Bur. Stds., Wash., D. C., 1919-24; Dir. Rsch., Lindemann & Hoverson Co., Milwaukee, Wis., 1924-26; Dir. Cer. Rsch. and Mgr., Cer. Serv., Metal and Thermit Corp., Carteret, N. J., 1926-58. Hon. Pos.: Past Pres., Am. Cer. Soc.; Past Pres., N. J. Cer. Assn. Mem.: Sigma Xi; Acacia; Keramos; Fellow, Am. Cer. Soc.; Natl. Inst. Ceramic Engrng. Contbr. to: Natl. Bur. Stds.; Jour. Am. Cer. Soc. Areas of Rsch.: Vitreous Enamels for Metals, Ceramic Glazes and Opacifiers.

DANIELSON, Robert Emil (Ph.D.), Asst. Prof. of Astronomy, Princeton Univ., Princeton, N. J. Home Add.: 13 S. Stanworth Dr., Princeton, N. J. ASTROPHYSICS. b. Boy River, Minn., Dec. 14, 1931. s. Carl Elvin and Gerda Sophia (Rosen) D. Edn.: B.S., Univ. of Minn., 1953; M.S., ibid., 1955; Ph.D., ibid., 1958. m. Lenore Helene Blake, June 29, 1957. c.: Deanna Kathleen; Debra Jean. Exp.: Rsch. Assoc. and Lectr., Univ. of Minn., 1957-58; Rsch. Assoc., Princeton Univ., 1958-62; Asst. Prof., ibid., 1962—. Mem.: Am. Astronomical Soc.; Am. Geophys. Union; Am. Physical Soc. Contbr. to: Astrophysical Jour.; Astronomical Jour.; Jour. of Geophys. Rsch.; Phys. Rev. Areas of Rsch.: Solar Physics; Planetary Physics; Cosmic Ray Physics.

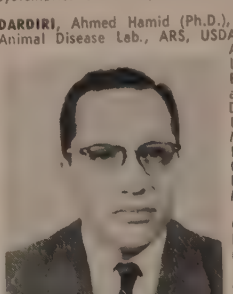
DANOVICH, John F., Jr. (Mr.), Chemist, Naval Air Material Center, Philadelphia, Pa. Home Add.: 2239 S. Beechwood St., Phila. 45, Pa. SPECIALIST IN ELECTRON MICROSCOPY. b. Johnstown, Pa., Jan. 27, 1923. s. John and Julia (Dzmuro) D. Edn.: B.S., St. Vincent Coll., 1950. m. Mary M. Reeping, Sept., 1951. c.: Mary Ann; Teresa M.; John J.; Kathleen M.; James V.; Robert M.; Edward M. Exp.: Chemist, Phila. Quartermaster Depot, 1951-56; Chemist, U. S. Bureau of Mines, Bruceton, Pa., 1956; Chemist, U. S. Naval Air Material Center, 1956-58; Analytical Chemist, ibid., 1958—. Mem.: A.C.S.; A.A.A.S.; Electron Microscope Soc. of Am.; Soc. of Aerospace Materials and Process Engr.; Soc. Electron Microscopy, Japan; H.N.S.; K. of C.; C.W.V.; V.F.W. Contbr. to: Jour. Electrochemical Soc. Serv. Rec.: U.S.N



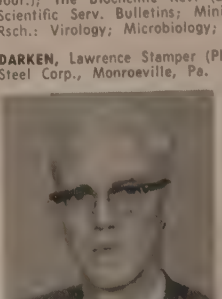
Areas of Rsch.: Industrial Applications in Electron Microscopy.

DANSEREAU, Pierre (D.Sc.), Asst.-Dir., Botany, N. Y. Botanical Garden, Bronx Park, New York 58, N. Y. Home Add.: 1208 Midland Ave., Bronxville, N. Y. BIOGEOGRAPHY-PLANT ECOLOGY. b. Montreal, Can., Oct. 5, 1911. s. J. Lucien and Marie (Archambault) D. Edn.: B.A., Universite de Montreal, Can., 1931; B.Sc., Inst. Agricole d'Oka, Can., 1936; D.Sc., Univ. de Geneve, 1939; Hon. Deg.: LL.D., Univ. of Saskatchewan, 1959; D.Sc., Univ. of New Brunswick, 1959. m. Francoise Masson, Aug. 29, 1935. Exp.: Botanist, Montreal Botanical Garden, Can., 1939-41; Dir., Service de Biogeographie, Montreal, Can., 1943-50; Asst. to Assoc. Prof., Univ. of Mich., 1950-55; Dean of Sci. and Dir. Bot. Inst., Univ. of Montreal, 1955-61; Asst.-Dir. (Botany), N. Y. Botanical Garden, Bronx Park, N. Y., 1961—. Hon. Pos.: Dir., World Univ. Serv. Sem. to Ghana, 1957. Mem.: Royal Soc. of Can.; Bot. Soc. of Am.; Ecol. Soc. Am.; Soc. Bot. de France; Soc. Bta. Ital.; Assn. Am. Geogr. Author: Biogeography An Ecological Perspective, 1957. Contbr. to: Ecology, Bull. of the Torrey Botanical Club; Bull. Soc. Bot. de France; Acta Biotheor.; Rev. Can. Biol.; Contrib. Inst. Bot. Univ. Montreal; Bull. Serv. Biogeogr.; Proc. Pac. Sci. Congresses. Areas of Rsch.: Vegetation of the World; Vegetation Dynamics; Vegetation Mapping; Biosystematics of Cistus, Potentilla, Xanthium.

DARDIRI, Ahmed Hamid (Ph.D.), Rsch. Veterinarian, Plum Island Animal Disease Lab., ARS, USDA, Greenport, L. I., N. Y. Home Add.: P. O. Box 988, Southold, L. I., N. Y. VIROLOGY. b. Cairo, Egypt, Mar. 10, 1919. s. Hamid and Amina (El Riede) D. Edn.: D.V.M., Cairo Veterinary Coll., Egypt, 1939; M.V.Sc., ibid., 1945; M.Sc., Mich. St. Univ., 1947; Ph.D., ibid., 1950. m. M. Lucille Olivia Bierlein, April 8, 1951. Exp.: Sr. Poultry Health Officer, Ministry of Agri., Cairo, Egypt, 1950-51; Sr. Lectr. in Vet. Coll., Cairo Univ., 1951-55; Animal and Poultry Health Consultant, Internatl. Cooperation Admin., Point IV, Cairo, Egypt, 1952-55; Rsch. Assoc., Dept. of Animal Pathol., Univ. of Rhode Island, 1955-56; Asst. Prof., Dept. of Animal Pathol., ibid., 1956-59; Assoc. Prof., Dept. of Animal Pathol., ibid., 1959-61; Rsch. Veterinarian, Plum Island Animal Disease Lab., ARS, U.S.D.A., Greenport, L. I., N. Y., 1961—. Hon. Pos.: Secy., Northeast Regional Project, 1960; Pres., ibid., 1961. Mem.: A.A.A.S.; N. Y. Acad. of Scis.; Am. Soc. for Microbiol.; U. S. Livestock Sanitary Assn.; Wildlife Disease Assn.; Natl. Assn. of Federal Veterinarians; Avian Pathologists Assn.; Tissue Culture Assn.; Am. Vetnry. Med. Assn.; Poultry Sci. Assn.; Am. Pub. Hlth. Assn.; Sigma Xi; Phi Sigma. Contbr. to: Am. Pat. Med. Assn. Jour.; Am. Vet. Rsch. Jour.; Poultry Sci.; Cornell Veterinarian; Rhode Island Agric.; Avian Diseases; Foreign Agric. Sonderdruck aus Zentralblatt fur Veterinarmedizin (a German Jour.); The Biochemic Rev. (a Spanish Publication); Tech. & Scientific Serv. Bulletins; Ministry of Agric., Egypt. Areas of Rsch.: Virology; Microbiology; Veterinary Science.



DARKEN, Lawrence Stamper (Ph.D.), Dir., Fund Rsch. Lab., U. S. Steel Corp., Monroeville, Pa. Home Add.: R.D. #3, Irwin, Pa. METAL SCIENCE. b. Brooklyn, N. Y., Sept. 18, 1909. s. William H. and Gertrude A. (Stamper) D. Edn.: A.B., Hamilton Coll., 1931; Ph.D., Yale Univ., 1933. m. Margaret E. FitzGerald, 1939. c.: Joanne S.; Mary C.; Lawrence E., Jr.; William H.; Marjorie B.; Howard R. Exp.: Chemist, H. Koppers Co., N. Y. C., 1934-36; Physical Chemist, U. S. Steel Corp., Kearny, N. J., 1935-54; Asst. Prof., Polytechnical Institute of Brooklyn, 1946-52; Asst. Dir., U. S. Steel Rsch. Lab., Kearny, N. J., 1954-56; Asst. Dir., Fund. Rsch. Lab., U. S. Steel Corp., Monroeville, Pa., 1956-57; Asst. Dir., ibid., 1957-62; Dir., ibid., 1962—. Mem.: Natl. Acad. of Scis.; Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; A.C.S.; N. Y. Acad. of Sci.; Fellow; A.A.A.S.; Lambda Chi Alpha; Phi Beta Kappa; Sigma Xi. Author: Physical Chemistry of Metals, 1953. Contbr. to: Trans. Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; Jour. A.C.S.; Acta Metallurgica; Trans. Am. Soc. for Metals; Natl. Acad. Areas of Rsch.: Physical Chem. and Thermodynamics of Metal and Metallic Systems; Diffusion in Metals; Solid State.



DARNOWSKI, Vincent S. (Mr.), Instr., N. Y. Univ., New York, N. Y.; Adjunct Asst. Prof., Montclair State Coll., Montclair, N. J. Home Add.: 164 Driggs Ave., Brooklyn 22, N. Y. CHEMISTRY SCIENCE EDUCATION. b. Brooklyn, N. Y., July 18, 1933. s. Michael J., Sr. and Mary (Kielbinski) D. Edn.: B.S., St. John's Univ., 1954; M.S., St. Johns Univ., Jamaica, N. Y., 1958. Exp.: Tchr., St. Johns Preparatory, Brooklyn, N. Y., 1956-58; Tchr., Oceanside Publ. Schls., Oceanside, N. Y., 1958-61; Instr., N. Y. Univ., 1961—; Adjunct Asst. Prof., Montclair State Coll., 1961—. Hon. Pos.: Asst. Dir., Project on Information Processing. Mem.:

n. Chem. Soc.; A.A.A.S.; New England Assn. of Chem. Tchrs. rv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Sci. Edn.; ogrammed Tchrs.; Computer Technology.

RKIS, Frederick Randolph (Ph.D.), Dir. of Rsch., Liggett and ers Tobacco Co., Durham, N. C. CHEMISTRY. b. Frederick, Md., July 22, 1899. s. Thomas M. and Maria (Wachter) D. Edn.: B.S., Univ. of Md., 1922; M.S., ibid., 1923; Ph.D., ibid., 1928. m. Mildred Morris, Oct. 6, 1928. c.: Frederick R., Jr.; Thomas Morris; Barbara Lee. Exp.: Instr., Univ. of Md., Coll. Park, Md., 1922-23; Analytical Chemist, State Control Labs. of Md., 1923-26; Chemist, Fla. Citrus Expt. Station, 1927-28; Chemist, Liggett and Myers Tobacco Co., Durham, N. C., 1928-33; Rsch. Assoc., Duke Univ., 1933-47; Dir. of Rsch., Liggett and Myers Tobacco Co., 1948 ; Mem. Bd. of Dir., 1956—; V. Pres., 1960. Hon. Pos.: Mbr., Tobacco Adv. Comm., U.S.D.A. Mem.: Am. Chem. Soc.; A.A.A.S.; N. C. Acad. of Sci.; Sigma Xi; Phi

mbda Upsilon; Alpha Chi Sigma; Rotary; Torch Club; Hope lley Country Club; Masonic Lodge. Author: Aromatic Tobacco, 247. Contbr. to: Jour. Indust. and Engrng. Chem.; Jour. Assn. Official Agril. Chem. Areas of Rsch.: Pathol. Diseases of bacco; Production of Tobacco; The Relation of the Chem. mposition of Tobacco to Its Quality; The Aging and Processing d Manufacturing of Tobacco. Gen. Int.: Vol. 3 of Tobacco Sci., b. in 1959, was dedicated in his honor by Editorial Bd.

ASH, Barry Harold (Ph.D.), Dir., Prod. Devel. Rsch., Whitehall bs. Div., Am. Home Prods., 685 Third Ave., N. Y. 17, Y. Home Add.: 168 Woods Rd., Englewood Cliffs, N. J. HARMACEUTICALS, RESEARCH AND DEVELOPMENT. b. N. Y., Y., June 9, 1931. s. Joseph A. and Anna (Levine) D. Edn.: S., Columbia Univ., 1952; M.S., ibid., 1954; Ph.D., Univ. of a., 1956. m. Selma Magid, Dec. 19, 1953. c.: Faith Cheryl; eil Warren. Exp.: Asst. Prof., Columbia Univ., Coll. of Pharm., Y. City, 1956-60; Dir., Prod. Devel. Rsch., Whitehall Rsch. bs. Div. of Am. Home Prods., 1960—. Hon. Pos.: Visit. Staff, sch. and Devel., Chas. Pfizer and Co., Bklyn., N. Y., summer, 958; Chmn. Seminar Comm., Soc. Cosm. Chemists. Mem.: Am. ssn. Adv. Sci.; Am. Pharm. Assn.; S.C.C.; Soc. Pharm. Ind.; elta Sigma Theta; Rho Chi; Gamma Sigma Epsilon; Phi Kappa i. Contbrng. Author: Remingtons Practice of Pharmacy, Vol. I, 1961. Contbr. to: Jour. of Pharm. Sci.; Am. Perfumer; n. Profess. Pharmacist. Gen. Int.: Lascoff Memorial Scholar, olumbia Univ., 1951; Fellow, Am. Fndn. Pharm. Educ., 1954-56. reas of Rsch.: Pharmaceutical Dosage Forms; Rheology.

ATER, Arnold Henry (Mr.), Dir., Tech. Serv., Ultra Chem. Works, c., Paterson, N. J. Home Add.: 110 Parmelee Ave., Hawthorne, J. CHEMISTRY–DETERGENT. b. Hawthorne, N. J., Mar. 18, 916. s. William DeGray and Helen E. (Eberding) D. Edn.: A.B., inceton Univ., 1938. m. Helen H. Stone, Apr. 20, 1940. c.: chard DeGray. Exp.: Rsch. Chemist, N. Y. Univ. Med. Schl., pt. Theraps., N. Y. C., 1938-39; Dir., Techn. Serv., Ultra em. Works, Inc., 1939—. Mem.: Am. Chem. Soc.; Am. Oil emists Soc.; A.S.T.M.; N. Y. Acad. of Sci.; Am. Assn. for the iv. of Sci. Contbr. to: Jour. of Pharmacol. and Exptl. Theraps.; ap and Chem. Specs. Serv. Rec.: U. S. Army, 1945-46. Areas Rsch.: All Areas of Detergent Chemistry.

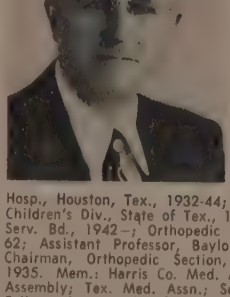
AUER, Maxwell (Ph.D.), Prof. of Radiation Physics, Depart-ent of Radiology and Prof. of Pharmacology, Univ. of Miami Schl. of Med., Coral Gables, Fla.; Radiation Physicist, Dept. of Radiol., Jackson Memorial Hosp., Miami, Fla. Home Add.: 6660 Montgomery Dr., Miami Fla. RADIOLOGICAL PHYSICS. b. Bayonne, N. J., Sept. 3, 1913. s. Abraham and Rebecca Dauer. Edn.: A.B., N. Y. Univ., 1935; Sc.M., ibid., Grad. Schl., 1937; LL.B., George Wash. Univ., 1949; Ph.D., Univ. of Chicago, 1951. m. Reva Broudy, Dec. 25, 1941. c.: Roger A.; Edward A. Exp.: Asst. Instr., Dept. of Anatomy, X-ray Sect., N. Y. Univ. Grad. Schl., 1935-39; Instr., Dept. of Roentgenol., Army Med. Schl., Wash., D. C., 1940-41; Instr., X-ray Physics, X-ray Sect., Med. Dept. Schl. for Enlisted Technicians, ibid., 1941-42; Sr.

tr., X-ray Physics, Army. Schl. of Roentgenol., Course of Ented Technicians, Memphis, Tenn., 1943-44; Instr., X-ray Physics, my Schl. of Roentgenol., Basic Intensive Course for Officers, 44-45; Chf., Rsch. and Dev., ibid., 1945; Commandant, ibid., 45; Dir. of Trng., Brooke Army Med. Center, Ft. Sam Houston, x., 1945-46; Indoctrination in Atomic Energy, Manhattan Project stallations Preparatory for Operation Crossroads, 1946; Radigical Officer, Operations Crossroads, (Bikini A-Bomb Tests), int, Army, Navy and A.F., 1946; Asst. Med. Dir., Manhattan oject, Wash., D. C., 1946-47; Radiological Officer, Atomic Energy mm., Div. of Milit. Application, Radiol. Br., 1947-49; Secy., Med. Adv. Comm., ibid., 1948-49; Tech. Liaison Officer, Scientific Planning Comm., Operation Sandstone, AEC Proving Ground Group (Eniwetok A-Bomb Tests), 1948; AEC Test Operations Officer, ibid., 1948; Special Lectr., Med. Aspects of Atomic Explosion, Army Med. Schl., Wash., 1949; Rsch. Assoc., Univ. of Chicago Toxicity Lab. and Dept. of Pharmacol., 1949-51; Chf., Special Projects Br., Nuclear Energy, Off. of the Surg. Gen., U. S. Army, Rsch. and Dev. Div., Wash., 1951-54; Secy., Army Med. Serv. Grad. Schl., Walter Reed Army Med. Center, Washington, 1954-55; Chf., Dept. of Pharmacol., ibid., 1955; Chf., Dept. of Biophysics, Exec. Officer and Radiation Protection Officer, U. S. Army, Japan, 1955-58; Chf., Radiological Hyg. Div., U. S. Army Environmental Hyg. Agency, Army Chem. Center, Md., 1958-61; Lt. Col., MSC, USA-Ret., 1961; Principal Staff Scientist, Aircraft Armament, Cockeysville, Md., 1961; Assoc. Prof. of Radiation Physics, Dept. of Radiol. and Rsch. Assco. Prf. of Pharmacol., Univ. of Miami Schl. of Med., 1961 ; Radiation Physicist, Dept. of Radiol., Jackson Meml. Hosp., Miami, Fla., 1961-62; Prof. of Rad., Phys. Dept., of Radiol. and Prof. of Pharmacol., Univ. of Miami, 1962 . Mem.: Health Phys. Soc.; A.A.A.S.; Am. Indus. Hyg. Soc.; Am. Assn. of Univ. Profs.; Am. Conf. of Govt. Industrial Hyg.; Radiol. Soc. of No. Am.; Radiation Physicist—Certified Health Physics; Assoc. Fellow in Physics—Am. Coll. of Radiology. Contbr. to: Am. Jour. Roentgen and Rad. Therap.; Univ. of Chicago Toxicity Lab. Reports; Proc. Soc. Exptl. Biol. and Med.; etc. Areas of Rsch.: Radiation Dosimetry, Health Physics, Radiological Health and Protection, Radioisotope Applications Techniques and Instrumentation, Radiation Equipment and Devices, Radiobiology, Nuclear Weapons Effects, Radiation Hazards Evaluations.

DAVENPORT, Lee Losee (Ph.D.), Vice-Pres., Sylvania Elec. Pdts., Inc., 730 Third Ave., N. Y. 17, N. Y. Home Add.: Winding Lane, Greenwich, Conn. PHYSICS. b. Schenectady, N. Y., Dec. 31, 1915. s. Harry Lee and Faith (Losee) D. Edn.: B.S., Union Coll., 1937; M.S., Univ. of Pittsburgh, 1940; Ph.D., ibid., 1946. m. Anne Stephenson, Jan. 27, 1944. c.: Jeanne Lee. Exp.: Exec. V.-Pres., Perkin-Elmer Corp., Norwalk, Conn., 1950-57; Pres., Sylvania-Corning Nuclear Corp., Bayside, N. Y., 1957-60; V.-Pres., Sylvania Elec. Pdts., Inc., N. Y., 1960—. Mem.: Sigma Xi; Sigma Pi Sigma; Am. Phys. Soc.; Am. Assn. for the Adv. of Sci. Areas of Rsch.: Ultra Violet and Infra Red Spectroscopy, X-Ray Diffraction, Radar and Microwave; Particle Accelerators (Cyclotron); Optical Instruments; Nuclear Fuels.

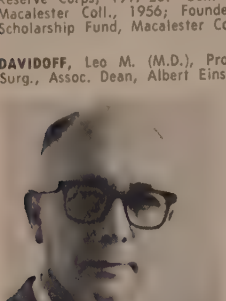
DAVEY, Bessie Louise (Ph.D.), Hd., Dept. of Home Economics, New Mexico St. Univ., University Park, N. M. Home Add.: 2020 Garrison Rd., Las Cruces, N. M. NUTRITION. b. Detroit, Mich., Nov. 8, 1920. d. Edwin J. and Lillian (Spurr) D. Edn.: B.S., Wayne State Univ., 1943; M.S., Ore. St. Univ., 1945; Ph.D., ibid., 1949. Exp.: Assoc. Prof. and Rsch. Assoc., Univ. of Ala., 1949-53; Prof. and Hd. Dept. of Foods and Nutrit., ibid., 1953-61. Mem.: Am. Dietetic Assn.; Am. Home Econ. Assn.; Am. Inst. of Nutrition; A.A.U.P.; A.A.U.W.; A.A.A.S.; Alpha Delta Kappa; Sigma Xi; Phi Upsilon Omicron; Omicron Nu. Contbr. to: Jour. Nutrition; Jour. Am. Dietetic Assn.; Food Rsch. Areas of Rsch.: Ascorbic Acid Metabolism, Nutrition of Adolescents.

DAVID, Solomon David (M.D.), Asst. Prof., Orthopedic Surg., Baylor Univ. Med. Schl., Houston, Tex. Home Add.: 5505 Holly Springs Dr., Houston 27, Tex. ORTHOPEDIC SURGERY. b. Damascus, Syria, July 8, 1888. s. David Joseph and Hadlah (Daas) D. Edn.: B.A., Macalester Coll., 1912; B.S., Med. Dept., Univ. of Minn., 1916; M.D., ibid., 1916. Hon. Deg.: M.A., Internatl. Bible Coll., Minneapolis, Minn., 1914. m. Victoria David, Nov. 17, 1916. c.: Florence David Livingston; Alice David Rainey; S. D. David, Jr.; Betty Lou David Guenveur. Exp.: Res. in Orthopedic Surgery, Mass. Gen. Hosp., Children's Hosp. and Harvard Med. Schl., 1921-23; Orthopedic Surgeon, U. S. Pub. Health Serv., 1921-23; Orthopedic Surgeon, Arabia Temple, Orth. Clinic, Houston, Tex., 1923-24; Instr., Orthopedic Surgery, Nursing Schl., Methodist Hosp., Houston, Tex., 1932-44; Orthopedic Surgeon, Tex. Crippled Children's Div., State of Tex., 1938; Orthopedic Surgeon, Selective Serv. Bd., 1942—; Orthopedic Surgeon, Tex. Edn. Agency, 1950-62; Assistant Professor, Baylor University, 1962—. Hon. Pos.: Chairman, Orthopedic Section, South Texas Medical Assembly, 1935. Mem.: Harris Co. Med. Assn.; Life Mem., South Tex. Med. Assembly; Tex. Med. Assn.; Sou. Med. Assn.; Am. Med. Assn.; Fellow, Am. Acad. of Orthopedic Surgeons and A.A.A.S.; Am. Cancer Soc.; Am. Friends of Middle East; C. of C., Houston, Tex.; Farm & Ranch Club; Arabia Temple; Shriners, Houston, Tex.; Soil Conservation, Waller Co., Tex. Author: Posterior Incision for Drainage of Ankle Joint, 1923; An Incision for



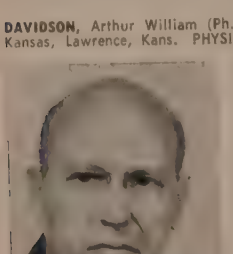
Synovectomy of Knee Joint, 1930. Serv. Rec.: U. S. Army Med. Reserve Corps, 1917-20. Gen. Int.: Recipient of Useful Citizen, Macalester Coll., 1956; Founder of Dr. and Mrs. S. D. David Scholarship Fund, Macalester Coll., St. Paul, Minn.

DAVIDOFF, Leo M. (M.D.), Prof., Chmn., Dept. of Neurological Surg., Assoc. Dean, Albert Einstein Coll. of Med., New York 61, N. Y. Home Add.: 18 Marshall Ridge Rd., New Canaan, Conn. NEUROLOGICAL SURGERY. b. Talsen, Latvia, Jan. 16, 1898. s. Israel and Libbe (Lemkus) D. Edn.: M.D., Harvard Med. Schl., 1922. Hon. Deg.: L.H.D., Yeshiva Univ., 1952. m. Ida Fisher, Oct. 3, 1926. c.: Dr. Helen D. Wallach; Mrs. Leonore D. Lockwood; Dr. Frank; Mrs. Mary D. Houts. Exp.: Rsch. Asst. in Neuropathol., N. Y. St. Psychiatric Inst., N.Y.C., 1927-29; Neurosurgeon, Neurological Inst. of N. Y., N.Y.C., 1929-37; Chf., Dept. of Surg., Attending Neurological Surgeon, Jewish Hosp. of Brooklyn, N. Y., 1937-45; Attending Neurological Surgeon, Chf. of Div., Neurological Surg., Montefiore Hosp., N.Y.C., 1945-49; Dir. of Neurological Surg., Beth Israel Hosp., N.Y.C., 1949-54; Neurosurgeon, Mt. Sinai Hosp., N.Y.C., 1951-56; Dir. of Surg., Chf. of Neurosurgery, Bronx Municipal Hosp. Center, N.Y.C., 1954-58; Attending Neurosurgeon, Montefiore Hosp., N.Y.C., 1956-58; Consultant in Neurosurgery, ibid., 1958—; Visiting Neurosurgeon, Dir. of Neurological Surg., Bronx Municipal Hosp. Center, N.Y.C., 1959—; Prof., Chmn., Dept. of Surg., Albert Einstein Coll. of Med., 1954-58; Prof., Chmn., Dept., Neurological Surg., ibid., 1959—; Assoc. Dean, ibid., 1961—. Mem.: Alpha Omega Alpha; A.A.A.S.; Am. Assn. of Neuropathol.; Am. Bd. of Neurological Surg.; Am. Coll. of Surgeons; A.M.A.; Am. Neurological Assn.; Assn. for Rsch. in Nervous and Mental Diseases; Harvey Cushing Soc.; Soc. for Neurological Surgeons; N. Y. Acad. of Med. Author: 170 Articles and 10 Books, including Brain Tumors, Their Pathology, Symptomatology, Diagnosis and Prognosis, 1931. Contbr. to: Jour. of Neurosurgery; Neurology; Jour. of Neuropathol. and Exptl. Neurol.; Arch. of Neurol. and Psychiatry; Radiol.; Am. Jour. of Roentgenol. and Radium Therapy; Surg.; Gynecol. and Obstetrics; Jour. of Neurophysiol.; Psychosomatic Medicine; Confinia Neurologica; N. Y. St. Jour. of Med.; Arch. of Surg.; Arch. of Opthalmology; Am. Jour. of Opthalmology; Cancer; Pediatrics; Bull. of N. Y. Acad. of Med. Areas of Rsch.: Neuroradiology; Neurosurgery; Neuropathology.



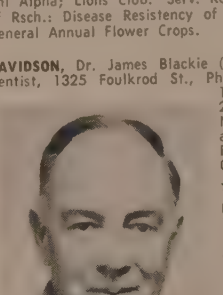
DAVIDS, Anthony (Ph.D.), Assoc. Prof. of Psychology, Brown Univ.; Chf. Psychol., Emma Pendleton Bradley Hosp., Providence, R. I. Home Add.: 218 Burgess Ave., E. Providence, R. I. CLINICAL PSYCHOLOGY. b. Providence, R. I., Aug. 28, 1923. s. William J. and Louise (Nahigan) D. Edn.: A.B., Brown Univ., 1949; A.M., Harvard Univ., 1951; Ph.D., ibid., 1953. m. Martha St. Germain, Sept., 1949. Exp.: Lectr. and Rsch. Assoc., Harvard Univ., 1953-55; Asst. Prof., Brown Univ., 1955-57; Assoc. Prof., ibid., 1957—; Chf. Psychol., Bradley Hosp., 1955—. Mem.: Phi Beta Kappa; Sigma Xi; A.A.A.S.; Am. Psychol. Assn.; Eastern Psychol. Assn.; R. I. Psychological Assn., Pres., 1960-62; Delta Tau Delta. Contbr. to: Jour. Abn. Soc. Psychol.; Jour. Consult. Psychol.; Jour. Personality; Jour. Appl. Psychol.; Am. Jour. Orthopsychiat.; Int. Jour. Soc. Psychiat.; Jour. Proj. Tech.; Sociometry; Psychol. Monogr.; Am. Psychologist. War Record: U.S.N.R., 1943-46. Areas of Rsch.: Psychodiagnosis; Psychopathalogy; Personality and Cognition; Child Behavior.

DAVIDSON, Arthur William (Ph.D.), Prof. of Chemistry, Univ. of Kansas, Lawrence, Kans. PHYSICAL AND INORGANIC CHEMISTRY. b. N. Y., Feb. 16, 1896. s. David and Clara (Recht) D. Edn.: B.S., City Coll. of N. Y., 1915; A.M., Columbia, 1917; Ph.D., ibid., 1921. m. Elisabeth Elsey of Modesto, Calif., Aug. 5, 1925. d. George and Florence E. c.: David Leo; Dorothy L. (Rich). Exp.: Asst. Prof. of Chem., Univ. of Kans., 1921-27; Assoc. Prof., ibid., 1927-37; Prof., ibid., 1937—; Asst. Dean of the Grad. Schl., ibid., 1950-55; Assoc. Dean, ibid., 1955-56; Chmn., Dept. of Chem., ibid., 1956-61. Hon. Pos.: Chmn., Kans. City Sect., A.C.S., 1929; Chmn., Univ. of Kans. Sect., ibid., 1934; Ed. Bd., Jour. of A.C.S., 1949-58; Fulbright Lectr., Turku, Finland, 1954-55. Mem.: A.C.S.; A.A.A.S.; Kans. Acad. of Sci.; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi. Co-author: Gen. Chem.: A Systematic Approach, 1949; College Chem., A Systematic Approach, 1953. Contbr. to: Jour. A.C.S.; Jour. of Chem. Edn.; Jour. of Phys. Chem.; Jour. of Inorg. and Nuclear Chem.; Chem. Rev. Ph.D. Dissertation: The Formation of Addition Compounds Between Sulfuric Acid and Metallic Sulfates. The Correlation of Solubility and Compound Formation in Solutions. War Record: Chem. Warfare Serv., U.S.A. Travel: U. S.; Can.; Finland; Sweden; Norway; Denmark; Germany; Holland; England. Hobbies: Philately. Listed in: A.M.S.; Who Knows—and What; W. W. in Am. Jewry; Chemical W. W.; W. W. in Am. Edn.; W. W. in the Midwest. Special Int.: Salt Solutions in Non-aqueous Solvents; Ion-exchange; Anodic Oxidation of Metals.



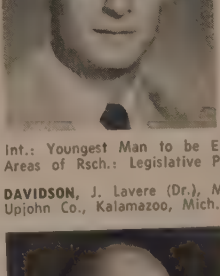
DAVIDSON, Alvah Dean (Mr.), Plant Breeder, P.O. Box 514, Lompoc, Calif. Home Add.: 3411 Via Cortez, Lompoc, Calif. FIRST GENERATION HYBRIDS OF ANNUAL FLOWERS. b. Philadelphia, Pa., Mar. 15, 1930. s. Norman Lambert and Bertha Isabel (Campbell) C. Edn.: B.S., The Pa. State Univ., 1952. m. Marian Lee Humphrey, Dec. 21, 1956. c.: Kerri Lee; Stephen Dean; John Howard. Exp.: Production Supt., Pan Am. Seeds, Inc., Paonia, Colo., 1952-55; Mgr., Sinclair Seed Co., Ojai, Calif., 1955-58; Plant Breeder, Denholm Seed Co., Lompoc, Calif., 1958—. Mem.: A.A.A.S.; Am. Genetic Assn.; Natl. Coun. of Commercial Plant Breeders; Am. Soc. of Hort. Sci.; Sigma Phi Alpha; Lions Club. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Disease Resistency of Petunia and Zinnia; Fertility of General Annual Flower Crops.

DAVIDSON, Dr. James Blackie (D.D.S.), Oral Surgeon; Operating Dentist, 1325 Foulkrod St., Philadelphia 24, Pa. Home Add.: 1325 Foulkrod St., Philadelphia 24, Pa. b. Philadelphia, Pa., Nov. 18, 1902. s. James Blackie and Mary Somerville (Cairns) D. Edn.: D.D.S., Philadelphia Dental Coll., Temple Univ., 1925. m. Jeanette M. Snyder, Nov. 9, 1946. Exp.: Asst. Dental Surg., Frankford Hosp., Philadelphia, Pa., 1926-32; Relief Dental Surg., Holmesburg Co. Jail, Pa., 1930; Assoc. Dental Surgeon, Frankford Hosp., Pa., 1932-40; Chf. Dental Surg., ibid., 1940-41; Co-Surg., Maxillo-Facial Unit, Emergency Serv., St. Coun. of Defense, 1941-45; Oral Surg., Frankford Hosp., 1941-50; Consultant in Dept. of Oral Surg., ibid., 1950—. Mem.: Affiliate Fellow, A.M.A.; Fed. Dentaire Internationale; A.A.A.S.; Am. Public Health Assn.; Am. Dental Assn.; Pa. St. Dental Soc.; Philadelphia Co. Dental Soc.; Acad. of Stomatol.; Am. Soc. of Children's Dentistry; Affiliate Mem., Philadelphia Co. Med. Soc.; Xi Psi Phi; Omicron Kappa Upsilon; Masons; Corp. of Frankford Hosp.



DAVIDSON, Raymond Jack (Mr.), Vice Pres. and Mgr. of Frisco Pharmacy, Inc., Joplin, Mo. Home Add.: 2421 Ill., Joplin, Mo. PHARMACY. b. Meade, Kans., Jan. 11, 1931. s. Raymond L. and Mildred R. (Simpson) D. Edn.: LL.B., Joplin Jr. Coll., 1949; B.S., Univ. of Kans., Kans. City, Mo., 1952. m. Joan Reese, Sept. 11, 1951. c.: Terri Lynn; Raymond P., II. Exp.: Vice Pres., Frisco Pharmacy, Inc., 1952—. Hon. Pos.: Pres., Mo. Pharm. Assn., 1961; Chmn. of Exec. Coun., Mo. Pharml. Assn., 1961-62; Chmn., Advert. Comm. Natl. Assn. Retail Druggists, 1960-61 and 1961-62. Mem.: Mo. Pharm. Assn.; Natl. Assn. Retail Druggists; Am. Pharml. Assn.; Exchange Club; Grand Lodge A. and AM of Mo. Contbr. to: Mo. Pharml. Assn. Jour.; N.A.R.D. Jour.; Mid-Western Druggist. Gen. Int.: Youngest Man to be Elected Pres. of Mo. Pharml. Assn. Areas of Rsch.: Legislative Procedure, Public Speaking, Politi

DAVIDSON, J. Lavere (Dr.), Mgr., Veterinary Medical Dept., T Upjohn Co., Kalamazoo, Mich. Home Add.: 3009 Bronson Blv Kalamazoo, Mich. VETERINA MEDICINE; CLINICAL RESEAR IN ANIMAL MEDICINE. b. Gal burg, Mich., Jan. 11, 1911. O. Glenn and R. Eva (Smith) Edn.: D.V.M., The Ohio St Univ., 1933. m. Anne Lawrence, March 20, 1937. Daniel C.; Mary Anne. Exp.: V erinary Practice, Kalamaz Mich., 1933-41; Meat & M Sanitarian, part-ttime, City Kalamazoo, Mich., 1933-38; V erinary Med. Dept., The Upj Co., 1940-41; Mgr., Veterin Med. Dept., ibid., 1946—. H Pos.: Pres., Am. Vet. Exhibit Assn. Mem.: N. Y. Acad. of S Am. Assn. Adv. Sci.; Soc Animal Production; A.V.M.A.; ter. Assn. of Anesthesiologi



Mich. Vet. Med. Assn.; Phi Sigma Kappa; Masons; Elks; Scout Advisory Bd., Health and Welfare; Milit. Surgeons of

. S.; Royal Soc. of Health. Contbr. to: Jour. A.V.M.A.; North mer. Vet.; Vet. Med. Jour.; M.S.U. Vet.; Ceylon Vet. Jour.; ne Sci. Counselor; Auburn Veterinarian; Southwestern Veteri- arian; Proc. of 2nd Congreso Internacional Veterinario De potecnia, Madrid; Jour. of Animal Sci.; Amer. Jour. of Vet. ci. War Record: U.S.A.F.R., 1941-46. Gen. Int.; Ordained linister in Episcopal Ch., Perpetual Deacon assigned as Curate, t. Luke's Ch., Kalamazoo. Areas of Rsch.: Clinical Research in eterinary Medicine, Veterinary Endocrinology and Anesthesiol- gy; Episcopal Church Canon Law.

AVIDSON, Robert Lee, III (Mr.), Exec. Assoc., W. Alec Jordan ssoc., 230 Park Ave., N. Y. C.; Vice-Pres., Corporate Publications, Inc., 230 Park Ave., N. Y. C.; Editor, The Indicator, 14 River- edge Rd., New Shrewsbury, N. J. CONSULTANT, TECHNICAL AND SCIENTIFIC COMMUNICATIONS (EDITING, PUBLISHING, WRITING). b. Nevada, Mo., May 10, 1923. s. Robert Lee, Jr. and Nancy Helen (Manker) D. Edn.: B.S., Univ. of Mo., 1944; M.S., ibid., 1947. m. Lorena Elizabeth Turner, June 13, 1950. c.: Roberta Anne; Curtis Lee. Exp.: Chem. Engr., DuPont Co., Wilmington, Del., 1947-49; Tech. Sv., ibid., Orange, Tex., 1949-50; Proj. Engr., Aerojet Engrng. Corp., Azusa, Calif., 1951-52; Process Engr., Arab. Am. Oil Co., N. Y. C., 1952-54; Assoc. Editor, Petroleum Processing, McGraw-Hill, N. Y. C., 1954-57; Sr. Editor, Petroleum Week, ibid., 1957-59; Exec. Assoc., W. Alec Jordan Assoc., N. Y. C., 1959—; V.-Pres., Corporate Publications, Inc., N. Y. C., 1959—. Mem.: Sigma Xi; Tau Beta Pi; Am. Chemical Soc.; Am. Inst. of Chemical Engrs.; Am. Rocket Soc.; N. Y. Acad. of Scis.; A.A.A.S.; Alpha Chi Sigma; Phi Delta Theta. Author: Successful Process Plant Practices, 1958. Co-author: Manual for Process Engineering Calculations, 1962. Co-Editor: Walter-Soluble Resins, 1962. Contbr. to: Am. Perfumer; Am. Paint Jour.; Paint & Varnish Production; Chem.; S.P.E. Jour. Serv. Rec.: U.S.A.R., 1942-46. Areas of Specialized Knowledge: Chemical Engrng., Technical and Scientific Editing and Writing.

DAVIS, Adolf Joseph (Mr.), Tech. Dir., Master Bronze Powder Co., 538 W. State, Calumet City, Ill. Home Add.: 8144 Kingston Ave., Chicago 17, Ill. CELLULOSE AND ORGANIC CHEMISTRY. b. Chicago, Ill., Oct. 8, 1908. s. David and Anna (Lang) D. Edn.: M.S., Univ. of Chicago, 1941; B.S., Lewis Inst., 1934. m. Irene Alexander, Aug. 20, 1930. c.: Carol. Exp.: Res. Chem., Visking Co., Chicago, Ill., 1926-53; Chief Chem., UARCO, ibid., 1953-54; Pack. Tech., QM Food and Cont. Inst., ibid., 1954-56; Res. Chem., Tee Pak. Inc., ibid., 1956-58; Tech. Dir., Master Bronze Powder Co., Calumet City, Ill., 1958—. Hon. Pos.: Pres., Chicago Chem. Club; Chmn., Comm. Chicago Sec. A.C.S.; Dir., Chicago Sec., A.C.S. Mem.: Am. Chem. Soc.; A.A.A.S. Areas of Rsch.: Cellulose, plastics, packaging, Printing Inks and Paints.

DAVIS, Benjamin Ammon (Mr.), Materials Engr., Bendix Corp., Kansas City, Mo. Home Add.: 629 Troost, Olathe, Kan. ORGANIC CHEMISTRY. b. Fairbury, Nebr., Sept. 10, 1908. s. Benjamin A. and Mary Viola (Fleckenstine) D. Edn.: B.S., Central Coll., 1932; M.S., Kan. State Univ., 1939. m. Gladys M. Fennema, May 29, 1934. c.: Kelvin Lee; Kathleen Louise. Exp.: Instr., Seneca Pub. Schl., Seneca, Kan., 1934-38; Chmn., Sci. Dept., Atlantic H. S., Atlantic, Ia., 1938-41; Dean of the Jr. Coll., Eagle Grove Jr. Coll., Eagle Grove, Ia., 1941-43; Instr. Physics and Chem., Co Coll., Cedar Rapids, Ia., 1943-45; Chem. Engr., Maytag Corp., Newton, Ia., 1945-56; Admin. Asst., Bendix Corp., 1956—. Hon. Pos.: Div. Chmn. Agric. and Conservation Comm., Kiwanis Internatl.; Pres., Olathe Kiwanis Club, 1962. Mem.: Am. Chem. Soc.; A.A.A.S.; Kan. Acad. of Sci. Contbr. to: Jour. Soc. Plastic Engrs.; Am. Home Mag.; Coronet; Proceedings, Second Internatl. Electronic Packaging Symposium, Univ. Colo., 1961. Areas of Rsch.: Endocrinology, Thyroid and Sex Hormones; Rubber and Plastics.

DAVIS, Carl Forest (Ph.D.), Assoc. Prof., Dept. of Elect. Engrng., U. S. Air Force Acad., Colo. Home Add.: Qtrs. 4308 B, USAF Acad., Colo. ELECTRICAL ENGINEERING. b. Milo, Me., May 12, 1919. s. Eben W. and Alice (Pearson) D. Edn.: B.A., Univ. of Me., 1942; B.A., Air Force Inst. of Techn., 1955; M.S., Univ. of Ill., 1956; Ph.D., ibid., 1960. m. Madalene Mayo, May 17, 1945. c.: Gail Ann. Exp.: Communications and Elect. Staff Officer, USAF, Continental United States, Okinawa, R. I., 1951-60; Asst. Prof., USAF Acad., Colo., 1960-61; Ext. Lectr., Univ. of Colo., Boulder, Colo., 1961—; Assoc. Prof., USAF Acad., 1961—. Mem.: Sigma Xi; I.R.E.; Am. Soc. of Engrng. Edn.; Theta Chi; Phi Kappa Phi. Serv. Rec.: U. S. Army Air Corps, 1942-45; U. S. Air Force, 1951—. Areas of Rsch.: Nonlinear Differential Equations as Related to Oscillatory Systems.

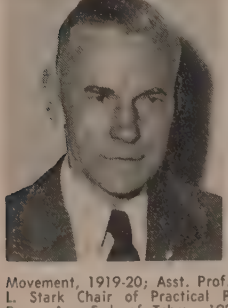
DAVIS, Charles Truman (M.D.), Ophthalmologist, 1150 N. Country Club Dr., Mesa, Ariz. Home Add.: 832 W. 12th St., Mesa, Ariz. OPHTHALMOLOGY. b. El Dorado, Ark., Aug. 16, 1920. s. Jesse and Dixie (Britt) D. Edn.: M.D., Univ. of Tenn. Coll. of Med., 1950; M.S., Univ. of Minn., 1955. m. Jean Lowe, Aug. 23, 1943. c.: Elizabeth; Nancy; Charles. Exp.: Intern, Gorgas Hosp., Canal Zone, 1950-51; Resident, V.A.M.-T.G., Memphis, Tenn., 1951-52; Fellow, Mayo Foundation, Rochester, Minn., 1952-55; Consultant, Scott and White Clinic, Temple, Tex., 1955-58; Instr., Univ. of Tex. Med. Schl., 1956-58; Staff Consult., Southside Hosp., Mesa, Ariz., 1958—; Staff Consultant, Marcus Lawrence Hosp., Cottonwood, Ariz., 1958—. Fellow: Am. Acad. of Ophthalmol. and Otol.; A.A.A.S. Mem.: A.M.A.; Phoenix Ophthal. Soc.; Maricopa Co. Med. Soc.; Ariz. St. Med. Assn.; Phi Theta Kappa; Alpha Omega Alpha; Lions; Elks. Contbr. to: Am. Jour. of Ophthal.; Arch. of Ophthal., A.M.A.; Excerpta Medica. Serv. Rec.: U. S. Army, 1940-45. Areas of Rsch.: Hereditary Macular Degeneration; Ophthalmic Plastic Surgery.

DAVIS, Donald E. (Ph.D.), Prof. and Bot., Dept. of Bot. and Plant Pathol., Auburn Univ., Auburn, Ala. b. Jan. 12, 1916, Charleston, Ill. s. Leonard E. and Jessie (Echard) D. Edn.: B.Ed., E. Ill. State Univ., 1938; M.S., Ohio State Univ., 1940; Ph.D., ibid., 1947. Hon. Degs.: Doctor of Pedagogy, E. Ill. State Univ., 1956. m. Dorothy Richey of Flat Rock, Ill., June, 1940. d. Austin and Matilda Richey. c.: Leonard Richey; Dorothy Ann. Exp.: Instr., Bot., Ohio State Univ., 1946-47; Asst. Prof., Bot., Auburn Univ., 1947-48; Assoc. Prof., Bot., 1949—; Oak Ridge Institute Fellow, 1951; Assoc. Prof. and Assoc. Bot., 1952, Prof. and Botanist, 1955; Weed Soc. of Am., Ala. Acad. Sci.; A.A.A.S.; Am. Soc. of Plant Physiologist; Sigma Xi; Phi Epsilon Phi; Kappa Delta Pi; Gamma Sigma Delta; Aub. Meth. Church; Lions. Contbr. to: Am. Jour. Bot. Weeds. Ph.D. Dissertation: A Contribution to the Study of Calcium Deficiency in Soja Max and Pinus Taeda. War Record: Inf., Europe; Hon. Discharge. Travel: England; Europe; N. Amer. Hobby: Sports. Listed in: A.M.S.; Who's Who in Am. Ed.

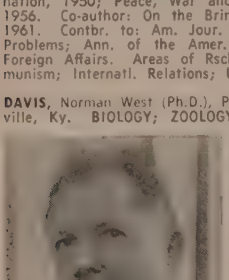
DAVIS, Francis Kaye, Jr. (Ph.D.), Prof. of Physics, Drexel Inst. of Tech., Philadelphia, Pa.; Staff Meteorologist, WFIL-TV, Philadelphia, Pa. Home Add.: 103 Avonbrook Rd., Wallingford, Pa. PHYSICAL METEOROLOGY-ATMOSPHERIC PHYSICS. b. Scranton, Pa., May 4, 1918. s. Francis and Anna J. (Wooten) D. Edn.: B.S., West Chester State Coll., 1939; M.S., Mass. Inst. of Tech., 1944; N. Y. Univ., 1957. m. Ida Mae Lamplugh, Sept. 25, 1941. c.: Richard Kaye; Frances Kay. Exp.: Chemist, Sun Oil Co., Marcus Hook, Pa., 1939-42; Prof. Physics, Drexel Inst. of Tech., Phila., Pa., 1946—; Meteorologist, WFIL-TV, Phila., Pa., 1947—; Consultant, City of Phila., R.C.A., Gen. Adjustment Bureau, Warner Co., Haverford Twp. and others, 1950—. Mem.: Am. Assn. of Physics Tchrs.; Am. Geophysical Union; Am. Meteorological Soc.; A.A.A.S.; Am. Inst. of Med. Climatology; Franklin Inst., Air Pollution Control. Assn.; Sigma Xi; Phi Kappa Phi; P.T.A.; Am. Legion; Presby. Ch. Author: Experiments in Physics, 1954. Contbr. to: Am. Jour. Physics; Bull. of Am. Meteorological Soc.; Annal of N. Y. Acad. of Scis.; Arch. of Environmental Health. Serv. Rec.: A.A.F., 1942-46. Areas of Rsch.: Storm damage, atmospheric pollution, physics of fog formation, upper atmosphere physics, earth vibrations.

DAVIS, Harry Glen (Ph.D.), Rsch. Entomol., U.S.D.A., ARS, Corvallis, Ore. Home Add.: 1956 Beca St., Corvallis, Ore. MEDICAL ENTOMOLOGY. b. Dayton, Wash., June 25, 1921. s. Harry A. and Grace J. (Terry) D. Edn.: B.A., Eastern Wash. Coll., 1951; Ph.D., Wash. St. Univ., 1961. Exp.: Rsch. Entomol., U.S.D.A., A.R.S., Corvallis, Ore., 1961—. Mem.: Sigma Xi; Entomol. Soc. of Am.; Ore. Entomol. Soc.; Wash. Entomol. Soc.; Am. Mosquito Control Assn.; A.I.B.S.; Phi Mu Alpha; Phi Delta Theta. Contbr. to: Proc. Entomol. Soc. Wash.; Mosquito News. Serv. Rec.: U. S. Army A.F., W.W. II. Areas of Rsch.: Medically Important Diptera, Especially Cattle Grubs; Black Flies and Ceratopogonids.

DAVIS, Jerome (Ph.D.), Exec. Dir., Promoting Enduring Peace, Inc., 112 Beach Ave., Woodmont, Conn. Home Add.: 489 Ocean Ave., West Haven, Conn. SOCIOLOGY; INTERNATIONAL RELATIONS; CRIMINOLOGY. b. Kyoto, Japan, December 2, 1891. s. Jerome D. and Frances (Hooper) D. Edn.: A.B., Oberlin Coll., 1913; M.A., Columbia Univ., 1919; Ph.D., ibid., 1922. Hon. Degrees: D.D., Oberlin Coll., 1933; LL.D., Hillsdale, 1933; D.Litt., Florida Southern, 1947. m. Mildred Rood, July 20, 1920. c.: Frances Elizabeth, dec.; Helen Patricia; Wilfred Grenfell. Exp.: Sec. Civic Work Minneapolis Civic and Commerce Assn., 1913; Lecturer, Ext. Courses, N. Y. C., 1914; Secy. to Dr. Wilfred Grenfell, Labrador, 1915; Russian War Work, 1916-18; Made Survey of Russians in Amer. for Inter-Church World Movement, 1919-20; Asst. Prof., Dartmouth Coll., 1921-24; Gilbert L. Stark Chair of Practical Philanthropy, Yale Univ., 1924-37; Pres., Am. Fed. of Tchrs., 1936-39; Dir., Y.M.C.A. Work, P. W. Camps of Canada, 1940-43; War Work abroad, 1943-45; Prof., Hiram Coll., 1947-48; Vis. Prof., Univ. of Colo., 1950; Fisk Univ., 1954; Exec. Dir. Promoting Enduring Peace, Inc., Woodmont, Conn., 1949—. Hon. Pos.: Chmn., Conn. State Leg. Comm., 1931-39; Pres., Eastern Sociol. Conf., 1936-37; Trustee Oberlin Coll., 1947-57. Mem.: Eastern Sociol. Soc.; Am. Sociol. Soc.; Alpha Chi Rho; Delta Sigma Rho; Alpha Kappa Delta. Author: Introduction to Sociology; Readings in Sociology; Contemporary Social Movements; Capitalism and Its Culture; Character Assassination, 1950; Peace, War and You, 1952; Religion in Action, 1956. Co-author: On the Brink, 1959; Citizens of One World, 1961. Contbr. to: Am. Jour. of Sociol.; A.A.U.P. Bull.; Sociol Problems; Ann. of the Amer. Acad. of Pol. and Social Sci.; Foreign Affairs. Areas of Rsch.: Criminology; Russia and Communism; Internatl. Relations; United Nations.



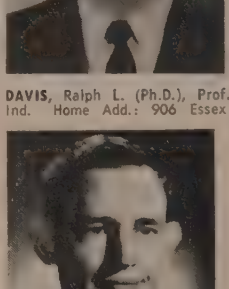
DAVIS, Norman West (Ph.D.), Prof. of Biol., Union Coll., Barbourville, Ky. BIOLOGY; ZOOLOGY. b. Atlantic City, N. J., May 8, 1905. s. Dr. Wm. P. and Lysbeth (Wilson) D. Edn.: B.S., Univ. of Fla., 1930; M.S., ibid., 1931; Ph.D., Cornell Univ., 1933. m. Anne Jefferson, Dec. 25, 1936. c.: William P.; Lysbeth Anne; Jonathan W. Exp.: Entomolst., U. S. Dept. of Agri., White Plains, N. Y., 1933-34; Horticulture Spec., N. Y. State Dept. Agri. and Mkts., 1934-61; Prof. of Biol., Union Coll., Ky., 1961—. Mem.: A.A.-A.S.; A.I.B.S.; Phi Sigma; Sigma Xi. Author: A New Opilionid from Florida, 1933; A Cyphophthalmid from South America, 1937; A Revision of the Genus Deiobunum, 1934. Contbr. to: Jour. of the N. Y. Entomol. Soc.; The Am. Midland Naturalist. Areas of Rsch.: Taxonomy of Phalangida; Herpetology; Biology; Zoology.



DAVIS, John Emerson (Ph.D.), Prof. of Pharmacology, Univ. of Tex., Austin, Tex. Home Add.: 1413 Larkwood Dr., Austin 5, Texas. PHARMACOLOGY. b. Detroit, Mich., Jan. 1, 1907. s.: Emerson and Marion (Biegler) D. Edn.: A.B., Oberlin Coll., 1930; M.S., Univ. of Mich., 1931; Ph.D., Univ. of Chicago, 1936. m. Unni Haerem, 1935. c.: Barbara Jean. Exp.: Instr. in Physiol., Med. Coll. of Va., 1935-37; Instr. in Physiol., and Pharmacol., Univ. of Ala., 1937-38; Asst. Prof. of Pharmacol., Univ. of Vt., 1938-42; Assoc. Prof., Pharmacol., Univ. of Ark., Schl. of Med., 1942-45; Prof., Pharmacol., ibid., 1945-51; Prof. of Pharmacol., Univ. of Tex., Coll. of Pharmacy, 1951—. Mem.: Amer. Physiol. Soc.; Soc. for Pharmacol. and Expmtl. Therapeutics; Soc. Expt. Biol. & Med.; A.A.A.S.; Fellow, Am. Coll. of Cardiology; Am. Pharmaceutical Assn.; Sigma Xi; Gamma Alpha; Rho Chi; Sigma Delta Psi; Sigma Nu; Phi Be Pi; Kappa Psi; Austin Coin Club. Contbr. to: Amer. Jou Physiol.; Sci.; Jour. Pharmacol. & Exptl. Therap.; Proc., So Exptl. Biol. and Med.; Jour. Lab. & Clin. Med.; Amer. Jou Digestive Diseases. Areas of Rsch.: Pharmacology of Erythr polesis; Anemia and Polycythemia. Exercise Physiology. Acet choline.

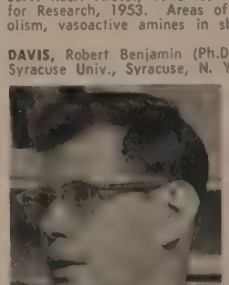
DAVIS, Paul Irwin (Mr.), Section Hd., Goodyear Atomic Cor P. O. Box 628, Portsmouth, Ohio. Home Add.: 286 W. So. S Jackson, Ohio. INSTRUMENT TION DEVELOPMENT. b. India apolis, Ind., June 25, 1928. Howard E. and Audrey (Atkinso D. Edn.: B.S., Purdue Univ., 195 m. Kathryn Cole, June 11, 194 c.: Kathy; Richard; Theodor David. Exp.: Sect. Hd., Goo year Atomic Corp., 1953—. Ho Pos.: Past Pres., Scioto Vall Sect., I S A. Mem.: A A A S Ohio Acad. of Science; A Vacuum Soc.; Internatl. Organiz tion for Vacuum Sci. and Tec Serv. Rec.: U.S.A.F., W. W. Gen. Int.: Registered Profession Engr. Areas of Rsch.: Vacuu Application and Technology, Ma Spectrometry, Thermoelectricity.

DAVIS, Ralph L. (Ph.D.), Prof. Agron., Purdue Univ., Lafayett Ind. Home Add.: 906 Essex St., W. Lafayette, Ind. PLA GENETICS AID BREEDING. Kennedy, Ala., Sept. 10, 1921. Oron and Ethel (Richardson) Edn.: B.S., Auburn Univ., 194 M.S., Purdue Univ., 1948; Ph.I ibid., 1950. m. Betty Simpso Aug. 20, 1943. c.: Rae; Mar Craig. Exp.: Asst. Prof., Purd Univ., 1950-53; Assoc. Pro ibid., 1953-57; Prof., ibid., 195 —; Visit. Prof., Ore. Sta. Uni 1959-60. Hon. Pos.: Pres., Cro Sci. Soc. of Am., 1961-62; Pre ibid., 1962-63. Mem.: Am Soc. Agron.; Ind. Acad. Sc Alpha Gamma Rho; Sigma Xi; P Kappa Phi; Alpha Zeta; Gamm Sigma Delta; Omega Kappa Delt A.A.A.S.; A.I.B.S.; Crop Sci. S of Am. Contbr. to: Jour. Animal Sci.; Jour. of Econ. E tomol.; Ohio Jour. Sci.; Ind. Acad. Sci.; Agron. Jour.; Cr Science. War Record: U. S. Navy, W. W. II. Areas of Rsch Inheritance and Breeding Techniques Studies in Legumes; Ins and Disease Reaction; Genotype Environmental Interactions.



DAVIS, Richard Bradley (M.D.), Instr. in Internal Med., Univ. Minn. Med. Schl. and Univ. of Minn. Hosp., Minneapolis Minn. Home Add.: 1869 Moore Ave., St. Paul 13, Minn. TERNAL MEDICINE. b. Iowa City, Ia., Nov. 6, 1926. s. Brad Nelson and Gladys (Fairbanks) D. Edn.: B.S., Yale Univ., 194 M.D., Univ. of Ia., 1953. m. Jean Anderson, June 22, 1957. Janet; Stephen; Catharine. Exp.: Instr. in Med., Univ. Minn., Minneapolis, Minn., 1959—. Mem.: A.A.A.S.; Am. Fe for Clinical Rsch.; Am. Soc. for Experimental Pathology; Beta Pi; Sigma Xi; Soc. for Exptl. Biology and Medicine; Endocrine Soc. Contbr. to: Circulation, Circulation Rsch Jour. Lab. and Clin. Med.; Am. Jour. Med., Metabolism; Jour. Am. Med. Assn.; Proceedings of Soc. for Exp. Biology and Me Serv. Rec.: A.U.S., 1945-46. Gen. Int.: Received Borden Awa for Research, 1953. Areas of Rsch.: Hematology, Indole Meta olism, vasoactive amines in shock.

DAVIS, Robert Benjamin (Ph.D.), Assoc. Prof., Maths. and Ed Syracuse Univ., Syracuse, N. Y. Home Add.: 444 Bradford Av Webster Grove 19, Mo. MATH MATICS AND EDUCATION. b. F River, Mass., June 23, 1926. Benjamin F. and Ethel (Reed) Edn.: S.B., Mass. Inst. of Tec 1946; S.M., ibid., 1948; Ph. ibid., 1951. m. Rose Marga Garcia, Sept. 14, 1958. c.: Ali andrea Clarie. Exp.: Tchng. As and Instr., Mass. Inst. of Tec 1946-51; Asst. Prof., Maths. Un of N. H., 1951-56; Assoc. Pro Maths. and Edn., Syracuse Uni 1956—; Dir., Syracuse Un Webster Coll. Madison Proj., 19 —. Mem.: Math. Soc. of Am Am. Phys. Soc.; Am. Psych Assn.; Mathl. Assn. of Am.; A Soc. of Engrng. Edn.; Natl. Co of Tchrs. of Maths. Author: D covery in Algebra, 1962. Cont to: Procs. of Am. Math. Soc.; Jour. of Engrng. Edn.; Mat Revs.; The Maths. Tchrs.; Am. Mathl. Monthly; N. Y. St Maths. Tchr. Areas of Rsch.: Partial Differential Equatio Digital Computers; Mathematical Physics; The Teaching Learning of Mathematics.



DAVIS, William (Dr.), General Electric Co., Schenectady, New York.

DAVISSON, Charlotte Meaker (Ph.D.), Physicist, Naval Rsch. Lab., Wash. 25, D. C. Home Add.: 4654 Cedar Ridge Dr., S.E., Wash. 21, D. C. INTERACTION OF GAMMA RAYS WITH MATTER. b. Phillipston, Mass., Oct. 7, 1914. d. William Lathrop Meaker and Anna (Laramy) M. Edn.: B.A., Wellesley Coll., 1936; M.A., Smith Coll., 1939; Ph.D., Mass. Inst. of Tech., 1948. m. James W. Davisson, Sept. 12, 1947. c.: Nancy. Exp.: Staff, Bendix Aviat. Corp., Teterboro, N. J., 1942-44; Staff, Manhattan Proj., Columbia Univ., N. Y., N. Y., 1944-46; Physicist, Naval Rsch. Lab., 1954—. Mem.: Phi Beta Kappa; Sigma Xi; Am. Assn. for the Adv. of Sci.; Am. Phys. Soc. Contbr. to: Phys. Rev.; Revs. of Mod. Phys.; Siegban Beta and Gamma Spectroscopy. Areas of Rsch.: Gamma Ray Absorption; Gamma Ray Albedos.

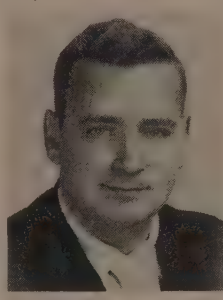
DAVISSON, James Willans (Ph.D.), Head, Rsch. and Dev. Br., Crystal Sect., U. S. Naval Rsch. Lab., Wash. 25, D. C. Home Add.: 4654 Cedar Ridge Dr., S.E., Wash. 21, D. C. CRYSTALS, DIELECTRIC BREAKDOWN. b. Pittsburgh, Pa., Oct. 23, 1914. s. Clinton Joseph and Charlotte Sara (Richardson) D. Edn.: A.B., Princeton Univ., 1938; Ph.D., Mass. Inst. of Technol., 1943. m. Charlotte Meaker, Sept. 12, 1946. c.: Nancy. Exp.: Rsch. Assoc., Lab. for Insulation Rsch., Mass. Inst. Technol., 1946-47; U. S. Naval Rsch. Lab., Washington, D. C., 1947—. Mem.: Fellow, Am. Phys. Soc.; Rsch. and Engr. Soc. of Am.; Am. Crystallographic Assn.; Wash. Acad. of Sci.; Wash. Phil. Soc. Contbrng. Author: Progress in Dielectrics, 1959. Contbr. to: Phys. Rev.; Jour. Applied Physics; Acta Crystallographica; Acta Metallurgica. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Orientation of electrical breakdown paths in Crystals. Electrical and Mechanical effects attending breakdown.

DAWES, Chester L. (Dr.), Prof. Emeritus, Elec. Engrng., Harvard Univ., Consulting Engr., Cambridge, Mass. Home Add.: 74 Wedgemere Ave., Winchester, Mass. ELECTRIC POWER TRANSMISSION, HIGH VOLTAGE ENGINEERING AND MEASUREMENTS. b. Somerville, Mass., Nov. 13, 1886. s. Henry Laurens and Minnie (Goodwin) D. Edn.: S.B., M.I.T., 1909. Hon. Degrees: A.M., Harvard, 1942; Dr.Engrng., Northeastern, 1945. m. Anna Davis, June 1, 1912; Muriel Beattie, June 17, 1944. c.: Laurens Davis; Jane G. McClennan. Exp.: Asst. in Electrical Engrng., M.I.T., 1909-11; Instr., Harvard Univ., 1911-19; Prof., U. S. Naval Acad., 1912-14; Asst. Prof., Harvard Univ., 1919-31; Assoc., ibid., 1951-53; Assoc. Prof. Emeritus, ibid., 1953. Hon. Pos.: Chmn., Boston Sect. of A.I.E.E.; Vice-Pres., A.I.E.E.; Chmn., New England Sect., A.S.E.E. Mem.: Fellow, Am. Inst. of Elect. Engrs.; Fellow, A.A.A.S.; Am. Soc. of Engrng. Edn.; A.A.U.P.; Harvard Engrng Soc.; Sigma Xi; Tau Beta Pi. Author: A Course in Electrical Engineering, Vol. I, Direct Currents, 1920, 1927, 1937, 1952; Vol. II, Alternating Currents, 1922, 1928, 1934, 1947; Industrial Electricity, Vol. I, Direct Currents, 1925, 1942, 1956; Vol. II, Alternating Currents, 1925, 1942, 1960; Electrical Engineering Section, Marks Mechanical Engineers Handbook. Contbr. to: Electrical Engrng.; Transaction Am. Inst. of Elec. Engrs.; Physics; Jour. of Engrng. Edn. Areas of Rsch.: Ionization and Electrical Stresses in High-Voltage Cables; Voltage Divider for Lightning Surge Generator; Traveling Lightning Waves in High-Voltage Power Systems; Electrical Measurements and Machinery.

DAWSON, Elsie Halstrom (Mrs.), Chief, Food Quality Lab., Human Nutrition Rsch. Div., Agricultural Rsch. Service, U.S.D.A., Washington 25, D. C. Home Add.: 134 Fleetwood Terrace, Silver Spring, Md. FOOD AND NUTRITION RESEARCH. b. Reedley, Calif., Feb. 4, 1913. d. Albin and Mary Cecelia (Ahlstrom) Halstrom. Edn.: B.A., Univ. of Calif., 1933; M.A., ibid., 1935. m. Edward Dawson, 1936. c.: Edward Douglas. Exp.: Tchng. Asst., Univ. of Calif., Berkeley, Calif., 1933-35; Instr., Syracuse Univ., 1935-40; Instr., Cornell Univ., 1940-41; Food Rsch., Dept. of Agri., Wash., D. C., 1941—. Hon. Pos.: Chmn., Food and Nutrition Sect., the Am. Home Econ. Assn.; Assoc. Editor, Food Technol. and Food Rsch. Journals; Sec., Wash. Sect., Inst. of Food Technologists, 1958; 1959; Mem., Rsch. Coun. Inst. of Am. Poultry Industries. Mem.: Inst. of Food Technologists; Am. Home Econs. Assn.; Sigma Xi; Iota Sigma Pi; Phi Sigma; Alpha Nu; Sigma Delta Epsilon; Phi Tau Sigma; P.T.A.; Scouts; Sligo Park Civic Assn. Co-author: Sensory Methods for Measuring Differences in Food Quality, 1954; Chapter in Food, Yearbook of Agriculture, 1959. Contbr. to: Food Technol.; Food Rsch.; Cereal Chem.; Poultry Sci.; Jour. of Home Econs.; Jour., Amer. Dietetics Assn.; Agric. and Food Chem.; Food Engrng. General Int.: Received Superior Service Award, U. S. Dept. of Agric., 1951. Listed in: W. W. of Amer. Women; Am. Men of Sci. Areas of Rsch.: Food Research: Sensory Methods of Measuring Quality; Factors Influencing the Quality of Beef, Lamb, Pork, Poultry and Poultry Products; Cereal Products; Dairy Products; Fruits and Vegetables—Fresh, Frozen, Dehydrated, Canned; Food for the National School Lunch Program, including Research on Food Use and Quality.

DAWSON, Percy Millard (M.D.), Prof., Retired. Home Add.: 107 East Portola Ave., Los Altos, Calif. PHYSIOLOGY. b. Montreal, Canada, May 19, 1873. s. Benjamin and Olive Jane (Millard) D. Edn.: A.B., Johns Hopkins Univ., 1894; M.D., ibid., 1898. m. 1st: Agnes Wakefield Learned, Apr. 8, 1901; 2nd, Doris Shirley Nightingale, Oct. 4, 1948. c.: Emily; Helen; Margaret Ruth. Exp.: Asst. to Assoc. Prof., Johns Hopkins Univ., 1898-1909; Instr. to Assoc. Prof., Univ. of Wis., 1913-32; Visiting Prof., Duke Univ., 1943-46; Lectr., Stanford Univ., 1947-51. Mem.: A.A.A.S.; Am. Physiol. Soc.; Sigma Xi; Retired, History of Sci. Soc.; Am. Acad. of Physical Edn. (Assoc.); Phi Kappa Psi; Phi Beta Kappa. Author: A Biography of Francois Magendie, 1908; Anatomy and Physiology for Nurses, 1917; The Physiology of Physical Edn., 1935; Soviet Samples: Diary of an American Physiologist. Contbr. to: Am. Jour. Physiol.; Jour. A.M.A.; Johns Hopkins Hosp. Bull.; Jour. Exp. Med.; Ann. Med. Hist.; Jour. Health, Phys. Edn. and Recreation; Rsch. Quarterly of Am. Assn. of Health, Phys. Edn. and Recreation; Bull. History of Med. Areas of Rsch.: Physiology of Nervous System and Circulation; Physiology Applied to Sport and Labor.

DAWSON, Roy Carlton (Ph.D.), Tech. Officer, Food and Agriculture Organization of the UN, Wash. 25, D. C. Home Add.: 4019 Beechwood Rd., Univ. Park, Md. SOIL MICROBIOLOGY. b. Culpeper, Va., May 1, 1907. s. James Ernest, (dec.) and Virginia Caroline (Romine) D. Edn.: B.S., Univ. of Md., 1937; M.S., Univ. of Md., 1939; Ph.D., Univ. of Nebr., 1947. m. Virginia Truilinger, March 8, 1941. c.: Robert William; Russell Alan. Exp.: Food Inspector, Dist. of Columbia Health Dept., Wash., D. C., 1939-40; Bacteriologist, Soil Conservation Serv., USDA, 1941-49; Consultant, Internatl. Programs, ARS, USDA, 1950-55; Technical Officer, Food and Agr. Org. of the UN, Wash., D. C., 1956—. Mem.: Fellow, Am. Assn. Adv. Sci.; Am. Soc. for Microbiol.; Wash. Acad. of Sci.; Am. Soc. Agr. Engrs.; Am. Soc. Agronomy; Soil Sci. Soc. of Am.; Can. Soc. Soil Sci.; Internatl. Soc. Soil Sci.; Soc. for Internatl. Dev.; Am. Soc. for Range Mgmt.; Sigma Xi. Contbr. to: Soil Sci.; Proc. Soil Sci. of Am. Areas of Rsch.: Soil Microbiology; International Development; Technical Assistance.



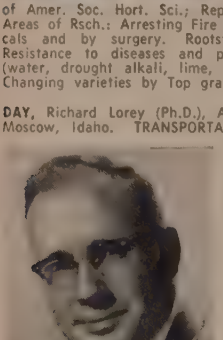
DAWSON, William Woodson (Ph.D.), Research Psychologist, U. S. Army Medical Research Laboratories, Ft. Knox, Ky. SENSORY RADIOBIOLOGY; ELECTROPHYSIOLOGY; SOMESTHESIS. b. Nashville, Tenn., May 21, 1933. s. William Joseph and Myrtle (Gillentine) D. Edn.: A.B., Vanderbilt Univ., 1955; M.S., Fla. State Univ., 1957; Ph.D., ibid., 1960. m. Shirley Harman, Dec., 1955. c.: Angela K. Exp.: Rsch. Asst., Office of Naval Rsch., Fla. State Univ., 1956-57; Grad. Rsch. Fellow, ibid., 1957-58; Rsch. Asst., Office Surg. Gen., ibid., 1957-58; Rsch. Fellow, Natl. Inst. of Health, ibid., 1958-60; Doctoral Rsch. Fellow, ibid., 1960; Consultant, Lawrence Radiation Laboratories, Univ. of Calif. at Berkeley, 1961; Lectr., N.S.F. Radiobiology Institute Program, 1961—. Mem.: S. Eastern Psychol. Assn.; Fla. Psychological Assn.; A.A.A.S.; Sou. Soc. for Philosophy and Psychol.; Theta Chi; Sigma Xi; Phi Sigma. Contbr. to: Jour. Psychol.; Sci.; Psychological Rec.; Jour. Applied Physiol.; Jour. Psychol.; Exptl. Neurol. Serv. Rec.: U.S.A.R., 1955-62. Gen. Int.: Earliest Am. Electrophysiological Rsch. into Visual Effects of Minute Radiations; Electrophysiological Re-examination of Helmholtz's Doctrine of Specific Fiber Energies. Areas of Rsch.: Integration of Psychophysics and Sensory Electrophysiology; Prenatal Behavior; Sensory Aspects of Nuclear Radiation.

DAY, Eva Savannah Segraves (Mrs.), Asst. Rsch. Prof., Schl. of Home Econs., Woman's Coll., Univ. of N. C., Greensboro, N. C. Home Add.: 4202 Groometown Rd., Greensboro, N. C. HOME ECONOMICS, HOUSING RESEARCH. b. Wilkes Co., N. C., Jan. 26, 1927. d. Robert Clay Segraves and Mrs. Alma Clementine Sparks. Edn.: B.S., Appalachian State Tchrs. Coll., 1951; M.S., Woman's Coll. of Univ. of N. C., 1953. m. Royal Palmer Day, Nov. 22, 1945. c.: Patricia Fay; Robert Clay. Exp.: Home Econs. Tchr., H. S., Ronda, N. C., 1947-48; Elem. Tchr., Elem. Schl., Collettsville, N. C., Spring, 1951; Rsch. Asst., Woman's Coll. of Univ. of N. C., 1951-53; Rsch. Instr., ibid., 1954-61; Rsch. Asst. Prof., ibid., 1961—. Hon. Pos.: Chmn., Sou. Reg. Housing Rsch. Technical Comm.; Adviser, Alpha Kappa Chapt., Omicron Nu. Mem.: Am. Home Econs. Assn.; N. C. Home Econs. Assn.; Guilford Co. Home Econs. Assn.; N. C. Edn. Assn. Contbr. to: Agricultural Exptl. Sta. Bull.; Rsch. and Farming Quarterly. Areas of Rsch.: Activity and Space Needs of Preschool Children and Experiments on the Skid Resistance and Gloss Values of Smooth Floor Surfaces and Finishes.

DAY, Leonard Herrington (Mr.), Retired; Assoc. Pomologist Emer., Univ. of Calif., Davis, Calif. Home Add.: Box 126, Davis, Calif.

FUNDAMENTALS OF BIOLOGY APPLIED TO PROBLEMS OF HORTICULTURE. b. Calif., April 22, 1883. s. Louis V. and Sarah (Herrington) D. Edn.: B.S., Univ. of Calif., Davis, 1925; M.S., ibid., 1928. m. Emma Underwood, April 26, 1910. c.: Paul R.; Ralph G.; Alva Day Grant. Exp.: Entomol. and Hort. Inspector, San Benito Co., Calif., 1908-10; Hort. Commissioner, ibid., 1910-20; Tchr. and Researcher in Pomology, Univ. of Calif., Davis, 1921-28; Asst. Pomol. (Rsch. only), ibid., 1928-39; Assoc. Pomol., (Rsch. only), ibid., 1939-50; Retired, ibid., 1950—. Mem.: A.A.A.S.; Am. Soc. Hort. Sci.; Sigma Xi; Calif. Acad. Sci.; Cooper Ornithological Soc., Sierra Club. Contbr. to: Proc. of of Amer. Soc. Hort. Sci.; Reports on expmts. and observations. Areas of Rsch.: Arresting Fire Blight Cankers (on Pear) by chemicals and by surgery. Rootstocks for deciduous fruit trees—Resistance to diseases and pests; tolerance to soil conditions (water, drought alkali, lime, etc.); Compatibility with varieties. Changing varieties by Top grafts. Hobby: Natural History.

DAY, Richard Lorey (Ph.D.), Asst. Prof., Geog., Univ. of Idaho, Moscow, Idaho. TRANSPORTATION GEOGRAPHY; CONSERVATION OF RESOURCES; CLIMATOLOGY; GEOGRAPHY OF UNITED STATES AND CANADA. b. Templeton, Mass., July 6, 1921. s. Corey C. and Olga (Bergquist) D. Edn.: A.B., Clark Univ., 1948; A.M., ibid., 1950; Ph.D., Univ. of Ill., 1959. Exp.: Observer U. S. Weather Bur., Portland, Maine; Washington, D. C.; and Ocean Weather Patrol, 1940-45; Instr., Geog., Univ. of Fla., 1950-53; Rsch. Asst., Univ. of Ill., and Consultant for City Plan Commission of E. St. Louis, Ill., 1953-56; Instr., Geog., Univ. of Fla., 1956-59; Asst. Prof., ibid., 1959-61; Asst. Prof., Geog. Univ. of Idaho, 1961—. Mem.: Assn. of Am. Geographers; Am. Geog. Soc. Contbr. to: Bull. of Am. Meteorological Soc.; Bull. of Fla. Acad. of Sci.; Bull. of Me. Audubon Soc.; U. S. Hydrographic Office, Weather Summaries. Areas of Rsch.: Transportation Geography; Climatology; Biogeography.



DAY, Melvin Sherman (Mr.), Dir., Office of Scientific and Technical Information, Natl. Aeronautics and Space Administration, Wash. 25, D. C. Home Add.: 7805 Beech Tree Rd., Bethesda 14, Md. DOCUMENTATION OF SCIENTIFIC AND TECHNICAL INFORMATION. b. Lewiston, Me., Jan. 22, 1923. s. Israel and Frances (Goldberg) D. Edn.: B.S., Bates Coll., 1943. m. Annette Berman, Feb. 8, 1948. c.: Cynthia Lee; Wendy Anne; Robert Marshall. Exp.: Metallurgical Chemist, Metal Hydrides, Inc., Beverly, Mass., 1943-44; Lab. Foreman, U. S. Army and Tenn. Eastman Corp., Oak Ridge, Tenn., 1944-46; Scientific Analyst, Manhattan Engr. Dist., Oak Ridge, Tenn., 1946-47; Production Control Officer, U. S. Atomic Energy Comm., Technical Information Serv. Ext., Oak Ridge, Tenn., 1948-49; Asst. to Chf., ibid., 1950-52; Asst. Chief., ibid., 1952-56; Chf., Ibid., 1956-58; Asst. Dir., ibid., Wash., D. C., 1958-60; Dir., Office of Technical Information, ibid., 1960; Deputy Dir., Office of Technical Information and Edntl. Programs, N.A.S.A., Wash., D. C., 1960-61; Dir., ibid., 1962—. Hon. Pos.: U. S. Mem. of Technl. Information and Documentation Comm., AGARD-NATO, 1961—; Chmn., A.E.C. Tech. Information Panel; Fed. Advisory Comm. on Scientific Information; U. S. Representative, Scientific Information Advisory Panel, Internatl. Atomic Energy Ag.y.; Bd. of Dirs., Natl. Fed. of Scientific Abstracting and Indexing Servs., Secy., Indus. Adv. Comm. Mem.: A.C.S.; Am. Nuclear Soc.; A.A.A.S.; Am. Rocket Soc.; Natl. Rocket Club; Am. Documentation Inst.; Special Libs. Assn. Contbr. to: Am. Documentation; La Revue de la Documentation. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Recipient, U. S. A.E.C. Sustained Superior Performance Award, 1960; Nominated in 1960 by A.E.C. for receipt of one of twelve Annual Arthur S. Flemming Awards. Areas of Rsch.: Machine Storage and Retrieval of Scientific Information; Microform Reproduction and Dissemination of Technical Reports.

DAYHOFF, Edward S., (Ph.D.), Physicist, Naval Ordn. Lab., White Oak, Silver Spring, Md. Home Add.: 1618 Tilton Dr., Silver Spring, Md. EXPERIMENTAL SOLID STATE AND QUANTUM PHYSICS. b. N. Y. City, June 26, 1925 s Samuel Roscoe and Elsie (Schachtel) D. Edn.: A.B., Columbia Coll., 1946; M.A., Columbia Univ., 1947; Ph.D., ibid., 1952. m. Margaret Oakley, May 29, 1948. c.: Ruth E.; Judith E. Exp.: Physicist, Natl. Bureau of Standards, Wash., D. C., 1952-55; Physicist, Naval Ordn. Lab., Silver Spring, Md., 1955—. Mem.: Am. Phys. Soc.; Am. Opt. Soc.; Philos. Soc. of Wash.; Phi Beta Kappa; Sigma Xi. Contbr. to: Phys. Rev.; Applied Optics; Jour. of Applied Phys.; Jour. of Rsch. of the Natl. Bureau of Standards. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: Precise Measurement of Lamb Shift in Hydrogen. Areas of Rsch.: Solid State Lasers; Magnetic Resonance in Antiferromagnetics; Microwave Optics; Optical Image Electronics; Free Polarized Electrons; Atomic Beam Resonance.

DAYHOFF, Margaret Oakley (Ph.D.), Chief, Div. of Chem. Biol., Natl. Bio. Med. Rsch. Found., Silver Spring, Md. Home Add.: 1618 Tilton Dr., Silver Spring, Md. CHEMISTRY. b. Philadelphia, Pa., Mar. 11, 1925. d. Kenneth W. and Ruth (Clark) Oakley. Edn.: B.A., N. Y. Univ., 1945; M.A., Columbia Univ., 1946; Ph.D., ibid., 1948. m. Edward S. Dayhoff, May 29, 1948. c.: Ruth Elizabeth; Judith Elaine. Exp.: Rsch. Asst., N. Y. City Rockefeller Inst., 1948-51; Post Doctoral Fellowship, Univ. of Md., 1957-59; Chief, Div. of Chem. Biol., Natl. Biol. Med. Rsch. Found., Silver Spring, Md., 1960—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Phi Beta Kappa Contbr. to: Jour. of Chem. Physics; Jour. of Am. Chem. Soc.; Am. Sci. Inst.; Spec. Acta Areas of Rsch.: High Speed Computer Applications to Chemistry, Deduction of Primary Protien Structure from Peptide Degradation Products.

DE, Paritosh Kumar (Ph.D.), Rsch., Dept. of Biochemistry, Sr. Rsch. Chemist, Biochemistry The Jewish Hospital of Brooklyn, Brooklyn 38, N. Y. Home Add.: 806 Washington Ave., Brooklyn, N. Y. PHYSICAL CHEMISTRY AND PHYSICAL BIOCHEMISTRY. b. Calcutta, July 4, 1930. s. Shyama Charan De and Nandarani (Indra) D. Edn.: Univ. of Calcutta, B.Sc., 1949; M.Sc., ibid., 1952; D.Phil., ibid., 1958. Exp.: B.O.C. Rsch. Scholar, Sr. Rsch. Asst., Lctr., Univ. of Calcutta, 1954-59; Rsch. Assoc., St. Univ. of Ia., 1959-60; Rsch. Assoc., Duke Univ., 1960-61; Rsch. Chemist, The Jewish Hosp., Brooklyn, N. Y., 1961—. Mem.: Am. Chemical Soc.; A.A.A.S.; N. Y. Acad. of Sci.; A.A.U.P.; Sigma Xi; Indian Chemical Soc.; Ia. Acad. of Sci. Contbr. to: Jour. of Am. Chemical Soc.; Jour. of Biological Chemistry; Trans. of Faraday Soc.; Jour. of Indian Chemical Soc.; Kolloid Zeitschrift; Publications of Central Leather Rsch. Inst. Areas of Rsch.: Electrochemistry of Colloids, Phyiscal Chemistry of Collagen, Physical Chemistry of Proteins, Calcification and Bone Formation, Ion Exchange, X-Ray Diffraction.

DAZO, Bonifacio Capili (Ph.D.), Malacologist, World Health Organ., Alexandria, Egypt, U.A.R. Home Add.: 128 Jose Rizal St., Sta. Maria, Bulacan, Philippines. ZOOLOGY (MOLLUSKS). b. Sta. Maria, Bulacan, Phil., May 14, 1927. s. Marciano and Juana (Capili) D. Edn.: B.S., Univ. of the Philippines, 1952; M.S., Univ. of Mich., 1957; Ph.D., ibid., 1962. m. Leticia Ramos, Jan. 6, 1958. Exp.: Asst. Malacologist, Dept. of Health, Manila, Philippines, 1952-54; Malacologist, ibid., 1954-57; Supvrng. Malacologist, ibid., 1957-58; Med. Zoologist, Museum of Zool. Univ. of Mich., 1958-62; Scientist, World Health Organ., Alexandria, Egypt, U.A.R., 1962—. Mem.: Sigma Xi; Am. Soc. of Zoologists; Sci. Rsch. Club of the Univ. of Mich.; Phi Sigma Soc.; A.A.A.S.; Soc. of Systematic Zool.; The Am. Microscopical Soc.; The Am. Malacological Union; The Ecological Soc. of Am.; Beta Sigma; Phil. F.O.A. Fellows Assn.; Philippine-Mich. Club; In

ternatl. Students Assn. Contbr. to: The Am. Malacological Union; The Am. Microscopical Soc.; The Nautilus; Malacologia; The Am. Jour. of Parasitol. Gen. Int.: I.C.A. Fellow to U. S., Puerto Rico and Japan, 1955-57; U.S.P.H.S. Fellow, Univ. of Mich., 1959-62. Areas of Rsch.: Medically Important Mollusks of the Orient & Middle East Particularly the Molluscan Hosts of Schistosomiasis; Philippine Land and Fresh-Water Mollusks; N. Am. Pleurocerid Snails.

DEAN, John Gilbert (Ph.D.), Dir., Dean Associates, 5 Stewart Lane, Wilton, Conn. CHEMISTRY. b. Pawtunet, R. I., Feb. 16, 1911. s. William C. and Marian L. (Roffee) D. Edn.: Ph.B., Brown Univ., 1931; M.S., ibid., 1932; Ph.D., Columbia Univ., 1936. m. Flora Maitland, Jan. 11, 1942. c.: Robert; Elizabeth; Diana. Exp.: Dir., Rsch. and Dev., Permutit Co., Birmingham, N. J., 1936-40; Chmn., Sci. Dept., Sarah Lawrence Coll., 1940-42; Senior Fellow, Mellon Inst., Pittsburgh, Pa., 1942-46; In Charge, Ind. Chem. Sect., Internatl. Nickel Co., N. Y., 1946-51; Dir., Div. of Cooperative Rsch., Columbia Univ., 1951-53; Dir., Dean Associates, Wilton, Conn., 1951—. Mem.: Am. Chem. Soc.; A.A.A.S.; Electrochem. Soc.; Commercial Chem. Dev. Assn.; A.I.M.E.; Phi Lambda Upsilon; Sigma Xi; Epsilon Chi; Chemists Club. Contbr. to: Ency. Britannica; Ency. Chem. Tech.; Ind. & Eng. Chem.; Am. Chem. Soc. Jour. Areas of Rsch.: Chemical extraction of metals from low grade ores and preparation, properties and applications of metal compounds, powders and catalysts. Expert on the chemistry and extractive metallurgy of Nickel, Cobalt and many other metals. Also expert on adsorption, catalysis, ion exchange and solvent extraction.

DEAN, Nora D. (M.D.), St. Joseph Infirmary, Louisville, Ky. Home Add.: 1255 Eastern Parkway, Louisville, Ky. OBSTETRIC ANESTHESIOLOGIST. b. Mercer Co., Ky., Aug. 24, 1892. d. Samuel Harrison and Emily Jane (Dearinger) D. Edn.: M.D., Univ. of Louisville, Med. Schl., 1927. Exp.: Asst. Student Instr., Univ. of Louisville, 1925-26; Interne, Memorial Hosp., Worcester, Mass., 1927-28; Asst. Instr., Clinical Microscopy, Univ. of Louisville, 1928-38; Private Practice, Louisville, Ky., 1928-43; Resident Physician, Susan Speed Davis Home, ibid., 1928-42; Physician, Y.W.C.A., ibid., 1928-42; Instr. of Anatomy, Nazareth Coll., 1941-42; Instr., Anesthesiology, Memorial Hosp., Worcester, Mass., 1943-46; Acting Chf. of Anesthesiol., ibid., 1943-46; Private Practice, St. Joseph Infirmary, Louisville, Ky., 1947-57; Dir. of Obstetrical Anesthesia, ibid., 1957—. Contbr. to: Ky. Med. Jour.; Am. Jour. of Obstetrics and Gynecol.; Current Rschs. in Anesthesia and Analgesia; Anesthesia and Analgesia; Med. Woman's Jour. Gen. Int.: W. B. Sanders Chemistry Award, 1927.

DEAN, Sheldon Williams, Jr., (D.Sc.), Corrosion Engr., Inter. Natl. Nickel Co., Inc., Bayonne, N. J. Home Add.: 46 Sandra Circle, Westfield, N. J. CHEMICAL ENGINEERING: INDUSTRIAL CHEMISTRY, SURFACE CHEMISTRY. b. N. Y. C., July 3, 1935. s. Sheldon Williams Sr., and Gladys (Law) D. Edn.: A.B., Middlebury Coll., 1958; B.S., Mass. Inst. of Technol., 1958; D.Sc., ibid., 1962. m. Linda Durfee, June, 1960. Exp.: Chem. Engr., Procter & Gamble, Cincinnati, Ohio, summer, 1958; Tchng. Asst., Mass. Inst. of Technol., 1958-59; Rsch. Asst., ibid., 1960-61; Corrosion Engr., Inter. Natl. Nickel Co., Inc., Bayonne, N. J., 1961—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Inst. of Chem. Engr.; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi; Alpha Tau Omega. Areas of Rsch.: Wetting Phenomena, Surface Chemistry, Corrosion.

DEANE, Darrell Dwight (Ph.D.), Assoc. Prof. of Dairy Mfg., Div. of Animal Sci., Univ. of Wyo., Laramie, Wyo. DAIRY BACTERIOLOGY: LACTIC BACTERIOPHAGES, CHEESE MAKING. b. Anacortes, Wash., Nov. 9, 1915. s. Dwight E. and Bernice I. (Gould) D. Edn.: B.S., Univ. of Idaho, 1938; M.S., Univ. of Nebr., 1939; Ph.D., Pa. State Univ., 1942. m. Gwendolyn E. Davis, 1943. c.: James D.; Steven G.; Giles D. Exp.: U. S. Army, 1942-46; Asst. Prof., Univ. of Nebr., Lincoln, Nebr., 1946-51; Asst. Prof. of Dairy Industry, Iowa State Univ., Ames, Iowa, 1951-61; Assoc. Prof. of Dairy Mfg., Univ. of Wyo., 1961—. Mem.: Am. Dairy Sci. Assn.; Internatl. Assn. Milk and Food Sanitarians; Sigma Xi; Alpha Xeta; Gamma Sigma Delta; Phi Kappa Phi. Contbr. to: Jour. of Dairy Sci. War Record: W. W. II. Special Int.: Lactic Bacteriophages; Swiss and Cheddar Cheese Ripening; Quality Control of Cottage Cheese.

DEANE, Helen Mary (M.D.), Assoc. Physician, Woman's Coll., Greensboro, N. C. Home Add.: 1176 Aldrich St., N.E., Aiken, S. C. MEDICINE. b. Merricourt, N. Dak., Feb. 18, 1895. d. F. T. and Anna R. (Stephenson) D. Edn.: A.B., Carlton Coll., 1915; B.S., Univ. of Minn. Med. Schl., 1918; M.B., ibid., 1920; M.D., ibid., 1921; P.G., AMA of Vienna, 1927. m. E. C. Jeune (dec.), May, 1927. c.: Helen Jeune Heatherly. Exp.: Resident Physician, Home Schl. for Girls, Sauk Center, Minn., 1922-23; Resident Physician St. Training Schl., Hudson, N. Y., 1923-27; Assoc. Physician, Smith Coll., Northampton, Mass., 1930-38; Assoc. Physician, Woman's Coll., Greensboro, N. C., 1938-39; Staff Physician, Mass. State Hosp., Northampton, Mass., 1942; Plant Physician, with E. I. duPont de Nemours Co. at Ala. Ord. Works, Childersburg, Ala., 1942-45; Old Hickory Rayon, Old Hickory, Tenn., 1946-49; Plant Physician, Savannah River Plant, Aiken, S. C., 1953-60; Assoc. Physician, Ala. Poly. Inst., Auburn, Ala., 1945-46; Assoc. Physician, Woman's Coll., Greensboro, N. C., 1950-53; Assoc. Physician, ibid., 1960—. Hon. Pos.: Dir., Aiken Co. T.B. Assn.; Dir., Aiken Co. Red Cross; Mem., Aiken Co. Mental Health Assn.; Pres., Comm. for Highway Safety. Mem.: Am. Med. Assn.; M.W.I.A.; A.M.A. of Vienna, A.E.I.; A.M.W.A.; A.A.A.S.; A.A.U.W.; B. and P.W.; Aiken Co. and S. C. Med. Soc.

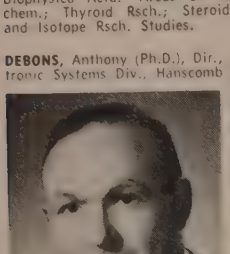
DEASY, George F. (Ph.D.), Prof. of Geography, Pa. State Univ., University Park, Pa. Home Add.: 1112 Old Boalsburg Rd., State College, Pa. GEOGRAPHY. b. Cincinnati, Ohio, Feb. 20, 1912. s. William P. and Clara L. (Woelfel) D. Edn.: A.B., Univ. of Cincinnati, 1935; M.S., ibid., 1936; Ph.D., Clark Univ., 1948. m. Dorothy M. Vollrath, 1936. Exp.: Geographer, Univ. of Cincinnati, 1936-40; Geographer, U. S. Dept. of State, Wash., D. C., 1940-41; Geographer, U. S. Dept. of the Army, ibid., 1942-47; Geographer, Pa. State Univ., 1947—. Hon. Pos.: Pres., Pa. Acad. Sci., 1962; Treas., Assn. Am. Geographers, 1959-62. Mem.: Assn. Am. Geographers; A.A.A.S.; Pa. Acad. Sci. Author: The World's Nations, an Economic and Regional Geography, 1958; Atlas of Pennsylvania Coal and Coal Mining, 1959. Contbr. to: Annals of Assn. of Am. Geographers; Econ. Geography; Proceedings of the Pa. Acad. of Sci.; Monthly Weather Rev.; Agricultural Hist. Areas of Rsch.: Geography of Coal, Especially in Pa.

DEATHERAGE, Bruce Hampton (Ph.D.), Proj. Dir., Tracor, Inc., 1703 Guadalupe Street, Austin 1, Texas. Home Add.: 1514 Flintridge Rd., Austin 46, Tex. PHYSIOLOGICAL PSYCHOLOGY OF HEARING. b. Wichita Falls, Tex., Sept. 14, 1921. s. Albert Gerald and Laura Sudella (Roberts) D. Edn.: B.A., The Univ. of Tex., 1948; Ph.D., ibid., 1953. m. Martha Ann Martin, July 12, 1953. c.: Alison Ann. Exp.: Rsch. Scientist, Defense Rsch. Lab., Univ. of Tex., 1950-54; Rsch. Assoc., Central Inst. for the Deaf, St. Louis, Mo., 1954-57; N.I.M.H. Special Rsch. Fellow, Univ. of Chicago, 1957-58; Rsch. Assoc., Children's Hosp., Los Angeles, Calif., 1958-61; Project Director, Tracor, Inc., Austin, Tex., 1961—. Mem.: Am. Physiological Soc.; Am. Psychological Assn.; Acoustical Soc. of Am.; Human Engrng. Soc.; Psychonomic Soc.; Sigma Xi; Navy League. Contbr. to: Jour. of the Acoustical Soc. of Am.; Am. Jour. of Psychol.; Federation Proc.; Am. Jour. of Physiol.; Laryngoscope. Serv. Rec.: U.S.N.R., 1942-46. Areas of Rsch.: Binaural Hearing; Neurophysiology of Hearing; Visual and Auditory Displays.

DEBONS, Albert Frank (Ph.D.), Rsch. Physiologist-Biochemist, Prin. Investigator, Radioisotope Unit, V.A. Hosp., Birmingham, Ala. Home Add.: 1513 S. 8th Ave., Birmingham 5, Alabama. INTERMEDIARY METABOLISM AND ENDOCRINE RESEARCH, NEURAL REGULATION OF OBESITY. b. Brooklyn, N. Y., Nov. 4, 1929. s. Phillip and Carmela D. Edn.: B.S., Syracuse Univ., 1953; M.S., George Washington Univ., 1955; Ph.D., ibid., 1958. m. Evelyn Ruth Quade, 1955. c.: Jeanne; Elizabeth. Exp.: Rsch. Assoc., George Washington Univ., 1958; Rsch. Assoc., Brookhaven Natl. Lab., Upton, N. Y., 1958-61; Rsch. Biochemist, V.A. Hosp., Birmingham, Ala., 1961–; Asst. Prof., Dept. of Physiol., Univ. of Ala., 1961– ; Asst. Prof., Dept. of Med., ibid., 1961 . Mem.: Sigma Xi; Soc. of Nuclear Med.; Am. Fed.

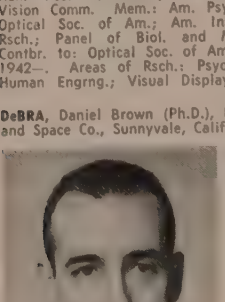
for Clin. Rsch. Contbr. to: Am. Jour. of Physiol.; Endocrinol.; Jour. of Lipid Rsch.; Jour. of Applied Physiol.; Biochemica et Biophysica Acta. Areas of Rsch.: Endocrine Physiol. and Biochem.; Thyroid Rsch.; Steroid Metabolism; Neutron Activation and Isotope Rsch. Studies.

DEBONS, Anthony (Ph.D.), Dir., Electronic Systems Div., Hanscomb Field, Bedford, Mass. Home Add.: 314 Old Billerica Rd., Bedford, Mass., N.Y. EXPERIMENTAL PSYCHOLOGY. b. Mesida, Malta, Apr. 6, 1916. s. Philip and Carmela (Guiffrida) D. Edn.: B.A., Brooklyn Coll., 1948; M.A., Columbia Univ., 1952; Ph.D., ibid., 1954. m. Margaret Kenneally, Aug. 15, 1948. c.: Janet Maria; Eugene. Exp.: Chf., Psychol. Sect., Arctic Aeromed. Lab., 1948-51; Rsch. Officer, Visual Displays, WADC, Ohio, 1953-55; Chf., ibid., 1955-57; Chf., Human Engrng. Lab., Rome Air Dev. Ctr., N.Y., 1957-58; Asst. Dir., Dir. of Engrng., Rome Air Dev. Ctr., Griffis AFB, N.Y., 1958-61; Chf., Systems Design Lab., Electronic Systems Div., Hanscom Field, Bedford, Mass., 1961-62; Dir., Elect. Syst. Div., 1962–.



Hon. Pos.: Chairman, Work Group VI, NRC, Armed Forces Vision Comm. Mem.: Am. Psychol. Assn.; A.A.A.S.; Sigma Xi; Optical Soc. of Am.; Am. Inst. of Physics; Comm. on Polar Rsch.; Panel of Biol. and Med. Scis.; Human Factors Soc. Contbr. to: Optical Soc. of Am. Serv. Rec.: U.S.A.F. (Lt. Col.), 1942–. Areas of Rsch.: Psychophysics; Unusual Environments; Human Engrng.; Visual Displays; System Design.

DeBRA, Daniel Brown (Ph.D.), Rsch. Specialist, Lockheed Missiles and Space Co., Sunnyvale, Calif. Home Add.: 1421 Meadow Lane, Mt. View, Calif. GUIDANCE AND CONTROL OF VEHICLES. b. N. Y. City, June 1, 1930. s. Arthur H. and Gertrude M. (Boyle) D. Edn.: B.E., Yale Univ., 1952; M.S., Mass. Inst. of Technol., 1953; Ph.D., Stanford Univ., 1962. m. Esther S. Crosby, Apr. 3, 1954. c.: Corinne C.; Elisabeth B.; Heidi M.; Jacques A. Exp.: Proj. Engr., The Thermix Corp., Greenwich, Conn., 1953-54; Rsch. Specialist, Lockheed Missiles and Space Co., Sunnyvale, Calif., 1956–. Mem.: Am. Astronautical Soc.; Inst. of Radio Engrs.; Acoustical Soc. of Am.; Am. Rocket Soc.; British Interplanetary Soc.; A.A.A.S.; Zeta Psi. Contbr. to: Jour. of Astronautical Scis. Serv. Rec.: U.S.A.F., 1954-56. Areas of Rsch.: Attitude Control of Satellites and Space Vehicles.



DECKER, Donald Gilmore (Ph.D.), Dean of the Coll., Prof. of Sci., Colo. State Coll., Greeley, Colo. Home Add.: 1427 Glenmere Rd., Greeley, Colo. SCIENCE EDUCATION, ZOOLOGY. b. Elizabeth, Colo., Jan. 7, 1914. s. Sidney and Nellie (Gilmore) F. Edn.: B.S., Eastern Mich. Coll., 1935; M.A., Colo. State Coll., 1937; Ph.D., Columbia Univ., 1943. Hon. Deg.: Sc.D., Mich State Normal Coll., 1951. m. 1st, Doris Ritter, Dec. 23, 1937 (dec., 1953). 2nd m., Doris Stricklan. c.: Mrs. Judith Carol Gilbert, Exp.: Rsch. Assoc., Columbia Univ., 1940-43; Chmn., Sci. Div., Colo. State Coll., 1948-54; Dean of the Coll. and Prof., Sci., ibid., 1955–. Hon. Pos.: Pres., Natl. Sci. Tchrs. Assn., 1959. Mem.: Natl. Sci. Tchrs. Assn.; Natl. Assn. for Rsch. in Sci. Tchng.; Natl. Edn. Assn.; Colo. Edn. Assn.; Colo.-Wyo. Acad. of Sci.; Lambda Sigma Tau; Sigma Phi Epsilon; Rotary. Author: L. W. Singer Science Series, Grades 1 Through 9, Co-author, 1947 Contbr. to: Phys. Today; N.E.A. Jour.; The Sci. Tchr.; Jour. of Bact. Areas of Rsch.: Curriculum in Science.

de CAIRES, Robert Percy Francis (M.D.), Admin. Dir., Clinical Investigation, Parke-Davis Rsch. Labs., 2800 Plymouth Rd., Ann Arbor, Mich. Home Add.: 700 Avon Rd., Ann Arbor, Mich. MEDICAL ADMINISTRATION. b. British Guiana, May 13, 1914. s. Francis and Josephine (Gonsalves) d. Edn.: M.B., Ch.B., Univ. of Edinburgh, Scotland, 1938; M.D., ibid., 1950; M.P.H., Johns Hopkins Univ., 1948. Hon. Deg.: M.R.S.H., Roy Soc. Health, London, 1951. m. Daphne Fulton, 1947. Exp.: Chf., Occ. Health Serv., PAHO WHO, Washington, D. C., 1954-57; Representative, Pan Am. Health Org., World Health Organ., Caracas, Venezuela, 1957-59; Clin. Invest. Parke-Davis Rsch. Labs., Ann Arbor, Mich., 1959 –; Rsch. Cons., Univ. of Mich., 1961 . Mem.: A.A.A.S.; Am. Soc. Trop. Med. and Hyg.; Am. Pub. Health Assn.; Am. Ger. Soc.; Canadian Med. Assn.; British Med. Assn.; Royal Soc. Health; Royal Soc. Trop. Med. and Hyg.; Am. Rheum. Assn.; Alumni Assn., Johns Hopkins and Edinburgh Univ. Contbr. to: Am. Jour. Trop. Med. and Hyg.; Am. Jour. Hyg.; West Indian Med. Jour.; Puerto Rico Jour. Trop. Med. and Hyg. Gen. Int.: British Guiana Scholar, 1932; Rockefeller Foundation Fellow, 1944 and 1947-48. Areas of Rsch.: Chemotherapy.

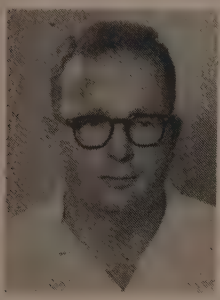
de CALLIES, Richard Noble, Lt. Comdr., U.S.N. (Ret.), Consult., Integrated Display and Control, Grad. Student, U.C.L.A. Home Add.: 17906 Doty Avenue, Torrance, Calif. AERONAUTICAL ENGINEERING. (Fluid Dynamics); HUMAN FACTORS (Man Machine Systems). b. Morristown, N. J., Nov. 5, 1920. s. Pers E. (dec.) and Elsie Mae (Botdorf) D. Edn.: B.S., Naval Postgrad. Sch., 1951; M.S., Stevens Inst. of Technol., 1952. m. Dorothy L. Greenhalgh, Feb. 7, 1943. c.: Carol Anne; Susan Elizabeth. Exp.: Naval Aviator, Patrol-A.S.W., Combat Operations, 1943-49; Hydrodynamics Project Officer, Bureau of Aeronautics, Martin Co., Baltimore, 1952-54; Flight Test Engr., Seaplane Projects, Flight Test Div., Patuxent River, Md., 1954-57; Program Officer, Integrated Display and Control, Program Dir., Army-Navy Instrumentation Program, 1959-62, Office of Naval Rsch. Hon. Pos.: Chmn., Working Group, Army-Navy Instrumentation Program, 1959; Chmn., O N R Presentation on Army-Navy Instrumentation Program, AGARD, Athens, 1959; Chmn., ONR Presentation on Army-Navy Instrumentation Program, IATA, Switzerland, 1960. Mem.: I.A.S.; H.F.S.; A.A.S. Author: Seaplane Testing Manual, 1957. Contbr. to: Am. Astronautic Soc.; Japanese Rocket Soc.; AGARD (Aeromed); Am. Univ. Inst. on Elect. Display. Serv. Rec.: U. S. Navy, 1942-62. Areas of Rsch.: Continue Efforts to Set Requirements and Explore Areas of Man Machine Inter-Relationships in Order to Create Effective Man Machine Systems Based on Man's Requirements, Capabilities and Limitations Regardless of Any Particular Vehicle; Optimization of Sensors, Computers, Displays and Controls.

DECKER, Fred William (Ph.D.), Assoc. Prof., Chmn., Atmospheric Sci. Br., Ore. St. Univ., Corvallis, Ore. Home Add.: 827 N. 31st St., Corvallis, Ore. METEOROLOGY. b. Portland, Ore., July 5, 1918. s. John William and Emma (Schlickaiser) D. Edn.: A.A., Multnomah Coll., 1937; B.S., Ore. St. Univ., 1940; M.S., N. Y. Univ., 1943; Ph.D., Ore. St. Univ., 1955. m. Charlotte E. Menker, Oct., 1942. c.: Charlotte Jane; William Allen; Lorraine Anne. Exp.: Observer, Forecaster, U. S. Weather Bur., Pendleton, Ore. and Portland, Ore., 1937; Observer, Forecaster, U. S. Weather Bur., Oakland and San Francisco, Calif., 1941; Instr., N. Y. Univ., 1941-44; Instr., Multnomah Coll., 1946; Instr., Asst. Prof., Assoc. Prof., Ore. St. Univ., 1946–; Visit. Prof., Swiss Fed. Institute of Technology, Zurich, 1962–. Hon. Pos.: Pres., Ore. Sect., A.A.P.T.; Pres., Ore. Br., Am. Met. Soc.; Pacific Northwest Regional Committee, Am. Geophys. Union. Mem.: A.M.S.; A.I. A.A.A.S., Fellow; Ore. Acad. of Sci.; A.W.W.A.; Acacia; Pi Epsilon; Sigma Pi Sigma; Sigma Xi; Toastmasters Internat.; Reserve Officers Assn.; Corvallis C. of C.; Boy Scouts of Am. Natl. Rifle Assn. Author: The Weather of Oregon, 1960; The Weather Workbook, 1958; Rudiments of Weather, 1956. Contbr. to: Sci.; Bull. of the A.M.S.; The Officer; The Toastmaster; The Sci. Tchr. Serv. Rec.: Reservist, 1937–; Capt. to Lt. Col., U.S. A.F., 1946–. Gen. Int.: Recipient of Grants from N.S.F. Others for Weather Rsch.; Radio Amateur, W7ANX. Areas

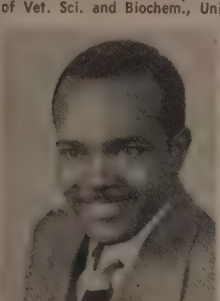
Rsch.: Precipitation Studies; Radar Meteorology; Atmospheric Ozone; Synoptic Meteorology (Mesometeorology).

DECKER, Floyd Archie (Mr.), Prof. and Chmn., Dept. of Engrng., Tex. Western Coll., El Paso, Tex. ENGINEERING. b. Dec. 15, 1898, Amazonia, Mo. s. Archie L. and Fannie B. (Snapp) D. Edn.: B.S., in Elect. Engrng., Kans. State Coll., 1927; E.E., ibid., 1932; M.S.E., Univ. of Mich., 1945. m. Dorothy L. Newton of Troy, Kans., May 15, 1918. d. Mr. and Mrs. Chas. E. Newton. c.: Virginia Louise (Mrs. Frank V. Whitney). Exp.: Testman, Gen. Elect. Co., 1927-28; Instr. in Elect. Engrng., Univ. of Ariz., 1928-33; Elect. Engr., United Verde Copper Co., Jerome, Ariz., Summer, 1929; Instr. in Engrng., Tex. Western Coll., El Paso, Tex., 1935; Asst. Prof. of Engr., ibid., 1935-42; Assoc. Prof., Engrng., ibid., 1942-47; Prof. and Chmn., Dept. of Engrng., ibid., 1947—; Prof. of Elect. Engrng., Univ. of N. Mex., 1943-45 (on leave from Tex. Western); Act. Dean of Engrng., Tex. Western Coll., 1948-49. Mem.: A.I.E.E.; A.S.E.E.; Phi Kappa Phi; Sigma Tau; Phi Kappa Tau. War Rec.: Inf., W.W. I, 1918-19. Hobbies: Hunting; Fishing. Listed in: W. W. in Engrng.

DEDOLPH, Richard R. (Ph.D.), Asst. Prof., Dept. of Horticulture, Mich. State Univ., E. Lansing, Mich. Home Add.: 526 Park Lane, E. Lansing, Mich. PLANT PHYSIOLOGY. b. St. Paul, Minn., Dec. 13, 1926. s. Frederick and Marietta (Simpson) D. Edn.: B.S., Univ. of Minn., 1953; M.S., Univ. of Maryland, 1959; Ph.D., ibid., 1959. Exp.: Asst. Prof., Univ. of Hawaii, Honolulu, Hawaii, 1958-60; Asst. Prof., Mich. State Univ., E. Lansing, Mich., 1960—. Mem.: Am. Soc. for Hort. Sci.; Am. Soc. Plant Phys.; Scandinavian Soc. of Plant Phys.; Botannical Soc. of Am.; A.A.A.S.; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta. Contbr. to: Science; Proc. of Am. Soc. for Hort. Sci.; Plant Physiol.; Botannical Gazette; Am. Jour. of Botany. Serv. Rec.: U.S.N., 1944-46. Areas of Rsch.: Plant Physiology; Biometry.



DEESE, Dawson Charles (Ph.D.), Rsch. Assoc., Biochemist, Depts. of Vet. Sci. and Biochem., Univ. of Wis., Madison 6, Wis. Home Add.: 206 Bernard Ct., Madison 5, Wis. BIOCHEMISTRY AND CHEMISTRY. b. Raleigh, N. C., Dec. 7, 1931. s. Craig and Carrie (Studivent) D. (both dec.). Edn.: B.S., A. and T. Coll. of N. C., 1952; M.S., Tuskegee Inst., 1954; Ph.D., Univ. of Wis., 1960. Exp.: Chem. Course and Lab. Instr., A. and T. Coll. of N. C., 1952; Chem. Instr., Tuskegee Inst., 1953; Carver Rsch. Fellow, ibid., 1952-54; Biochem. Rsch. Asst., Univ. of Wis., 1954-57, 1958-60; Biochem. Tchng. Asst., ibid., 1957-58; Rsch. Assoc., Dept. of Vet. Sci. and Biochem., Univ. of Wis., 1960—. Mem.: Am. Chem. Soc.; Phi Sigma Biol. Soc.; Am. Assn. Adv. Sci.; Sigma Xi; Am. Soc. Plant Physiol.; Alpha Phi Alpha. Contbr. to: Science; Nature; Jour. Agri. and Food Chem.; Phytopathol.; Phytopathol. Zeitschr. Areas of Rsch.: Biochemistry of Disease and Disease Resistance in Plants; Oxidative Enzymes and Product and Disease Resistance; Biological Activity of Chemically Modified Tobacco Mosaic Virus; Plant Growth Substances and Auxin Metabolism in Plants; Biochemical Studies of Bloat in Cattle.



DEFFNER, Gottfried, Georg, Johannes (Ph.D.), Sr. Rsch. Chemist, New England Nuclear Corp., Boston, Mass. Home Add.: 45 Willow St., Belmont, Mass. ANALYTICAL CHEMISTRY AND INSTRUMENTATION, CHEMISTRY OF PROTEINS, OF VEGETABLE TANNINS, OF NERVOUS TISSUE, OF NUCLEIC ACIDS; MASS SPECTROMETRY. b. Ausburg, Germany, May 9, 1910. s. Johannes and Maria (Mueller) D. Edn.: B.S., Univ. of Munich, Germany, 1942; M.S., Univ. of Erlangen, Germany, 1951; Ph.D., Univ. of Munich and Max Planck Inst. of Protein a Leather Rsch., Germany, 1954. m. Mechtild Ploeckl, Aug. 16, 1955. c.: Maria; Gisela; Thomas. Exp.: Rsch. Assoc., Max Planck Inst. of Protein a. Leather Rsch., Regensburg, Germany, 1949-56; Rsch. Assoc., Mass. Inst. of Tech., Cambridge, Mass., 1956-61; Sr. Rsch. Chem., New England Nuclear Corp., Boston, Mass., 1961—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Soc. of Sigma Xi. Contbr. to: Proc. Natl. Acad. Sci.; Nature; Biochim. Biophys. Rs. Comm.; Chemische Berichte; Biochim. Biophys. Acta. Areas of Rsch.: Application of Mass Spectrometry in Amino Acid Chemistry; Biosynthesis of Radioactive Compounds.

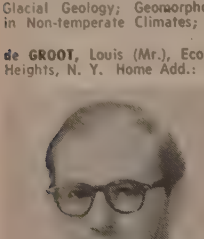
DEFFTERIOS, Margaret N. (Ed.D.), Pub. Schl. Adminr., San Francisco Unified Schl. Dist., 135 Van Ness Ave., San Francisco 2, Calif. Home Add.: 638 36th Ave., San Francisco 21, Calif. BIOLOGICAL SCIENCE; SCIENCE TEACHING IN THE PUB. SCHOOLS; SCIENCE INTERESTS OF CHILDREN AND YOUTH. b. San Francisco, Calif., April 2, 1916. d. Nicholas J. and Kalliop (Valsamy) D. Edn.: A.B., San Francisco St. Coll., 1939; M.A., Coll. of the Pacific, 1945; Ed.D., Univ. of Calif., 1958. Exp.: Tchr., Pub. Schls. of Calif., 1939-43; Instr. in Ed., San Francisco St. Coll., summer, 1944; Asst. Curr. Coordinator, Stockton Unified Schl. Dist., 1943-44; Asst. Prof., Edn., Humboldt St. Coll., summer, 1959; Consult. in Elem. Edn., Cornell Univ., summer, 1958; Pub. Schl. Adminr., San Francisco Unified Schl. Dist., 1950—; Asst. Prof. of Edn., Sacramento St. Coll., summer, 1961; Asst. Prof. of Edn., Univ. of the Pacific, summer, 1962. Mem.: Life Mem., Pi Lambda Theta; Life Mem., Am. Assn. Adv. Sci.; Life Mem., N.E.A.; Calif. Edn'l. Rsch. Assn.; Assn. of Field Adminrs.; Natl. Council of Admin. Women in Edn.; Calif. Congress of Parents and Tchrs.; Natl. Congress of Parents and Tchrs. General Int.: Presentation of Rsch. Paper at the Annual Spring Conf. of Calif. Edn'l. Rsch. Assn., Bakersfield, Calif., 1960; Fellowship in Intercultural Edn., Univ. of Calif., Los Angeles. Areas of Rsch.: Science Interests of Intellectually Gifted Children in the Elementary School; The Elementary School Curriculum; The Slow-Learner in the Elementary School; Reading Disabilities of Emotionally Disturbed Children in the Elementary School; School Administration and the Public Relations Program; Pupil-Teacher Relationships; Science Needs of Teachers.

DEGERING, Ed(ward) F(ranklin) (Ph.D.), Hd., Radiation Chem. Lab., Pioneering Rsch. Div., QM R&E Command, QM R&E Center, Natick, Mass. Home Add.: 26 Robinhood Rd., Natick, Mass. RADIATION CHEMISTRY, ORGANIC SYNTHESES, ORGANIC NITROGEN COMPOUNDS, CHEMISTRY OF THE CARBOHYDRATES. b. Dodge City, Kans., May 17, 1898. s. Irving Harrison and Talitha Cumi (Cowgill) D. Edn.: B.A., Union Coll., 1924; M.S., Univ. of Neb., 1929; Ph.D., ibid., 1930. m. Clara Mae Ogden, Aug. 12, 1921. c.: John Edward (dec.). Exp.: Prof. of Math., Canadian Jr. Coll., 1919-20; Contracting Business with Father, Seattle, Wash., 1920-21; Prin., Oriens H. S., Seattle, 1921-23; Grad. Asst. and Fellow, Univ. of Neb., 1924-30; Instr., Purdue Univ., 1930-31; Asst. Prof., ibid., 1931-38; Assoc. Prof., ibid., 1938-42; Prof., ibid., 1942-49; Asst. Chmn., Chemistry and Chemical Engrng., Armour Rsch. Foundation, 1949-50; Rsch. Consultant, Miner Labs., Chicago, 1950-51; Rsch. Mgr., Buckman Labs., Inc., Memphis, 1951-53; Hd., Radiation Chem. Lab., Pioneering Rsch., QM R&E Command, QM R&E Center, 1953—. Hon. Pos.: Vice-Pres., Indiana Acad. Sci., 1940-41; Pres., Indiana Acad. Sci., 1945-46; Pres., Indiana Chem. Soc., 1940; Chmn., Medicinal Div., 1945-46; Past Section Chmn. and Counsellor, Purdue Section; Pres., A.A.A.S. Acad. Conf., 1945-46; Secy., Chem. Section, A.A.A.S., 1946—. Mem.: Am. Chem. Soc.; Indiana Acad. of Sci.; Am. Inst. of Chemists; Alpha Chi Sigma; Phi Lambda Upsilon; Sigma Xi; Lions Internatl. Author: An Outline of Organic Chemistry, 1937; The Quadri-Service Manual of Organic Chemistry, 1938; The Work Book of Fundamental Organic Chemistry, 1941; Fundamental Organic Chemistry, 1942; An Outline of the Chemistry of the Carbohydrates, 1943; An Outline of Organic Nitrogen Compounds, 1945. Contbr. to: Jour. Am. Chem. Soc.; Jour. Am. Pharmaceutical Soc.; Jour. of Organic Chem.; Sic.; The Chemist; Radiation Rsch.; Proceedings of A.S.T.M.; Jour. of Am. Ceramic Soc.; Radiation Effects Symposium, #4. Gen. Int.: Holder of Over a Score of Patents on Organic Syntheses and on Applications of Ironizing Radiation. Areas of Rsch.: Irradiation Factor-Dependency of Vinyl Monomer Systems.

DeGROFF, Harold Miller, Jr. (Ph.D.), Hd., Schl. of Aeronaut. and Engrng. Scis., Purdue Univ., Lafayette, Ind. Home Add.: R.R. 10, Lafayette, Ind. AERONAUTICAL ENGINEERING. b. Toledo, Ohio, May 10, 1920. s. Harold Miller, Sr. and Marjorie (Lantz) D. Edn.: B.A.E., Rensselaer Polytech. Inst., 1946; M.S., Calif. Inst. of Tech., 1947; A.E., ibid., 1948; Ph.D., ibid., 1949. m. Sarah Meek, Aug. 14, 1947. c.: Thomas Dudley; Katherine Harriett; Joseph Edward; Mary Barbara; Judith Helen. Exp.: Engr., Aeroprods. Div., GMC, Vandalia, Ohio, 1947; Engr., Fairchild Airplane Co., Oak Ridge, Tenn., 1949-51; Prof., Purdue Univ., 1951—. Mem.: Am. Rocket Soc.; Inst. of the Aerospace Scis.; Am. Soc. for Engr. Edn.; Sigma Xi; Tau Beta Pi; Sigma Gamma Tau; Rotary. Contbr. to: Jour. of the Aerospace Scis.; Jour. of Fluid Mechs.; Aeronaut. Engrng. Rev.; Jour. of Engrng. Edn.; Jet Propulsion Jour. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Aerodynamics; Propulsion; Airplane and Missile Design.

DE GOES, Louis, Col., U.S.A.F., Box 9368, Wright-Patterson AFB, Ohio; Chief Terrestrial Scis. Lab., Geophysics Rsch. Dir., Office of Aerospace Rsch., Hanscom Field, Bedford, Mass. Home Add.: 911 Blue Rock Rd., Xenia, Ohio. EARTH SCIENCES. b. Honolulu, Hawaii, June 23, 1916. Edn.: Geol. Engr., Colo. Schl. of Mines, 1941; M.S., Stanford Univ., 1950. m. Allison V. Hammond, June 3, 1944. c.: Michael; John; Allison. Exp.: Assoc. Prof., U.S.A.F. Inst. of Tech., Wright-Patterson AFB, Ohio, 1950-53; Rsch. Assoc., Rsch. Studies Inst., The Air Univ., 1953-57; Chief Terrestrial Scis. Lab., Geophysics Rsch. Dir., Office of Aerospace Rsch., Hanscom Field, Bedford, Mass., 1957—. Mem.: A.A.A.S.; Am. Geophys. Union; Acad. of Sci.; Geol. Soc. of Am.; Soc. of Am. Military Engrs.; Theta Tau; RESA; Alpha Tau Omega; Boy Scouts of Am. Serv. Rec.: U.S.A.F., 1941—. Areas of Rsch.: Glacial Geology; Geomorphology; Engineering Geology; Survival in Non-temperate Climates; Polar Rsch.

de GROOT, Louis (Mr.), Econ. Analyst, P. O. Box 344, Yorktown Heights, N. Y. Home Add.: Hopewell Junction, N. Y. ECONOMICS.



b. Amersfoort, Netherlands, June 28, 1929. s. Meijer and Sophia (Swaab) D. Edn.: B.S., Columbia Univ., 1956; M.A., ibid., 1958; Netherlands Schl. of Economics, 1958-59. m. Barbara Brenner, June 7, 1956. c.: Marc; David. Exp.: Rsch. Asst., Natl. Bur. of Econ. Rsch., Inc., N. Y., N. Y., 1956-58, 1959-60; Econ. Analyst, Internatl. Business Machines Corp., Yorktown Heights, N. Y., 1960—. Mem.: Am. Econ. Assn.; Am. Statistical Assn.; The Inst. of Mgt. Scis.; A.A.A.S.; Am. Acad. of Polit. and Social Scis. Serv. Rec.: U. S. Army, 1951-53.

de HALAS, Don Richard (Ph.D.), Sr. Engr., Gen. Elec. Co., Richland, Wash. Home Add.: 1812 W. 12th St., Kennewick, Wash.

RADIATION EFFECTS ON MATERIALS. b. San Francisco, Calif., Mar. 16, 1930. s. Andrew and Delorys (Thatcher) d. Edn.: B.S., Univ. of Calif., 1952; M.S., Univ. of Idaho, 1955; Ph.D., Oregon St. Coll., 1960. m. Roberta Zulauf, 1955. c.: Jeffery S.; Jay L.; Molly S. Exp.: Engr., Gen. Elec. Co., Richland, Wash., 1952-58; Supvr., ibid., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Kappa Phi; Sigma Xi; Sigma Pi Sigma; Alpha Chi Sigma. Contbr. Author: Nuclear Graphite, 1962; Proceedings of Fifth Conference on Carbon, 1962; Proceedings of 2nd U. N. Conference on Peaceful Uses of Atomic Energy, 1959. Areas of Rsch.: Corrosion; Radiation Damage to Organic Liquids; Radiation Damage to Graphite; Gas Reactions with Graphite.

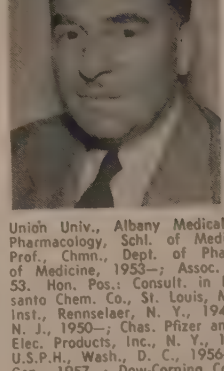
DEHMELT, Hans Georg (Dr.rer.nat.), Prof., Dept. of Phys., Univ. of Wash., Seattle, Wash. Home Add.: 1425 Fifth Ave. N., Seattle, Wash. RADIOFREQUENCY SPECTROSCOPY.

b. Goerlitz, Germany, Sept. 9, 1922. s. Georg and Asta (Dehmelt) D. Edn.: Abiturium, Gymn. z. Grauen Kloster, Berlin, 1940; B.S., Goettingen Univ., Germany, 1946; M.S., ibid., 1949; Ph.D., ibid., 1950. Exp.: Rsch. Fellow, Goettingen Univ., 1950-52; Rsch. Assoc., Duke Univ., N. C., 1952-55; Visit. Asst. Prof., Univ. of Wash., 1955-56; Asst. Prof., ibid., 1956-57; Assoc. Prof., ibid., 1957-61; Prof., ibid., 1961—. Mem.: Fellow, Am. Phys. Soc.; Am. Assn. Phys. Tchrs.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Phys. Rev.; Phys. Rev. Letters; Jour. of Chem. Phys.; Jour. De Physique Et LeRadium; Zeitscheift fuer Physik; Naturwissenschaften; Am. Jour. of Phys. Gen. Int.: First Nuclear Quadrupole Resonance Experiments; Light Modulation by Precessing Atoms; Spin Resonance of Free Electrons. Areas of Rsch.: Nuclear Quadrupole and Magnetic Resonance, Paramagnetic Resonance; Optical Pumping; Polarization of Ions; Ion Traps; Atomic Collisions; Plasma Physics.

DEHNBOSTEL, Nellie Gwynne (Mrs), Assoc. Prof., Youngstown Univ., Youngstown, Ohio. Home Add.: 178 Iddings, N.E., Warren, Ohio. PARASITOLOGY, REGENERATION. b. Steubenville, Ohio, Jan. 16, 1899. d. Joseph and Nellie May (Howell) D. Edn.: B.M., Dana Musical Inst., 1922; M.Mus., Ibid., 1936; A.B., Kent St. Univ., 1939; B.S., ibid., 1940; M.A., Ibid., 1942. m. Raymond H. Dehnbostel, June 17, 1926. Exp.: Tchr. of Theory, Dana Musical Inst., Warren, Ohio, 1922-31; Music Tchr., Geauga and Trumbull Co., Ohio, 1931-34; Music Tchr., Dana Musical Inst., 1934-41; Instr., Dana Schl. of Mus., Youngstown Univ., 1941—; Asst. Dean, ibid., 1948-59; Assoc. Prof., Youngstown Univ., 1942—. Mem.: Am. Soc. of Parasitologists; A.A.A.S.; Am. Guild of Organists; Composer, Authors, Artists of Am.; Coll. Music Soc.

DEHNBOSTEL, Raymond Henry (Mr.), Asst. Prof. of Psychology, Youngstown Univ., Youngstown, Ohio. Home Add.: 178 Iddings, N.E., Warren, Ohio. CLINICAL PSYCHOLOGY. b. Ridgeville Corners, Ohio, June 6, 1901. s. Ernest A. and Catherine (Imbrook) D. Edn.: B.Mus., Dana Music Inst., 1926; M.Mus., ibid., 1938; B.S., Kent St. Univ., 1940; M.A., ibid., 1942. m. Nellie Gwynne, June, 1926. Exp.: Tchr. of Music, Trumbull and Geauga Co., Ohio, 1926-42; Asst. Supt., Geauga Co., Ohio, 1945-50; Tchr. of Mus., Youngstown Univ., Youngstown, Ohio, 1945-58; Asst. Prof., ibid., 1958—. Mem.: A.A.A.S.; Coll. Mus. Soc.; Composers, Authors and Artists of Am.; Coll. Band Dirs. Assn.; Music Educators Natl. Conf. Serv. Rec.: AUSAF, 1942-45.

DEICHMANN, William Bernhard (Ph.D.), Prof. and Chmn., Dept. of Pharmacology, Univ. of Miami Schl. of Med., Coral Gables, Fla. Home Add.: 1931 S. Bayshore Dr., Miami 33, Fla. PHARMACOLOGY-TOXICOLOGY. b. Kiel, Germany, Sept. 7, 1902. s. Wilhelm J. and Mathilde (Bollenhagen) D. Edn.: A.B., Western Reserve Univ., 1932; M.S., ibid., 1934; Ph.D., Univ. of Cincinnati, Schl. of Med., 1939. m. Hedy Gruebler, Aug. 4, 1928. c.: Herbert; Herta. Exp.: Asst. in Biochem., Western Res. Schl. of Med., 1927-34; Asst. to Dir. and Jr. Pharmacologist, Dupont Haskell Lab. of Industrial Toxicology, Wilmington, Del., 1934-37; Asst. and Grad. Student, Univ. of Cincinnati Schl. of Med., Kettering Lab., 1937-39; Instr. in Pharmacology ibid., 1943-47; Hd. Div. of Toxicology, ibid., 1939-47; Assoc. Prof. and Hd. of Pharmacology,



Union Univ., Albany Medical Coll., N. Y., 1947-50; Prof. of Pharmacology, Schl. of Medicine and Pharm., ibid., 1950-53; Prof., Chmn., Dept. of Pharmacology, Univ. of Miami Schl. of Medicine, 1953—; Assoc. Chief Examiner, Natl. Bd., 1948-53. Hon. Pos.: Consult. in Pharmacology and Toxicology: Monsanto Chem. Co., St. Louis, Mo., 1939—; Sterling-Winthrop Rsch. Inst., Rensselaer, N. Y., 1947-53, 1958—; Standard Oil Co. of N. J., 1950—; Chas. Pfizer and Co., Inc., N. Y., 1955—; Sylvania Elec. Products, Inc., N. Y., 1955—; Air Pollution Med. Program, U.S.P.H., Wash., D. C., 1956—; Med. Rsch. Br. Off., of Surgeon Gen., 1957—; Dow-Corning Corp., Midland, Mich., 1949-51, 1957—; U.S.A.F., Rome Air Development, Rome, N. Y., 1957—; Mem. of Subcom. on Health and Sci., House Interstate and Foreign Commerce, Washington, 1957; Chmn. of "Aramite Comm.," Natl. Acad. Sci., 1958. Mem.: Fellow, Royal Soc. of Med. (Eng.); Fellow, Soc. Adv. Sci.; Fellow, N. Y. Acad. of Sci.; Fellow, Ohio Acad. of Sci.; Sigma Xi; Am. Soc. for Pharmacol. and Exptl. Therapeutics; Co-Founder, Soc. of Toxicology, 1961; Am. Industrial Hygiene Assn.; N. F. State Soc. for Medical Research; Honorary Advisor, Union Americana de Medicina del Trabajo; Pan Am. Medical Assn.; Oceanographic Soc.; U. S. Naval Inst. (Assoc. Mem.); Capt., U. S. Coast Guard Auxiliary, 9th Naval Dist., 1940-42; Founder and Commodore, Univ. Yacht Club; Navigator, U. S. Power Sqds. Author: The Toxicity of DDT, 1950. Co-author: Signs, Symptoms and Treatment of Certain Acute Intoxications, 1955, 1958. Contbr. to: Industrial Hyg. and Toxicol.; Ency. of Chem.; Assoc. Editor, Industrial Med. and Surg.; Assoc. Editor, Applied Pharmacol. and Toxicol.; and others. Areas of Rsch.: Toxicology; Pharmacology; Bladder Carcinogens; Microwave Radiation.

DEITRICK, John English (M.D.), Dean, Cornell Univ. Med. Coll., 1300 York Ave., New York 21, N. Y. Home Add.: 69 Rockledge Rd., Bronxville, N. Y. INTERNAL MEDICINE. b. Watsontown, Pa., Apr. 13, 1905. s. Edgar and Capitola (Heiny) D. Edn.: B.S., Princeton Univ., 1929; M.D., Johns Hopkins Univ., 1933. m. Dorothy Geib, 1936. c.: Sarah; John; William. Exp.: Intern, Johns Hopkins Hosp., 1933-34; Asst. Res. in Med., N. Y. Hosp., 1934-36; Instr. in Med., Cornell Univ., 1936-42; Res. Physician, N. Y. Hosp., 1936-38; Asst. Attending Physician, ibid., 1938-43; Assoc. Attending Physician, ibid., 1943-52; Asst. Prof. of Clin. Med., Cornell Univ., 1942-44; Assoc. Prof., ibid., 1944-52; Visiting Physician and Dir. of the Second Cornell Med. Div., Bellevue Hosp., 1946-49; Attending Physician, Jefferson Med. Coll. Hosp., 1952-57; Magee Prof. of Med. and Hd. of Dept., Jefferson Med. Coll., 1952-57; Visit. Physician, Second Cornell Med. Div., Bellevue Hosp., 1957—; Attending Physician, N. Y. Hosp., 1957—; Dean, Prof. of Med., Cornell Univ. Med. Coll., 1957—. Mem.: Am. Coll. of Phys.; Assn. of Am. Physicians; N. Y. Acad. of Med.; Alpha Omega Alpha; Nu Sigma Nu; Phi Beta Kappa; Sigma Xi. Author: Medical Schools in the U. S. at Mid-Century, co-author, Berson, 1953. Areas of Rsch.: Med. Edn.

DeKAY, Henry George (Ph.D.), Prof. of Pharm., Purdue Univ., Lafayette, Ind. INDUSTRIAL PHARMACY. b. Randolph, Neb., Aug. 14, 1898. s. John and Lotta May (Zimmer) D. Edn.: A.B., Wayne S. T. C., Neb., 1923; B.S., Univ. of Neb., 1928; M.S., Univ. of Chicago, 1930; Ph.D., Purdue Univ., 1934. m. Eva May Roberts, dau. of Chambers, Neb., July 2, 1920. d. Charles W. and Jane Wyant Robertson. c.: Cleonice Jeanne. Exp.: Coach of Athletics, Tilden, Neb., 1920; Coach and Prin. of H. S., Wausa, Neb., 1921;

Prin. of H. S., Stuart, Neb., 1922; Supt. of Schls., Stuart, Neb., 1923-27; Instr. in Pharm., Purdue Univ., 1928-33; Asst. Prof. in Pharm., ibid., 1933-38; Assoc. Prof. in Pharm., ibid., 1938-43; Prof. of Pharm., ibid., 1943—. Hon. Pos.: Secy., Alpha Kappa Lambda Frat., 1945-47; Natl. Pres., Alpha Kappa Lambda Frat., 1947-51. Mem.: Phi Lambda Upsilon; Sigma Xi; Am. Pharm. Assn.; Kappa Psi; Rho Chi; Alpha Kappa Lambda; Alpha Phi Omega; Fellow, A.A.A.S.; A.A.U.P.; Optimist; U. S. Pharmacopoeial Revision Com. and The Enhancement Panel in Pharmacy Advisory to the Chmn. of Rev., 1950-60; Ind. Pharm. Assn.; Chmn., Professional Relations Com.; The Am. Soc. of Hosp. Pharm.; Ind. Acad. of Sci. Author: Qualitative Analysis for Students of Pharmacy and Medicine. Collaborator Text: Am. Pharm., I; Pharmaceutical Compounding and Dispensing. Contbr. to: Jour. of Am. Pharm. Assn. Ph.D. Dissertation: An Assay of Hyoscyamus. War Record: Service, 1918. Travel: U. S.; Can. Hobbies: Stamps; Coins; Movies. Listed in: A.M.S.; W. W. in Am.; W. W. in Central States; Who Knows—and What; W. W. in Am. Edn. Special Int.: Pharmacy and Chem.

DE LA CRUZ, Montano F., Process Engr., Space Technology Lab., Inc., Los Angeles 45, Calif. Home Add.: 218 Manhattan Ave., Apt. E, Hermosa Beach, Calif.

SOLID STATE ELECTRONIC DEVICES, AND VACUUM TECHNOLOGY. b. Lingayen, Pang., Philippines, Mar. 15, 1912. s. Claudio and Catalina (Flores) D. Edn.: B.S., Univ. of Chicago, 1935. m. Betty Jane Clark, 1938. c.: Michael T.; Lynn; Shirley J. Exp.: Hd., Fine Technique Dept., Coleman Instruments, Inc., Maywood, Ill., 1939-56; MTS, Hughes Aircraft Co., Culver City, Calif., 1956-60; Process Engr., Space Tech. Lab., Inc., Los Angeles, Calif., 1960—. Mem.: Am. Chem. Soc.; A.A.A.S. Gen. Int.: Certificate of Appreciation, Los Angeles Pub. Schls. for Taking Part in Industry-School Program, 1959. Areas of Rsch.: Crystal Growth; Design of Glass Electrodes for Micro-pH Determination; Diffraction Grating Casting; Electroluminescence; Superconductivity.

DELANEY, Matthew Sylvester (Rev.), Vice-Prin., Pius X H. S., Downey, Calif. Home Add.: 12348 Paramount Blvd., Downey, Calif. MATHEMATICS. b. Ireland, Nov. 26, 1927. s. Joseph C. and Elizabeth (Bergin) D. Edn.: B.A., Immaculate Heart Coll., 1958; M.S., Univ. of Notre Dame, Ind., 1960. Exp.: Tchr., Math., Physics, Pius X H. S., Dewney, Calif., 1955—; Vice Prin., ibid., 1960—; Part-time Lectr. in Math., Immaculate Heart Coll., 1962—. Hon. Pos.: Chmn., Math. and Sci. Dept., Pius X H. S. Mem.: A.A.A.U.S.; M.A.A.; Natl. Coun. of Math. Tchrs.; Calif. Coun. of Math. Tchrs.; Natl. Sci. Tchrs. Assn. Gen. Int.: N.S.F. Grant, Univ. of Notre Dame, Ind., 1960; also, Princeton Univ., 1961. Areas of Rsch.: Abstract Algebra, Theory of Transcendental Numbers.

DeLAMATER, Edward Doane (M.D.), Rsch. Prof., Schl. of Med., Univ. of Pa., Philadelphia 4, Pa. Home Add.: 175 Matson Ford Rd., Gulph Mills, Conshohocken, Pa. CYTOLOGY OF MICROORGANISMS. b. Plainfield, N. J., Jan. 24, 1912. s. Van Ness and Jacqueline (Newton) D. Edn.: M.A., Oberlin Coll., 1932; M.A., Johns Hopkins Univ., 1937; Ph.D., Columbia Univ., 1941; M.D., ibid., 1942. m. 1st, Jean Edgar, Jan. 31, 1943; 2nd, Margaret Henderson Turner, Feb. 25, 1961. c.: Gretchen; Peter; David; Margaret Murray Maynadier. Exp.: Asst. in Botany, Johns Hopkins Univ., 1933-36; Asst. in Dermatology, Columbia Univ., 1936-42; Mycologist for Vanderbilt Clinic, ibid., 1936-42; Fellow in Dermatology, Mayo Found., Univ. of Minn., 1946-47; Asst. Prof. in Bacteriol. and Mycology, ibid., 1947-48; Mycologist, Mayo Clinic, Rochester, Minn., 1946-48; Assoc. Research Professor, University of Pennsylvania, 1948-51; Res. Prof., ibid., 1951—; Dir., Section on Cytology and Genetics, ibid., 1953—; Consultant to Lab., Smith Kline and French Lab., Philadelphia, Pa., 1948-51; Consultant, Office of the Surg. Gen., ibid., 1948—; Consultant, Pepper Lab., Univ. Hosp., ibid., 1949—; Consultant in Microbiol., Veterans Admin., ibid., 1954—; Consultant in Microbiol. and Mycology, Skin and Cancer Hosp. of Philadelphia, Pa., 1958—. Hon. Pos.: Mem., Rsch. Rev. Panel, Natl. Multiple Sclerosis Soc.; Mem., Med. Advisory Bd., Natl. Multiple Sclerosis Soc., East. Pa. Chap. Mem.: Am. Acad. of Microbiol.; Am. Assn. for Cancer Rsch.; A.A.A.S.; Am. Gnt. Assn.; Am. Med. Assn.; Am. Soc. of Human Genetics; Biol. Stain Comm.; Botan. Soc. of Am.; Electron Microscope Soc. of Am.; Torrey Bot. Club; Am. Soc. for Cell Biol. Contbr. to: J. Bact.; Exptl. Cell Res.; J. Histochem. Cytochem.; Science; Am. J. Botany; Mycologia; Am. J. Syph., Gonor. and Ven. Dis.; J. Invest. Derm.; Stain Tech.; J. Exptl. Med.; J. Gen. Microb.; Ann. Rev. Microbiol. Serv. Rec.: U.S.A.F., 1943-46. Areas of Rsch.: Med. Mycology, Microbiol. Dermatology.

DELANEY, Arthur A. (Mr.), Instr. of Soc. Studies, Geography, New Hyde Park Mem. H. S., 500 Leonard Blvd., New Hyde Park, N. Y. Home Add.: 12 Ridge Dr., E., Flower Hill, Roslyn, N. Y. GEOGRAPHY-ECONOMIC AND HUMAN. b. Great Neck, N. Y., Sept. 26, 1931. s. Arthur A., Sr. and Palmyra D. Edn.: B.S., St. Univ. of N. Y., 1953; M.A., Columbia Univ., 1956; Prof. Dip., 1960. Exp.: Tchr., Roxbury Central H. S., Roxbury, N. Y., 1953-54; Instr., U. S. Army Signal Schl., Fort Monmouth, N. J., 1954-56; Instr. of Soc. Studies, Geog., New Hyde Park Mem. H. S., 1956—. Hon. Pos.: Mem. Exec. Comm. and Ambassador-Chmn., Tchrs. Coll., Columbia Univ. Alumni Fund Comm.; Rsch. Assoc., Columbia Univ. Link Fdtn. Arctic Geog. Proj., 1960. Mem.: Assn. of Am. Geographers; Natl. Coun. for Geographic Edn.; Ill. Geographical Soc.; Royal Canadian Geographical Soc.; Natl. Geographical Soc.; Natl. Coun. for the Soc. Studies; Phi Delta Kappa; Kappa Delta Pi; Phi Eta Sigma. Author: Inventory of Geographic Source Materials, 1960. Contbr. to: Profl. Geographer; Jour. of Geog.; Clearing House; Schl. Activities; H. S. Jour.; Bookmark; Balance Sheet; N. Y. State Edn.; Peabody Jour. of Edn.; Soc. Edn.; The Soc. Studies; Tchrs. Coll. Jour.; Grade Tchr.; Core Tchr.; Exchange; Edn.; Sci. Edn.; Schl. Sci. and Math.; Sci. News; Child Life; Soc. Studies News; Viewpoint; Foreign Edn'l. Periodicals. Author: Inventory of Source Materials, 1960. Serv. Rec.: U. S. Army Signal Corps, Korean War. Hobbies: Philately; Photography. Listed in: Dir. of Am. Geographers; W.W.A.E. Areas of Rsch.: Geographic Education with Emphasis on Materials and methods of Teaching, Particularly the Use of Audio-Visual Materials in Geographic Instruction.

DELANO, Clarissa (Miss), Assoc. Prof. of Polit. Sci. and Sociol., Ark. State Coll., Jonesboro, Ark. POLITICAL SCIENCE. b. Lee Park, Neb., Sept. 7, 1893. d. W. S. and Ada (Crawford) D. Edn.: A.B., Univ. of Nebr., 1917; M.A., ibid., 1948. Exp.: Faculty, Ark. State Coll., 1946—. Mem.: A.A.U.P.; Am. Polit. Assn.; A.A.A.S.; Am. Sociol. Soc.; Alpha Delta Pi; Delta Kappa Gamma; Pi Gamma Mu; Pi Sigma Alpha; A.A.U.W.; League of Women Voters; Altrusa; Twentieth Century Club. Author: Study of U. S. Constitution, 1920. Contbr. to: League of Women Voters. Past Editor: A Study of Jonesboro City Government. Gen. Int.: Delta Gamma Fellowship for study at Oxford and University of Paris, 1958. Listed in: Who's Who Among Am. Women.

DELAPLAINE, Richard Platt (M.D.), Asst. Clinical Dir., Philadelphia State Hospital, Philadelphia 14, Pa. Home Add.: 17 Longford St., Philadelphia 36, Pa. NEUROPSYCHIATRY. b. Philadelphia, Pa., May 21, 1924. s. Roy W. and Ellen (Watson) D. Edn.: B.A., Univ. of Mich., 1947; M.D., Temple Univ. Schl. of Med., 1951. m. Elsie King, Aug. 25, 1961. c.: Duane. Exp.: Intern, French Hosp., San Francisco, Calif., 1951-52; Resident, Phila. General Hosp., Phila., Pa., 1953-55; Resident, Phila. State Hospital, Phila., Pa., 1956-59; Asst. Clinical Dir., Phila. State Hosp., Phila., Pa., 1959—. Mem.: Am. Med. Assn.; Pa. Med. Soc.; Phila. Co. Med. Soc.; Am. Psychiatric Assn.; Acad. of Religion and Mental Health; Mental Health Assn. of Southeastern Pa.; A.A.A.S.; Chi Phi; Phi Chi. Serv. Rec.: USAAF, 1942-45. Areas of Rsch.: Schizophrenia.

DeLANO, Richard Herbert (Mr.), Dir., Diodes, Inc., Canoga Park, Calif. Home Add.: 18200 Karen Dr., Tarzana, Calif. SYSTEMS ANALYSIS, SATELLITE AND ORBITAL STUDIES, ELECTRONICS, STATISTICS. b. Los Angeles, Calif., Aug. 13, 1925. s. Ralph Grant and Mary Louise (Hinesley) D. Edn.: B.S., Calif. Inst. of

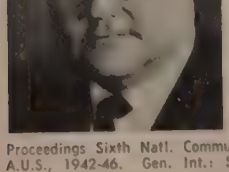
Technol., 1946; M.S., ibid., 1946. m. Evy Mastor, Mar. 2, 1952. c.: Ronald Philip; Eric Richard. Exp.: Sr. Staff Physicist, Hughes Aircraft, Culver City, Calif., 1946-55; Exec. Vice-Pres., Systems Labs. Corp., Sherman Oaks, Calif., 1956-59; Gen. Mgr., S. L. Div., Electronic Specialty Co., Los Angeles, Calif., 1959-61; Dir., Diodes, Inc., Canoga Park, Calif., 1959—. Hon. Pos.: Chmn., Los Angeles P. G. on Information Theory, I.R.E. Mem.: A.A.A.S.; R.E.S.A.; Tau Beta Pi. Author: Guided Missile Engineering, 1958. Contbr. to: Proc. I.R.E. Serv. Rec.: U.S.M.C.R., 1943-45.

DELAUER, Richard Daniel (Ph.D.), Assoc. Dir., Ballistic Missile Prog. Mgmt., Prog. Dir., Titan Weap. Sys., P.O. Box 95001, Space Technol. Lab., Inc., Los Angeles 45, Calif. Home Add.: 534 E. 39 Street, San Bernardino, Calif. AERONAUTICS, MATHEMATICS, NUCLEAR ENGINEERING. b. Oakland, Calif., Sept. 23, 1918. s. Michael and Matilda (Giambruno) D. Edn.: A.B., Stanford Univ., 1940; B.S., Naval Post Grad. Schl., 1949; A.E., Calif. Inst. of Technol., 1950; Ph.D., ibid., 1953. m. Ann Carmichael, Dec. 6, 1940. c.: Richard Daniel, Jr. Exp.: Dir., Vehicle Devel. Lab., Space Technol. Labs., Los Angeles, Calif., 1958-60; Dir., Titan Weapon System, ibid., 1960—; Assoc. Dir., Ballistic Missile Program Mgmt., ibid., 1961—. Hon. Pos.: Mem., N.A.S.A. Rsch. Advisory Comm. on Nuclear Energy Systems. Mem: Am. Rocket Soc.; Inst. of Aeronautical Sci.; A.A.A.S.; Sigma Xi; Kappa Sigma. Co-Author: Nuclear Rocket Propulsion, 1958. Contbrng. Author: Ballistic Missiles and Space Vehicles Systems, 1961. Serv. Rec.: U. S. Navy, 1943-58. Areas of Rsch.: Aerospace Engrng., Nuclear Rocket Propulsion.

del CASTILLO, Rafael Carlos, III (Mr.), Pres., Rafael del Castillo and Co. Corp., 26 Broadway, N. Y. 4, N. Y. Home Add.: 75 Gillette Ave., Bayport, L. I., N. Y. CHEMISTRY, MATHEMATICS, INTERNATIONAL FINANCE AND TRADE. b. Brooklyn, N. Y., July 24, 1919. s. Rafael Crawford, Jr. and Ruth M. (Behr). Edn.: B.S., Manhattan Coll., 1941; Grad. Studies at Poly. Inst. of Brooklyn, 1941 and New Schl. for Soc. Rsch., 1958. m. Anne S. Carroll, May 21, 1955. c.: Suzanne; Rafael, IV; Carroll Anne; Kathryn Anne. Exp.: Chief Control Chemist, Triton Chem. Corp., 1941-43; Res. Chemist, Stein Hall and Co., Inc., 1943-45; Pres., South American Development Services, Div., 1950—; Treas., Tex. Empire Oil Co., Inc., 1953-60; Consult. to Refineria Chilena de Petroleos, Santiago, Chile; Industrial Processing Corp., Panama, 1956-62; Associated with Laren Co., N. Y. (brokers), 1961 . Hon. Pos.: Mem., Internatl. Comm. for Peace by Investment. Mem.: Am. Chem. Soc.; Pan Am. Soc.; Assn. of Consulting Chemists and Chem. Engrs.; Phi Rho Pi. Listed in: Am. Men of Sci. Areas of Rsch.: International Finance and Trade.

DELMAN, Alvin Daniel (Mr.), Supvr. Chem., Polymer Chem. Unit Hd., Matl. Lab., N. Y. Naval Shipyard, Brooklyn, N. Y. Home Add.: 12 John Drive, Plainview, L. I., N. Y. POLYMER CHEMISTRY. b. Brooklyn, N. Y., Dec. 8, 1917. s. Samuel and Sophie M. (Rosenberg) D. Edn.: B.S., Polytechnic Inst. of Brooklyn, 1938; M.A., Tchrs. Coll., Columbia Univ., 1939. m. Mildred I. Katz, Aug. 29, 1943. Exp.: Jr. Chem., N. Y. Naval Shipyard, Brooklyn, N. Y., 1941-43; Asst. Chem., ibid., 1943-47; Assoc. Rsch. Chemist, ibid., 1947-53; Supvr. Chem., ibid., 1953—; Pres., Laminar Products Co., Brooklyn, N. Y., 1945-46. Mem.: Am. Chemical Soc.; A.A.A.S.; N. Y. Rubber Group; R.E.S.A. Contbrng. Author: Ozone Chemistry and Technology, 1959 Contbr to: Jour. Polymer Sci.; Jour. Appl. Polymer Sci.; Rubber World; Anal. Chem.; Proc. 4th and 6th Joint Army-Navy Air Force Confs. Areas of Rsch.: Synthesis of Organometallic, Silarylene, and Semi-conducting Polymers; Invest. of Mechanism of Ozone and High-energy Radiation Degradation of Elastomers.

DEMAREE, Frank Edward, Admin. of Data Communications Trng., Am. Tele. and Telegr. Co., Treadway Otesaga, Cooperstown, N. Y. Home Add.: Lake Rd., Cooperstown, N. Y. ELECTRICAL ENGINEERING, COMMUNICATIONS ENGINEERING. b. Gibson, Ia., Aug. 24, 1919. s. Dr. Chester and Mrs. Laura (Schuler) D. Edn.: B.S., Iowa State Univ., 1941. m. Meta Schalinske, Mar. 18, 1943. c.: Frank E., II; Susan; Anne; Mary Jane. Exp.: Special Services Engr. and Engr. Transmission Engr., Ill. Bell Telephone Co., Chicago, Ill., 1941-55; Supt. Engr., Western Electric Co., N. Y., N. Y., 1955-60; Div. Engrg. Mgr., Ill. Bell Telephone, Chicago, Ill., 1960-62; Admin., Am. Tel. and Telegr. Co., 1962 . Mem.: Am. Institute of Electrical Engineers; Institute of Radio Engrs.; A.A.A.S. Contbr. to:



Proceedings Sixth Natl. Communications Symposium. Serv. Rec.: A.U.S., 1942-46. Gen. Int.: Supt. of Engrng., Western Electric Co., Project Mercury. Areas of Rsch.: Radar Systems; Radio Systems; Communications Systems; Data Handling Systems.

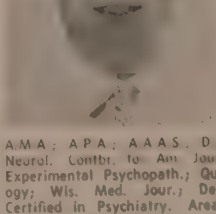
DeLOACH, Will Scott (Ph.D.), Prof. of Chem., George Peabody Coll. for Tchrs., Nashville 5, Tenn. CHEMISTRY. b. Dora, Ala., Dec. 22, 1910. s. James E. and Susan (Gaines) DeL. Edn.: B.S., Howard Coll., 1932; M.S., ibid., 1934; Ph.D., Univ. of Chicago, 1939. Exp.: H. S. and Coll. Tchr., Ala., 1934-54; Prof. of Chem., Cataba Coll., 1955-56; Prof. of Chem., Florence State Coll., Ala., 1956-59; Prof. of Chem., George Peabody Coll., 1959—. Mem.: Am. Chem. Soc.; Fellow, Am. Assn. Adv. Sci.; Fellow, Am. Inst. Chem.; Natl. Assn. for Rsch. in Sci. Tchng.; Sigma Xi; Gamma Alpha. Contbr. to: Jour. Chem. Edn.; Sci. Edn.; Schl. Sci. and Math. Areas of Rsch.: Chemical Education; Organic Chemistry.

DE MASTRY, John Andrew, Rsch. Metallurgical Engr., Advanced Materials Tech. Div., Battelle Memorial Inst., Columbus, Ohio. Home Add.: 881 S. Brinker Ave., Columbus 4, Ohio. HIGH TEMPERATURE MATERIALS FOR NUCLEAR FUELS, CLADDING AND STRUCTURAL USE, ALSO MATERIALS FOR ROCKETS. b. Columbus, Ohio, Nov. 12, 1930. s. Anthony J. and Helen (Harrison) D. Edn.: B.Sc., Ohio State Univ., 1953. m. Alice Ptacek, Sept. 4, 1954. c.: Michael S.; Mary C.; Jean M. Exp.: Rsch. Met. Engr., Battelle Memorial Inst., Columbus, Ohio, 1956—. Mem.: Am. Rocket Soc.; Am. Acad. for Adv. of Sci.; Am. Soc. for Testing and Materials; Am. Soc. for Metals. Contbr. to: Reactor Core Materials; Nuclear Sci. and Engrs. Serv. Rec.: A.U.S., 1953-55. Areas of Rsch.: Development of Refractory materials for fuel and cladding use in nuclear reactors, Also other Elevated Temperature Applications.

deMONSABERT, Winston Russel (Ph.D.), Prof., Loyola Univ., Coll. of A. and S., 6363 St. Charles Ave., New Orleans, La. Home Add.: 810 Brockenbraugh Ctr., Metairie, La. CHEMISTRY (INORGANIC-ANALYTICAL). b. New Orleans, La., June 12, 1915. s. Joseph and Davida (Guilette) D. m. Eleanor Ray Ranson, 1955. c.: Winston R. Edn.: B.S., Loyola Univ., 1937; M.A., Tulane Univ., 1945; Ph.D., ibid., 1952. Exp.: Prof. of Physics, Warren Easton H. S., New Orleans, La., 1940-44; Prof. of Chem. and Physics, Behrman H. C., New Orleans, 1944-48; Assoc. Prof. of Chem., Loyola Univ., 1948-55; Prof. of Chem., Loyola Univ., 1955—. Hon. Pos.: Chmn. of Chem. Curr. Revision Comm. for Orleans Parish Schl. Bd., 1947; Treas., La. Sect., A.C.S., 1949-53; Fellow, Am. Inst. of Chem.; Faculty Moderator, Loyola Chapt. of the Stud. Affiliate of A.C.S., 1953-62; Chmn., La. Sect., A.C.S., 1954; Chmn., La. Chap., Am. Inst. of Chemists, 1958-60. Mem.: Am. Inst. of Chem.; Sr. Mem. of A.C.S.; New Orleans Acad. of Sci.; Sigma Xi. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Phys. Chem. Encyclopedia of Chem.; Encycl. Americana. Travel: U. S.; Mex. Hobbies: Musci; Sailing; Philately Numismatics. Listed in: Who Knows—and What; W.W. in the S. and S.W.; A.M.S. Areas of Rsch.: Zirconium Chemistry; Gas Chromatography; Chemical Instrumentation; Corrosion.

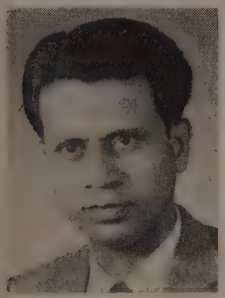
DEMPSEY, James, Astronautics Div., Dynamics/Astronautics, 5001 Kearny Ville Rd., San Diego 11, Calif.

DENZEL, Hermann Alfred (M.D.), Clinical Dir., Winnebago State Hosp., Winnebago, Wis. Home Add.: Winnebago, Wis. PSYCHIATRY, DRUG RESEARCH. b. Muelheim, Germany, Apr. 16, 1927. s. Dr. Alfred and Lili (Dorner) D. Edn.: M.D., Univ. of Tuebingen, 1952. m. Dr. Luise Bodamer, Jan. 23, 1954. c.: Harold Edgar; Ingrid Christine Luise; Klaus Manfred Exp.: Interne, Univ. Hosp., Tuebingen, Germany, 1952-54; Res. in Psychiatry, Mental Health Inst., Cherokee, Iowa, 1954-55; Res. in Psychiatry, Danville State Hosp., Danville, Pa., 1955-57; Assistant Psychiatrist, Dela. State Hosp., Farnhurst, Dela., 1957-58; Res. in Psychiatry, Mendota State Hosp., Madison, Wis., 1958-59; Psychiatrist, Chief of Service, Winnebago St. Hosp., Winnebago, Wis., 1960-61—. Mem.: Winebago Co. Med. Soc.; State Med. Soc. of Wis.; A.M.A.; A.P.A.; A.A.A.S.; D.A.N.K.; Am. Bd. of Psychiatry and Neurol. Contbr. to: Am. Jour. of Psychiatry; Jour. of Clin. and Experimental Psychopath.; Quart. Rev. of Psychiatry and Neurology; Wis. Med. Jour.; Dela. State Med. Jour. Gen. Int.: Certified in Psychiatry. Areas of Rsch.: Psychiatry, Drug Rsch. Psychopharmacology.

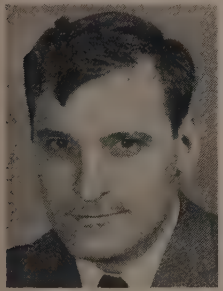


DePETRIS, Vincent Raphael, Pres., DePetris, Inc., 230 Grosse Pointe Blvd., Grosse Pointe 36, Mich. Home Add.: 25 Hampton Rd., Grosse Ponte, Mich. PLANT GENETICS GARDEN AND COMMERCIAL CHRYSANTHEMUMS; HORTICULTURAL SCIENCE. b. Lugano Italian, Switzerland, Dec. 27, 1891. s. Sabbath Emidius and Marie (DeSimone) DeP. Edn.: B.S., Rhode Island State Univ., 1911; M.S., Harvard Univ., 1913. m. Maureen Janisse. c.: Justine. Exp.: Pres., DePetris, Inc., Grosse Pointe, Mich., 1927—. Mem.: Hon. Life Mem., Natl. Chrysanthemum Soc.; Am. Biol. Soc.; Am. Assn. Adv. Sci.; Rotary Club; Grosse Pointe Mem. Assn. Contbr. to: Chrysanthemum Breeders Handbook by Natl. Chrysanthemum Soc. Serv. Rec.: U. S. Army, 1917-18. Gen. Int.: Awards for achievements in Horticulture by Mass. Horticultural Soc., 1941; Mich. Horticulture Soc., 1947; Garden Club of Am., 1948. Areas of Rsch.: Originator of approximately 20 per cent of the commercial and Garden chrysanthemums in culture today. Recognized as one of the foremost chrysanthemum breeders in the world having consistently introduced outstanding varieties each year.

DESHPANDE, Krishnanath Bhaskar (Ph.D.), Rsch. Assoc., Inst. of Natl. Sci., Univ. of N. C., Chapel Hill, N. C. Home Add.: 101 Dickinson Ct., Chapel Hill, N. C. PHYSICAL CHEMISTRY. b. Bombay, India, Nov. 1, 1921. s. Bhaskar R. and Savitri B. (Gadkari) D. Edn.: B.S., Univ. of Bombay, 1943; M.S., ibid., 1946; Ph.D., ibid., 1951. m. Vimal Khanolkar, Dec. 24, 1950. c.: Jayant; Kalpana. Exp.: Lectr., Siddharth Coll., 1947-57; Post-doc. Fellow, Univ. of Mo., 1957-60; Rsch. Assoc., Univ. of N. C., 1960—. Mem.: Am. Chem. Soc.; Indian Chem. Soc. Contbr. to: Jour. Am. Chem. Soc.; Jour. of Indian Chem. Soc.; Trans. VII Internatl. Congr. Soil Sci.; Jour. of Sci. Industr.; Rsch. Jour. Univ. Bombay. Gen. Int.: Awarded Fulbright Travel Grant to visit U. S., Sept., 1957. Areas of Rsch.: Colloids; Electrochem. of Clays; Studies in Sorption of Radio Active Nucleides by Clays; Chromatographic Studies in Radio Active Waste Disposal.



DESSAUER, Herbert Clay (Ph.D.), Assoc. Prof. of Biochem., La. State Univ. Schl. of Med., New Orleans 12, La. Home Add.: 7100 Dorian St., New Orleans, La. BIOCHEMISTRY. b. New Orleans, La., Dec. 30, 1921. s. Herbert Andrew and Shirley (Patin) D. Edn.: B.S., La. State Univ., 1949; Ph.D., ibid., 1952. m. Frances Jane Moffatt, Dec., 1949. c.: Dan Winston; Rebecca Lynn; Bryan Clay. Exp.: Instr., La. State Univ. Schl. of Med., 1951-53; Asst. Prof., ibid., 1953-56; Assoc. Prof., ibid., 1956—. Mem.: Am. Physiological Soc.; Soc. for Exptl. Biol. and Med.; Am. Soc. of Icthy. and Herpetol.; A.A.A.S.; Sigma Xi; Phi Beta Pi; Phi Kappa Phi. Contbr. to: Am. Jour. of Physiol.; Proc. Soc. for Exptl. Biol. and Med.; Sci.; Jour. of Exptl. Zool.; Biological Bull.; Arch. of Biochem. and Biophysics; Comparative Biochem. and Physiol. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Comparative Biochem. and Physiol. of Reptiles; Blood Proteins.



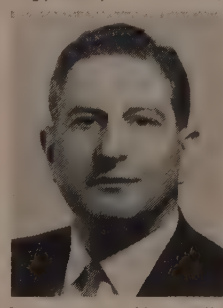
DETJEN, Gustav Heinrich Hugo, Pres. and Dir., Detjen Corp., Insectocutor Div., Pleasant Valley, Dutchess County, N. Y. Home Add.: Freedom Plains, R.F.D.#1, Pleasant Valley, N. Y. CONTROL OF HOUSE FLIES AND PHOTOTROPIC INSECTS BY MEANS OF INSECT ELECTROCUTING DEVICES. b. Altona/Elbe, Ger., Jan. 20, 1905. s. Gustav Heinrich Nicolaus and Martha (Lueders) D. Edn.: Attended Pace Coll., 1934. m. Marion L. Kirby, Sept. 16, 1944. c.: Christine M.; Theodore G.; James T.; Louise H. Exp.: Treas. and Dir., Jay Dreher Corp., Electric Fly Screen Div., 1930-38; Pres. and Dir., Detjen Corp., Insectocutor Div., 1938. Hon. Pos.: Stamp Ed. for Three Newspapers; Stamp Club Ed. for Stamp World. Mem.: Mem. and Secy., Dutchess Philatelic Soc.; A.P.S.; S.P.A.; N.P.S.; German P.S., Collectors Club; N. Y. Entomol. Soc.; Entomol. Soc. of Am.; Am. Entomol. Soc.; Entomol. Soc. of Can.; Entomol. Forening (Denmark); Societe Entomol. de Fr.; Deutsche Entomologische Ges.; Schweizerische Entomol. Ges.; Societe Royale Entomologique; A.A.A.S.; N. Y. Acad. Sci. Hobby: Philately. Areas of Rsch.: Control of House Flies and Night Flying Insects by Electricity Through Interception and Counter-Attraction With Filtered Black Light.

DESSLER, Alexander Jack (Ph.D.), Prof. of Atmospheric and Space Scis., Southwest Ctr. for Adv. Studies, Dallas, Tex. Home Add.: 3957 Cedar Bayou Dr., Dallas 34, Tex. SPACE SCIENCE. b. San Francisco, Calif., Oct. 21, 1928. s. David Alexander and Julia (Shapiro) D. Edn.: B.S., Calif. Inst. of Tech., 1952; Ph.D., Duke Univ., 1956. m. Lorraine Barbara Hudek, 1952. c.: Pauline; David; Valerie. Exp.: Sect. Hd., Lockheed Missiles and Space Co., Palo Alto, Calif., 1956-62; Prof., Southwest Ctr. for Adv. Studies, Dallas, Tex., 1962—. Mem.: Am. Geophys. Union; Am. Phys. Soc.; Sigma Xi. Author: Satellite Environment Handbook, Co-author, 1961. Contbr. to: Jour. of Geophys. Rsch.; Phys. Rev. Letters; Planetary and Space Sci.; Astrophys. Jour. Serv. Rec.: U. S. Navy, 1946-48; Areas of Rsch.: Geomagnetism, Van Allen Radiation, Solar Wind, Interplanetary Magnetism, Cosmic Radiation.

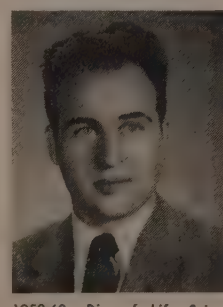
DETTERMAN, Robert Lawrence (Mr.), Rsch. Geologist, U. S. Geol. Survey, Menlo Park, Calif., Home Add.: 1725 Chitamook Ct., Sunnyvale, Calif. STRATIGRAPHY AND SEDIMENTATION. b. Green Springs, Ohio, Apr. 20, 1919. s. Wade H. and Ruth (Stigamire) D. Edn.: B.A., Miami Univ., 1941. m. Janis Scott, 1954. c.: Mark Eugene; Lynda Jean. Exp.: Geologist, U. S. Geological Survey, Washington, D. C. and Menlo Park, Calif., 1947—. Mem.: Am. Assn. of Petroleum Geologists; A.A.A.S.; Geological Soc. of Wash.; Calif. Acad. of Sci.; Arctic Inst. of N. Am. Contbr. to: Bull. of Am. Assn. of Petroleum Geologists; Arctic; Professional Paper; U. S. Geological Survey. Serv. Rec.: U. S. Army Air Corps, 1942-45. Areas of Rsch.: Sedimentation and Stratigraphy.

DeTURCK, John Edward (Mr.), Instr. in Biol., Villanova Univ., Villanova, Pa. Home Add.: 210 Penn Terrace, Mt. Penn., Reading 5, Pa. PHYSIOLOGY. b. Reading, Pa., Jan. 27, 1934. s. J. Robert and Florence (Meter) D. Edn.: B.S., Albright Coll., 1955; M.A., Bryn Mawr Coll., 1961 Exp.: Instr. Asst., Villanova Univ., 1955-58; Instr., ibid., 1960—. Mem.: Am. Soc. Zoologists; A.A.A.S.; Pa. Round Table of Cath. Soc. Serv. Rec.: Walter Reed Army Inst. of Rsch. 1958-60. Areas of Rsch.: Influence of Bacterial Edotoxin on Body Glycogen levels.

DEUTCH, Michael J. (Ph.D.), Consulting Engr., 726 Transportation Bldg., Wash., D. C. Home Add.: 2820 32nd St., N.W., Wash., D. C. CHEMICAL ELECTRICAL AND MECHANICAL ENGINEERING. b. Smolensk, Russia, Aug. 26, 1907. s. Joseph O. and Marie (Askenazy) D. Edn.: M.E., Univ. Ghent, Belgium, 1929; E.E., ibid., 1929; Ph.D., Univ. of Brussels, Belgium, 1930. m. Rachel Fischer, Jan. 30, 1934. c.: Nina Deutch Hurwitz; John Mark; Sara Anne. Exp.: Chf. Engr., Mgr. of Dev., Sofina, Ltd., 1929-42; Chf. Integration and Scheduling and Asst. to Chmn., War Production Bd., 1942-45; Special Asst. to Dir. of War Mobilization, 1945-46; Private Consulting Engr. Wash., 1946—; Industrial Advisor U. S. Survey Mission to Philippines, 1950; Consultant Department of State, Consultant AC of S, 1951; Consult., Pan-Am. Union, 1961—. Hon. Pos.: Chmn., C. S. Interagency on Fertilizers and Carbon Black. Mem.: Belgian Rsch. Soc., Br. Rsch. Soc.; Council on Foreign Relations; A.I.E.E.; A.S.M.E.; A.I.Ch.E.; Cosmos; Torch; Lotos; Petroleum Club, Houston. Contbr. to: Bulletin of Atomic Scientists; Chem. Engrng. Areas of Rsch.: Electrical and Atomic Power; Petrochemicals and Plastics; Regional Industrial Development; Military Logistics.

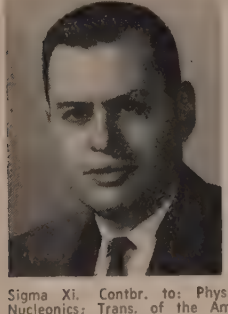


DEUTSCH, Marshall E. (Ph.D.), Dir. of Life Scis. Rsch., Central Rsch. Div., Becton Dickinson and Co., 429 Sylvan Ave., Englewood Cliffs, N. J. Home Add.: 132 Baylor Ave., Hillsdale, N. J. LIFE SCIENCES. b. N. Y. C., Aug. 17, 1921. s. David and Madeline (Roth) D. Edn.: B.S., Coll. of N. Y., 1941; Ph.D., N. Y. Univ., 1951. m. Judith Greene, June 27. 1947. c.: Pamina Margaret; Ethan Amadeus; Freeman S. Exp.: Jr. Engr., Am. Transformer Company, Newark, N. J., 1941-42; Instr. in Radio Theory, Melville Radio Inst., New York, N. Y., 1945-46; Tchng. Rsch. Assoc., N. Y. U., 1946-49; Rsch. Asst., ibid., 1949-51; Rsch. Scientist, Henry Ford Hosp., Detroit, 1951-53; Hd., Chem. Microbiol. Dept., Warner-Chilcott Lab., Morris Plains, N. J., 1953-55; Sr. Scientist, ibid., 1955-58; Dir. of Rsch. and Dev., G. W. Carnrick Co., 1958-60; Dir. of Life Scis. Rsch., Central Rsch. Div., Becton

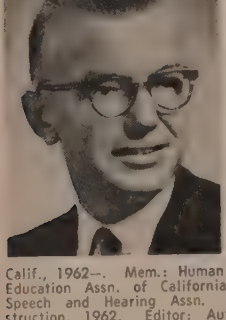


Dickinson and Co., 1960—. Mem.: A.A.A.S.; Am. Chemical Soc.; Am. Pharmaceutical Assn.; RESA; Summit Assn. of Scientists; New York Acad. of Sciences; The Am. Institute; Internatl. Soc. for General Semantics. Contbr. to: Chemical Abstracts. Serv. Rec.: U.S.A.A.F. Gen. Int.: Invented many diagnostic reagents, including Warner-Chilcott's Urograph. Areas of Rsch.: Effects of Alkylating Agents on Blood, Thermodynamic and Kinetic Parameters of Microbial Inactivation, Thyroid Chemistry, Development of Pharmaceutical Products; Medical Equipment.

DEUTSCH Robert William (Ph.D.), Scientist, Republic Aviation Corp., Farmingdale, N. Y. Home Add.: 5 Marian Lane, Jericho, N. Y. NUCLEAR PHYSICS; REACTOR PHYSICS; RADIATION DETECTORS; SPACE RADIATION. b. Far Rockaway, N. Y., Mar. 21, 1924. s. Nathan and Lena (Berger) D. Edn.: B.S., Mass. Inst. of Technol., 1948; Ph.D., Univ. of Calif., 1953. m. Florence Kadish, Sept. 11, 1949 c.: Jane Lisa; David Jeffrey. Exp.: Tchng. Asst., Univ. of Calif., Berkeley, Calif., 1949-50; Physicist, Lawrence Rad. Lab., ibid., 1950-53; Nucl. Physicist, Knolls Atomic Power Lab., Schenectady, N. Y., 1953-57; Ch. Proj. Physicist, Gen. Nucl. Engrng. Corp., Dunedin, Fla., 1957-61; Scientist, Republic Aviation Corp., 1961—. Mem.: Am. Phys. Soc.; Am. Nucl. Soc.; Am. Rocket Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Phys. Rev.; Nucl. Sci. and Engrng.; Nucleonics; Trans. of the Am. Nuclear Soc.; Reactor Sci. and Technol. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Theoretical Analysis of the Nuclear Characteristics of Reactor Cores and Reactor Shields; Theoretical Analysis of Interaction of High-Energy Particles with Matter.



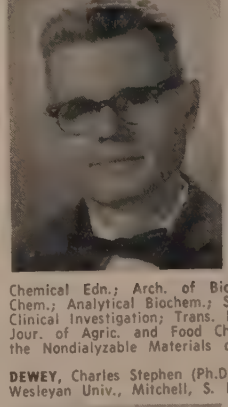
DEUTSCH William Ronald (Mr.), Dir. of Programming Servs., Corrigan Communications, Inc., 1111 E. Ash, Fullerton, Calif. Home Add.: 2112 Omega Dr., Santa Ana, Calif. COMMUNICATIONS—MAJOR EMPHASIS IN PSYCHOLOGY AND SPEECH. b. Dallas, Tex., May 30, 1925. s. Antone T. and Elizabeth I. (Black) D. Edn.: A.A., Long Beach City Coll., 1952; B.A., Long Beach State Coll., 1954; Ph.D., (cand.). m. Eugenie M. Kalmin, March 19, 1955. c.: Stephie S.; Sandra K.; John K.; Jayme M. Exp.: Hd. R. and D., Rheem Califone Corp. Hollywood Calif., 1958-59; Western Reg. Mgr., Rheem Ednl. Systems., Culver City, Calif., 1959-61; Instr., Orange Co. State Coll., Fullerton, Calif., Sum., 1961; Programming Servs., Corrigan Communications 1961—; Instr., Univ. of Sou. Calif., L. A., Calif., 1962—. Mem.: Human Factors Soc. of Am.; Audio-Visual Education Assn. of California; National Education Assn.; Am. Speech and Hearing Assn. Contbrng. Author: Programed Instruction, 1962. Editor: Automated Teaching Bulletin. Serv. Rec.: U. S. Navy, 1943-46, 1950-52. Gen. Int.: Pioneer Work in Design, Research and Development of Auto-Instructional Devices and Programming. Areas of Rsch.: Programmed Learning; Human Factors.



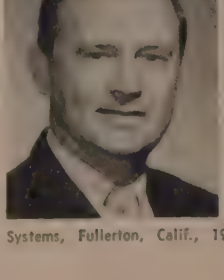
DeVOE, Charles Freeman (Ph.D.), Dir., Ceramic Rsch., Corning Glass Works, Corning, N.Y. Home Add.: 38 W. 4th St., Corning, N. Y. PHYSICS. b. Freeport Ill., Apr. 5 1909. s. Charles W. and Mary Adell (Threadgold) DeV. Edn.: Ph.B., Univ. of Wis., 1930; Ph.M., ibid., 1932; Ph.D., ibid., 1936. m. Myrtle Huffman, June 16, 1934. c.: Jean A.; Charles G. Exp.: Rsch. Physicist, Corning Glass Works, 1936-48; Mgr., Pilot Plant No. 1 Corning Glass Works N. Y., 1948-51; Mgr., Pilot Plant No. 2, ibid., 1952- 53; Chf. Proc. Engr., ibid., 1953-54; Dir. Mgrng. Staffs, ibid., 1954-57; Dir. Ceramic Rsch. ibid. 1957—. Hon. Pos.: Fellow Am. Cer. Soc. Mem.: Am. Phy. Soc.; Am. Ceramic Soc.; Soc. Glass Tech.; A.A.A.S. Contbr. to: Phys. Rev. Gen. Int.: Developed Continuous Method for Melting Optical Glass; Developed Several Innovations for Uniform Quality Glass; Now Doing Refractory Research for Glass and Steel Furnaces. Areas of Rsch.: Research Administration.

DEUTSCH, Stanley (Ph.D.), Vice Pres., Chmn. of Scientific Staff, and Mem., Bd. of Dirs., Consad Corp., Santa Monica, Calif. HUMAN FACTORS AND BIOASTRONAUTICS. b. Yonkers, N. Y., Oct. 28, 1921. s. Benjamin and Helene (Klein) D. Edn.: B.A., Brooklyn Coll., 1948; M.S., Purdue Univ., 1951; Ph.D., ibid., 1957. m. Thelma R. Fogel, June, 1948. c.: Ellen Sue; Robert Jay; Paula Jean. Exp.: Asst. Statn., Bklyn. Coll. Test and Advisement Unit, Bklyn., N. Y., 1948; Rsch. Psycholt., U. S. Navy Elect. Lab., San Diego, Calif., 1948-57; Hd., H. F. Supp Progs., Martin Co., Denver Colo., 1957-58; Rsch. Psycholt., AFBMD, Inglewood and Vandenberg AFB, 1958; Hd., Tech. Staff Human Factors, Systems Engrng. and Technl. Dir., Douglas Aircraft Co., 1961-62; Supvr., Hd., Human Factors, Life Sciences Sect., Douglas Aircraft Co., 1958-62; Vice Pres., Consad Corp., 1962—. Hon. Pos.: Secy.- Treas., Human Factors Soc. of San Diego; Chmn., Mem. Eval. Comm., Human Factors Soc. of Am. Mem.: Sigma Xi; Am. Phychol. Assn.; Am. Rocket Soc.; Western Simulation Coun.; Western Psychol. Assn.; Human Factors Soc.; Human Factors Soc. of Los Angeles; Y.M.C.A. Indian Guides. Contbr. to: Jour. of Exptl. Psychol.; Jour. of Appl. Psychol. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Merit. Achievement Award, U. S. Navy, 1957; Rsch. Fellowship, 1953-56; U. S. Navy Scholarships, 1953 and 1956. Areas of Rsch.: Behavioral Scis., Applications of Human Factors to Systems Engineering, Analysis and Development; Bioastronautics, Psychophysics, Engineering Psychology.

DEVOR, Arthur W., (Ph.D.), Assoc. Prof. of Physiol. Chem., Ohio State Univ., Columbus, Ohio. Home Add.: 1196 Hope Ave., Columbus, Ohio. BIOCHEMISTRY. b. Colo., Apr. 13, 1911. s. Arthur A. and Sarah J. (Wilklow) D. Edn.: B.S., McPherson Coll., 1935; M.S., Kans. State Univ., 1937; Ph.D., Univ. of Sou. Calif., 1947. m. Mary Todd, 1938. c.: Kenneth; Karen. Exp.: Grad. Asst., Kans. State Univ., 1935-41; Instr., Univ. of Pittsburgh, Erie Ctr., 1941-43; Instr., Adelphia Coll., 1943-45; Grad. Asst., Univ. of Sou. Calif., 1945-47; Prof., Minot State Tchrs. Coll., 1947-48; Asst. Porf., Assoc. Prof., S. D. State Coll., 1948-52; Asst. Prof., Assoc. Prof., Ohio State Univ., 1952—. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Lambda Upsilon; Gamma Sigma Delta; Sigma Xi. Contbr. to: Am. Chem. Soc.; Jour. of Chemical Edn.; Arch. of Biochem. and Biophysics; Analytical Chem.; Analytical Biochem.; S. D. Acad. of Sci.; Sci.; Jour. of Clinical Investigation; Trans. Kans. Acad. of Sci.; Cancer Rsch.; Jour. of Agric. and Food Chem. Areas of Rsch.: Studies on the Nondialyzable Materials of Human Urine.



DEWEY, Charles Stephen (Ph.D.), Prof., Hd. of Chem. Dept., Dak. Wesleyan Univ., Mitchell, S. Dak. Home Add.: 620 S. Sanborn, Mitchell, S. D. CHEMISTRY (ORGANIC). b. Riverton, Vt., June 5, 1897. s. Elmer Carroll and Alice Bertha (Covell) D. Edn.: A.B., Pomona Coll., 1919; M.A., Harvard Univ., 1920; Ph.D., ibid., 1924. m. 1st, Jane Esther Drake (dec.), June, 1924; 2nd m., Lois Holladay, Dec., 1952. c.: Barbara; Russell; Drucilla. Exp.: Rsch. Chemist, Natl. Aniline and Chem. Co., Buffalo, N. Y., 1924-29; Rsch. Chemist, Cabot Carbon Co., Pampa, Tex., 1929-31; Rsch. Chemist, Firestone Tire and Rubber Co., Akron, Ohio, 1931-35; Group Leader, Nangatuck Chem., Nangatuck, Conn., 1936-45; Rsch. Chem., E. R. Squibb and Sons, New Brunswick, N. J., 1945-46; Asst. Prof., Univ. of Md., 1946-59; Prof. Dak. Wesleyan Univ., 1959—. Mem.: Am. Chem. Soc.; Alpha Chi Sigma; Phi Kappa Phi; Lions Club. Contbr. to: Indust. and Engrng. Chem. Jour.; Jour. Am. Chem. Soc. Areas of Rsch.: AZO Dyes; Rubber Antioxidants; Thiazoles; Aramatic Amines; Insecticides.



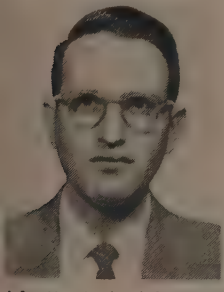
de WITTE, Leendert (Ph.D.), Mgr., Mathematical Anal. Dept., Hughes Ground Systems, Fullerton, Calif. Home Add.: 1898 Temple Hills Dr., Laguna Beach, Calif. MATHEMATICAL ANALYSIS, THERMODYNAMICS OF SURFACES, GEOPHYSICS. b. Bergen op Zoom, Holland, Feb. 9, 1925. s. Leendert and Elizabeth D. (van Ysseldyk) d. W. Edn.: B.Sc., Univ. of Groningen, Holland, 1943; M.Sc., Calif. Inst. of Tech., 1947; Ph.D., ibid., 1950. m. Flor de Maria Sanchez Cerizola, Sept. 10, 1948. c.: Leonardo Antonio; Odile Celeste; Richard William; Olga Maria. Exp.: Supvr., Physics Sect. Rsch. Dept., Continental Oil Co., Ponca City, Okla., 1951-55; Consultant, Laguna Beach, Calif., 1955-58; Staff Scientist, Ramo Wooldridge Corp., El Segundo, Calif., 1958-60; Mgr., Math. Anal. Dept., Hughes Ground Systems, Fullerton, Calif., 1960. Mem.: Assn. for Computing

Machinery; Internatl. Cybernetics Soc.; Soc. of Exploration Geophysicists; Am. Geophys. Union. Contbr. to: Jour. of Petroleum Technol.; Proc. Tex. Rsch. Com.; Geophysics; Kolloid Zeitschrift; Helvetica Chimica Acta; Jour. of Assn. for Computing Machinery; Communications of the Assn. for Computing Machinery. Serv. Rec.: Royal Netherlands East Indies Army, 1943-46. Gen. Int.: Escaped from occupied Holland, via Spain, 1943. Areas of Rsch.: Numerical Analysis, Digital Computer Applications; Thermodynamics of Surface Layers; Petrophysics; Electrical Surveying in Geophysics.

DHOM, Friedrich (Mr.), Physicist, Scientific Advisory Office White Sands Missile Range El Paso, Texas. Home Add.: 3806 Altura Ave., El Paso, Tex. ELECTRONICS, RESEARCH, DEVELOPMENT AND EVALUATION OF GUIDED MISSILE WEAPON SYSTEMS; R. & D. OF ADVANCED ELECTRONIC GUIDANCE AND CONTROL SYSTEMS. b. Homburg, Germany, Mar. 10, 1909. s. Christian and Friederika (Sertel) D. Edn.: B.S., Ingenieur Akademie Mannheim, Germany, 1929. m. Amalie Vogel, July 1, 1937. c.: Heidemarie A.; Karin M. Exp.: Chf. Tech. Office, Ernst Griebel and Co., Homburg, Germany, 1930-36; Rsch. Engr. Siemens and Halske A. G., Berlin, Germany, 1936-38; Group Chf., R and D. Lab., Germany Rocket Center, Peenemuende, 1938-45; Guid. Miss. Specialist, Proj. Paperclip, U. S. Army Ord., Ft. Bliss, Tex., 1945-48; Guid. Missile Consult., Bendix Av. Corp., Teterboro, N. J., 1948-52; Scientific Advisor and Guid. Miss. Specialist, White Sands Missile Range, 1952—. Mem.: A.A.A.S.; Am. Rocket Soc. Gen. Int.: Contributions to the Development of the V2 Missile in Germany; R. and D. of Doppler and Phase Radio Navigation Systems. Areas of Rsch.: R. and D. of Guid. Miss. Weapon Systems, Guid. Miss. Weapon System Testing and Evaluation, Long Range Radio Navigation, Space Communication, Advanced Space Vehicle Design, Space Vehicle Propulsion.

DIAMOND, Julius (Ph.D.), Technical Dir., Lincoln Lab., Decatur, Ill. Home Add.: 102 Columbus Dr., Decatur, Ill. ORGANIC CHEMISTRY, PHARMACEUTICAL CHEMISTRY. b. Philadelphia, Pa., Apr. 12, 1925. s. Joseph and Mildred (Belsky) D. Edn.: B.S., Univ. of Pennsylvania, 1945; M.A., Temple Univ., 1953; Ph.D., ibid., 1955. m. Arlene Volgerstein, 1953. c.: Michael; Susan; Lisa. Exp.: Organic Rsch. Chemist, Wyeth Labs., Phila., Pa., 1950-56; Dir. of Labs., G. F. Harvey Co., Saratoga Springs, N. Y., 1956-57; Project Leader, Wallace Labs., New Brunswick, N. J., 1957-59; Tech. Dir., Lincoln Labs., Decatur, Ill., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi. Contbr. to: Remington's Practice of Pharmacy, 12th Edition; Bennett's Chemical Formulary, Vol. XII; Elderfield's Heterocyclic Compounds, Vol. 8; Jour. of Organic Chem. Areas of Rsch.: Organic Synthesis; Medicinal Chemistry; Analgesics.

DIANA Leonard Matthew (Ph.D.), Physicist, Am. Tobacco Co., Dept. of Rsch. and Devl., 400 Jefferson Davis Highway, Richmond 24, Va. Home Add.: 4111 Hillcrest Rd., Richmond 25, Va. INSTRUMENTATION; NUCLEAR PHYSICS; ANALOG COMPUTING. b. Columbia, Pa., Jan. 26, 1923. s. Leonard and Lucy (Petrilli) D. Edn.: B.S., Ga. Inst. of Tech., 1948; Ph.D., Univ. of Pittsburgh, 1953. m. Pearl Butler, June 21, 1950. c.: Leonard Preston; Susan Claire; Lawrence Gardner. Exp.: Instr., Lab. Physics, Ga. Tech., Atlanta, Ga., 1946-48; Instr., Physics, Univ. of Pittsburgh, 1949-52; Rsch. Assoc., ibid., 1951-53; Project Physicist, Standard Oil Co., Dept. of Engrng. Rsch., Whiting, Ind., 1953-59; Physicist, Am. Tobacco Co., Dept. of Rsch. and Devel., Richmond, Va., 1959—. Mem.: Am. Physical Soc.; A.A.A.S.; Va. Acad. of Sci.; Sigma Xi; Sigma Pi Sigma; Tau Beta Pi; Phi Kappa Phi; Phi Eta Sigma; Alpha Chi Sigma. Contbr. to: Bull. Am. Physical Soc. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Instrumentation; Scattering of Protons and Deuterons; Analog Computing.



DIANA, Pearl Butler (Ph.D.), Pvt. Practice, 4111 Hillcrest Road, Richmond 25 Va. PSYCHOLOGY. b. Spring Creek W. Va. May 30, 1920. d. Oza Preston and Lura M. (Gardner) Butler. Exp.: B.S., Univ. of N. Mex., 1937; M.S., ibid., 1940; Ph.D., Univ. of Pittsburgh, 1948. m. Leonard M. Diana, June 21, 1950. c.: Leonard Preston; Susan Claire; Lawrence Gardner. Exp.: Psychologist and Tchr., N. Mex. Home and Trng. Schl., Los Lunas, N. M., 1937-38; Psychologist, Juvenile Court of Allegheny Co., Pittsburgh, Pa., 1942-45; Sr. Psychologist, Seattle Guidance Clinic, Seattle, Wash., 1945-46; Lectr., Univ. of Pittsburgh, 1948-51; Psychologist, Staunton Clinic, Pittsburgh, Pa., 1947-52. Hon. Pos.: Governor's Youth Commission for Lake Co. Mem.: Am. Psychol. Assn.; Fellow, Soc. for Projective Techniques; Pa. Psychol. Assn.; Sigma Xi. Areas of Rsch.: Child Development, Abnormal Psychology, Projective Techniques, Psychosomatic Disorders.

DICHTER, Ernest (Ph.D.), Pres., Inst. for Motivational Rsch., Inc., Croton-on-Hudson, N. Y. Home Add.: Glendale Rd., Ossining, N. Y. SOCIAL-PSYCHOLOGICAL COMMUNICATION. b. Vienna, Austria, Aug. 14, 1907. s. Wilhelm and Mathilda (Schneider) D. Edn.: Ph.D., Univ. of Vienna, 1934. m. Hedy Langfelder, 1934. c.: Thomas William; Susan Jane. Exp.: Pres., Inst. for Motivational Rsch., Inc., Croton-on-Hudson, N. Y., 1951—; Pres., Ernest Dichter Assoc., Inc., Liberia, ibid., 1958—. Mem.: Am. Psychol. Assn.; Am. Sociol. Assn. Author: Successful Living, 1947; The Strategy of Desire, 1960. Contbr. to: Harvard Bus. Rev.; Jour. of Marketing; Sponsor; Printers Ink. Areas of Rsch.: Motivational Rsch.

DICKERSON, Russell Burton (Ph.D.), Assoc. Dean and Dir. of Resident Edn., Coll. of Agric., Penn. St. Univ., 211 Armsby Bldg., Univ. Park, Pa. Home Add.: 540 E. Prospect Ave., St. College, Pa. TEACHING, COUNSELING, EVALUATING THE EFFECTIVENESS OF INSTRUCTION, AND ADMINISTERING THE RESIDENT EDUCATION PROGRAM IN TUNE WITH A RAPIDLY CHANGING AGRICULTURE AND THE ATTENDANT NEW DEMANDS FOR GRADUATES. b. Sussex, N. J., June 21, 1904. s. George Albert and Dona Hunt (Mackerley) D. Edn.: B.S., Penn. St. Univ., 1927; M.S., Rutgers Univ., 1933; Ph.D., Penn. State Univ., 1943. m. Josephine Cornelia Miles, Dec. 27, 1927. c.: Helen Elizabeth D. Wise; Russell Burton, Jr.; George Roy; Jeanne Linn. Exp.: Tchr., E. Greenville Bd. of Edn., E. Greenville, Pa., 1927-28; Tchr., Sussex Bd. of Edn., Sussex, N. J., 1937-38; Tchr., Sussex Co. Voc. Bd. of Edn., Newton, N. J., 1937-38; Instr., Penn. St. Univ., 1938-43; Assoc. Prof., ibid., 1943-47; Proprietor, Orchard Crest Farm, Newton, N. J., 1947-49; Assoc. Dean, Coll. of Agric., Penn. St. Univ., 1949—; Dir. Res. Edn., ibid., 1949—. Hon. Pos.: Visit. Prof., Univ. of Philippines Coll. of Agric., 1956-58; Natl. 4-H Alumni Recog. Award, 1955; Sect., Gamma Sigma Delta, 1960—; Chmn., Natl. Land-Grant Comm., Workshop Conf. on Measurement and Eval. in the Improve. of Tchng. Proficiency in Agri., 1961; 1955-61—Chmn., first and Mem. of third, Land-Grant Comm. to prepare and publish Natl. Brochure on Career Opportunities in Agriculture; 1st edition, "Careers Ahead, 3rd "There's a New Challenge in Agriculture"; Chmn., Res. Instrn. Sect. in Agric. and Secy., Div. of Agric., Assn. of St. Univ. and Land-Grant Coll., 1962. Mem.: Alpha Tau Alpha; Gamma Sigma Delta; Pi Gamma Mu; Phi Delta Kappa; Delta Theta Sigma; Rotary; C. of C. Author: 12 Manuals of Instruction for Food Production, War Training Courses, 1943. Contbr. to: Agric. Edn. Mag.; Interst. Printers and Pub.; Sci. for the Farmer. Serv. Rec.: 2nd Lt. ROTC, U. S. Army, 1927. Gen. Int.: Outstanding Alumnus, Beta Chapt., Delta Theta Sigma, 1962. Areas of Rsch.: Reorganization of Curriculum, Majors and Courses in the College of Agriculture to More Adequately Recruit, Counsel and Prepare Students for Unlimited Career Opportunities in the Dynamic Industry of Agriculture; Studies in Agricultural Education; Development and Measurement of the Effectiveness of Different Methods of Presenting Data Obtained in Studies of Efficient Crop and Livestock Production, Processing, Marketing and Utilization.

DICKINS, Dorothy (Ph.D.), Hd., Home Econ. Rsch. Agri. Exptl. Sta., Miss. St. Univ., State College, Miss.. FAMILY ECONOMICS. b. Money, Miss., Aug. 27, 1898. d. W. B. and Marion (Stokes) D. Edn.: B.S., Miss. Sta. Coll. for Women, 1920; M.S., Tchrs. Coll., Columbia Univ., 1922; Ph.D., Univ. of Chgo., 1937. Exp.: Hd., Home Econ. Rsch. Agri. Exptl. Station, 1925—. Hon. Pos.: Tech. Adv. Comm. to the U. S. Bureau of Labor Statistics; Consumer's Adv. Comm. of the Pres. Coun. of Econ. Advrs.; Home Econs. Div. Rep. of the Land-Grant Coll. Assn. on the Mktg. Rsch. Adv. Comm.; Treas., Secy., Pres. and Counselor in the Miss. Home Econs. Assn.; Pres., Starkville Br. of the Am. Assn. of Univ. Women; Sta. Chmn. of the Social Studies Comm., 1954-56; Pres., Miss. Div. of A.A.U.W., 1956-58. Mem.: Am. Assn. Univ. Profs.; Am. Home Econs. Assn.; Miss. Home Econs. Assn.; Phi Kappa Phi. Contbr. to: Jour. of Home Econs.; Jour. of Farm Econs.; Jour. of Rural Sociol.; Social Forces; Am. Sociol. Rev.; Am. Jour. of Dietes.; Assn. Anns. of the Am. Acad. of Polit. and Social Sci.; Jour. of Mktg.; Jour. of Am. Assn. of Univ. Women; Miss. Agri. Exptl. Sta. Bull. Areas of Rsch.: Family Economics.

DICKEY, George Daman (Mr.), Consultant, Home Add.: 211 Highland Ave., Ridgewood, N. J., and Dorset, Vermont. CHEMICAL ENGINEERING. b. West Pittston, Pa. s. Edward P. and Anna M. (Ellithorp) D. Edn.: B.S., Pennsylvania St. Univ.; Grad.

Stud., Pratt Univ., Columbia Univ., P. E. Univ. State N. Y. m. Mary E. Laborde, Sept. 21, 1921. c.: George J.; Mary E., (Dr. Wendell F. Smith Jr.) Exp.: V.P., Industrial Filtration Corp., New York, N. Y., 1920-23; Founder Conkey Filter Co., New York, N. Y., 1923-44; Market Analyst General Motors Corp., ibid., 1927-29; Mgr., Dryer Div., Carrier Corp., ibid., 1929-31; Partner, Conkey Filter Co., ibid., 1931-44-59; Partner, Conkey Unit, Gen. Am. Transp., ibid., 1944-55; Partner, Conkey Equip. Div., Chicago Bridge and Iron Co., 1955-58; Consult., ibid., 1958—. Mem.: A.A.A.S.; A.C.S.; Am. Institute Chemical Engineering; Am. Institute M. and M. and Petroleum Engineers; Am. Forestry Soc.; Am. Inst. Management; N. Y. Sewage; Industrial Wastes Assn.; N.S.P.E.; Alpha Gamma Rho; Soc. Valley Hosp.; Sons of Rev., N. Y.; Nantucket Hist. Soc.; So. Vt. Art Ctr; Railway Machinery Club, N. Y. Co-Author: Textbook of Filtration, 1923. Author: Theory and Practice of Filtration, 1947. Assoc. Author: Chemical Engineering Costs, 1950. Contbr. to: Encyclopedia of Chem., 1956; Chem. and Met. Eng.; Publ. Works; Waste. Engrng. Author: Filtration, 1961. Serv. Rec.: U. S. Army, 1918-23. Areas of Rsch.: Separation Solids from Liquids, Chem. Engrng. Equipment.

DICKINSON, Janet Ellen (Miss), Senior Air Pollution Analyst, Los Angeles Co. Air Pollution Control Dist., 434 S. San Pedro St., Los Angeles 13, Calif. Home Add.: 1348 Hidden Valley Dr., W. Covina, Calif. ORGANIC CHEMISTRY; ATMOSPHERIC POLLUTION. b. Buffalo, N. Y., April 16, 1922. d. Alfred L. and Anna C. (Menges) D. Edn.: B.A., Elmira Coll., 1943. Exp.: Chem., E. I. duPont de Nemours & Co., Inc., Pioneering Rsch., Buffalo, N. Y., 1943-50; Air Pollution Chem., Los Angeles Co. Air Pollution Control Dist., Los Angeles, 1951—. Mem.: Am. Assn. Adv. Sci.; Am. Chem. Soc.; Air Pollution Control Assn.; Phi Beta Kappa. Contbr. to: Jour. Air Pollution Control Assn. Areas of Rsch.: Air Pollution; Meas. and Control.

DICKS, Martha Wilcox (Ph.D.), Assoc. Prof., Div. Home Econ., Univ. of Wyo., Laramie, Wyo. Home Add.: Apt. 5, 1310 Grand Ave., Laramie, Wyo. NUTRITIONAL BIOCHEMISTRY. b. Cheshire, Conn., Dec. 2, 1928. d. Alfred H. and Katherine D. (Harned) Dicks. Edn.: B.S., Univ. of Conn., 1950; M.S., Cornell Univ., 1951; M.A., Ind. Univ., 1955; Ph.D., Univ. of Conn., 1961. Exp.: Undergrad. Asst., Nutrition Rsch., Univ. of Conn., 1947-50; Grad. Asst., Nutrition Rsch., Cornell Univ., 1950-51; Grad. Asst., Biochem. Rsch., Ind. Univ., 1951-54; Asst. Prof., Nutrition, Univ. of Ala., 1954-55; Rsch. Asst., Nutrition Rsch., Univ. of Conn., 1955-60; Asst. Prof., Human Nutrition Rsch., Mont. St. Coll., 1960-61; Assoc. Prof., Univ. of Wyo., 1961—. Mem.: Sigma Xi; Gamma Sigma Delta; Am. Chem. Soc.; A.A.A.S.; Biometric Soc.; Am. Diet. Assn.; Phi Kappa Phi; A.A.U.P. Contbr. to: Jour. Dairy Sci.; Jour. Animal Sci.; Fed. Proc.; Animal Nutrition Rsch. Coun.; Nature; Storrs Agril. Exptl. Sta.; Jour. Nutrition. Areas of Rsch.: Chemical Analysis, Bioassay and Nutrition of Vitamin E.

DIEBOLD, John, Statesman of Automation.

DIENSTEIN, William (Ph.D.), Prof., Soc. Sci. and Criminol., Fresno St. Coll., Fresno, Calif. Home Add.: 4694 No. Mariposa, Fresno 26, Calif. CRIMINOLOGY. b. Chicago, Ill., May 9, 1909. s. Joseph and Fannie (Heda) D. Edn.: A.B., Stanford Univ., 1931; M.A., Univ. of Calif., 1939; Ph.D., Stanford Univ., 1959. m. Roslyn Robbins, July 13, 1947. Exp.: Tchr., Union H. S., Taft, Calif., 1935-38; Tchr., Schl. Dist., Taft, Calif., 1938, 1941-42; Prof., Fresno St. Coll., 1946—; Governor's Special Study Comm. on Juvenile Justice, St. of Calif., 1957-60. Hon. Pos.: Chmn., Advisory Comm., Fresno St. Mental Hygiene Clinic; Bd. of Edn., Fresno City Unified Schl. Dist., elected 1961—; Book Rev. Ed., Police; Editor Bd., Quaderin Di Criminologia Clinica. Mem.: Am. Soc. of Criminol.; A.A.A.S.; Acad. for Scientific Interrogation; Internatl. Assn. for Identification; Internatl. Soc. of Criminol.; Internatl. Assn. Chfs. of Police; Calif. Peace Officers Assn.; Calif. Probation Parole and Corrections Assn.; Pi Gamma Mu; Phi Kappa Phi; Phi Delta Kappa; Delta Sigma Rho. Author: Technics for the Crime Investigator, 1952; Are You Guilty?, 1953. Contbr. to: Police; Crime and Delinquency; Phi Delta Kappan. Serv. Rec.: U. S. Army, 1941-46, 1950-52. Areas of Rsch.: Deviant Behavior; Delinquency and Crime.

DIETZ, Albert G. H. (D.Sc.), Prof. of Bldg. Engrng., Mass. Inst. of Technol., Cambridge, Mass. Home Add.: 19 Cambridge St., Winchester, Mass. BUILDING ENGINEERING; BUILDING MATERIALS; EMPHASIS ON SCIENCE OF MATERIALS, ESPECIALLY PLASTICS. b. Lorain, Ohio, Mar. 7, 1908. s. Peter and Adele (Grevsmuhl) D. Edn.: A.B., Miami Univ., Oxford, Ohio, 1930; S.B., Mass. Inst. of Technol., Cambridge, Mass., 1932; S.M., ibid., 1936; Sc.D., ibid., 1941. m. Ruth Avery, Sept. 9, 1936. c.: Margaret; Henry. Exp.: Asst., Bldg. Engrng., Mass. Inst. Technol., 1934-36; Instr., Bldg. Engrng., ibid., 1936-41; Asst. Prof., ibid., 1941-45; Assoc. Prof., ibid., 1945-51; Prof., ibid., 1951—. Hon. Pos.: The Phi Beta Kappa Associates, Bldg. Rsch. Advisory Bd. Mem.: Fellow, Am. Acad. of Arts and Scis.; Am. Soc. of Civil Engrs.; Am. Soc. of Mechanical Engrs.; Am. Soc. for Testing and Materials; Am. Physical Soc.; Am. Assn. for the Adv. of Sci., Fellow; Phi Beta Kappa; Tau Beta Pi; Sigma Xi; Beta Theta Pi. Author: Engineering Laminates, Editor; Dwelling House Construction; Materials of Construction, Wood, Plastics, Fabrics. Contbr. to: Transactions; A.S.M.E.; Proceedings, A.S.T.M.; Proceedings, A.A.A.S.; Forest Products Rsch. Jour.; Architectural Record; Space Heating with Solar Energy; Building Construction Handbook. Gen. Int.: Derham Mem. Award of the Plastics Institute of Australia, 1962; Engrng. Edn. Mission to Japan of the A.S.E.E., Templin Award and Award of Merit, A.S.T.M.; Fitzgerald Award, Boston Soc. of Civil Engineers. Areas of Rsch.: Properties of Plastics; Laminated Timber; Solar Heating of Buildings; Modern Technology of the Dwelling House.

DIETZ, Victor Hugo (D.D.S.), Dentist, Univ. Club Bldg., St. Louis 3, Mo. Home Add.: 9064 Monmouth Dr., Richmond Hgts. 17, Mo. DENTAL RESEARCH; ENDODONTICS; PERIDONTICS. b. St. Louis, Mo., May 24, 1912. s. Carl Henry and Marie Elzee (Schaake) D. Edn.: D.D.S., Wash. Univ., 1935; M.Sc., Natl. Electronics Inst., 1936; Ps.D., Coll. of Divine Metaphysics, 1937; B.S., St. Louis Univ., 1938; M.S., Univ. of Ill., 1941; A.B., Roosevelt Univ., 1942; Ph.B., Loyola Univ., 1947; Ph.D., Univ. of Mich., 1950. m. Lorraine Haas, June 5, 1937. c.: Deborah Candace. Exp.: Instr., Univ. of Ill., 1938-41; Chf. of Rsch., Army Dental Schl., 1942-44; Rsch. Fellow, Natl. Insts. of Health, 1946-50; Dir., Post-Grad. Endodontics, St. Louis Univ., 1954-57; Rsch. Consult., The Lorvic Corp., St. Louis, 1950—; Consult., Scott A.-F.B., 1957—; Gen. Practice, Dentistry, 1935-38; Endodontist, St. Louis, 1950—; Dir., Univ. Dental Associates, St. Louis, 1955—. Mem.: Am. Dental Assn.; Internatl. Dental Organizations; etc. Fellow, Internatl. Coll. of Dentists; Am. Inst. of Chem.; Am. Coll. of Dentists; Acad. Internatl. Dentistry; A.A.A.S. Editor: Am. Assn. of Endodontists, 1952-59; St. Louis Sect.; Internatl. Assn. for Dental Rsch., 1955-58. Assoc. Editor: The Audio Jour. of Dentistry, 1958—. Serv. Rec.: U. S. Army, 1942-46, Lt. Col.; Legion of Merit.

DIETZ, David Henry (Dr.), Sci. Editor of the Scripps-Howard Newspapers, The Cleveland Press Bldg., Cleveland 14, Ohio. GENERAL SCIENCE, ASTRONOMY AND ATOMIC ENERGY. b. Cleveland, Ohio, Oct. 6, 1897. s. Henry W. and Hannah (Levy) D. Edn.: A.B., Western Reserve Univ., 1919. Hon. Deg.: Litt.D., Western Res. Univ., 1948; LL.D., Bowling Green St. Univ., 1954. m. Dorothy B. Cohen, Sept. 26, 1918. c.: Doris Jean; Patricia Ann; David Henry, Jr. Exp.: Mem., Editorial Staff, Cleveland Press, Ohio, 1915—; Sci. Editor, Scripps-Howard Newspapers, 1921—. Mem.: Fellow, A.A.A.S.; Ohio Acad. of Sci.; Roy. Astron. Soc.; Am. Astron. Soc.; Societe Astronomique de France; Natl. Assn. of Sci. Writers; Zeta Beta Tau; Sigma Delta Chi; Omicron Delta Kappa; Sigma Xi. Author: The Story of Sci., 1931; Med. Magic, 1937; Atomic Energy in the Coming Era, 1945; Atomic Science, Bombs and Power, 1954; All About Satellites and Space Ships, 1958; All About Great Medical Discoveries 1960. Contbr. to: Science; Jour. of Applied Physics; Am. Scholar

War Record: U. S. Army, 1918. Consultant to Surgeon-General of U. S. Army, 1944-47. Special Int.: Gen. Sci.; Popularization of Sci. and Med.; Sci. Journalism; Astronomy and Atomic. Gen. Int.: Author of Article on Atomic Bomb in 1946 edition of Encyclopaedia Britannica and of Annual Article on Atomic Energy in Britannica Book of the Yr., 1946-56; Winner, Pulitzer Prize in Journalism, 1937; Zeta Beta Tau, New Orleans Trophy, 1938; B. F. Goodrich Award for Distinguished Public Service, 1940; War Dept. Certificate of Appreciation, 1945; Geo. Westinghouse Dist. Sci. Writers Award, 1946; Albert Lasker Med. Journalism Award, 1954; Ohioana Career Medal, 1958; James T. Grady Award, 1960.

DIJKMAN, Marinus Johannes (Ph.D.), Prof. of Tropical Botany and Genetics, Univ. of Miami, Coral Gables 46, Fla. Home Add.: 6767 S.H. 112th St., Miami 56, Fla. TROPICAL HORTICULTURE, BREEDING/SELECTING OF TROPICAL CROPS. b. Djombang, Java, Indonesia, Feb. 12, 1907. s. Bernard Adrianus and Melanie V. M. (Spruyt) D. Edn.: B.S., Univ. of Utrecht, The Netherlands, 1929; M.S., ibid., 1932; Ph.D., ibid., 1934. m. Nelly Ochse, Aug. 2, 1938. c.: Dick Jaap. Exp.: Salesman, Brocades & Italie, Surabaia, Java, Indonesia, 1934-35; Secy., W. Java Exptl. Sta., Gen. Agri. Syndicate, Bogor, Java, Indonesia, 1935-37; Rubber Geneticist, ibid., 1937-39; Head, Agri. Extension Serv., S. and W. Sumatra, ibid., 1939-47; Consultant, Transitional Netherlands East Indies Govt. in Australia and Indonesia, 1945-47; Asst. Prof., Applied Tropical Botany & Genetics, Univ. of Miami, 1947-55; Consultant & Lectr., Escuela Agricola Panamericana, Honduras, C.A., 1954-55; Assoc. Prof., Univ. of Miami, 1955-60; Consultant, Instituto Salvadoreno de Investigaciones del Caft, El Salvador, C.A., 1958; Prof., Univ. of Miami, 1960—; Institutional Rsch. Grant Comm., Am. Cancer Soc. Institutional Grant, Schl. of Med., ibid., 1960—. Mem.: A.A.A.S.; Tri-Beta; Botanical Soc. of Am.; Fla. Acad. of Scis.; Fla. St. Horticultural Soc.; Gerontological Soc.; Scandinavian Soc. for Plant Physiol.; Xi Gamma Iota; Veterans Assn. of Univ. of Miami; Netherlands Protestant Ch. Author: Hevea—Thirty Years of Research in the Far East, 1951, 4th Print., 1961. Co-Author: Tropical and Sub-Tropical Agriculture, 1961. Contbr. to: Sci.; Am. Jour. of Botany; La Hacienda; Econ. Botany; Proc. Fla. St. Horticulture Soc.; Proc. Caribbean Region Am. Soc. Hort. Sci. Serv. Rec.: Netherlands East Indies Army, 1941-45. Gen. Int.: Am. Cancer Soc. and N.I.H. Grant, 1960-63; U.S.A.F. Grant, 1962-65. Areas of Rsch.: Macro and Micro Environment in Relation to Aging.

DILLARD, David H. (M.D.), Asst. Prof. of Surgery, Univ. of Washington Med. Schl., Dept. of Surg., Seattle 5, Wash. Home Add.: 12712 39th N.E., Seattle, Wash. GENERAL SURGERY, CARDIOVASCULAR, THORACIC. b. Spokane, Wash., May 14, 1923. s. James Pitt and Mabel (Carlson) D. Edn.: A.B., Whitman Coll., Wash., 1946; M.D., Johns Hopkins Univ., 1950. m. Virginia Foster, July 7, 1948. c.: Kristine; David; James; Julia; Robert. Exp.: Instr. in Surgery, Univ. of Washington Schl. of Med., 1954-59; Asst. Prof. of Surgery, ibid., 1959—. Mem.: King Co. Med. Soc.; Washington St. Med. Assn.; Am. Med. Assn.; Seattle Surgical Soc.; Fellow, Am. Coll. of Surgeons; Sigma Xi; Golden Pouch Soc. Contbrng. Author: Surgery of the Stomach and Duodenum, 1962; Geriatric Surgical Emergencies, 1963. Contbr. to: Surgical Forum; Ann. Surg.; The Am. Surg.; Surgery; New Eng. Jour. of Med.; Trans. Am. Soc. Artificial Internal Organs; Jour. Thoracic Surg.; N.W. Med.; Jour. Am. Med. Assn.; Jour. Am. Surg. Areas of Rsch.: Cardiovascular and esophageal diseases, Hemodialysis.

DILLER, Alford Claudon (M.D.), Physician, 113 N. Main, Convoy, Ohio. Home Add.: 111 N. Main, Convoy, Ohio. MEDICINE. b. Pandora, Ohio, Jan. 24, 1925. s. Clarence David and Ruth (Claudon) D. Edn.: A.B., Bluffton Coll., 1950; M.D., Univ. of Chicago Med. Schl., 1954. m. Marilyn Jane Basinger, Aug. 21, 1949. c.: Jonathan Ford; Steven Lindsay; Phillip Morgan; Thomas Allen; Leslie Ann. Exp.: Intern., Blodgett Memorial Hosp., Grand Rapids, Mich., 1954-55; Resident, Parkview Memorial Hosp., Ft. Wayne, Ind., 1955; Physician, Convoy, Ohio, 1955—. Hon. Pos.: Chf. of Med. Staff, Van Wert Co. Hosp.; Pres., Van Wert Co. Med. Soc.; Chmn., Insurance and Econs. Committee, Ohio Acad. of Gen. Practice. Mem.: A.M.A.; Ohio St. Med. Assn.; Am. Acad. of General Practice; Am. Geriatric Soc.; N.Y. Acad. of Scis.; A.A.A.S.; Nu Sigma Nu; Lion's Club; Van Wert United Health Foundation. Areas of Rsch.: Data Processing as Applied to Medicine.

DILLON Lawrence Samuel (Ph.D.), Prof. of Biol., A. and M. Coll. of Tex., College Station, Tex. Home Add.: 1008 Harrington, College Station, Tex. BIOLOGY. b. Reading, Pa., Apr. 6, 1910. s. Leroy V. and Emma L. (Culp) D. Edn.: B.S., Univ. of Pittsburgh, 1933; M.S., A. and M. Coll. of Tex., 1950; Ph.D., ibid., 1954. m. Elizabeth J. Schatz, 1932. c.: Patricia J. Exp.: Zoologist and Asst. Dir., Reading Pub. Museum, Reading, Pa., 1937-48; Prof., A. and M. Coll. of Tex., College Sta., Tex., 1948—; N.S.F. Fellow, Univ. of Queensland, 1959-60. Mem.: A.A.A.S.; A.A.U.P.; Entomol. Soc. of Am.; Sigma Xi; Soc. for Study of Evolution; Ecological Soc. of Am.; Tex. Acad. of Sci.; Acad. Zool.; Soc. of Systematic Zool.; Inst. Americano; Am. Soc. of Zoologists; Phi Kappa Phi. Author: Manual of Common Beetles of North America, 1961; Laboratory Survey of Biology, 1962. Contbr. to: Wasmann Jour. of Biology; Bull. Brooklyn Entomological Soc.; Jour. N. Y. Entomological Soc.; Bull. British Museum; Wasmann Jour. Biology; Systematic Zoology; Evolution; Jour. Neurology. Areas of Rsch.: Insect Taxomomy; Evolution of Life in General; Zoogegraphy; Paleoclimatology.

DI LUZIO, Frank C. (Mr.), Vice Pres. of Engrng., Fairbanks, Morse & Co., Wis. Denver, Colo. Office, Farmers Union Bldg., Suite 604, Denver, Colorado. ENGINEERING AND HYDROLOGY. b. Rome, Italy, Sept. 2, 1913. s. Louis and Josephine M. (Novelli) D. Edn.: B.S., Fenn Coll., 1938. m. Phyllis Krejci, July 3, 1934. c.: Joan M.; Frank C., Jr. Exp.: Mgr., Area Office, U. S. Atomic Energy Comm., Los Alamos, N. M., 1943-56; Deputy Mgr., ibid., Albuquerque, N. M., 1956-61; Vice Pres. of Engrng., Fairbanks, Morse & Co., Beloit, Wis., 1961—. Hon. Pos.: Mem., Rivers and Harbors Congress; Mem., Bd. of Regents, N. M. inst. of Mining and Technol.; Mem., Water Resources Committee. Mem.: Intl. Assn. for Hydraulic Rsch.; Assn. for Appl. Solar Energy; Am. Geophysical Union; Natl. Acad. of Scis.; Am. Soc. of Civil Engrs.; Tau Beta Pi; Albuquerque Petroleum Club. Contbr. to: N. M. Quart.; N. M. and Its Mineral Resources; Jour. of Solar Energy; Harvard Rev. Serv. Rec.: Corps of Engrs., 1943-46. Areas of Rsch.: Systems Studies; Hydrology; Natural Resource Develop. and State and Regional Develop. Studies.

DIMAS-D'ARUTI, Federico M. (D.D.S.), Oral Surgeon, U. S. Air Force Staff Dent. Suregon, 363 R. Lamar St. Roosevelt, Puerto Rico. Home Add.: 1500 Ave. Americo Miranda, Rep. Metropolitano, Puerto Rico. ORAL SURGERY. b. San Juan, Puerto Rico, February 24, 1896. s. Don Federico Dimas and Adelia (Aruti de) D. Edn.: B.S., Deitchman Coll., 1918; D.D.S., Univ. of Md. Dent. Coll., 1922; LL.B., Univ. of Chicago Law Schl., 1928; Science, La Sage Inst., Paris, Fr., 1930. Hon. Deg.: Ph.D., Avatar Univ., London, Eng., 1930; Sc.D., Internatl. Acad., London, 1951; Sc.D., Byzantine, Univ., Spain, 1952; Sc.D., Minerva Acad., Italy, 1952; Sc.D., Andhra Rsch. Univ., India, 1945; Sc.D., Voltaire Univ., France, 1946; Sc.D., Western Univ., Calif., 1948; Sc.D., Univ. Latino-Americana, Cuba, 1952. m. Colita Mercado, Dec. 25, 1926. Exp.: Dir., Municipal Dent. Clinics, Puerto Rico, 1925-27; Staff Member, Doctors Hospital, Washington, D. C., 1940-53; Staff Dental Surgeon, U.S.A.F., Wash., D. C., 1925-53; Oral Surgeon, ibid., 1953—. Hon. Pos.: Natl. Tech. Advisory, Army and Navy Union; Natl. For. Repr., Army and Navy Union; Past Pres., Reserve Off. Assn., Puerto Rico; Past Pres., Am. Internatl. Acad.; Repr., Dent. Coll. of Santa Domingo in U. S.; Official Delegate, 10th Internatl. Cong. of Milit. Med.; Official Delegate to the 3rd Internatl. Cong. in Stomatology; Fellow of Emerson Rsch., Univ. Calif.; Fellow, Internatl. Acad. of Odontology, Argentine; Fellow, Internatl. Coll. of Dentists; Psi Omega; Scabbard and Blade; Phi Beta Gamma; Arnold Air Soc. (Hon.); Sigma Phi Mu; Acad. of Science, (Hon.) Mexico; Acad. of Science, Maryland; Fellow, A.A.A.S.; International Acad. of Odontology; Am. Acad. of Dental Medicine; Fellow, Am. Assn. of Stomatology; Fellow, Am. Soc. General Anesthesia; Honorary Mem., Am. Assn. of Military Surgeons. Author: Dental Jurisprudence, 1925. Contbr. to: Jours. of Dentist. War Rec.: U.S.A.F., 26 Yrs., Ret. Col.; Appointed Hon. Brig. Genl., Allied Resistance Force. Gen. Int.: Fauchard Medal for disting. services in the Dental Profession; Received Various Decora-

tions from: U. S.; France; Belgium; Montenegro; Ger.; Poland; Russia; Italy; Spain; Greece; Mex.; S. Am.; Awarded the Nobiliary Title of "Count D'Aruti" by H.M. King Humberto II of Italy (1946); Awarded "Count de Clemont" by the Imperial House of Deols, France; Awarded the LATERANS CROSS by the Vatican; Awarded 33rd degree Mason at Rome, Italy. Areas of Rsch.: Oral Surgery; General Dentistry.

DIMMICK, John F. (Ph.D.), Asst. Prof. of Biol., 113 Winston Hall, Wake Forest Coll., Winston-Salem, N. C. Home Add.: Apt. 9B Wake Forest Coll., Winston-Salem, N. C. ANIMAL PHYSIOLOGY. b. Carroll Co., Ill., Aug. 7, 1921. s. B. D. and Bernice (Schade) D. Edn.: B.S., Western Ill. State Univ., 1948; M.S., ibid., 1949; Ph.D., Univ. of Ill., 1960. m. Kathryn Scott, Jan., 1946. c.: Judith Kay; Jean Karol. Exp.: Tchg. Asst., Western Ill. State Univ., Macomb, Ill., 1948-49; Sci. Tchr., Easton Comm. H. S., Easton, Ill., 1949-52; Biol. Tchr., Urbana H. S., Urbana, Ill., 1952-59; Res. Asst., Univ. of Ill., Urbana, Ill., 1959-60; Post Doc., ibid., 1960-61; Asst. Prof. of Biol., Wake Forest Coll., Winston-Salem, N. C., 1961—. Mem.: A.A.A.S.; N.A.B.T.; Sigma Zeta; Sigma Xi. Contbr. to: Ill. Acad. of Sci. Abstracts and Physiologist Abstract. Serv. Rec.: A.U.S. Areas of Rsch.: Effects of legumes on the gastrointestinal tract of humans and the interaction of carbonic anhydrase in the production or absorption of carbon dioxide in flatus.

DINEEN, Eugene Joseph (Ph.D.), Assoc. Prof. of Chem., W. Va. State Coll., Institute, W. Va. Home Add.: 152 Main Ave., Nitro, W. Va. ACADEMIC-PHYSICAL ORGANIC CHEMISTRY (REACTION MECHANISMS) AND ELECTRO-ORGANIC CHEMISTRY, INDUSTRIAL-CELLULAR PLASTICS AND COATINGS (POLYMERS). b. Niagara Falls, N. Y., Nov. 12, 1920. s. Timothy C. and Margaret M. (Moynihan) D. Edn.: B.S., Niagara Univ., 1942; M.S., Univ. of Notre Dame, 1948; Ph.D., The Ohio State Univ., 1951. Exp.: Production Chemist, Chem. Construction Corp., Operators of Lake Ontario Ordnance Works, Lewiston, N. Y., 1942-43; Rsch. Asst., Columbia Univ., S.A.M. Labs., N. Y., 1943-44; Rsch. Chem., Hooker Chem. Co., Niagara Falls, N. Y., 1951-53; Rsch. Chemist, O-CEL-O, Div. of General Mills, Buffalo, N. Y., 1953-54; Chief-Chemist, Banite Co., Buffalo, N. Y., 1955-56; Rsch. Chemist, Natl. Aniline Div., Allied Chem. Co., ibid., 1956-57; Past Pres. and Rsch. Dir. of Swevco, Inc., ibid., 1957-59; Assoc. Prof. of Chem., W. Va. State Coll., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Lambda Upsilon. Contbr to: Jour. Electrochem. Soc.; Electrolytic Reduction of Organic Compounds. Serv. Rec.: Army of U. S., 1944-46. Gen. Int.: One of the Founders of Swevco, Inc.; developers of custom molded Urethane Foam Products. Retain 25% interest in Company. Areas of Rsch.: Foamed Urethanes; Research in the preparation of Urethane Polymers for the fabrication of Cellular crash padding and cushioning materials; Urethane coatings and adhesives; Developed Methods and Techniques for Close Molded Urethane Foams; Investigation in the Process Variables of The Photochlorination of Benzene; Also Academic Research in the Stereochemistry of Substituted Pyrans.

DINGER, Harold Eugene (Mr.), Consultant, Naval Rsch. Lab., Wash., D. C. Home Add.: 2106 Keating St., S.E., Wash. 21, D. C. RADIO WAVE PROPAGATION. b. Barberton, Ohio, May 7, 1905. s. Edwin C. and Nellie E. (Thompson) D. Edn.: Attended Univ. of Akron, 1930-31; Univ. of Md., 1947-51; Grad. Schl., U.S.D.A., 1947-51. m. Edith E. Cramer, July 27, 1929. c.: Marilyn R. Bell; Barbara J. Butler. Exp.: Chf. Instr., McKim Tech. Inst., Akron, Ohio, 1929-39; Radio Engr., Naval Rsch. Lab., Wash., D. C., 1940-42; Sect. Hd., ibid., 1942-57; Consult., ibid., 1957—. Hon. Pos.: Past Chmn., Comm. IV, URSI; Mem., Natl. Com. of URSI; Mem., Exec. Com. of CCIR. Mem.: Fellow, Inst. of Radio Engrs.; Fel., A.A.A.S.; Fel., Am. Inst. of Elec. Engrs.; R.E.-S.A.; U.R.S.I.; C.C.I.R. Contbr. to: Proc. I.R.E.; Elec. Engrng.; Nature Electronics; L'Onde Electrique; Tele-tech; Jour. of Geophys. Rsch. Serv. Rec.: Awarded Meritorious Civ. Serv. Award, Navy, 1947. Gen. Int.: U.S.A. Delegate to Internatl. Meetings in Lucerne, Paris, Sydney, London, Geneva, Boulder, Los Angeles, Warsaw, and Washington. Areas of Rsch.: Radio Wave Propagation, Inospheric Physics, Atmospheric Electricity, Electronic Compatibility, Internatl. Radio Regulation and Control.

DINGMAN, Reed Othelbert (M.D.), Plastic Surgeon, 221 N. Ingalls, Ann Arbor, Mich. Home Add.: 1029 Chestnut Rd., Ann Arbor, Mich. PLASTIC SURGERY. b. Rockwood, Mich., Nov. 4, 1906. s. Wilbert and Gertrude (Scherer) D. Edn.: B.A., Univ. of Mich., 1928; D.D.S., ibid., 1931; M.S., ibid., 1932; M.D., ibid., 1936. m. Thelma Muir, 1932. c.: David; Sue; Sally. Exp.: Instr. in Oral Surg., Univ. of Mich., 1931; Asst. Res. and Res., Dept. of Oral Surg., Univ. Hosp., 1933-35; Surgical Internship, Wash. Univ., Barnes Hosp., St. Louis, 1936-37; Dept. of Maxillofacial Surg., Geisinger Mem. Hosp., Danville, Pa., 1937-39; Private Practice, Wash., D. C., 1939-40; Asst. and Preceptee in Plastic Surg., 1940-45; Res. in Plastic Surg., Blodgett Mem. Hosp., Grand Rapids, Mich., 1945-46; Consult. in Oral and Plastic Surg., Percy Jones Army Hosp., Battle Creek, Mich., 1950-53; Assoc. Prof. of Oral Surg., Schl. of Dentistry, Univ. of Mich., 1946—; Asst. Prof. of Surg., ibid., 1953—; Consult. in Surg., Vets. Admin. Hosp., Ann Arbor, Mich., 1955—. Hon. Pos.: Secy-Treas., Am. Bd. of Plastic Surg., Inc.; Mem., Bd. of Dirs., Found. of Am. Soc. of Plastic and Reconstructive Surg., Inc.; Repr. to Adv. Bd. of Med. Specialties from Am. Bd. of Plastic Surg., Inc.; etc. Mem.: Am. Coll. of Surg.; Am. Med. Assn.; Am. Soc. Oral Surg.; Am. Assn. of Plastic Surg.; Am. Soc. Plastic and Reconstructive Surg.; Internatl. Assn. of Plastic Surg.; Am. Soc. of Maxillofacial Surg.; Am. Assn. of Cleft Palate Rehab.; Am. Dental Assn.; Mich. State Dental Soc.; Mich. State Med. Soc.; Psi Omega; Nu Sigma Nu; Omicron Kappa Upsilon; Phi Kappa Phi; Galens Hon. Med. Soc.; C. of C., and others. Author: 80 scientific articles on oral and plastic surgery. Assoc. Editor: Jour. of Plastic and Reconstructive Surg.

DINSMORE, Ray Putnam (Dr.), Vice Pres., Rsch. and Development, The Goodyear Tire and Rubber Co., 1144 E. Market St., Akron, 16, Ohio. CHEMICAL ENGINEERING; RESEARCH— RUBBER. b. Tewksbury, Mass., Apr. 24, 1893. s. Hiram and Susan (Toye) D. Edn: B.S., Mass. Inst. of Tech., 1914. Hon. Deg.: D. Engrng., Case Schl. of Applied Sci., 1940. m. Violet Cowie, Sept. 24, 1919. c.: Ruth Harrison Ayers; Ray Putnam. Exp.: Tech. Staff, The Goodyear Tire and Rubber Co., Ohio., 1914-16; Asst. Chemist, ibid., Canada, 1916-19; Chief Chemist, ibid., Calif., 1919-21; Chf. Chemist, Rsch. Dir., ibid., Ohio, 1921-32; Asst. Factory Mgr., ibid., 1932-39; Mgr. Devel. Dept., ibid., 1940-43; Vice-Pres., ibid., 1943-61; Ret., 1961; Dir., ibid., 1960. Hon. Mem. and Dir., Asst. Deputy Rubber Director, 1942-43; Technical Consultant to Goodyear, Independent Engineering Management Consultant, 1961—. Mem.: Fellow, Am. Inst. Chemists; Fellow, Royal Soc. Arts; Fellow, Inst. Rubber Industry; Fellow, Am. Assn. Adv. of Sci.; Am. Chem. Soc.; Am. Inst. Chem. Engrs.; Soc. Automotive Engrs.; Alpha Chi Sigma; Past Pres. and Dir., Am. Sect., Societe de Chimie Industrielle. Contbr. to: Chem. Met. Eng.; Ind. Engrng. Chem.; I.R.J.; Rubber Age; Trans. I.R.I.; Colloid Chem.; Mines Mag.; S.A.E. Jour.; etc. Gen. Int.: Colwyn Medal award by Inst. Rubber Industry, London, 1948; Charles Goodyear Medal award by Rubber Division, Am. Chem. Soc., 1955; Distinguished Award by Akron Council Engrng. and Scientific Societies, 1959; Trustee, Midwest Rsch. Inst.; Trustee, Kent State Univ. Special Int.: Rubber Tech.; Polymer Chem.; Organic Synthesis.

DITTMAN, Paul Edward (Mr.), Supervisory Scientist, Bolt, Beranek and Newman, Inc., Cambridge, Mass. ENGINEERING PSYCHOLOGY. b. Peekskill, N. Y., Mar. 30, 1917. s. P. J. and Bertha (Mansbach) D. Edn.: B.S., N. Y. State Coll., Albany, 1938; M.S., Univ. of Ill., 1950. m. Mildred Nightingale, July 1, 1942. c.: Diane Elaine. Exp.: Educator, Secd. Schls., N. Y. State, 1938-41; Exec. Asst. to Vice-Pres. of R and D, Link Aviation, Inc., 1946-51; Consultant, Engr. Psychol., Melpar, Inc., 1953-55; Chf., Human Engrng. and Trng. Rsch. Br., Hdqs., U.S.A.F., 1955-56; Deputy Chf., Bch. Sci. Div., A. F. Office of Scientific Rsch., 1956-58; Asst. Chf., Human Factors Engrng. Sect., Boeing Airplane Co., 1959-60; Supervisory Scientist, Bolt, Beranek and Newman, Inc., Mass., 1960—. Mem.: Div. of Engrng. Psychol.; A.P.A.; I.A.S.; I.R.E.; Am. Assn. Adv. of Sci.; A.S.M.A.; Kappa Phi Kappa; A.R.S.; Masons. Serv. Rec.: U.S.A.F., 1941-45; 1951-53. Gen. Int.: Contributions to the design and utilization of Flight Trng. Equipment and Methods and the Human Engrng. of Man-Machine systems. Areas of Rsch.: Man-Machine Systems, Trng. equipment and methods.

DISNEY, Ralph L. (Mr.), Assoc. Prof., Univ. of Buffalo, Buffalo, N. Y. and Visit. Lectr., Univ. of Mich., Ann Arbor, Mich. Home Add.: 529 Fifth St., Ann Arbor, Mich. OPERATIONS RESEARCH. b. Baltimore, Md., Feb. 27, 1928. s. Ralph L., Sr. (dec.) and May (Whitestone) D. Edn.: B.E., Johns Hopkins Univ., 1952; M.S.E., ibid., 1955. m. Lois DuFrain, Jan., 1955. c.: Lynn; Carrie; Edward. Exp.: Operation Analyst, Operations Research Office, Bethesda, Md., 1955-56; Asst. Prof., Lamar St. Coll. of Tech., 1956-59; Assoc. Prof., Univ. of Buffalo, 1959 —; Visit. Prof., Univ. of Mich., 1962—. Hon. Pos.: On Bd. of Dirs., Lamar Rsch. Center, 1956-59; Consultant to Computer Ctr., Univ. of Buffalo, 1961-62. Mem.: A.S.E.E.; A.I.I.E.; O.R.S.A.; Am. Math. Soc.; Math. Assn. of Am.; S.I.A.M.; A.A.A.S.; Alpha Pi Mu; Sigma Xi. Contbr. to: The Industrial Engineering Economist; Jour. of International Engineering. Areas of Rsch.: Operations Rsch.; Conveyor Theory, Probability Theory and Stochastic Process; Operations Rsch. in Inventory Systems.

DITTMER, John Charles (Ph.D.), Asst. Prof., Biochemistry Dept., Univ. of Ky., Lexington, Ky. Home Add.: 115 Zandale Dr., Lexington, Ky. BIOCHEMISTRY. b. El Reno, Okla., Mar. 27, 1928. s. Herman and Murl (Roberts) D. Edn.: B.S., Univ. of Okla., 1954; Ph.D., Univ. of Wash., 1958. Exp.: N.I.H. Rsch. Fellow, A.R.C. Inst. of Animal Physiol., Babraham, Cambridge, Eng., 1958-60; Asst. Prof., Univ. of Sou. Calif., 1960-62; Asst. Prof., Univ. of Ky., 1962 . Mem.: Am. Chem. Soc.; A.A.A.S.; Biochemical Soc., London; Am. Oil Chem. Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Biological Chemistry; Biochemical Jour. Areas of Rsch.: Chemistry and Metabolism of Lipids.

DITTMER, Karl (Ph.D.), Dir., Div. of Grants and Fellowships, Am. Chemical Soc., 1155 16th St., N.F., Washington 6, D. C. Home Add.: 6764 Brigadoon Dr., Bethesda 14, Md. BIOCHEMISTRY. b. Hebron, N. D., Jan. 18, 1914. s. Albert and Pauline (Pfaeffle) D. Edn.: B.A., Jamestown Coll., 1937; M.A., Univ. of Colo., 1939; Ph.D., Cornell Univ., 1944. m. Marjorie Ann Johnson, June 15, 1949. c.: Charles Gomer Thomas; David Lloyd Thomas, (stepsons); Dolores Jean D. Exp.: Asst. Prof., Assoc. Prof., Univ. of Colo., 1945-49; Prof., Head of Dept., Fla. State Univ., 1949-58; Dir., Grants and Fellowships, Am. Chemical Soc., Wash., D. C., 1958—. Mem.: Am. Soc. of Biological Chemists; Am. Chemical Soc.; A.A.A.S., Fellow; Sigma Xi; Alpha Chi Sigma; Torch Club. Contbr. to: Jour. of the Am. Chemical Soc.; Jour. of Biological Chemistry; Sci.; Jour. of Bacteriology; Proc. of N. Y. Acad. of Scis.; Proc. of Exptl. Biol. and Medicine; Arch. of Biochemistry. Areas of Rsch.: Biotin Chemistry; Anti-Amino Acids; Microbiological Assays.

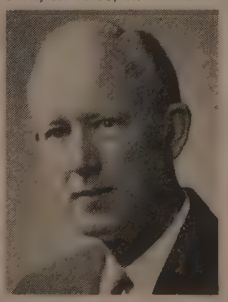
DIXIT, Kamalakar R. (Ph.D.), Visiting Prof. of Phys., Clarkson Coll. of Technol., Potsdam, N. Y. Home Add.: 48 Elm St., Potsdam, N. Y. NUCLEAR PHYSICS AND SOLID STATE PHYSICS. b. Nasik, India, Oct. 6, 1909. s. Ramchandra S. and Janki (Shintre) D. Edn.: B.Sc., Bombay Univ., 1929; M.Sc., ibid., 1930; Ph.D., London Univ., 1933; D.I.C., Imperial Coll., London, 1934; Dr. Hal., Physikalisches Inst., Leipzig, 1936. m. Kusum Phadke, June 16, 1943. c.: Avinash; Kalika. Exp.: Prof. of Phys., Gujarat Coll., Ahmedabad, India, 1936-45; Prof. of Phys. Inst. of Sci., Bombay, India, 1945-55; Pres., Gujarat Coll., Ahmedabad, India, 1955-58; Visiting Prof. of Phys., Clarkson Coll. of Tech., 1960—. Hon. Pos.: Pres., Indian Phys. Soc., 1955-56; Coun. Mem., Natl. Inst. of Scis. of India, 1955-58, 1960-61. Mem.: Sigma Xi; Radio Club, Bombay; Torch Club, Potsdam, N. Y. Author: Introduction to Wave Mechanics and Quantum Mechanics, 1953. Contbr. to: Philos. Mag., London; Phys. Rev.; Indian Jour. of Phys.; Physikalische Zeitschrift; Zeitschrift Fur Naturforschung. Areas of Rsch.: Solid State Physics, Semiconductors, Nuclear Physics, Cosmic Rays.

DIXON, Frank James, Jr. (M.D.), Head, Division of Experimental Pathol., Scripps Clinic and Rsch. Foundation, 476 Prospect St., La Jolla, Calif. Home Add.: 2355 Avenida de la Playa, La Jolla, Calif. PATHOLOGY. b. St. Paul, Minn., Mar. 9, 1920. s. Frank James and Rose (Kuhfeld) D. Edn.: B.S., Univ. of Minn., 1939; M.D., Med. Schl. of the Univ. of Minn., 1943. m. Marion Edwards, Mar., 1946. c.: Janet Wynn; Frank Edwards; Michael Bigelow. Exp.: Rsch. Asst., Dept. of Pathol., Harvard Med. Schl., 1946-48; Instr., Dept. of Pathol., Wash. Univ. Med. Schl., 1948-50; Asst. Prof., ibid., 1950-51; Prof. and Chmn., Dept. of Pathol., Univ. of Pittsburgh Schl. of Med., Pittsburgh, Pa., 1951-61; Hd., Div. Expmtl. Pathol., Scripps Clinic and Rsch. Found., Calif., 1961—. Hon. Pos. Mem., Editorial Bd., Laboratory Investigation; Jour. of Immunology; Jour. of Allergy; Transplantation Bull.; Proc. Soc. Exp. Biol. and Md.; Jour. Arthritis and Rheumatism. Mem.: Diplomate, Am. Bd. of Pathology; Am. Assn. Pathologists and Bacteriologists; N. Y. Acad. of Sci.; Am. Assn. Immunologists; Soc. for Exptl. Biol. and Med.; Am. Soc. for Exptl. Pathol.; Am. Assn. for Cancer Rsch.; A.A.A.S.; Internatl. Acad. of Pathol.; Interurban Pathol. Soc.; Am. Soc. for Clin. Invest.; Soc for Clin. Inves.; Am. Coll. of Allergists; Am. Acad. of Allergists; Natl. Fdtn., Rsch. Advisory Com.; Natl. Sci. Fdtn., Com. on Biol.; N.I.H. Allergy and Immunology Study Sect.; Nu Sigma Nu; Alpha Omega Alpha; Sigma Xi. Author: Tumors of the Male Genital System, Atlas of Tumor Pathol., 1952. Contbr. to: Jour. Immunol.; Jour. Exptl. Med.; Jour. Lab. and Clin. Med.; Proc. Soc. for Exptl. Biol. and Med.; Sci.; Am. Jour. Med. Sci. Awards: Theobald Smith Award, 1952; Parke-Davis Award, 1957. War Rec.: U. S. Navy, 1943-46. Special Int.: Immunology; Radiobiol.; Cancer.

DIXON, Franklin Painter **(Ph.D.), Prin. Scientist, Advanced Devel.** Aeronutronic Div., Ford Motor Co., Ford Rd., Newport Beach, Calif. Home Add.: 1815 Toyon Lane, Newport Beach, Calif. SPACE PHYSICS. b. Corpus Christi, Tex., Jan. 25, 1927. s. Basil Van Dixon and Winona Mae (Powers) D. Godfrey. Edn.: B.S., Univ. of Tex., 1954; M.S., Calif. Inst. of Tech., 1957; Ph.D., ibid., 1960. m. Barbara June Stout, Mar. 24, 1951. c.: Craig Franklin. Exp.: Rsch. Asst., Los Alamos Scientific Lab., Los Alamos, N. Mex., 1954; Rsch. Asst., Synchroton Lab., Calif. Inst. of Tech., 1954-59; Prin. Scientist, Aeronutronic Div., Ford Motor Co., Newport Beach, Calif., 1959—. Mem.: Am. Phys. Soc.; Am. Geophys. Union; Am. Rocket Soc.; Sigma Pi Sigma; Sigma Xi. Contbr. to: Phys. Rev. Serv. Rec.: USAF, 1945-52. Gen. Int.: Conducted Integration and Development of Air Force Blue Scout Rocket and Satellite Experiments; Performed Studies for Dept. of Defense and NASA. Areas of Rsch.: Space Physics; High Energy Physics; Fast Coincidence Counters; Lunar and Planetary Sciences; Rocket and Satellite Payload Experimentation.

DOAN, Donald J. (Ph.D.), Res. Metallurgist, The Eagle-Picher Co., Joplin, Mo. Home Add.: 216-N Byers Ave., Joplin, Mo. METALLURGY. b. Francis, Okla., Mar. 11, 1910. s. William E. and Cleo (Ireland) D. Edn.: B.S., Univ. of Wash., 1931; M.S., Univ. of Ariz., 1932; Ph.D., Mo. Schl. of Mines, 1935. m. Alma Thompson, 1937. Exp.: Res. Met., Eagle-Picher Co., Joplin, Mo., 1935-39; Res. Met., ibid., Cincinnati, Ohio, 1939-42; Res. Met., ibid., Chicago, Ill., 1946-53; Res. Met., ibid., Joplin, Mo., 1953—. Mem.: Am. Chem. Soc.; Am. Inst. Min. and Met. Engrng.; A.A.A.S.; Faraday Soc.; Am. Electrochem. Soc.; Sigma Xi; Phi Lambda Upsilon. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Lead and Zinc Metallurgy; Battery Fundamentals.

DOBBINS, William Earl (Sc.D.), Prof. of Civil Engrng., N. Y. Univ., N. Y. 53, N. Y. Home Add.: 50 Cedar Court, Closter, N. J. HYDRAULIC AND SANITARY ENGINEERING. b. Woburn, Mass., Mar. 1, 1913. s. William James and Fanny (Bustard) D. Edn.: S.B., Mass. Inst. of Tech., 1934; S.M., ibid., 1935; Sc.D., ibid., 1941. m. Norma Nilsen, Dec. 20, 1952. c.: Thomas; William; Richard. Exp.: Instr., Robert Coll., Istanbul, Turkey, 1936-39; Engr., Fay, Spofford and Thorndike, Boston, Mass., 1946-50; Assoc. Prof. of San. Engrng., N. Y. Univ., 1950-57; Prof., ibid., 1957—. Mem.: Am. Soc. of Civil Engrs.; Boston Soc. of Civil Engrs.; Am. Geophys. Union; Am. Assn. for the Adv. of Sci.; A.S.E.E.; Am. Water Works Assn.; N. Y. Water Pollution Control Assn.; Tau Beta Pi; Sigma Xi; Chi Epsilon. Contbr. to: Trans. Am. Soc. of Civil Engrs. Serv. Rec.: U. S. Navy, 1943-46. Gen. Int.: A.S.C.E. Rudolf Hering Medal for 1959. Areas of Rsch.: Sedimentation, Radioactive Wastes; Stream Pollution.



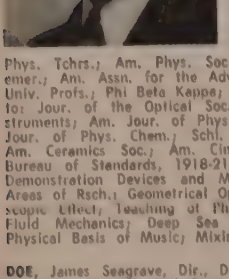
DOBRIANSKY, Lev E. (Ph.D.), Prof. of Econ., Georgetown Univ., Wash., D. C. Home Add.: 834 Kling Dr., Alexandria, Va. SOCIAL PHILOSOPHY; MONEY AND BANKING; POLITICAL ECONOMY OF U.S.S.R. b. New York, N. Y., Nov. 9, 1918. s. John I. and Eugenia (Greshchuk) D. Edn.: B.S., N. Y. Univ., 1941; M.A., ibid., 1943; Ph.D., ibid., 1951. Hon. Deg.: LL.D., Munich, 1952.

m. Julia Kusy, June 29, 1946. c.: Larisa Eugenia; Paula Jon. Exp.: Tchng. Fellow, Econs., N. Y. Univ., 1942-44; Instr., Econs., ibid., 1944-48; Asst. Prof., Econs., Georgetown Univ., 1948-52; Assoc. Prof., ibid., 1952-60; Prof., ibid., 1960 -; Faculty of Polit. Affairs, Natl. War Coll., 1957-58. Hon. Pos.: Acting Chmn., Dept. of Econs., Georgetown Univ., 1953-54; Rsch. Analyst, Am Bankers Assn., 1942-43; Associate Editor, The Ukrainian Quarterly, 1946—; Chairman of Editorial Board, 1960 -. Mem.: Am. Economics Assn.; A.A.U.P.; Acad. of Political Science; Am. Finance Assn.; Natl. Soc. for Study of Edn.; Catholic Econ. Assn.; Beta Gamma Sigma; Delta Sigma Pi, and others. Author: The Free Trade Ideal, 1954; Captive Nations Week Res. (Public Law 86-90), 1959; Shevchenko Monument Res. (Public Law 76-749), 1960. Contbrng. Editor: The Great Pretense, 1956; Veblenism: A New Critique, 1957. Co-Author: Decisions For A Better America, 1960. Editor and Contbr.: The Crimes of Khrushchev, 1959; Europe's Freedom Fighter: Taras Shevchenko, 1960. Contbr. to: Georgetown Law Jour.; Social Order; Ann. Acad. of Polit. and Soc. Sci.; Manuscripts, Am. Econ. Rev. and many others. Areas of Rsch.: U.S.S.R. The Non-Russian Nations in U.S.S.R.; Economy; Money and Banking-Monetary Standards; Social Philosophy Veblenism; Institutional Economics.

DODD, Eileen Kramer (Ph.D.), Prof. of Psychol., Mary Washington Coll., Box 1205, Coll. Station, Fredericksburg, Va. PSYCHOLOGY. b. Coplay, Pa., Dec. 23, 1899. d. Peter Zehmer and Jane (Meyers) Kramer. Edn.: Ph.B., Muhlenberg Coll., 1922; M.A., N. Y. Univ., 1924; Ph.D., ibid., 1927. m. James Harvey Dodd, Aug. 29, 1930. Exp.: Prof. of Psychol., Mary Washington Coll. of the Univ. of Va., Fredericksburg, Va., 1926-. Mem.: A.A.A.S.; Am. Psychol. Assn.; Internatl. Coun. of Women Psychologists; Va. Acad. of Sci.; E. Psychol. Assn.; S.E. Psychol. Assn.; Pi Lambda Theta; Alpha Phi Sigma; Chi Beta Phi; Psi Chi. Special Int.: Child Psychol.; General Psychol.; Personality; Theories of Personality Development.

DODD, Laurence Ellsworth (Ph.D.), Prof. of Phys., (Emer.), Univ. of Calif., Los Angeles, Calif. Home Add.: 1132 E. Third St., Port Angeles, Wash. PHYSICS (OPTICS, TEACHING METHODS AND DEVICES). b. Cascade, Ia., July 16, 1886. s. Willard Howard and Harriet (Goodyear) D. Edn.: B.S., Cornell Coll., 1910; M.S., State Univ. of Ia., 1914; Ph.D., ibid., 1918. m. Marguerite Templeton, July 3, 1929. Exp.: Asst. Physicist, Natl. Bureau of Standards., Pittsburgh, Pa., 1918-19; Assoc. Physicist, ibid., Washington, D. C., 1919-21; Lectr., State Univ. of Ia., Ia. City, 1921; Asst. Prof. to Prof., Phys., Univ. of Calif., L. A., 1921-54; Prof., (Emer.), ibid., 1954—. Hon. Pos.: Chmn., Natl. Nominating Comm., Am. Assn. of Phys. Tchrs.; Pres., Am. Assn. of Phys. Tchrs., Sou. Calif. Sect. Mem.: Am. Assn. of Phys. Tchrs.; Am. Phys. Soc.; Optical Soc. of Am., Fellow, emer.; Am. Assn. for the Adv. of Sci., Fellow; Am. Assn. of Univ. Profs.; Phi Beta Kappa; Sigma Xi; Gamma Alpha. Contbr. to: Jour. of the Optical Soc. of Am.; Rev. of Scientific Instruments; Am. Jour. of Phys.; Jour. of the Am. Chem. Soc.; Jour. of Phys. Chem.; Schl. Sci. and Maths.; Jour. of the Am. Ceramics Soc.; Am. Cinematographer. Serv. Rec.: Natl. Bureau of Standards, 1918-21. Gen. Int.: Many New Lecture Demonstration Devices and Methods for Teaching of Physics. Areas of Rsch.: Geometrical Optics; Optical Instruments; Stroboscopic Effect; Teaching of Physics, New Devices and Methods; Fluid Mechanics; Deep Sea Diving; Mechanics of Rotation; Physical Basis of Music; Mixing of Liquids; Vapor Pressure.

DOE, James Seagrave, Dir., Dept. of Scl., The Detroit Country Day Summer Schl. and Summer Scl. Lab., 22305 W. Thirteen Mile Rd., Birmingham, Mich. Home Add.: 4017 Albert, Royal Oak, Mich. CHEMISTRY; PHYSICS. b. Stoughton, Mass., Mar. 22, 1920. s. Chester Winfield and Florence Alfreda (MacCombie) D. Edn.: A.B., Bates Coll., 1942. m. Katherine Serauw, Sept. 13, 1942. c.: James Ernest; Thomas William; Andrew Charles. Exp.: Hd. of Scl. Dept., Detroit Country Day Schl., 1949-54; Hd. of Dept. of Scis. and Math., ibid., 1954—; Dir., Detroit Country Day Summer Schl. and Summer Scl. Lab., ibid., 1961—; Detail Project Engr., Chevrolet Engrng., 1956; Detail Project Engr., Fisher Body Engineering, 1950-55; Chemist, Androscoggin River Pollution Project, 1947-49. Hon. Pos.: Chmn., Scl. Sect., Meeting of Independent Schls. Assn. of N. Central States, 1956. Mem.: Am. Assn. of Adv. Sci.; Natl. Sci. Tchrs. Assn.; Cent. Assn. of Sci. and Math. Tchrs.; Independent Schls. Assn. of No. Cent. States; Assn. of Am. Physicists. Serv. Rec.: U.S.A.A.C., 1943-46. Areas of Rsch.: Instrumentation for Noise and Vibration and Vehicle Safety Testing; River Pollution by Industrial Waste.



DOE, Bruce Roger (Ph.D.), Geologist, U. S. Survey, Wash. 25, D. C. Home Add.: 2230 Wash. Ave., Silver Spring, Md. GEOCHEMISTRY OF TRACE ELEMENTS AND THEIR ISOTOPES. b. St. Paul, Minn., Apr. 24, 1932. s. Richard H. and Ruth E. (Schoen) D. Edn.: B.S. and B. Geol. E., Univ. of Minn., 1954; M.S., Mo. Schl. of Mines, 1956; Ph.D., Calif. Inst. of Tech., 1960. m. Nellija Oleks, March 21, 1958. Exp.: Instr., Mo. Schl. of Mines, Rolla, Mo., 1955-56; Postdoct. Fellow, Geophys. Lab., Wash., D. C., 1960-61; Geologist, U. S. Geol. Survey, Wash., D.C., 1961 -. Hon. Pos.: Pan Am. Petrol. Fellow, Calif. Inst. of Tech., 1956-57; Kennecott Copper Fellow, Calif. Inst. of Tech., 1957-59. Mem.: Sigma Xi; Geol. Soc. of Am.; Am. Mineral. Soc.; Geochem. Soc.; Am. Geophys. Union; Geol. Soc. of Wash.; Sigma Gamma Epsilon. Contbr. to: Am. Mineral.; Bull. of the Geol. Soc. of Am.; Jour. of Geophys. Rsch. Areas of Rsch.: Solid Solution Geothermometry; Trace Element Geochemistry; Radiogenic Tracer Analysis; Geochronology.

DOERR, Arthur Harry (Ph.D.), Dean of the Grad. Coll. and Prof. of Geography, Univ. of Okla., Norman, Okla. Home Add.: 1213 Leslie Lane, Norman, Okla. GEOGRAPHY. b. Johnston City, Ill., Aug. 28, 1924. s. Arthur H. and Nettie Esther (Felts) D. Edn.: B.A., Southern Ill. Univ., 1947; M.A., Ind. Univ., 1948; Ph.D., Northwestern Univ., 1951. m. Dale A. Lantrip, Aug. 15, 1947. c.: Marc M. Exp.: Asst. Prof. to Prof., Univ. of Okla., 1951 -; Assoc. Dean of the Grad. Coll., ibid., 1960-61; Dean of Grad. Coll., ibid., 1961—; Fulbright Prof., Univ. of the Philippines, Diliman, Rizal, Phil., 1958-59; Instr., Northwestern Univ., 1949-51. Mem.: Am. Assn. of Geographers; Southwestern Soc. Sci. Assn.; A.A.A.S.; Okla. Acad. of Sci.; Sigma Xi; Sigma Delta Pi; Gamma Theta Upsilon. Author: Principles of Geography, 1959. Contbr. to: Annals Assn. of Am. Geog.; Southwestern Social Sci. Quart.; Jour. of Geog.; Econ. Geog.; Landscape; Rocks and Minerals; Land Econ.; Proc. Okla. Acad. of Sci.; The Scientific Monthly; The Professional Geographer; Social Studies; Encyclopedia Britannica. Serv. Rec.: U. S. Army Air Corps, W. W. II. Areas of Rsch.: Man and Land Relationships; Economic Geography, The Far East; Tropical Land Use.

DOERSAM, Charles Henry, Jr., Dir. of Marketing, Instruments for Industry, 101 New South Rd., Hicksville, N. Y. Home Add.: 24 Winthrop Rd., Port Washington, N. Y. INFORMATION HANDLING SYSTEMS, DIGITAL TECHNIQUES APPLIED TO CONTROL PROBLEMS. b. New York, N. Y., Nov. 1, 1921. s. Charles Henry and Mary E. (Davenport) D. Edn.: B.S., Columbia Univ., 1942; M.S., ibid., 1944. m. Cynthia Ann Wick, Dec., 1954. c.: Charles Henry III; Donna Davenport; Dean Robert. Exp.: Mem. Tech. Staff, Bell Telephone Lab., N. Y., 1942-44; Sr. Project Engr., Office of Naval Rsch., Port Wash., N. Y., 1946-53; Sr. Engr., Sect. Hd. and Project Engr., Sperry Gyroscope Co., Great Neck, N. Y., 1953-60; Sr. Rsch. Engr., Fairchild Camera and Instrument, Hicksville, N. Y., 1955-56; New Products Mgr., Potter Instrument Co., Plainview, N. Y., 1960-61; Marketing Mgr., Instruments for Industry, Hicksville, N. Y., 1961—. Hon. Pos.: I.R.E. Professional Group of Space Electronics: Chmn., Secy., Treas. Mem.: Inst. of Radio Engrs., Sr. Mem., 1951; A.A.A.S.; Am. Acad. of Polit. Sci. Contbr. to: I.R.E. Transactions and Convention Records. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Information Handling and digital techniques applied to control and data reduction for guided missile simulation and test data reduction.

DOGGETT, Leonard Allison (Mr.), Staff Engr. at H.R.B Singer, State Coll., Pa. Home Add.: 357 East Prospect Ave., State College, Pa. ELECTRICAL ENGINEERING. b. Boston, Mass., Nov. 10, 1888. s. Frederick Fobes and Mary Chipman (DeWolf) D. Edn.: A.B., Harvard Univ., 1908; M.E.E., ibid., 1910; E.E., D. Edn.: A.B., Harvard Univ., 1908; M.E.E., ibid., 1910; E.E., Pa. State Univ., 1930. m. Elizabeth Armstrong Creelman of Pa. State Univ., 1930. m. Elizabeth Armstrong Creelman of Kelvin Ireland, Dec. 23, 1920. c.: Alice D.; Frederick Fobes, II; Margaret Clyde. Exp.: Instr. at Harvard Univ., 1910-13; Pa. State Univ., 1923-49. Now Emer. Prof.; Instr. at Harvard Univ., 1910-13; Prof., U. S. Naval Acad. Post Grad. Schl., 1913-23. Prof. The Prof., U. S. Naval Acad. Post Grad. Schl., 1913-23. Prof. The Pa. State Univ., 1923-49. Now Emer. Prof.; Interim Prof., Univ. of Fla., 1949-49; Visiting Prof., Bucknell Univ., 1949-53. Hon. Pos.: Chmn. of Edn. Com., Am. Inst. Elec. Engrs.; Mem. Natl. Coun. A.A.U.P.; Chmn. Student Br. Com., Am. Inst., Elec. Engrs. Mem.: Am. Inst. of Elec. Engrs.; Am. Soc. Engrng. Edn.; Am. Assn. Univ. Profs.; Sigma Xi; Eta Kappa Nu; Tau Beta Pi; Kappa Delta Rho. Author: Alternating Current Analysis in 1933; Outline of Public Utilities in 1938. Contbr. to: Am. Inst. Elec. Engrs.; Am. Soc. Engrng. Edn. War Rec.: U. S. Naval Acad., 1913-23. Travel: England; Europe. Gen. Int.: Mem. of Boro Coun. Hobbies: Travel; Painting; Postage Stamps. Listed in: Who's Who in Engrng.; Who's Who in Pa.; Who's Who in the East; A.M.S.; Who's Who in Am Edn. Special Int.: Design of Elec. Mach.

DOHENY, James Jerome, Jr. (Mr.), Exec. Secy. and Mgr., Am. Chem. Soc., Chicago Sect., 86 East Randolph St., Chicago 1, Ill. Home Add.: 4247 West End Ave., Chicago 1, Ill. MANAGEMENT. b. Effingham, Ill., June 22, 1906. s. James J. and Julia (Willenborg) D. Edn.: B.S., Ill. Inst. of Tech., 1927; M.S., ibid., 1932. Exp.: Convention Mgr., Am. Chem. Soc., Washington, D.C., 1940-49; Mgr. Exec. Secy., Am. Chem. Soc., Chicago, Ill., 1949-

Mem.: A.A.A.S.; Fellow, A.I.C.; Soc. for Hist. of Techn.; Am. Chem. Soc.; Soc. for Study of Alchemy; Alpha Chi Sigma; Phi Lambda Upsilon. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Engineering; Exposition management.

DOHMS, Doris A. (Mrs.), Kindergarten Tchr., 6453 N. 89th St., Milwaukee, Wis. Home Add.: 17575 Royal Crest Dr., Brookfield, Wis. ELEMENTARY SCIENCE.

b. Mt. Morris, Wis., Oct. 11, 1909. d. Walter and Lillian (Streicher) Moldenhauer. Edn.: B.E., Wis. State Coll., 1954; M.S., Univ. of Wis., 1960. m. George W. Dohms, Feb. 14, 1937. Exp.: Tchr., Rural Schls., Sonora, Wautoma, Wis., 1935-37; 1st to 4th Grade, Waukau, Wis., 1937-41; 5th and 6th Grade Tchr., Fall River, Wis., 1941; 1st to 4th Grade Tchr., Windsor, Wis., 1942-43; Lab. Technician, Hercules, Baraboo, Wis., 1943-45; Tchr., Rural Schl., Token Creek, DeForest, Wis., 1945-47; 2nd Grade Tchr., Cambridge, Wis., 1947-52; Kindergarten Tchr., Sunnyside, Madison, Wis., 1954-56; 2nd. Gr. Tchr., Browning, Milwaukee, 1956-59; Kindergarten Tchr., Browning, Milwaukee, Wis., 1959-61; Kindergarten Tchr., Bruce, Milwaukee, 1961—. Hon. Pos.: Secy., Wis. State Conservation Curr. Comm., 1957; Chmn., Milwaukee Conservation Curr. Comm., 1959; 4-H Leader of Conservation, 65th St. Club, 1959—. Mem.: Pi Lambda Theta; Conservation Edn. Assn.; C.A.S.M.T.; A.A.A.S.; W.C.C.E.; A.C.E.; M.T.A.; W.E.A.; N.E.A.; P.T.A. Areas of Rsch.: Elementary Science; Conservation.

DOLAN, Francis Emil (Ph.D.), Prof. of Anatomy, Chmn., Dept. of Biol., Univ. of Bridgeport, Bridgeport, Conn. Home Add.: 525 Lincoln Ave., Bridgeport, Conn. ANATOMY AND PHYSIOLOGY. b. Yonkers, N. Y., June 14, 1911. s. Francis G. and Bertha C. (Kramer) D. Edn.: Ph.D., Gottingen Univ., 1931. Hon. Deg.: D.Sc., McKinley Coll., 1944. m. Frances M. Ferri, 1951. c.: Rita; Mary Frances; Rosemary; Monica; Nancy. Exp.: Prof. of Anat., Bellevue Hosp., New York, N. Y., 1932-47; Dean of Admissions, Univ. of Bridgeport, 1947-50; Asst., Assoc., then Full Prof., Ibid., 1950—; Chmn., Dept. of Biology, 1960—. Mem.: German Anatomical Soc.; Soc. of Am. Microbiologists; New York Academy of Sciences; Delta Tau Kappa; Pi Gamma Mu; Nu Epsilon Pi; Torch Club. Author: Manual of Human Anatomy, 1950; Digest of Human Anatomy and Physiology, 1952; Handbook of Derma Surgery, 1939; Action of Cones to Light, 1940; Cosmetic Surgery, 1942. Contbr. to: Jour. of Biological Scis. Areas of Rsch.: Eyes and their Functions; Cardiovascular Areas.

DOLE, Gertrude Evelyn (Ph.D.), Lecturer in Anthropology, Columbia Univ., New York, N. Y. Home Add.: 4499 Henry Hudson Parkway, New York 71, N. Y. CULTURAL ANTHROPOLOGY. b. Cavendish, Vt., Oct. 10, 1915. d. Fletcher E. and Laura R. (Harrington) D. Edn.: A.B., Middlebury Coll., 1937; M.A., Univ. of N. C., 1949; Ph.D., Univ. of Mich., 1957. Exp.: Lecturer, New Schl. for Social Rsch., New York, N. Y., summer, 1958; Lecturer, Columbia Univ., 1958-60; Enthnographic Field Rsch. for Am. Museum of Natural Hist., 1960-61; Lecturer, N. Y. Univ., 1961—; Lecturer, Columbia Univ., 1961-62. Mem.: Am. Anthropological Assn.; A.A.A.S.; Am. Ethnological Soc.; Sgima Xi. Author: Essays in the Science of Culture in Honor of Leslie A. White, 1960. Contbr. to: Am. Anthropol.; Papers of the Mich. Acad. of Sci.; Arts and Letters; Revista do Museu Paulista; RUNA; Proceedings of the Internatl. Congress of Anthropol. Sciences. Areas of Rsch.: Ethnology of South Am.; Kinship; Social Organization.

DOLKART, Leo, Consulting Electrical Engr., 222 E. Chestnut St., Chicago 11, Ill. DESIGN OF ILLUMINATION AND INDUSTRIAL AND COMMERCIAL POWER SYSTEMS DISTRIBUTION; HIGH TENSION SUB-STATIONS. b. Caucasia, Sept. 14, 1881. s. Abraham and Julia (Brownstone) D. Edn.: B.S.E.E., Univ. of Ill., 1903. m. Clara Elson, Mar. 12, 1908. c.: Elynore Meserow; Ralph. Exp.: Chf. Elect. Engr., Albert Kahn, Inc., Detroit, First Five Year Plan, U.S.S.R., Moscow, 1930-31; Chf. Engr., Leonard Const. Co., New York and Newport, R. I., 1940-45; Chf. Engr., Bajio, Mex., 1945-47; Consulting Engr., Electrical Construction Firms, 1947—. Hon. Pos.: Chmn., A.I.E.E. Air Pollution Comm.; Adv. Coun. Soc. Hist. of Technol.; Fellow, Am. Inst. Elect. Engrs. and Member for Life; Emeritus Mem., Illumin. Engrng. Society; Chmn., Institutional Comm., Military Engr.; Editor, Sci-En-Tech News, 1955—; Secy., Future Engrs. of Am. Mem.: A.A.A.S.; Fut. Engrs. of Am.; Soc. Tech Writ. and Publ.; Ill. Soc. Prof. Engrs.; Natl. Soc. Prof. Engrs.; Western Soc. of Engrs.; Soc. Am. Military Engrs.; Bd. of Govs., Chicago Tech. Soc. Coun.; Dir., Cook Co. Post Reserve Officers Assn. of U.S.A. Contbr. to: Military Engineer; A.I.E.E. Conference Papers; Pit and Quarry; Quartermaster Review; Contractor and Engineers Monthly; Affiliated News; Sci-En-Tech News; The Vector; Spice. Serv. Rec.: A.U.S., W.W. I. Gen. Int.: Merit Award, Tech. Coun., 1961; Award of Merit, Illum. Engrng. Soc., 1956; Milit. Award, 1931; Illum Engr. Soc. Gold 50 Yr. pin, 1956; First Prize Lighting Contest, 1956; Safety Fleming Trophy, 1936-37; Masonic 50 Yr. Gold Pin. Areas of Rsch.: Preparing a book to be issued shortly and entitled, Ancient History of Caucasia and her Tribes: History of 1st Engrng. School, 700 B.C.; History of Engineering 4500 B.C. to Yr. 1.

DOLLAHITE, James Walton (D.V.M.), Assoc. Veterinarian, 122C Vet. Med. Bldg., Tex. A. and M. Coll., College Station, Tex. Home Add.: 4200 Milam, Bryan, Tex. RESEARCH IN ANIMAL DISEASES WITH SPECIAL INTEREST IN RESEARCH ON TOXIC PLANTS. b. Centerpoint, Tex., May 1, 1911. s. William Walter and Lucy Jane (Thomason) D. Edn.: D.V.M., A. and M. Coll. of Tex., 1933; M.S., ibid., 1961. m. Willie Mae Bishop, Dec. 22, 1934. c.: Alice Jane; Jamie Sue. Exp.: General Practice of Vet. Med., Ferrell and Marfa, Tex., 1933-34 and 1934-39; 1946-52; Jr. Vet., USDA, BAI, Animal Dis. Lab., Beltsville, Md., 1934-39; Assoc. Vet. and Hd. of Animal Disease Lab., Marfa, Tex., Tex. Agric. Expt. Sta., 1952-62; Assoc. Vet., Tex. A. and M. Coll., 1962—. Mem.: Am. Vet. Med. Assn.; A.A.A.S.; Am. Assn. of Vet. Nutritionists; Tex. Public Health Assn.; Tex. Agric. Workers Assn.; Am. Coll. of Veterinary Toxicologists; Sigma Xi; Phi Zeta; Rotary. Contbr. to: Veterinary Medicine; Jour. of Bacteriology; Jour. Am. Vet. Med. Assn.; The Southwestern Veterinarian; T.A.E.S. Progress Report. Serv. Rec.: A.U.S., 1942-46. Areas of Rsch.: Toxicology of Plants.

DONAHUE, Hayden Hackney, Supt., Central State Hosp., Norman, Okla. Residence Add.: Superintendent's Quarters, Central State Hosp., Norman, Okla. PSYCHIATRY AND MENTAL HOSPITAL ADMINISTRATION. b. El Reno, Okla., Dec. 4, 1912. s. Henry Hilton and Mayme (Hackney) D. Edn.: B.S., Univ. of Kan., 1939; M.D., ibid., Schl. of Med., 1941. m. Patricia Toothacker, Feb. 22, 1947. c.: Erin Kathleen; Kerry Shannon; Patricia Marie. Exp.: Draftsman and Jr. Engr., Paulette and Wilson Constrn. Co., Salina, Kan., 1931-32; Engr., Div. of Water Conservation, St. of Kan., 1934-36; Statistician and Chf. of Stat. Unit, Dept. of Inspection Registration, State of Kan., Ibid., 1936-37; Hosp. Exec. Officer and Neuropsychiatrist, A.A.F., Wright-Patterson Field, Ohio, 1942-43; Air Group Surgeon and Psychiatrist, U.S.A.F., N. Africa, Italy and Sicily, 1943-44; Dir. of Professional Services, A.A.F., Neuropsychiatric Center, St. Petersburg, Fla., 1944-45; Chf. of Hosp. Operations, Central Off., U. S. Vet. Admin., Wash., D. C., 1946; Exec. Officer (Asst. Mgr. and Acting Mgr.), U. S. Vets. Admin. Hosp., N. Little Rock, Ark., 1946-49; Dir. of Rsch. and Edn., Ark. State Hosp. and Consult. in Psychiatry, Ark. State Health Dept., 1949-51; Asst. Med. Dir., Tex. Bd. of Hosps. and Special Schls., Austin, 1951-53; Dir. of Mental Health, State of Okla., Okla. City, 1953-59; Asst. Supt. and Dir. of Projects, Ark. State Hosp., 1959-61; Supt., Central State Hosp., Norman, Okla., 1961—; Instr., Med. and Psychiatry, Univ. of Ga. Schl. of Med., 1942; Lectr., Psychiatry, A.A.F. Redistribution Ctr., Atlantic City, 1944; Lectr., Hosp. Admin. and Psychiatry, A.A.F. Neuropsychiatric Ctr., St. Petersburg, Fla., 1944-45; Lectr., War Neurosis, Sr. Med. Off. Trng. Schl., Orlando, Fla., 1945; Lectr., Hosp. Admin. and Psychiatry, Residency Prog., U. S. V.A. Hosp., N. Little Rock, Ark., 1946-49; Lectr., Hosp. Admin. and Psychiatry, Residency Prog., Ark. State Hosp., Little Rock, 1949-51; Assoc. Prof., Psychiatry, Univ. of Ark. Schl. of Med., 1949-51; Assoc. Prof., Clin. Psychiatry, Univ. of Ark. Schl. of Med., 1959—; Lectr., Legal Med., Univ. of Tex. Schl. of Law, 1952; Consulting Asst. Prof. Neurol. and Psychiatry, Univ. of Okla. Schl. of Med., 1954-58; Assoc. Prof. of Psychiatry, ibid., 1958—. Hon. Pos.: Pres. Elect, Okla. Br. of A.P.A., 1959; Pres. Elect, Okla. Br., Am. Psychiat. Assn., 1962; Chmn., Budget Comm., Am. Psychiat. Assn., 1962-65; Mem., Comm. on Budget and Consult. Mental Hospital Service, Am. Psychiatric Assn., 1959—; Vice-Chmn., Oklahoma Comm., White House Conference on Children and Youth, 1959; Mem. Govs. Commn., White House Conf. on Aging, 1960; Mem., Natl. Adv. Comm., White House Conf. on Aging; Advisor to Okla. Comm., Pres. Comm. on Employment of Handicapped, 1957-59; Mem. of Coun. on Mental Health Trng. and Rsch. of So. Regional Edn. Bd., 1954-59; Mem., Professional Comm., Natl. Assn. for Mental Health, 1959—; Natl. Program Comm., Coun. on Social Work Edn., 1959; Chmn., Sub. Sect., Mental Health White House Conf. on Aging, 1961; Mem., Achievement Awards Comm., Am. Psychiatric Assn., 1961-63; etc. Mem.: Natl. Acad. Religion and Mental Health; Am. Med. Correctional Assn.; Okla. State Med. Assn.; Chmn. of Comm. on

Aging, Okla. Med. Assn., 1958-59; Co-Chmn., Comm. on Ins., ibid., 1958-59; Ark. State Med. Assn.; Chmn., Comm. on Mental Health, Ark. Med. Assn., 1959—; Okla. Clin. Soc.; A.M.A.; Mem. of Mid-Continent Psychiatric Assn., 1959—; Mem., Ark. Br. of A.P.A., 1959—; Chmn., Comm. Aspects of Psychiatry Comm.; Fellow, Am. Psychiatric Assn.; Fellow, Am. Assn. for Mental Deficiency; Fellow, Am. Geriatric Soc.; Fellow, A.A.A.S.; and many others. Contbr. to: Psychiatric Quart.; Am. Jour. Psychiatry; Am. Jour. Clin. Nutrition. Serv. Rec.: U.S.A.F., W. W. II. Areas of Rsch.: Flying Fatigue; War Neurosis; T.B. and Narcosynthesis (truth serum) in Mental Hosps.; Social Anthropological, Physical and Psychological Problems of the Aged; Psychological Selection of Hospital Personnel; Trng. of Professional, Technical and Ancillary Hosp. Personnel; Hosp. Operation and Mgmt. Problems; Use of Special Drugs in the Treatment of Mental Patients; Use of Rehabilitative Therapies in the Care and Treatment of Institutionalized Patients.

DONHEISER, Walter Joseph (Ph.D.), Chf. Psychologist, Southeast La. Hosp., Mandeville, La. CLINICAL PSYCHOLOGY. b. New York, N. Y., Nov. 23, 1927. s. Sidney and Agnes (Hennessy) D. Edn.: B.A., Adelphi Coll., 1951; M.A., ibid., 1952; Ph.D., ibid., 1959. m. Deirdre Moesel, 1954. c.: David; Mark. Exp.: Special Schl. Psychologist Bd. of Cooperative, Edni. Services, Patchogue, L. I., N. Y., 1956-59; Dir. of Trng., Southeast La. Hosp., Mandeville, La., 1959-61; Chf. Psychologist, ibid., 1961—. Hon. Pos.: Consultant, St. Tammany Guid. Center, Covinton, La.; Special Lectr., La. State Univ., Baton Rouge, La. Mem.: Am. Psychol. Assn.; La. Psychol. Assn.; Eastern Psychol. Assn.; A.A.A.S.; Psi Chi; Alpha Delta Epsilon. Serv. Rec.: A.U.S., 1945-48. Areas of Rsch.: Interest in the Treatment of Mental and Emotional Disorders; Rsch. in Communication Theory and Psychotherapy.

DONN, Anthony (M.D.), Asst. in Opthal., Presbyt. Hosp., 635 W. 165, N. Y. 32, N. Y. Home Add.: 156 E. 79, N. Y. City, N. Y.

PHYSIOLOGY OF THE EYE. b. N. Y., N. Y., March 4, 1926. s. Louis Loveman Lefkowitz and Alice (Donn) D. Edn.: B.S., Yale Univ., 1947; M.D., Columbia Phys. and Surg. Coll., 1951. m. Anna Cappio, July 31, 1952. c.: Michael Louis. Exp.: Instr., Coll. of Physns. and Surgns., N. Y., 1957 ; Asst. in Ophthal., Presbyt. Hosp., 1961—. Mem.: Sigma Xi; Alpha Omega Alpha. Contbr. to: Archives of Ophthal.; Jour. of Invest. Ophthal.; Nature; Trans. of N. Y. Acad. of Sci. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Physiology of the Eye (Cornea).

DONOHOO, John Thomas (Ph.D.), Asst. Prof. and Hd. Dept. of Biol., St. Mary's Univ., San Antonio, Tex. ZOOLOGY. b. St. Louis, Mo., Feb. 26, 1919. s. Joseph J. and Mary Ann (Brown) D. Edn.: B.S., Univ. of Dayton, 1940; M.S., Marquette Univ., 1951; Ph.D., Univ. of Notre Dame, 1956. Exp.: Instr., Chaminade, Clayton, Mo., 1940-44; Instr., Don Boscoe H. S., Milwaukee, Wis., 1944-50; Instr., St. Mary's Univ., 1950-56; Asst. Prof., ibid., 1956-58; Assoc. Prof., ibid., 1958—. Mem.: A.A.A.S.; R.E.S.A. Soc. of Am. Microbiol.; Natl. Assn of Biol. Tchrs.; Tex. Acad. of Sci.; Sigma Xi. Areas of Rsch.: Microbiol., Radiation Biol., Genetics.

DOOD, Arnold Robert (M.D.), Dir. of Lab., Holland City Hosp., Holland, Mich. Home Add.: 598 Central Ave., Holland, Mich. PATHOLOGY. b. Grand Rapids, Mich., Jan. 29, 1928. s. Herman and Nellie (De Maagd) D. Edn.: B.S., Calvin Coll., 1951; M.D., Univ. of Mich., 1953. m. Mary E. Malloy, June 13, 1952. c.: Diane; Arnold, Jr.; Steven; Tanya; Danelle. Exp.: Res. in Path., Butterworth Hosp., Grand Rapids, Mich., 1956-60; Pathologist, Holland City and Zeeland Comm. Hosp., Holland and Zeeland, Mich., 1960—. Mem.: A.M.A.; Mich. Pathol. Soc.; A.S.C.P.; Coll. of Am. Pathol.; A.A.A.S. Serv. Rec.: U. S. Army, 1954-56.

DOOLEY, Evelyn Johns (Mrs.), Math. Tchr., Central H. S., Columbia, Tenn. Home Add.: Rte. 5, Columbia, Tenn. b. Maury Co., Tenn., Feb. 3, 1919. d. Porter B., Sr., and Janie Lynn (Johns) D. Edn.: B.S., Middle Tenn. St. Coll., 1957; M.A., Geo. Peabody Coll. for Tchrs., 1961. m. Billy Dooley, Dec. 21, 1944. s. Clampett and Carrie Dooley of Columbia, Tenn. c.: Wilma Jo. Exp.: Prin. and Tchr., Union Valley Elem. Schl., Sawdust, Tenn., 1937-40; Tchr., Graham Elem. Schl., Williamsport, Tenn., 1940-41; Tchr., Cross Bridges Elem. Schl., Cross Bridges, Tenn., 1941-43; Tchr., Union Grove Elem. Schl., Columbia, Tenn., 1943-45; Tchr., Andrews Elem. Schl., Columbia, Tenn., 1952-57; Math. Tchr., Central H. S., 1957—. Hon. Pos.: Past Chmn., In-Serv. Work of Fourth Grade Tchrs. of Maury Co., 1954-55; Past Chmn., In-Serv. Work of Math. Tchrs. of Maury Co., 1957-58; Co-Advisor of the Pulaski Region of the Tenn. Jr. Acad. of Sci., 1960—; Secy., In-Serv. Work of Math. Tchrs. of Maury Co.

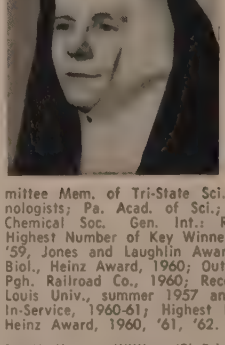
Mem.: Theta Omicron Chapt.; Kappa Delta Pi; M.T.S.C.; N.E.A. (life mem.); A.A.A.S.; Natl. Coun. of Tchrs. of Math.; Tenn. Jr. Acad. of Sci.; Central Assn. of Sci. and Math. Tchrs.; T.M.T.A.; T.E.A.; First Cumberland Presby. Ch. Gen. Int.: Attended Four Summer Inst. Progs. of the Natl. Sci. Found. Hobbies: Ch. Work; Mod. Math.; Traveling; Piano.

DOOLING, John Stuart (Ph.D.), Assoc. Prof., Catholic Univ. of Am., Wash., D. C. Home Add.: 1926 Lawrence St., N.E., Wash. 18, D. C. PHYSICAL CHEMISTRY. b. Philadelphia, Pa., June 27, 1913. s. John Aloysius and Sarah Dermitt (Love) D. Edn.: A.B., Catholic Univ. of Am., 1936; Ph.D., ibid., 1951. Exp.: Instr., Catholic Univ. of Am., 1949-53; Asst. Prof., ibid., 1953-57; Assoc. Prof., ibid., 1957—. Hon. Pos.: Asst. to Bd. of Trustees, St. Mary's Coll., Wilmington, Del. Mem.: Sigma Xi; Am. Assn. of Physics Tchrs.; Am. Physical Soc.; Am. Chemical Soc.; A.A.A.S.; Am. Numismatic Soc. Contbr. to: Jour. of the Am. Chemical Soc.; Jour. of Chemical Physics; Jour. of Physical Chem. Areas of Rsch.: Molecular Structure and Chemical Kinetics.

DOPPELT, Jerome Edward (Ph.D.), Asst. Dir., Test Div., The Psychol. Corp., 304 East 45th St., N. Y. 17, N. Y. PSYCHOLOGY MEASUREMENT AND TEST CONSTRUCTION. b. Aug. 12, 1917, N.Y.C. s. Usher and Sadie (Katz) D. Edn.: B.S., City Coll. of N. Y., 1936; M.S., ibid., 1937; Ph.D., Columbia Univ., 1949. m. Ruth Cooper of N.Y.C., June 29, 1947. d. Mr. and Mrs. M. L. Cooper. c.: Arthur; Martin; Harvey. Exp.: N. Y. St. Employment Serv., Interviewer, 1937-39; Grad. Record Office of Carnegie Found. for Adv. of Tchng., Asst. Tech. Dir., 1939-44; U. S. Army, Los Alamos Sci. Lab., 1945-46; Psychol. Corp., Asst. Dir., Test Div., 1946—. Mem.: Phi Beta Kappa; Sigma Xi; Am. Psychol. Assn.; Am. Statistical Assn.; Psychometric Soc.; Eastern Psychol. Assn. Ph.D. Dissertation: The Organization of Mental Abilities in the Age Range 13-17. War Rec.: Spec. Engr., 1945-46, U. S. A. Atomic Bomb Lab., Los Alamos, N. Mex. Listed in: A.M.S. Special Int.: Psychol. Test Construction; Statistics and Measurement in Psychology and Edn.; Machine Tabulation Techniques.

DORMAN, Richard L., Architect and Designer, Los Angeles, Calif.

DOROCHOWICZ, Sister Mary Carmella, C.S.S.F., Sci. Tchr., St. Adalbert H. S., 155 So. 15th St., Pittsburgh 3, Pa. Home Add.: 1500 Woodcrest Ave., Coraopolis, Pa. CHEMISTRY AND BIOLOGY. b. Ranshaw, Pa., May 19, 1910. d. John and Antoinette (Pahutka) D. Edn.: B.A., Seton Hill Coll., 1945; M.Ed., Duquesne Univ., 1959; M.S., St. Louis Univ., 1960. Exp.: Med. Technolst., Mercy Hosp., Part-time, 1947-53, 1945-53; Sci. Tchr., St. Adalbert H. S., 1946-53; Sci. Tchr., Our Lady of the Sacred Heart, 1953-59; Sci. Tchr., St. Adalbert H. S., 1959—. Hon. Pos.: Natl. Sci. Fdtn., St. Louis Univ., 1962, summer; Vice-Pres., Pittsburgh Math. and Sci. Tchrs. Assn.; Dir., Diocesan Health Curr. Mem.: A.A.A.S.; Am. Chem. Soc.; Pa. Cath. Round Table of Sci.; Pittsburgh Math. and Sci. Tchrs. Assn.; Committee Mem. of Tri-State Sci. Fair; Am. Soc. of Clinical Technologists; Pa. Acad. of Sci.; Natl. Assn. of Biol. Tchrs.; Am. Chemical Soc. Gen. Int.: Received Teachers Award for the Highest Number of Key Winners in the Tri-State Fair, 1956, '57, '59, Jones and Laughlin Award; Highest Number of Winners in Biol., Heinz Award, 1960; Outstanding Contributions to Sci. Edi., Pgh. Railroad Co., 1960; Recd. Natl. Sci. Fdtn. Fellowship, St. Louis Univ., summer 1957 and 1958; Mt. Mercy in Pittsburgh In-Service, 1960-61; Highest Number of Key Winners in Biol., Heinz Award, 1960, '61, '62.



DORN, Herman William (Ph.D.), Dir. of Rsch. Chem., 6161 Preston Haven Dr., Dallas 30, Tex. BIOCHEMISTRY; ORGANIC CHEMISTRY; FOODS AND DRUGS. b. Sept. 14, 1911, N. Y. s. David and Frances (Schnapper) D. Edn.: Student, Worcester Poly. Inst., 1929-30; A.B. in Biol. and Chem., Clark Univ., 1935; M.A. in Biol. Chem., ibid., 1936; Ph.D. in Organic Chem., ibid., 1938; Post Doctorate Fellow, State Univ. of Iowa, 1943. m. Mary Alice McDermott of Worcester, Mass., Apr. 2, 1934. d. Dr. Francis Edward and Frances Ethel (Prescott) McDermott. c.: Cynthia Gilbert; Prescott Mathew; Juliet Benson; Barrett Edward. Exp.: Instr., Pub. H. S., Worcester, Mass., 1938-39; Scientific Dir., Parker-Dorn, Inc., Worcester, Mass., 1937—; Supvr. of Chem. Production, Amino Products Co., Rossford, Ohio, 1938-42; Sr. Rsch. Chemist, Internatl. Minerals and Chem. Corp., Rossford, Ohio, 1942-45; Lectr. in Chem. Engrng., Univ. of Toledo, 1945; Supvr. of Biochem., Owens-Ill. Glass Co., Toledo, Ohio, 1945-47; Dir. of Rsch., Irwin, Neisler & Co., Decatur, Ill., 1948-52; Food and Drug Rsch. Consultant, Dorn and Co., Decatur, Ill., 1952—; Director of Rsch., Frozen Food Inst. and Pres., New York, N. Y., 1946—. Hon. Pos.: Chmn., Toledo Sect., Am. Chem. Soc., 1945;

Chmn., Toledo Am. Soc. Hygiene Assn., 1946-47; Pres., Decatur Coun. of Soc. Agencies, 1955-58; Deputy Dir., Macon Co. Civil Defense, 1956-58; Coun. Commsnr., B.S.A., 1951-58; Decatur Civic Serv. Award, 1952. Mem.: Am. Chem. Soc.; Fellow, Am. Inst. of Chem.; Fellow, N. Y. Acad. Scis.; Fellow, A.A.A.S.; Inst. Food Tech.; Assoc. Ed., "Food Technology"; Assoc., Vitamin Chemists; Trustee, Toledo Cancer Soc., Licensed Prof. Chem. in Engr., Ohio, Tex. and Ill.; Soc. of Am. Milit. Engrs.; Armed Forces Chem. Assn.; Assn. of Consult. Chemists and Chem. Engrs.; Secy., Toledo Bd. on Hazardous Materials and Processes; Chemn., Central Ill. Soc. of Professional Engrs., 1951. Contbr. to: Publications and Patents; Jour. Am. Chem. Soc.; Sci.; Jour. Soc. Exptl. Biol. and Med., Chem. and Engr. News; Bull. Natl. Formulary Com. Ph.D. Dissertation: Derivatives of the Ethers of Hydroxy-hydroquinone. War Record: Commissioned in Chem. Warfare Serv., 1939-42; Lt. Col., Chemical Corps, 1949—; Deputy Dir. Rsch., U. S. A. Chem. Rsch. and Dev. Labs., 1959—. Gen. Int.: Chem. Specialization in Digitalis Heart Principles, Cinchona Alkaloids, Proteins, Amino Acids, Vitamins, also Synthetic and Natural Vasopressors, Depressors, Ganglionic Blocking Agents, Analgesics, Quarternaries. Listed in: A.M.S.; Chem. W. W.; Who Knows—and What; W. W. Am.; W. W. in Engrng. Special Int.: Biological and Military Chem.—Foods and Drugs.

DORPAT, Theodore Lorenz (M.D.), Psychiatrist, 1214 Boylston, Seattle, Wash. Home Add.: 4226 N. E. 73rd, Seattle 5, Wash.

PSYCHIATRY. b. Miles City, Mont., Mar. 25, 1925. s. Theodore E. and Eda G. (Christiansen) D. Edn.: B.S., Whitworth, 1948; M.D., Univ. of Wash., 1952. m. Klarese Lere, Sept., 1949. c.: Joanne K. Exp.: Asst. Prof., Schl. of Med., Univ. of Wash., 1958-59; Clin. Asst. Prof., ibid., 1959—; Psychiatrist, Seattle, Wash., 1960—. Hon. Pos.: Comm. of Psychiats. for Community Action, Seattle, Secy. Mem. of Legisl. Comm.; Awarded the Margaret H. O'Donnell Prize in Psychiat., 1952. Mem.: Alpha Omega Alpha; Sigma Xi; Am. Med. Assn.; Am. Psychiat. Assn.; King Co. Med. Soc.; Wash. State Med. Assn.; N. Pacific Soc. of Neurol. and Psychiat.; Wash. Assn. for Mental Health. Contbr. to: Archives of Psychiatry; Psychosomatic Med.; Jour. of Nervous and Mental Diseases; Northwest Med.; Postgraduate Med. Comprehensive Psychiatry. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: Muscle Pain; Suicide.

DORTIGNAC, Edward John (Mr.), Rsch. Forester, Rocky Mountain Forest Exp. Sta., 203 Marron Hall, Univ. of New Mex., Albuquerque, N. M. Home Add.: 11505 Riviera Rd., N.E., Albuquerque, N. Mex. WATERSHED MANAGEMENT, HYDROLOGY AND SOILS. b. San Francisco, Calif., May 11, 1910. s. Edward John and Blanche (Jacquelin) D. Edn.: B.S., Univ. of Calif., 1933. m. Marion M. Bucher, Aug. 7, 1939. c.: Jeanette; Edward T.; Robert M. Exp.: Rsch. Forester, Ecologist, and Hydrologist, Calif., Lake States, Southern, Southwestern and Rocky Mountain Forest and Range Exp. Sta.; Emergency (Guayule) Rubber Proj., Shelterbelt Proj., U. S. Forest Serv., Calif., Minn., Colo., Tex., Miss., and N. Mex., 1934—. Hon. Pos.: Mem., Governor's Adv. Comm. for Devel. Long-Range Objectives for Natural Resources.

Mem.: A.A.A.S.; Soc. Am. Foresters; B.P.O.E.; Am. Foresters Assn. Contbr. to: A.A.A.S. Symposium; Jour. of Forestry; Soil Sci.; Ecology; Am. Soc. Agri. Engr.; N. Mex. Professional Eng.; N. Mex. Water Conf.; Am. Meteorol. Soc. Areas of Rsch.: Watershed and Range Management; Hydrol.; Ecology; Soils; Climatol.

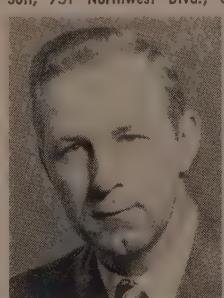
DORST, Howard Earl (Mr.), Entomologist in charge Federal Field Station, Utah State Univ., Campus, Logan, Utah. Home Add.: 649 E. Center, Logan, Utah.

ENTOMOLOGICAL RESEARCH ON CONTROL OF INSECTS THAT DAMAGE SUGAR BEETS AND TOMATOES. b. Pomeroy, Ohio, Sept. 19, 1904. s. Otto H. and Clara (Kautz) D. Edn.: B.A., Univ. of Kan., 1929; M.A., ibid., 1930. m. Martha Hauserman, Aug. 1, 1931. c.: Ronald V. Exp.: Jr. Entomologist, U.S.D.A. Bureau of Entomol. and Plant Quarantine, Richfield, Utah, 1930; Jr. Entomologist, U.S.D.A. Bureau of Entomol. and Plant Quarantine, Salt Lake City, Utah, 1930-36; Asst. Entomologist, U.S.D.A. Bur. of Entomol. and Plant Quarantine, Logan, Utah, 1936-41; Entomologist, U.S.-D.A. Entomology Rsch. Div., ibid., 1946—. Hon. Pos.: Pres., Logan Jr. C. of C., 1940; Pres., Utah Dept. Reserve Officers Assn., 1948; Grand Patron, Grand Chapt., Order of Eastern Star of Utah, 1959; Secy.-Treas., Pacific Northwest Vegetable Insect Conf., 1956-61, Chmn., 1963. Mem.: Sigma Xi; Phi Sigma; Entomological Soc. of Am.; Mason; Scottish Rite; Shriner; O.E.S.; Rotary. Contbr. to: Journal of Econ. Entomology; Journal of the Am. Soc. of Sugar Beet Technologists; Miscellaneous Publication, U. S. Department of Agriculture; Utah Farm and Home Science; Utah Academy of Sciences, Arts and Letters; Jour., Kan. Entomol. Soc.; Utah Ext. Leaflets. Serv. Rec.: U. S. Army Sanitary Corps, 1932; U. S. Army, 1941-46; Col., MSC, 1954. Areas of Rsch.: Entomological Rsch. for Control of Insects of Sugar Beets and Tomatoes in Intermountain District.

DOSSEL, William Edward (Ph.D.), Assoc. Prof. of Anatomy, The Creighton Univ. Schl. of Med., 302 N. 14th St., Omaha 2, Nebr. Home Add.: 3215 Belvedere Blvd., Omaha, Nebr.

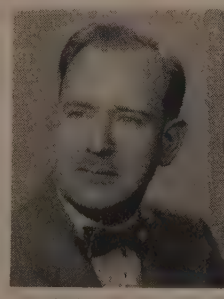
BIOLOGY (Experimental Embryology-Research Interest); ANATOMY (Histology, Embryology—Main Teaching Interest). b. St. Louis, Mo., April 16, 1920. s. Carl William and Ethel Theresa (Kronsbein) D. Edn.: A.B., Ill. Coll., 1948; M.S., Marquette Univ., 1950; Ph.D., The Johns Hopkins Univ., 1954. m. Coralie Strickland, Dec. 31, 1956. c.: Carl William, II; Clifford Latimer. Exp.: Instr., Univ. of N. C. Med. Schl., 1954-57; Asst. Prof., Anatomy, ibid., 1957-60; Assoc. Prof., Anatomy, Creighton Univ. Schl. of Med., 1960—. Hon. Pos.: Dir., Electron Microscope Lab.; Chmn., Basic Sciences Bldg. Com. Mem.: Sigma Xi; Electron Microscope Soc. of Am.; Am. Assn. of Anatomists; Am. Soc. of Zoologists; Sigma Pi. Contbr. to: Anatomical Record; Science; Laboratory Investigation; McGraw Hill Encycl. of Sci. and Technol. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Fine structure embryonic induction systems and endocrine organs (especially thyroid). Avian thyroid development and activity. Coronary atherosclerosis (fine structure endothelium coronary vessels). Fine structure of cardiac jelly.

DOTSON, George Kenneth (Mr.), Chief, Ohio Div. of Lands and Soil, 751 Northwest Blvd., Columbus, Ohio. Home Add.: 430 Dennis Lane, Grove City, Ohio.



SOIL SCIENCE. b. Kingman, Ind., Jan. 16, 1918. s. Frank and Ruby (Hutts) D. Edn.: B.S., Univ. of Ill., 1940. m. Charlotte Vizedom, 1949. c.: Sharon; Douglas. Exp.: Soil Scientist, U. S. Soil Conservation Serv., Hamilton, Ohio, 1942-52; Conservationist, Ohio Div. of Lands and Soil, Columbus, Ohio, 1952-55; Asst. Chief, Ohio Div. of Lands and Soil, ibid., 1955-57; Chief, Ohio Div. of Lands and Soil, ibid., 1957—. Hon. Pos.: Exec. Vice Pres., Conservation Sect., Ohio Acad. of Sci. Mem.: Soil Conservation Soc. of Am.; Soil Sci. Soc. of Am.; Am. Soc. of Agronomy; Internatl. Soc. of Soil Sci.; Am. Assn. Adv. Sci.; Ohio Acad. of Sci. Co-author: Our Ohio Soils, 1958. Contbr. to: The Ohio Conservation Bull. Areas of Rsch.: Soil Classification and Survey, Soil Consevation.

DOUGHTY, Richard Morrison (Mr.), Asst. Prof., Materia Medica Dept., Univ. of Ky. Coll. of Pharm., Lexington, Ky. Home Add.: 312 Linden Walk, Lexingtn, Ky.

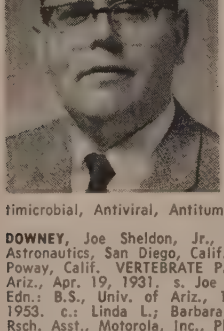


PLANT PHYSIOLOGY; PHARMACOGNOSY. b. Sewickley, Pa., Dec. 5, 1921. s. J. Clifford, Sr. and Lilan (Morrison) D. Edn.: B.S., Univ. of Pittsburgh, 1948; M.S., ibid., 1954. m. Gloria Hartman, Aug. 14, 1960. Exp.: Asst. in Chem., Coll. of Pharm., Univ. of Pittsburgh, 1948-49; Asst. Pharmacognosy, Coll. of Pharm., ibid., 1949-50; Instr., Pharmacognosy, ibid., 1950-51; Instr., Materia Medica, Coll. of Pharm., Univ. of Ky., 1951-54; Asst. Prof., ibid., 1954—; Ind. Univ. Fellowship, 1958-59; Grad. Asst., Botany, ibid., 1959-60; Acting Hd., Materia Medica Dept. (and Asst. Prof.), Univ. of Ky. Coll. of Pharm., 1961—. Mem.: A.A.A.S.; Soc. of Plant Physiol.; Am. Soc. of Botany; Soc. of Pharmacognosy; Am. Assn. of Univ. Profs.; Ky. Soc. Nat. Hist.; Ky. Acad. of Sci.; Kappa Phi Kappa; Kappa Psi; Rho Chi; Sigma Xi. Contbr. to: Ky. Pharmacist. Areas of Rsch.: Morphology of Allergenic Pollens; Plant Pigments; Occurrence of Coumarins and Phenolic Compounds in Plants; Pharmacognostical Aspects of Plant Physiology.

DOUGLAS, Donald Boynton (M.D.), Attending Physician, 39 East 67th St., N.Y.C. 21, N. Y. Home Add.: 222 East 35th St., N.Y.C. 16, N. Y. NEUROLOGY AND PSYCHIATRY. b. Chicago, Ill., Oct. 15, 1920. s. Donald B. and Martha (Clow) D. Edn.: A.B., Princeton, 1942; M.D., Northwestern, 1946. Exp.: Pvt. Prac., Part-time, N. Y., 1950—; Jr. Asst. Psychiatrist, Vanderbilt Clinic, Presbyterian Hosp., N. Y., 1951-55; Consult. (Civilian) in Psychiatry, Army Exam. Ctr., 1951-52; Sr. Rsch. Scientist, Psychiatry, N. Y. State Psychiatric Inst., Dept. of Exptl. Psychiatry, 1952; Sr. Rsch. Psychiatrist, ibid., 1952-53; Am. Bd. of Psychiatry and Neurol. (Psychiatry), N. Y., 1953; Resident in Neurol., Bronx Veterans Admin. Hosp., 1953-54; Resident in Neuropathol., Columbia Coll. of Physicians and Surgs., 1955; Instr. in Psychiatry, ibid., 1955—; Asst. Attending Psychiatrist, Vanderbilt Clinic, 1955—; Fellow in Neurol., III. Div., Bellevue Hosp., 1955; Asst., Dept. of Neuropathol., N. Y. State Psychiatric Inst., 1956; Rsch. Collaborator, Brookhaven Natl. Lab., Upton, Long Island, 1956; Am. Bd. of Psychiatry and Neurol. (Neurology), N. Y., 1956; Attending Neurologist, Willowbrook State Schl., Staten Island, 1956-60; Attending Physician Neurol., Hosp. for Special Surgery, N. Y., 1958; Attending Neurologist, French Hosp., N. Y., 1958; Assoc. Neuropsychiatric, St. Barnabas Hosp., N. Y., 1958; Attending Neurologist, N. Y. Eye and Ear Infirmary, 1959. Mem.: A.M.A.; N. Y. State Med. Soc.; N. Y. County Med. Soc.; Assn. for the Adv. of Psychotherapy; Am. Psychiatric Assn.; Am. Assn. for Electrodiagnoses and Electromyography; N. Y. Soc. for Clin. Psychiatry; Am. Assn. of Neuropathologists; Am. Soc. for Clin. Hypnosis. Contbr. to: Am. Jour. Psychotherapy; Psychoanalytic Rev.; The Psychiatric Quarterly.

DOUGLAS, William (Dr.), Flight Surgeon, Project Mercury, Cape Canaveral, Fla.

DOUROS, John D., Jr. (Ph.D.), Rsch. Microbiol., Sun Oil Co., Marcus Hook, Pa. Home Add.: 37 Greentree Dr., West Chester, Pa. FERMENTATION, SCREENING (ANTIBIOTICS, ANTI FUNGAL, VITAMIN, AMINO ACIDS). b. Reading, Pa., Dec. 26, 1930. s. John D., Sr. and Dorothy L. (Richardson) D. Edn.: B.A., Duke Univ., 1952; M.S., Rutgers Univ., 1955; Ph.D., Pa. St. Univ., 1958. m. Anna Beryl Skidmore, 1954. c.: Diane; John, III. Exp.: Rsch. Microbiol., Parke Davis & Co., Detroit, Mich., 1957-60; Rsch. Microbiol., Sun Oil Co., Marcus Hook, Pa., 1960—. Mem.: Am. Soc. of Microbiol.; Soc. of Indus. Microbiol.; Am. Chem. Soc.; Sigma Xi. Contbr. to: Jour. of Bact. Abstracts. Serv. Rec.: U. S. Army Med. Corps, 1952-54. Areas of Rsch.: Fermentation (Antibiotic and Hydrocarbons); Screening (Antimicrobial, Antiviral, Antitumor, Insecticide); Serology.



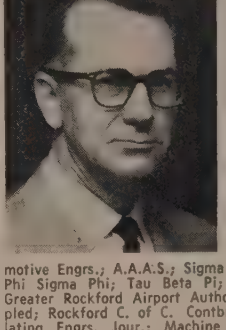
DOWNEY, Joe Sheldon, Jr., Engrng. Writer-General Dynamics/Astronautics, San Diego, Calif. Home Add.: 12605 Wantagh Dr., Poway, Calif. VERTEBRATE PALEONTOLOGY-GEOLOGY. b. Tempe, Ariz., Apr. 19, 1931. s. Joe Sheldon and Dorothy (Whitehill) D. Edn.: B.S., Univ. of Ariz., 1963. m. Virginia Coxe, Jan. 10, 1953. c.: Linda L.; Barbara K.; Ronald A.; Sharon I. Exp.: Rsch. Asst., Motorola, Inc., Phoenix, Ariz., 1956-57; Rsch. Asst., Univ. of Ariz., Tucson, Ariz., 1959-61; Engr. Writer-General Dynamics Corp., San Diego, Calif., 1961—. Mem.: Soc. of Vertebrate Paleontology; A.A.A.S.; San Diego Zoological Soc. Contbr. to: Jour. of Paleontology. Serv. Rec.: U.S.M.C., 1950-56. Areas of Rsch.: Pleistocene Mammals (general); (Specialized field) Fossil Hares and Rodents.

DOYLE, Father John Thomas, O.S.F.S., Dean, Sci. Dept., Salesianum Schl., Wilmington, Del. PHYSICS. b. Phila., Pa., Nov. 29, 1924. s. John and Marie (Lawler) D. Edn.: A.B., Catholic Univ. of Am., 1949; M.Edn., Univ. of Del., 1961. Exp.: Dean, Sci. Dept., Cathedral Pred. Schl., Erie, Pa., 1954-56; Dean, Sci. Dept., Salesianum Schl., 1956—. Hon. Pos.: Pres., Middle Stas. Sci. Tchrs. Assn. Mem.: Am. Chem. Soc.; Del. Tchrs. of Sci.; Natl. Sci. Tchrs. Assn. Gen. Int.: Del. Sci. Tchrs. Award, Del. Sect. of the Am. Chem. Soc., 1962. Areas of Rsch.: Magnetic Resonance.

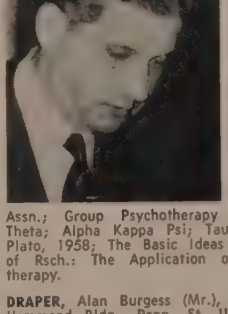
DRACY, Arthur E. (Ph.D.), Prof. Dairy Husbandry, S. D. St. Coll., Brookings, S. D. Home Add.: Sunnyview, Brookings, S. D. DAIRY HUSBANDRY. b. Virgil, S. D., May 12, 1917. s. John S. and Kate (Sexton) D. Edn.: B.S., Univ. of Minn., 1943; M.S., ibid., 1946; Ph.D., ibid., 1949. m. Irene Margaret Haley, Sept. 4, 1943. c.: Susan Irene. Exp.: Prof., S. D. St. Coll., 1948—. Mem.: Am. Dairy Sci. Assn.; S. D. Acad. of Sci.; Agric. House Soc.; Toastmasters Internatl. Contbr. to: Jour. Dairy Sci.; S. D. Acad. of Sci.; ta. St. Coll. Jour. of Sci.; Mich. St. Jour. of Sci. Serv. Rec.: U. S. Army, 1943-44. Gen. Int.: A. Radio Sonde for Measuring Intra-Ruminal Pressures. Areas of Rsch.: Physiology of the Rumen and of Lactation.

DRAKE, Frank (Dr.), Radio Astronomy, W. Va.

DRAKE, George Forrest (Mr.), Vice-Pres., Woodward Governor Co., 5001 N. Second St., Rockford, Ill. Home Add.: 1916 Bradley Rd., Rockford, Ill. AUTOMATIC CONTROL DEVICES, PRIMARILY MECHANICAL-HYDRAULIC. b. Annsville, N. Y., July 2, 1903. s. George W. and Evah (Shaw) D. Edn.: B.S., Univ. of Ill., 1930. m. Avis M. Carl, Dec. 26, 1930. c.: Dennis F. Exp.: Machinist, Barber-Colman Co., Rockford, Ill., 1921-23; Machine Designer, Draftsman, ibid., 1923-26; Development Engr., ibid., 1930-34; Chf., Eng. Elec. Appl. Div., ibid., 1934-38; Chf., Exptl. Engr., Woodward Governor Co., Rockford, Ill., 1938-42; Chf. Engr., ibid., 1942-54; Vice-Pres., Engrng., ibid., 1954-58; Vice-Pres., Engrng. and Rsch., ibid., 1958—. Mem.: Am. Inst. of Electrical Engrs.; Am. Soc. of Mechanical Engrs.; Soc. of Automotive Engrs.; A.A.A.S.; Sigma Xi; Phi Eta Sigma; Pi Mu Epsilon; Phi Sigma Phi; Tau Beta Pi; Alpha Kappa Lambda; Sigma Xi; Greater Rockford Airport Authority; Rockford Assn. for the Crippled; Rockford C. of C. Contbr. to: Am. Soc. Heating and Ventilating Engrs. Jour.; Machine Design; Am. Soc. of Mechanical Engrs. Trans.; Am. Inst. of Electrical Engrs. Trans. Areas of Rsch.: Automatic Control of Power Sources.



DRAKE, Henry L. (Ph.D.), Vice-Pres., The Philosophical Rsch. Soc., Inc., 3910 Los Feliz Blvd., Los Angeles 27, Calif. Home Add.: 3241 Lowry Rd., Los Angeles 27, Calif. PRIVATE PSYCHOTHERAPY AND GROUP THERAPY. b. Savannah, Ga., Sept. 22, 1906. s. H. L. and Esther J. (Teinman) D. Edn.: M.S., Univ. of Pa., 1929; M.A., Univ. of Sou. Calif., 1948; C.G., Jung Inst. of Analytical Psychology, 1947; Ph.D., Univ. of Calcutta, 1955. m. Ruth H. Klapsteg, 1941. c.: Jerome Hall; Adrienee Ann. Exp.: Vice-Pres., Empire Life and Accident Ins. Co., Indianapolis, Ind., 1930-48; V.-Pres. and Mem. of the Finance Comm., The Philosophical Rsch. Soc., Inc., Los Angeles, Calif., 1949—. Mem.: A.A.A.S.; Am. Philosophical Assn.; Indian Psychol. Assn.; Am. Psychol. Assn.; Western Psychol. Assn.; Group Psychotherapy Assn. of S. Calif.; Phi Delta Theta; Alpha Kappa Psi; Tau Kappa Alpha. Author: People's Plato, 1958; The Basic Ideas of Man, co-author, 1955. Areas of Rsch.: The Application of Philosophic Values to Psychotherapy.



DRAPER, Alan Burgess (Mr.), Asst. Prof. of Ind. Engrng., 207 Hammond Bldg., Penn. St. Univ., University Park, Pa. Home Add.: 245 E. Hamilton Ave., State College, Pa. MANUFACTURING PROCESSES, TOOL ENGINEERING, METAL CASTING, METAL MACHINING. b. Newton, Mass., Jan. 3, 1922. s. Elwyn B. and Olive (Titus) D. Edn.: B.S., Mass. Inst. Tech., 1947; M.I.E., Syracuse Univ., 1955. m. Lois Lipa, June 18, 1949. c.: Stephen; Margaret; Nancy; Elizabeth; Kathleen. Exp.: Apprentice Toolmaker, Brown and Sharpe Mfg. Co., Prov., R. I., 1939-44; Proj. Engr., Carrier Corp., Syracuse, N. Y., 1947-51; Inst. Ind. Engrng., Syracuse Univ., 1951-57; Asst. Prof., Ind. Engrng., Penn. St. Univ., 1957—. Hon. Pos.: Chmn., Basic Concept Comm., A.F.S. Mem.: A.S.T.M.E.; A.S.E.E.; A.S.M.; Alpha Pi Mu. Author: Manufacturing Processes Laboratory Manual, 3rd Ed., 1962; Section 5000 of Fundamentals of Tool Design, 1962. Contbr. to: Micro Tech.; Trans. Am. Foundrymens Soc.; A.S.T.M. Bull. Areas of Rsch.: Forgeability; Turbulent Flow of Liquid Metals; Fundamental Properties of the Clay, Sand, Water System; Heat Transfer in Molding Materials; Industrial Finishing Systems and Their Design; Tool Engineering; Machinability of Metals.

DREIBELBIS, Francis Ralph (Mr.), Rsch. Soil Scientist, U. S. Dept. of Agric. Rsch. Station, Coshocton, Ohio. Home Add.: 614 Highland Blvd., Coshocton, Ohio. SOIL SCIENCE. b. Virginville, Pa., Oct. 3, 1897. s. Francis F. and Sarah (Luckenbill) D. Edn.: B.S., Penn. St. Univ., 1924; M.Sc., Ohio St. Univ., 1928. m. Miriam Zaugg, Sept. 2, 1928, dec. Feb. 2, 1962. c.: Kenneth R. Exp.: Asst. Soil Chemist, Ohio Agric. Expt. Station, Wooster, Ohio, 1925-28; Asst. Soil Chemist, ibid., 1930-34; Jr. Soil Expt., Soil Erosion Serv., Zanesville, Ohio, 1934-35; Soil Scientist, Soil and Water Conserv. Rsch. Station, 1935—. Mem.: Am. Geophys. Union; Soil Sci. Soc. of Am.; Am. Soc. of Agron.; Soil Conserv. Soc. of Am.; Ohio Acad. of Sci.; Lions Club, Coshocton, Ohio. Contbr. to: Soil Rsch.; Soil Conserv.; Soil Sci. Soc. Am. Proc.; Trans. Am. Geophys. Union; Jour. Water and Soil Conserv.; Agron. Jour. Notes; Crops and Soils. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Soil Science and Hydrology; Agricultural Chemistry.

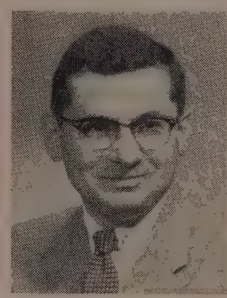
DREIZEN, Samuel (Dr.), Assoc. Prof., Nutrition and Metabolism, Northwestern Univ. Med. Schl., Chicago, Ill. Home Add.: 244 E. Pearson St., Chicago, Ill. NUTRITION, STOMATOLOGY, CHILD GROWTH AND DEVELOPMENT. b. New York, N. Y., Sept. 12, 1918. s. Charles and Rose (Schneider) D. Edn.: B.A., Brooklyn Coll., 1941; D.D.S., Western Reserve Univ., 1945; M.D., Northwestern Univ., 1958. m. Jo Gilley, Aug. 3, 1956. Exp.: Rsch. Assoc., Nutrition Clinic, Hillman Hosp., Birmingham, Ala., 1945-49; Instr., Nutrition and Metabolism, Northwestern Univ. Med. Schl., 1949-50; Asst. Prof., Nutrition and Metabolism, ibid., 1950-59; Assoc. Prof., Nutrition and Metabolism, ibid., 1959. Hon. Pos.: Asst. Scientific Dir., Nutrition Clinic, Hillman Hosp., Birmingham, Ala., 1948-60. Mem.: A.A.A.S.; Internatl. Assoc. Dental Rsch.; Soc. for Rsch. in Child Develop.; World Med. Assn.; Am. Dental Assn. Hon. Frat.: Sigma Xi; Omicron Kappa Upsilon; Alpha Omega Alpha. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Lancet; Jour. Pediat.; Am. Med. Assn. Jour. Dis. Child.; Am. Jour. Roentgenol., Radium Therapy and Nuclear Med.; Growth; Jour. Am. Dent. Assn.; J.A.M.A.; Oral Surg., Oral Med., Oral Pathol.; Surg., Gynec. and Obst.; Int. Rev. of Vitamin Rsch.; Postgrad. Med.; Jour. Periodont.; Dental Clinics of N. Am. Serv. Rec.: Capt., D.C., U.S.A.R. Areas of Rsch.: Nutritional Deficiency Disease; Child Growth and Develop.; Diseases of the Teeth and Supporting Structures.

DRESCHER, Milton Adolph (Mr.), Chf. of Dept., Sci. and Industry Dept., Milwaukee Publ. Libr., Milwaukee, Wis. Home Add.: 2811 N. 73rd St., Milwaukee 10, Wis. CHEMISTRY AND LIBRARY SCIENCE. b. Milwaukee, Wis., June 28, 1904. s. Alvin and Lydia (Vick) D. Edn.: B.A., Univ. of Wis., 1931; B.S., Univ. of Ill., 1932; A.M., Univ. of Mich., 1938. m. Estelle Hogins (dec.), Jan. 9, 1934. c.: Mary Ellen. Exp.: Lab. Asst., Phoenix Hosiery Co., Milwaukee, Wis., 1923-25, 1927-30; Head Asst., Milwaukee Publ. Libr., Sci. and Industry Dept., Milwaukee, Wis., 1932-41; Chf. of Dept., ibid., 1941—. Mem.: Am. Chemical Soc.; Engrs. Soc. of Milwaukee; Wis. Acad. of Scis., Arts and Letters; A.A.A.S.; Internatl. Soc. for Gen. Semantics; Inst. of Gen. Semantics; Soc. for the Hist. of Technol.; Am. Libr. Assn., Special Librs. Assn. Areas of Rsch.: Libr. Organization and Serv., Particularly in the Fields of Sci. and Technol.

DRESIA, William Frederick (Mr.), Hd. of Sci. Dept., San Rafael H. S., San Rafael, Calif. Home Add.: 107 Santa Margarita Dr., San Rafael, Calif. PHYSICAL CHEMISTRY. b. Columbus, Kans., Nov. 2, 1904. s. William and Anna (Fehrenbach) D. Edn.: B.S., Univ. of Okla., 1927; M.A., Stanford Univ., 1929; P.G., Univ. of Munich (Germany), (1932-33). m. Joyce Davies, 1939. c.: David Rolf; Sara Mae. Exp.: Tchr., Northeast Okla. A. & M. Coll., 1929-32; Chem., Celite—Johns-Manville, Lompoc, Calif., 1927-28; Tchr., Covina Union H. S., Covina, Calif., 1934-44; Tchr., San Rafael H. S., San Rafael, Calif., 1945—; Instr., Univ. of Calif., summer, 1959. Hon. Pos.: Past Pres., Calif. Sci. Tchrs. Assn., N.S.; Vice-Pres., Calif. Chapt., Am. Assn. Phys. Tchrs. Mem.: Natl. Sci. Tchrs. Assn.; Calif. Sci. Tchrs. Assn.; N.S.; Am. Inst. Phys.; Calif. Chapt., Am. Assn. Phys. Tchrs.; Phi Lambda Upsilon; Alpha Chi Sigma; Y.M.C.A. Contbr. to: Sci. Tchr.; Jour. Am. Chem. Soc. Areas of Rsch.: Photochemistry.

DREVDAHL, John E. (Ph.D.), Assoc. Prof. of Psychol., Univ. of Miami, Coral Gables, Fla. Home Add.: 9870 S.W. 44th St., Miami, Fla. PSYCHOLOGY. b. Marquette, Mich., May 5, 1924. s. Elmer R. and Celia M. (Blomgren) D. Edn.: B.A., Univ. of Mich., 1949; Ph.D., Univ. of Nebr., 1954. m. Mary F. Hood, July 3, 1957. Exp.: Staff Psychol., V.A. Hosp., Minneapolis, 1954-56; Clin. Instr., Univ. of Minn. Med. Schl., 1954-56; Asst. Prof. of Psychol., Univ. of Ark., 1956-57; Asst. Prof. of Psychol., Okla. State Univ., 1957-59; Asst. Prof. of Psychol., Univ. of Miami, 1959-61; Assoc. Prof. of Psychol., ibid., 1961—. Mem.: Sigma Xi; Am. Psychol. Assn.; A.A.U.P.; A.A.A.S.; Midwestern Psychol. Assn.; Psi Chi; Phi Delta Kappa. Contbr. to: Am. Psychol.; Jour. of Clin. Psychol.; Jour. of Abnormal and Social Psychol.; Edntl. Forum. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Creativity, Psychology of Social Institutions, Personality Theory.

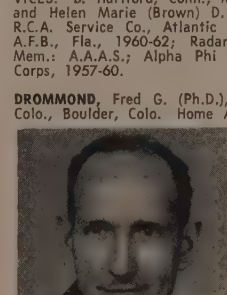
DREYFUSS, Robert George (Mr.), Asst. Dir. of Rsch. and Engrng., Glass Containers Corp., Fullerton, Calif. Home Add.: 1107 North Raymond Ave., Fullerton, Calif. CHEMISTRY; GLASS TECHNOLOGY. b. Frankfurt-Main, Germany, Sept. 6, 1931. s. Hans and Elizabeth (Kees) D. Edn.: B.S., Union Coll., 1952. m. Doris Augman, June 9, 1956. Exp.: Rsch. Chemist, Thatcher Glass Mfg. Co., Elmira, N. Y., 1952-58; Mgr. of Rsch., Devel. and Control Lab., ibid., 1958-59; Mgr. of Glass and Melt. Tech. Serv., ibid., 1959-60; Asst. Dir. of Rsch. and Engrng., Glass Containers Corp., Fullerton, Calif., 1961—. Mem.: Am. Chem. Soc.; Am. Ceram. Soc.; Can. Ceram. Soc.; A.A.A.S.; Soc. Soft Drink Technol.; Air Pollution Control Assn. Contbr. to: Can. Ceram. Soc. Areas of Rsch.: Glass Formulation; Furnace Operation and Container Manufacture.



DRIER, Roy Ward (Ph.D.), Prof. of Metallurgy, Mich. Coll. of Mining and Technol., McNair Hall, Houghton, Mich. METALLURGY. b. June 6, 1897, Calumet, Mich. s. Adam Charles and Winifred (Ward) D. Edn.: Undergraduate, Mich. Coll. of Mining and Technology; B.S., and E.M., ibid., 1925; E.Met., ibid., 1926; Graduate Work, ibid., Univ. of Chicago; Univ. of Ill.; Univ. of Mich.; M.S., 1928; Ph.D., 1934. Exp.: Jr. Estimating Electrical Engineer, Union Electric Light and Power Co., 1920-21; X-ray Installation Engr., Dick X-ray Co.; Safety Engr., Internatl. Harvester Co., 1927-28; Asst. Prof. of Metallurgy, Mich. Coll. of Mining and Technol., 1929-34; Assoc. Prof. of Metallurgy, Mich. Coll. of Mining and Technol., 1929-34; Assoc. Prof. of Metallurgy, ibid.; Bethlehem, 1941-43; 1943-45; Tech. Asst. to the Inspector of Naval Materials, Detroit, 1945, Retired to M.C.M.O.T. Prof. of Met. Engrng. Hon. Pos.: Mem., Student Relations Com. of the A.I.M. and M.E. Mem.: Tau Beta Pi; Ill. Iota; Theta Tau; Alpha Sigma Mu; A.I.M.&M.E.; A.S.M.; S.P.E.E.; Sigma Xi; Mu Pi Sigma; Calumet Men's Club; Army and Navy Club; Miscowabik Club; Naval Res. Officers' Assn.; Keweenaw Hist. Soc.; Am. Legion. Contbr. to: A.I.M.&M.E. Transactions; Indust. and Engrng. Chem.; Physical Rev.; Philosophical Mag.; Wire and Wire Products; Antiquity; Lake Superior Mining Inst. Transaction; Mich. Coll. of Min. and Technol. Rsch. Bull.; Compton's Encyc. Ph.D. Dissertation: Correlation of Unit Cell Orientation with Tensile Strength and Electrical Conductivity. War Rec.: Enlisted in U. S. Army in W.W. I; Commissioned in U.S.N.R., 1934; Commissioned Lt. Comdr. in Ordnance Div. of U.S.N.R., 1934-41; Asst. Inspector of Naval Material, Bethlehem, Pa., 1941— (on leave from M.C.M.&T.). Travel: Can.; Mex.; Hawaiian Islands. Hobbies: Reading; Archeology; Parapsychology. Listed in: A.M.S.; Who's Who in Engrng.; Who's Who in the Western Hemisphere; Who's Who in Amer. Edn. Special Int.: Physical Metallurgy, Mineral Dressing.

DRISCOLL, Benedict Malone, Jr. (Mr.), Radar Techn., R.C.A., Trinidad. Home Add.: 7 Olmstead St., E. Hartford 8, Conn. ELECTRONICS; AUTOMATIC TRACKING AND DATA COMPUTATION DEVICES. b. Hartford, Conn., May 25, 1938. s. Benedict Malone and Helen Marie (Brown) D. Exp.: D/R. Electronic Technician, R.C.A. Service Co., Atlantic Missile Range, Carter Cay, Patrick A.F.B., Fla., 1960-62; Radar Techn., R.C.A., Trinidad, 1962—. Mem.: A.A.A.S.; Alpha Phi Omega. Serv. Rec.: U. S. Marine Corps, 1957-60.

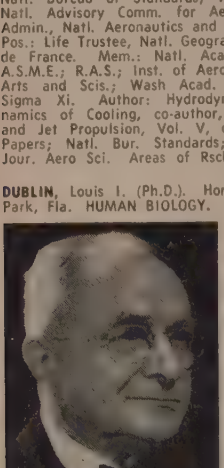
DROMMOND, Fred G. (Ph.D.), Prof. of Pharm. Chem., Univ. of Colo., Boulder, Colo. Home Add.: 1036 14th St., Boulder, Colo. PHARMACY AND PHARMACEUTICAL CHEMISTRY. b. Sanborn, Neb., Mar. 5, 1911. s. George F. and Mary Agnes (McGinnis) D. Edn.: Ph.C., Univ. of Colo., 1933; B.S., ibid., 1933; M.S., ibid., 1934; Ph.D., Purdue Univ., 1951. Exp.: Rsch. Fellow, Univ. of Colo., 1933-35; Tchng. Fellow, ibid., 1935-38; Instr., Pharm., ibid., 1938-42; 1946-50; Rsch. Fellow, A.F.P.E., Purdue Univ., 1950-51; Asst. Prof. of Pharm., Univ. of Colo., 1951-54; Assoc. Prof. of Pharm., ibid., 1954-60; Prof. of Pharm. Chem., ibid., 1960—. Hon. Pos.: Chmn., District VIII, A.A.C.P.; Chmn., A.A.C.P. Sect. of Tchrs. of Graduate Instruction. Mem.: Am. Pharmaceutical Assn.; Am. Chem. Soc. and Sect. of Medicinal Chem.; Fellow, A.A.A.S.; Am. Soc. Hosp. Pharmacists; Am. Animal Health Pharmaceutical Assn.; Colo.-Wyo. Acad. of Sci.; Colo. Pharm.



Assn.; Sigma Xi; Rho Chi; Phi Delta Chi; Phi Lambda Upsilon; Acacia Frat. Contbr. to: Jour. of the Am. Pharmaceutical Assn.; Jour. of Pharm. and Pharmacol.; Acta Pharmacologica et Toxicologica; Analytica Chimica Acta; Univ. of Colo. Studies. War Record: U. S. Army, 1942-46. Areas of Rsch.: Toxicology; Emulsion Stability; Oral Pharmaceuticals; Organoleptic Testing; Suspending Agents; Organic Medicinal Synthesis.

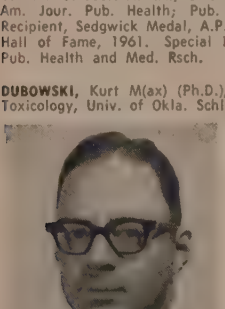
DRYDEN, Hugh Latimer (Ph.D.), Deputy Admin., Natl. Aeronautics and Space Admin., Wash. 25, D. C. Home Add.: 5606 Overlea Rd., Wash. 16, D. C. PHYSICS, AERODYNAMICS, AERONAUTICS, ASTRONAUTICS. b. Pocomoke City, Md., July 2, 1898. s. Samuel Isaac and Nova Hill (Culver) D. Edn.: A.B., Johns Hopkins Univ., 1916; A.M., ibid., 1918; Ph.D., ibid., 1919. Hon. Deg.: Sc.D., Polytechnic Inst. Brooklyn, 1949; ScD., Univ. of Pa., 1951; D. Eng., New York Univ., 1950; LL.D., Johns Hopkins, 1953, Adelphi, 1959. m. Mary Libbie Travers, Jan. 29, 1920. c. Hugh Latimer, Jr.; Mary Ruth; Nancy Travers. Exp.: Lab. Asst. to Assoc. Dir., Natl. Bureau of Standards, Washington, D. C., 1918-47; Dir., Natl. Advisory Comm. for Aeronautics, ibid., 1947-57; Deputy Admin., Natl. Aeronautics and Space Admin., ibid., 1957—. Hon. Pos.: Life Trustee, Natl. Geographic Soc., Correspondent, Academie de France. Mem.: Natl. Acad. Sci.; Fellow, Am. Phys. Soc.; A.S.M.E.; R.A.S.; Inst. of Aero. Sci.; Am. Phil. Soc.; Am. Acad. Arts and Scis.; Wash Acad. Sci.; A.A.A.S.; Phi Beta Kappa; Sigma Xi. Author: Hydrodynamics, co-author, 1932; Aerodynamics of Cooling, co-author, 1936; High Speed Aerodynamics and Jet Propulsion, Vol. V, co-author, 1959. Contbr. to: Sci. Papers; Natl. Bur. Standards; Natl. Adv. Comm. Aero. Jour.; Jour. Aero Sci. Areas of Rsch.: turbulance, boundary layer.

DUBLIN, Louis I. (Ph.D.). Home Add.: 425 Alberta Dr., Winter Park, Fla. HUMAN BIOLOGY. b. Kovno, Lithuania, Nov. 1, 1882.



s. Max and Sarah (Rosenzweig) D. Edn.: B.S., C.C.N.Y., 1901; Ph.D., Columbia Univ., 1904. m. Augusta Salik, Apr. 5, 1908. c.: Elisabeth; Mary; Thomas; Amos. Exp.: Instr. in Math., C.C.N.Y., 1901-08; Statistician, Metropolitan Life Ins. Co., N. Y., N. Y., 1911-31; Third Vice-Pres. and Statistician, ibid., 1931-44; Second Vice-Pres. and Statistician, ibid., 1944-52; Consultant, Health and Welfare Inst. of Life Ins., N. Y., 1953-60. Hon. Pos.: Pres., Am. Pub. Health Assn., 1931-32; Pres., Am. Statistical Assn., 1924; Pres., Pop. Assn. of Am., 1935-36; Chmn. Bd., Am. Mus. Health, 1938-44; Am. Vice-Pres., Int. Union for Sci. Study of Popn.; Vice-Pres., A.A.A.S., 1917. Mem.: Phi Beta Kappa; Fellow, Am. Pub. Health Assn.; Fellow, A.A.A.S.; Fellow, Am. Statistical Assn. Author: Mortality Statistics of Insured Wage Earners and Their Families, 1919; Health and Wealth, 1928; A Family of Thirty Million, 1943; The Facts of Life from Birth to Death, 1951. Collaborator: (with Lee K. Frankel and Miles M. Dawson) Workingmen's Ins. in Europe, 1910; (with Lee K. Frankel) Principles of Life Ins., 1911; (with Alfred J. Lotka) The Money Value of a Man, 1930, rev. 1946; (with B Bunzel) To Be or Not to Be—a Study of Suicide, 1933; (with Alfred J. Lotka) Length of Life: A Study of the Life Table, 1936, rev. 1949; (with Alfred J. Lotka) Twenty-five Years of Health Progress, 1937. Contbr. to: Jour. A.M.A.; Cincinnati Jour. Med.; The Am. Scholar; Am. Jour. Pub. Health; Pub. Health Nursing; etc. Gen. Int.: Recipient, Sedgwick Medal, A.P.H.A., 1959; Elected into Insurance Hall of Fame, 1961. Special Int.: Vital Statistics; Demography; Pub. Health and Med. Rsch.

DUBOWSKI, Kurt M(ax) (Ph.D.), Assoc. Prof. of Clin. Chem. and Toxicology, Univ. of Okla. Schl. of Med.; Dir. of Clin. Chem. and Toxicol. Labs., Univ. Hosp., Univ. of Okla. Med. Center, Okla. City 4, Okla. Home Add.: 1818 N.W. 34th St., Oklahoma City 18, Okla. CLINICAL CHEMISTRY AND TOXICOLOGY. b. Berlin, Germany, Nov. 21, 1921. s. Jaques D. and Gertrud Baron (Steinberg). Edn.: B.A., N. Y. Univ., 1946; Dipl. Chem. Engr., Ohio State Univ., 1944; M.Sc., ibid., 1947; Ph.D., ibid., 1949. Exp.: Tchng. Fellow, Ohio St. Univ., 1946-48; Lectr., N. Y. Univ., 1950-53; Lectr., Northwestern Univ., 1950-56; Lectr., St. Univ. of Iowa, 1954-58; Lectr., Univ. of Louisville, 1956; Assoc. Prof. of Clinical Chem., Univ. of Fla., 1958-61; Assoc. Prof. of Clin. Chem. and Toxicol., Univ. of Okla. Schl. of Med., 1961



Hon. Pos.: Secy.-Treas. and Dir., Am. Bd. of Clin. Chem.; Chmn., Comm. on Clin. Chem., Am. Inst. of Chemists; Past Chmn., Toxicology Sec., Am. Acad. of Forensic Sci.; Comm. on Alcohol and Drugs, Natl. Safety Coun.; Consultant in Clin. Chem. and Toxicol., U. S. Pub. Health Serv. and Veterans Admin.; Consultant in Sci. Law Enforcement, Okla. City Police Dept. Mem.: A.A.A.S.; Am. Acad. of Forensic Scis.; Am. Assn. of Clin. Chemists; A.A.U.P.; Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Inst. of Chemists; Am. Med. Assn.; Assn. of Am. Med. Colls.; Assn. of Clin. Scientists; Iowa Acad. of Sci.; N. Y. Acad. of Sci.; Phi Lambda Upsilon; Sigma Xi; Soc. Med. Jurisprudence; Scientific Rsch. Soc. of Am. Contbrng. Author: Measurements of Exocrine and Endocrine Functions of the Pancreas, 1961; Chemical Tests for Intoxication Manual, 1959; Standard Methods of Clinical Chemistry, Vol. 3, 1961. Contbr. to: Annals Western Med. and Surg.; Chemist-Analyst; Am. Jour. Clin. Path.; Jour. Criminal Law, Criminol. and Police Sci.; Police; Jour. Am. Med. Assn.; Lab. Digest; Jour. Forensic Sci.; Clinical Chem. Serv. Rec.; A.U.S., 1942-46. Gen. Int.: Diplomate, Am. Bd. of Clinical Chem. Areas of Rsch.: Clinical Biochemistry; Clinical Toxicology; Clinical Chem. Methodology; Forensic Chemistry and Toxicology; Criminalistics; Trace Evidence Examination and Evaluation; Homicide Investigation.

DuBRIDGE, Lee A(lvin) (Ph.D.), Pres., Calif. Inst. of Tech., Pasadena, Calif. Home Add.: 415 South Hill Ave., Pasadena, Calif. PHYSICS. b. Terre Haute, Ind., Sept. 21, 1901. s. Frederick Alvin and Elizebeth Rebecca (Browne) D. Edn.: A.B., Cornell Coll., 1922; A.M., Univ. of Wis., 1924; Ph. D., ibid., 1926. Hon. Deg.: Sc.D., Cornell Coll., Polytechnic Inst. of Brooklyn, Wesleyan Univ. Univ. of British Columbia, Wash. Univ., Occidental Coll., Univ. of Md., Columbia Univ.; Ind. Univ., Univ. of Wis.; LL.D., Univ. of Calif. at Los Angeles, Univ. of Rochester, Univ. of Southern Calif., Northwestern Univ.; L.H.D., Univ. of Redlands, Univ. of Judaism; D.C.L., Union Coll., Schenectady. m. Doris May Kohl, Sept. 1, 1925. c. Mrs. David MacLeod; Richard Alvin. Exp.: Instr. in Phys., Univ. of Wis., 1925-26; Fellow, Natl. Rsch. Coun., Calif. Inst. of Tech., 1926-28; Asst. Prof. of Physics, Wash. Univ., 1928-33; Assoc. Prof. of Physics, ibid., 1933-34; Prof. of Physics and Chmn. of Dept., Univ. of Rochester, 1934-46; Dean, Faculty of Arts and Sci., ibid., 1938-42; Dir. Radiation Lab., Mass. Inst. of Tech., 1940-45; Pres., Calif. Inst. of Tech., 1946—. Hon. Pos.: Pres., Am. Phys. Soc.; Chmn., Sci. Advisory Comm. of Office of Defense Mobilization. Mem.: Fellow, Am. Phys. Soc.; A.A.A.S.; Am. Philos. Soc.; Natl. Acad. of Sci.; Phi Beta Kappa; Sigma Xi; Tau Kappa Alpha; Tau Beta Pi; Sigma Pi Sigma; Kiwanis; Rotary; C. of C. Author: Photoelectric Phenomena, Co-author, 1932; New Theories of the Photoelectric Effect, 1934; Introduction to Space, 1960. Contbr. to: Am. Jour. of Phys.; Civil Engrng.; Edn'l. Record; Elec. Engrng.; Jour. of Engrng. Edn.; Jour. of Med. Edn.; Mech. Engrng.; Phys. Rev.; Physics Today; Rev. of Sci. Instruments; SAE Jour.; Science; Yale Rev. Areas of Rsch.; Photoelectric and Thermionic Emission, Electronics, Nuclear Physics, Radar.

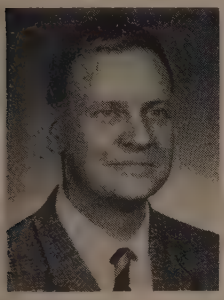
DUDLEY, Homer Walter. Home Add.: 150 Ashland Rd., Summit, N. J. ELECTRICAL COMMUNICATION. b. Oranda, Va., Nov. 14, 1896. s. Rev. Walter Lee and Kate (Showalter) D. Edn.: B.S. in E.E., Pa. St. Coll., 1921; M.A., Columbia Univ., 1924. m. Leta M. Fairbairn, Aug. 4, 1924. c.: Martha Jean; Patsy Ann; Richard Walter. Exp.: Prin., Niles Valley, Pa., Pub. Schl., 1914-15; Prin., Beech Creek, Pa., H. S., 1915-16; Mem., Technical Staff, Bell Telephone Labs., Inc., Murray Hills, N. J., 1921-61. Mem.: I.R.E.; A.I.E.E.; Audio Engrng. Soc.; Acoustical Soc. Am.; A.A.A.S.; Eta Kappa Nu; Sigma Tau; Phi Kappa Phi. Contbr. to: Bell System Tech. Jour.; Jour. Franklin Inst.; Proc. Natl. Acad. Sci.; Jour. Acoustical Soc. Am.; Elec. Engrng.; etc. War Record: Med. Corps, 1917-18. Gen. Int.: Vocoder for

Remaking Speech Automatically; Voder for Synthesis of Speech upon Fingering of Keyboard; Automatic Recognition of Phonetic Patterns in Speech; Coaxial Cable System; 35 Patents. Special Int.: Transmission in Communication Circuits; Speech Analysis and Synthesis; Under Water Sound; Carrier Rsch.; Visible Speech Apparatus.

DUFF, James Thomas (Ph.D.), Bacteriol., Ft. Detrick, Frederick, Md. Home Add.: 4 D. Watkins Acres, Frederick, Md. MICROBIOLOGY. b. Sandusky, Ohio, Jan. 23, 1925. s. William John and Winifred (Breining) Duff. Edn.: B.S., Ohio St. Univ., 1947; M.S., ibid., 1949; Ph.D., Univ. of Tex., 1960. Exp.: Bacteriol., Med. Investigations Div., U. S. Army Chem. Corps, Biol. Lab., Ft. Detrick, Frederick, Md., 1949—. Mem.: Am. Soc. for Microbiol., A.A.A.S.; Soc. of Gen. Microbiol. (G. Britain); Sigma Xi; Rsch. Soc. of Am. Contbr. to: Jour. of Gen. Microbiol.; Jour. of Immunol.; Jour. of Bacteriol. Serv. Rec.: U.S.N.R., 1943-45. Areas of Rsch.: Bacteriol.; Immunol.; Virol. (Bacterial Toxins and Toxoids, Bacteriophage, Tissue Culture, and Animal Viruses).

DUFFY, Elizabeth (Ph.D.), Prof. of Psychol., Woman's Coll., Univ. of N. C.; Greensboro, N. C. Home Add.: 1412 West Lake Dr., Greensboro, N. C. PSYCHOLOGY. b. New Bern, N. C., May 6, 1904. d. Dr. Francis and Lida (Patterson) D. Edn.: A.B., Woman's Coll. of Univ. of N. C., 1925; M.A., Columbia Univ., 1926; Ph.D., Johns Hopkins Univ., 1928. m. John E. Bridgers, Jr., 1938. c.: Elizabeth Duffy. Exp.: Postdoctoral Rsch. Fellowship, Columbia Univ., 1928-29; Instr., Sarah Lawrence Coll., 1929-37; Prof. of Psychol., Woman's Coll. of. Univ. of N. C., 1937—. Hon. Pos.: Pres., Div. of General Psychol. of Am. Psychological Assn.; Coun. of Representatives, bid., Pres., Sou. Soc. of Philosophy and Psychol.; Pres., N. C. Psychol. Assn. Mem.: Southeastern Psychol. Assn.; Psychonomic Soc.; A.A.A.S.; Phi Beta Kappa; Sigma Xi. Author: Activation and Behavior, 1962. Contbr. to: Psychol. Rev.; Genetic Psychol. Monographs; Am. Jour. of Psychol.; Jour. of General Psychol.; Jour. of Abnormal and Social Psychol.; Jour. of Personality; Jour. of Exptl. Psychol.; Psychol. Record; Child Development. Gen. Int.: Member of First Urban Renewal Commission in N. C. Areas of Rsch.: Activation, Emotion, Personality.

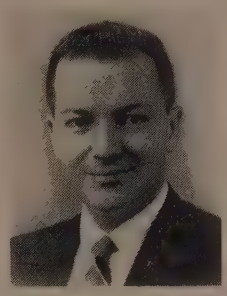
DUISENBERG, Charles Edward (M.D.), Practicing Radiologist; Dir., Photographic and Chem. Rsch., W. B. Snook Mfg. Co., Palo Alto, Calif.; Instr. in Radiol., Stanford Univ., Schl. of Med., Palo Alto, Calif. Home Add.: 836 Seale Ave., Palo Alto, Calif. MEDICINE-RADIOLOGY; ENGINEERING PRODUCT RESEARCH AND DEVELOPMENT IN X-RAY AND PHOTO FIELD. b. Los Angeles, Calif., June 4, 1918. s. Walter G. A. and Breta (Bills) D. Edn.: A.B., Stanford Univ., 1940; M.D., ibid., 1944. m. Jean Kretsinger (dec.), June 21, 1941. c.: Peter Dean; David Chas.; Sally Jean; Katheryn Ann. Exp.: Radiologist, Palo Alto Med. Clinic, Palo Alto, Calif., 1949-57; Private Practice and Consultant Radiologists, Los Altos, Calif., 1954—; Consultant Radiologist, Lockheed Missile Systems Div., Med. Dept., Sunnyvale, Calif., 1958—; Instr. in Radiological Anatomy, Stanford Univ. Med. Schl., Palo Alto, Calif., 1951—; Dir. of Rsch. and Product Development, W. B. Snook Mfg. Co., ibid., 1949—. Hon. Pos.: Diplomate, Am. Bd. of Radiology. Mem.: Coll. of Radiol.; Radiological Soc. of N. Am.; Soc. of Motion Pictures and TV Engrs.; Calif. Med. Soc.; Am. Med. Soc.; Santa Clara Co. Med. Soc.; Nu Sigma Nu; Commonwealth Club of Calif. Contbr. to: Jour. Radiol. Soc. of N. Am.; Jour. Calif. Med. Soc.; Jour. Soc. of Motion Picture and TV Engrs. Serv. Rec.: Army of U. S., 1944-46. Gen. Int.: Development of one of the first Angio cardiographic techniques. Areas of Rsch.: Radiological Investigation of Physiological Movements and Motion; Chemo Therapy of Tumors; Development of Specialized Radiological Equipment; Photographic Chemistry and Processing.



DUKES, Peter Paul (Ph.D.), Rsch. Assoc., Argonne Cancer Rsch. Hosp., Univ. of Chicago, Chicago, Ill. Home Add.: 5505 S. Everett, Chicago 37, Ill. BIOCHEMISTRY. b. Vienna, Austria, June 27, 1930. s. Paul Stephan and Vera Phyllis (Przibram) D. Edn.: Ph.D., Univ. of Chicago, 1958. m. Lois Jean Pinta, May 5, 1961. Exp.: Rsch. Asst., Dept. of Biochem., Univ. of Chicago, 1955-58; Rsch. Assoc., Argonne Cancer Rsch. Hosp., Univ. of Chicago, 1958—. Mem.: A.A.A.S.; Sigma Xi. Contbr. to: Jour. of Biol. Chem.; Endocrinology. Areas of Rsch.: Erythropoietin; Nucleic Acids; Bacteriophage.

DUKES, Richard Eugene (M.D.), Staff Pediatrician, Carle Hosp. Clinic, Urbana, Ill. Home Add.: 1106 W. Armory, Champaign, Ill. PHYSICIAN, PEDIATRICS. b. Dugger, Ind., Aug. 21, 1915. s. Frederick Morton and Cecil (Weaver) D. Edn.: B.S., Ind. Univ. Schl. of Med., 1938; M.D., ibid., 1940. m. Kathleen Cox, 1940. c.: Jack; Susan; Andre; Kathleen Patrice. Exp.: Attending Pediatrician, Carle Hosp. Clinic, 1946—. Mem.: A.A.A.S.; Am. Acad. of Pediatrics; World Health Organization; Am. Med. Assn.; Central Ill. Pediatrics Soc.; Am. Pub. Health Organization; Am. Heart Assn.; Sigma Pi; Phi Beta Pi; Kiwanis Club. Contbr. to: Ill. Med. Jour.; Archives of Otolaryngology; Archives of Pediatrics; Pediatrics; Am. Jour. Diseases of Children. Serv. Rec.: A.U.S., 1943-46.

DUNAIF, Samuel Lewis (M.D.), Prin. Rsch. Scientist, N.Y.S. Dept. of Ment. Hyg., 9 E. 96th St., N. Y. 28, N. Y. Home Add.: 25 Browning Dr., Ossining, N. Y. ADULT AND CHILD PSYCHIATRY AND PSYCHOANALYSIS, STUDY OF ADULT AND JUVENILE OFFENDERS. b. Brooklyn, N. Y., Aug. 5, 1924. s. Arthur and Sylvia (Nassberg) D. Edn.: B.S., Univ. Coll. of Arts and Sci., N. Y. Univ., 1944; M.D., N. Y. Univ. Coll. of Med., 1947. Exp.: Internship, Bellevue Hosp., N.Y.C., 1947-48; Res. in Psychiatry, ibid., 1948-49; Res. in Psychiatry, N. Y. St. Psychiatric Inst., N.Y.C., 1949-50; Res. Psychiatrist, ibid., 1951-53; Tchr., 3rd Year Med. Students, Columbia Univ., Coll. of Phys. and Surgeons, 1953—; Instr. in Psychiatry, ibid., 1955; Sr. Rsch. Scientist in Psychiatry, N. Y. St. Psychiatric Inst., N.Y.C., 1953-54; Consultant Rsch. Psychiatrist, Sex Delinquency Rsch. Project, ibid., 1954-55; Trng. in Child Psychiatry, Mt. Sinai Hosp. Children's Psychiatric Clinic, OPD, 1954-55; Prin. Rsch. Scientist, N. Y. State Dept. of Mental Hyg., N. Y., 1957—; Consultant Psychiatrist, Hudson River Valley Speech Center, Phelps Mem. Hosp., North Tarrytown, N. Y., 1957—; Clin. Asst. Prof. of Psychiatry, Child Psychiatry, State Univ. of N. Y. Downstate Med. Center, 1958-59; Asst. Prof. of Psychiatry, Child Psychiatry, ibid., 1959—. Hon. Pos.: Chmn., Pub. Relations Com., Sect. on Psychiatry and Neurol., Westchester Co. Med. Soc.; Dir., Psychiatric Clinic, Court of Special Sessions, N.Y.C., 1955; Clin. Dir., Joint Rsch. Project on Study of Fighting Street Gangs, N.Y.C. Youth Bd., Jewish Bd. of Guardians and Community Mental Health Bd., 1961—. Mem.: Am. Psychiatric Assn.; N. Y. Soc. for Clin. Psychiatry; N. Y. Co. Med. Soc.; N. Y. State Med. Soc.; Westchester Co. Med. Soc. Contbr. to: Am. Psychopathol. Assn.; N.Y.S. Dept. of Mental Hyg.; The Clin. Application of Projective Drawings. War Record: U. S. Army Med. Corps, 1950-51. Areas of Rsch.: Rsch. Study of Etiology and Treatability of Juvenile Delinquency; Rsch. Studies of Adult and Youthful Offenders and Supervision of Staff of Psychologists; Social Workers; Probation Officers in Joint Work with Department of Correction at Correctional Institutions and Problems of Juvenile and Adult Delinquency.



DUNCAN, David Christie (Ph.D.), Physicist, U. S. Govt. St. Coll., Pa. PHYSICS. b. July 30, 1889, Churchville, N. Y. s. James Duncan and Margaret (Christie) D. Edn.: A.B., Univ. of Mich., 1911; M.A., ibid., 1913; Ph.D., ibid., 1924. m. Mildred Webb of Churchville, N. Y., Aug. 28, 1913. d. George and Mary Webb. c.: Gordon Webb; Donald Christie. Exp.: Instr. in Physics, Purdue Univ., 1911-18; Prof. of Physics, Pa. St. Univ., 1918-53; Acting Hd., Dept. of Physics, ibid., 1950-53; Emer. Prof. of Physics, Pa. St. Univ., 1953—; Physicist, HRB-Singer, 1953-56. Mem.: Presby. Church; Am. Phys. Soc.; A.A.A.S.; A.A.U.P.; A.S.E.E.; Am. Assn. Phys. Tchr.; Sigma Xi; Phi Kappa Phi; Chi Phi. Listed in: W. W. in Pa.; A.M.S.; W. W. in Am.; W. W. in Am. Edn.

DUNCAN, Donald P(endleton) (Ph.D.), Prof., Schl. of Forestry, Univ. of Minn., St. Paul, Minn. Home Add.: 2 Chipmunk Lane, North Oaks, St. Paul 10, Minn. FOREST MANAGEMENT, WATERSHED MANAGEMENT, WILD LAND RECREATION. b. Joliet, Ill., Feb. 24, 1916. s. Kenneth Whitney and Nettie Vivian (Pendleton) D. Edn.: B.S.F., Univ. of Mich., 1937; M.S., ibid., 1939; Ph.D., Univ. of Minn., 1951. m. D. Mercein Benzie, July 6, 1956. c.: Kenneth H.; Nancy S.; Debra M. Exp.: Shelterbelt Supv., U. S. Forest Serv., Washington, D. C., 1939-40; Jr. Forester, U. S. Forest Serv., ibid., 1940-41; Instr., Kan. St. Univ., Manhattan, Kan., 1941-42; Extension Forester, ibid., 1946-47; Instr. to Prof., Univ. of Minn., St. Paul 1, Minn., 1947—. Hon. Pos.: Chmn., Div. of Forest Recreation, Soc. of Am. Foresters, 1955-56; Chmn., Upper Miss. Valley Sec., SAF; Consultant Minn., Natl. Resources Coun. Mem.: A.A.A.S.; Ecological Soc. of Am.; Soc. of Am. Foresters; Wilderness Soc.; A.A.U.P.; Sigma Xi; Phi Sigma; Gamma Alpha. Author: A Laboratory Manual in Farm Forestry, 1951. Contbr. to: Forest Sci.; Jour. of Forestry; Proceedings of the Soc. of Am. Foresters; Naturalist; Conservation Volunteer; Minn. Forestry Notes; Minn. Farm and Home Sci.; Miscellaneous Pub. of the Lake States Forest Experiment Sta. Serv. Rec.: A.U.S., 1942-45. Areas of Rsch.: Silvics; Watershed Management; Wild Land Recreation.

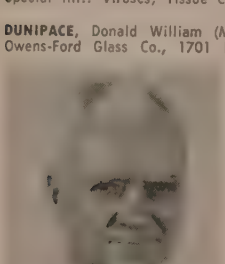
DUNCAN, Donald (Ph.D.), Prof. and Chmn., Dept. of Anatomy, the Univ. of Tex. Med. Br., Galveston, Tex. Home Add.: 114 Tarpon, Galveston, Tex. ANATOMY. b. Marietta, Minn., Jan. 31, 1903. s. Henry and Clara B. (Olson) D. Edn.: B.A., Carleton Coll., 1923; M.A., Univ. Minn., 1927; Ph.D., ibid., 1929. m. Margaret Aileen Eberts, Litchfield, Minn., 1924. d. John William and Alice James Eberts. c.: Mary Jeanne; Margaret Caroline; Kathleen Elizabeth. Exp.: Asst. Prof., Univ. Utah, 1929-30; Asst. Prof. Anatomy,

Univ. of Buffalo, 1930-32; Assoc. Prof., Anatomy, Univ. of Tex., 1932-40; Prof., Anatomy, ibid., 1940-42; Prof. and Hd., Anatomy, Univ. of Buffalo, 1942-43; Prof. Anatomy, La. State Univ., 1943-46; Prof. and Chmn., Anatomy, the Univ. of Tex. Med. Branch, 1946—; Assoc. Dean of Grad. Schl., ibid., 1952—. Hon. Pos.: Pres., Tex. Acad. of Sci.; First Vice-Pres., Am. Assn. Anatomist; Managing Editor, Am. Jour. of Anat., 1959—. Mem.: Am. Assn. Anatomists; Am. Assn. Phys. Anthropologists; Am. Acad. Neurol.; Soc. Exp. Biol. and Med.; Nu Sigma Nu; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Comp. Neurol.; Anat. Rec.; Arch. of Path.; Jour. Neuropath. and Exp. Neurol.; Tex. Reports on Biol. and Med. Areas of Rsch.: Structure and Function of Nerve Cells and Fibers.

DUNGER, George Albert (Ph.D.), Prof. of Missiology, N. Am. Bapt. Seminary, 1605 S. Euclid Ave., Sioux Falls, S. D. Home Add.: 2480 Kenwood Manor, Sioux Falls, S. D. CULTURAL ANTHROPOLOGY. b. Germany, Apr. 24, 1908. s. Paul R. and Ida S. (Bochmann) D. Edn.: M.A., The Hartford Seminary Foundation, 1946; Ph.D., ibid., 1950. m. Louise A. Krack, Feb. 8, 1936. c.: Daphne; Amaryllis. Exp.: Field Supt., Cameroons Bapt. Mission, Forest Park, Ill., 1941-46; Supvr. of Schls., ibid., 1946-48; Rsch. Asst. in Anthropol., The Hartford Seminary Foundation, 1949-50; Dir. of Liberal Arts Studies, Prof. of Missions, Barrington Coll., 1950-51; Prof. of Missions, N. Am. Baptist Seminary, 1951—; Am. Visiting Prof., Univ. of Ghana, 1958-59; Guest Lectr. in Cultural Anthropol., Univ. of Wichita, Kan., Dana Coll., Blair, Neb., 1961, Mankato State College, Mankato, Minn. Mem.: Am. Anthropological Assn., Fellow; A.A.A.S., Fellow; Am. Geographical Soc., Fellow; Africa Studies Assn., Fellow; Assn. of Professors of Missions; Soc. for the Scientific Study of Religion; S. D. Acad. of Science. Areas of Rsch.: Cultural Rapprochement Through the Application of Multilateral Ethical Values Within the Context of the Social Scis.; Development of a field theory which includes value systems of varied cultures.

DUNHAM, Wolcott Balestier (M.D.), Assoc. Chief of Staff for Rsch.; Dir. Med. Rsch. Lab., Veterans Admin. Med. Tchng. Group, Kennedy Hosp., Memphis 15, Tenn.; Assoc. Prof. of Bacteriol., Coll. of Med., Univ. of Tenn. b. June 15, 1900, Boston, Mass. s. Theodore and Josephine (Balestier) D., Prof. of Surg., N. Y. Post-Grad. Med. Schl. and Hosp. Edn.: A.B., Columbia Coll., 1924; M.D., Coll. of Phys. and Surg., Columbia Univ., 1928. m. Isabel Bosworth of Ithaca, N. Y., Oct. 7, 1940. d. Mr. and Mrs. Francke Huntington Bosworth, Dean, Coll. of Architecture, Cornell Univ. c.: Wolcott Balestier, Jr.; Anne Huntington. Exp.: Asst. Bacteriol., N. Y. Post-Grad. Med. Schl. and Hosp., Columbia Univ., 1937-46; Rsch. Fellow, Columbia Div., Welfare Hosp. for Chronic Diseases, N.Y.C., 1939-40; Assoc. in Microbiol., The Squibb Inst. for Med. Rsch., N. Brunswick, N. J., 1942-46; Rsch. Biol., V.A. Med. Tchng. Group, Kennedy Hosp., Memphis, Tenn., 1946—; Dir., Med. Rsch. Lab., 1949—; Assoc. Prof. of Bacteriol., Univ. of Tenn., Coll. of Med., 1952—; Asst. Dir., Prof. Serv. for Rsch., 1956—. Mem.: N. J. Br., Soc. of Am. Bacteriol., Pres., 1944-45; N. Y. Acad. of Sci.; Soc. for Expmt. Biol. and Med.; Sigma Xi; A.F.C.R.; Fellow, N. Y. Acad. of Med.; Fellow, Am. Coll. of Phys.; etc. Travel: N. Am.; Europe. Hobbies: Mechanics; Ednl. Technics; Philol.; Family. Listed in: Who's Important in Med.; W. W. in the S. and S.W.; A.M.S.; W. W. in Am. Edn. Special Int.: Viruses; Tissue Culture; Spirochetes; Antibiotics.

DUNIPACE, Donald William (Mr.), Dir. of Development, Libbey-Owens-Ford Glass Co., 1701 E. Broadway St., Toledo 5, Ohio. 518 E. Indiana Ave., Perrysburg, Ohio. APPLICATION OF PHYSICS AND OPTICS IN THE PRODUCTION AND EVALUATION OF FLAT GLASS. b. Bowling Green, Ohio, May 24, 1907. s. Robert L. and Grace B. (Schantz) D. Edn.: B.A., Ohio St. Univ., 1929; M.A., ibid., 1930. m. Eunice H. Davis, 1928. c.: Kenneth Robert; Mrs. Virginia L. D. Cook. Exp.: Asst. in Physics Dept., Ohio St. Univ., 1929-32; Physicist, Libbey-Owens-Ford Glass Co., Toledo, Ohio, 1935-57; Dir. of Development, ibid., 1957—. Hon. Pos.: Chmn., Ohio Sect., Am. Physical Soc., 1950. Mem.: Am. Inst. of Physics; Am. Physical Soc.; Optical Soc. of Am.; Ohio Sect., Am. Physical Soc.; A.A.-A.S.; Pi Mu Epsilon; Toledo Museum of Art. Contbr. to: Glass Industry; Physical Rev.; Heating Piping and Air Conditioning. Areas of Rsch.: Glass Processing; Glass Inspection; Optical Instrumentation.



DUNLAP, Estelle Cecilia (Mrs.), Tchr., MacFarland Jr. H. S., Wash., D. C. Home Add.: 719 Shepherd St., N.W., Wash., D. C. MATHEMATICS. b. Wash., D. C., Sept. 26, 1913. d. John F. and Mary F. Chasley (Diggs) D. Edn.: B.S., Dist. of Columbia Tchrs. Coll., 1937; M.S., Howard Univ., 1940. m. Lee A. Dunlap, May, 1941. c.: Gladys C.; Dolly A. Exp.: Tchr., Garnet Patterson Jr. H. S., Wash., D. C., 1941-56; Tchr., MacFarland J. H. S., Wash., 1956—. Hon. Pos.: Hd. of Math. Dept., Garnet Patterson J. H. S., 1950-55. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Edn. Assn.; Natl. Coun. of Tchrs. of Math.; Natl. Aviation Edn. Coun.; Northwest Boundary Civic Assn.; Washington Urban League; Soc. for Industrial and Applied Math.; Am. Ord. Assn. Contbr. to: The Math. Tchr.; Sci.; Natl. Aeronautics; The Natl. Edn. Jour. Areas of Rsch.: Mathematics; Physics; Chemistry.

DUNLAP, Vining Campbell (Ph.D.), Consultant, United Fruit Co., 30 St. James Ave., Boston, Mass. TROPICAL AGRICULTURE. b. Bowdoinham, Me., Apr. 17, 1893. s. James and Annie Bell (Williams) D. Edn.: A.B., Bates Coll., 1914; A.M., Cornell Univ., 1916; Ph.D., ibid., 1920. Hon. Deg.: D.Sc., Bates Coll., 1949. m. Lydia Cloward, Sept. 20, 1940. Exp.: Instr., Cornell Univ., 1919-22; Plant Pathologist and Soil Surveyor, United Fruit Co., S. and Central Am., West Indies, 1922-36; Dir., Tropical Rsch., ibid., La Lina, Honduras, 1936-53; Consultant, Pan Am. Union, Boston, Mass., Wash., D. C., 1956—; Consultant, Internatl. Cooperation Administration, Africa, 1960; Consultant, United Fruit Co., Boston, Mass., 1953—. Mem.: A.A.A.S.; Am. Geographical Soc.; N. Y. Acad. of Sci.; Am. Ornithologist Union; Gamma Alpha; Sigma Xi; Phi Beta Kappa; N. Y. Explorers Club. Serv. Rec.: A.E.F., 1917-19. Areas of Rsch.: Tropical Plant Pathol. and Soils; Banana, Abaca and Cacao Production.

DUNN, Lois E. (Mrs.), Sci. Supvr., Jefferson Co. Schls., 1580 Yarrow St., Lakewood, Colo. Home Add.: 4375 Quay St., Wheat Ridge, Colo. ELEMENTARY AND JUNIOR HIGH SCIENCE EDUCATION AND CURRICULUM. b. Chillicothe, Mo., Aug. 5, 1913. d. John L. (dec.) and Laura A. (Snook) Stevenson. Edn.: A.B., Ariz. St. Univ., 1936; M.A., Colo. St. Coll., 1959. m. Charles L. Dunn, May 18, 1949. c.: Mary L. Exp.: Tchr., Miami Pub. Schls., Miami, Ariz., 1936-42; Tchr., Morrenci Pub. Schls., 1947-49; Tchr., Jefferson Co. Schls., Jefferson Co., Colo., 1954-59; Sci. Supvr., ibid., 1959—. Hon. Pos.: Treas., Colo. Sci. Tchrs. Assn.; Pres., ibid.; Mem., Steering Comm., Natl. Sci. Tchrs. Assn.; Mem., Curriculum Comm., ibid.; Mem., Conventions Planning Comm., ibid. Mem.: Jefferson Co. R-1 Edn. Assn.; Colo. Edn. Assn.; N.E.A.; Colo. Sci. Tchrs. Assn.; Natl. Sci. Tchrs. Assn.; A.A.A.S.; Phi Beta Epsilon; Pleiades.

DUNN, Halbert Louis (M.D.), Consultant and Lectr. in High-Level Wellness, 7631 Fort Foote Rd., S. E., Wash. 22, D. C. PUBLIC HEALTH, MEDICINE, AND BIOLOGY; STATISTICS. b. New Paris, Ohio, May 17, 1896. s. Louis and Irene (Halbert) D. Edn.: A.B., Univ. of Minn., 1919; M.A., ibid., 1920; M.B., ibid., 1921; M.D., ibid., 1922; Ph.D., ibid., 1923. m. 1st, Katherine Brandner, Sept. 7, 1920 (div.); 2nd, Elizabeth Phelps, Oct. 18, 1941. c.: (by first wife) Halbert; Robert; Richard. Exp.: Instr. in Anatomy, Univ. of Minn., 1922-23; Asst. in Med., Presby. Hosp., N.Y.C., 1923-24; Fellow in Med., Mayo Clinic, 1924-35; Assoc. Prof. of Biometry and Vital Stats., Schl. of Hyg. and Pub. Health, Johns Hopkins Univ., 1925-29; Hd., Dept. of Stats., Mayo Clinic and Assoc. Prof. of Med. Stats., Univ. of Minn., 1929-32; Dir. of Univ. Hosp. and Prof. of Med. Stats., ibid., 1932-35; Chief Statistician and Chf. Vital Stats. Div., Bu

of Census, Wash., 1935-46; Chief, Natl. Off. of Vital Stats., Pub. Health Serv., Wash., D. C., 1946-60; Special Asst. on Aging, Bureau of St. Services, U. S. Pub. Health Serv., 1960-61. Hon. Pos.: Mem., Expert Comm. on Health Stats., World Health Organization, Geneva, 1949-51; Mem., Adv. Panel of Experts on Health Stats., ibid., 1951—; Mem. of Temporary Organizing Comm., Inter Am. Stats. Inst., 1939-41; Secy. Gen., ibid., 1941-52; Consult. to the I.A.S.I. Exec. Comm., 1952-54; and many others. Mem.: Internatl. Stats. Inst.; Fellow, Am. Assn. Adv. Sci.; Fellow, Am. Pub. Health Assn.; Fellow, Am. Stats. Assn.; Population Assn. of Am.; Population Ref. Bur.; Cosmos Club; Wash. Acad. of Med.; etc. Serv. Rec.: U. S. Army Med. Corps, 1918-19. Contbr. to: Physiol. Rev.; Jour. Am. Stats. Assn.; Estadistica; Pub. Health Reports; Jour. Internatl. Coll. of Surgeons; Forum of Osteopathy; Jour. Natl. Med. Assn.; Problems of U. S. Econ. Development; Am. Jour. of Pub. Health; Can. Jour. of Pub. Health; Geriatrics; Main Currents in Modern Thought. Books: Your World and Mine; High-Level Wellness.

DUNN, James Robert (Ph.D.), Assoc. Prof., Rensselaer Poly. Inst., Troy, N. Y.; Pres., James R. Dunn and Assocs., Box 187, Averill Park, N. Y. Home Add.: Rd. #2, View Dr., Averill Park, N. Y.

GEOLOGY (ECONOMIC GEOLOGY, ENGINEERING GEOLOGY, PETROLOGY). b. Sacramento, Calif., Oct. 18, 1921. s. Walter Ray and Frances Gladys (Latta) D. Edn.: A.B., Univ. of Calif., 1943, Ph.D., ibid., 1950. m. Marjorie Ralph, Nov. 17, 1946. c.: Marsha; Brian; David; Sheldon; Carolyn (dec.). Exp.: Asst. Prof., Rensselaer Poly. Inst., 1950-55; Assoc. Prof., ibid., 1955—; Consult., N. Y. St., 1952—. Hon. Pos.: Chmn., Comm. for Engrng. Geol. Rsch., Geol. Soc. Am.; Mem. of Comm. on Rels. with Geol. Engrng., ibid. Mem.: Geol. Soc. Am.; Geochem. Soc.; Am. Inst. Min. Engrs.; Capital Dist. Geol. Soc.; Assn. Geol. Tchrs.; Phi Kappa Tau; Theta Tau; Sigma Xi. Contbr. to: Jour. Geol. Edn.; Am. Journ. Sci.; Min. Engrng.; N. Y. St. Dept. Pub. Wks. Bull. Serv. Rec.: U. S. Navy, 1943-46. Gen. Int.: Discovered sev. metallic and non-metallic mineral deposits; Located site of new Atlantic Cement Plant (world's largest); Demonstrated how cement rock and aggregate reserves of N. Y. St. can be increased by sev. billion tons; Did geol. work on Schoelkopf disaster and other problems in Niagara Falls Area. Areas of Rsch.: Petrology; Physical and Chemical Characteristics of Rock Aggregate for Concrete; Economic and Industrial Geology of Mineral Deposits; Engineering Geology.

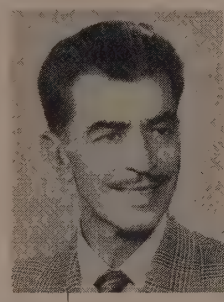
DUNN, Louis Gerhardus (Ph.D.), Chmn. of Bd., Space Technol. Labs., Inc., One Space Park, Redondo Beach, Calif. Home Add.: P. O. Box 133, Mtn. Ranch, Calif.

SPACE SCIENCE. b. Ermelo Transvaal, S. Africa, Nov. 4, 1908. s. James P. and Marie (Swart) D. Edn.: B.S., Calif. Inst. of Technol., 1936; M.S., ibid., 1937; M.S., ibid., 1938; Ph.D., ibid., 1940. m. Ruth Freeman, Aug. 1, 1935. c.: Patricia Ann; Sandra Jane; Michael Edwin; Gerald; Linda Marie. Exp.: Act. Dir., Jet Propulsion Lab., Calif. Inst. of Technol., 1946-47; Dir., ibid., 1947-54; Assoc. Dir., Guided Missile Rsch. Div., The Ramo-Wooldridge Corp., Calif., 1954-55; Dir., ibid., 1955; V.-Pres. and Dir., ibid., 1955-57; Exec. V.-Pres. and Gen. Mgr., Space Technol. Labs., Los Angeles, Calif., 1957-58; Pres., ibid., 1958-62; Chmn., Bd., Space Technol. Labs., 1962—. Mem.: A.A.A.S., Fellow; Am. Rocket Soc., Fellow; Inst. of Aeronautical Sciences, Fellow; Am. Ordnance Assn.; Am. Assn. of University Professors; Sigma Xi. Co-Author: Airplane Structural Analysis and Design, 1942. Gen. Int.: Recipient of the Presidential Medal of Merit for Work on Torpedoes During World War II and of the Patriotic Civilian Service Award for Research and Development Work Carried on by the Jet Propulsion Laboratory for the Dept. of the Army. Areas of Rsch.: Aerodynamics; Structures; Jet Propulsion; Guided Missile Rsch.

DUNNEWALD, Theodore John (Mr.), Assoc. Prof. Soils and Soil Survey, Univ. of Wyo., Laramie, Wyo. Home Add.: 401 S. 15th, Laramie, Wyo. SOILS; AGRONOMY. b. Cedar Grove, Wis., Oct. 1, 1885. s. Samuel and Anna (Wilterding) D. Edn.: B.S.A., M.S. Agric., Wis., 1912. m. Helen C. Bishop, 1931. c.: John; Ann. Exp.: Field Asst., Wis. Geol. and Natural Hist. Survey, 1910-24; Prof. Soils and Soil Survey, Univ. of Wyo., 1925-54. Mem.: Sigma Xi; Natl. Assn. Agronomy; Am. Chem. Soc.; Colo.-Wyo. Acad. of Sci.; Kiwanis. Contbr. to: Agronomy Jour.; Sci. Publications of Wyo. Areas of Rsch.: Soils; Soil Survey; Plant Science.

DUPRE', Margaret Verness (Miss), Prof. of Sci., State Univ. Coll., Buffalo 22, N. Y. Home Add.: 14 Granger Pl., Buffalo 22, N. Y. NUTRITIONAL CHEMISTRY, HUMAN BIOLOGY, BACTERIOLOGY. b. Troup, Tex., Dec. 8, 1901. d. Marcy M. and Sally Belle (Naasson) D. Edn.: B.S., Tex. Woman's Univ., 1924; M.S., Tchrs. Coll., Columbia Univ., 1933. Exp.: Tchr. Biol., Lubbock H. S., Lubbock, Tex., 1924-26; Tchr. Sci., S. Jr. H. S., Waco, Tex., 1926-30; Instr. Sci., St. Tchrs. Coll., Buffalo, N. Y., 1930-42; Asst. Prof. and Prof. of Sci., ibid., 1943—. Mem.: Am. Home Economics Assn.; A.A.A.S.; Natl. Edn. Assn.; N.Y.S. Tchrs. Assn.; Faculties Assn.; Am. Assn. of Univ. Prof.; Pi Lambda Theta; Altrusa Club. Author: Handbook of Biological Data Nation Research Council, 1956; Optimum Temperature for Growth; Rickettsia and Bacteria, 1962. Areas of Rsch.: Food and Nutritional Chemistry; Bacteriology of Foods; Human Biology.

DUPREE, Louis Ph.D.), Am. Univs. Field Staff, Assoc. Prof. of Anthropol., The Pa. Sta. Univ., Univ. Pk., a. Home Add.: 906 W. 4th St., Greenville, N. C. ANTHROPOLOGY. b. Greenville, N. C., Aug. 23, 1925. s. Chauncey L. and Luna Emily (Tripp) D. Edn.:



B.A., Harvard Univ., 1950; M.A., ibid., 1953; Ph.D., ibid., 1955. m. Ann Bradford Kirschner, Sept. 24, 1949. c.: Julie; Louis F. R.; Sara Gardiner. Exp.: Anthropolt., Faceometer Proj., Forsyth Dent. Clinic for Children, 1952; Tchng. Fellow, Harward Univ., Cambridge, Mass., 1952-53; Asst. to Dean of Freshman, ibid, 1953; Area Study Contractor, Air Univ., Maxwell AFB, Ala., 1953-54; Asst. Prof., ibid, 1954-57; Assoc. Prof., ibid, 1957; Assoc. Prof., The Pa. Sta. Univ., 1957—; Rsch. Assoc., Anthropol., Am. Museum of Nat. History, 1959—; Assoc., Am. Univs. Field Staff, 1959—. Hon. Pos.: Thaw Fellow, Harvard, 1951; Gen. MacNider Scholarship for a Pacific Veteran, 1950; Mem., Near and M. E. Comm., Social Sci. Rsch. Coun., 1958-59; Foreign Affairs Consultant, Spec. Operations Rsch. Officer, Am. Univ., Wash., D. C., 1958, 1960-61. Mem.: Fellow, Am. Anthropol. Assn.; Fellow, Am. Assn. for the Adv. of Sci.; Am. Oriental Soc.; Am. Ethnol. Soc.; Soc. for App. Anthropol.; Archaeol. Inst. of Am.; Gamma Alpha; Middle East Instit.; Royal Cent. Asian Soc.; N. C. Archaeol. Soc.; Explorers Club. Contbr. to: Proc. Am. Philos. Soc.; Jour. E. Asiatic Studies; Jour. Ala. Acad. Sci.; Am. Antiquity; Air Univ. Publs.; Archaeol.; Human Organ.; The Middle E. Jour.; The Nation; Jour. of Clin. Psychol.; Am. Anthropolt.; Nat. History; Jour. of Social Rsch.; Afghan Student News. Serv. Rec.: U. S. Naval Reserve, 1943-44; U. S. Army, 1944-47; Reserve, 1947—. Gen. Int.: Adv. Editor, Jour. of Social Rsch., 1962—; Columnist, Kabul Times, 1962-63; Commendation for Meritorious Civilian Serv. Areas of Rsch.: Asiatic Archaeology and Ethnology; Research in Small Group Interactions.

DURHAM, William Fay (Ph.D.), Chief, Wenatchee Field Sta., U. S. Pub. Health Serv., P. O. Box 73, Wenatchee, Wash. Home Add.: 1409 Madison St., Wenatchee, Wash. BIOCHEMISTRY. b. Esom Hill, Ga., Apr. 19, 1922. s. George Fay and Lucie (Pennington) D. Edn.: A.B., Emory Univ., 1943; M.S., ibid., 1948; Ph.D., ibid., 1950. m. Sara Sudderth, Sept. 20, 1947. c.: William F., Jr.; Garland P. B. Exp.: Instr., Chem. Dept., Emory Jr. Coll., 1943-44; Instr., Biochemistry Dept., Emory Med. Schl., 1947-50; Biochemist, Toxicol. Sect., Communicable Dis. Ctr., U. S. Pub. Health Serv., 1950-57; Chf., Wenatchee Field Sta., ibid., 1957. Mem.: Am. Chem. Soc.; A.A.A.S.; Rsch. Soc. of Am.; Sigma Alpha Epsilon; Rotary Internatl. Contbr. to: A.M.A. Archives Industrial Health. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Toxicology of Pesticides.

DUSHKES, Sherman Zigmund (Mr.), Engr., Shell Develop. Co., 4560 Horton St., Emeryville, Calif. Home Add.: 1102 Crompton Rd., Redwood City, Calif. AUTOMATIC CONTROL. b. Chicago, Ill., Dec. 27, 1926. s. Abraham and Agnes Gwendolyn (Rubin) D. Edn.:

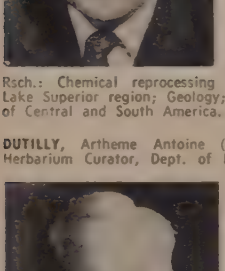
B.Sc., Ill. Inst. of Tech., 1948. m. Edith Kogan, Nov. 26, 1953. c.: Alan David; Larry Steven; Jody Lynn; Elise Anne. Exp.: Engr., Panellit, Inc., Chicago, Ill., 1948-49; Engr., Askania Regulator Co., Chicago, Ill., 1949-51; Engr., Mare Island Naval Shipyard, Vallejo, Calif., 1951-54; Engr., Shell Develop. Co., Emeryville, Calif., 1954—. Mem.: Tau Beta Pi; Pi Tau Sigma; Tau Omega. Contbr. to: Trans., A.S.M.E.; Machine Design; Instruments and Automation; Control Engrng. Serv. Rec.: U. S. Navy, 1945-46. Gen. Int.: Special Commendation from Commander of Mare Island Naval Shipyard for Work in Field of Automatic Control of Submarines, 1954; Reviewer for Applied Mechanics Reviews, 1951. Areas of Rsch.: Engaged in Applied Research, Development, and Engineering of Automatic Control Systems for Chemical Plants and Refineries.

DURR, Frank Lowell (Mr.), Patent Lawyer, 10 East 40th St., New York, N. Y. Home Add.: 200 W. 18th St., New York, N. Y. PATENTS IN THE FIELD OF CHEMISTRY AND CHEMICAL ENGINEERING. b. Marion, Ohio, Jan. 6, 1904. s. William F. and Carrie V. (Cromer) D. Edn.: B.S., Otterbein Coll., 1925; M.S., Ohio St. Univ., 1928; LL.B., Southeastern Univ., 1931. m. (Div.). c.: Frank R.; B. Joan. Exp.: Tchr. and Coach, H. S., W. Va., 1925-36; Chemist, Libbey-Owens Glass Co., Ohio, 1927-28; Exami-

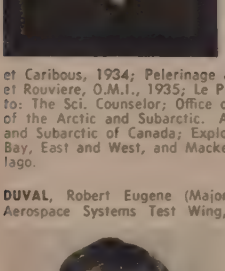
ner, U. S. Patent Office, Wash., D. C., 1928-45; Patent Lawyer, Greene and Durr, New York, N. Y., 1946-52; Patent Lawyer, Greene, Pineles, Cullman and Durr, New York, N. Y., 1952—. Mem.: Am. Chem. Soc.; A.A.A.S.; Chem. Club; Am. Electroplaters Soc.; Am. Bar Assn.; N. Y. Patent Bar Assn.; D. C. Bar; Patent Office Soc.; Gamma Alpha; Engl. Speaking Union. Contbr. to: Chem. Abstracts.

DU TEMPLE, Octave Joseph (Mr.), Exec. Secy., Am. Nuclear Soc., 244 East Ogden, Hinsdale, Ill. Home Add.: 15 West 306 Plainfield, Hinsdale, Ill. NUCLEAR AND CHEMICAL ENGINEERING. b. Hubbell, Mich., Dec. 10, 1920. s. Octave J., Sr. and Marguerite Odina (Gadoury) D. Edn.: M.S., Mich. Coll. of Mining and Technol., 1949; M.B.A., Northwestern Univ., 1955. m. Susan Keach, June 9, 1951. c.: Lesley Ann; Octave Joseph. Exp.: Assoc. Engr., Argonne Natl. Lab., Argonne, Ill., 1949-58; Exec. Secy., Am. Nuclear Soc., Chicago, Ill., 1958—. Mem.: A.N.S.; A.I.Ch.E.; A.C.S.; A.A.A.S.; Delta Sigma Phi; Phi Lambda Upsilon; Kiwanis. Author: Prehistoric Copper Mining in the Lake Superior Region, 1961. Serv. Rec.: U. S. Army Air Force, 1945. Gen. Int.: Flying Instr., 1941-45. Areas of Rsch.: Chemical reprocessing of nuclear fuels; Archeology of Lake Superior region; Geology; Flying; Geography and Economics of Central and South America.

DUTILLY, Artheme Antoine (Mr.), Arctic Inst. Dir., Langlois Herbarium Curator, Dept. of Biol., The Catholic Univ. of Am., Wash. 17, D. C. Home Add.: 3616 15th St., N.E., Wash. 17, D. C. ARCTIC FLORAL, EXPLORATION. b. Roxton-Falls, P. Q., Canada, Nov. 22, 1896. s. Adhe'mard and Cordelia (Favreau) D. Edn.: B.A., Ottawa, 1932; B.Sc.A., Montreal, 1933; L.Sc.A., Montreal, 1934; L.L., Montreal, 1936. Exp.: Prof. Gen. Sci., Gravelbourg Coll., 1924-29; Philos., ibid., 1929-32; Dir. Schl. Farm, Rougemont, Canada, 1935-36; Rsch. Assoc. in Biol., Catholic Univ., 1937—; Naturalist, Oblate Arctic Missions, 1936—; Arctic Inst., Dir., 1941—; Curator, Langlois Herbarium, 1942—. Mem.: Am. Polar Soc.; Special Library Assn.; Wash. Acad. of Sci.; Can. Soc. Tech. Agr. Corp. of Agronomists of Quebec. Author: Rennes et Caribous, 1934; Pelerinage au lieu du massacre des PP. LeRou et Rouviere, O.M.I., 1935; Le Pie XI des Esquimaux, 1936. Contbr. to: The Sci. Counselor; Office of the Quartermaster General; Flora of the Arctic and Subarctic. Areas of Rsch.: Arctic Flora; Arctic and Subarctic of Canada; Exploration of Rivers Flowing in Hudson Bay, East and West, and Mackenzie River; Canada Arctic Archipelago.

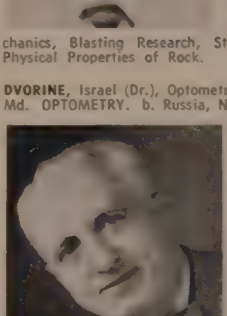


DUVAL, Robert Eugene (Major, U.S.A.F.), Chem. Engr., 6595th Aerospace Systems Test Wing, Vandenberg A.F.B., Calif. Home Add.: 1126 Catalpa St., Vandenberg A.F.B., Calif. CHEMICAL ENGINEERING. b. Anaheim, Calif., May 24, 1925. s. Joseph Patrick and Margaret Francis (Robertson) D. Edn.: A.A., Fullerton Jr. Coll., 1943; B.Engr., Univ. of S. Calif., 1944; M.S., Ohio St. Univ., 1950. m. Shirley Marilyn Springer, June 22, 1946. c.: Lloyd Duane; Carol Yvonne; Charlene Michele. Exp.: Analyst, U.S.N. Foreign Tchl. Intell. Ctr., Wash., D. C., 1945-46; Rsch. Engr., Battelle Meml. Inst., Columbus, Ohio, 1946-50; Head, Foreign Sci. Intell. Desk, Office of Naval Intell., Wash., D. C., 1950-52; Intell. Officer, Office of Naval Intell., S.E. Asia, Pacific, Arctic, 1953-57; Asst. Off. in Chg., 5th Dist. Office of Naval Intell., Norfolk, Va., 1958-60; Chem. Engr., 6595th Aerospace Test Wing, Vandenberg A.F.B., Calif., 1960—. Hon. Pos.: Rsch. Mem., Natl. Adv. Comm. on Aircraft Hydraulic System Materials. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Soc. of Military Engrs.; Am. Assn. for Industrial Security; A.A.A.S.; Soc. of Plastics Engrs.; Philippine Inst. of Chem. Engrs.; Sou. Ohio Rubber Group. Contbr. to: Trans. of the Am. Soc. of Mech. Engrs.; Ohio St. Univ. Grad. Schl. Dissertations. Serv. Rec.: U. S. Navy, 1942-60; U. S. Air Force, 1960—. Areas of Rsch.: Intelligence Methods; Plastics and Elastomers; Hydraulic and Pneumatic Systems; Synthetic Compounds—Hydraulic Fluids; Photographic Interpretation; Mechanics of Fluid Motion and Gas Dynamics; Heat Transfer; Chem.

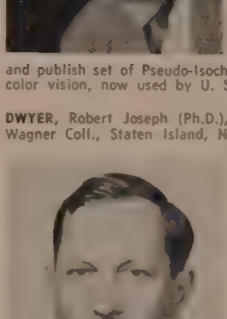


DUVALL, Wilbur Irving (Mr.), Physicist, U. S. Bureau of Mines, Coll. Pk., Md. Home Add.: 10116 Dallas Ave., Silver Spring, Md. PHYSICS—ROCK MECHANICS. b. Gaithersburg, Md., Jan. 3, 1915. s. James E. and Maggie V. (Briggs) D. Edn.: B.S., Univ. of Md., 1936; M.S., ibid., 1938. m. Angela A. Aiello, Oct. 17, 1945. c.: Donna Marie; Bonnie Jean; Paula Ann; Karen Lou. Exp.: Tchr., Richard Mont. H. Schl., Rockville, Md., 1936-37; Fellow, Univ. of Md., Coll. Pk., Md., 1937-38; Instr., Amherst Coll., 1938-39; Physicist, U. S. Bureau of Mines, 1939—. Hon. Pos.: Mem. of Geol. Soc. of Am., Rock Mechans. Comm.; Chmn., Eastern Sect. of the Seismol. Soc. of Am., 1961-62. Mem.: Am. Geophys. Union; Seismol. Soc. of Am.; Sigma Xi. Contbr. to: Geophys. Areas of Rsch.: Rock Mechanics, Blasting Research, Stability of Underground Openings, Physical Properties of Rock.

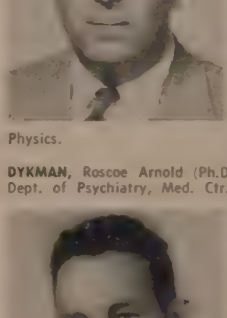
DVORINE, Israel (Dr.), Optometrist, 2328 Eutaw Pl., Baltimore 17, Md. OPTOMETRY. b. Russia, Nov. 16, 1899. s. Hyman and Sarah (Ginsburg) D. Edn.: D.O., Phila. Optical Coll., 1926. Hon. Deg.: o° Ocular Sci., Beta Sigma Kappa, 1959. m. Rebecca Weiner, Nov. 19, 1919. c.: Shura; William. Exp.: Optometrist, Aug. 8, 1922. Hon. Pos.: Pres., Maryland Optometric Assn., 1934-36; Mem., Bd. of Examiners in Optometry in Md. Mem.: Am. Acad. of Optometry; Am. Assn. Adv. Sci.; Beta Sigma Kappa; Mason; Odd Fellows. Author: Analytical Refraction and Orthoptics; Animated Fusion Trng. Charts; Dvorine Pseudo-Isochromatic Plates. Contbr. to: Am. Jour. Optometry; Optometric Weekly; Optical Jour.; Edn. Publication. Serv. Rec.: U.S.C.G.R., 1945. Areas of Rsch.: Color Vision. Gen. Int.: First man in the U. S. to design and publish set of Pseudo-Isochromatic Plates to test for defective color vision, now used by U. S. Armed Forces.



DWYER, Robert Joseph (Ph.D.), Chmn., Dept. Math. and Physics, Wagner Coll., Staten Island, N. Y. Home Add.: 46A Seth Court, Staten Island 1, N. Y. PHYSICS. b. Norwood, Ohio, Jan. 11, 1907. s. Orville F. and Florence (Mundell) D. Edn.: Ph.D., Harvard, 1941; A.M., ibid., 1937; A.B., Univ. of Cincinnati, 1929. Exp.: Instr., Physics, Lafayette Coll., Easton, Pa., 1941-42; Asst. Prof. Physics, Trinity Coll., Hartford, Conn., 1942-45; Rsch. Physicist, Lane Wells Co., Los Angeles, Calif., 1945-52; Sr. Scientist, Beckman Instruments, Los Angeles, Calif., 1952-56; Asst. Prof., Physics, Purdue Univ., Hammond Ctr., Ind., 1956-60; Chmn., Dept. Math. and Physics, Wagner Coll., N. Y., 1960—. Contbr. to: Jour. Chem. Physics; Jour. Optical Soc. Am.; Am. Jour. Physics. Areas of Rsch.: Spectroscopy; Electronics; Applied Physics.



DYKMAN, Roscoe Arnold (Ph.D.), Dir., Lab. for Behavioral Scis., Dept. of Psychiatry, Med. Ctr., Univ. of Ark., Little Rock, Ark. Home Add.: 31 Belmont Dr., Little Rock, Ark. PHYSIOLOGICAL PSYCHOLOGY. b. Pocatello, Ida., Mar. 20, 1920. s. Arnold H. and Mable (Balderston) D. Edn.: Ph.D., Univ. of Chicago. m. Virginia June Johnston, 1941. c.: Richard Arnold; Susan June; Thomas Ross; Laura Jane. Exp.: Instr., Ill. Inst. of Tech., 1948-50; U. S. Public Health Fellow, Johns Hopkins Hosp., 1950-52; Instr., ibid., 1952-53; Asst. Dir. Studies, Assn. of Am. Med. Colls., 1953-55; Assoc. Prof., Dir., Lab. for Behavioral Scis., Univ. of Ark., 1955-61; Prof., ibid., 1961—. Hon. Pos.: Chmn., Admissions Comm., Med. Center, Univ. of Ark., 1959—. Mem.: Am. Psychol. Assn.; A.A.-U.P.; Am. Assn. Adv. Sci; N. Y. Acad. Sci.; Sigma Xi; Kappa Delta Pi. Co-Author: Physiological Reactions to Novel Stimuli, 1959. Contbr. to: Jour. Comparative and Physiol. Psychol.; Ann. of New York Acad. of Scis.; Jour.



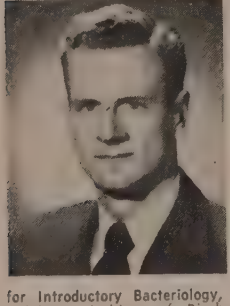
Med. Edn.; Jour. Genetic Psychol.; Jour. Gen. Psychol.; Am. Jour. Physiol.; Psychological Monographs. Serv. Rec.: U. S. Army, W. W. II. Areas of Rsch.: Autonomic Nervous System; Conditioning and Learning; Behavioral Genetics.

DYE, Marie (Ph.D.), Dean, Coll. of Home Economics, Mich. State Univ., East Lansing, Mich. Home Add.: 730 Chittenden Dr., East Lansing, Mich. HOME ECONOMICS, NUTRITION. b. Chicago, Ill., Sept. 13, 1891. d. Ara R. and Susie E. (Dolliver) D. Edn.: B.S., Univ. of Chicago, 1914; M.S., ibid., 1918; Ph.D., ibid., 1922. Hon. Deg.: LL.D., Mich. State Univ. Exp.: Tchr., Starrett Schl. for Girls, Chicago, Ill., 1916-18; Tchr., Univ. of Chicago, 1918-19; Rsch. Fellow, Nelson Morris Inst. of Med. Rsch., ibid., 1921-22; Asst., Assoc. Prof. and Dean, Coll. of Home Econ., Mich. State Univ., 1922-56; Asst. and Assoc. Prof., ibid., 1922-29; Dean and Prof., 1929-56; Dean Emeritus, ibid., 1956—. Hon. Pos.: Pres., Omicron Nu; Secy., Treas., Pres., Am. Home Econ. Assn. Mem.: Am. Chem. Soc.; A.A.A.S.; Am. Home Econ. Assn.; Am. Soc. of Biol. Chem.; Am. Inst. of Nutrition; Am. Assn. Univ. Women; Sigma Xi; Kappa Nu Sigma; Omicron Nu; Phi Kappa Phi; Pi Beta Phi. Author: Home Economics in Colleges, co-author, 1949. Contbr. to: Jour. of Home Econ.; Jour. of Nutrition; Jour. of Biological Chem. Areas of Rsch.: Human Nutrition.

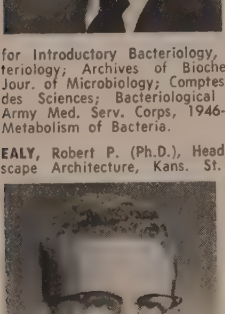
DYKE, Ray Arthur (Mr.), Retired, Meteorologist in Weather Bur., Lincoln, Neb. Home Add.: 1413 Third Ave., Laurel, Miss. WEATHER FORECASTING. b. Livermore, Pa., Oct. 7, 1881. s. Samuel Amos and Mary (Oliver) D. m. Harriet Crouch, Sept. 16, 1914. c.: Mrs. Lesley M. Seago; Ray A., Jr.; Mrs. James E. Thornton. Exp.: Observer, U. S. Weather Bur., Several Stations, 1903-16; Meteorologist, Dist. Forecaster, ibid., New Orleans, La., 1916-35; Meteorologist, Supvr., Forecaster, ibid., 1935-43; Meteorologist, Sec. Dir., ibid., Lincoln, Neb., 1943-51. Mem.: Am. Meterological Soc.; A.A.A.S.; Rotary Club. Contbr. to: Monthly Weather Rev.; Bull. of the Am. Meteorological Soc. Areas of Rsch.: Forecasting of Weather, Including Cold Waves, Storms, and Hurricanes; Temperature Relations; Temperature Inversions.

E

EAGON, Robert Garfield (Ph.D.), Assoc. Prof., Dept. Bacteriology, Univ. of Ga., Athens, Ga. Home Add.: 60 West Lake Dr., Athens, Ga. BACTERIAL METABOLISM AND PHYSIOLOGY. b. Salesville, Ohio, Oct. 29, 1927. Edn.: B.S., The Ohio St. Univ., 1951; M.S., ibid., 1952; Ph.D., ibid., 1954. m. Margretta Buchanan, Aug. 30, 1952. c.: Victoria Margretta. Exp.: Predoctoral Rsch. Fellow, Ohio St. Univ., 1952-54; Fulbright Scholar to France, 1954-55; Asst. Prof. of Bacteriology, Univ. of Ga., 1955-59; Assoc. Prof. of Bacteriology, ibid., 1959—. Hon. Pos.: Pres., S.E. Br. of the Soc. of Am. Bacteriologists, 1960-61; V.-Pres., S.E. Br. of the Soc. of Am. Bacteriologists, 1959-60. Mem.: Am. Soc. for Microbiol.; S.E. Br. of the Soc. of Am. Bacteriologists; A.A.A.S.; Sigma Xi; Phi Sigma. Co-Author: A Laboratory Manual for Introductory Bacteriology, 1960. Contbr. to: Jour. of Bacteriology; Archives of Biochemistry and Biophysics; Canadian Jour. of Microbiology; Comptes rendus des seances de l'Academie des Sciences; Bacteriological Proceedings. Serv. Rec.: U. S. Army Med. Serv. Corps, 1946-49. Areas of Rsch.: Carbohydrate Metabolism of Bacteria.



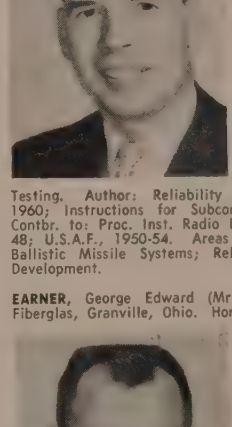
EALY, Robert P. (Ph.D.), Head, Dept. of Horticulture and Landscape Architecture, Kans. St. Univ., Manhattan, Kans. Home Add.: 1925 Vermont, Manhattan, Kans. ORNAMENTAL HORTICULTURE, PROPAGATION, TAXONOMY AND LANDSCAPE ARCHITECTURE. b. Kay Co., Okla., July 6, 1914. s. Charles G. and Annie (Johnson) E. Edn.: B.S., Okla. St. Univ., 1941; M.S., Kans. St. Univ., 1946; Ph.D., La. St. Univ., 1955. m. Carol L. Smith, 1939. Exp.: Grad. Asst., Kans. St. Univ., 1941-42; Asst. Prof., Okla. St. Univ., 1946-55; Assoc. Prof., ibid., 1955-58; Prof., ibid., 1958-61; Prof., Head, Dept. of Horticulture and Landscape Architecture, Kans. St. Univ., 1961—. Hon. Pos.: Natl. Committee on Student Affiliates, Am. Soc. Landscape Architecture; Bd. of Dirs., Assn. of Kans. Landscape Architects. Mem.: Am. Soc. of Horticultural Sci.; Kans. St. Horticultural Soc.; Sigma Xi; Gamma Sigma Delta; Phi Eta Sigma; Phi Kappa Phi; Alpha Zeta; Manhattan C. of C. Author: Landscape Architecture in Relation to Contemporary Elementary Schools, 1955; Microfilm Publication, 1958. Contbr. to: Proc. Okla. Acad. of Sci.; Proc. Assn. Sou. Agricultural Workers. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Landscape Architecture; Ornamental Horticulture; Propagation; Taxonomy and Ecology of Plants.



EAMES, Edward Jefferson (Mr.), Intelligence Rsch. Specialist, Dept. of Navy, Wash. 25, D. C. Home Add.: 7611 Constantine Ave., Springfield, Va. GEOGRAPHY AND EDUCATION. b. Santa Fe, N. Mex., May 4, 1918. s. Edward John and Ethel Etta (Misner) E. Edn.: B.S., Ind. St. Tchrs. Coll., 1941; M.S., ibid., 1946; Post-Grad., Univ. of Neb., summers 1948, '49, '50. m. Mary Helen Dworak, Nov., 1942. c.: Susan June; Ethelreda Jane; Edward Jeffrey. Exp.: H. S. Tchr., Blackhawk H. S., Blackhawk, Ind., 1946-47; Tchr., Chrisny H. S., Chrisny, Ind., 1947; Instr. of Geography, Drake Univ., Des Moines, Ia., 1947-50; Intelligence Rsch. Specialist, Dept. of Navy, Wash., D. C., 1950—. Mem.: Am. Geographical Soc.; Assn. of Am. Geographers; Internatl. Geographical Union; A.A.A.S.; Natl. Coun. for Geographic Edn.; Am. Polar Soc.; Ind. Acad. of Sci.; Ia. Acad. of Sci.; Natl. Geographic Soc.; Alpha Phi Omega; Reserve Officers Assn. Serv. Rec.: U.S.N., W. W. II, U.S.N.R., 1945—. Areas of Rsch.: U.S.S.R., Europe, Pacific Ocean Area; Regional and Polar Areas.

EARLE, Floyd Eugene (Mr.), Speech Pathologist and Audiologist, 266 Locust St., Akron 2, Ohio. REHABILITATION OF SPEECH AND HEARING DISORDERS. b. Akron, Ohio, June 16, 1929. s. Herbert and Grace (Cunningham) E. Edn.: B.S., Kent St. Univ., 1953; M.A., ibid., 1959. m. Patty Ann Trapp, Dec. 19, 1953. c.: Claudia Patricia; Lucinda Lynn. Exp.: Chf. Therapist, Parent's Cerebral Palsy Clinic, Akron, Ohio, 1953-55; Dir., Speech and Hearing Clinic, Tuscarawas Co. Hosp., Dover, Ohio, 1953-61; Private Practice, Akron, Ohio, 1954—. Hon. Pos.: Chmn., St. Comm. on Regulation of Fees for Servs. for Speech and Hearing Therapy; Past Pres., Summit Co. Speech and Hearing Assn. Mem.: Am. Speech and Hearing Assn.; Ohio Speech and Hearing Assn.; A.A.A.S.; Ohio Begg Orthodontic Assn.; W. Edwin Palmer Lodge, F. & A.M.; Aroba Lodge; Adar Coun.; Arras Chapt. Areas of Rsch.: Treatment to Correct Condition of Abnormal Swallowing in Connection with Orthodontic Treatment; Hypnosis.

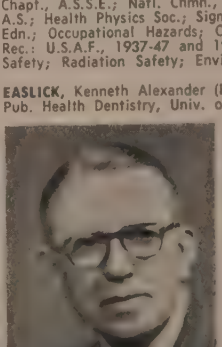
EARLES, Donald Ray (Mr.), Sect. Chf., Rehability Analysis, The AVCO Corp., Wilm., Mass. Home Add.: 1 Buford Rd., Peabody, Mass. OPERATIONS RESEARCH AND RELIABILITY ENGINEERING. b. Seminole, Okla., Dec. 1, 1928. s. Artie Ray and Iva Lee (Whiddon) E. Edn.: B.S.I.E., So. Meth. Univ., 1953. m. Margrit Ehrlich, Dec. 9, 1953. c.: Donald Patrick; Renate Elizabeth. Exp.: Lab. Technician, So. Meth. Univ., Illumination Rsch. Lab., 1955-57; Project Engr., The Western Elec. Co., Burlington, N. C., 1957-58; Group Engr., Systems Engrng., The Martin Co., 1958-61; Sect. Chf., Reliability Analysis, The AVCO Corp., 1961—. Mem.: Inst. Radio Engrs.; Operations Rsch. Soc. of Am.; A.S.Q.C. Hon. Pos.: Mem., I.R.E. Subcom. on Reliability Prediction; Chmn., A.S.Q.C. Task Group on Reliability Testing. Author: Reliability Application and Analysis Guide, 1960; Instructions for Subcontractor Reliability Studies, 1960. Contbr. to: Proc. Inst. Radio Engrs. Serv. Rec.: U.S.M.C., 1946-48; U.S.A.F., 1950-54. Areas of Rsch.: Operational Analysis of Ballistic Missile Systems; Reliability Engineering Research and Development.



EARNER, George Edward (Mr.), Mathematician, Owens Corning Fiberglas, Granville, Ohio. Home Add.: 3791 Conway Dr., Columbus 27, Ohio. MATHEMATICS. b. Conshohocken, Pa., Mar. 19, 1930. s. John Henry and Edythe Lillie (Morrison) E. Edn.: B.A., Miami Univ., 1953; M.A., ibid., 1958. m. Donna Jeanne Voss, Dec. 26, 1953. c.: Timothy; Christopher Michael. Exp.: Thermodynamic Computations Analyst, Gen. Elec. Corp., Evendale, Ohio, 1958-60; Mathematician, Owens Corning Fiberglas, Granville, Ohio, 1960—. Mem.: Soc. for Industrial and Applied Math.; Arnold Air Soc.; Alpha Epsilon Rho; Berwick Park Civic Assn.; Courtright Schl. P.T.A. Serv. Rec.: U.S.A.F., 1953-58. Areas of Rsch.: Thermodynamics; Stress Analysis; Computer Programming.

EASLEY, Charles William (Mr.), Safety Engr., Calif. Inst. of Tech., Pasadena, Calif. Home Add.: 900 N. First Ave., Arcadia, Calif. SAFETY. b. Vandalia, Ill., Sept. 10, 1918. s. Charles E. and Tessie (Schutz) E. Edn.: Attended, Greenville Coll., 1937; Pacific Coast Univ., Law Schl., 1950; Southwestern Univ., Law Schl., 1953; Univ. of Calif., Los Angeles, 1956. m. Mary Havlin, Feb. 1944. c.: Charles, Jr.; Estelle; Gerald; Helen. Exp.: Safety Engr., Ford Motor Co., Maywood, Calif., 1947-53; Safety Engr., Los Angeles Co., Calif., 1953; Safety Engr., Calif. Inst. of Tech., Pasadena, Calif., 1953—. Hon. Pos.: Vice-Chmn., L. A. Chapt., A.S.S.E.; Natl. Chmn., Campus Safety Assn. Mem.: A.A.A.S.; Health Physics Soc.; Sigma Delta Kappa. Contbr. to: Safety Edn.; Occupational Hazards; Coll. and Univ. News Letter. (Ser. Rec.: U.S.A.F., 1937-47 and 1950-52. Areas of Rsch.: Industrial Safety; Radiation Safety; Environmental Health.

EASLICK, Kenneth Alexander (D.D.S.), Prof. of Dentistry, Prof. of Pub. Health Dentistry, Univ. of Mich., Ann Arbor, Mich. PUBLIC HEALTH DENTISTRY; DENTISTRY FOR CHILDREN. b. Sept. 1, 1893, Ridgeway, Mich. s. Schuyler Colfax and Rosa (Pilbeam) E. Edn.: A.B., Univ. of Mich., 1917; D.D.S., ibid., 1928; A.M., ibid., 1936. m. Mercie Marie Van Aken of Detroit, Mich., Apr. 3, 1922; d. Abraham B. and Harriet Withey Van Aken. c.: David Kennet. Exp.: Instr. in Clin. Dentistry, Univ. of Mich., 1928; Dir., Children's Clinic, 1930; Instr. in Operative Dentistry, 1934; Asst. Prof., ibid., 1937; Asst. Prof., Pub. Health Dentistry, Schl. Pub. Health, 1941; Assoc. Prof. ibid., 1942; Prof., ibid., 1945; Chmn. Dept. of Hlth., Schl. of Pub. Hlth., 1961; Licensed Spec. in Dentistry for Children, Mich., 1941; Diplomate, Am. Bd. of Pedodontics, 1948; Chmn., Dental Health Sect., A.P.H.A., 1944; Chmn., Children's Dentistry and Oral Hygiene Sect., A.D.A., 1942-47; A.A.A.S., Fellow; Am. Coll. of Dentists, Fellow; A.P.H.A., Fellow; Am. Soc. Dent. for Children; Diplomate, Am. Bd. Dent. Pub. Health, 1952; Federation Dentaire Internationale; Internatl. Assn. for Dental Rsch.; A.A.A.S.; P.H.D.; Am. Acad. Pedodontics; La Sociedad Odontologica Cubana



ociedad Cubana de Odontol. Infantil; La Sociedad Odontologica
El Salvador; Phi Kappa Phi; Omicron Kappa Upsilon; Delta
mega; Delta Sigma Delta; Am. Legion; Univ. of Mich. Club.
thor: Dental Caries; Mechanism and Present Control Technics
Evaluated at Univ. of Mich. Workshop, 1948; (with William R.
ann), "Practice Admin. for the Dentist, 1955"; "The Practice of
ental Public Health," 1956. Contbr. to: Science and Dental Jour.
ar Record: U. S. Army Ambulance Serv., S. S. U. 591, 1918-19.
sted in: A.M.S.; W. W. in Midwest; W. W. A. E.; W. W. in
ntral States; Who's Important in Med.; W. W. Among Phys.
d Surgeons; W. W. in Am.; Who Knows—and What; Ldrs. in
n. Sci. Special Int.: Treatment of Infected and Traumatized
eth in Children; Admin. Practice in Dent. Pub. Health.

ASLEY, William Kenneth (Ph.D.), Prof. Chem., Chmn. Dept.,
ortheast La. St. Coll., Monroe, La. Home Add.: 500 Orleans St.,
onroe, La. CHEMISTRY. b. Morristown, Tenn., July 19, 1921.
Clair and Lida (Medlin) E. Edn.: B.S., Carson-Newman Coll.,
44; M.S., Univ. of Richmond, 1947; Ph.D., Georgetown Univ.,
52. m. Elizabeth Miller, Oct., 1944. c.: William K.; Martha
.; Karen L.; Sandra C. Exp.: Instr., Univ. Ark., 1947-48; Asst.
of., Carson-Newman Coll., 1948-49; Asst. Instr., Georgetown
niv., 1949-51; Rsch. Chemist, The Chemstrand Corp., Decatur,
a., 1951-55; Prof., Ark. St. Coll., 1955-57; Prof., East Tenn.
Coll., 1957-59; Prof. of Chem. and Chmn. Dept. of Chem.,
ortheast La. St. Coll., 1959—. Hon. Pos.: Chmn., Chem. Sect.,
k. Acad.; Alternate Counc., Cent. Ark. Sect. Am. Chem. Soc.
em.: Tenn. Acad. of Sci.; Ark. Acad. of Sci.; A.A.A.S.; Sigma
Sigma; Am. Chem. Soc. Contbr. to: Jour. of the Am. Chem.
c. War Record: U. S. Navy, 1944-46. Areas of Rsch.: Esters
plant growth hormones; Quaternary salts of heterocyclic nitro-
n compounds; Syntheses of monomers and catalysts for con-
nsation polymers.

ASTER, Stephen Sherman (Mr.), Tech. Advisor, Velsicol Internat.
me Add.: Port Republic, Md. APPLIED ENTOMOLOGY. b. St.
Vincent, Minn., Mar. 25, 1905.
s. William H. and Hilda A. (Munro) E. Edn.: B.S., Univ. of Minn., 1927; M.S., ibid., 1929. m. Myrtle Bekkedahl, June 10, 1930. c.: Barbara Mastroianni; Stephen S., Jr. Exp.: Entomologist, U. S. Dept. Agric., 1937-44; Entomologist, 2nd Army, U.S.A., 1944-47; Chf. Entomologist, Food and Agric. Org. of U. N., 1947-53; Foreign Entomologist, Velsicol Chem. Corp., 1953-57; Dir., Far East, Velsicol Int., 1957-60; Tech. Advisor, Velsicol Internat., 1960—. Mem.: Ent. Soc. Am.; A.A.A.S.; Wash. Ent. Soc.; Japanese Ent. Soc.; Cosmos Club; Sigma Xi; Gamma Sigma Delta; Alpha Zeta; Phi Lambda Upsilon; Alpha Gamma Rho; Alpha Chi Sigma. Contbr.

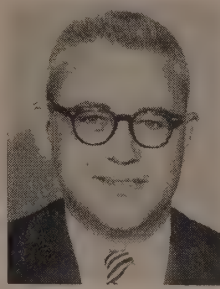
: Military Eng.; Jour. Econ. Ent.; Int. Congress Ent. Gen. Int.:
nprovement of Grain Storage Methods; Control of Harmful Soil
sects. Areas of Rsch.: Fumigants, Grain Storage, Soil Insects.

ASTERDAY, Otho Dunreath (Ph.D.), Pharmacologist, Hazleton Lab.,
lls Church, Va. Home Add.: Box 375 F, R.R. No. 4, Vienna, Va.
PHARMACOLOGY, PHARMACEUTICAL CHEMISTRY, NEUTRON ACTIVATION, RADIATION EFFECTS ON MAMMALS. b. Allen Co., Ind., Oct. 3, 1924. s. Cloud M. and Erla Cloe (Mawhorter) E. Edn.: B.A., Ball St. Tchrs. Coll., 1948; M.S., St. Univ. of Iowa, 1950; Ph.D., ibid., 1953. m. Susan Anne Neuwoehner, 1949. c.: Otho Dunreath; Catherine Sue; Carl Lee; Paul Jay. Exp.: Asst. Pharm., Brookhaven Natl. Lab., Upton, L. I., N. Y., 1953-55; Assoc. Pharm., Med. Rsch. Center, ibid., 1955-61; Pharmacologist, Hazleton Lab., Falls Church, Va., 1962—. Hon. Pos.: Fellow, N. Y. Acad. of Sci.; Fellow, Iowa Acad. of Sci.; Fellow, Am. Assn. for the Adv. of Sci. Mem.: Rad. Rsch. Soc.;

ometric Soc.; Am. Soc. for Pharm. and Experimental Therautics; Soc. of Toxicology; The Coblentz Soc.; Animal Care anel; Sigma Zeta; Gamma Alpha; Sigma Xi. Contbr. to: M.A.; Archives of Neurology and Psychiatry; Jour. of Am. harm. Assn.; Fed. Proc.; Am. Arch. Int. Pharm.acodyn.; Rad. sch.; A.M.A. Arch. of Path.; Jour. Pharm. Exp. Ther. Serv. c.: U. S. Navy, 1942-46. Areas of Rsch.: Borate Analysis, ynthesis, Toxicity and Pharmacology, Neutron Capture Therapy, ffect of Radiation on Mammals, Isotopic Shifts Produced in frared and Raman Spectroscopy and Nuclear Magnetic Resoance, Computer Utilization in Statistics.

BERLY, William R. (Ph.D.), Assoc. Prof. of Biol., Manchester ll., North Manchester, Ind. Home Add.: 1515 Sunset Dr., orth Manchester, Ind. LIMNOLOGY AND ECOLOGY. b. North anchester, Ind., Oct. 4, 1926. s. John H. and Ollie (Heaston) E. n.: B.A., Manchester Coll., 1948; M.A., Ind. Univ., 1955; .D., ibid., 1958. m. Eloise Whitehead, 1946. c.: Diana Sue; enda Kay; Sandra Jo. Exp.: Sci. Instr., Publ. Schls., Wabash ., Ind., 1947-52; Tchng. Instr., Ind. Univ., 1952-55; Asst. Prof., Manchester Coll., 1955-59; Assoc. Prof., ibid., 1959—. Hon. Pos.: Program Chmn., Ind. Acad. of Sci. Mem.: Am. Soc. of Limnology and Oceanography; Soc. Syst. Zool.; Natl. Assn. Biol. Tchrs.; Internatl. Assn. Theoret. and Applied Limnology; Sigma Xi; Kiwanis Internatl. Contbr. to: Proc. Ind. Acad. of Sci.; Systematic Zoology. Areas of Rsch.: Oxygen Production in Lakes.

EASTMAN, Samuel Ewer (Mr.), Dir. of Develop. Planning, Technical Operations Inc., Wash., D. C. Home Add.: 4448 Hawthorne St., N.W., Wash., D. C. b. Erie, Pa., Dec. 15, 1922. Edn.: B.S.E., Princeton Univ., 1944; LL.B., Harvard Univ. Law Schl., 1949. m. Frances Pauline Grace, June, 1950. c.: Melissa Sue; Megan Sarah; Amanda Ford. Exp.: Rsch. Asst., Inst. for Advanced Study, Princeton, N. J., 1949-50; Asst. Prof., Grad. Schl. of Bus. Admin., Harvard Univ., 1951-55; Asst. Chief, Logistics Dept., Rand Corp., Santa Monica, Calif., 1955-56; Dir. of Tech. Staff, Aeronautical Rsch. Fdtn., 1956-58; Lectr., Schl. of Industrial Management, Mass. Inst. Tech., 1958-60; Dir. and Assoc., United Rsch., Inc., 1958-59; Mgr., Wash. Rsch. Office, Technical Operations, Inc., 1958-61; Dir. of Dev. Planning, Technical Operations, ibid., 1961—. Hon. Pos.: Mem., Comm. on Law and Sociol.; Am. Rocket Soc.; Mem., Legal Comm. Internatl. Astronautical Fedn.; Consultant, Maritime Cargo Transport Comm., Natl. Acad. of Scis., Natl. Rsch. Coun. Mem.: Mass. and Dist. of Columbia Bar; Assoc. Mem., Inst. of the Aeronautical Scis. Author: Forecast of Aviation Activity in the United States, 1956-75. Co-Author: Ships and Sugar, 1953. Serv. Rec.: U. S. Navy, W. W. II.



EBLIN, Lawrence Powell (Ph.D.), Prof. of Chem. and Dir. of Sum. Institutes for Sci. Tchrs., Ohio Univ., Athens, Ohio. Home Add.: 151 Grosvenor St., Athens, Ohio. CHEMISTRY. b. Rutland, Ohio, Oct. 28, 1909. s. James O. and Stella (Powell) E. Edn.: B.S.Chem., Ohio Univ., 1931; Ph.D., Ohio St. Univ., 1935. m. Geraldine Ayers, 1938. c.: James B. Exp.: Instr., Ohio Univ., Athens, Ohio, 1935-40; Asst. Prof., ibid., 1940-44; Assoc. Prof., ibid., 1944-51; Prof. of Chem., ibid., 1951—; Chmn. of Dept. of Chem., ibid., 1952-58; Sum. Institutes for Sci. Tchrs., ibid., 1957—. Mem.: Ohio Acad. of Sci.; Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Assn. Univ. Profs.; Gamma Alpha; Phi Lambda Upsilon; Sigma Xi; Blue Key; Phi Beta Kappa; Rotary. Author: Co-Author, A Laboratory Program for General Chemistry, 1944, 1954.

Contbr. to: Jour. of Chem. Edn.; Jour. of Phys. Chem.; Coll. and Univ. Areas of Rsch.: Viscosities of Liquids and Solutions; Eutectic Mixtures of Salts.

EBY, Lawrence T. (Ph.D.), Asst. Mgr., Mkt. Development, Enjay Chem. Co., Div. of Humble Oil and Refining Co., 1141 E. Jersey St., Elizabeth, N. J. Home Add.: 1105 DeWitt Terrace, Linden, N. J. ORGANIC CHEMISTRY. b. South Bend, Ind., May 3, 1916. s. Ralph C. and Edna May (Thornton) E. Edn.: B.S., Univ. of Notre Dame, 1938; M.S., ibid., 1939; Ph.D., ibid., 1941. m. Claudine I. Hart, June 8, 1941. c.: Jane Sue; Claudia Ann. Exp.: Rsch. Chemist, Esso Rsch. and Engrng., Linden, N. J., 1941-57; Sr. Mkt. Devel. Engr., Enjay Co., Inc., Elizabeth, N. J., 1957-58; Asst. Mgr., Mkt. Devel., ibid., 1958—. Hon. Pos.: Natl. Councilor, N. J. Sect., A.C.S.; Chmn., N. J. Sect., A.C.S.; Chmn., N. J. Sect., Am. Inst. of Chemists. Mem.: A.A.A.S.; T.A.P.P.I.; Am. Assn. Textile Chemists and Colorists; N. Y.

Rubber Group; The Chemists Club; Chemical Mkt. Rsch. Assn.; Commercial Chem. Devel. Assn. Contbr. to: Jour. A.C.S.; Anal. Chem.; Indust. and Engrng. Chem.; Rubber World; Rubber Age; A.M.A. Arch. of Indust. Hygiene and Occupation Med. Gen. Int. Areas of Rsch.: Organic Chem.; Petrochemicals; Polymers; Rubber; Analytical Chem.; Carcinogenesis; Mkt. Devel.

ECKENHOFF, James Edward (M.D.), Prof., Anesthesiology in Surgery, Univ. of Pa. Hosp. of the Univ. of Pa., 3400 Spruce St., Phila. 4, Pa. Home Add.: 207 S. Chester Rd., Swarthmore, Pa. ANESTHESIOLOGY. b. Easton, Md., Apr. 2, 1915. s. George L. and Ada (Ferguson) E. Edn.: B.S., Univ. of Ky., 1937; M.D., Univ. of Pa., 1941. m. Bonnie Lee, 1938. c.: Edward Alvin; James Benjamin; Walter Leroy; Roderic George. Exp.: Asst. Instr. in

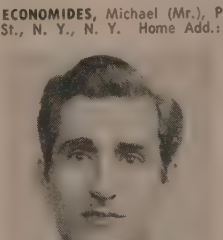
Surgery, Anesthesiology, Univ. of Pa. Schl. of Med., 1944-47; Asst. Instr., Pharmacol., ibid., 1945-47; Instr. in Surgery, Anesthesiology, ibid., 1948-49; Assoc. in Surgery, Anesthesiology, ibid., 1949-50; Asst. Surgeon, Anesthesiology, Children's Hosp., Phila., Pa., 1949-53; Asst. Prof. in Surgery, Anesthesiology, Univ. of Pa., 1950-52; Assoc. Prof., Anesthesiology in Surgery, ibid., 1952-55; Prof., Anesthesiology in Surgery, Univ. of Pa., 1955–. Hon. Pos.: Bd. of Dirs., Am. Soc. of Anesthesiologists, 1957-60; Pres., Pa. Soc. of Anesthesiologists, 1954; Treas., Assn. of Univ. Anesthetists, 1956; Pres.-Elect, ibid., 1961; Assoc. Editor: Anesthesiology, 1955-58; Editor, ibid., 1958–; Advisory Coun. to the Med. Examiner, Phila. Mem.: Am. Physiological Soc.; Am. Med. Assn.; Am. Bd. of Anesthesiology; Am. Coll. of Anesthesiologists; Sigma Xi; Assn. of Univ. Anesthetists; Assn. of Univ. Profs. Author: Introduction to Anesthesia—The Principles of Safe Practice, 1957. Contbr. to: Anesthesiology; Am. Jour. Physiol.; Jour. Pharm. and Exptl. Therap.; Am. Heart Jour.; Proc. Soc. Experimental and Medical Surgery; Amer. Jour. of Medical Sci.; Am. Jour. Obst. and Gyn.; A.M.A.; Am. Jour. Dis. of Child; Surgical Forum; Surg. Gyn. and Obst.; Ann. Surgery; and others. War Record: Mc AUS, 1941-45. Areas of Rsch.: Anesthesiology; Narcotics; Analeptic Drugs; Circulation.

ECKERT, Hans Ulrich (Mr.), 3563 Hartzel Dr., Spring Valley, Calif. GAS DYNAMICS, GASEOUS ELECTRONICS. b. Danzig, Germany, April 20, 1916. s. Erich and Elly (Bernd) E. Edn.: Cand. Phys., Techn. Hochschule Danzig, 1938; Dipl. Eng., Techn. Hochschule, Berlin, 1941. m. Ingeborg Gebhardt, May 2, 1946. c.: Kristin Susan; Sieglind Clara. Exp.: Gr. Engr., German Army Ord., Test Sta., Peenemunde, Germany, 1943-45; Task Scientist, Wright Patterson A.F.B., Dayton, Ohio, 1946-54; Staff Scientist, Gen. Dyn. Astronautics, San Diego, Calif., 1954-62; Staff Scientist, Lockheed Calif. Co., Burbank, Calif., 1962–. Mem.: Inst. of Aero-Space Sciences; Am. Phys. Soc., Divs. of Fluid Dynamics and Plasma Physics. Contbr. to: Jour. Aero-Space Sciences; Jour. of Applied Physics. Areas of Rsch.: High Speed Cinematography; Supersonic Wind Tunnels; Boundary Layer Flow; Electrodeless Discharges; Plasma Flow.

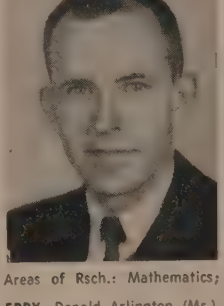
ECKEY, Eddy W. (Mr.), Dir., Eckey Lab., 313 South Wayne Ave., Cincinnati 15, Ohio. Home Add.: 713 Reilly Rd., Cincinnati 15, Ohio. ORGANIC CHEMISTRY; CHEMICAL TECHNOLOGY. b. Henry County, Iowa, Dec. 3, 1902. s. William and Mary (Wiese) E. Edn.: A.B., Wash. Univ., 1923; M.A., Harvard Univ., 1926. m. Mary Little, Apr. 13, 1929. c.: Helen E. Gibson; Elizabeth E. Bickford. Exp.: Rsch. Chemist, The Procter and Gamble Co., Cincinnati, Ohio, 1926-30; Hd. of Oil Rsch. Lab., ibid., 1930-45; Dir. and Owner, Eckey Lab., 1946–. Mem.: Am. Chem. Soc.; Am. Oil Chemists' Soc.; Alpha Chi Sigma; Kappa Alpha. Author: Vegetable Fats and Oils, 1954. Gen. Int.: Inventor of Method for Directed Interesterification of Glycerides. Areas of Rsch.: Chemistry and Technology of Fats and Fatty Oils; Esterification, Alcoholysis, Ester Interchange; Technology of Fractional Distillation.

ECONOMOS, George (Sc.D.), Electronics Consultant, Allen-Bradley Co., Milwaukee, Wis. Home Add.: 4311 N. Md. Ave., Milwaukee 11, Wis. CERAMIC MATERIALS FOR THE ELECTRONICS INDUSTRY. b. Haverhill, Mass., Aug. 22, 1919. s. James and Angelina (Matsuka) E. Edn.: B.S., Northeastern Univ., 1949; S.M., Mass Inst. of Tech., 1951; Sc.D., ibid., 1954. m. Bessie Kasida, Aug. 24, 1947. c.: Gayle Virginia; James William. Exp.: Asst. Prof. and Sect. Ldr. in the Lab. for Insulation Rsch., Mass. Inst. of Tech., Cambridge, Mass., 1954-61; Electronics Consultant, Allen-Bradley Co., 1961 Hon. Pos.: Treas., N. E. Sect. Am. Ceramic Soc.; Chmn., Rsch. Comm., Elect. Div., Am. Ceramic Soc.; Chmn., Non-Metallic Magnetic Materials Subcomm. of C-21, A.S.T.M. Mem.: Am. Ceramic Soc.; Am. Chem. Soc.; Soc. of Sigma Chi; A.A.A.S.; N. Y. Acad. of Scis. Contbr. Author: Ceramic Fabrication Processes; Kinetics of High-Temperature Processes. Contbr. to: Jour. of the Am. Ceramic Soc.; Materials in Design Engrng.; Jour. of the Electrochem. Soc.; Ind. and Engrng. Chem. Serv. Rec.: U. S. Army, 1941-45. Gen. Int.: Contbr. to the Develop. of Magnetic Ferrite Memory Cores for Digital Computer Applications. Areas of Rsch.: Development Materials and Processing Techniques, Using Fundamental Co cepts, for Use in Electronic Applications.

ECONOMIDES, Michael (Mr.), Proprietor, Econ Chemicals, 79 W St., N. Y., N. Y. Home Add.: 310 E. 90th St., N. Y. 28, N. AGRICULTURAL AND FOOD CHE ISTRY. b. Chios, Greece, Se 12, 1923. s. George and Assi ina (Cavouras) E. Edn.: Gy nasium of Chios, Greece, 194 Chem., Natl. Univ. of Athe Greece, 1954. Exp.: Chemist, T Insecticide and Agric. Chem. dust., Athens, Greece, 1954-5 In Chg., Rsch. Lab., Coffee stants, Inc., L. I. City, N. 1958-60; Proprietor, Econ Chem 1960–. Mem.: Am. Chem. So Am. Assn. Adv. Sci.; Royal Che Soc. of Netherlands; Hellet Chem. Soc.; Hellenic Univs. Gra Assn. Serv. Rec.: W.W. II. G Int.: Travel on Field Assignme in Europe, Middle East. Areas Rsch.: Various Areas in Agric tural and Food Chemistry.



EDDINGTON, Glenn Murray (Mr.), Tchr. of Math., Santa Mon City Coll., Santa Monica, Calif. Home Add.: 909 Gretna Gre Way, Los Angeles 49, Calif. MA EMATICS. b. Nashville, Ten Feb. 6, 1905. s. Frank Mar (dec.) and Lillian (Harvey, dec.) Edn.: A.B., Davidson Coll., 192 M.A., Peabody Coll., 1927. Catherine Page, June 2, 19 c.: Glenn Murray, Jr. Exp.: Tc Battle Ground Acad., Frankl Tenn., 1926-36; Assoc. Headm ibid., 1936-44; Headmstr., ib 1944-50; Assoc. Prof. Math., T culum Coll., 1950-53; Tchr. Mat Santa Monica H. S., Santa Mo ca, Calif., 1953-57; Tchr. Mat Santa Monica City Coll., 1957 Hon. Pos.: Past Pres., Mid-So Assn. of Independent Schls.; der, Presby. Church. Mem.: Ma Assn. of Am.; Alpha Phi Epsil Phi Delta Kappa; Lions Cl Areas of Rsch.: Mathematics; Psychology.

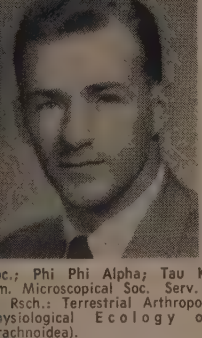


EDDY, Donald Arlington (Mr.), Dir., Schl. of Agri., S. Dak. St Coll., Brookings, S. Dak. Home Add.: 517 9th Ave., Brookin S. Dak. AGRICULTURAL EDU TION. b. Sioux City, Iowa, M 19, 1906. s. D. O. and Zo (England) E. Edn.: M.S., S. D State Coll., 1945. m. Eva Ge vieve Shaw, June 18, 1927. Donna Maxine Fuhs. Exp.: Ins Schl. of Agri., S. Dak. State C 1927-36; Asst. Prin., ibid., 19 41; Dir., ibid., 1941-61; Assi the Dir. of Resident Instruct ibid., 1961–. Mem.: Gamma ma Delta.

EDELMAN, Morton Henry (M.D.), Internist, 210 East 73rd N. Y. 21, N. Y. Home Add.: 1049 Park Ave., N. Y. 28, N CLINICAL PARASITOLOGY. b. N N. Y., July 25, 1913. s. Selig Selma (Pfeffer) E. Edn.: Johns Hopkins Univ., 1933; M ibid., Med. Schl., 1937. m. H Wyner, 1946. c.: Diane; Rob Nancy. Exp.: Interne, Sinai Ho Balto, Md., 1937-38; Interne, ish Hosp., Brooklyn, N. Y., 1 39; Asst. Resident and Resi in Med., ibid., 1939-40; R Asst. Microbiology and Eu Meyer, Jr. Fellow, Mt. Sinai Ho N.Y.C., 1940-42; U. S. Army M Corps, Chf. of Lab. and Inter 107 Sta. Hosp., 1942-46; R Asst. Microbiology, Mt. Si Hosp., N. Y., 1946-58; Rsch soc. Microbiology, ibid., 1958 Sr. Clin. Phys. In Med., 1946-60. Mem.: Am. Med. A N. Y. Co. and N. Y. State Med. Soc.; Diplomate, Am. Bd Internal Med.; Fellow, Am. Coll. of Physicians; Fellow, N Acad. of Med.; N. Y. Acad. of Scis.; Am. Soc. of Tropical and Hygiene; Am. Soc. of Parasitologists; N. Y. Soc. of Tro Med.; Am. Federation for Clin. Rsch.; Am. Assn. Adv. of

e Royal Soc. of Health; Am. Pub. Health Soc.; N. Y. Pub. alth Assn. Contbr. to: Annals of Internal Med.; Archives of ternal Med.; The Bull. of the U. S. Med. Dept.; The Jour. of rasitology; The Am. Jour. of Tropical Med.; Jour. of the Am. ed. Assn.; The New England Jour. of Med. Serv. Rec.: U. S. my Med. Corps, 1942-46. Areas of Rsch.: Special interest in e Cultivation of Endameba Histolytica for Diagnostic Purposes Human Amebiasis.

GAR, Arlan Lee (Ph.D.), Assoc. Pref. of Biol., Alma Coll., ma, Mich. Home Add.: 602 Woodworth St., Alma, Mich. INVERTEBRATE ZOOLOGY, NATURAL HISTORY, TAXONOMY, PHYSIOLOGICAL ECOLOGY OF THE ORDER PHALAGIDA (ORTHOPODA: ARACHNOIDEA). b. Gratiot Co., Mich., June 3, 1926. s. Sherman J. and Letha Ellen (Perdue) E. Edn.: B.A., Alma Coll., 1949; M.A., Univ. of Mich., 1950; M.S., ibid., 1957; Ph.D., ibid., 1960. m. Bonnie Jean Anderson, Mar. 30, 1952. c.: Rosemary; Amy; Andrew. Exp.: Instr., Alma Coll., 1950-51; Asst. Prof., Alma Coll., 1953-58; Assoc. Prof. of Biol., ibid., 1958—. Mem.: Am. Assn. Adv. Sci.; Sci. Rsch. Club; Phi Sigma; Sigma Xi; Beta Beta Beta; Mich. Acad. of Sci., Arts and Letters; Phi Kappa Phi; Am. Soc. of Zool.; Am. Microscopical

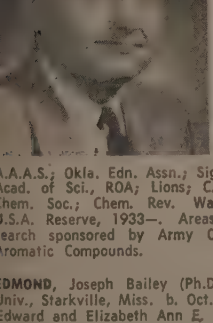


c.; Phi Phi Alpha; Tau Kappa Epsilon. Contbr. to: Trans. n. Microscopical Soc. Serv. Rec.: U. S. Army, 1951-53. Areas Rsch.: Terrestrial Arthropods; Natural history, Taxonomy and ysiological Ecology of Order Phalagida (Arthropoda: rachnoidea).

DIE, Leslie C. (Mr.), Engr. of Operations Rsch., Port of N. Y. uthority, New York, N. Y. Home Add.: 700 Nassau St., Bellmore, N. Y. ENGINEERING, OPERATIONS RESEARCH. b. Kansas City, Mo., Nov. 21, 1914. s. Stewart C. and Maude A. (White) E. Edn.: B.S., Univ. of Kan., 1936. m. Marjorie H. Crawford, Jan. 7, 1939. c.: Mallory Lee; Eleanor Barrett. Exp.: Engr., Western Union Tel. Co., N. Y., N. Y., 1936-46; Sr. Engr., Intl. Tel. and Tel. Co., ibid., 1944-51; Chf., Port of N. Y. Authority, ibid., 1951-62; Engr. of Operations Rsch., ibid., 1962—. Hon. Pos.: Chmn., Various Comm. of A.I.E.E. and O.R.S.A. Mem.: N.S.P.E.; Fellow, A.A.A.S.; Sigma Phi Epsilon; Tau Beta Pi; Sigma Tau. Contbr. to: Reference Data for Radio Engrs., 1949; Operations Rsch. for Management, 1956; In-

roduction to Operations Rsch., 1957. Gen. Int.: Johns Hopkins niv. Lanchester Prize, 1954. Areas of Rsch.: Operation Rsch.; ueing Theory; Theory of Traffic Flow.

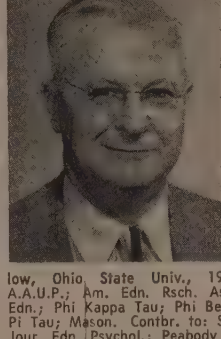
DMISON, Marvin T. (Ph.D.), Dir., Rsch. Foundation, Okla. St. niv., Stillwater, Okla. Home Add.: 1107 No. Skyline Dr., Stillwater, Okla. ORGANIC CHEMISTRY. b. Lincoln, Neb., July 21, 1912. s. Wellington V. and Maude (Clemens) E. Edn.: B.A., Univ. of Neb., 1933; M.S., ibid., 1947; Ph.D., Okla. A. and M. Coll., 1952. m. Ila Fern (Hallstrom), Lincoln, Neb., Aug. 17, 1939. c.: William Robert; Lawrence Ray. Exp.: Sci. Tchr., Shattuck Military Schl., Faribault, Minn., 1938-41; Sci. Tchr., Wentworth Milit. Acad., Lexington, Mo., 1947-48; Tchng., Chem. Rsch. and Asst. in Rsch., to Vice-Pres. and Provost, Univ. of Ark., 1951-55; Prof. and Dir., Rsch. Foundation, Okla. St. Univ., 1955—. Hon. Pos.: Exec. Com., Mid-Am. State Univs. Assn.; Mem., Counc. Associated Midwest Univs. Mem.: Am. Chem. Soc.; A.A.U.P.;



A.A.A.S.; Okla. Edn. Assn.; Sigma Xi; Phi Lambda Upsilon; Okla. Acad. of Sci., ROA; Lions; C. of C. Contbr. to: Jour. of Am. Chem. Soc.; Chem. Rev. War Record: U. S. Army, 1941-46; U.S.A. Reserve, 1933—. Areas of Rsch.: General explosives research sponsored by Army Ordnance; Radical Substitutions in Aromatic Compounds.

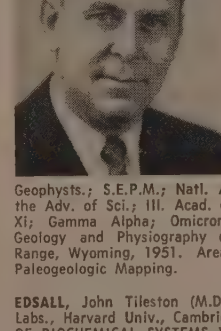
EDMOND, Joseph Bailey (Ph.D.), Prof. Emer. of Hort., Miss. St. Univ., Starkville, Miss. b. Oct. 11, 1894, Yorkshire, Eng. s. John Edward and Elizabeth Ann E. Edn.: B.S., Mich. St. Univ., 1923; M.S., Iowa St. Univ., 1924; Ph.D., Univ. of Md., 1933. Exp.: Instr. in Horticulture, Mich. St. Univ., 1924-29; Assoc. Prof. of Hort., Miss. State Univ., 1931-35; Assoc. Prof. of Hort., Clemson Coll., 1935-44; Assoc. Horticulturist, Georgia Agri. Exptl. Sta., 1945-46; Assoc. Hort., La. Agri. Exptl. Sta., 1947-48; Prof., Hort., Miss. St. Univ., 1948-61. Mem.: Sigma Xi; Phi Kappa Phi; Phi Sigma; Gamma Sigma Delta; Alpha Zeta; Pi Kappa Phi. Ph.D. Dissertation: Sex Expression in Cucumbers, Univ. of Md., 1933. War Record: Entered Serv., Sept., 1917, Served with Co. K, 125th Inf., 32nd Div., Oct., 1917-Feb., 1919. Special Int.: The Physiology and Culture of Vegetables.

EDMISTON, Robt. Wentz (Ph.D.), Prof. of Edn., Dir. of Practical Arts Division, Miami Univ., Oxford, Ohio. Home Add.: 117 West Collins St., Oxford, Ohio. PSYCHOLOGICAL MEASUREMENT GUIDANCE. b. Oct. 21, 1894, Wapakoneta, Ohio. s. A. L. and Alice (Wentz) E. Edn.: A.B., Miami Univ., 1916; M.A., Ohio St. Univ., 1921; Ph.D., ibid., 1929. m. Helen Marie Fisher, Wapakoneta, Ohio, 1918. d. Mr. and Mrs. Edward Fisher. c.: Robt. Edward. Exp.: Sci. Instr., Wapakoneta, 1916-19; Prin. of Schls., Celina, 1919-22; Supv. of Sci., Central H. S., Lima, Ohio, 1922-28; Chmn. of Chem. Dept., Northwestern St. Coll., 1930-31; Visiting Prof., Geo. Peabody Coll. for Tchrs., 1931-32; Prof. of Edn., Miami Univ., 1932-61; Prof. Em., ibid., 1961—; Guidance and Meas. Consultant. Hon. Pos.: Grad. Fellow, Ohio State Univ., 1928-39. Mem.: N.E.A.; A.A.A.S.; A.A.U.P.; Am. Edn. Rsch. Assn.; Natl. Soc. of Coll. Tchrs. of Edn.; Phi Kappa Tau; Phi Beta Kappa; Phi Delta Kappa; Epsilon Pi Tau; Mason. Contbr. to: Schl. and Soc.; Am. Schl. Bd. Jour.; Jour. Edn. Psychol.; Peabody Jour. of Edn.; Jour. of Edn. Rsch.; Sci. Edn. Author: Measures of Interests, Motor Capacity, and How-to-Study. Ph.D. Dissertation: Overlapping in Secondary Schl. Sci. War Record: Second Lieut., C. W. S., U. S. A.



EDMONSON, Jack Willis Everett (Mr.), Geophysicist, Narvarte Consulting, 1103 Frost Natl. Bank Bldg., San Antonio, Tex. Home Add.: 114 Encino Blanco, San Antonio, Tex. GEOPHYSICAL EXPLORATION. b. Big Sandy, Tex., Apr. 15, 1923. s. Charles Lake and Winnie Lee (Gore) E. Edn.: B.S., Tex. Coll. of Arts and Industries, 1947; M.S., ibid., 1951. m. Sue DeVille, Nov. 17, 1951. c.: Jacqueline Sue; Jack Willis; Beverly Jo; Charles Edward; David Ray. Exp.: Geophysicist, Shell Oil Co., Houston, Tex., 1947-51; Geophysicist, Narvarte Consulting, San Antonio, Tex., 1951—. Hon. Pos.: Past Pres., Geophysical Soc. of S. Tex. Mem.: Soc. of Exploration Geophysicists; Inst. of Radio Engrs.; Seismological Soc. of Am.; Am. Geophysical Union; Geophysical Soc. of S. Tex. Serv. Rec.: U. S. Army Air Force, 1943-46. Areas of Rsch.: Interpretation of Subsurface and Geophysical Data; Seismic Velocity and Delta-T Analysis.

EDMUND, Rudolph (Ph.D.), Chmn., Div. of Scis., Augustana Coll., Rock Island, Ill. Home Add.: 4013 31st Ave., Rock Island, Ill. GEOLOGY; PETROLEUM GEOLOGY; STRATIGRAPHY. b. Lockridge, Ia., Mar. 9, 1910. s. Amos D. and Minnie (Odean) E. Edn.: A.B., Augustana Coll., 1934; M.S., St. Univ. of Ia., 1938; Ph.D., ibid., 1940. m. Doris Swanson, June 8, 1939. c.: M. Diane; Janice O.; Linda L. Exp.: Geolt., Shell Oil Co., Tulsa, Okla., 1940-45; Dist. Geolt., The Globe Oil and Rfg. Co., Okla. City, Okla., 1945-48; Assoc. Prof., Augustana Coll., 1948-51; Regl. Geolt., The Globe Oil and Rfg. Co., Okla. City, Okla., 1951-53; Vice-Pres. for Foreign and Domestic Exploration, Sohio Petrol. Co., 1953-60; Prof., Geol., Augustana Coll., 1960—. Mem.: Fellow, Geol. Soc. of Am.; Am. Assn. Petrol. Geol.; Soc. Exptl.



Geophysts.; S.E.P.M.; Natl. Assn. of Geol. Tchrs.; Am. Assn. for the Adv. of Sci.; Ill. Acad. of Sci.; Okla. City Geol. Soc.; Sigma Xi; Gamma Alpha; Omicron Delta Kappa. Author: Structural Geology and Physiography of the Northern End of the Teton Range, Wyoming, 1951. Areas of Rsch.: Subsurface Geology and Paleogeologic Mapping.

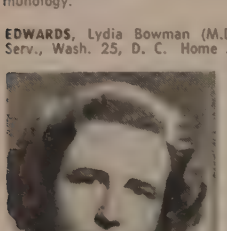
EDSALL, John Tileston (M.D.), Prof. of Biol. Chem., Biological Labs., Harvard Univ., Cambridge 38, Mass. PHYSICAL CHEMISTRY OF BIOCHEMICAL SYSTEMS WITH SPECIAL REFERENCES TO PROTEINS. b. Phila., Pa., Nov. 3, 1902. s. David Linn and Margaret Harding (Tileston) E. Edn.: A.B., Harvard Univ., 1923; M.D., Harvard Med. Schl., 1928. m. Margaret Dunham, May 1, 1929. c.: James Lawrence; David Tileston; Nicholas Cranford. Exp.: Tutor in Biochem. Scis., Harvard Univ., 1928—; Chmn., Bd. of Tutors in Biochem. Scis., ibid., 1931-57; Asst. Prof. of Biol. Chem., ibid., 1932-38; Assoc. Prof., ibid., 1938-51; Prof., ibid., 1951—; Mem., Univ. Lab. of Physical Chem., ibid., 1950-53; Prof. of Biol. Chem., Biological Labs., Harvard Univ., 1953—; Fulbright Visiting Lectr., Cambridge, Eng., 1952; Visiting Prof., Coll. de France, Paris, 1955. Hon. Pos.: Pres., Am. Soc. Biol. Chemists, 1957; Chmn., Div. of Biol. Chem., Am. Chem. Soc.,

1948-49; 1950-51. Mem.: Natl. Acad. Sci.; Am. Philos. Soc.; Biochem. Soc. Great Britain; Soc. de Chimie Biologique; Am. Acad. Arts and Sci.; Am. Chem. Soc.; Am. Soc. Biol. Chemists; A.A.A.S.; Sigma Xi; U. S. Natl. Commn. for UNESCO, 1950-56. Editor: Jour. of Biological Chem., 1958—. Co-Author: Proteins, Amino Acids and Peptides, 1943; Co-Author: Biophysical Chemistry, Vol. I (1958). Contbr. to: Jour. Am. Chem. Soc.; Jour. Biol. Chem.; Jour. Chem. Physics; etc. War Record: Worked for Com. on Med. Rsch., Off. of Scientific Devel., on Devel. of Fractionation Products of Blood Plasma, 1941-45. Special Int.: Physical Chem. of Proteins, Amino Acids; Peptides; Double Refraction of Flow; Raman Spectra; Muscle Proteins; Blood Clotting.

EDWARDS, Benjamin D(avid) (Mr.), Coordinator, Professional Staffing, N.A.S.A., Washington 25, D. C. Home Add.: 216 S. Carolina Ave., S.E., Wash. 3, D. C. PSYCHOLOGY, PERSONNEL; OCCUPATIONAL ANALYSIS AND COMPENSATION SYSTEMS; OCCUPATIONAL ANALYSIS—TRADES AND CRAFTS OCCUPATIONS. b. Detroit, Wayne Co., Mich., Mar. 5, 1920. s. Benjamin David, Sr. (dec.) and Maude Vivian (Grove) E. Edn.: A.B., Wittenberg Coll., 1941. m. Dr. Dorothy Schneider, July 6, 1956. c.: Lauren Grove. Exp.: Wage and Pay System Analyst, U. S. Navy, OIR, Wash., D. C., 1946-48; Occupational Systems Analyst, U. S. A. F., Hdq., Wash., D. C., 1948-56; Science Register Manpower Analyst, Natl. Sci. Found., Wash., D. C., 1956-58; Personnel Officer, Smithsonian Inst., Wash., D. C., 1958-59; Exams. and Standards Analyst, Natl. Aeronautics and Space Admin., Wash. 25, D. C., 1959-61; Profl. Recruiting Officer, Natl. Aeronautics and Space Admin., ibid., 1961—. Mem.: Pi Sigma Alpha; Am. Assn. Adv. Sci.; Kappa Phi Kappa; Lambda Chi Alpha; Masonic Lodge. Monitor-Editor: Air Force Manual, 40-4, Air Force Wage Board Occupational Standards, 1950-56. Areas of Rsch.: Occupational Analysis and Wage Systems; Occupational Coding Structures; and Use of Such Systems on EAM or ADP Data Processing Equipment; Manpower Studies and Development Programs; Professional Recruiting Programs.

EDWARDS, Joshua Leroy (M.D.), Prof. and Chmn., Dept. Pathol., Coll. Med., Univ. of Fla. Home Add.: 623 S.W. 27th St., Gainesville, Fla. PATHOLOGY. b. Jasper, Fla., Aug. 9, 1918. s. Harry L. and Julia (Miller) E. Edn.: B.S., Univ. of Fla., 1939; M.D., Tulane Schl. Med., 1943. m. Jeane Perrin, 1953. c.: Julia Elizabeth; Jeane Augusta; Joshua Leroy. Exp.: Gen. Pract. Med., Lake City, Fla., 1946-48; Res., Pathol., Tuoro Infirmary, New Orleans, La., 1948-49; Res. and Chf., Res. Dept. Pathol., New Eng. Deaconess Hosp., Boston, Mass., 1949-51; Tchng. Fellow, Dept. of Pathol., Harvard Med. Schl., 1950-51; Instr., Dept. Pathol., Duke Univ. Med. Schl., Assoc., Dept. Pathol., ibid., 1952-53; Asst. Staff, Rockefeller Inst., 1951-52; Prof., Pathol., and Chmn., Dept., Univ. of Fla. Med. Schl., 1955—. Mem.: A.A.A.S.; N. Y. Acad. Scis.; Tissue Culture Assn.; Internatl. Acad. Pathol.; Am. Soc. Exptl. Pathol.; Am. Med. Assn.; Fla. Med. Assn.; Alachua Co. Med. Soc.; Sigma Xi. Contbr. to: Proc. Natl. Acad. Scis.; Jour. Exptl. Med.; Jour. Biophys. and Biochem.; Cytol.; Sci.; Jour. Lab. and Clin. Investigation; Am. Jour. Pathol.; Lab. Investigation; Jour. of Cell Biol. Serv. Rec.: U. S. Army, Med. Corps, 1944-46. Areas of Rsch.: Pathology; Cytology; Immunology.

EDWARDS, Lydia Bowman (M.D.), Med. Dir., U. S. Pub. Health Serv., Wash. 25, D. C. Home Add.: 2725 29th St., N.W., Wash., D. C. TUBERCULOSIS RESEARCH. b. Berkeley, Calif., June 3, 1905. d. Edmund Baker and Rhoda (Walker) E. Edn.: Univ. of Rome, Italy, 1923; B.A., Radcliffe Coll., 1927; Univ. of Paris Med. Schl., 1928; M.D., Johns Hopkins Med. Schl., 1932. Exp.: Interne in Med., Johns Hopkins Hosp., 1932-33; Asst. Res. Med., Strong Mem. Hosp., 1933-34; Intern in Pediatrics, Johns Hopkins Hosp., 1934-35; Asst. Res. Pediatrics, ibid., 1935-37; Dir., Pediatrics, Out-Patient Dept., ibid., 1937-38; Fellow, Assoc. to Asst. Prof., Pediatrics and Preventive Med., ibid., 1939-43; Commissioned Officer in U. S. Pub. Health Serv., 1943; Tuberculosis Prog., Pub. Health Serv., 1944; UNRRA, 1944-46; Tuberculosis Prog., Pub. Health Serv., 1946-48; On loan to WHO, 1948-55; Med. Dir., U. S. Pub. Health Service, TB Program, Wash., D. C., 1955. Mem.: Am. Trudeau Soc.; Alpha Omega Alpha; Phi Beta Kappa; Chevy Chase Club; Club of Colonial Dames, Wash., D. C. Co-author: WHO Monograph Series, BCG Vaccination, 1953. Contbr. to: Pub. Health Reports; WHO Bull.; Lancet; Am. Jour. Hyg., Pediatrics. Areas of Rsch.: Rsch. in Tuberculosis.



EDWARDS, Marie Babare, Psychologist in Priv. Prac., 5[illegible] Condon Ave., Los Angeles 56, Calif. PSYCHOLOGIST. b. Taco[illegible] Wash., Jan. 2, 1919. d. Nick [illegible] Mary (Mardesich) Babare. Ed[illegible] B.A., Stanford Univ., 1948; M.[illegible] ibid., 1949; Grad. Trng. Clin[illegible] Psychol., Univ. of Calif. at [illegible] Angeles, 1958-60. Exp.: Counse[illegible] for Univ. of Sou. Calif. Guida[illegible] Ctr., 1950-52; Proj. Coordina[illegible] Sou. Calif. Soc. for Mental Hy[illegible] 1952-54; Publ. Speaker, Welf[illegible] Fed. of Los Angeles, 1953-[illegible] Field Repr., Los Angeles Co. [illegible] sn. for Mental Health, 1957-[illegible] Psychologist in Priv. Prac., p[illegible] time to full time, Los Ange[illegible] Calif., 1952—. Mem.: Am. P[illegible] chol. Assn.; Western Psyc[illegible] Assn.; Calif. St. Psychol. Ass[illegible] Am. Assn. Adv. Sci.; Natl. Ac[illegible] of Rel. and Mental Health; S[illegible] for Adv. of Mgt.; St. of Ca[illegible] Certified Psychol.; Natl. Vocational Guid. Assn. Areas of Rsc[illegible] Psychotherapy Community Mental Health Services; Creativity [illegible] Personal Growth in Human Relations Laboratories.

EELLS, Richard S. F. (Mr.), Pres., Found. for the Study of Hum[illegible] Organization; Vice-Pres., Gibbons, Griffin and Eells, Inc., N. [illegible] N. Y. Home Add.: 251 E. 5[illegible] St., N. Y., N. Y. POLITICAL S[illegible] ENCE. b. Cashmere, Wash., A[illegible] 5, 1917. s. Fred K. and Sop[illegible] (Fox) E. Edn.: A.B., Whitm[illegible] Coll., 1940. Exp.: Chf., Ae[illegible] nautics Div., Libr. of Congr[illegible] Wash., D. C., 1945-50; Gugg[illegible] heim Chair of Aeronautics, Libr[illegible] Cong., 1948-50; Field Dir., N[illegible] East Coll. Assn., N. Y., N. [illegible] 1950-52; Ednl. Consult., G[illegible] Elec. Co., N. Y., N. Y., 1952-[illegible] Mgr., Pub. Rel. Rsch., ibid., 19[illegible] 56; Pub. Policy Rsch., ibid., 19[illegible] 60; Pres., Found. for the St[illegible] of Human Organization; Vice-Pr[illegible] Gibbons, Griffin and Eells, I[illegible] N. Y., N. Y., 1960—. Hon. Pe[illegible] Visit. Rsch. Fellow, Grad. Schl. [illegible] Bus., Columbia Univ., 1956-[illegible] Visit. Scholar, 1958-59; Senior Rsch. in Business, 1959-60; [illegible] junct Prof. of Bus., 1960—. Mem., Rsch. Advisory Bd., N[illegible] Merit Scholarship Corp. Mem.: N. Y. Acad. of Sci.; Am As[illegible] for Pub. Opinion Rsch.; Am. Polit. Sci. Assn.; A.A.A.S.; Econo[illegible] Club of N. Y.; N. Y. Chapt. of Phi Beta Kappa; Phi Delta The[illegible] Author: Corporation Giving in a Free Society, 1956; The Me[illegible] ing of Modern Business, 1960; Conceptual Foundations of Busin[illegible] (with Clarence Walton), 1961. Contbr. to: Business Horizo[illegible] Challenge; Calif. Mgmt. Rev.; Western Bus. Rev.; Pub. Opin[illegible] Quart. War Rec.: U.S.A.F., 1943-45. Areas of Rsch.: Social [illegible] Political Aspects of Corporate Enterprise; Business Philanthro[illegible] Public Opinion Research.

EGGERT, Franklin Paul (Ph.D.), Dean, Grad. Study, Univ. of M[illegible] Orono, Me. Home Add.: 190 Main St., Orono, Me POMOLO[illegible] b. Buffalo, N. Y., May 13, 1920. s. Paul A. and Florence [illegible] (Graf) E. Edn.: B.S.A., Cornell Univ., 1942; M.S.A., ibid., 19[illegible] Ph.D., ibid., 1949. m. Barbara Eccles, 1945. c.: E. Paul; [illegible] chael; Geoffrey; Jonathan. Exp.: Assoc. Prof., Univ. of M[illegible] 1949-51; Prof., ibid., 1951—; Dean, Grad. Study, ibid., 196[illegible] Mem.: Am. Soc. Hort. Sci.; Bot. Soc. of Am.; Am. Pom. So[illegible] Sigma Xi; Phi Kappa Phi; Alpha Gamma Rho. Contbr. to: P[illegible] Am. Soc. Hort. Sci. Serv. Rec.: U. S. Marine Corps, 1943-[illegible] Areas of Rsch.: Nutrition of Apples; Maturity of Apples; Stor[illegible] of Apples.

EGLITIS, Irma (M.D.), Assoc. Prof., Dept. of Anat., Ohio St[illegible] Univ. Coll. of Med., 1645 Neil Ave., Columbus 10, Ohio. Ho[illegible] Add.: 123 E. Lane Ave., Colu[illegible] bus 1, Ohio. ANATOMY, DE[illegible] ATOLOGY. b. Riga, Latvia, [illegible] 13, 1907. d. Georgs and Eli[illegible] bete (Kronenberg) Liepinsh. Ed[illegible] M.D., Univ. of Latvia, Faculty [illegible] Med., 1931. m. John Arnold [illegible] litis, April 17, 1938. Exp.: As[illegible] Instr., Jr. Instr., Instr. Gr[illegible] Anat., Histol., Embryol., The Un[illegible] of Latvia, Faculty of Med., De[illegible] of Anat., Riga, Latvia, 1931-[illegible] Residencies, Univ. of Latvia, Ho[illegible] of Dermatol. and Syphilol., ibi[illegible] 1932, 1942-44; Instr., Gro[illegible] Anat., Ernst Moritz Arndt, Un[illegible] of Greifswald, Germany, 1944-[illegible] Instr., Dept. of Anat., Coll. [illegible] Med. Ohio State Univ., 1952-[illegible] Asst. Prof., ibid., 1956-62; As[illegible] Prof., ibid., 1962—. Hon. Pe[illegible] Pres., Am. Med. Women's Assn., Columbus Br., Ohio, 1961-[illegible] Vice-Pres., ibid., 1959-60; Secy.-Treas., ibid., 1958-59. Me[illegible] Sigma Xi; Am. Assn. of Anatomists; Am. Med. Women's Ass[illegible] Ohio Acad. of Sci.; Coun. of Inst. for Rsch. in Vision. Contb[illegible]

Author: Anatomy and Histology of The Eye and Orbit in Domestic Animals. Contbr. to: Am. Jour. of Anat.; The Ohio Jour. of Sci. Listed in: Am. Men of Sci.; W. W. of Am. Women; W. W. Am. Edn. Areas of Rsch.: Visual Apparatus; Skin; Blood Vessels; Glandular Division.

EGLITIS, John Arnold (M.D.), Prof., Ohio State Univ., Coll. of Med., Columbus, Ohio. Home Add.: 123 E. Lane Ave., Columbus 1, Ohio. HISTOLOGY. b. Latvia, Dec. 16, 1902. s. Alexander and Zelma (Marija) E. Edn.: M.D., Univ. of Latvia, Fac. of Med., 1931; D.Sc., (Med.), ibid., 1940; Habil., ibid., 1942; Cert., Univ. of Hamburg, Inst. of Maritime and Trop. Diseases, 1947. m. Irma Liepinsh, April 17, 1938. Exp.: Asst. to Assoc. Prof. and Chmn., Histol. and Embryol., Univ. of Latvia, Fac. of Med., Riga, Latvia, 1927-44; Assoc. Prof., Univ. of Greifswald, Germany, 1944-45; Assoc. Prof. and Chmn., Baltic Univ. of Hamburg, ibid., 1946-49; Instr., Ohio State Univ. Coll. of Med., 1951-52; Asst. Prof., ibid., 1952-55; Assoc. Prof., ibid., 1955-61; Prof., ibid., 1961—. Mem.: Am. Assn. of Anatomists; Ohio Acad. of Sci.; Sigma Xi; Latvian Med. and Dent. Assn. in U.S.A.; Ohio State Univ. Inst. for Perinatal Studies; Ohio State Univ. Faculty Club; Fraternitas Vesthardiana. Author: Histological Embryological Researches about the Anal Glands (Skin Glands) of the Rodentia and Man, 1939. Contbr. to: Anat. Rec.; Ohio Jour. of Sci.; Anatl. Anz.; Acta Medica Latvica; Jour. of Latv. Phys.; Jour. of Urology. Gen. Int.: First Prize, Latvian Culture Fdn. for Scientific Rsch.; Fellow, Fac. of Med., Strasbourg, France, 1932; Innsbruck, Austria, 1936-37. Listed in: Am. Men of Sci.; W. W. in Am. Edn. Areas of Rsch.: Glandular division Blood vessels; Metaplasia; Ear, Nose, and Throat diseases.

EGLY, Richard Samuel (Ph.D.), Dir. Process Devel., Rsch. and Devel. Dept., Commercial Solvents Corp., Terre Haute, Ind. CHEMICAL ENGINEERING AND ORGANIC CHEMISTRY. b. Grabill, Ind., July 6, 1914. s. Albert and Anna (Stukey) E. Edn.: B.S., Purdue Univ., 1936; M.S., Univ. of Ill., 1938; Ph.D., ibid., 1940. m. Helen Bourke, July 2, 1949. c.: David Alan; Sarah Margaret; Diana Gail; Joan Esther. Exp.: Grad. Asst., Univ. of Ill., Urbana, Ill., 1936-40; Chem. Engr., Rsch Dept., Commercial Solvents Corp., Terre Haute, Ind., 1940-43; Chf., Chem. Engr. Grp., ibid., 1943-50; Dir. of Chem. Rsch., ibid., 1950-55; Dir., Nitroparaffin Devel., ibid., 1955-57; Assoc. Scientific Dir., 1957-62; Dir., Process Devel., ibid., 1962—. Registered Professional Engr. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Natl. Assn. of Corrosion Engr.; Soc. of Chemical Indus.; Am. Rocket Soc.; Alpha Chi Sigma; Phi Lambda Upsilon; Tau Beta Pi; Omega Chi Epsilon; Sigma Xi. Contbr. to: Indust. and Engrng. Chem.; Chem. Engrng. Progress. Special Int.: Equipment and Processes for Nitrating Alkane Hydrocarbons, Preparation of Nitroparaffin Derivatives, High Pressure Techniques and Reactions and Application of Heat Transfer Principles to Laboratory and Pilot Plant Equipment; Propellants and Explosives.

EHLMANN, Arthur J. (Ph.D.), Assoc. Prof. of Geol., Tex. Christian Univ., Ft. Worth, Tex. Home Add.: 5620 Waltham, Ft. Worth 15, Tex. MINERALOGY; GEOLOGY. b. St. Charles, Mo., May 18, 1928. s. Arthur H. and Viola E. (Phillips) E. Edn.: B.S., in Edn., Univ. of Mo., 1950; M.A., ibid., 1954; Ph.D., Univ. of Wash., 1958. m. Rita J. Burke, Mar. 30, 1956. c.: Julie Carol; Wesley Bryant; Eric Geoff; Sheila Ann. Exp.: Asst. Prof., Univ. of Wash., 1954-56; Asst. Prof., Tex. Christian Univ., 1956-58; Assoc. Prof., ibid., 1958—. Hon. Pres., Tex. Christian Univ. Sigma Xi Club. Mem.: Sigma Xi; Mineral. Soc. of Am.; Soc. of Econ. Paleontols. and Mineralogists; Tex. Acad. of Sci. Contbr. to: Econ. Geol.; Proc. of Natl. Clay Confs.; Geol. Soc. of Am. Bull.; Jour. of Sedimentary Petrol. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Clay Mineralogy; X-Ray Diffraction and Fluorescence Analysis; Mineral Synthesis.

EHMAN, Philip John (Ph.D.), Rsch. Mgr., Ansul Chem. Co., Marinette, Wis. Home Add.: 1447 Newberry Ave., Marinette, Wis. ORGANIC CHEMISTRY. b. Bozeman, Mont., Aug. 29, 1911. s. Julius H. and Anna (Pietl) E. Edn.: B.S., Mont. St. Coll., 1932; Ph.D., Univ. of Chicago, 1935. m. Ottilie Tovar, June 18, 1938. c.: Gary; Jane; Rita; John; Lisa Mary. Exp.: Rsch. Chemist, Continental Can Co., Chicago, Ill., 1935-36; Rsch. Chemist, Ansul Chem. Co., Marinette, Wis., 1936-42; Asst. Dir of Rsch., ibid., 1942-51; Rsch. Mgr., ibid., 1951—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Gamma Alpha; Sigma Xi; Alpha Chi Sigma; C. of C. Contbr. to: Encyclo. of Chem. Tech.; Encyclo. of Chem. Areas of Rsch: Organic Synthesis, Methylation, Organic Arsenicals, Heterocyclic Nitrogen Compounds, Fire Extinguishing Agents, Refrigeration, Sulfur Dioxide Chemistry.

EHRENSTEIN, Maximilian Richard (Ph.D.), Prof. of Biochem., Schl. of Med., Univ. of Pa., 806 Maloney Clinic, Univ. of Pa. Hosp., Phila. 4, Pa. ORGANIC, BIOLOGICAL AND MEDICINAL CHEMISTRY. b. May 11, 1899, Munich, Germany. s. Richard and Amanda Alwine (Engels) E. Edn.: Realgymnasium, Goettingen, Abitur Exam., 1918; Sc.D., Univ. of Goettingen, 1921; State Bd. Exam. in Food Chem., Univ. of Munich, 1928; State Bd. of Exam. for Apothecaries, Univ. of Berlin, 1931; Habilitation as Privadozent in Med. Chem., ibid., 1931. m. Elsa Meyer of Hamburg, Germany, Apr. 5, 1925. d. Carl Christian Berthold Wilhelm and Johanne (Detje) Meyer. Exp.: Asst. in Chem., Univ. of Goettingen, 1921-23; Asst. in Organic Chem., Technische Hochschule Breslau, 1923-25; Rockefeller Foundation Fellow in Organic Chem., Univ. of Zurich, 1925-26; Rsch. Assoc. in Organic Chem., Univ. of Munich, 1926-29; Instr. in Analytical Chem., Organic Chem., Food Chem. and Pharmaceutical Chem., Univ. of Berlin, 1929-31; Privatdozent of Medicinal Chem., ibid., 1931-34; Rsch. Assoc. in Physiol. Chem., Med. Schl., Univ. of Va., 1934-37; Asst. Prof. of Chem., Assigned to Med., Med. Schl., Univ. of Pa., 1937-48; Assoc. Prof. of Physiol. Chem., Assigned to Med., ibid., 1948-49; Prof. of Biochem., Assigned to Rsch. Med., ibid., 1949—. Mem.: Swiss Chem. Soc.; A.C.S.; A.A.A.S.; Physiol. Soc. of Phila.; Phila. Organic Chem. Club; Phila. Biochem. Club; Endocrine Soc. of Phila.; the John Morgan Soc. of Phila. Contbr. to: Chem. and Med. Jours. Ph.D. Dissertation: On the Thermal Decomposition of Some Diazoperoxides. Special Int.: Alkaloid Chem. and Steroid Chem. Listed in: W. W. in Am. Edn.; Kurschner's Deutscher Gelehrtenkalender; Am. Men. Sci.

EHRLICH, Paul (Ph.D.), Scientist, Monsanto Chem. Co., Springfield, Mass. Home Add.: Burleigh Rd., Hampden, Mass. PHYSICAL CHEMISTRY. b. Vienna, Austria, Dec. 20, 1923. s. Jacob and Irma Hunner E. Edn.: B.S., Queens Coll., 1944; M.S., Univ. of Wis., 1948; Ph.D., ibid., 1951. m. Celia Lesley, Apr. 16, 1949. c.: Daniel; James; Catherine; Margot; Paul Roger. Exp.: Phys. Chemist, Natl. Bureau of Standards, Wash., D. C., 1951-53; Fellow, Harvard Univ., Cambridge, Mass., 1953-54; Rsch. Chemist, Monsanto Chem. Co., Springfield, Mass., 1954-56; Rsch. Specialist, ibid., 1956-60; Group Leader, Polymer Physics, Chemstrand Corp., Pensacola, Fla., 1960-61; Supervisor, Polymer Physics, ibid., 1961-62; Mem.: Am. Chem. Soc.; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Polymer Sci.; Jour. Appl. Phys. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Solutions of Macromolecules, Electrical Properties of Polymers, High Pressure Polymerization of Ethylene.

EHRENTHEIL, Otto Felix (M.D.), Staff Physician, Veterans Admin. Hosp., Boston, Mass. Home Add.: 54 Wallingford Rd., Brighton, Mass. INTERNAL MEDICINE; PSYCHIATRY. b. Trieste, Italy, May 21, 1897. s. Emmanuel and Ada (Perutz) E. Edn.: M.D., Univ. of Vienna, Austria, 1923. m. Josefine Fischer, June, 1923. c.: Susan Leonora Naomi Myers. Exp.: Asst. Prof. in Med., Tufts Univ. Schl. of Med., Boston, Mass., 1955—; Instr. in Psychiatry, Boston Univ. Schl. of Med., Boston, Mass., 1961—. Mem.: Mass. Med. Soc.; Am. Psychiatric Assn.; A.A.A.S.; Cardiovascular Soc.; Corresponding Mem., Gesellschaft der Aerzte in Wien. Co-Author: Clinical Medicine and the Psychotic Patient, 1960. Contbr. to:

A.M.A. Arch. of Gen. Psych.; Psychosomatic Med.; Geriatrics. Areas of Rsch.: Medical Problems in Psychotic Patients; Changes in Behavior When the Psychotic Patient Grows Old; Diabetes and Emotions.

EHRMAN, Libert (Mr.), Vice-Pres., Surveys and Rsch. Corp., 1010 Vermont Ave., Wash. 5, D. C. Home Add.: 1303 Popkins Lane, Alexandria, Va. SOCIAL SCIENTIST AND STATISTICIAN. b. N. Y., N. Y., July 3, 1916. s. David and Helen Roslyn (Fleischer) E. Edn.: B.S.S., Coll. of the City of N. Y., 1951. m. Sara Ethel Teitelbaum, Sept. 8, 1940. c.: David Jonathan; Daniel Joseph. Exp.: Chief, Safety Analysis, Civil Aero. Admin., Wash., D. C., 1945-54; Assoc., Samuel Weiss Rsch. Assocs., Wash., D. C., 1954-55; Vice-Pres., Stuart Rice Assocs., Inc., Wash., D. C., 1955-58; Vice-Pres., Surveys and Rsch. Corp., Wash., D. C., 1958—; Consultant, G. E. Co., 1954—; Consultant, United Fruit Co., 1955—; Senate Foreign Relations Comm., Counc. for the Advancement of Small Colleges, 1956-57; Consultant, Chilean Nitrate Corp., Am. Assn. for the Adv. of Sci.; Pres., Comm. on Scientists and Engineers; Chilton Publications; Consejo Nacional de Economia, Cuba, 1957-58; Internatl. Cooperation Administration, 1958—; Natl. Insts. of Health, 1960—. Mem.: Am. Statistical Assn.; Inst. for Mgt. Scis.; Natl. Insts. of Health; World Assn. for Public Opinion Rsch.; Am. Acad. for Polit. and Soc. Scis.; Soc. for Intl. Devel.; Natl. Planning Assn. Co-author: Foreign Aid Programs of Other Free Nations, 1957; Effective Shareowner Relations Through Research, 1956; Stimulating Voluntary Giving to Higher Education and Other Programs, 1958. Contbr. to: Am. Statistician; The Analysts Jour.; Traffic Quar.; Bull. De L'Institut Internatl. Statistique. War Rec.: U.S.A.F., 1943-45. Areas of Rsch.: Tariffs; Transportation; Government Statistical Organizations and Programming; Management; Manpower; Economic Development.

EIBERT, John, Jr. (Ph.D.), Pres., Scientific Associates, Inc., 3755 Forest Park Ave., St. Louis 8, Mo. Home Add.: 10801 Kennerly Rd., St. Louis 28, Mo. PHYSICAL CHEMISTRY. b. St. Louis, Mo., Sept. 18, 1918. s. John and Margaret (Mueller) E. Edn.: B.S., Washington Univ., 1940; M.S., ibid., 1942; Ph.D., ibid., 1944. m. Sophie Churnlich, Aug., 1941. c.: Rocky; Cassandra; Gary; Mosette. Exp.: Rsch. Chem., Anheuser-Busch, Inc., St. Louis, Mo., 1945-46; Secy. Treas., Scientific Assn., St. Louis, Mo., 1946-60; Pres., ibid., 1960—. Mem.: N. Y. Acad. of Sci.; Am. Chem. Soc.; Am. Inst. of Chem.; Alpha Chi Sigma; Inst. of Food Tech.; Sigma Xi; Tau Beta Pi; Phi Mu Epsilon. Areas of Rsch.: Pharmaceutical Chemistry.

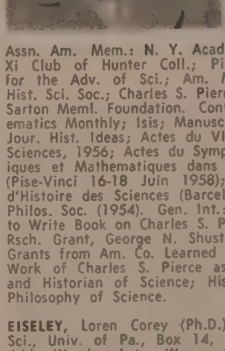
EICHELBERGER, Marietta (Ph.D.), Food and Nutrition Consultant, 5843 No. Kostner Ave., Chicago 46, Ill. NUTRITION. b. Macon, Miss., Aug. 20, 1893. d. Philander W. and Hulda (Richards) E. Edn.: B.S., Miss. St. Coll. for Women, 1913; M.S., Univ. of Chicago, 1919; Ph.D., 1925. Exp.: Tchng., Home Econ. in High Schls. in Miss., 1913-17; Head of Home Econ. Dept., Shorter Coll., 1917-18; Prof. of Nutrition, Univ. of Ky., 1919-24; Dir., Red Cross Nutrition Serv., Midwestern Area, 1925-31; Dir., Nutritional Serv. and Home Econ., Evaporated Milk Assn., Chicago, Ill., 1931-58; Food and Nutrition Consultant, Chicago, Ill., 1958—. Mem.: Am. Dietetic Assn.; Am. Home Econ. Assn.; Am. Pub. Health Assn.; Am. Chem. Soc.; Sigma Xi; Phi Upsilon Omicron; Kappa Mu Sigma. Contbr. to: Am. Home Econ. Assn.; Am. Pub. Health Assn.; Am. Dietetic Assn. Gen. Int.: Organization of Early Community Nutrition Edn. Services in 17 Midwestern States. Areas of Rsch.: Nutrition.

EICHLER, Myron Franklin (M.D.), Instr. in Psychiatry (Mental Health Career Investigator), Psychiatric Inst., 645 W. Redwood St., Baltimore 1, Md. Home Add.: 6204 Cross Country Blvd., Baltimore 15, Md. PSYCHIATRY. b. Brooklyn, N. Y., Feb. 26, 1929. s. Isidore and Ethel (Langer) E. Edn.: B.S., Tulane Univ., 1950; M.D., St. Univ. of N. Y. Downstate Med. Ctr., Brooklyn, 1954. m. Brenda Horowitz, Mar., 1956. c.: Ruth M.; Susan A.; Ann. Exp.: Instr., Univ. of Md. Med. Schl., Baltimore, Md., 1960—. Mem.: Am. Psych. Assn.; A.A.A.S.; Soc. for Psychophysiological Rsch.; Baltimore Neurological Soc.; Md. Psych. Soc.; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Jour. of Nervous and Mental Disease. Serv. Rec.: A.U.S., 1956-58. Areas of Rsch.: Experimental Psychopathology.

EICHNER, Eduard (M.D.), Physician, 10605 Chester Ave., Cleveland, Ohio. Home Add.: 3333 Daleford Rd., Shaker Heights 20, Ohio. OBSTETRICS AND GYNECOLOGY. b. Cleveland, Ohio, Nov. 11, 1905. s. Nathan J. and Dora (Guren) E. Edn.: B.A., Adelbert Coll., Western Reserve Univ., 1925; M.D., Schl. of Med., ibid., 1929. m. Helen Short, Sept., 1931. c.: Wm. Eduard; Judith May. Exp.: Jr. Asst. Ob/Gyn., Mt. Sinai Hosp., Cleveland, Ohio 1936; Sr. Asst. Ob/Gyn., ibid., 1939; Assoc. Visitant Ob/Gyn. ibid., 1947—; Dir. Rsch., Ob/Gyn., ibid., 1958—; Asst. Clin Prof., Schl. of Med., Western Reserve Univ., Cleveland, Ohio, 195—; Consultant, Ob/Gyn., State Hosp., Cleveland, Ohio, 1949—. Hon. Pos.: Past Chmn., Sec. Ob/Gyn., Ohio St. Med. Assn.; Pres. Cleveland Soc. Ob/Gyn., 1959; Vice-Chmn., Ohio Sect. Am Coll. Ob/Gyn. Mem.: Am. Med. Assn.; Am. Coll. Ob/Gyn.; Am Coll. of Surgeons; Internatl. Coll. Surgeons; N. Y. Acad. of Sci.; Soc. Exptl. Biol. and Med.; Endocrine Soc.; Am. Comm. Maternal Welfare; Phi Lambda Kappa; Phi Epsilon Pi; Sigma Xi. Contbng Author: Progress in Gynecology, 1957. Contbr. to: Am. Jour. Obst. and Gyn.; N. Y. Acad. of Sci.; Obst. and Gyn.; Ohio St Med. Jour.; Jour. Internatl Coll. of Surgeons; W. Va. Med. Jour Serv. Rec.: U.S.N.R., W. W. II. Areas of Rsch.: Obs. and Gyn. Pelvic Lymphatics; Forces of Labor, Endocrinology.

EILERS, Louis Kenneth (Ph.D.), Pres., Tenn. Eastman Co., Kingsport, Tenn.; Pres., Texas Eastman Co., Longview, Tex.; Vice Chmn., Bd. of Dir., Eastman Chem. Products, Inc. Home Add.: 1578 Crescent Dr., Kingsport, Tenn. ORGANIC CHEMISTRY. b. Gillespie, Ill., April 11, 1907. s. William H. and Minnie (Luken) E. Edn.: A.A., Blackburn Coll., 1927; B.S., Univ. of Ill., 1929; M.S., Univ. of Va., 1930; Ph.D., Northwestern Univ., 1932. Hon. Deg.: D.Sc., Blackburn Coll., 1957. m. Cora Frances Wampler, Oct., 1930. c.: Lois; Carol; Carl; Richard; William. Exp.: Chemist, Marsene Transparent Paper Co., Gary, Ind., 1933; Chemist Van Cleff Bro., Chicago, Ill., 1933; Chem., Supt. Roll Coating Dept., Asst. Mgr., Film Mfg.; Asst. to Gen. Mgr. of Kodak Park Works, Eastman Kodak Co., Rochester, N. Y., 1934-56; Vice Pres and Asst. Gen. Mgr., ibid., 1956-58; Pres., Eastman Chem. Products, Inc., Kingsport, Tenn., 1959-60; Vice Chmn., Bd. of Dir ibid., 1960—; 1st Vice Pres., Tenn. Eastman Co., Kingsport Tenn., 1959-61; Pres., ibid., 1961—; 1st Vice Pres., Tex. Eastman Co., Longview, Tex., 1959-61; Pres., ibid., 1961—. Hon. Pos. Permanent Secy., Alpha Chi Sigma, 1948-53. Mem.: Am. Chem Soc.; Photographic Soc. of Am.; Sigma Xi; Phi Lambda Upsilon Alpha Chi Sigma. Gen. Int.: Elected an Assoc. Fellow of th Photographic Soc. of Am. for Outstanding Contributions to th Technology of Photographic Film Mfg.

EISELE, Carolyn (Miss), Assoc. Prof. Math., Hunter Coll., N.Y.C N. Y. Home Add.: 257 W. 86th St., N. Y. 24, N. Y. HISTOR MATH. AND SCIENCE; LOGIC AN PHILOSOPHY OF SCIENCE OF LAT 19TH CENTURY; DIFFERENTIA GEOMETRY. b. N.Y.C., June 1 1902. d. Rudolph and Caroli (Wuest) E. Edn.: A.B., Hunte Coll., 1923; A.M., Columbia Univ 1925. m. 1943. Exp.: Mem., Fa ulty, Hunter Coll., 1923—. Hon Pos.: Chmn., N. Y. Hist. Sci. Soc 1959-63; Treas., 1953-58, 1960— Mem., Coun., Natl. History, Sc Soc., 1959-62; Chmn., Comm Higher Edn., N. Y. City Br. A.A.U.W., 1960-61; Mem.: Adv Screening Comm., Fulbright an Smith-Mundt Awards, 1958-6 Chmn., Advisory Screening Comm Fulbright and Smith-Mundt Award 1960-63; Mem., Math. Speake Bur., Met. N. Y. Sect., Mat Assn. Am. Mem.: N. Y. Acad. of Scis.; Phi Beta Kappa; Sigm Xi Club of Hunter Coll.; Pi Mu Epsilon; Fellow, Am. Ass for the Adv. of Sci.; Am. Math. Soc.; Math. Assn. of Am Hist. Sci. Soc.; Charles S. Pierce Soc.; A.A.U.W.; A.A.U.P.; Georg Sarton Meml. Foundation. Contbr. to: Scripta Mathematica; Mat ematics Monthly; Isis; Manuscripta; Proc. Am. Philosophical Soc Jour. Hist. Ideas; Actes du VIII Congres Internatl. D'Histoire d Sciences, 1956; Actes du Symposium Internatl. des Sciences Phy iques et Mathematiques dans la Premier Moitie du XVII^e Siec (Pise-Vinci 16-18 Juin 1958); Actes du IX^e Congres Interna d'Histoire des Sciences (Barcelona-Madrid, 1959); Year Book A Philos. Soc. (1954). Gen. Int.: Schl. Grant from Am. Philos. So to Write Book on Charles S. Pierce as Historian of Sci., 1952-5 Rsch. Grant, George N. Shuster Faculty Fellowship Fund, 196 Grants from Am. Co. Learned Socs., 1958, 1959. Areas of Rsch Work of Charles S. Pierce as a Scientist, Logician, Philosoph and Historian of Science; History of Mathematics and Scienc Philosophy of Science.

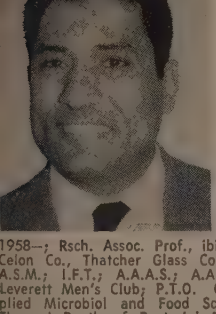


EISELEY, Loren Corey (Ph.D.), Anthropologist and Historian Sci., Univ. of Pa., Box 14, Bennett Hall, Phila. 4, Pa. Hon Add.: Wyndon Apts., Wynnewood, Pa. ANTHROPOLOGY AND HI TORY OF SCIENCE. b. Lincoln, Neb., Sept. 3, 1907. s. Cly Edwin and Daisy (Corey) E. Edn.: A.B., Univ. of Neb., 193 A.M., Univ. of Pa., 1935; Ph.D., ibid., 1937. Hon. Deg.: L.H.D Western Res. Univ., 1959; L.H.D , N. Y. Univ., 1960; Litt D. Un of Neb., 1960; Sc.D., Franklin and Marshall Coll., 1960. Mabel Langdon, Aug. 29, 1938. Exp.: Asst. Prof., Dept. Sociol. and Anthropol., Univ. of Kan., 1937-42; Assoc. Pro ibid., 1942-44; Prof., Hd. of Dept. of Sociol. and Anthropo Oberlin Coll., 1944-47; Prof. and Chmn., Dept. of Anthropo Univ. of Pa., 1947-59; Provost, ibid., 1959-61; Univ. Prof. Anthropol. and the History of Sci., ibid., 1961 ; Chmn., Dept the History and Philosophy of Sci., Grad. Schl., Ibid., 1961- Fellow, Center for Advanced Study for the Behavioral Sci Stanford, Calif., 1961-62. Hon. Pos.: Vice-Pres., Am. Anthropo Assn., 1947; Pres., Am. Inst. for Human Paleontology, 1953-5 Mem.: Am. Philos. Soc.; Am. Anthropol. Assn., Fellow; Am. Ass Adv. Sci., Fellow; Soc. for Am. Archeol.; Hist. of Sci. Soc.; Sig Xi; Phi Delta Kappa; Sphinx; Franklin Inn Club. Author: T

mmense Journey, 1957; Darwin's Century, 1958; The Firmament f Time, 1960; The Mind As Nature, 1962; Francis Bacon and he Modern Dilemma, 1962. Contbr. to: Proc. Am. Philos. Soc. ci.; Scientific Monthly; Scientific Am.; Am. Anthropol.; Am. ntiquity; Sat. Evening Post; Harper's Mag.; Readers Digest; orizon and others. Gen. Int.: Phi Kappa Award in Science, 959, for Book Published in 1958; John Burroughs Medal for ook Published in 1960; Le Comte du Navy Award for Books ublished in 1962; Represented in Numerous Anthologies of merican Literature. Areas of Rsch.: Evolution of Man; Botanical nd Paleontological Problems Relating to Early Man in the New Vorld; History of Biology and Geology.

ISEN, Jacob (Mr.), Dir. of Prescription Dept. and Treas., The chwarz Drug Stores, Inc., 457 Clinton Ave., Newark, N. J. Home Add.: 1155 Corrinne Terrace, Mountainside, N. J. PRESCRIPTIONS, OPHTHALMIC PHARMACY AND PRESCRIPTION PHARMACEUTICAL MANUFACTURE. b. Newark, N. J., Jan. 1, 1901. s. Louis and Fannie (Appelbaum) E. Edn.: Ph.G., Columbia Univ., 1923. m. Helen Schwartz, Apr., 1927. c.: Lewis Michael. Exp.: Dir. of Prescription Dept., Schwarz Drug Stores, Inc., 1923—. Hon. Pos.: Chmn., N. J. Comm. for Funds for Israeli Coll. of Pharmacy; Chmn., Judicial Coun. N. J. Pharmaceutical Assn. Mem.: A.A.A.S.; Affiliate Mem., A.M.A.; Royal Soc. of Health in Gr. Britain; Am. Pharm. Assn.; N. J. Pharmaceut. Assn.; Natl. Assn. of Sanitarians; Am. Assn. of Hosp. Pharmacists; N. J. Acad. of Pharmacy; Rho Phi Pi; Bd. of Health, Mountainside, N. J. Contbr. to: The Chemcial Formulary; Sci. Editor, N. Y. Jour. of Pharmacy; N. J. Jour. of Pharmacy; Essex County Medical Bull.; A.Ph.A. Jour. Service Rec.: Lt. Col. (Ret.), U. S. Army Med. Corps. Gen. Int.: Establishment of information center on the compounding of prescriptions and the interpretations of foreign prescriptions. Areas of Rsch.: Ophthalmic Solutions, the Buffering and Self-Sterilization.

EL-BISI, Hamed Mohamed (Ph.D.), Assoc. Prof., Univ. of Mass., Amherst, Mass. Home Add.: East Leverett Rd., Leverett, Mass. FOOD AND INDUSTRIAL MICROBIOLOGY WITH A GENERAL TRAINING IN FOOD SCIENCE AND TECHNOLOGY. b. El-Bagur, Menufia, Egypt, Mar. 29, 1926. s. Mohamed Hasan and Amuna Sultan (Waly) E. Edn.: B.Sc., Ein-Shams Univ., Cairo, Egypt, 1947; M.S., Univ. of Ill., 1952; Ph.D., ibid., 1955. m. Elizabeth Leigh Searle, Nov. 1952. c.: Leila Hamed; Kemal Hamed; Karim Hamed; Tarek Hamed. Exp.: Instr., H. S., Zagazig, Egypt, 1947-50; Rsch. Asst., Univ. of Ill., 1954-55; Lectr., Ein-Shams Univ., Cairo, Egypt, 1955-56; Mem. on Advisory Committees, Egyptian Govt., Cairo, Egypt, 1955-56; Rsch. Asst. Prof., Univ. of Mass., 1958-62; Grad. Faculty, ibid., 1958—; Rsch. Assoc. Prof., ibid., 1962—; Industrial Advisor, The Celon Co., Thatcher Glass Co., Muscatine, Ia., 1960—. Mem.: A.S.M.; I.F.T.; A.A.A.S.; A.A.U.P.; Sigma Xi; Phi Tau Sigma; Leverett Men's Club; P.T.O. Contbr. to: Jour. of Bacteriol.; Applied Microbiol and Food Sci. Areas of Rsch.: Physiol. and Thermal Death of Bacterial Endospores. Kinetics and Mode of Antimicrobial Action of Chemicals, Both in Liquid and Vapor Phases; Microbiol. of Foods; Industrial Fermentations.

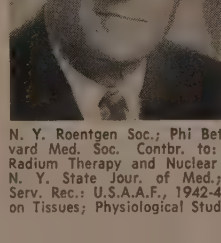


ELDERING, Grace (Sc.D.), Assoc. Dir., Western Mich. Section Lab., Mich. Dept. of Health, 720 Fuller N.E., Grand Rapids 3, Mich. Home Add.: 3424 Bayberry Dr., N.W., Comstock Park, Mich. MICROBIOLOGY. b. Myers, Mont., Sept. 5, 1900. d. Herman and Mary (Grierson) E. Edn.: B.A., Mont. St. Univ., 1927; Sc.D., Johns Hopkins Univ., 1941. Exp.: Bacteriologist, Mich. Dept. of Health, Lansing, Mich., 1928-32; Bacteriologist, ibid., Grand Rapids, Mich., 1932-51; Dir. Branch Lab., ibid., 1951—. Mem.: Am. Pub. Health Assn.; Am. Soc. for Microbiol.; A.A.A.S.; Mich. Acad. of Sci.; N. Y. Acad. of Sci.; Sigma Xi; Delta Omega. Contbr. to: Jour. of Am. Pub. Health Assn.; Jour. of Bacteriol.; Am. Jour. of Hygiene. Gen. Int.: Contributed to Field Study on Whooping Cough Vaccine; Antigenic Analysis of Bordetella. Areas of Rsch.: Whooping Cough; Diagnostic Microbiology; Public Health; Immunology.

ELKES, Joel (M.D.), Chf., Clin. Neuropharmacol. Rsch. Ctr., Natl. Inst. of Mental Health, Dir., Behavioral and Clin. Studies Ctr., St. Elizabeth Hospital, Wm. A. White Building, Washington 20, D. C. Home Add.: 9902 Cedar Lane, Bethesda, Md. PSYCHIATRY, PSYCHOPHARMACOLOG. b. Koenigsburg, Nov. 12, 1913. s. Elkanan and Miriam (Malbin) E. Edn.: M.R.C.S., L.R.C.P., Univ. of London, England, 1941; M.B., Ch.B., Univ. of Birmingham, England, 1947; M.D. (Hons.), Ibid., 1949. m. Charmian Bourne, Dec. 18, 1943. c.: Anna Rosalind. Exp.: Lectr. in Pharmacol., Univ. of Birmingham, England, 1945-48; Sr. Lectr., Acting Dir., Dept. of Pharmacol., ibid., 1948-50; Fulbright Travelling Fellow, 1950-51; Prof., Chmn., Dept. of Expti. Psychiatry, Univ. of Birmingham, England, 1951-57; Consultant Psychiatrist, Birmingham United Hosp. and Birmingham Reg. Hosp. Bd., 1953-57; Scientific Dir., Birmingham Regional Psychiatric Early Treatment Ctr., 1953-57; Chf., Clin. Neuropharmacol. Rsch. Ctr., Natl. Inst. of Mental Health, Dir., Behavioral and Clin. Studies Ctr., St. Elizabeth's Hosp., Wash., D. C., 1957—; Clin. Prof., Psychiatry, George Washington Univ., 1957—. Hon. Pos.: Pres., Am. Coll. of Neuropsychopharmacol.; Mem., Psychopharmacol. Study Sect., Natl. Inst. of Mental Health; Consultant, World Health Organization; Mem., Central Comm., Internatl. Brain Organization (UNESCO); Editor, Psychopharmacologia; Editor, Jour. of Psychiatric Rsch. Mem.: Am. Soc. Pharmacol. and Expti. Therapeutics; Physiol. Soc. of Gr. Brit.; Pharmacol. Soc. of Gr. Brit.; N. Y. Acad. of Scis.; Wash. Acad. of Med.; Am. Psychiatric Assn.; Group for Adv. of Psychiatry; Soc. for Biological Psychiatry; Am. Psychopathological Assn.; Faraday Soc.; British Electro Encephalographic Soc.; Soc. for Study of Drug Addiction; British Psychological Soc.; Sigma Xi; Club, Cosmos Club, Wash., D. C. Editor: Regional Neurochemistry, 1961. Contbr. to: British Med. Jour.; Brain; Psychopharmacologia; Jour. of Physiol.; Symposia on Special Subjects. Areas of Rsch.: Psychiatry; Pharmacol.; Neurochem.; Neurophysiol.

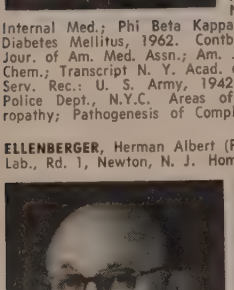
ELION, Herbert A., Pres., Dir. of Research, Elion Instruments, Inc., Rt. 130, Burlington, N. J. Home Add.: 166 Stockton St., Princeton, N. J. EXPERIMENTAL PHYSICS AND CHEMISTRY. b. N.Y.C., Oct. 16, 1923. s. Robert and Bertha (Kahn) E. Edn.: B.M.E., Coll. of City of N. Y., 1945; M.M.E., Polytech. Inst. of Brooklyn, 1949; Ph.D., ibid. (inc.), 1954. m. Sheila Thall, June 16, 1945. c.: Gary Douglas; Glenn Richard; Jonathan Lee; Bethanne Thall. Exp.: Rsch. Engr., Inst. of Thermal Rsch., Yonkers, N. Y., 1945-46; Physicist, M. W. Kellogg Co., Jersey City, N. J., 1946-49; Physicist, Airborne Instruments Lab., Mineola, N. Y., 1949-50; Project Physicist, Freed Radio Corp., N.Y.C., 1950-51; Chf. Engr., Farrand Optical Co., Inc., Bronx, N. Y., 1951-52; Elec. Engr., Sperry Parts, Inc., Danbury, Conn., 1953-57; Group Ldr., R.C.A., Camden, N. J., 1957-59; Pres., Dir. of Rsch., Elion Instruments, Inc., Burlington, N. J., 1959—. Hon. Pos.: Chmn., Bd. of Dirs., Elion Instruments, Inc.; Pres., Elion Foundation. Mem.: Am. Physical Soc.; N. Y. Acad. of Sci.; A.A.A.S.; S.A.E.; Am. Soc. of Mech. Engrs.; Acoustical Soc. of Am.; Inst. of Radio Engrs.; Soc. for Applied Spectroscopy; Am. Soc. for Metals; Am. Vacuum Soc.; Soc. for Non-Destructive Testing; Inst. of Navigators; A.C.S.; Sigma Xi; Epsilon Nu Gamma. Author: Measurement of Rocket and Other Flame Temperatures, 1948; Properties of Materials and Gases for Use in Heat Transfer in Solid Propellant Rocket Engines, 1948; Experimental and Theoretical Temperature Transients in Rocket Nozzles, 1950; Metallurgical Structure Analysis by Ultrasonics, 1957; Analytical Chemistry, 1961. Contbr. to: Rev. of Scientific Instruments; Physical Rev.; Instruments Soc. of Am. Papers; Jour. of Soc. for Non-Destructive Testing; A.C.S. Papers; Internatl. Conf. on Spectroscopy Paper; Internatl. Cong. on Acoustics Paper; Conf. on Ultrasonic Energy Losses in Crystalline Materials Paper. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Particle Beams; Electron Beams; Ultra-Intensity Light Sources; Ultrasonic Methods of Information and Physical Properties Determination; Magnetic Resonance Spectroscopy; High Vacuum; Information Recording; Heat Transfer and Technical Mgmt.

ELKIN, Milton (M.D.), Prof. and Chmn., Dept. of Radiol., Albert Einstein Coll. of Med., Bronx 61, N. Y. Home Add.: 13 Kingston Rd., Scarsdale, N. Y. RADIOLOGY. b. Boston, Mass., Feb. 24, 1916. s. Philip and Rose (Dexter) E. Edn.: A.B., Harvard Coll., 1937; M.D., Harvard Med. Coll., 1941. m. Gloria King, Nov. 12, 1943. c.: Philip Ian; Karen Ann; Laura Sue. Exp.: Assoc. Radiologist, Peter Bent Brigham Hosp., Mass., 1951-52; Dir. of Radiol., Cambridge City Hosp. and Asst. Radiol., New Eng. Med. Ctr., Mass., 1952-53; Assoc. Radiol., Cedars of Lebanon Hosp., Calif., 1953-54; Prof. and Chmn. of Radiol., Albert Einstein Coll. of Med. and Dir. of Radiol., Bronx Municipal Hosp., N. Y., 1954—. Mem.: Am. Coll. of Radiol.; Am. Roentgen Ray Soc.; Radiological Soc. of N. Am.; Assn. of Univ. Radiologists; N. Y. Roentgen Soc.; Phi Beta Kappa; Alpha Omega Alpha; Harvard Med. Soc. Contbr. to: Radiol.; Am. Jour. of Roentgenol. Radium Therapy and Nuclear Med.; Am. Jour. of Gastroenterol.; N. Y. State Jour. of Med.; Neurol.; British Jour. of Radiol. Serv. Rec.: U.S.A.A.F., 1942-46. Areas of Rsch.: Radiation Effects on Tissues; Physiological Studies of the Kidneys by X-ray Methods.

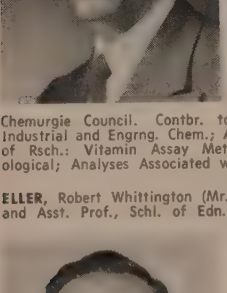


ELLENBERG, Max (M.D.), Physician, 45 E. 66th St., N. Y. 21, N. Y. Home Add.: 1435 Lexington Ave., N. Y. 28, N. Y. INTERNAL MEDICINE AND DIABETES. b. N. Y., Jan. 29, 1911. s. Philip and Sarah (Yablon) E. Edn.: B.S., Coll. of the City of N. Y., 1931; M.D., N. Y. Univ. Coll. of Med., 1935. m. Mary M. Lemon, Dec. 1, 1942. c.: Richard Dennis; Robert Miles; William Arthur. Exp.: Instr., Coll. of Phys. and Surg., Columbia Univ., N. Y., 1942—; Dir. Diagnostic Clinic, Mt. Sinai Hosp., N.Y.C., 1942-50; Rsch. Fellow in Pathol., ibid., 1942-59; Att. Phys., ibid., 1950—; Physician, N. Y., 1951—. Hon. Pos.: Chmn., Clin. Soc., N. Y. Diabetes Assn. Mem.: Am. Med. Assn.; Am. Diabetes Assn.; Am. Coll. of Phys.; Internatl. Coll. of Phyns.; N. Y. Acad. of Scis.; N. Y. Diebetic Assn.; Am. Bd. of Internal Med.; Phi Beta Kappa; Alpha Omega Alpha. Author: Diabetes Mellitus, 1962. Contbr. to: Annals of Internal Med.; Jour. of Am. Med. Assn.; Am. Jour. of Med. Sci.; Jour. of Biol. Chem.; Transcript N. Y. Acad. of Scis.; N. Y. St. Jour. of Med. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Police Surgeon, Police Dept., N.Y.C. Areas of Rsch.: Diabetes; Diabetic Neuropathy; Pathogenesis of Complications of Diabetes.

ELLENBERGER, Herman Albert (Ph.D.), Biochem., Lime Crest Rsch. Lab., Rd. 1, Newton, N. J. Home Add.: Rd. 3, Box 691, Newton, N. J. VITAMIN AND DRUG ANALYSES; BIOCHEMICAL RESEARCH. b. Annville, Pa., Mar. 24, 1916. s. Harry M. and Alice R. (Umberger) E. Edn.: B.S., Lebanon Valley Coll., Pa., 1938; M.S., Pa. St. Univ., 1946; Ph.D., ibid., 1948. m. Esther M. Hausman, July 29, 1950. c.: Mark; Brian; Roger. Exp.: Plant Chemist, Whitmoyer Labs., Inc., Myerstown, Pa., 1939; Lab. Technician and Asst. Chemist, Pa. Dept. of Agric., Harrisburg, Pa., 1939-41; Asst. Chemist, Whitmoyer Labs., Inc., Myerstown, Pa., 1941-43; Rsch. Asst. and Fellow, Pa. St. Univ., St. Coll., Pa., 1943-48; Biochemist, Lime Crest Rsch. Lab., 1948—. Mem.: Am. Chem. Soc.; A.A.A.S.; Animal Nutrition Rsch. Coun.; N. Y. Acad. of Sci.; Chemurgie Council. Contbr. to: Jour. Nutrition; Anal. Chem.; Industrial and Engrng. Chem.; Arch. Biochem. and Biophys. Areas of Rsch.: Vitamin Assay Methods—Chemical, Physical and Biological; Analyses Associated with the Animal Feed Industry.



ELLER, Robert Whittington (Mr.), Asst. Dean, Coll. of Gen. Studies and Asst. Prof., Schl. of Edn., Geo. Wash. Univ., Wash., D. C. Home Add.: 2423 16th St., N., Arlington, Va. b. Asheville, N. C., Oct. 11, 1927. s. William Robert and Sue Myrtle (Whittington) E. Edn.: B.S., Wilson Tchrs. Coll., 1951; M.A., Geo. Wash. Univ., 1953; Dr. Cand., ibid., 1957. m. Janice Carolyn Parker of Wash., D. C., Aug. 12, 1950. d. Chester V. and Dorothy (Davis) Parker. c.: Jonathan Robert; Robin Sue. Exp.: Tchr. of Sci., Dolly Madison Jr. H. S., Arlington, Va., 1951-53; Tchr. of Chemistry and Hd. of Sci. Dept., Wakefield Sr. H. S., Arlington, Va., 1953-55; Asst. Prin., Geo. Mason H. S., Falls Church, Va., 1955-56; Prof. Asst. to Program Dir. of Edn. in the Scis., Div. of Scientific Personnel and Edn., Natl. Sci. Found., Wash., D. C., Summer, 1956; Asst. Dir., Off-Campus Div., Coll. of Gen. Studies, Dir. of Field Studies, Schl. of Edn., Geo. Wash. Univ., Wash., D. C., 1956-58; Edntl. Techn., U. S. Oprns, Mission to Thailand, Internatl. Cooperation Admin., S. E. Asia Treaty Organ., Grad. Schl. of Engrng. and Atoms for Peace Prog., Bankok, Thailand, 1958-59; Dir., Campus Div., Coll. of Gen. Studies and Lect., Schl. of Edn., ibid., 1959-61; Asst. Dean, Coll. of Gen. Studies and Asst. Prof., Schl. of Edn., 1961—. Hon. Pos.: Mem. of Arlington, Va., Co. Tchrs. Coun. on Instrn.; Arlington, Va., Co. Textbook Adoption Comm.; Co-Chmn., Arlington Co. Sci. Fair; Joint Bd., Wash. Acad. of Sci. Mem.: N.E.A.; Adult Edn. Assn.; N.A.A.S.; A.A.U.P.; Phi Sigma Pi; Phi Delta Kappa; Masonic Lodge; Panel Mem., Natl. Conf. on Intl. Econ. and Social Devel. Contbr. to: "Know How," periodical of Va. Edn. Assn. and Beta Gamma Newsletter; Periodical of Phi Delta Kappa, Campus Chapt., Geo. Wash. Univ. War Record: 1st Sgt., C.I.D., 11th Airborne Div., U. S. Army, 1945-47; 1st Lt., Med. Serv. Corps, U. S. Army Reserve, 1956-61. Travel: Far East; India; Pacific; Asia Minor; Europe. Hobbies: Tennis; Basketball; Travel. Areas of Rsch.: Sci. Edn.; Armed Service Programs for M.A. in Internatl. Affairs, Bus. Administration, and Personnel Mgmt.



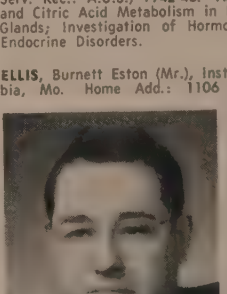
ELLIAS, Loretta Christine (Ph.D.), Asst. Prof. Bacteriol., Fla. St. Univ., Tallahassee, Fla. Home Add.: 524 Palm Court, Tallahassee, Fla. BACTERIAL METABOLISM. b. Jacksonville, Fla., Sept. 3, 1919. s. Albert and Anna (Rodd) E. Edn.: B.S., Fla. St. Coll. for Women, 1943; M.S., Univ. of Ky., 1946; Ph.D., Univ. of Mich., 1958. Exp.: Instr., Fla. St. Coll. for Women, Tallahassee, Fla., 1946-47; Instr., Fla. St. Univ., Tallahassee, Fla., 1947-55; Dir., Regl. Lab., Fla. Bd. of Health, 1948-49; Asst. Prof., Fla. St. Univ., Tallahassee, Fla., 1955—. Mem.: A.A.A.S.; Soc. Am. Microbiologists; Assn. Southeastern Biologists; Sigma Xi; Phi Sigma. Contbr. to: Jour. Bacteriology; Biochemica Biophysica Acta; Assn. Southeastern Biologists. Areas of Rsch.: The Identification and Purification of Toxic Factors of Staphylococci; Bacterial Ascorbic Acid Oxidase; Alpha Glucosidase of Yeast.

ELLINGSON, Mark (Ph.D.), Pres., Rochester Inst. of Tech., Rochester, N. Y. Home Add.: 3940 East Ave., Rochester 18, N. Y. EDUCATIONAL ADMINISTRATION. b. Magrath, Alberta, Canada, June 5, 1904. s. Ole and Katherine (Friel) E. Edn.: A.B., Gooding Coll., 1926; M.A., Univ. of Rochester, 1930; Ph.D., Ohio State Univ., 1936; LL.D., Univ. of Rochester, 1951. m. Marcia Cooke Randall, Rochester, N. Y., July 12, 1934. c.: Laura Kathryn; Louise Alice; Karen Marie; Jon Eric. Exp.: Instr., Econ., Rochester Inst. of Tech., 1926; Sec., Curriculum Rev. Program, ibid., 1928; Chmn., Curriculum Rev. Program, ibid., 1931-36; Supvr., Photographic Tech. Dept., ibid., 1930-36; Pres., Rochester Inst. of Tech., Rochester, N. Y., 1936—. Mem.: Am. Edu catnl. Rsch. Assn.; Academic Coun., Rochester Museum Assn.; New comen Soc.; Natl. Soc. for the Study of Education; Rochester Engrng. Soc.; Am. Soc. for Eng. Edn.; Chamber of Comrc.; Rotary Club; Rochester Club; Genesee Valley Club; Chmn. of Bd., Community Savings Bank of Rochester; Trustee, Am. Craftsmen's Coun.; Defense Advisory Com. on Edn. in the Armed Forces (U. S. Dept. of Defense). Author: (with Jarvie) Handbook on the Anecdotal Behavior Jour., 1940. Areas of Rsch.: Occupational and Professional Education.

ELLIOT, Charles Lothrop (Mr.), Geophysical Engr., Newmont Exploration, Ltd., Briar Ridge Rd., Danbury, Conn. MINING GEO PHYSICAL RESEARCH AND EXPLORATION (APPLIED GEOPHYSIC IN THE SEARCH FOR MINERAL COMMODITIES). b. Northampton, Mass., Nov. 15, 1928. s. William Samuel and Eleanore (Lothrop) E. Edn.: B.S., Mich. Coll. of Mining and Technol., 1954; M.S., ibid., 1955. m. Helen McMahon, Sept. 17, 1954. Exp.: Geophysical Engr., Newmont Exploration, Ltd., Danbury, Conn., 1955—. Mem.: Soc. of Exploration Geophysicists; Am. Geophys Union; European Assn. of Exploration Geophysicists; Am. Inst. o Mining, Metallurgical and Petroleum Engrs., Inc.; Tau Beta P Contbr. to: Geophysics. Serv. Rec.: U. S. Navy, 1946-49. Area of Rsch.: Instrumentation, Rsch., and Applications of the Mag netic, Gravity and Electromagnetic Methods of Geophysical Ex ploration.

ELLIOTT, Joseph Robert (Ph.D.), Biochemist, St. Lukes Episcopa Hosp., Houston, Tex. Home Add.: 6833 Neff, Houston 36, Te CLINICAL CHEMISTRY, BIOCHEMISTRY. b. Kansas City, Kan Dec. 11, 1923. s. Clarance E. and Mary Eve (Finley) E. Edn B.A., Univ. of Kan., 1949; M.S., Univ. of Mo., 1951; Ph.D., ibid 1953. m. Betty Ann Street, 1953. c.: Betty Jo; Tyra Lyn Exp.: Post Doc. Fellow in Biochem., Northwestern Med. Schl Chicago, Ill., 1953-55; Rsch. Assoc. in Biol., Rice Univ., Housto Tex., 1955-58; Biochemist, Jefferson Davis Hosp., Houston, Tex 1957-59; Clinical Instr. in Biochem., Baylor Coll. of Med., Hou ton, Tex., 1958—; Biochemist, St. Lukes Episcopal Hosp., Hou ton, Tex., 1958—. Mem.: A.A.A.S.; Am. Physiol. Soc.; Am. Ass Clin. Chem.; Gamma Alpha Grad. Sci.; Sigma Xi. Contbr. t Fed. Proc. Clinical Chem.; Proc. Soc. Exptl. Biol. and Me Serv. Rec.: A.U.S., 1942-46. Areas of Rsch.: Calcium, Phospha and Citric Acid Metabolism in Bone as Controlled by Parathyro Glands; Investigation of Hormone Levels in Bood and Urine Endocrine Disorders.

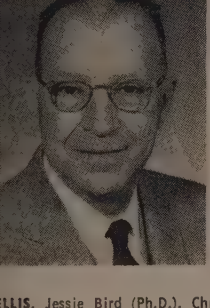
ELLIS, Burnett Eston (Mr.), Instr. in Geol., Christian Coll., Colu bia, Mo. Home Add.: 1106 Eastwood Circle, Columbia, M MICROPALEONTOLOGY - CONO DONTS. b. Greenway, Ark., No 11, 1921. s. Burnett Eston a Trella Lea (Sargent) E. Edn A.B., Univ. of Mo., 1944; M.A ibid., 1948. m. Jessie Bird Star Aug. 20, 1946. c.: Eston Burne Exp.: Student Asst., Univ. of M 1943-44; Grad. Asst., Geol., ibi 1946-49; Instr. in Geol. and C ordinator of Learning Resource Christian Coll., 1949—. Mem A.A.A.S.; Assn. of Mo. Geologist Assn. of Geology Tchrs. Se Rec.: U. S. Army, 1944-46. Are of Rsch.: Geology of the Nor eastern Part of Saline Co., M Micropaleontology-Conodonts.



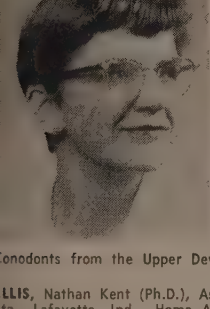
ELLIS, George Edwin, Jr. (Mr.), Rsch. Specialist, Marquardt Cor Van Nuys, Calif. Home Add.: 1709 El Rey Rd., San Pedro, Ca THERMODYNAMICS; MATERIALS AND PROCESSES. b. Beaumo Tex., Apr. 14, 1921. s. George Edwin, Sr. and Julia Ann (Ry E. Edn.: B.S., Chem. Engrng., Univ. of Tex., 1948; M.S., Che Engrng., Univ. of Sou. Calif., L. A., 1958. Exp.: Chem. Eng The Tex. Co., Port Arthur, Tex., 1948-51; Grad. Student, U

f Tex., Austin, Tex., 1951; Chem. Engr., The Tex. Co., Long each, Calif., Houston, Tex., 1952-53; Sr. Process Engr., AiRsch. Mfg. Co., Los Angeles, Calif., 1953-57; Sr. Process Engr., Petroleum Combustion and Engrng. Co., ibid., 1957; Sr. Process ngr., Jacobs Engrng. Co., Pasadena, Calif., 1957; Sr. Process ngr., AiResearch Mfg. Co., Los Angeles, Calif., 1957-59; Sr. rocess Engr., Sesler and Assocs., ibid., 1959; Sr. Rsch. Engr., . Am. Aviation, Inc., Downey, Calif., 1959-61; Sr. Rsch. Engr., lagna Corp., Anaheim, Calif., 1961-62. Mem.: Am. Inst. of hem. Engrs.; Am. Chem. Soc.; Am. Soc. for Metals; Am. Assn. or Adv. of Sci.; Phi Lambda Upsilon. Author: Embrittlement f Iron and Steel. Contbr. to: Abstractor for Chem. Abstracts. erv. Rec.: U. S. Army Air Force, 1943-45; Reserves, 1949-57. reas of Rsch.: Thermodynamics; Hydrogen Embrittlement; Electrochemistry; Cryogenics; Propulsion; Kinetics.

LLIS, James (Mr.), Vice-Pres., Tenn. Eastman Co., Div. of Eastman Kodak Co., Kingsport, Tenn. Home Add.: 1708 Orchard Lane, Kingsport, Tenn. INDUSTRIAL EXECUTIVE. b. Memphis, Tenn., Dec. 22, 1898. s. S. J. and Elise (Crockett) E. m. Josephine Morris, Oct. 16, 1928. Exp.: Employed, Tenn. Eastman Co., Kingsport, Tenn., 1925; Various Engrng. and Supervisory Positions, Vice-Pres., ibid., 1958—. Hon. Pos.: Chmn., Local Sect., A.S.M.E.; Natl. Nominating Comm., A.S.M.E.; Fellow, Am. Soc. Mech. Engrs. Mem.: A.C.S.; Am. Physical Soc.; A.A.A.S.; Tenn. Soc. Prof. Engrs.; Tau Beta Pi; Ridgefields Country Club; Am. Legion; Mason; Shriner; V.F.W. Contbr. to: Mechanical Engrng. Serv. Rec.: U. S. Army, 1917-19. Areas of Rsch.: Industrial Engrng. and Industrial Management.



LLIS, Jessie Bird (Ph.D.), Christian Coll., Columbia, Mo. Home dd.: 1106 Eastwood Circle, Columbia, Mo. PLEISTOCENE GEOLOGY; MICROPALEONTOLOGY. b. Chicago, Ill., Oct. 4, 1921. d. Frederick Edgar and Jessie Bird (Raw) Stark. Edn.: B.S., Northwestern Univ., 1943; M.S., ibid., 1945; Ph.D., Univ. of Mo., 1959. m. Burnett Eston Ellis, Aug. 20, 1946. c.: Eston Burnett. Exp.: Grad. Asst., Geol., Geog., Northwestern Univ., 1943-45; Grad. Asst., Univ. of Mo., 1946-48; Asst. Instr., Geol., ibid., 1948-50; Instr. in Geol., Christian Coll., 1954—. Mem.: A.A.A.S.; Assn. of Mo. Geologists; Sigma Delta Epsilon; Natl. Coun. for Geographic Edn.; Assn. of Geology Tchrs. Areas of Rsch.: An Analysis of Some Physical Characteristics of Glacial Tills from Northeastern Illinois; A Statistical Analysis of Conodonts from the Upper Devonian of Mo.

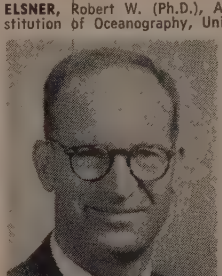


LLIS, Nathan Kent (Ph.D.), Asst. Dir., Purdue Univ. Agric. Expt. ta., Lafayette, Ind. Home Add.: R.R. 1, Lafayette, Ind. HORTICULTURE. b. Maple Rapids, Mich., Jan. 14, 1909. s. Nathan and Kittie Belle (Floate) E. Edn.: B.S., Mich. St. Coll., 1932; M.S., ibid., 1935; Ph.D., ibid., 1950. m. Eve Steusland, Apr. 27, 1934. c.: Nathan Kent, Jr.; Kittie Lou; Natalie Ruth. Exp.: Asst., Mich. St. Univ., 1934-35; Asst., Purdue Univ. Agric. Expt. Sta., 1935-41; Asst. Prof., ibid., 1941-47; Assoc. Prof., ibid., 1947-50; Prof., Head, Dept. of Horticulture, ibid., 1950-58; Asst. Dir., ibid., 1958—. Mem.: A.A.A.S.; A.S.H.S.; I.F.T.; Ind. Acad. of Sci.; Soc. Econ. Botany; Sigma Xi; Alpha Zeta; Rotary. Areas of Rsch.: Crops Grown on Organic Soils; Vegetable Crop Production and Mints of Mentha Sp.

ELLS, Victor Raymond (Ph.D.), Hd., Physical Chem. Lab., Rsch. Div., Norwich Pharmacal Co., Norwich, N. Y. Home Add.: 119 So. Broad St., Norwich, N. Y. PHYSICAL CHEMISTRY; SPECTROSCOPY; PHOTOCHEMISTRY. b. Benton Harbor, Mich., Dec. 7, 1914. s. Howard Raymond and Lida A. (Wood) E. Edn.: A.B., Kalamazoo Coll., 1935; M.S., Brown Univ., 1938; Ph.D., Univ. of Rochester, 1939. Exp.: Instr., Spectroscopy, Univ. of Mo., 1939-43; Physical Chem., Hd. Physical Chem. Lab., Norwich Pharmacal Co., 1943—. Chief, Radiol. Sec., Chenango Co. (N. Y.) Civilian Defense Org. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Optical Soc. of Am., Fellow; A.A.A.S.; Soc. for Applied Spectroscopy; Sigma Xi; A.A.U.P.; Gamma Alpha; Masonic Bodies in Norwich; Oneonta; Binghamton, N. Y. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Optical Soc. of Am.; Jour. Assn. of Official Agri. Chem.; Sci.; Procs. of the Mo. Acad. of Sci.; Procs. of the Soil Sci. Soc. of Am.; Jour. Biol. Chem.; Antibiotics and Chemotherapy; Am. Jour. of Digestive Diseases; Jour. of Med. and Pharmaceutical Chem. Areas of Rsch.: Spectroscopy, Photochem.; Application of These and Other Specialties of Physical Chem. to Analytic and Biochem. Problems.

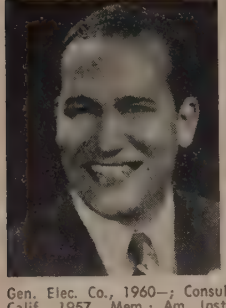
ELMSTROM, George P. (O.D.), Optometrist and Writer, 502 Main St., El Segundo, Calif. Home Add.: 1400 Walnut, El Segundo, Calif. OPTOMETRY. b. Salem, Mass., Sept. 11, 1925. s. George P. and Emily (Wedgwood) E. Edn.: A.A., L. A. City Coll., 1948; B.S., L. A. Coll. of Optometry, 1950; O.D., ibid., 1951. Hon. Degr.: D.O.S., Beta Sigma Kappa Frat., 1955. m. Shirley Miller, Nov. 12, 1948. c.: Pamela; Beverly; Robert. Exp.: Instr., L. A. Coll. of Optometry, 1960—. Mem.: Illuminating Engrng. Soc.; Fellow, A.A.A.S.; Fellow, Distinguished Service Found. of Optometry; Omega Delta; Beta Sigma Kappa; Kiwanis Club, Past Pres. Author: Principles of Practice Management for the Optometrist, 1962. Contbr. to: Am. Jour. of Optometry; Jour. of the Am. Optometric Assn.; Optometric Weekly; Optometric World; Optical Jour. and Rev. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Contact Lens Applications.

ELSNER, Robert W. (Ph.D.), Asst. Rsch. Physiologist, Scripps Institution of Oceanography, Univ. of Calif., La Jolla, Calif. Home Add.: 8384 Sugarman Dr., La Jolla, Calif. PHYSIOLOGY. b. Boston, Mass., June 3, 1920. s. Carl F. and Gertrude (Sanborn) E. Edn.: B.A., N. Y. Univ., 1950; M.S., Univ. of Wash., 1955; Ph.D., ibid., 1959. m. Elizabeth Fuller, 1946. c.: Wendy; Peter; Steven. Exp.: Physiologist, U.S.A.F., Arctic Aeromedical Lab., Alaska, 1953-56; Sr. Physiologist, Univ. of Wash., 1959; Physiologist, Instituto de Biologia Andina, Lima, Peru, 1959-61; Physiologist, Norwegian Rsch. Coun., Oslo, Norway, 1961; Asst. Rsch. Physiologist, Scripps Instn. of Oceanography, Univ. of Calif., 1961—. Mem.: Sigma Xi; A.A.A.S.; Arctic Inst. of No. Am.; Am. Physiol. Soc. (Assoc.); Internatl. Soc. of Biometeorology; Am. Alpine Club; Soaring Soc. of Am. Contbr. to: Jour. of Applied Physiol.; Arctic; Jour. of Aviation Med. Serv. Rec.: American Field Service, W.W. II. Areas of Rsch.: Environmental Physiology, Comparative Physiology.

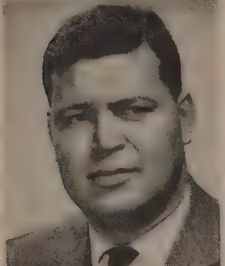


ELSTON, James Strode (Mr.), Retired, 1640 Palmer Ave., Winter Park, Fla. ACTUARIAL SCIENCE. b. Martinsdale, Mont., May 26, 1889. s. Jacob T. and Anna Mary (Strode) E. Edn.: A.B., Cornell Univ., 1911. m. Elizabeth H. Walker, Mar. 19, 1914. c.: Ruth Elizabeth. Exp.: Various positions to Assoc. Actuary, The Travelers Ins. Co., 1913-55; Retired, 1955—. Hon. Pos.: Vice-Pres., Am. Inst. of Actuaries, 1947-49; Editor, Record of Am. Inst. of Actuaries, 1929-47; Asst. Editor of Trans. of Actuarial Soc., 1922-49; Soc. of Actuaries, 1949-54; Mem. of Bd. of Govs., Am. Inst. of Actuaries, 1927-49; Mem. of Coun. of Casualty Actuarial Soc., 1924-27. Mem.: Fellow, Soc. of Actuaries; Fellow, Casualty Actuarial Soc.; Fellow, Am. Pub. Health Assn.; Fellow, Royal Stat. Soc.; Huegonot Soc. of Fla.; Fellow, A.A.A.S.; Am. Math. Soc.; Math. Assn. of Am.; Inst. Math. Stat.; Am. Stat. Assn.; Phi Beta Kappa; Sons of Am. Rev.; First Congregational Ch., Winter Park Author: The Elston Family in Am., 1942; Tice Families in Am., 1948; Strode and Stroud Families in England and Am., 1949; Sources and Characteristics of Principal Mortality Tables, Prin. Contbr., 1932. Contbr. to: Trans. of Actuarial Soc. of Am.; Record of Am. Inst. of Actuaries; Bulletin du Comite Permanent des Congres Internationaux d'Actuaires, Belgium; Am. Year Book; Jour. of Am. Assn. Univ. Tchrs. of Ins. Gen. Int.: Compiled and Edited Indexes of 95 Volumes of Am. Actuarial Societies Publications. Listed in: World W. W. in Commerce and Industry; W. W. in the South and Southwest. Areas of Rsch.: Actuarial Science, especially Mortality Experience Investigation (and Genealogy).

EL-SUM, Hessein M. A. (Ph.D.), Sr. Rsch. Scientist, Physics, Gen. Elec. Co., Computer Lab., Sunnyvale, Calif. Home Add.: 74 Middlefield Rd., Atherton, Calif. PHYSICS-(X-RAYS, OPTICS, INFRARED). b. Cairo, Egypt, (U.A.R.), Oct. 24, 1918. s. Mohammed Amin and Fahimah (Abdel-Hadi) El-Sum. Edn.: B.Sc., Cairo Univ., Egypt, 1941; M.Sc., Calif. Inst. of Tech., Pasadena, Calif., 1947; Ph.D., Stanford Univ., 1952. m. Louise Brooker, 1953. c.: Paul. Exp.: Design and Internal Construction Engr., Egyptian Tel. & Tel., Cairo, Egypt, 1941-42; Instr., Faculty of Engr., Cairo Univ., Cairo, Egypt, 1942-46; Lectr., ibid., 1952-54; Rsch. Assoc. and Lectr., Univ. of Redlands, 1954; Rsch. Assoc., Stanford Univ., 1955-57; Rsch. Scientist, Lockheed Missiles and Space Div., Palo Alto, Calif., 1957-60; Sr. Rsch. Scientist, Physics, Gen. Elec. Co., 1960—; Consultant, I.B.M. Rsch. Labs., San Jose, Calif., 1957. Mem.: Am. Inst. of Physics; Am. Phys. Soc.; Biophys. Soc.; A.A.A.S.; Sigma Xi; Commonwealth Club of Calif. Contributing Author: X-Ray Microscopy and Microradiography, 1957. Contbr. to: Phys. Rev.; J.O.S.A. Areas of Rsch.: Optics; Infrared, Information Retrieval by Analysis and Synthesis of Wavefronts; X-Ray Optics; Biological Effects of High Energy Radiation.



EL WARDANI, Sayed Aly (Ph.D.), Asst. Prof. of Chem., Dept. of Chem., Oceanography Prog., Natural Scis., San Jose St. Coll., San Jose, Calif. Home Add.: 732 Concord Ave., San Jose, Calif. OCEANOGRAPHY, GEOCHEMISTRY. b. Alexandria, Egypt, Feb. 26, 1927. s. Aly and Bahgat Elba E. Edn.: B.S., Univ. of Alexandria, Egypt, 1948; M.S., Univ. of Calif., 1952; Ph.D., ibid., 1956. m. Joan M. Newman, May, 1956. c.: Ramsey W.; Nile R.; Aladdin S. Exp.: Sr. Oceanographer, Rsch. Asst. Prof. of Oceanography, Univ. of Wash., 1956-59; Asst. Prof. of Chem. and Physical Sci., Portland St. Coll., 1959-60; Asst. Prof. of Chem., San Jose St. Coll., 1960—. Mem.: Am. Geophysical Union; Am. Soc. of Limnol. and Oceanography; A.-C.S.; Geochemical Soc.; A.A.A.S.; Calif. Assn. of Chem. Tchrs.; Sigma Xi. Contbr. to: Geochimica et Cosmochimica Acta; Deep-Sea Rsch. Areas of Rsch.: Environmental Oceanography; Chemical Oceanography; Marine Geochem.; Analytical Chem. of Sea Water; Marine Organisms and Sediments; Application of Radioisotopes in Oceanographic Problems; Marine Pollution.



ELY, Lawrence Orlo (M.D.), Chf. Surg., Iowa Luth. Hosp., 1068 4th St., Des Moines 14, Iowa. Home Add.: 5400 Woodland, Des Moines 12, Iowa. GENERAL SURGEON. b. Guthrie Center, Iowa, Dec. 13, 1919. s. John Emerson and Luella M. (Knapp) E. Edn.: B.A., Univ. of Ia., 1942; M.D., ibid., 1943; M.S., ibid., 1948; Ph.D., ibid., 1950. m. Dorothy Jenkins, Aug., 1942. c.: Patricia Ann; Lawrence O., Jr.; Stephen Craig; Bennett Knapp; Carolyn Elizabeth. Exp.: Intern, Mt. Carmel Mercy Hosp., Detroit, Mich., 1943-44; Rsch. Asst. to Assoc., Physiol., Univ. of Ia., 1946-48; Res. to Instr., Dept. Surg., ibid., 1948-52; Pvt. Practice, Gen. Surg., Des Moines, Ia., 1952—; Dir. Intern Edn., Iowa Luth. Hosp., Des Moines, Ia., 1952-61; Chf. Surg., Ia. Luth. Hosp., 1962—. Mem.: Fellow, Am. Coll. Surg.; Diplomate, Am. Bd. of Surg.; Fellow, Am. Assn. for the Adv. of Sci.; N. Y. Acad. Sci.; Polk Co. Med. Assn.; Iowa St. Med. Assn.; A.M.A.; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Am. Jour. Ophthal.; Lancet; Iowa Med. Jour.; Archives Ophthal. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Cellular Metabol.; Fluid and Electrol. Balance.

EMRICK, Donald Day (Ph.D.), Rsch. Assoc., Standard Oil Co., Cleveland 28, Ohio. Home Add.: 5224 Lee Rd., Maple Heights 37, Ohio. ORGANIC CHEMISTRY. b. Waynesfield, Ohio, Apr. 3, 1929. s. Ernest Harold and Nellie Grace (Day) E. Edn.: B.S., Miami Univ., 1951; M.S., Purdue Univ., 1954; Ph.D., ibid., 1956. Exp.: Grad. Tchng. Asst., Purdue Univ., 1951-55; Sr. Chemist, Standard Oil Co., 1955-56; Tech. Specialist, Ibid., 1956. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Phi Beta Kappa. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem. Areas of Rsch.: Sulfur Compounds, Biphenlys, Diphenylmethanes, Stereochemistry of Ring Compounds, Lubricants, Surfactants, Polymers, Rare Earths, Electronic Absorption Spectra.

ELY, Ralph L(awrence), Jr. (Ph.D.), Md., Isotope Devel. Lab., Rsch Triangle Inst., Durham, N. C. Home Add.: 3546 Hamstead Ct Durham, N. C. NUCLEAR PHYSICS b. Roneys Point, W. Va., Nov. 2 1917. s. Ralph L. and August Genevieve (Bullard) E. Edn.: B.S. Wash. and Jefferson Coll., 1940 M.S., Univ. of Colo., 1944; Ph.D. Univ. of Pittsburgh, 1951. m Eleanor Kathleen Holmes, June 8 1948. c.: Ralph L., III; Christo pher; Geoffrey Brian; Peter Lin coln. Exp.: Assoc. Scientist, U.S N. Radio and Sound Lab., 1944 46; Instr. of Physics, Univ. o Pittsburgh, 1946-48; Rsch. Assoc ibid., 1948-51; Sr. Scientist, Wes inghouse-Bettis, 1951-54; V.-Pres and Tech. Dir., Nuclear Sci. an Engrng. Corp., 1954-59; Hea Isotope Devel. Lab., Rsch. Tr angle Inst., 1959—. Hon. Pos Treas., Isotopes and Radiatio Div., Am. Nuclear Soc. Mem.: Am. Nuclear Soc.; Am. Physic Soc. Contbr. to: Physical Rev.; Rev. of Scientific Instrument I.R.E. Trans. of the Professional Group on Nuclear Sci.; Nucl onics. Gen. Int.: Development of Backscattering Density Gaus for Subsurface Quality of Timber. Areas of Rsch.: Application Nuclear Techniques; Low-Level Radioactivity Counting; Speci Counting Techniques.

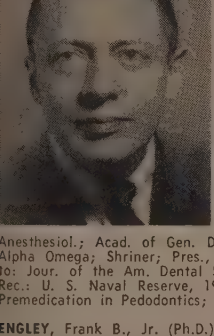
ELY, Thomas Sharpless (M.D.), Resident in Industrial Med., Uni of Rochester Schl. of Med. and Dentistry, Rochester, N. Y. Hon Add.: Box 10, Mendon, N. OCCUPATIONAL MEDICINE. b. Ph adelphia, Pa., Sept. 26, 1924. Frederic G. and Ruthanna (Shar less) E. Edn.: M.D., Georgetow Univ. Schl. of Med., 1948. Carol Kruse, June 23, 1945. c John; Carolyn; Elizabeth; Richar Douglas. Exp.: Asst. Med. Offic U.S.S. Kearsarge, F.P.O., San Fra cisco, 1952-54; Project Officer, N val Med. Rsch. Inst., Behesc Md., 1954-56; Asst. Chf., Me Branch, Div. of Biol. and Me U. S. Atomic Energy Comm Wash., D. C., 1956-57; Asst. Ch Health Protection Br., Div. of Bi and Med., U. S. Atomic Ener Commn., Wash., D. C., 1957-5 Asst. Chf., Health Protection B Office of Health and Safety, ibi 1959-60; Chf., ibid., 1960-61; Resident, Univ. of Rochester, Sc of Med. and Dentistry, 1961—. Mem.: Am. Assn. for the A of Sci.; Indust. Med. Assn.; Am. Acad. of Occupational Me Contbr. to: Proc. I.R.E.; Jour. of Occupational Med.; Ator Energy Law Jour.; N. C. Med. Jour. Serv. Rec.: U.S.N. G Int.: Contributions in the Field of: Biomedical Effects in Ator Weapons Field Testing; Biological Effects and Hazards of Mic wave Energy; Hazards of Certain Internal Radionuclides. Ar of Rsch.: Biophysics; Physiology; Radiobiology; Occupational M

ENGELHARDT, David M. (M.D.), Exec. Officer, Dept. of Psychia St. Univ. of N. Y., Downstate Med. Ctr., 450 Clarkson Av Brooklyn, N. Y. Home Add.: Marlborough Rd., Brooklyn N. Y. PSYCHIATRY. b. Aust June 15, 1912. s. Chaim Frieda (Beer) E. Edn.: B.S., C of City of N. Y., 1932; M. Univ. of Vienna, Schl. of Me 1937. m. JoAnn Zavatsky, J 30, 1952. c.: JoAnn; Nina; Jai Exp.: Assoc. Dir., Kings Co. P chiat. Hosp., Brooklyn, N. 1947-58; Acting Chmn., Dept. Psychiat., St. Univ. of N. Downstate Med. Ctr., 1958- Exec. Officer, Dept. of Psychi ibid., 1960—. Hon. Pos.: Me Comm. on Clin. Drug Eval., N Inst. of Mental Health, 1961- Chmn., Adv. Coun. on Childh Mental Illness, Natl. Inst. Mental Health, 1962—; Fell Am. Acad. of Psychoanalysis; Past Pres., Brooklyn Psych Soc. Mem.: Am. Coll. of Neuropsychopharmacology, Cha Fellow; N. Y. Academy of Sciences. Contbr. to: The Jour. of Psychiat.; Jour. of Nervous and Mental Diseases; J of the Am. Med. Assn.; Comprehensive Psychiat.; A.M.A. Ar of Gen. Psychiat.; Internatl. Jour. of Grp. Psychotherapy. S Rec.: U. S. Army Air Force, 1940-46. Gen. Int.: Cert. Me Hosp. Administrator; Bd. Qual. Am. Bd. of Psychiat. and Neu Areas of Rsch.: Psychopharmacology.

ENDERSBY, Victor A. (Mr.), Consultant Engr., P. O. Box 4 Napa, Calif. Home Add.: 4715 Redwood Rd., Napa, Calif. C ENGINEERING—RESEARCH AND INVESTIGATIONS. b. Augu Mont., Dec. 19, 1891. s. Alvadus O. and Mary Elizabeth (Cook Edn.: B.A., Stanford Univ., 1916. m. Frances Holman, June 1925. c.: Elena E. Metson; Keith; Sandra E. Richardson. E Deck Officer, U. S. Coast and Geodetic Survey, Alaska and

Francisco, 1917; Transitman to Asst. Engr., U. S. Natl. Park Serv., 1919-22; Railway Engr. and Supt., Lyon, Hill and Co., Port Angeles, Wash., 1922-23; Jr. Civ. Engr. to Asst. Const. Engr., Calif. St. Highways, Sacramento, Calif., 1924-27; Construction Engr. to Assoc. Bridge Engr., Calif. St. Highway Bridge Dept., Los Angeles, 1927-33; Sr. Bridge Field Engr., Supvng. Construction, Calif. St. Toll Bridge Authority, Oakland, Calif., 1933-37; Engr. to Sr. Engr., Shell Development Co., and Shell Oil Rsch., Emeryville, Calif., 1937-52; Ret., ibid., 1952; Testing and Materials Engr., Contra Costa Co. Pub. Works Dept., Calif., 1953-57; Ret., ibid., 1957; Consult. Civil Engr. and Investigator, Napa, Calif., 1957—. Hon. Pos.: Charter Chmn., Triaxial Inst., Engrng. Materials Rsch. Mem.: Fellow, Am. Soc. Civil Engrs.; Am. Assn. Engrs.; Assn. Asphalt Paving Technologists; Am. Assn. Adv. Sci.; and others. Contbr. to: Proc. Mont. Natl. Bituminous Conf.; Proc. A.A.P.T.; Proc. A.S.T.M.; Western Construction News; Proc. Highway Rsch. Bd.; Ency. Chem. Tech.; Ency. Britannica, Forthcoming Edition; Am. Water Works Assn. Jour. Serv. Rec.: U. S. Army, 1917-19. Areas of Rsch.: Road Materials and Road Pavement Construction Methods; Bridge Construction; Underground Water Control; Surface Water Behavior; Unusual and Complex Investigations, especially for Legal Purposes, in Engrng. Field; State of Calif. License, Civil Engrng.

ENGELMAN, Melvin Alkon (D.D.S.), One E. Acad. St., Wappingers Falls, N. Y. Home Add.: Nutmeg Hill, Wappingers Falls, N. Y. GENERAL PRACTITIONER—DENTISTRY. b. Waterbury, Conn., July 27, 1921. s. Herman and Marion (Halpern) E. Edn.: A.B., Ohio Univ., 1942; D.D.S., Schl. of Dentistry, W. Reserve Univ., 1944. m. Muriel Phillips, Aug. 28, 1949. c.: Curtis; Suzanne. Exp.: Assoc. Att. Oral Surgeon, St. Francis Hosp., Poughkeepsie, N. Y., 1960—; Courtesy Staff, Vassar Bros. Hosp., ibid., 1949—; Dentist, One E. Acad. St., Wappingers Falls, N. Y., 1949—. Hon. Pos.: Dir., 1st Reg. Sci. Fair of Dutchess Co., 1959-60; Dir. and Lectr., Ext. Course for Dental Assts., Dutchess Comm. Coll., 1960—. Mem.: Am. Dental Assn.; Am. Assn. Adv. of Sci.; Soc. of Dent. for Children; Am. Dental Soc. of Anesthesiol.; Acad. of Gen. Dentistry; Assn. of Milit. Surgeons; Alpha Omega; Shriner; Pres., W. F. C. of C., 1952-54. Contbr. to: Jour. of the Am. Dental Soc.; N. Y. St. Dental Jour. Serv. Rec.: U. S. Naval Reserve, 1942—, Lt. Comdr. Areas of Rsch.: Premedication in Pedodontics; Oral Pharmacology; Oral Pathology.



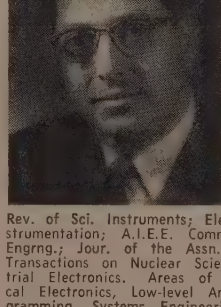
ENGLEY, Frank B., Jr. (Ph.D.), Prof., Chmn., Micro. Dept., Schl. of Med., Univ. of Mo., Columbia, Mo. Home Add.: 609 Westmount, Columbia, Mo. MICROBIOLOGY. b. Wallingford, Conn., Oct. 26, 1919. s. Frank B. and Annie (Brown) E. Edn.: B.S., Univ. of Conn., 1941; M.S., Univ. of Pa., 1944; Ph.D., ibid., 1949. m. Beatrice Doak, 1948. c.: Karen Winslow; Elizabeth Ann; Heather Cooke; Frank B., III. Exp.: Lab. Asst., Atwater Lab., Univ. of Conn., 1938-41; Asst. Instr., Univ. Pa. Schl. of Med., 1941-44; Rsch. Microbiologist, Chemical Corps, Camp Detrick, Md., 1946-50; Assoc. Prof. Bacteriol. and Parasitol., Univ. of Tex. Med. Br., 1950-55; Prof., Chmn., Microbiol. Dept., Univ. of Mo., 1955; Asst. Dean, Schl. of Med., 1956-60; Acting Chmn., Pub. Health and Prev. Med., 1960-61. Mem.: Am. Soc. for Microbiol.; Fellow, Am. Acad. of Microbiol.; Fellow, A.A.A.S.; Fellow, A.P.H.A.; N. Y. Acad. Sci.; R.E.S.A.; Soc. Exptl. Biol. and Med.; A.A.U.P.; Sigma Xi. Author: Pocket Guide to Medical Microbiol., 1954. Contbr. to: Jour. of Bacteriol.; Bacteriol. Rev.; Bacteriol. Proceedings; Proc. Soc. Exptl. Biol. and Med.; Annals of N. Y. Acad. Sci.; Tex. Reports on Biol. and Med.; Southwest Vet.; Am. Jour. of Publ. Health. War Record: U. S. Army, 1944-46. Areas of Rsch.: Microbial Toxins; Airborne Organisms; Survival of Microorganisms; Host Natural Resistance; Antiseptics and Disinfectants.

ENGLISH, W(illiam) David (Ph.D.), Rsch. Scientist, Astropower, Inc., Costa Mesa, Calif. Home Add.: 852 S. Oakwood St., Orange, Calif. ORGANOMETALLIC, INORGANIC AND ORGANIC CHEMISTRY. b. Toronto, Can., July 11, 1925. s. William David Fraser and Frances Mary (Clark) E. Edn.: B.Sc., Univ. of Manitoba, 1946; M.Sc., McGill Univ., 1950; Ph.D., Pa. St. Univ., 1955. m. Madeline Zunic, Sept. 21, 1946. c.: Patricia Ann; Robert David; Randall James. Exp.: Scientific Officer, Defense Rsch. Chem. Labs., Ottawa, Can., 1950-52; Rsch. Chemist, M. W. Kellogg Co., Jersey City, N. J., 1955-57; Sr. Rsch. Chemist, U. S. Borax Rsch. Corp., Anaheim, Calif., 1957-62; Rsch. Scientist, Astropower, Inc., Costa Mesa, Calif., 1962—. Mem.: Chem. Soc. of London, Fellow; A.A.A.S., Fellow; Am. Inst. of Chemists, Fellow; Chem. Inst. of Can.; Assoc. of Prof. Chemists of Quebec; A.C.S.; Sociedad Quimica de Mexico; Southern Calif. Acad. of Sci.; Phi Kappa Phi; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. A.C.S.; Jour. Chem. Soc. of London; Can. Jour. of Chem.; Can. Jour. Technol. Areas of Rsch.: Organometallic Polymers; Thermally Stable Polymers; Hydroboration, Fluorine Compounds.

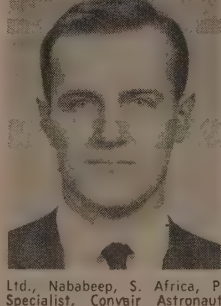
ENKE, Christie George (Ph.D.), Asst. Prof., Princeton Univ., Princeton, N. J. Home Add.: 125 Mountain Ave., Princeton, N. J. ELECTROCHEMISTRY, ANALYTICAL CHEMISTRY. b. Minneapolis, Minn., July 8, 1933. s. Alvin Christie and Mae (Ferris) E. Edn.: B.S., Principia Coll., 1955; M.S., Univ. of Ill., 1957; Ph.D., ibid., 1959. m. Mary Crane, June, 1956. c.: Paul, David. Exp.: Asst. Prof., Princeton Univ., 1959—. Mem.: Am. Chem. Soc.; Electrochem. Soc.; Bunsengesellschaft fur Physikalische Chemie; Sigma Xi; Phi Lambda Upsilon. Author: Electronics for Scientists, 1962. Contbr. to: Jour. Electrochem. Soc.; Anal. Chem. Areas of Rsch.: Theoretical Electrochemistry; Electroanalytical Chemistry; Instrumentation.

ENOCH, Jay Martin (Ph.D.), Rsch. Asst., Prof., Dept. of Ophthalmology, Washington Univ. Schl. of Med., 640 S. Kingshighway Blvd., St. Louis 10, Mo. Home Add.: 1247 Purdue Ave., University City 30, Mo. PHYSIOLOGICAL OPTICS. b. New York City, N. Y., April 20, 1929. s. Jerome and Stella (Nathan) E. Edn.: B.S., Columbia Univ., 1950; Ph.D., Ohio State Univ., 1956. m. Rebekah Feiss, 1951. c.: Harold; Barbara; Ann. Exp.: Asst., Fellow, Ohio State Univ., 1953-56; Asst. Prof. Physiological Optics, ibid., 1957-58; Rsch. Assoc. and Assoc. Supvr., Mapping and Charting Rsch. Lab., ibid., 1956-58; Visiting Rsch. Fellow, Natl. Physical Lab., Teddington, Middlesex, England, 1959-60; Rsch. Instr., Dept. of Ophthalmol., Washington Univ., 1958-59; Rsch. Asst. Prof., ibid., 1959—. Mem.: Optical Soc. of Am.; A.A.A.S.; Assn. for Rsch. in Ophthalmology; Psychonomic Soc.; Am. Acad. of Optometry; Contact Lens Soc.; Sigma Xi. Contbr. to: Jour. Opt. Soc. Am.; Optica Acta; Am. Jour. Ophthal.; A.M.A. Arch. Ophthal.; Am. Jour. Optom.; Sci.; Ophthalmology. Serv. Rec.: U. S. Army, 1951-52, Army Med. Rsch. Lab., Ft. Knox, Ky. Areas of Rsch.: Retinal Receptor Optics and Function. Visual Search, Contact Lenses, Amblyopia.

ENSLEIN, Kurt (Mr.), Vice-Pres. and Dir. of Rsch., Brooks Rsch., Inc., P. O. Box 271, East Rochester, N. Y. Home Add.: 96 Greenaway Rd., Rochester 10, N. Y. ELECTRONICS. b. Cologne, Germany, Dec. 21, 1924. s. Jacob and Marguerite (Einstein) E. Edn.: B.E.E., Lycee Janson de Sailly, 1940. m. Ruth K. Einstein, Dec. 22, 1945. c.: Peter T.; John P.; Monica Jane. Exp.: Gen. Dynamics and Elec. Stromberg-Carlson Div., Rochester, N. Y., 1948-51; Chief Elec., Sr. Elec. Eng., Univ. of Rochester, Physics Dept., 1951-57; Vice-Pres. and Dir. of Rsch., Brooks Rsch., Inc., East Rochester, N. Y., 1957—. Hon. Pos.: Chmn., Rochester Confs. on Data Acquisitions and Processing in Med. and Biol. Mem.: I.R.E. (P.G.B.M.E., P.G.I.T., etc.); A.I.E.E. (E.T.M.B.); A.A.A.S.; Phys. Soc. Contbr. to: Rev. of Sci. Instruments; Elec. Mfg.; I.R.E. Transaction on Instrumentation; A.I.E.E. Communications and Electronics; Elec. Engrng.; Jour. of the Assn. for Computing Machinery; I.R.E. Transactions on Nuclear Science; I.R.E. Transactions on Industrial Electronics. Areas of Rsch.: Pattern Recognition, Medical Electronics, Low-level Amplification, Digital Computer Programming, Systems Engineering, Magnetic Amplifiers, Crossbar Switching, Special Purpose Digital and Analog Computers, Nuclear Instrumentation, Pulse Height Analyzers, Solid State Switching.



ENZMANN, Robert Duncan (Ph.D.), Sr. Systems Engr., Radio Corp. of Am., Moorestown, N. J., Prof. of Mineralogy and Geophysics, Boston Univ., Boston, Mass. Home Add.: 28 Grove St., S. Braintree, Mass. INTEGRATION OF WEAPONS SYSTEMS; SEDIMENTATION: MINERALIZATION AND GRANITIZATION; LARGE-SCALE MAPPING OF STRUCTURES IN AFRICA, GREENLAND, SCANDINAVIA, MEDITERRANEAN, ALASKA. b. Peking, China, Nov. 5, 1924. s. Dr. Ernst V. and Florence (Goodman) E. Edn.: B.A., B.Sc., Harvard Univ., 1949; B.Sc., Witwatersrand, S. Africa, 1952; M.Sc., ibid., 1954; Ph.D., M.I.T. and Uppsala, Sweden, 1957. m. Joanna Muckenhoupt, Sept. 13, 1958. c.: Cassandra Beoll; Alexander Nicholas. Exp.: U.S.A.F. Survey Team, Greenland, 1954-57; Rsch., O'Okiep Copper Co., Ltd., Nababeep, S. Africa, Prof., Boston Univ., 1958—; Design Specialist, Convair Astronautics, Boston, Mass., 1959-60; Sr. Engr., Radio Corp. of Am., Boston, Burlington, Mass. and N. J., 1960—. Mem.: Am. Assn. Petroleum Geologists; Geophysical Union; Geological Soc. of Am.; Geological Soc. of S. Africa; Geological Soc. of Sweden. Contbr. to: Missiles and Rockets; Ia. Acad. of Scis. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: System Int. Ionosphere, Electromagnetic Signatures; Weapon Systems Particularly Missiles; Detection and Discrimination Techniques; Sedimentation, Metamorphism and Mineralization; Glacial Geomorphology; I.L.S., G.C.A., Magnetic Air De-



tection, Pine-Tree Line, Dew Line, Sage, Gap-Filler, Atlas-System, BMEWS Greenland and Alaska, TRADEX/NIKE-ZEUS Pacific Missile Range, American Rocket Society.

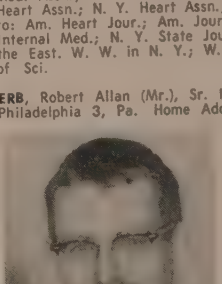
EPSTEIN, Benjamin (Ph.D.), Consultant, 768 Garland Dr., Palo Alto, Calif. STATISTICS AND PROBABILITY. b. Boston, Mass., Mar. 5, 1918. s. Harry and Fannie (Rabinowitz) E. Edn.: B.S., Mass. Inst. of Technol., 1937; M.S., ibid., 1938; Ph.D., Univ. of Ill., 1941. m. Molly Hoffman, Sept. 8, 1940. c.: David; Carl; Sibyl. Exp.: Instr., Univ. of Ill., 1941-42; Mathematician, Frankford Arsenal, Philadelphia, Pa., 1942-44; Statistician, Westinghouse Elec. Corp., Pittsburgh, Pa., 1944-45; Mem. of Staff, Coal Rsch. Lab., Carnegie Inst. of Technol., 1945-48; Lectr., Carnegie Inst. of Technol., 1945-48; Assoc. Prof., Wayne St. Univ., 1948-55; Prof., ibid., 1955-60; Visiting Prof., Stanford Univ., 1955-56; Visiting Prof., ibid., 1957-60; Consultant, Self-Employed, Palo Alto, Calif., 1960—. Mem.: A.A.A.S., Fellow; Inst. of Math. Statistics, Fellow; Am. Stat. Assn., Fellow; Am. Soc. for Quality Control, Fellow; Operations Rsch. Soc. of Am., Member, Am. Math. Soc.; Math. Assn. of Am.; Soc. for Ind. and Appl. Math.; Inst. of Mgmt. Scis.; Biometrics Soc.; Societe de Statistique de Paris; Sigma Xi. Contbr. to: Annals of Math. Stat.; Jour. of Am. Stat. Assn.; Technometrics; Ind. Quality Control; Jour. of Appl. Physics; Jour. of Franklin Inst.; Math. Revs.; Appl. Mechanics Revs. Areas of Rsch.: Theory and Applications of Statistics and Probability; Statistical Theory of Life and Fatigue Testing; Reliability Theory; Extreme Values; Order Statistics; Poisson Processes and their Applications.

EPSTEIN, Frederick Hermon, (M.D.), Assoc. Prof. of Epidemiology, Univ. of Mich. Schl. of Pub. Health, Ann Arbor, Mich. Home Add.: 1415 Granger Ave., Ann Arbor, Mich. CARDIOVASCULAR DISEASES. b. Frankfurt-on-Main, Germany, July 24, 1916. s. Ernst Hermann and Klara (Redelsheimer) E. Edn.: B.A., Cambridge Univ., 1940; M.A., ibid., 1944; M.B., B.Chir., ibid., 1944; M.D., ibid., 1956; M.R.C.S., London, 1943; L.R.C.P., ibid., 1943. m. Ingeborg L. Guenther, 1943. c.: Andrew E.; Anthony C. Exp.: House Physician, Mile End Hosp., London, England, 1943-44; Casualty Officer, Hillingdon Co. Hosp. and St. Mary's Hosp., ibid., 1944-45; Res. Phys., Ruthin Castle Clinic, Wales, Great Britain, 1945-47; Rsch. Fellow and Asst. Res., N. Y. Univ. Div., Goldwater Mem. Hosp., N. Y. City, 1948-51; Physician in Charge of Rsch. Dept., Sidney Hillman Health Center, N. Y. City, 1951-56; Asst. Att. Visiting Phys., Third Med. Div., N. Y. Univ., 1952-56; Rsch. Assoc. Dept. of Epidemiol., Univ. of Mich. Schl. of Pub. Health, 1956-59; Resident Lectr., ibid., 1957-59; Assoc. Prof., ibid., 1959—. Hon. Pos.: Mem., Bd. of Scientific Dirs., Center for Rsch. in Diseases of the Heart, Univ. of Mich.; Mem., Rsch. Comm., Univ. of Mich. Schl. of Pub. Health; Mem., Committee on Epidemiological Studies, Am. Heart Assn.; Mem., Rsch. Study Comm., Coun. on Arteriosclerosis, Am. Heart Assn.; Temp. Advisor, Cardiovascular Diseases, World Health Organization, 1961. Mem.: Gerontological Soc., Fellow; Am. Assn. for the Adv. of Sci.; N. Y. Co. Med. Soc.; Am. Heart Assn.; Am. Federation for Clinical Rsch.; Harvey Soc.; Am. Public Health Assn., Fellow; Am. Epidemiol. Soc. Contbr. to: Am. Heart Jour.; Circulation; Arch. Int. Med.; Am. Jour. Clinical Nutrition; Jour. Chronic Disease; Arch. Int. Med.; Am. Jour. Med.; Jour. of Am. Med. Assn. Gen. Int.: First Class Honours and College Prize in Intermediate Exam., Cambridge, 1939; Rsch. Fellow, N. Y. Heart Assn., 1950-51; Spec. Rsch. Fellow, Natl. Heart Instit., Natl. Instits. of Health, 1956-59; Career Rsch. Award, Natl. Heart Instit., Natl. Inst. of Health, 1962—. Areas of Rsch.: Epidemiology of heart disease, esp. arteriosclerosis.

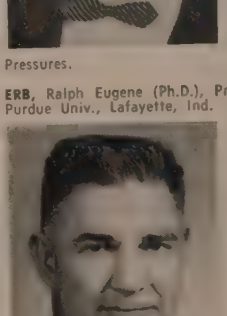
EPSTEIN, George (Mr.), Staff Scientist, Materials, Research Lab., Aeronutronic Division of Ford Motor Co., Newport Beach, Calif. Home Add.: 914 Edgecomb St., Covina, Calif. PHYSICAL CHEMISTRY. b. Boston, Mass., Nov. 9, 1926. s. Eli and Esther E. (Hecht) E. Edn.: B.S., Univ. of Mass., 1948; M.S., Mass. Inst. of Tech., 1951. m. Irene Edith Tabrisky, July 4, 1951. c.: Susan Ruth; David Seth. Exp.: Lab. Asst., Univ. of Mass., 1946-48; Rsch. Asst., Plastics Lab., Mass. Inst. of Tech., 1949-51; Rsch. Engr., North Am. Avn., Inc., Downey, Calif., 1952-55; Senior Engr., Prin. Engr., Asst. Chief Engr., Structural Materials Div., Aerojet-General Corp., Azusa, Calif., 1955-61; Staff Scientist, Materials Rsch. Lab., Aeronutronic Div. of Ford Motor Co., Newport Beach, Calif., 1961—. Instr., U.C.L.A., Engr. Ext. Hon. Pos.: Natl. Dir. of Soc. of Aerospace Material and Process Engrs.; Bd. of Trustees, Plastics Inst. of Am.; A.S.T.M., Chmn., Sect. G, Sub Com. XVIII, Com. D-20; Editorial Advry. Bd., SPE; Advisory Com., Univ. of Calif. at Los Angeles, Engineering Extension, Short Course on Sandwich Construction Mem.: Soc. of Plastics Engrs.; Soc. of Plastics Indus.; Am. Chem. Soc.; Soc. of Aerospace Material and Process Engrs.; Hillel Soc.; Phi Kappa Phi; Tau Epsilon Phi. Author: Adhesive Bonding of Metals, 1954. Contbr. to: Jour. of Soc. of Plastics Engrs.; Modern Plastics; Materials in Design Engrng.; Am. Welding Soc.; Plastics Tech.; Adhesives and Resins, London, Eng.; Machine Design; Adhesives Age; Modern Plastics Encycl.; Aerospace Engrng. Gen. Int.: Citation for participation in Polaris Fleet ballistic missile program, 1961. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Plastics, Resins, Adhesives; High Temperature and Structural Applications, e.g., Missiles, Rockets and Aircraft; Technical Management; Materials Rsch.

EPSTEIN, Samuel (M.D.), Clin. Asst. Prof., State Univ. of N. Y. Downstate Med. Center, Brooklyn, N. Y.; Physician, 700 Ocean Ave., Brooklyn Ave., Brooklyn 26, N. Y. Home Add.: 3101 Bedford Ave., Brooklyn 10, N. Y. INTERNAL MEDICINE AND CARDIOLOGY. b. New York City, N. Y., Nov. 14, 1912. s. Hyman and Minnie (Aboff) E. Edn.: B.S., N. Y. Univ., 1931; M.D., ibid., 1934. m. Blanche Mendlowitz, Aug. 1940. c.: Judy Lynn; Robert Alan. Exp.: Asst. Visiting Physician, Coney Island Hosp., N. Y., N. Y., 1937-43; Asst., Cardiac Clinic, Maimonides Hosp., N. Y., N. Y., 1937-48; Assoc. Visiting Physician, Coney Island Hosp., N. Y., N. Y., 1943-57; Asst. Peripheral Vascular Clinic, Maimonides Hosp., 1948-50; Asst. Attending Physician, ibid., 1947-57; Assoc. Attending Physician, ibid., 1957—; Attending Physician, Coney Island Hosp., N. Y., N. Y., 1957—; Dir., Med. Servs., ibid., 1958—; Clin. Instr. of Med., State Univ. of N. Y., Downstate Med. Ctr., Brooklyn, N. Y., 1959-61; Clin. Asst. Prof. of Med., ibid., 1961—. Hon. Pos.: Ocean Med. Soc. Mem.; Am. Fed. Clin. Rsch.; Am. Coll. of Physicians; Am. Coll. of Cardiology; Am. Coll. of Chest Physicians; Am. Coll. of Angiology; Am. Geriatrics Co.; Brooklyn Soc. of Internal Med.; A.M.A.; N. Y. Med. Assn.; N. Y. State Med. Soc.; Kings Co. Med. Soc.; Am. Heart Assn.; N. Y. Heart Assn.; N. Y. Cardiological Soc. Contbr. to: Am. Heart Jour.; Am. Jour. of Cardiology; A.M.A.; Arch. Internal Med.; N. Y. State Jour. of Med. Listed in: W. W. the East. W. W. in N. Y.; W. W. in World Jewry; Jewish Me of Sci.

ERB, Robert Allan (Mr.), Sr. Rsch. Chemist, The Franklin Inst., Philadelphia 3, Pa. Home Add.: P. O. Box 160, Valley Forg Pa. PHYSICAL CHEMISTRY. Ridley Park, Pa., Jan. 30, 193 s. John Walter and Roma (Cha man) E. Edn.: B.S., Univ. Pa., 1953; M.S., Drexel Inst. Tech., 1959. m. Doretta Bark 1953. c.: Sylvia Ann; Sus Doretta. Exp.: Chemist, Gat Engrng. Co., Wilmington, Del 1953-54; Sr. Rsch. Chemist, T Franklin Inst., Philadelphia, P 1954—. Mem.: Am. Assn. for t Adv. of Sci.; Am. Chem. So The Franklin Inst.; Science Rs Soc. of Am.; Soc. of Rheolog Natl. Geographic Soc. Contbr. Transactions of the Soc. of Rhe ogy; Office of Tech. Servi Publications. Areas of Rsch.: C loid Science; Polymers; Surfa Chemistry; Rheology; Ultra-Hi Pressures.

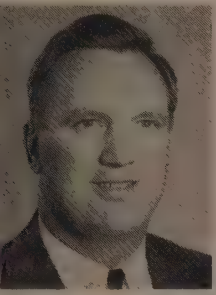


ERB, Ralph Eugene (Ph.D.), Prof., Asst. Hd. Dept., Animal S Purdue Univ., Lafayette, Ind. Home Add.: 525 Hayes, W. Laf ette, Ind. DAIRY ENDOCRIN OGY AND PHYSIOLOGY AND DA MANAGEMENT. b. Jerseyville, May 28, 1917. s. George Anna (Engel) E. Edn.: B.S., Ur of Ill., 1940; M.S., Purdue Un 1942; Ph.D., ibid., 1947. Rosetta Roodhouse, Aug. 24, 19 c.: George Edward. Exp.: A Prof., Wash. Sta. Univ., Pullm Wash., 1947-48; Assoc. Pr ibid., 1948-53; Prof., ibid., 19 62; Prof., Asst. Hd. Dept., mal Sci., Purdue Univ., 196 Hon. Pos.: Secy. and Vice Ch and Chmn., Am. Dairy Sci. As Prod. Sect.; Chmn., Am. Dairy Assn., Gen. Program; Chm Western Reg. Phys. Proj., 19 61; Chmn., Western Reg. Te Comm.; Secy. and Vice-P 1948-50, Am. Dairy Sci. Assn., Western Div. Mem.: Sigma The Endocrine Soc.; Soc. of Zoolts.; Gamma Sigma Delta; A Zeta; Phi Zeta; Am. Men of Sci.; Am. Dairy Sci. Assn.; Fe Am. Assn. Adv. Sci.; Am. Soc. of Anim. Sci.; Farm House Fr Chamber of Commerce. Contbr. to: Jour. of Dairy Sci.; of Animal Sci.; Endocrinol. Serv. Rec.: U. S. Navy, 194



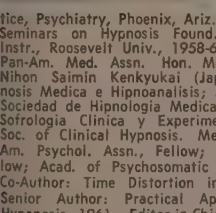
Gen. Int.: Borden Award Winner, Am. Dairy Sci. Assn., 1961. Areas of Rsch.: Pioneered in Research which led to Widespread Adoption of Artificial Breeding of Dairy Cattle; Dairy Management; Studies on Milk Composition; Environmental Influences on Semen Metabolism; Characterization and Identification of Female Sex Steroids in Cattle and Swine; Levels of Progestin in Blood During the Estrous Cycle and Pregnancy.

ERICKSON, John Morris (Ph.D.), Assoc. Prof. of Chem., St. Cloud St. Coll., St. Cloud, Minn. Home Add.: 821 Tenth St., S.E., St. Cloud, Minn. PHYSICAL CHEMISTRY. b. Curtiss, Wis., Apr. 28, 1918. s. Alfred M. and Laura J. (Geary) E. Edn.: B.S., Univ. of Wis., 1940; M.S., S. Dak. St. Coll., 1953; Ph.D., Ia. St. Univ., 1956. m. Helen M. Lorentson, June, 1948. c.: Jan; Deborah; Nancy. Exp.: Prod. Foreman and Cost Cont. Engr., Procter and Gamble Mfg. Co., Chicago, Ill., 1940-43; Instr., Assoc. Prof., S. Dak. St. Coll., 1947-60; Assoc. Prof., St. Cloud St. Coll., 1960—. Mem.: Am. Chem. Soc.; Minn. Acad. Sci.; Phi Lambda Upsilon; Tau Beta Pi; Sigma Phi Sigma; Phi Kappa Phi. Co-Author: Experiments in Inorganic Chemistry, 1959. Serv. Rec.: U. S. Nav. Res., 1943-46. Areas of Rsch.: Ion Exchange as Applies to Separation of Rare Earth Metals.



ERICKSON, Milton Hyland (M.D.), Editor, The Am. Jour. of Clinical Hypnosis, 32 W. Cypress, Phoenix, Ariz. MEDICINE (PSYCHOTHERAPY) b. Aurum, Nev., Dec. 5, 1901. s. Albert and Clara Florence (Miner) E. Edn.: B.A., Univ. of Wis., 1927; M.A., ibid., 1928; M.D., Med. Schl., ibid., 1928. m. Elizabeth Euphemia Moore, June 18, 1936. c.: Albert; Lance; Carol; Elizabeth; Allan; Robert; Roxanna; Kristina. Exp.: Jr. Physician, Sr. Physician, Chf. Psychiatrist, Rsch. Serv., Worcester State Hosp., Worcester, Mass., 1930-34; Dir. of Psychiatric Rsch., Wayne Co. Gen. Hosp., Eloise, Mich., 1934-39; Dir. of Psychiatric Rsch. and Trng., ibid., 1939-48; Instr. in Psychiatry, Wayne Univ. Coll. of Med., 1939-40; Asst. Prof., ibid., 1940-44; Assoc. Prof., ibid., 1944-48; Prof., Grad. Schl., Wayne Univ., 1943-48; Pvt. Practice, Psychiatry, Phoenix, Ariz., 1948—; Sr. Mem., Tchng. Faculty, Seminars on Hypnosis Found., Chicago, Ill., 1955-62; Visiting Instr., Roosevelt Univ., 1958-61. Hon. Pos.: Advisory Vice-Pres., Pan-Am. Med. Assn. Hon. Mem.: Br. Soc. of Med. Hypnotists; Nihon Saimin Kenkyukai (Japan); Sociedad Argentina de Hipnosis Medica e Hipnoanalisis; Sociedad Argentina de Hipnoterapia; Sociedad de Hipnologia Medica de Cordoba; Sociedad Espanola de Sofrologia Clinica y Experimental. Fellow and Past-Pres., Am. Soc. of Clinical Hypnosis. Mem.: Am. Psychiatric Assn., Fellow; Am. Psychol. Assn., Fellow; Am. Psychopathological Assn., Fellow; Acad. of Psychosomatic Med., Fellow; A.A.A.S.; Sigma Xi. Co-Author: Time Distortion in Hypnosis, 1954, 2nd ed., 1959. Senior Author: Practical Application of Medical and Dental Hyponosis, 1961. Editor-in-Chief: The Am. Jour. of Clin. Hypnosis. Assoc. Editor: Diseases of the Nervous System. Foreign Editor: Revista Latino-Americana de Hipnosis Clinica. Publications in Jour. of Gen. Psychol.; Br. Jour. of Med. Psychol.; Psychosomatic Med.; Jour. of Clin. and Exptl. Hypnosis; Psychoanalytic Quart.; Med. Clinics of N. Am.; Am. Jour. of Psychiatry; and others. Areas of Rsch.: Psychotherapy; Hypnosis; Psychosomatic Medicine; Interpersonal Communication.

ERLICH, Philip (M.D.), Consultant in Psychiatry, New Jersey Neuropsychiatric Inst., 341 Nassau St., Princeton, N. J. Home Add.: 41 Littlebrook Rd., Princeton, N. J. PSYCHIATRY. b. N. Y., N. Y., Feb. 24, 1924. s. Nathan and Rose (Erlich) E. Edn.: A.B., Princeton Univ., 1945; M.D., N. Y. Univ., 1947. m. Gloria Chassor, 1953. c.: Julia L.; Austin R. Exp.: Instr., Univ. of Mich., Schl. of Med., Ann Arbor, Mich., 1951-53; Consultant in Psychiatry, Trenton State Coll., Trenton, N. J., 1956—; Consultant in Psychiatry, New Jersey Neuropsychiatric Inst., 1960—. Mem.: Am. Psychiatric Assn.; Am. Assn. for the Adv. of Sci.; Am. Med. Assn.; Phi Delta Epsilon. Contbr. to: Jour. of Nervous and Mental Diseases. Serv. Rec.: U. S. Navy, 1943-45; U. S. Army, 1953-55. Areas of Rsch.: Psycho Therapy, Teaching, Mental Health, Preventive Medicine, Child Development.



ERIKSON, George Emil (Ph.D.), Asst. Prof., Harvard Med. Schl., Boston, Mass. Home Add.: Bay Rd., S. Easton, Mass. HUMAN ANATOMY AND COMPARATIVE PRIMATE ANATOMY. b. Palmer, Mass., May 3, 1920. s. Emil and Sofia (Gustafson) E. Edn.: B.S., Mass. St. Coll., 1941; M.A., Harvard Univ., 1946; Ph.D., ibid., 1948. m. Suzanne Henderson, 1950. c.: Ann; David; John; Thomas. Exp.: Asst. Prof., Harvard Univ., 1949-52; Asst. Prof., Harvard Med. Schl., 1955—; Assoc. Curator, Warren Anatomical Museum, ibid., 1961—. Mem.: Am. Assn. Physical Anthropoligists; Am. Soc. Mammalogists. Areas of Rsch.: Human Anatomy; Comparative Anatomy of Primates.

ERNSBERGER, Maurice L(eon) (Ph.D.), Dir., Rsch. and Devel., Organic Chemicals Dept., E. I. duPont de Nemours and Co., Wilmington, Del. Home Add.: 13 Cragmere Rd., Wilmington 3, Del. ORGANIC CHEMISTRY. b. Toledo, Ohio, Aug. 14, 1911. s. David A. and Ida (Ury) E. Edn.: B.Sc., Univ. of Toledo, 1932; M.Sc., Ohio State Univ., 1934; Ph.D., ibid., 1936. m. Virginia Storm, 1936. c.: Jane; John; Marian. Exp.: Rsch. Chemist, DuPont de Nemours and Co., Chem. Dept., Wilmington, Del., 1936-41; Rsch. Supv., ibid., 1941-50; Lab. Dir., Textile Fibers Dept., ibid., 1950-52; Asst. Tech. Dir., Organic Chem. Dept., ibid., 1952-56; Dir. Rsch. and Devl. Div., ibid., 1956—. Mem.: Am. Chem. Soc.; A.A.A.S.; Soc. Chem. Ind.; Am. Inst. Chem.; Phi Lambda Upsilon; Sigma Xi; Gamma Alpha.

ERULKAR, Solomon David (Ph.D.), Assoc. Prof. Pharmacology, Univ. of Pennsylvania Med. Schl., Philadelphia 4, Pa. Home Add.: 409 Virginia Ave., Havertown, Pa. NEUROPHYSIOLOGY. b. Calcutta, India, Aug. 18, 1924. s. David Solomon and Esther (Kilekar) E. Edn.: B.A., Univ. of Toronto, Can., 1948; M.A., ibid., 1949; Ph.D., Johns Hopkins Univ., 1952; D.Phil., Oxford Univ., England, 1957. m. Catherine Bear, Sept., 1950. c.: Matthew David; Benjamin. Exp.: Pre Doctl. Fellow in Physiol., Johns Hopkins Med. Schl., Baltimore, Md., 1951-52; Post Doctl. Fellow in Physiol., ibid., 1952-54; Recipient MRC Personal Grant, Demonstrator, part time, Oxford Univ., England, 1955-58; Asst. Prof., Temple Univ. Med. Schl., Phila., Pa., 1958-60; Asst. Prof., Univ. of Penn. Schl. of Med., Phila., Pa., 1960-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Physiol. Soc.; A.A.A.S.; Am. Assn. Med. Coll.; Am. Assn. of Univ. Profs.; Am. Inst. of Biol. Sci.; Physiological Soc. of Philadelphia. Contbr. to: Arch. Biochem.; Johns Hopkins Hosp. Bull.; Proc. Roy. Soc.; Jour. Physiol.; Nature; Jour. Comp. Neurol.; Jour. Anat., London. Areas of Rsch.: Sensory Systems, with special emphasis on the Acoustic System. Microelectrode recording from single nerves in the Central Auditory Pathway.

ERVIN, Roger Edward (Ph.D.), Assoc. Prof. of Geography, Fresno State Coll., Fresno 26, Calif. Home Add.: 4455 East Sierra Madre, Fresno 26, Calif. GEOGRAPHY. b. Danbury, Nebr., Oct. 9, 1921. s. Edward Floyd and Elna Madeleine (McDonald) E. End.: B.A., Univ. of Wash., 1947; M.A., ibid., 1949; Ph.D., Univ. of Fla., 1954. Exp.: Mil. Intell. Rsch. Aeornautical Chart and Info. Ctr., Wash., D. C., 1954-55; Instr., Univ. of Delaware, Newark, Del., 1955-57; Asst. Prof., Fresno State Coll., Fresno, Calif., 1957-62; Assoc. Prof. of Geography, ibid., 1962—. Mem.: Am. Geographical Soc.; Assn. of Am. Geographers; Assn. of Pacific Coast Geographers; Calif. Coun. of Geography Tchrs.; A.A.A.S.; Sigma Xi; Phi Kappa Phi. Author: Land Use in Southern Middle Chile, 1955. Contbr. to: Am. Jour. of Economics and Sociology. Serv. Rec.: A.U.S., 1942-46. Areas of Rsch.: South America, United States, Economic Geography, Underdeveloped Areas.

ESCH, Bonnie B. (Mrs.), Research Engr., No. Am. Aviation, Downey, Calif. Home Add.: 1958 Fullerton Ave., Costa Mesa, Calif. HUMAN FACTORS ENGINEERING. b. March Field, Calif., Nov. 1931. d. Wayne Robinson Smith and Beulah (Reeds) S. Edn.: R.N., Fresno Gen. Hosp. Schl. of Nursing, 1952; B.A., Long Beach State Coll., 1958. m. Lynd J. Esch. Exp.: Team Leader Rehabilitation, Orange Co. Hosp., Orange, Calif., 1956-57; Tech. Instr., State of Calif., Dept. of Employment, L. A., Calif., 1958-60; Human Factors Engr., Northrop Corp., 1960-62; Rsch. Engr., No. Am. Aviat., 1962—. Mem.: Am. Assn. Adv. of Sci.; Human Factors Soc.; Aerospace Med. Soc.; Am. Astronautical Soc.; Psi Chi. Contbr. to: Proc. of Am. Soc. of Trng. Dirs. Gen. Int.: Advanced Design Project Prospector (Lunar Probe), Study of Control Display Requits. Areas of Rsch.: Human Error Probability in Operation of Electronic and Optomechanical Equipment.

ESHLEMAN, S(ilas) Kendrick, III (M.D.), Physician, Psychiatrist, Private Practice, Lancaster, Pa. Home Add.: 1421 Marietta Ave., Lancaster, Pa. PSYCHIATRY. b. Gainesville, Fla., June 28, 1928. s. Silas K., Jr. and Hope (McClamroch) E. Edn.: B.S., Univ. of Fla., 1949; M.D., Univ. of Pa., 1953. m. Judith Cooper, 1954. c.: Diane Elizabeth. Exp.: Interne, Hosp., Univ. of Pa., 1953-54; Res. in Psychiatry, Norristown State Hosp., Norristown, Pa., 1954-55, 1957-59; Ward Officer, U. S. Army Hosp., Neuro-Psychiatric Serv., Ft. Knox, Ky., 1955-57; Private Practice, Lancaster, Pa., 1959—; Consultant in Psychiatry, V.A. Hospital, Lebanon, Pa., 1961—. Mem.: A.A.A.S.; Am. Psychiatric

Assn.; Am. Med. Assn.; Phi Beta Kappa; Phi Kappa Phi; Alpha Omega Alpha; Nu Sigma Nu. Serv. Rec.: U. S. Army, 1955-57. Areas of Rsch.: Fresh-Water Sponges of Fla.

ESKEW, Cletis Theodore (Ed.D.), Prof. of Biol. and Dir. of Arts and Scis., Midwestern Univ., Wichita Falls, Tex. Home Add.: 2010 Pearl, Wichita Falls, Tex. BOTANY (TAXONOMY). b. Cloud Chief, Okla., July 10, 1904. s. C. Edward and Ruth (Macom) E. Edn.: B.S., Southwestern State Coll., 1931; M.S., Univ. of Okla., 1937; Ed.D., North Tex. State Univ., 1960. m. Annie Laurie Smith, 1936. c.: Mark Franklin. Exp.: Prin., Cedar Dale, Caddo Co., Okla., 1924-30; Supt., Retrop, Okla., 1931-37; Prin., Sr. H. S., Mangum, Okla., 1937-39; Prof. of Botany, Southwestern State Coll., Weatherford, Okla., 1939-42; Prof. of Biol. and Dean, Midwestern Univ., Wichita Falls, Tex., 1942—. Hon. Pos.: Mem., Comm. on Standards and Classification of Assn. of Tex. Colls. and Univ. Mem.: Beta Beta Beta; Pi Gamma Mu; Phi Beta Sigma; Phi Sigma; Phi Delta Kappa; Tex. Acad. of Sci.; A.A.A.S.; Rotary. Author: The Vegetation of Oklahoma, 1939; Agricultural Botany, 1941. Contbr. to: Okla. Tchr.; The Am. Midland Naturalist. Areas of Rsch.: Taxonomy of the Flowering Plants; College Teaching and Administrative Leadership.

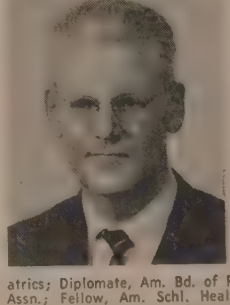
ESSELMAN, Walter H. (Ph.D.), Mgr., Engrng. and Devel., Nerva Project, Westinghouse Elec. Corp., Astronuclear Lab., P. O. Box 10864, Pittsburgh 36, Pa. Home Add.: 208 Yarrow Lane, Pittsburgh 36, Pa. DESIGN, DEVELOPMENT AND ENGINEERING OF ADVANCED CONTROL AND POWER SYSTEMS, PARTICULARLY IN THE NUCLEAR FIELD. b. Hoboken, N. J., Mar. 19, 1917. s. Gustave and Stephanie (Winter) E. (dec.). Edn.: B.S., Newark Coll. of Engrng., 1938; M.S., Stevens Inst. of Tech., 1944; Ph.D., Poly. Inst. of Brooklyn, 1953. m. Margaret J. Carey, June, 1943. c.: Walter; Thomas; Marie; Peter. Exp.: Test Engr., Application Engr. Anti-Aircraft Con., Elevator Control, Westinghouse Elec. Corp., Pittsburgh, Pa., 1939-50; Various, ibid., Bettis Atomic Power Lab., 1950-59; Mgr., Engrng. and Dev., Nerva Project, Astronuclear Lab., ibid., 1959—. Mem.: Am. Inst. of Electrical Engrs.; Am. Nuclear Soc.; Am. Rocket Soc.; Tau Beta Pi; Sigma Xi. Contbr. to: Trans. Am. Inst. Elec. Engrs.; ONR Rep.; Univ. of Calif. Press; 2nd Annual Internatl. Conf. on Peaceful Uses of Atomic Energy at Geneva, Switzerland.

ESSENWANGER, Oskar Maximilian Karl (Dr. rer nat), Chf., Aerophysics Br., Rsch. Lab., R & D Directorate, Redstone Arsenal, Huntsville, Ala. Home Add.: 809 Watts Dr., S.E., Huntsville, Ala. ATMOSPHERIC PHYSICS, METEOROLOGY AND CLIMATOLOGY. b. Munich, Germany, Aug. 25, 1920. s. Oskar and Anna (Ritzinger) E. Edn.: Diploma, Univ. of Vienna, 1943; Dr. rer. nat, Univ. of Wurzburg, 1950. m. Katharina Dorfer, June 17, 1947. Exp.: Rsch. Meteorologist, German Weather Serv., Bad Kissingen, Wurzburg, Germany, 1946-57; Rsch. Meteorologist, U. S. Weather Bur., N.W.R.C., 1957-61; Instr., Asheville Biltmore Coll., 1957-61; Chf., Aerophysics Br., VA. Mi. Cd., Huntsville, Ala., 1961—; Assoc. Prof., Univ. of Ala., 1961—. Mem.: Am. Meteorol. Soc.; Am. Geophysical Un.; Am. Statistical Assn.; Am. Soc. Quality Control; German Meteorological Soc.; German Verband Deutscher Meteorologen. Contbr. to: Monthly Weather Rev.; Jour. of Applied Meteorol.; Geophys. Monograph; Bull., Am. Meteorological Soc.; Meteor. Rundsch; Annal. Meteor.; Ber. Dt. Wetterd. U.S.-Zone; Ber. Dt. Wetterd. Geofisica pura e Applicata; Archiv f. Meteorologie, Geoph. and Bioklim.; Zeitschr. f. Meteor. Areas of Rsch.: Statistical Methods and Analysis in Atmospheric Physics; Meteorology and Climatology.

ESSER, Nicholas M. (Mr.), General Patent Counsel, Chemetron Corp., 840 N. Michigan Ave., Chicago 11, Ill. Home Add.: 6N371 Roselle Rd., Roselle, Ill. PHYSICS. b. Aurora, Ill., Feb. 7, 1923. s. Raymond E. and Elizabeth (Steichen) E. Edn.: Dipl. Meteorology, N. Y. Univ., 1944; LL.B., DePaul Univ., 1949; P.L.M., John Marshall Law Schl., 1950. m. Elaine Carlson, 1945. c.: Nicholas, Jr.; Dale. Exp.: Patent Attorney, Automatic Elec. Co., Northlake, Ill., 1948-50; Patent Atty., Singer, Stern and Carlberg, Chicago, Ill., 1950-52; Gen. Patent Counsel, Chemetron Corp., Chicago, Ill., 1952—. Mem.: Chicago Patent Law Assn.; Assn. Internatl. for Protection of Indl. Property; A.A.A.S.; Delta Theta Phi. Serv. Rec.: U.S.A.F., 1943-46. Gen. Int.: Alumnus of Year, 1960, St. Procopius Coll., Lisle, Ill. Areas of Rsch.: Internatl. Industrial Property Law; Cryogenics; Thermal Welding; Food and Chemical Processes and Equipment; Metallurgical Processes and Equipment; Elec. Communications and Transmissions; Oil Field Wire Line Services; Fine Chemicals and Bulk Pharmaceuticals.

ESTES, Edna Eva (Ph.D.), Biol. Instr., St. Tchrs. Coll., Salisbury, Md. Home Add.: Rt. 8, Box 137, Jasper, Ala. BOTANY (PLANT PHYSIOLOGY). b. Jasper, Ala., Nov. 23, 1921. d. F. E. and Ethel (Ford) E. Edn.: B.S., Univ. of Ala., 1948; M.S., ibid., 1949; Ph.D., ibid., 1957. Exp.: Asst. Prof. of Biol., Flora Macdonald Coll., 1949-53; Instr. in Biol., Univ. of Ala., Mobile Ctr., 1953-54; Univ. Tchng. Fellow, ibid., 1954-56; Temp. Instr., ibid., 1955-56 (Summer, St. Mary's Semin. Jr. Coll., 1957-59; Asst. Prof., Del Mar Coll., 1959-60; Biol. Instr., St. Tchrs. Coll., 1960—. Mem.: Sigma Xi; Botanical Soc. of Am., Inc.; A.A.A.S.; Am. Soc. of Plant Physiologists; Assn. of Southeastern Biologists; Ala. Acad. of Sci. Contbr. to: Plant Physiol. Serv. Rec.: W.A.S., U.S. Army. Areas of Rsch.: Dissertation: Phosphorus-32 Uptake and Photosynthetic Factors in Higher Plants.

ESTY, Geoffrey Winslow (M.D.), Special Consultant, N. J. St. Dept. Edn., Trenton, N. J. Home Add.: 6 Ober Rd., Princeton, N. J. PEDIATRICS, PUBLIC HEALTH, MENTAL HEALTH. b. Brookline, Mass., Nov. 30, 1904. s. Clarence H. and Rosamond (Field) E. Edn.: A.B., Harvard Coll., 1927; M.D., Harvard Med. Schl., 1931. m. Valiere Wrightmyer, July 6, 1929. c.: Joseph Arthur; Jonathan Field. Exp.: Pediatric Practice, Westfield, N. J., 1934-42; Pediatrician, Bur. Maternal and Child Health, N. J. St. Dept. Health, 1941-42; Pediatrician in Chg. of Child Guid., ibid., 1945-49; Dir., Div. of Constructive Health, ibid., 1949-58; District St. Health Officer, ibid., 1958-60; Special Consultant, Schl. Health Edn.; N. J. St. Dept. Edn., 1960—. Hon. Pos.: Pres., Henry George Schl. of Soc. Sci., N. J. Mem.: Fellow, Am. Acad. Pediatrics; Diplomate, Am. Bd. of Pediatrics; Fellow, Am. Pub. Health Assn.; Fellow, Am. Schl. Health Assn.; A.A.A.S.; Royal Soc. of Health; Internatl. Soc. General Semantics. Contbr. to: Medical and Pub. Health Jour.; Am. Jour. of Econs. and Sociol. Serv. Rec.: U. S. Army, 1943-45. Areas of Interest: Child Guidance, Parent Education, Public Health Admin., General Semantics, Fundamental Econs. and Polit. Econ.



EUBANKS, William Hunter (Mr.), Hd., Dept. of Engrng. Graphics, Prof. of Engrng. Graphics, Miss. St. Univ., State College, Miss. Home Add.: Hwy. 82 East, State College, Miss. ENGINEERING GRAPHICS AND DESCRIPTIVE GEOMETRY. b. Columbus, Miss., Dec. 13, 1921. s. William H. and Pauline (Propst) E. Edn.: B.S., La. St. Univ., 1944; B.S., Miss. St. Coll., 1947; M.S., Miss. St. Univ., 1950. m. Juanita P. Patrick, Mar 5, 1944. c.: William H., Jr.; Kenneth B.; Cora Diane. Exp.: Engrng. Draftsman, City of Columbus, Miss. Light & Power Dept., Miss., 1946-47; Engr. and Draftsman, 4-County Elec. Power Assn., part-time, 1947-50; Engrng. Estimator, U. S. Steel Corp., Birmingham, Ala., summers, 1953, 1955; Engrng. Faculty, Miss. St. Univ., 1947—. Hon. Pos.: Sr. Scient., INSF Spons. Sci. Visitation Prog.; Proj. Leader, NSF Spons. Sci. Prog.; Mem. of the Natl. Grophies Interdisciplinary Comm. of the Am. Soc. for Engrng. Edn.; Mem., Faculty Coun. of Miss. State Univ. Mem.: Miss. Soc. for Professional Engrs.; The Natl. Soc. for Professional Engrs.; Am. Soc. for Engrng. Edn.; Alpha Tau Omega; Am. Soc. for Aeronautical Engrs.; The Natl. Exchange Club. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Registered Profl. Engr. #1609, St. of Miss. Areas of Rsch.: Experimenting with the Use of Photography to Illustrate Space Relationships in Graphics and Special Engrng. Problems.

EVANS, Edgar Ernest (Mr.), Prof., Social Sci., Ala. St. Coll., Montgomery, Ala. Home Add.: 1433 Cleveland Ave., Montgomery, Ala. BIOLOGY. b. Pittsview, Ala., Jan. 20, 1908. s. Ebenezer and Mary (Day) E. Edn.: B.A., Fisk Univ., 1930; M.A., Univ. of Mich., 1948. m. Zelia Valsavee Stephens, Dec. 25, 1940. Exp.: Instr., Apopka Jr. H. S., Apopka, Fla., 1931-34; Prin., Winter Garden Jr. H. S., Winter Garden, Fla., 1934-38; Prin., Starke H. S., Starke, Fla., 1938-41; Prin., Rosenwald H. S., Waynesboro, Va., 1946-48; Prof., Ala. St. Coll., 1949—. Hon. Pos.: Chmn., Bd. of Trustees, St. John A.M.E. Ch.; Chmn. of Edn., Public Icity Agent, So. Pride Lodge No. 431, Elks; Vice-Chmn., Elks of Ala.; Pres., Farm and City Enterprises, Inc.; St. Dir., Phi Beta. Mem.: Am. Pub. Health Assn.; Royal Soc. of Health; N.E.A.; Am. Tchrs. Assn.; Am. Adult Edn. Assn.; Am. Sociol. Soc.; A.A.U.P.

Am. Soc. for the Study of Edn.; Phi Delta Kappa; Phi Beta Sigma; and others. War Rec.: U. S. Army, 1941-45.

EVANS, Ernest Edward, Jr. (Ph.D.), Prof. and Chmn., Microbiol., Dept., Univ. of Ala. Med. Ctr., Birmingham 3, Ala. Home Add.: 1502 Oxmoor Rd., Birmingham 9, Ala. MICROBIOLOGY; IMMUNOLOGY. b. Parkersburg, W. Va., Dec. 14, 1922. s. Ernest E., Sr., and Vivian (Enoch) E. Edn.: A.B., Ohio Univ., 1945; M.S., Ohio St. Univ., 1947; Ph.D., Univ. of Sou. Calif., 1950. m. Marjorie McConville, 1947. Exp.: Instr., Univ. of Mich., Ann Arbor, Mich., 1950-51; Asst. Prof., ibid., 1951-55; Assoc. Prof., Univ. of Ala., Birmingham, Ala., 1955-61; Prof. and Chmn., ibid., 1961—. Hon. Pos.: Mem. Editorial Bd., Jour. of Bacteriol. Mem.: A.A.A.S.; Am. Soc. for Microbiol.; Am. Assn. Univ. Profs.; Am. Assn. Immunols.; Soc. Exptl. Biol. and Med.; Sigma Xi; Phi Beta Kappa. Contbrng. Author: Fungi and Fungus Disease, N. Y. Acad. Med., 1961; Manual of Microbiol. Methods, 1957. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Jour. Immunology; Jour. Bact., Sci.; Jour. Inv. Dermatol.; Jour. Lab. Clin. Med.; Jour. Inf. Dis.; Ann. N. Y. Acad. Sci.; Jour. Histochem. and Cytochem. Areas of Rsch.: Comparative Immunology, Antibody Synthesis, Staining and Cytochem., Antigenic Structure of Pathogenic Fungi, Microbial Capsule, Immunochem.

EVANS, Wayne Orien (Ph.D.), Rsch. Psychologist, U. S. Army Med. Rsch. Lab., Ft. Knox, Ky. Home Add.: 5437-C Brett Dr., Ft. Knox, Ky. PSYCHOPHARMACOLOGY. b. Seattle, Wash., Mar. 14, 1931. s. Orien T. and Alverta F. (Orr E. Edn.: B.A., Univ. of Colo., 1953; M.A., ibid., 1957; Ph.D., Duke Univ., 1960. m. Marien E. Mulanax, 1953. c.: Debra C. Exp.: Instr., Univ. of Ky. Ctr., Ft. Knox, Ky., 1959—; Psycho., Rsch., U. S. Army Med. Rsch. Lab., 1959—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Psychol. Assn.; Sigma Xi; Southern Soc. for Psychol. and Philos.; Alpha Epsilon Delta; Sigma Phi Epsilon. Contbr. to: Psychopharmacologia; Jour. of Exptl. Analysis of Behavior; Jour. of Exptl. Psychol.; Jour. of Psychol.; Psychol. Reports; Jour. of App. Physiol. Serv. Rec.: U. S. Med. Serv. Corp., 1958—; U. S. Corps of Engrs., 1953-58. Areas of Rsch.: Methods of Testing of Analgesic, Tranquilizing and Antifatigue Drugs, Motivation and Drug Action.

EVELAND, Warren Chester (Ph.D.), Assoc. Prof., Schl. of Pub. Hlth., Univ. of Mich., Ann Arbor, Mich. Home Add.: 2405 Colony Court, Ann Arbor, Mich. BACTERIOLOGY; USES OF FLUORESCENT ANTIBODY TECHNNIC IN DIAGNOSIS AND RESEARCH. b. Watsonville, Calif., Aug. 24, 1904. s. Chester and Martha Ann (Gilbert) E. Edn.: A.B., Univ. of Calif., 1930; M.S.-P.H., Univ. of Mich., 1939; Ph.D., Univ. of Md., 1952. m. Virginia Dudley, Feb. 19, 1940. c.: John D.; Ruth Ann. Exp.: Dir., Alaska Terr. Dept. of Health Lab., Juneau, Alaska, 1937-41; Chf., Bacteriol. and Immunol. Sect., U. S. Army Med. Labs., Alaska, U. S., Japan, 1941-59; Assoc. Prof., Schl. of Pub. Health, Univ. of Mich., 1959—. Hon. Pos.: Chmn., Scholarship Comm., Schl. of Pub. Hlth. Mem.: Am. Pub. Hlth. Assn.; Am. Soc. for Microbiol.; Am. Soc. of Prof. Biol.; Am. Assn. of Bioanalysts; Am. Acad. of Microbiol.; Assn. of Milit. Surgeons; N. Y. Acad. of Scis.; Sigma Xi; Phi Kappa Phi; Sigma Alpha Omicron; Delta Omega. Contbr. to: Jour. of Infectious Diseases; Am. Jour. Clin. Pathol.; Proc. Soc. Expt. Biol. and Med.; Am. Jour. Vet. Rsch.; Blood; Cornell Vet.; Am. Jour. Dis. Child.; Lab. Invest.; Jour. Bact.; Lab. Digest; Antibiot. and Chemo.; Armed Forces Med. Jour.; Am. Jour. Pathol.; Trans. N. Y. Acad. of Sci. Serv. Rec.: U. S. Army, 1939-59. Gen. Int.: Diplomate Am. Bed. of Microbiol. Areas of Rsch.: Medical and Public Health Microbiology; Fluorescent Antibody Technics.

EVERITT, William Littell (Ph.D.), Dean, Coll. of Engrng., Univ. of Ill., Urbana, Ill. Home Add.: 607 West Pennsylvania Ave., Urbana, Ill. ELECTRONICS AND COMMUNICATION ENGINEERING. b. Baltimore, Md., April 14, 1900. s. William Littell and Margaret (Pownall) E. Edn.: E.E., Cornell Univ., 1922; M.S., Univ. of Mich., 1926; Ph.D., Ohio State Univ., 1933. Hon. Deg.: D.Eng., Brad'ey Univ., 1959. m. Dorothy Wallace, Aug., 1923. c.: Barbara Alice; Bruce Wallace; Pamela Ann. Exp.: Prof. of E.E., Ohio State Univ., Columbus, Ohio, 1926-42; Hd. Prof. of E.E., Univ. of Ill., Urbana, Ill., 1945-49; Dean of Engr., ibid., 1949—. Hon. Pos.: Past Pres., Inst. of Radio Engrs.; Past Pres., Am. Soc. for Engrng. Edn.; Past Pres., Engrs. Coun. for Profl. Devel.; Pres., Associated Midwest Universities. Mem.: Am. Inst. of Elect. Engrs.; Inst. of Radio Engrs.; Am. Soc. for Engrng. Edn.; A.A.A.S.; Acoustical Soc. of Am.; Sigma Xi; Tau Beta Pi; Theta Chi; Phi Kappa Phi; Triangle; Eta Kappa Nu. Co-Author: Communication Engineering, 1956; Wire Telephony and Telegraphy, 1941; Fundamentals of Radio, 1942; Telecommunications, A Program for Progress, 1951; Fundamentals of Radio and Electronics, 1958. Contbr. to: Jour. of A.S.E.E.; I.R.E.; A.I.E.E.; Am. Coll. Dic.; McGraw-Hill Ency. of Sci. and Tech. Serv. Rec.: U.S.M.C., 1918-19. Gen. Int.: Awarded War Depts. Exceptionally Meritorious Civilian Award, 1946; Editor, Prentice Hall Series on Electrical Engineering. Areas of Rsch.: Antennas, Radio Altimeter; Telephone Switching; Inductive Coordination; Vacuum Tube; Amplifiers; Network Theory; Speech Compression.

EVERETT, Frank G. (M.D.), Periodontist, 921 Selling Bldg., Portland 5, Ore.; Clin. Assoc., Dept. of Periodontol., Univ. of Ore. Dent. Schl., 611 S.W. Campus Dr., Portland 1, Ore. Home Add.: 3512 S.W. Beaverton Ave., Portland 1, Ore. PERIODONTOLOGY. b. Vienna, Austria, Dec. 28, 1907. s. Otto J., M.D., and Frances A. (Iltis) E. Edn.: M.D., Univ. of Vienna Med. Schl., 1932; D.M.D., Univ. of Ore., Dent. Schl., 1941; B.S., ibid., 1941; M.S., Univ. of Ore., Med. Schl., 1948. m. Leonie Schulz of Vienna, Austria, Oct. 18, 1937. d. Ludwig and Edith Schulz. c.: Suzanne D.; Joan J.; F. Thomas. Exp.: Instr., Clin. Dentistry, Univ. of Vienna, Dent. Schl., Austria, 1932; Tchng. Staff, Univ. of Ore., Dent. Schl., 1941—; Rsch. Assoc., Dept. of Pharmacol., ibid., Med. Schl., 1946-48; Hd., Dept. of Periodontology, ibid., Dent. Schl., 1952-60; Clinical Assoc., Dept. Dental and Oral Med., ibid., Med. Schl., 1952-60; Hd., Dept. of Periodontology, ibid., 1957-60. Hon. Pos.: Mem., Advisory Coun., Dental Dept., Michael Reese Hosp.; Past Scientific Ed., Ore. St. Dental Jour.; Sect. Secy., 9th Congress of the Internati. Dent. Fed., Vienna, Austria, 1936. Mem.: Sigma Xi; Omicron Kappa Upsilon; Fellow, Am. Coll. of Dentists; Fellow, Internatl. Coll. of Dentists; Fellow, A.A.A.S.; Diplomate, Am. Bd. of Periodontol.; Am. Dent. Assn.; A.M.A.; Am. Acad. of Periodontol.; Am. Acad. of Oral Pathol.; Internatl. Assn. for Dent. Rsch.; Am. Assn. of Endodontists; Am. Soc. of Anesthesiol.; Portland Symphony Soc.; Portland Art Assn. Contbr. to: Jour. Am. Dent. Assn.; Jour. of Dent. Rsch.; Jour. of Periodontol.; Parodontologie; Oral Surgery-Oral Med.-Oral Pathol.; Arch. of Dermatol.; Anesthesiol. Editor: Textbook Periodontics, 1958. Contbr. to: Atlas of Clin. Pathol. of the Oral Mucous Membrane, 2nd ed., 1960. Hobbies: Playing Viola; String Quartet. Listed in: A.M.S.; Am. Dent. Leaders; W. W. in the West. Areas of Rsch.: Periodontology, Oral Pathol., Endodontics, Pharmacology of Local Anesthesia.

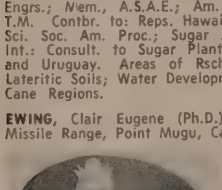
EWALT, Harry Ward, Jr. (O.D.), Optometrist, 8002 Jenkins Arcade, Pittsburgh 22, Pa. Home Add.: R.D. #3, Wexford, Pa. VISUAL SCIENCE. b. Pittsburgh, Pa., Feb. 2, 1907. s. Harry Ward and Carrie (Brown) E. Edn.: B.S., Ohio St. Univ., 1929; O.D., Philadelphia Optical Coll., 1931; Certif. in Aniseikonia, Eye Inst., Dartmouth Coll., 1941. Hon. Deg.: D.O.S., Sou. Coll. of Optometry, 1962. m. Jane Stewart, June, 1938. c.: Henry Ward, III; Sara Jane; Mary Elizabeth. Exp.: Optometrist, Pittsburgh, Pa., 1931—. Mem.: Fellow, Am. Acad. of Optometry; Pres., Am. Optometric Assn.; Consult., Office Surg. Gen., U. S. Army; Am. Assn. for the Adv. of Sci.; Fellow; N.E.A.; Exec. Internatl. Optical League; I.R.A.; Pi Kappa Alpha; Epsilon Psi Epsilon; Beta Sigma Kappa; Omega Delta; Coun. of Edn. and Profl. Guidance; Kiwanis; Pine Township Civic Assn. and Planning Comm. Author: Optometry (Monograph), 1938; Manual of Ocular Tests and Requirements, 1957. Contbr. to: Reports Annual Conf. on Reading, Univ. of Pgh.; Am. Jour. of Optometry and Arch. of Am. Acad.; Optical Jour. and Review of Optometry; Optometric Weekly. Serv. Rec.: A.U.S. Areas of Rsch.: Visual Problems of Children and Youth, Aniseikonia; Visual Achievement and Its Relationship to Reading.

EWART, William Howard (Ph.D.), Entomologist, Univ. of Calif., Riverside, Calif. Home Add.: 2085 Loma Vista St., Riverside, Calif. ECONOMIC ENTOMOLOGY. b. Radersburg, Mont., Mar. 8, 1913. s. Frank S. and Elizabeth (Boone) E. Edn.: B.A., Ohio State Univ., 1936; M.Sc., ibid., 1937; Ph.D., Cornell Univ., 1941. m. Alyce Hill, Mar. 24, 1934. c.: John; Robin; Mary. Exp.: Rsch. Asst., Cornell Univ., 1937-41; Entomologist, Tex. Agric. Expt. Sta., Winterhaven, Tex., 1941-45; Entomologist, Univ. of Calif., 1945—. Mem.: A.A.A.S.; Entomological Soc. of

Am.; Sou. Calif. Acad. of Sci.; Sigma Xi; Phi Kappa Phi. Contbr. to: Jour. of Econ. Entomol.; Annals Entomological Soc. of Am.; Sci. Areas of Rsch.: Biol. and Control of Insect Pests of Citrus and Avocados; Taxonomy of Thysanoptera.

EWART, George Yuan (Mr.), Dir. of Agric. and Hydrol., Am. Factors, Ltd., P. O. Box 3230, Honolulu 1, Hawaii. Home Add.: 3473 Paty Dr., Honolulu 14, Hawaii. WATER MANAGEMENT, IRRIGATION, DRAINAGE, DESALINIZATION IN SUGAR CANE OPERATIONS. b. Shanghai, China, Feb. 8, 1918. s. George Hillier and Daisy (Yuan) E. Edn.: B.S., Cornell Univ., 1946; M.S., ibid., 1947. m. Gladys Au, Feb. 11, 1944. c.: Maiden; Uson; Umon. Exp.: Irrigation and Drainage Engr., Kekaha Sugar Co., Honolulu, Hawaii, 1947-52; Dir. of Control and Rsch., ibid., 1952-57; Supt., Waiahole Water Works, subs. of Oahu Sugar Co., Ltd., Honolulu, Hawaii, 1957-59; Hd., Civ. Engr. Dept. and Land Dept., ibid., 1957-59; Dir. of Agric. and Hydrol., Am. Factors, Ltd., 1959—. Hon. Pos.: Past Chmn., Hawaii Water Conserv. Coun.; Ed. Bd., Am. Soc. Civ. Engr., Hawaii Chap.; Pres., Engrng. Assocs. Hawaii. Fellow: Am. Soc. Civ. Engrs.; Mem., A.S.A.E.; Am. Geophys. Union; A.W.W.A.; A.S.-T.M. Contbr. to: Reps. Hawaiian Sugar Tech.; Agric. Engr.; Soil Sci. Soc. Am. Proc.; Sugar Jour.; Hawaiian Plant. Rec. Gen. Int.: Consult. to Sugar Plantations in Hawaii, Peru, Argentina, and Uruguay. Areas of Rsch.: Sugar Cane Crop Management; Lateritic Soils; Water Development; Conveyence and Use in Sugar Cane Regions.

EWING, Clair Eugene (Ph.D.), Deputy Commander, AF, Pacific Missile Range, Point Mugu, Calif. Home Add.: 1005 Polaris Dr., Point Mugu, Calif. GEODETIC SCIENCE. b. Blue Rapids, Kans., Sept. 20, 1915. s. Grant and Margaret (Fincham) E. Edn.: B.S., C.E., Kans. Sta. Univ., 1941; M.S., C.E., Univ. of Colo., 1950; Ph.D., Ohio Sta. Univ., 1955. m. Evelyn Anderson, June 19, 1942. c.: Terry Michael; Kathleen Marie; Karen Sue; Patricia Jane; Kevin Douglas. Exp.: Commander, 1st Shoran Squadron (USAF), Korea, 1950-52; Commander, 5th Shoran Unit (USAF), Forbes AFB, Kans., 1952-53; Dir. Range Devel., AF Missile Test Ctr., Patrick AFB, Fla., 1955-58; Deputy Commander, AF, Pacific Missile Range, Point Mugu, Calif., 1960—. Mem.: Am. Geophys. Union; Scientific Rsch. Soc. of Am. Contbr. to: Trans. Am. Geophys. Union; Bull. Geodesique of the Assn. Internatl. De Geodesie; Air Univ. Quart. Rev. Serv. Rec.: U. S. Air Force, 1941—; (see Exp.). Gen. Int.: Grad. from Air Command and Staff Schl., Maxwell AFB, Ala., 1949; Grad. from the Indust. Coll. of Armed Forces, Ft. McNair, Wash., D. C., 1959. Areas of Rsch.: Missile and Space Range Instrumentation; Electronic Surveying; Geodetic Computations.

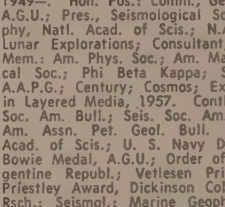


EWING, J. Franklin (Ph.D.), Assoc. Prof. Anthropology, Fordham Univ., New York 58, N. Y. ANTHROPOLOGY. b. N. Y., N. Y., Oct. 14, 1905. s. Frank Dell and Marie F. (Schmitz) E. Edn.: A.B., Woodstock Coll., 1928; A.M., ibid., 1929; S.T.L., ibid., 1936; Ph.D., Harvard Univ., 1947. Exp.: Instr., Ateneo De Manila, Manila, P. I., 1929-32; Asst. Prof., Fordham Univ., 1949-56; Assoc. Prof., ibid., 1956—. Mem.: Am. Anthropological Assn.; A.A.A.S.; Am. Assn. Phys. Anthropology; Soc. for Applied Anthropol.; Assn. of Asian Studies; Acad. of Rel. and Mental Health; Sigma Xi. Author: Hypebrachycephaly as Influenced by Cultural Conditioning, 1950; The World We Live In, 1959, '60, '61, 62; Edited Five Books in Field of Missiology. Contbr. to: Antiquity; Am. Antiquity; Anthropological Quart.; Biblica; Theol. Studies; Am. Catholic Sociological Rev.; Bull. Natl. Catholic Edn. Assn.; Jour. of Near Eastern Studies. Serv. Rec.: Philippines Army, 1941-45. Areas of Rsch.: Prehistory, Near East; Physical Anthro.; Philippines; Applied Anthropology; Religion and Science.

EWING, John Arthur (D.P.A.), Dir., Univ. of Tenn. Agri. Expt. Sta., Room 104, Morgan Hall, Knoxville, Tenn. Home Add.: 6603 Stone Mill Rd., Knoxville, Tenn. AGRICULTURAL RESEARCH. b. Euchee, Tenn., June 24, 1912. s. James Anderson (dec.) and Harriette Mahala (Moulton) E. (dec.). Edn.: B.S.A., Univ. of Tenn., 1933; M.S., ibid., 1946; D.P.A, Harvard Univ., 1956. m. Frances Burleson, Dec. 26, 1936. c.: John Arthur, Jr.; Ward Burleson; Jack Dunn. Exp.: Voc. Agri. Tchr., Unicoi Co. H. S., Erwin, Tenn., 1934-35; Asst. Co. Agent, Carter Co., Elizabethton Tenn., 1935-44; Asst. Supt., Middle Tenn. Expt. Sta., Columbia Tenn., 1944-46; Supt., ibid., 1946-49; Asst. Dir., U. T. Expt. Sta. Knoxville, Tenn., 1949-55; Sr. Vice-Dean, Coll. of Agri., ibid. 1955-57; Dir., U. T. Expt. Sta., ibid., 1957—. Hon. Pos.: Chmn. Sou. Expt. Sta. Dir.; Chmn., S.R.R.C. Mem.: Agronomy Soc.; Sou. Agri. Workers; Phi Kappa Phi; Sigma Xi; Omicron Delt Kappa; Rotary Club; Pi Kappa Alpha; Epsilon Sigma Phi; Masons Areas of Rsch.: Agronomy; Public Administration; Animal Husbandry.

EWING, William Maurice (Ph.D.), Dir., Lamont Geological Observatory, Palisades, N. Y.; Higgins Prof. of Geol., Columbia Univ., N. Y. C. Home Add.: Torrey Cliff, Palisades, N. Y. GEOPHYSICS AND MARINE GEOLOGY. b. Lockney, Tex., May 12, 1906. s. Floyd Ford and Hope (Hamilton) E. Edn.: B.A., Rice Inst., 1926; M.A., ibid., 1927; Ph.D., ibid., 1931. Hon. Deg.: D.Sc., Wash. and Lee Univ., 1949, Univ. of Denver, 1953, Lehigh Univ., 1957, Univ. at Utrecht, 1957, Univ. of R. I., 1960; LL.D. Dalhousie Univ., 1960. m. 1st. Avarilla Hildenbrand, 1928 (div.). m. 2nd. Margaret Sloan Kidder, 1944. c.: William Maurice, Jr.; Jerome Henry Kidder; Hope Hamilton; Peter Dulyea; Margaret Kidder. Exp.: Hohenthal Scholar, Rice Inst. 1923-26; Fellow in Physics, ibid., 1926-29; Instr. in Physics Univ. of Pittsburgh, 1929-30; Instr., Lehigh Univ., 1930-36 Asst. Prof., ibid., 1936-40; Guggenheim Fellow, Seismic Investigations of Ocean Basins, 1938-40; Assoc. Prof., Lehigh Univ. 1940-44; Rsch. Assoc., Woods Hole Oceanographic Instn., 1940-44; Assoc. Prof., Columbia Univ., 1944-47; Prof., ibid., 1947-59 Higgins Prof., ibid., 1959—; Dir., Lamont Geol. Obs., ibid. 1949—. Hon. Pos.: Comm., Geol. Soc. of Am.; Vice Pres., Pres. A.G.U.; Pres., Seismological Soc. of Am.; Comm. on Oceanography, Natl. Acad. of Scis.; N.A.S.A. Space Sci. Working Gr. on Lunar Explorations; Consultant, President's Sci. Advisory Comm. Mem.: Am. Phys. Soc.; Am. Math. Soc.; A.A.A.S.; Am. Geographical Soc.; Phi Beta Kappa; Sigma Xi; Natl. Geographic Soc. A.A.P.G.; Century; Cosmos; Explorers. Co-author: Elastic Waves in Layered Media, 1957. Contbr. to: Jour. Geophys. Rsch.; Geol. Soc. Am. Bull.; Seis. Soc. Am. Bull.; Deep-Sea Rsch.; Geophys. Am. Assn. Pet. Geol. Bull. Gen. Int.: Agassiz Medal, Natl. Acad. of Scis.; U. S. Navy Distinguished Serv. Award; William Bowie Medal, A.G.U.; Order of Naval Merit, Rank of Cmdr., Argentine Republ.; Vetlesen Prize; John Fleming Medal; Joseph Priestley Award, Dickinson Coll.; Guggenheim Fellow. Areas of Rsch.: Seismol.; Marine Geophysics; Seismic Reflection Survey

EYSTER, Henry Clyde (Ph.D.), Rsch. Plant Physiologist, Charles Kettering Fdn., Yellow Springs, Ohio. Home Add.: 1410 Meadow Lane, Yellow Springs, Ohio. PLANT PHYSIOLOGY, PHOTOSYNTHESIS NUTRITION AND CULTURE OF ALGAE. b. Dornsife, Pa., July 1, 1910. s. Roy and Mary Susa (Reed) E. Edn.: A.B., Bucknell Univ., 1932; M.A., Univ. of Ill., 1934; Ph.D., ibid., 1936. m. Dora May Trexler, Dec. 25, 1937. c.: Richard Alan. Exp.: Instr. N. C. St. Coll., 1936-37; Asst. Prof. and Assoc. Prof., Univ. of S. D., 1937-46; Rsch. Plant Physiologist, Chas. F. Kettering Rsch. Lab., Yellow Springs, Ohio, 1946—. Hon. Pos.: Chmn., Plant Sci. Sect., Ohio Acad. of Sci. Mem.: Botanical Soc. of Am.; Am. Soc. of Plant Physiologists; Am. Inst. of Biological Scis.; Phycological Soc. of Am.; Ohio Acad. of Sci.; Sigma Xi; Lions Club. Contbr. to: Sci.; Nature; Am. Jour. Botany; Plant Physiol.; Plant and Soil; Ohio Jour. of Sci.; Botanical Rev.; Arch. of Biochem. and Biophysics; Limnol. and Oceanography; Biochem. and Biophysical Rsch. Communications; Canadian Jour. of Botany. Areas of Rsch.: Plant Physiol.; Photosynthesis; Culture and Nutrition and Biochem. of Algae and Higher Plants.



EYTINGE, Bruce Dilworth (Mr.), Pres., Southwest Products, Inc., Rt. 4, Box 90, San Antonio, Tex. APPLIED PHYSICS, INSTRUMENTATION, AUTOMATIC CONTROL OF PROCESSES. b. N.Y.C., July 6, 1919. s. Bruce S. and Dorothy (Dilworth) E. Edn.: Polytechnic Inst. of Brooklyn, 1937-40. m. Ellen McGantlin, Oct. 15, 1955. c.: Laura Ellen; David Bradley. Exp.: Rsch. Engr., Sperry Gyroscope Co., Garden City, N. Y., 1940-44; Vice-Pres. and Ch. Engr., Elec. Sorting Mach. Co., Grand Rapids, Mich., 1944-46; Partner, Manhattan Rsch. Labs., N.Y., 1946-52; Consulting Editor, Prod. Des. and Dev. News, N.Y.C., 1954; Pres., Southwest Products Inc., San Antonio, Tex., 1953—. Mem.: A.A.A.S., Am. Physical Soc.; Tex. Acad. of Sci. Hon. Frat.: Pi Kappa Phi. Serv. Rec.: U.S.A.F. Gen. Int.: Technical Consultant, 1946—. Areas of Rsch.: Automatic Controls and Computers; Optical and Photoelectric Instr.; Food Processing; Electronics; Microwaves; Ultrasonics; X-rays; Crystallography; Photography; Interior and Exterior Ballistics; Pharmaceutical; Biological and Radiation Instr.; Acoustics; Fuel Cells.

AGERSTROM, William Henry (Ph.D.), Prof. Emeritus of Math., ity Coll. of N. Y., N. Y.; Presently Prof., Math., Pan American Coll., Edinburg, Tex. Home Add.: 1101 Whitewing Dr., McAllen, Tex. MATHEMATICS AND MATHEMATICAL EDUCATION. b. March 24, 1891, Bucatunna, Miss. s. John and Kathryn (O'Leary) F. Edn.: A.B., Tulane Univ., 1924; M.A., Columbia Univ., 1927; Ph.D., ibid., 1933; summers, Tulane Univ., 1917, '19, '22, '23; Peabody Coll., 1918; Univ. of Va., 1920; Univ. of Colo., 1921; Ala. Poly., 1929; Columbia Univ., 1926, '27, '30. m. Lenore Lindsey of Kirksville, Mo., June 6, 1925. d. Harry Smithers and Molly Wilkes Lindsey. c.: Gerald Francis. Exp.: Mobile Pub. Schl. System, Ala., 1912-29; Pres. H. S. Math. Sect., Ala. Edn. Assn., 1929-30; Ala. Coll. Sum. Schl. Tchr., 1928; Dept. of Edn., Ala. Poly., Summer Schl., 1929; Assoc. Prof., City Coll., 1930-57; Instr., Manhattanville Coll., Summer Schl., 1930; Extension Div., Manhattan Coll., 1940-41; E.S.M.W.T., Math., City Coll., N.Y.C., 1941-43; Chmn., Math., A.S.T.P. and A.S.T.R.P., City Coll., 1943-44; Visiting Prof. of Math., Univ. of Sou. Calif., Summer Schl., 1941; Univ. Trng. Command, Florence, Italy, 1945. Mem.: A.A.U.P.; Vice-Chmn. of the Metropolitan, N. Y. Section of the Mathematical Assn. of Am., 1952-53; Chmn., Met. N. Y. Soc., 1953-54; Exec. Dir. of the Contest in H. S. Math., Jointly Sponsored by the Math. Assn. of Am. and the Soc. of Actuaries; Math. Assn. of Am.; Am. Math. Soc.; Am. Assn. of Univ. Profs.; Sigma Phi Epsilon; Phi Kappa Theta; Kappa Delta Phi. Ph.D. Dissertation: Math. Facts and Processes Prerequisite to the Study of the Calculus. Travel: U. S.; Can.; Mex.; Europe; Africa. Hobbies: Travel; Reading; Theatre; Bridge. Listed in: Men of Mathematics and Graduate Courses Required for Mathematics Majors Getting M.S. Degree in Edn.

FAHRNEY, Delmer Stater (Mr.), Rear Admiral, U.S.N., Ret.; Secy. to the Comm. on Sci. and the Arts, Franklin Inst., Phila., Pa. Home Add.: Roundelay, Chadds Ford, Pa. AERONAUTICAL ENGINEER; GUIDED MISSILE PIONEER. b. Grove Indian Territory, Okla., Oct. 23, 1898. s. Albert F. and Lillian (Pugh) F. Edn.: B.S., U. S. Naval Acad., 1919; M.S., Mass. Inst. of Tech., 1930. m. Agnes W. Kelly, June 2, 1925. c.: Dawn; Delmer S., Jr.; Carol; Paula. Exp.: U. S. Navy, 1916-50; Eastern Rep. for Coleman Engrng. Co., Los Angeles, 1950-51; Eastern. Rep. for White Rodgers Elec. Co. of St. Louis, Mo., 1951-53; Historian for Bur. Aero., Navy Dept., Wash., D. C., 1953-58; Secy. to the Comm. on Sci. and the Arts, Franklin Inst., 1957—. Mem.: Inst. of Aero. Scis.; Am. Rocket Soc.; S.A.R. Soc.; Union League of Phila.; U.S.N.A. Alumni Assn.; Retired Officers Assn., and others. Author: History of Radio Controlled Aircraft and Guided Missiles, 1958. Patents: Guided Missiles; Flying Aircraft Carrier; Rotary Internal Combustion Engine; Extension Flaps; Wire Wound Propeller, and others. Gen. Int.: Commendation by Secy. Navy, 1938; Commendation and Ribbon by Secy. Navy, 1945; Legion of Merit, 1945; Gold Star in Lieu of 2nd Legion of Merit, 1957. Areas of Rsch.: Aeronautical Engrng.; Radio Controlled Aircraft (Developed the Target Drone); Guided Missiles (Designed and Tested First Successful Guided Missile).

FAILLO, Philip S. (D.D.S.), (M.D.S.), Oral Surgeon, Suite 206, Empire Bldg., Columbus, Ga. Home Add.: 82 Ft. Benning Rd., Columbus, Ga, ORAL SURGERY; PATHOLOGY; PHYSIOLOGY; ANATOMY; RESEARCH BIOLOGY. b, Melrose Park Ill., Dec. 13, 1907. s. John S., Sr. and Mary (Larocco) F. Edn.: D.D.S., Loyola Univ., Chicago Coll. of Dental Surgery, 1932; M.D.S., ibid., 1941. m. Laura Greene, Jan. 7, 1959. c.: Joyce Esch; Mrs. Bette Jarrell Green. Exp.: Instr., Loyola Univ., Chicago Coll. of Dental Surg., Chicago, Ill., 1939-47; Asst. Prof., Chicago Coll. of Dental Surg., 1941-48; Consultant and Dir. of Dent. Intern. Trng., 1958-61; Lectr. in Oral Surg. and Basic Scis., 1958-61; Oral Surgeon, Columbus, Ga., 1961—. Mem.: Am. Acad. of Oral Pathol.; Am. Men of Sci.; Am. Assn. for the Adv. of Sci.; Am. Med. Soc. of Vienna, Austria; Assn. of Military Surgeons; Am. Dental Soc.; Ga. St. Dental Soc.; Western Dist. of Ga.; Blue Key; Omicron Kappa Upsilon; Delta Sigma Delta. Contbr. to: Jour. Oral Surgery; Jour. of Am. Dental Assn.; Jour. of Dental Rsch.; U. S. Armed Forces Med. Jour.; Ill. Dental Jour. Serv. Rec.: U. S. Army Dental Corps, 1952-61. Areas of Rsch.: Oral Surgery, Pathology, Physiology, Anatomy, Proteolytic Enzymes, Teaching.

FAIRBANKS, Eugene Fox (M.D.), Chief of Anesthesiol., St. Lukes Hosp., Bellingham, Wash. Home Add.: 815 17th, Bellingham, Wash. MEDICINE; ANESTHESIOLOGY. b. Eugene, Ore., Mar. 20, 1921. s. Dr. Avard T. and Beatrice Maude (Fox) F. Edn.: B.S., Univ. of Mich., 1942; M.D., ibid., Med. Schl., 1945. m. Florence Marie Sundwall, Dec. 19, 1944. c.: Eugene S.; Suzanne; Lenore; Marcus Allen; Mary Annette; Peter Nathan; Christopher Neil; Laura Diane. Exp.: Prac. of Med. and Surg., Kennewick, Wash., 1949-57; Chf. of Anesthesiol., St. Lukes Hosp., 1959. Mem.: Am. Med. Assn.; Wash. St. and Whatcom Co. Med. Socs.; Am. Acad. of Gen. Prac.; Am. Soc. of Anesthesiologists; A.A.A.S.; Kiwanis. Contbr. to: The Mason Clinic Bull. Serv. Rec.: U. S. Army Med. Corps, 1946-48. Areas of Rsch.: Anesthesiology.

FAIRBANKS, Harold Vincent, Prof., Metallurgical Engrng., W. Va. Univ., Morgantown, W. Va. Home Add.: 22 Savannah Ave., Morgantown, W. Va. PHYSICAL METALLURGY. b. Des Plaines, Ill., Dec. 7, 1915. s. Oscar Wm. and Muriel Adelade (Hullet) F. Edn.: B.S., Mich. State Univ., 1937; M.S., ibid., 1939. m. Marilyn Elizabeth Markussen, July 20, 1951. c.: Elizabeth Muriel. Exp.: Instr., Ch.E. Dept., Univ. of Louisville, 1940-42; Asst. Prof., Ch.E., Rose Polytech., Terre Haute, Ind., 1942-47; Asst. Prof., Ch.E., W. Va. Univ., 1947-49; Assoc. Prof., Ch.E., ibid., 1949-55; Prof. of Met. Engrng., ibid., 1955—. Hon. Pos.: Adviser for Mining and Metallurgical Engrng. Dept., Taiwan Provincial Cheng Kung Univ., Tainan, Taiwan, China, 1957-59. Mem.: Am. Soc. Metals; Am. Inst. Met. Engrng.; Am. Chem. Soc.; Am. Soc. Engrng. Edn.; A.A.A.S.; W. Va. Acad. Sci.; Natl. and State Soc. Prof. Engrng.; Hon. Mem., Chinese Inst. of Engrs.; Am. Powder Met. Inst.; Sigma Xi; Tau Beta Pi; Phi Kappa Phi; Phi Mu Alpha; Lambda Chi Alpha. Contbr. to: Jour. Am. Cer. Soc.; Ind. Eng. Chem.; Jour. Acoustical Soc. of Am.; Chinese Inst. of Engrng. Areas of Rsch.: Metallurgical Applications of Ultrasonic Energy; Adherence of Glass to Metals; Powder Metallurgy.

FAIRBRIDGE, Rhodes Whitmore (Sc.D.), Prof. of Geol., Columbia Univ., N. Y. 27, N. Y. Home Add.: 420 Riverside Dr., N. Y. 25, N. Y. GEOLOGY. b. Pinjarra, W. Australia, May 21, 1914. s. Kingsley O. and Ruby E. (Whitmore) F. Edn.: B.A., Queens Univ., Can., 1936; B.Sc., Oxford Univ., 1940; D.Sc., Univ. of W. Australia, 1944. m. Dolores G. Carrington, 1943. c.: Kingsley. Exp.: Field Geologist, Iraq Petroleum Co., Middle East, 1938-40; Lectr., Univ. of W. Australia, Perth, Australia, 1946-54; Prof., Columbia Univ., N.Y.C., 1954—. Hon. Pos.: Chmn., Shorelines Comm., Internatl. Quaternary Assn. Mem.: Geol. Socs. of London; Geograph. Soc. of Am.; Am. Assn. of Petroleum Geologist; Geochem. Soc.; Am. Geophys. Union; Sigma Xi. Contbr. Author: Eustatic Changes of Sea Level; Pleistocene and Recent Coral Reefs of Australia. Contbr. to: Am. Jour. of Sci.; Bull. Am. Assn. Petroleum Geol.; Jour. of Geol.; Quart. Jour. Geol. Soc. London; Bull. Soc. Geol. France. Serv. Rec.: Royal Australian Air Force, 1943-46. Gen. Int.: Mem., 1952, Capricorn Expedition to S. Pacific. Areas of Rsch.: General Geology, Marine Geology, Coral Reef Ecology, Physical Geography, Quaternary Climatology.

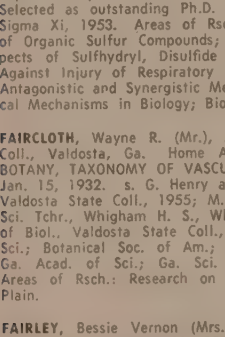
FAIRBANKS, Richard Henry, Sr. (Mr.), Senior Rsch. Scientist, Techn. Rsch. Grp., Syosset, N. Y. Home Add.: 20 Frostfield Pl., Huntington Sta., N. Y. PHYSICAL CHEMISTRY. b. Worcester, Mass., July 14, 1928. s. Vincent P. and Florence (Pariso) F. Edn.: A.B., N. Y. Univ., 1955; M.S., ibid., 1959. m. Rosaria Rado, Aug., 1950. c.: Richard; Patricia; Mark; Elizabeth. Exp.: Staff, Worcester Fdtn. for Exptl. Biol., 1947; Staff, Sloan-Kettering Inst. for Cancer Rsch., 1948-49; Staff, N. Y. Univ. Schl. of Med., 1949-56; U.S.P.H.S. Special Rsch. Fellow, 1956-59; Rsch. Assoc. in Pediatrics, N. Y. Univ. Med. Schl., 1959-60; Instr. Urology (Chemistry), ibid., 1960-61; Instr. Pediatrics, N. Y. St.

Univ. Med. Schl., 1960-61; Sr. Rsch. Scient., Techn. Rsch. Grp., 1961—. Mem.: Am. Inst. Chem.; Cobientz Soc.; Electrochem. Soc.; Am. Assn. for Adv. Sci.; Am. Chem. Soc.; Sigma Xi; N. Y. Acad. Scis.; Fellow, A.I.C.; Fellow, A.A.A.S. Contbr. to: Arch. Biochem. Biophysics; Annals N. Y. Acad. Sci.; Fed. Proc.; Anal. Chem.; Endocrinol.; Jour. Clin. Endocrinol. Metab.; Annals Rheumatic Dsieases; Proc. I.R.E. Canada. Areas of Rsch.: Physical Chem.; Semiconductor Materials; Anal. Steroid Chem.; Instrumental Analysis; Chem. Literature; Data Processing; Microelectronics; Thin Films; Glass Metal Adherence; Laser Welding.

FAIRCHILD, Edward Joseph, II (Ph.D.), Pharmacologist, Occupational Health Field Hqs., U. S. Pub. Health Serv., 1014 Broadway, Cincinnati 2, Ohio. Home Add.: 1610 Longbourne St., Cincinnati 30, Ohio. PHARMACOLOGY AND TOXICOLOGY. b. Gallup, N. Mex., Feb. 5, 1923. s. Leo and Anne (Koenig) F. Edn.: Ph.D., La. St. Univ., 1954. m. Billie June Spurlin, Jan. 29, 1944. c.: Victoria June; Krisha Jann; Robyn Janel. Exp.: Grad. Asst., Invert. Zool. and Mammalian Embryol., La. St. Univ., 1949-51; Sr. Fellow, Indusl. Rsch. Fellowship, Toxicol., ibid., 1951-54; Instr., Microbiol., Our Lady of the Lake Nursing Schl., Baton Rouge, La., 1953-54; Project Ldr., Fisheries Sect., La. Wildlife and Fisheries Comm., 1954-55; Biologist, Oyster and Water Bottoms Div., ibid., 1955-56; Pharmacolst., Toxicol. Sect., Occupational Health Field Hqs., U. S. Pub. Health Serv., Cincinnati, Ohio, 1956—. Mem.: Am. Indusl. Hyg. Assn.; A.A.A.S.; Soc. Exptl. and Med.; A.C.S.; Lambda Chi Alpha; Sigma Xi. Ph.D. Dissertation: The Effects of Lowered Oxygen Tensions Upon the Susceptibility of Daphnia Magna to Certain Inorganic Salts, 1954. Contbr. to: Am. Indusl. Hyg. Jour.; A.M.A.; Arch. Indusl. Hyg.; Proc. Soc. Exptl. Biol. and Med.; Sci.; Pharmacol. and Exptl. Therap. War Record: U. S. Army, 1942-46. Gen. Int.: Selected as outstanding Ph.D. candidate in Scis. by La. Chapt., Sigma Xi, 1953. Areas of Rsch.: Toxicology and Pharmacology of Organic Sulfur Compounds; Prophylactic and Therapeutic Aspects of Sulfhydryl, Disulfide and Inorganic Sulfur Compounds Against Injury of Respiratory Irritant Gases and or Irradiation; Antagonistic and Synergistic Mechanism in Toxicology; Free Radical Mechanisms in Biology; Bioassay of Air and Water Toxicants.

FAIRCLOTH, Wayne R. (Mr.), Asst. Prof., Biol., Valdosta State Coll., Valdosta, Ga. Home Add.: Arbor Farm, Whigham, Ga. BOTANY, TAXONOMY OF VASCULAR PLANTS. b. Grady Co., Ga., Jan. 15, 1932. s. G. Henry and Ruby (Sanders) F. Edn.: B.S., Valdosta State Coll., 1955; M.Ed., Univ. of N. C., 1959. Exp.: Sci. Tchr., Whigham H. S., Whigham, Ga., 1953-61; Asst. Prof. of Biol., Valdosta State Coll., 1961—. Mem.: Am. Assn. Adv. Sci.; Botanical Soc. of Am.; Sou. Appalachian Botanical Club; Ga. Acad. of Sci.; Ga. Sci. Tchrs. Assn.; Sigma Alpha Chi. Areas of Rsch.: Research on the flora of the Georgia Coastal Plain.

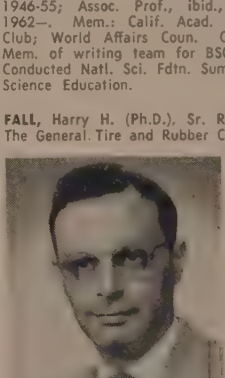
FAIRLEY, Bessie Vernon (Mrs.), Math. Tchr., Opelousas H. S., Opelousas, La. Home Add.: 137 West Jefferson St., Opelousas, La. MATHEMATICS, TEACHING HIGH SCHOOL STUDENTS. m. Eola, La., May 24, 1899. d. Matthew Parks Vernon and Florine Elizabeth (O'Neal) V. Edn.: B.A., La. Coll., Pineville, La., 1923; M.A., Univ. of Southwestern La., 1959. m. Morton Cowan Fairley, May 27, 1927. c.: William Morton; James Vernon. Exp.: Tchr. of Math. and Scis., Moss Point H. S., Moss Point, Miss., 1924-47; Tchr. of Math., Holmes Co. H. S., Bonifay, Fla., 1947-49; Tchr. of Math. Sci., Delcambre H. S., Delcambre, La., 1949-52; Sci. and Math., Opelousas H. S., Opelousas, La., 1952-62. Hon. Pos.: Chmn., St. Landry Parish Math. Tchrs. Assn.; Sponsor, Mu Alpha Theta; Chmn., St. J.C.L. Mem.: Natl. Edn. Assn.; La. Tchrs. Assn.; Natl. Coun. of Math. Tchrs.; St. Landry Parish Math. Tchrs.; Kappa Mu Epsilon; Mu Alpha Theta. Contbr. to: La. Tchrs. Jour. Areas of Rsch.: Set Theory; How Matrices Are Used; Mathematics.



FALK, Carolyn R. (Mrs.), Sr. Bacteriologist, (Retired, Nov., 1957), Dept. of Health, City of N. Y. Bureau of Labs., Foot of East 15th St., N. Y. 9, N. Y. Home Add.: 169 E. 69th St., N. Y. 21, N. Y. BACTERIOLOGY. b. Elmsford, N. Y., Apr. 28, 1902. d. Louis and Pearl (Asher) Rosenstein. Edn.: B.A., Smith Coll., 1923. m. K. George Falk, Oct. 17, 1935 (dec., Nov. 22, 1953). Exp.: Lab. Asst., Dept. of Health, City of N. Y., 1924-30; Bacteriolst., Dept. of Health, Bur. of Labs., N. Y., 1930-57; Sr. Bacteriolst., ibid., 1957, Retired Nov., 1957. Hon. Pos.: Mem., Bd. of Dirs., Lab. of Indusl. Hyg., 1953-54; Treas., ibid., 1954. Mem.: Fellow, Am. Pub. Health Assn.; A.A.A.S.; Soc. Am. Bacteriolst.; Am. Assn. of Immuniologists; Soc. Exptl. Biol. and Med.; N. Y. Acad. of Scis.; Am. Med. Writers Assn.; Royal Soc. of Health; Smith Coll. Club; League for Women Voters. Contbr. to: Jour. of Bacteriol.; Am. Jour. of Pub. Health; Jour. of Clin. Investigation; Am. Jour. of Hygiene; Jour. of Exptl. Med.; Proc. of Soc. of Exptl. Biol. and Med. Gen. Int.: First Aid Instr., Am. Red Cross, 1942; Vice-Pres., Vice-Chmn., 1956-59, Chmn., 1959-61, Metropolitan Br. of the Am. Church Union; Financial Chmn., Business and Profl. Group of Manhattan United Church Women, 1957-59; Treas., Manhattan United Church Women, 1960—; Supply Chmn., Upper Manhattan Day Branches, Womans Auxiliary of the Protestant Episcopal Church of Diocese of N. Y., 1957-60; Supply Chmn., Episcopal Churchwomen, Diocese of N. Y., 1960—; Secy., Bd. of Governors, Fingerlakes Conf., 2nd Province Episcopal Ch. Areas of Rsch.: Standardization and Testing of Biologic Products; Classification and Typing of Menigococci and Pneumococci; Scarlatinal Toxin; Typhoid in Oysters; Preservatives Used in Biologic Products; Antibiotic Assays.

FALK, Doris Finger (Ph.D.), Prof. of Biol., Fresno State Coll., Fresno, Calif. Home Add.: 4551 N. College, Fresno 4, Calif. SCIENCE EDUCATION. b. Corning, Calif., May 7, 1911. d. C. P. and Jennie Miller (Finger) Falk. Edn.: A.B., Univ. of Calif., Berkeley, 1931; M.A., ibid., 1932; Ph.D., ibid., 1956. m. Dr. Karl Falk, June 21, 1936. Exp.: Asst. Prof., Fresno State Coll., 1946-55; Assoc. Prof., ibid., 1956-62; Prof. of Biol., ibid., 1962—. Mem.: Calif. Acad. of Sci.; A.A.A.S.; Fresno Musical Club; World Affairs Coun. Contbr. to: Sci. Edn. Gen. Int.: Mem. of writing team for BSCS H. S. Biology textbooks, 1961; Conducted Natl. Sci. Fdtn. Summer Inst., 1959. Areas of Rsch.: Science Education.

FALL, Harry H. (Ph.D.), Sr. Rsch. Chemist, Central Rsch. Labs., The General Tire and Rubber Co., Akron, Ohio. Home Add.: 1198 Garman Rd., Akron 13, O. PHYSICAL ORGANIC CHEMISTRY. b. Lucenec, Czechoslovakia, Dec. 8, 1920. s. Ernest B. and Julia (Gaertner) F. Edn.: B.S., Pa. St. Univ., 1942; Ph.D., ibid., 1950. m. Agnes Jett, Sept. 3, 1947. c.: Karen Lee; Marcia Lynn; Lisabeth Ann. Exp.: Rsch. Chemist, Sylvania Indusl. Corp., Fredericksburg, Va., 1942-44; Sr. Rsch. Chemist, The Upjohn Co., Kalamazoo, Mich., 1951-56; Sr. Rsch. Chemist, Mobay Chem. Co., N. Martinsville, W. Va., 1956-57; Sr. Rsch. Chemist, General Tire and Rubber Co., 1957—. Mem.: Am. Chem. Soc.; N. Y. Acad. of Scis.; A.A.A.S.; Am. Inst. of Chemists; Phi Lambda Upsilon; Pi Mu Epsilon; Akron Civic Concert Orchestra; Doctors' Orchestra. Contbr. to: Indusl. and Engrng. Chem. Jour. of the Am. Chem. Soc. Serv. Rec.: U. S. Army, 1944-46, 1st Lt. Areas of Rsch.: Origin of Petroleum; Chemotherapy; Polymerization Mechanisms; Epoxide Synthesis.



FALLON, Carlos (Mr.), Administrator of Value Engrng., Missile and Surface Radar Div., Radio Corp. of Am., Moorestown, N. J. Home Add.: 461 Buttonwood Lane, Riverton, N. J. MECHANICAL ENGINEERING, OPERATIONS RESEARCH ENGINEERING APPLICATION OF VALUE THEORY. b. Bogota, Colombia, Jan. 21, 1909. s. Diego Jose and Blanca (Convers de) F. Edn.: Colombian Government Mili. Acad., Bogota, Colombia, 1928; Brit. Naval Mission, 1936. m. Maureen Byrne, June 16, 1934. c.: Daniel; Patricia. Exp.: Proc. Engr., Nems-Clarke Co., Silver Spring, Md., 1955-56; Systems Engr., Vitro Silver Spring Labs, Vitro Corp., Silver Spring, Md., 1956-57; Chf. Mech. Design Engr., Nems-Clarke Co., ibid., 1957-59; Mgr. of Mfg., Tele-Dynamics, Inc., Phila., Pa., 1959-60; Admin. of Value Engrng., Missile and Surface Radar Div., Radio Corp. of Am., Moorestown, N. J., 1961— Mem.: Am. Soc. of Naval Engrs., Inc.; Am. Soc. of Mech. Engrs.; Math. Assn. of Am.; Royal Astronomical Soc. of Can.; Can. Math. Congress; Inst. of Radio Engr. Author: A Variety of Fallon, 1950. Contbr. to: Trans. of the Inst. of Radio Engrs.; Proc. of the Inst. of Aerospace Sci.; Jour. of the Math. Assn. of Am. U. S. Naval Inst. Procs. Serv. Rec.: Colombian Navy, 1931-41; U. S. Air Force, 1943-46. Gen. Int.: Awarded the Cervante Medal of the Hispanic Inst. for Contributions to Western Hemisphere Solidarity. Areas of Rsch.: Problems of Choice and Strategy, Statistical Decision Theory; Space Navigation and Guidance.

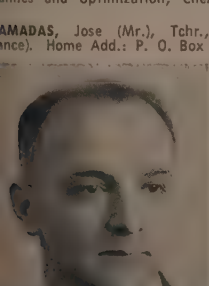
ALOON, William Wassell (M.D.), Assoc. Prof. of Med., Univ. Hosp., racuse 10, N. Y. Home Add.: 231 Ambergate Rd. INTERNAL MEDICINE, METABOLISM AND NUTRITION. b. Pittsburgh, Pa., July 6, 1920. s. Joseph C. and Martha (Wassell) F. Edn.: A.B., Allegheny Coll., 1941; M.D., Harvard Med. Schl., 1944. m. Roberta Emery, Sept. 11, 1948. c.: Karen Louise; William W., Jr.; Nancy Elizabeth. Exp.: Intern, Pa. Hosp., Phila., 1944-45; Asst. Res. Med., Albany Hosp., N. Y., 1945-46; Res. in Med., ibid., 1946-47; Rsch. Fellow, Harvard Med. Schl., 1947-48; Asst. Prof. Oncology, Albany Med. Coll., 1948-50; Instr., St. Univ. of N. Y., 1950-51; Asst. Prof., ibid., 1951-56; Assoc. Prof., ibid., 1956—. Mem.: A.A.-A.S.; Am. Fed. Clin. Rsch.; Sigma Xi; Am. Coll. of Physicians; Am. Assn. for Study of Liver Disease;

m. Inst. of Nutrition; A.M.A.; Phi Delta Theta; Univ. Club of racuse. Contbrng. Author: The Clinical Use of Aldosterone ntagonists, 1960. Contbr. to: New England Jour. Med.; Jour. b. and Clin. Med.; Am. Jour. Med.; Jour. Clin. Invest.; Am. ur. Med Sci.; Annals of Internal Med.; Ann. N. Y. Acad. of is.; N. Y. State Jour. of Med. Areas of Rsch.: Metabolic isease, Nutrition, Liver Disease, Endocrinology.

AN, Liang-tseng (Ph.D.), Assoc. Prof. of Chem. Engrng., Kans. . Univ., Manhattan, Kans. Home Add.: 2059 College View Rd., Manhattan, Kan. CHEMICAL ENGINEERING. b. Formosa, Aug. 7, 1929. s. Chung Chang and Chen Moi (Hwang) F. Edn.: B.S., Natl. Taiwan Univ., Taiwan, China, 1951; M.S., Kans. St. Univ., 1954; Ph.D., W. Va. Univ., 1957; M.S. (Math.), ibid., 1958. m. Eva Cheung, June 2, 1958. c.: Tso Yee; Judy Tso-ling. Exp.: Prodn. Plant Designer and Opr., Kaohsiung Agric. Chem. Wks., China, 1951-52; Rsch. Asst. and Specialist, W. Va. Univ., 1954-58; Instr., Kans. St. Univ., 1958-59; Rsch. Fellow, duPont Summer Rsch. Grants, 1959, '60; Asst. Prof., Kans. St. Univ., 1959-61; Assoc. Prof. of Chem. Engrng., ibid., 1961—. Hon. Pos.: Assoc. Mem., Am. Inst. of Chem. Engrs.

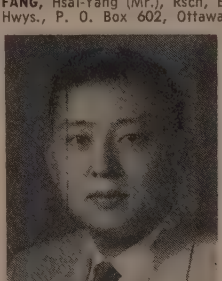
iem.: Am. Chem. Soc.; The Soc. of Chem. Engrs., Japan; Phi appa Phi; Phi Lambda Upsilon. Contbr. to: Biochem. Engrng. nd Tech.; Can. Jour. of Chem. Engrng.; Ind. Engrng. Chem.; I.Ch.E. Jour.; Chem. Engrng; Cereal Chem.; Int. Jour. of Heat nd Mass Trans.; Genie Chemie; Appl. Scientific Rsch.; Petroleum efiner; Bull. of Engr. Exptl. Sta., Kans. Sta. Univ. Areas of sch.: Fluidization, Transport Phenomena, Chemical Process Dyamics and Optimization; Chem. Reaction Engrng.

AMADAS, Jose (Mr.), Tchr., Journalist and Translator (free nce). Home Add.: P. O. Box 8, Rego Park 74, N. Y. CULTURAL ANTHROPOLOGY, LINGUISTIC SCIENCE, AREA STUDIES. b. Rio de Janeiro, Brazil, Apr. 10, 1908. s. Joao and Francisca (Herrera) F. Edn.: B.Sc. and B.Litt., Coll. Pedro II and Coll. S. Vicente, summa cum laude, 1927; C.P.A., Dept. of Bus. Edn., Brazil, 1932; M.A., Univ. of Mich., 1942; Postgrad. Studies, Univ. of Wis., 1943; Columbia Univ., 1942-55. m. 1st: (div.). c.: Nelson. m. 2nd: Violeta Zubcov, May 6, 1957. Exp.: Buyer and Salesman, S. A. White Martins, Engrs. and Importers, Rio, 1926-28; on the Staff of Bank of Brazil, 1928—; Dir., Inst. Britannia, Rio, 1937-42; Translator-Ed., United Press, Rio, 1938; Instr., Tech. Council on Econ. and Finance, Ministry of Finance, 1939-



0; Instr., Inst. Watson de Organiz. do Trabalho (Internatl. Bus. Machines), Rio, 1939-40; Assoc. Prof., Coll. Pedro II, 1939-44; nstr., Am. Council of Learned Societies' Inst. for Brazilian and ortuguese Studies, Univ. of Vt., 1942; Instr., Univ. of Mich., 942; Lectr., Columbia Univ. Exten., 1943-44; Instr., Faculty of hilos., Columbia Univ., 1944-47; Dir. of Lib., Bibliogr. and Cultural Archives, Hispanic Inst. in the U. S., Columbia Univ., 1943-7; Ed.-in-Chf., The Reader's Digest, ed. for Brazil and Portugal, 947-50; Radio Commentator and Actor on Weekly Programs ponsored by the U. S. Govt. over NBC, 1944-45, OWI, 1944-45, BS, 1944-47, Voice of Am., 1952-53 and WRUL, 1953-54, networks; Film and TV Transl. and Narrator, 20th Century-Fox, 1950-6, U. S. Dept. of State, 1951-53, U. S. Information Agency, 953—, Universal Pict., 1953-56, Hearst Metrotone, 1954—, United rtists, 1956—, Movietone, 1957—, etc.; Instr., City Coll. of . Y. Exten. Div., 1947-58; Press Officer of the Brazilian Delegation to the United Nations, 1950-55. Hon. Pos.: Fellowship Award Winner, Inst. of Internatl. Edn., N.Y.C., in cooperation with Brazil-U. S. Inst., Rio, 1941-42; Rockefeller Found., N.Y.C., 1942-43; Vice-Pres., N. Y. Chapt., Am. Assn. of Tchrs. of Spanish and Portuguese, 1946, reelected, 1946-47; Pres., Soc. of Language Specialists, 1958-60. Mem.: Acad. Polit. Sci.; Am. Assn. of Tchrs. of Spanish and Portuguese; A.A.U.P.; Am. Econ. Assn.; Hispanic Inst. in the U. S.; Natl. Acad. of Econ. and Polit. Sci.; Am. Assn. for the Adv. of Sci.; Brazilian Press Assn. (ABI); Internatl. Inst. of Ibero-Am. Lit.; Linguistic Soc. of Am.; M.L.A.A.; Am. Topical Assn.; Soc. of Am. Magicians; Internatl. Brotherhood of Magicians; Magicians Guild of Am.; Magic Collectors Assn.; Natl. Geog. Soc.; Natl. Travel Club; N. Y. Enthusiasts; etc. Contbr. to: Revista de Filologia Hispanica (Univ. of Buenos Aires); Romanic Rev.; Columbia Dict. of Mod. European Lit.; New Century Cyclopedia of Names. Travel: Latin Am.; Canada. Hobbies: Travel; Collection of Literature on Magic and Related Performing Arts. Listed in: Dir. Am. Scholars; W. W. in the East; W. W. in N. Y.; W. W. in the United Nations; W. W. in Am. Edn.; Rockefeller Fdtn. Fellowship Dir.; Tracy's Dir. of Magicians; Mike and Screen Press Dir. Areas of Rsch.: Lang. Tchng., Phonetics, Linguistic Geography; Latin-Am. Area Studies; History of Magic, Technology and Science; Systematic Study of Deceptive Factors that Affect the Scientific Observation of Human Capability and Behavior.

FANG, Hsai-Yang (Mr.), Rsch, Engr., Phys. Rsch. Lab., Ill. Div. of Hwys., P. O. Box 602, Ottawa, Ill. Home Add.: 734 River St., Ottawa, Ill. SOIL MECHANICS IN HIGHWAY ENGINEERING. b. Shanghai, China, Nov. 25, 1924. s. C. C. and Pao-li (Wang) F. Edn.: B.S.C.E., Hangchow Univ., China, 1947; M.S.C.E., Purdue Univ., Ind., 1956; Grad. Work, M.I.T., 1959. m. Julia F. Sun, July 2, 1960. Exp.: Instr. and Chf., Soil Mechans. Lab., Natl. Taiwan Univ., Taipei, Taiwan, China, 1947-52; Consult. Engr., Taiwan Power Co., ibid., 1947-52; Rsch. Asst., Purdue Univ., W. Lafayette, Ind., 1953-56; Soils Engr., AASHO Rd. Test, Hwy. Rsch. Bd., Ottawa, Ill., 1956-61; Asst. Chf., Spec. Assn. Br., Natl. Acad. of Scis., AASHO Rd., ibid., 1961-62. Mem.: Am. Soc. of Civil Engrng.; Am. Soc. for Testing Materials; Am. Geophys. Union; Internatl. Assn. for Hydraulic Rsch.; Hwy. Rsch. Bd.; Am. Statl. Assn.; Ind. Engrng. Coun.; Ill. Assn. of Hwy. Engrs.; Ottawa Airmen's Club. Contbr. to: Hwy. Rsch. Abstracts; Hwy. Rsch. Bd.; Am. Soc. of Civil Engrs.; Taiwan Power Engrng. Areas of Rsch.: Highway Materials Research; Evaluation of Pavement Performance; Effect of Weather Conditions on Highway Pavements; Statistical Procedures in Highway Engineering Research.



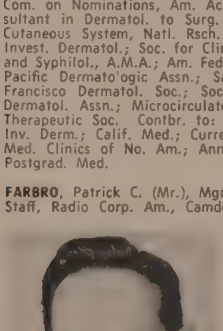
FARA, Frank Joseph (M.D.), 6738 West Cermak Road, Berwyn, Ill. Home Add.: 176 Northwood Road, Riverside, Ill. OBSTETRICS AND GYNECOLOGY. b. Chicago, Ill., March 19, 1908. s. Dr. Frank Joseph, Sr. and Julia (Tupy) F. Edn.: B.S., Univ. of Ill., 1929; M.D., ibid., 1933; Intern, Cook Co. Hospital, Chicago, Ill., 1933-35; Resident in Obstetrics and Gynecology, ibid., 1935-36. m. Nancy Myrtle Fredrickson, Dec. 19, 1938. c.: Frank Joseph, Jr.; Mary Ursula. Exp.: Obstetrics and Gynecology, Chf. Dept., MacNeal Mem. Hosp., Berwyn, Ill., 1936-60; Sr. Attending Man and Consultant, Obstetrics and Gynecol., St. Anthony de Padua Hosp., Chicago, Ill., 1936-62; Instr., Anat., Univ. of Ill., 1935-36; Asst. Prof., Obstetrics and Gynecol., Northwestern Univ. Med. Schl., 1936-62; Sr. Attendant, Obstetrics, Cook Co. Hosp., Chicago, Ill., 1948-62; Prof., Obstetrics, Cook Co. Hosp., Grad. Schl. of Med., 1948—. Hon. Pos.: Former Hd. of Obstetrics Dept., St. Anthony de Padua Hosp., Chicago, Ill. Mem.: Fellow, Am. Med. Assn.; Fellow, Am. Coll. of Surgeons; Fellow, Internal. Coll. of Surgeons; Fellow, Am. Coll. of Obstetricians and Gynecolog.; Chicago Gynecol. Soc.; Cent. Assn. Obstetrics and Gynecol.; Ill. State Med. Soc.; Chicago Med. Soc.; Diplomate, Am. Bd. of Obstetrics and Gynecol.; Alpha Kappa Kappa. Contbr. to: Am. Jour. of Obstetrics and Gynecol.; Obstetrics and Gynecol. Serv. Rec.: U. S. Army Med. Corps, Lt. Col., 1941-46.

FARBER, Eduard (Dr.), Consultant, 4530 Brandywine St., N.W., Wash. 16, D. C. WOOD CHEMISTRY; HISTORY OF CHEMISTRY. b. Brody, Austria, Apr. 17, 1892. s. Samuel and Cecille (Gottlieb) F. Edn.: Dr. Phil., Univ. of Leipzig, Germany, 1916. d. Dora Schmidt, 1922. c.: Elisabeth Lanzi; Irene Aikin; Viola. Exp.: Asst. Sci. Rsch., Kaiser Wilhelm Inst. f. Exper. Therapie, 1916, 1919; Chf. Chemist, Deutsche Bergin A. G. and Holzhydrolyse A.G., 1920-38; Dir. of Rsch., Polyxor Chem. Co., 1939-43; Chf. Chemist, Timber Engrng. Co., 1943-57; Retired, 1957—. Hon. Pos.: Chmn., Wash., D. C., Chapt. of Am. Inst. Chemists, 1947-48; Chmn., Div. of Hist., Am. Chem. Soc., 1955-56. Mem.: A.A.A.S.; A.I.C.; A.C.S.; Forest Products Rsch. Soc.; Hist. of Sci. Soc.; Hist. of Technol. Soc.; Royal Soc. of Arts; Tappi. Author: Die gesch. Entwicklung der Chemie, Berlin, 1921; The Evolution of Chem., N. Y., 1952; Nobel Prize Winners in Chem., N. Y., 1953; Great Chemists, N. Y., 1961. Contbr. to: Berichte d. Chem. Ges.; Naturwissenschaften; Z. Angew. Chemie; Isis; Ind. and Eng. Chem.; Jour. Chem. Edn.; Forest Prod. Jour.; Osiris; Science; Tappi; The Chemist. Areas of Rsch.: Chemical Utilization of Wood and By-products; History of Chemistry, particularly 19th Century.

FARBER, Emmanuel (M.D.), Prof. and Chmn., Dept. of Pathol., Univ. of Pittsburgh Schl. of Med., Pgh. 13, Pa. Home Add.: 5454 Beacon St., Pittsburgh 17, Pa. PATHOLOGY, BIOCHEMISTRY. b. Toronto, Ont., Can., Oct. 19, 1918. s. Morris and Mary (Madorsky) F. Edn.: M.D., Univ. of Toronto, 1942; Ph.D., Univ. of Calif., 1949. m. Ruth Wilma Diamond, Apr. 16, 1942. c.: Naomi Beth. Exp.: Intern and Res. in Pathol., Hamilton Gen. Hosp., Hamilton, Ont., Can., 1942-43; 1944-46; Fellow in Cancer Rsch. of the Am. Cancer Soc., Univ. of Calif. and Cook Co. Hosp., 1947-50; Instr. to Prof. of Pathol. and Biochem., Tulane Univ. Schl. of Med., 1950-61; Prof. and Chmn., Dept. of Pathol., Univ. of Pgh. Schl. of Med., 1961—. Mem.: Am. Soc. of Biol. Chemists; Am. Assn. of Pathol. and Bacteriol.; Am. Soc. for Exptl. Pathol.; Am. Chem. Soc.; Soc. for Exptl. Biol. and Med.; Histochemical Soc.; Internatl. Acad. of Pathol.; N. Y. Acad. of Sci.; A.A.A.S.; Sigma Xi. Contbr. to: Jour. of Biol. Chem.; A.M.A. Arch. of Pathol.; Cancer Rsch.; Proc. of the Soc. for Exptl. Biol. and Med.; Jour. Lab. and Clinical Med. War Record: Royal Canadian Army Med. Corps, 1943-46. Gen. Int.: Parke Davis Award in Experimental Pathology, 1958; Bertha Goldblatt Teplitz Memorial Award, 1961. Areas of Rsch.: Chemical Pathology; Enzyme Histochemistry; Carcinogenesis.

FARBER, Eugene Mark (M.D.), Prof. of Dermatol., Stanford Med. Center, 300 Pasteur Dr., Palo Alto, Calif. Home Add.: 167 Romoso Rd., Portola Valley, Calif. DERMATOLOGY. b. Buffalo, N. Y., July 24, 1917. s. Simon and matilda (Goldstein) F. Edn.: M.S., Univ. of Minn., 1946; M.D., Univ. of Buffalo, 1943; A.B., Oberlin Coll., 1939. m. Ruth Seiffert, Mar. 4, 1944. c.: Charlotte; Nancy; Donald; Mark. Exp.: Fellow, Dermatol. and Syph., Mayo Clinic, Rochester, Minn., 1944-48; Instr., Dermatol., Stanford Univ. Schl. of Med., San Francisco, Calif., 1948-49; Prof., Dermatol., Stanford Univ., Schl. of Med., Palo Alto, Calif., 1949—. Hon. Pos.: Mem., Bd. of Dirs., Am. Acad. of Dermatol. and Syph., 1956-57; Mem., Editorial Bd., Soc. for Inv. Dermatol. Jour., 1956; Mem., Comm. on Research, Stanford Clinic. Gr., 1957; Official Consultant in Dermatol., Bur. of Adult Health, State of Calif. Pub. Health Dept., Calif. Med. Assn., 1960; Mem., Com. on Nominations, Am. Acad. of Dermatol., 1960; Natl. Consultant in Dermatol. to Surg. Gen., USAF; Chmn., Com. on the Cutaneous System, Natl. Rsch. Coun. Mem.: Sigma Xi; Soc. for Invest. Dermatol.; Soc. for Clinc. Invest.; Am. Acad. of Dermatol. and Syphilol., A.M.A.; Am. Fed. for Clin. Rsch.; Calif. Med. Assn.; Pacific Dermato'ogic Assn.; San Francisco Co. Med. Assn.; San Francisco Dermatol. Soc.; Soc. for Exptl. Biol. and Med.; Am. Dermatol. Assn.; Microcirculatory Conf.; A.A.U.P.; A.A.A.S.; Am. Therapeutic Soc. Contbr. to: J.A.M.A.; Jour. of Hematol.; Jour. Inv. Derm.; Calif. Med.; Current Therapy; Arch. Derm. & Syph.; Med. Clinics of No. Am.; Ann. Rev. Phys.; Stanford Med. Bull.; Postgrad. Med.

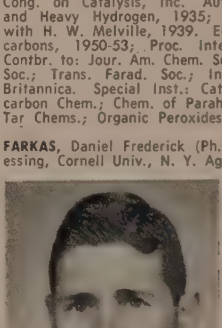
FARBRO, Patrick C. (Mr.), Mgr. Profl. Personnel Programs, R.C.A. Staff, Radio Corp. Am., Camden, N. J. Home Add.: 1729 Addison St., Phila. 3, Pa. INDUSTRIAL PSYCHOLOGY; PERSONNEL RESEARCH AND TRAINING. b. Drumright, Okla., Aug. 14, 1921. s. George and Hazel (Worrall) F. Edn.: A.B., Univ. Tulsa, 1947; M.S., Purdue Univ., 1948. Exp.: Grad. Tchng. Asst., Purdue Univ., 1947-48; Personnel Rsch. Analyst, R.C.A. Victor Gen. Office, Camden, N. J., 1948-49; Supvr., Employment, R.C.A., Lancaster, Pa., 1949-51; Mgr., Personnel Rsch. Div., R.C.A. Staff, Camden, 1951-57; Mgr., Trng. and Personnel Rsch., ibid., 1957-59; Mgr., Professional Personnel Programs, ibid., 1959—. Mem.: Am. Psychological Assn.; Internatl. Assn. Applied Psychol.; Eastern Psychological Assn.; N. J. Psychol. Assn.; Am. Assn. for the Adv. of Sci.; N. J. Academy of Sci.; N. Y. Academy of Sci.; Sigma Alpha Epsilon; Sigma Xi; Psi Chi; Am. Soc. of Trng. Dirs. (Vice-Pres., Phila. Chapt.); Greater Philadelphia Chamber of Comm., Management Manpower Resources Comm.; Exec. Comm., Camden Co. Chapt., Am. Cancer Soc. Contbr. to: Jour. Applied Psychol.; Personnel Psychol. Serv. Rec.: U. S. Navy, Lt.(jg.), 1942-46. Areas of Rsch.: Psychological Testing; Industrial Training and Development; Attitude Research; Selection and Placement Industry; Motivation.



FARINACCI, Nicholas Thomas (Ph.D.), Owner and Dir., Science-Tech., 350 Fifth Ave., New York, N. Y. Home Add.: 3 East Ninth St., New York, N. Y. SCIENTIFIC AND CHEMICAL CONSULTANT, CHEMISTRY; SYNTHESIS OF STEROID HORMONES. b. Brewster, N. Y., Mar. 1903. s. Frank and Marie (Gallo) F. Edn.: B.S., Columbia Univ., 1935; Ph.D., ibid., 1938. m. Louise Michel, Aug. 1931. Exp.: Rsch. on Cancer Radiology, Memorial Cancer Hosp. Lab., N.Y.C., 1926-28; Rsch. Physiologist, N. Y. Univ. Bellevue Med. Coll., 1928-35; Columbia Fellow, Am. Tobacco Co., Ibid., 1936-40; Rsch. Chem., Hercules Powder Co., Wilmington, Dela., 1940-43; Proj. Leader, Am. Cyanamide Co., N.Y.C., 1943; Rocket Rsch., U. S. Naval Acad., 1944; Owner, Dir., Science-Tech., N.Y.C., 1945—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Inst. of Chem.; N. Y. Acad. Sci.; Acad. Polit. Sci.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Ind. Engr. Chem.; Jour. Comp. Physiology; Am. Doc. Inst.; Acad. Polit. Sci. Serv. Rec.: U. S. Naval Acad., 1943-44. Areas of Rsch.: Physical Organic Chem. and Physiology, General Med.

FARKAS, Adalbert (Ph.D.), Asst. Dir. of Rsch., Houdry Process and Chem. Co., 408 Turner Rd., Media, Pa. PHYSICAL CHEMISTRY, INDUSTRIAL ORGANIC CHEMISTRY. b. Hungary, July 10, 1906. s. Stephen and Anna F. Edn.: Ph.D., Frankfurt Univ., 1930; Dr.-Engr. Technic. Univ., Vienna, 1932. m. Deborah Miller, 1936. c.: Edward Joel. Exp.: Instr. in Phys. Chem., Univ. of Frankfurt, Germany, 1931-33; Rsch. Fellow, Dept. of Colloid Sci., Cambridge Univ., England, 1933-36; Asst. Prof. of Phys. Chem., Hebrew Univ., Jerusalem, 1936-41; Group Ldr., Rsch. Dept., Union Oil Co., Wilmington, Calif., 1942-46; Supvr., Rsch. Dept., Barrett Div., Allied Chem. and Dye Corp., Glenolden, Pa., 1946-56; Hd., Org. Rsch. Sect., Rsch. Dept., Houdry Process Corp., Marcus Hook, Pa., 1956-59; Asst. Dir. Rsch., ibid., 1960—. Mem.: Am. Chem. Soc.; Phila. Catalysis Club; Phila. Org. Chemists' Club; Chem. Soc.; Faraday Soc.; Pres. and Dir., Internatl. Cong. on Catalysis, Inc. Author: Orthohydrogen, Parahydrogen and Heavy Hydrogen, 1935; Exptl. Methods in Gas Reactions with H. W. Melville, 1939. Editor: Physical Chemistry of Hydrocarbons, 1950-53; Proc. Internatl. Cong. on Catalysis, 1956. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Chem. Soc.; Trans. Farad. Soc.; Indus. Engrng. Chem.; Encyclopedia Britannica. Special Inst.: Catalysis; Catalytic Oxidation; Hydrocarbon Chem.; Chem. of Parahydrogen and Heavy Hydrogen; Coal Tar Chems.; Organic Peroxides.

FARKAS, Daniel Frederick (Ph.D.), Asst. Ext. Prof. of Food Processing, Cornell Univ., N. Y. Agr. Sta., Geneva, N. Y. Home Add.: 47 Garden Apts., Geneva, N. Y. FOOD PROCESSING AND PRESERVATION. b. Boston, Mass., June 20, 1933. s. Sanford and Lillian (Smith) F. Edn.: B.S., Mass. Inst. of Tech., 1954; M.S., ibid., 1955; Ph.D., ibid., 1960. m. Alice Bridgetta Brady, Jan., 1959. Exp.: Rsch. and Devel. Coordinator, Quartermaster Food and Container Inst., Chicago, Ill., 1956-57; Sr. Food Scientist, Arthur D. Little Inc., Cambridge, Mass., 1960-62; Asst. Ext., Prof. of Food Processing, Cornell Univ., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S., Inst. of Food Technolsts.; Sigma Xi; Pi Tau Sigma. Serv. Rec.: U.S.A.A., 1954—. Areas of Rsch.: Preservation of Foods by Ionizing Radiations.

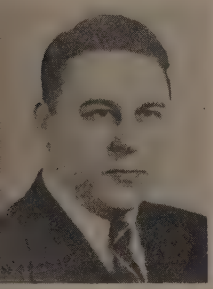


FARMER, William Wilton (Mr.), Dir. Universal Knowledge Found., San Bernardino, Calif. Home Add.: 671 No. "G" St., San Bernardino, Calif. CORRELATION OF SCIENCE AND PHILOSOPHY. b. Shattuck, Okla., Nov. 9, 1910. s. Johnson Charles and Flora Fay (Daniels) F. m. Elsa Arlene Morris, Sept. 11, 1939. c.: La Verne Barbara; Bee Bee; Joy; Arlin J. Exp.: U. S. Distr., Specialty Imports, 1932-42; Fireman, Santa Fe R.R., 1942-45; World Travel Study, Rsch., 1945-48; Realtor Business Brokerage, S. Bd., Calif., 1948-57; Philosopher Commentator, Radio Stas., KRNO, S. Bd., Calif., 1950-55, and KCKC, S. Bd., Calif., 1955—; Founder, Dir., Universal Knowledge Foundation, S. Bd., Calif., 1959—. Mem.: A.A.A.S. Areas of Rsch.: World Student: Travel. Inquisition Comparative Influence of Technology on Applied Philosophies; Private Rsch. and Consultant of Philosophical Trends.

FARNSWORTH, C. Eugene (Ph.D.), Chmn. of Dept. and Prof. of Silviculture, Coll. of Forestry, St. Univ., Syracuse 10, N. Y. Home Add.: 1219 Lancaster, Syracuse 10, N. Y. SILVICULTURE. b. Cresco, Iowa, May 24, 1904. s. C. E. and Louise Manett (Peck) F. Edn.: B.S., Iowa St. Coll., 1926; M.F., Yale Univ., 1928; Ph.D., Univ. of Mich., 1945. m. Frances E. Jones, Dec. 30, 1930. c.: Clinton Engene; John David. Exp.: Tchr. Asst., U. S. Forest Serv., Idaho, 1926-30; Instr. to Assoc. Prof., N. Y. St. Ranger Schl., Wanakena, N. Y., 1930-47; Assoc. Prof. to Prof., State Univ. Coll. of Forestry, Syracuse, N. Y., 1947—; Visiting

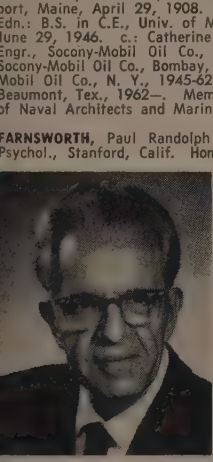
Prof. of Forestry, Univ. of Philippines Coll. of Forestry, 1957-59. Mem.: Phi Kappa Phi; Sigma Xi; A.A.A.S.; Soc. of Am. Foresters; A.A.U.P.; Forest Products Rsch. Soc. Areas of Rsch.: Silvics, Silviculture.

FARNSWORTH, Clyde Houston (Ed.D.), Chmn., Dept. of Bus. Adm. and Prof. of Econ. and Bus., E. Tenn. Sta. Coll., Johnson City, Tenn. Home Add.: 1116 S.W. Ave., Johnson City, Tenn. BUSINESS ADMINISTRATION, ECONOMICS, EDUCATION. b. Johnson City, Tenn., Oct. 6, 1908. s. William A. and Nettie (Crum) F. Edn.: B.S., East Tenn. St. Coll., 1929; A.B., Union Univ., 1934; M.Ed., Rsch. Univ., 1936; A.M., Ohio State, 1939; D.Litt., Webster Univ., 1945; M.S., Miss. St., 1951; Ed.D., Duke Univ., 1954; LL.D., Webster Univ., 1956. m. Edna Jones, Mar. 23, 1929. Exp.: Hd., Dept. of Bus. Admin., Econ. and Geog., Union Univ., 1932-46; Hd., Dept. of Bus. Admin., Econ. and Geog., Miss. Coll., 1946-47; Hd., Mktng. Dept., Miss. St. Coll., 1947-51; Prof. Lctr. in Econ., Wake Forest Coll., 1951-53; Dir. of Secd. Edn., Wilmington, N. C., 1953-55; Prof. of Geog. and Edn., Queens Coll., 1955-57; Psychologist and Lectr. in Psychol., Presby. Hosp., Charlotte, N. C., 1955-57; Psychol. and Test Consultant, Mecklenburg Co. Schls., 1956-57; Psychol. and Lectr. in Psychol., Meml. Hosp., Charlotte, N. C., 1956-57; Prof. of Edn., Furman Univ., Summer, 1957; Prof. and Hd., Dept. of Bus. Admin., E. Tenn. St. Coll., 1957-61; Chmn., Div. of Econ. and Bus. and Prof. of Econs., Ouachita Bapt. Coll., 1961-62; Chmn. and Prof., Dept. of Bus., E. Tenn. State College, 1962—. Hon. Pos.: Pres., Dixie Chapt., Am. Mktng. Assn.; Secy., Miss. Acad. Sci., Psychol. Div.; Mem., Natl. Coun., Tau Kappa Alpha; Tenn. Gov., TKA; Pres., Tenn. Oratorical League; Secy.-Treas., Tenn. Forensic Assn. Mem.: Am. Econ. Assn.; A.A.U.P.; Miss. Acad. Sci.; Sou. Econ. Assn.; Natl. Assn. Tchrs. Speech; Acad. of Polit. Sci.; Alpha Delta Sigma; Alpha Phi Epsilon; Beta Gamma Sigma; Delta Sigma Pi; Kappa Delta Pi; Sigma Alpha Epsilon; Rotary Club; Mod. Woodmen; Mason. Author: The Role of the Supvr., 1954; Applied Psychol., 1955; Essentials of Modern Geog., 1939; Workbook in Physics for the Army Air Corps, 1942. Co-author: College Business Law, 1960; Principles of Marketing, 1960. War Record: Ground Schl. Supvr., 44th CTD, Army Air Corps, 1942-46. Areas of Rsch.: Monetary Theory; Labor Relations; Marketing; Finance. Listed in: A.M.S.; W. W. in S. and S.W.; Dir. of Am. Scholars; W.W.A.E.



FARNSWORTH, George Alton (Mr.), Port Engr., East and Gulf Coast Div., Socony-Mobil Oil Co., Beaumont, Tex. Home Add.: 1875 Karen Lane, Beaumont, Tex. MARINE ENGINEERING. b. Jonesport, Maine, April 29, 1908. s. Edwin E. and Olivia (Kelley) F. Edn.: B.S. in C.E., Univ. of Maine, 1931. m. Margaret Stimson, June 29, 1946. c.: Catherine Hall; Georgina Alton. Exp.: Chief Engr., Socony-Mobil Oil Co., N. Y., 1934-44; Tanker Expediter, Socony-Mobil Oil Co., Bombay, India, 1944-45; Port Engr., Socony-Mobil Oil Co., N. Y., 1945-62; Port Engr., Socony-Mobil Oil Co., Beaumont, Tex., 1962—. Mem.: Soc. of Marine Port Engrs.; Soc. of Naval Architects and Marine Engrs.; Lambda Chi Alpha.

FARNSWORTH, Paul Randolph (Ph.D.), Prof. and Assoc. Hd. of Psychol., Stanford, Calif. Home Add.: 715 Salvatierra St., Stanford, Calif. PSYCHOLOGY OF MUSIC; SOCIAL PSYCHOLOGY. b. Waterbury, Conn., Aug. 15, 1899. s. Hiland R. and Elisabeth Rose (March) F. Edn.: A.B., Ohio St. Univ., 1921; M.A., ibid., 1923; Ph.D., ibid., 1925. m. Helen Elliott Cherington, Aug. 31, 1926. c.: Elliott C.; Susan M. Exp.: Asst. to Prof. of Psychol., Stanford Univ., Stanford, Calif., 1925—. Mem.: Am. Psychol. Assn.; West. Psychol. Assn.; Am. Musicol. Soc.; A.A.A.S.; Am. Soc. for Aesth.; Phi Beta Kappa; Phi Delta Kappa; Sigma Xi; Gamma Alpha; Pi Mu Epsilon. Author: Soc. Psychol., with R. T. La Piere, 1936; Musical Taste, 1950; Soc. Psychol. of Music, 1958. Contbr. to: Various Psychol. and Aesthetic Jours.; Ed. Ann. Rev. of Psychology. Special Int.: Soc. Psychol. Aspects of Music. Areas of Rsch.: Psychol. of Music; Social Psychology; General Psychology.



FARR, Andrew F. (Mr.), Hd. Chemist, Rancho Los Amigos Hosp., Downey, Calif. Home Add.: 8620 San Antonio Ave., So. Gate, Calif. CLINICAL CHEMISTRY. b. Denver, Colo., Jan. 13, 1922. s. Robert N. and Juanda J. (Farrar) F. Edn.: B.A., Univ. of Sou. Calif., 1951. m. Helen I. Ignatowicz, 1946. c.: Regina K.; Elizabeth A. Exp.: Chemist, A. L. Chaney Labs., Inc., Glendale, Calif., 1949-51; Hd. Chemist, Rancho Los Amigos Hosp., 1951—; Chem. Consult., A. L. Chaney Labs., Inc., 1959—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Phi Lambda Upsilon; Sigma Xi. Serv. Rec.: U. S. Air Force, 1942-46. Areas of Rsch.: Research in Respiratory Physiology; Blood Electrolyte and Renal Problems with Emphasis on Methods and Instrumentation.

FARR, J. Eugene (Mr.), Mem., Tech. Staff, Aerospace Corp., El Segundo, Calif. Home Add.: 222 Sterry St., Playa Del Rey, Calif. ANALYSIS AND RESEARCH IN AUTOMATIC FLIGHT CONTROL SYSTEMS. b. Los Angeles, Calif., Jan. 7, 1935. s. Julius Eugene and Martha (Claussen) F. Edn.: B.S., Univ. Calif., Los Angeles, 1958. Exp.: Engr., Marquardt Aircraft, Van Nuys, Calif., 1956-57; Sr. Rsch. Engr., No. Am. Aviation, L. A. Div., Internatl. Airport, Los Angeles, Calif., 1958-62; Mem., Tech. Staff, Aerospace Corp., El Segundo, Calif., 1962—. Mem.: I.R.E.; Kappa Alpha Order. Contbr. to: Aeronautical Systems Div. Technical Report. Gen. Int.: Traveled in Philippines, Singapore, Thailand, Cambodia, Hong Kong, Japan and Mexico. Areas of Rsch.: Rsch. in Control Problems Caused by Nonlinearities; Non-Linear Control Systems; Adaptive Control Systems; Aerospace Vehicle Control Systems.

FARR, Lee Edward (M.D.), Prof., Nuclear Med., Univ. of Tex., Postgrad. Med. Schl., Houston, Tex. Mail Add.: M. D. Anderson Hosp. and Tumor Inst., Houston 25, Tex. Home Add.: 5331 Beverly Hill Lane, Houston 27, Tex. NUCLEAR MEDICINE. b. Albuquerque, N. Mex., Oct. 13, 1907. s. Edward and Mabel (Heyn) F. Edn.: B.S., Yale Univ., 1929; M.D., ibid., Schl. of Med., 1933. m. Anne Ritter, Dec., 1936. c.: Frances; Susan; Edward. Exp.: Asst. and Assoc. in Med., Hosp. of Rockefeller Inst. of Med. Rsch., N. Y., N. Y., 1934-40; Dir. of Rsch., Alfred I DuPont Inst. of Nemours Fdn., Wilmington, Del., 1940-49; Med. Dir. and Chmn. Med. Dept., Brookhaven Natl. Lab. Associated Univ., Inc., Upton, N. Y., 1948-62; Prof., Nuclear Med., Univ. of Tex. Postgrad. Med. Schl., Houston, Tex. and Chf., Sect. Nuclear Med., M. D. Anderson Hosp. and Tumor Inst., Houston 25, Tex., 1962—. Hon. Pos.: Chmn., Natl. Rsch. Coun., Adv. Comm. on Atomic Bomb Casualty Comm.; Chmn., Am. Acad. Ped.; Comm. on Environmental Med.; Chmn., Comm. on Nuc. Med. Specialty Edn. Soc. Nuc. Med.; Natl. Rsch. Coun. Comm. on Naval Med. Rsch. Mem.: A.M.A.; A.A.A.S.; Am. Acad. of Pediatrics; Am. Cancer Soc.; Pediatric; Am. Soc. Clin. Investig.; Soc. Rad. Rsch.; Soc. Nuc. Med.; Harvey Soc.; Soc. Exptl. Biol. and Med.; Soc. Exp. Path.; Alpha Chi Sigma; Alpha Omega Alpha; Sigma Xi; Phi Sigma Kappa; Nu Sigma Nu. Author: Treatment of the Nephritic Syndrome, 1947; Clinical Aspects of Nuclear Medicine, 1961. Contbr. to: Arch. Path.; Jour. Nuc. Med.; Jour. Clin. Investig. Serv. Rec.: U. S. Navy, 1942-46. Gen. Int.: Received Order of the Phoenix from Greek Gov't. in 1959, for services helping them organize nuclear medicine program in Greece. Areas of Rsch.: The Use of Nuclear Reactors in Medicine; Neutron Capture Therapy of Cancer and Biological Effects of Neutrons; Tissue Effects of Particle Bombardment; Radioactive Isotopes in Medicine.

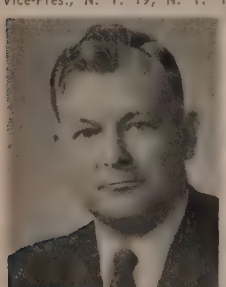
FARR, Wanda Kirkbride (Mrs.), Assoc. Prof. of Botany, Univ. of Maine, Orono, Me.; Farr Cytochemical Lab., 74 Elm St., Camden, Me. Home Add.: 74 Elm St., Camden, Me. PLANT CELL PHYSIOLOGY AND PLANT CYTOCHEMISTRY. b. New Matamoras, Ohio, Jan. 9, 1895. d. Frederick Kirkbride and Clara (Nikolaus) K. Edn.: B.S., Ohio Univ., 1915; M.A., Columbia Univ., 1918. m. Clifford H. Farr, May 15, 1918. c.: Robert N. Exp.: Lab. Asst., Botany, Ohio Univ., 1915; Instr. Botany, Kan. St. Agri. Coll., 1917-18; Plant Physiologist, Boyce Thompson Inst., Yonkers, N. Y., 1928-30; Assoc. Cotton Technol., U.S.D.A., Boyce Thompson Inst., 1930-36; Dir., Cellulose Lab. Chem. Found., ibid., 1936-40; Rsch. Microchemist, Am. Cyanamid Co., Stamford, Conn., 1940-43; Rsch. Assoc., Celanese Corp. of Am. Summit, N. J., 1943-54; Assoc. Prof., Botany, Univ. of Me., 1955—. Mem.: Am. Assoc. Adv. of Sci.; Royal Micros. Soc. London; Botanical Soc. Am.; Am. Chem. Soc.; Soc. for the Study of Development and Growth; Phi Beta Kappa; Sigma Xi; Natl. Inst. Social Scis.; Am. Soc. Naturalists; Sigma Delta Epsilon; Phi Mu. Author: Plant Cell Membranes, 1944. Contbr. to: Natl. Acad. of Sci.; Boyce Thompson Inst. Jour.; Am. Jour. Bot.; Jour. Appl. Physics; Jour. Phys. Chem.; Colloid Chem. Areas of Rsch.: Plant Physiology, Cytochemistry; Root Hair Growth; Formation, Structure and Composition of Plant Cell Walls.

FARRIER, Maurice Hugh (Ph.D.), Assoc. Rsch. Prof. of Entomology and Forestry, N. C. St. Coll., Raleigh, N. C. Home Add.: 4205 Arbutus Dr., Raleigh, N. C. FOREST ENTOMOLOGY AND ACAROLOGY. b. Washington Co., Iowa, Sept. 26, 1926. s. Illoah and Martha (Thompson) F. Edn.: B.S., Iowa St. Coll., 1948; M.S., ibid., 1950; Ph.D., N. C. St. Coll., 1955. m. Gwendolyn Krahnke, Aug. 18, 1956. c.: Michelle Alicia. Exp.: Asst. Res. Prof., N. C. St. Coll., 1955-60; Assoc. Res. Prof., ibid., 1960—. Hon. Pos.: Secy., N. C. Chapt. Gamma Sigma Delta. Mem.: A.A.A.S.; Soc. of Systematic Zoology; Entomological Soc. of Am.; N. C. Acad. of Sci.; Soc. of N. C. Entomological; Sigma Xi; Alpha Chi Rho; Gamma Sigma Delta; Toastmasters Internatl. Contbr. to: Jour. of Econ. Entomology; Rsch. and Farming; N. C. Agri. Exp. Sta.

Tech. Bull. Serv. Rec.: U. S. Army Res., 1950—. Areas of Rsch.: Forest Acarology and Entomology Including Soil Fauna; Losses of Tobacco Foliage Caused by Hornworms and Budworms; Seasonal Populations of the Corn Earworm; Taxonomic Revision of a Family of Soil-Inhabiting Mites.

FARRAR, George E., Jr. (M.D.), Med. Dir., Wyeth Labs., Box 8299, Phila. 1, Pa. Home Add.: 528 Scott Rd., Gladwyne, Pa. INTERNAL MEDICINE. b. Winter Park, Fla., Mar. 12, 1906. s. Rev. George E. and Mary (Persinger) F. Edn.: B.S., Wesleyan Univ., Conn., 1927; M.D., Johns Hopkins Univ., Schl. of Med., 1931. m. Elnore Spangle, Aug. 31, 1933. c.: Geo. E., III; Alice. Exp.: Intern and Res., Univ. Hosp., Univ. of Mich., 1931-33; Instr., Dept. of Internal Med., Univ. of Mich., Schl. of Med., 1933-35; Assoc. Pharmacol., Food and Drug Admin., Wash., D. C., 1935-36; Asst. then Assoc. Prof. of Med., Temple Univ., Schl. of Med., Phila., Pa., 1936—; Med. Dir., Wyeth Labs., Phila., Pa., 1949—. Hon. Pos.: Mem., U. S. Pharmacopoeial Com. on Rev., 1950-60; Subcoms. on Scope and Posology, Chmn. Panel on Nutrition; Dir., Treas., Phila. Co. Med. Soc.; Chmn., Com. on Finance and Budget; Mem., Com. on Publication; Mem., House Delegates and Mem. Com. on Legislation, Pa. Med. Soc. Mem.: Am. Coll. of Physicians; Am. Med. Assn.; Am. Soc. for Pharmacology and Exptl. Therapeutics; Am. Therapeutic Soc.; Am. Rheumatism Soc.; A.A.A.S.; Coll. of Physicians of Phila.; Sigma Xi; Phi Chi; Delta Upsilon; Phila. Skating Club and Humane Soc.; Phila. Country Club. Contbrng. Author: U. S. Dispensatory, 1947, 1950 and 1955; Insulin, 1937. Contbr. to: Am. Jour. of Med. Scis.; Jour. of Biological Chem.; Jour. of Nutrition; Jour. Exptl. Med.; Am. Jour. of Physiol.; Med. Clinics of N. Am.; Pa. Med. Jour.; Annals of Intnl. Med.; Am. Practitioner; Digest of Treatment; Jour. of Pharmacol. and Exptl. Therapeutics. Areas of Rsch.: Hematology; Physical Medicine; Therapeutics; Internal Medicine.

FARRINGTON, William Benford (Ph.D.), Empire Resources Corp., Vice-Pres., N. Y. 19, N. Y. Home Add.: 461 Grove St., Upper Montclair, N. J. GEOPHYSICS—ELECTRONIC ENGINEERING. b. N. Y. City, Mar. 10, 1921. s. Harold P. and Edith C. (Aitken) F. Edn.: B.C.E., Cornell Univ., 1943; M.S., ibid., 1949; Ph.D., Mass. Inst. of Tech., 1953. m. div., July 16, 1949. c.: William B., Jr.; Phyllis A.; Timothy C. Exp.: Sr. Investment Analyst, Continental Rsch. Corp., N. Y., 1956-61; Pres., Farrington Engrng. Corp., N. J., 1958—; Vice-Pres., Empire Resources Corp., 1961—. Mem.: Geol. Soc. of Am.; Am. Rocket Soc.; Soc. of Expl. Geophys.; Seismol. Soc. of Am.; Astronaut. Soc.; Inst. of Mining; Metal. and Petrol. Engrs.; Am. Assn. of Petrol. Geols.; Am. Geophys. Union; Sigma Xi; N. Y. Soc. of Security Analysts; Delta Upsilon. Contbr. to: Am. Geophys. Union Bull.; Am. Jour. of Sci. Serv. Rec.: U. S. Marines, 1943-46. Areas of Rsch.: Geophysics; Electronic Engineering.



FASMAN, Gerald David (Ph.D.), Asst. Prof. of Biochem., Grad. Dept. Biochem., Brandeis Univ., Waltham 54, Mass.; Established Investigator of the Am. Heart Association. Home Add.: 69 Kingswood Rd., Auburndale 66, Mass. AMINO ACIDS, PROTEINS, ENZYMES POLYAMINO ACIDS. b. Canada, May 28, 1925. s. Morris and Sarah (Stoffer) F. Edn.: B.S., Univ. of Alberta, 1948; Ph.D., Calif. Inst. of Technol., 1952. m. Jean Schalit, 1953. c.: Michael; Daniel; Johnothan. Exp.: Postdoctoral Fellowship of the Royal Soc. of Can., Cambridge Univ., 1951-52; Rsch. Fellow, ibid., 1952-53; Merck Postdoctoral Fellow at Eidg. Technische Hochschule, Zurich, Switzerland, 1953-54; Weizmann Fellow, Inst. of Sci., Rehovoth, Israel, 1954-55; Rsch. Asst., The Children's Cancer Rsch. Fdtn., The Children's Med. Center, Boston, 1955-56; Rsch. Assoc. in Pathol., ibid., 1957-61; Asst. Prof. of Biochem., Brandeis Univ., 1961—; Asst. in Pathol., Harvard Med. Schl., 1947-58; Rsch. Assoc. in Pathol., ibid., 1958-60; Lectr. in Protein Chem., Boston Univ., 1958-59; Asst. Hd., Biophysical Chem. Lab., The Children's Cancer Rsch. Fdtn., 1959-61; Rsch. Assoc. Biological Chem., 1960-62; Tutor in Biochem. Sci., Harvard Univ., 1960-62. Mem.: Am. Chem. Soc.; The Chem. Soc.; N. Y. Acad. of Sci.; A.A.A.S.; Sigma Xi. Contbr. to: Sci.; The Jour., A.C.S.; Arch. Biochem. and Biophysics; Jour. Biophysics and Biochem. Cyttol.; Jour. of Histochem. Areas of Rsch.: Amino Acids, Proteins, Enzymes, Polyamino Acids.

FASSEL, Velmer Arthur (Ph.D.), Prof. of Chem., Iowa St. Univ., Ames, Iowa. CHEMICAL SPECTROSCOPY; PHYSICAL CHEMISTRY; ANALYTICAL CHEMISTRY. b. Frohna, Mo., Apr. 26, 1919. s. Arthur E. G. and Alma (Poppitz) F. Edn.: B.S., S.E. Mo. St. Coll., 1941; Ph.D., Iowa St. Univ., 1947. m. Mary A. Katschke, July 25, 1943. Exp.: Rsch. Asst., Manhattan Project, Iowa St. Univ., Ames, Iowa, 1942-43; Jr. Chemist, ibid., 1943-46; Assoc. Chemist, Inst. for Atomic Rsch., ibid., 1946-47; Asst. Prof. Chem. Dept. and Inst. for Atomic Rsch., ibid., 1947-51; Assoc. Prof., ibid., 1951-54; Prof., ibid., 1954—. Mem.: Am. Chem. Soc.; Am. Inst. of Phys.; Optical Soc. of Am.; Iowa Acad. of Sci.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Analytical Chem.; Jour. Optical Soc. of Am.; Spectrochimica Acta; Editor: Spectrochimica Acta. Special Int.: Applications of Emission, Absorption, Infrared, Fluorescent and X-ray Spectroscopy to Problems in Chem., especially Analytical Problems, Determination of Gas Content of Metals, Molecular Structure.

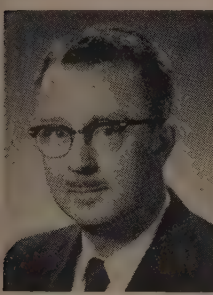
FATEMI, Nasrollah Saifpour (Ph.D.), Chmn., Social Sci. Dept., Fairleigh Dickinson Univ., Teaneck, N. J. Home Add.: 47 Chestnut Ridge Rd., Saddle River, N. J. SOCIAL SCIENCE. b. Iran, June 15, 1910. s. Ali Muhammad and Tuba F. Edn.: B.A., Stuart Meml. Coll., Isfahan, Iran, 1931; M.A., Columbia Univ., 1948; Ph.D., New Schl. for Social Rsch., 1954. m. Shayestah, 1931. c.: Faramarz; Fariborz; Farivar. Exp.: Instr., Stuart Meml. Coll., 1930-32; Editor, Lit. Mag., Bakhtar, Iran, 1934-36; Mem. of the Legislature of the Province of Isfahan, Iran, 1937-38; Mayor of the City of Shiraz, Iran, 1939-41; Gov.-Gen., Province of A Fars, in Iran, 1941-43; Mem. of the Iranian Parliament, Iran, 1943-46; Mem. of the Delegation to the Internatl. Conf. of UNESCO, 1949; Mem. of the Iranian Delegation to the United Nations, 1951-53; Visiting Lectr., Princeton Univ., N. J., 1950-55; Prof. of Social Sci. Dept., Fairleigh Dickinson Univ., 1956—; Chmn., Social Sci. Dept., ibid., 1960—. Hon. Pos.: Pres., Red Cross in the Province of Fars, Iran, 1942-43; Chmn., Ways and Means Comm. in the Iranian Parliament, 1944-45; Vice-Pres., Organ of E. Mediterranean Affairs, 1958-59; Mem. of the Exec. Comm. Am. Assn. Middle Eastern Stas., 1959—. Mem.: Acad. of Pol. Sci.; Am. Assn. for Middle Eastern Stas.; Assn. of Am. Univ. Profs.; Mem. of the Acad. of Sci. of Iran, 1943-46; Cosmopolitan Club. Author: Literary History of Persia, 1934, 1936; Biography of Hafiz and the 2nd Mongolian Invasion, 1937; The Diplomatic History of Persia, 1951; Oil Diplomacy in the Middle East, 1953; Co-Author, A Report on the Arab Refugees in Palestine, 1958. Contbr. to: Annals of the Acad. of Pol. Sci.; Clearing House; Moslem World; Vital Speeches of the Day; Bakhtar Emruz; Iran Nameh; Iran Rev. Areas of Rsch.: The Economic and Social Developments of Emerging Nations with Emphasis on the Middle East and Africa; Nationalism in the Muslim World.

FAUS, Duncan Owen (Mr.), Math. Tchr., Carmel H. S., Carmel, Calif. Home Add.: 1021 Hillside Ave., Pacific Grove, Calif. MATHEMATICS. b. Philadelphia, Pa., Oct. 20, 1923. s. Comdr. William Curtis and Mabel (Owen) F. Edn.: B.S., Lewis and Clark Coll., 1949; M.Ed., ibid., 1950; M.S., Ore. State Coll., 1958. m. Bernice Rentschler, Dec., 1947. c.: Anne Elizabeth; Penelope Joan; Shelley Campbell; William Curtis; Gretchen VanGordon. Exp.: Hd., Math. Dept., Sutherlin H. S., Sutherlin, Ore., 1953-57; Instr. of Math., Ore. State Coll., 1958-59; Math. Tchr., Pacific Grove H. S., Pacific Grove, Calif., 1959-61; Math. Tchr., Carmel H. S., Carmel, Calif., 1961—. Mem.: The Math. Assn. of Am.; Natl. Coun. of Tchrs. of Math.; Calif. Math. Coun.; Pi Mu Epsilon. Serv. Rec.: U. S. Navy, 1942-45.

FAURE, Gunter (Ph.D.), Asst. Prof., Geol. Dept., Ohio State Univ., Columbus, Ohio. Home Add.: 549 Harley Drive, Columbus 2, Ohio. GEOLOGY, ISOTOPE GEOLOGY OF STRONTIUM AND LEAD b. Tallinn, Estonia, May 11, 1934. s. Arnulf and Stella (von Harpe) F. Edn.: B.Sc., Univ. of Western Ontario, Can., 1957; Ph.D., Mass. Inst. of Technol., 1961. m. Barbara Goodell, Sept 5, 1959. c.: Mary Jennifer. Exp.: Rsch. Assoc., Mass. Inst. of Technol., 1961-62; Asst. Prof., Ohio State Univ., 1962—. Mem.: Am. Geophys. Union; Geochem. Soc.; Sigma Xi. Contbr. to: Geochimica et Cosmochimica Acta; Jour. of Geophys. Rsch.; Jour. of Petrology. Areas of Rsch.: Research in Geochronology Using

Decay of Rb^{87}-Sr^{87}; Isotopic Composition of Sr in Basaltic Rocks, Rb/Sr Ratio of the Upper Mantle of the Earth; Mass Spectrometry.

FAUST, Charles L. (Ph.D.), Chf. of Electrochem. Engrng. Div., Battelle Mem. Inst., Columbus 1, Ohio. ELECTROCHEMICAL ENGINEERING AND ELECTROCHEMISTRY; ELECTROPROCESSES. b. St. Louis, Mo., Nov. 8, 1906. s. Charles M. and Edna V. (Lawson) F. Edn.: B.S., Wash. Univ., 1930; M.S., ibid., 1931; Ph.D., Univ. of Minn., 1934. m. Florence L. Paradeau, 1934. c.: Charles D.; Jon L.; Teri-Louise. Exp.: Exchange Repairman, Southwestern Bell Telephone Co.-Western Elec. Co., St. Louis, Mo., 1927-29; Asst. Instr., Univ. Minn., Minneapolis, Minn., 1931-34; Staff, Battelle Meml. Inst., Columbus, Ohio, 1934—. Hon. Pos.: Pres., Electrochem. Soc., 1950-51; Vice-Pres., ibid., 1947-50; Bd. of Dir., ibid., 1942-44; 1947-52; Assoc. Editor, Monthly Rev. and Plating, 1944-49; Assoc. Ed., Mod. Electroplating; Electroplating Eng'g. Handbook; Special Consult., Materials Adv. Bd., 1951—; War Metallurgy Comm., 1942-44; Ed., Sect. 4, Chem. Abs., 1957—. Mem.: Electrochem. Soc.; Am. Sub Chem. Soc.; Am. Electroplaters' Soc.; Inst. Metal Finishing, London; Alpha Chi Sigma; Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon; Pi Mu Epsilon. Contbr. to: Jour. Electrochem. Soc.; Plating; Product Engrng.; Am. Machinist; The Iron Age; Steel; Metal Finishing; Jour. Electrodepositors' Tech. Soc.; Machinery; Am. Aviation. Special Int.: Electroprocesses—especially Electrodeposition, Electrowinning, Electrorefining, Metal Finishing; Electropolishing, Anodic Dissolution, Electrolytic Machining, Alloy Deposition, Pickling, Fused Salt Electrolysis, Electrochem. Behavior and Electrolysis.



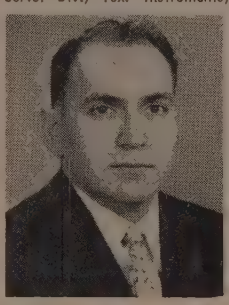
FAUST, William Roscoe (Ph.D.), Assoc. Supt., Radiation Div., Naval Rsch. Lab., Wash. 25, D. C. Home Add.: 6410 Walnut St., S.E., Wash. 22, D. C. PHYSICS. b. Shawnee, Okla., Mar. 9, 1918. s. Hugh G. and Bertha (Weiman) F. Edn.: B.S., Okla. St. Univ., 1939; M.S., Ill. Inst. of Technol., 1941; Ph.D., Univ. of Md., 1948. m. Mary Dees, 1942. c.: Hugh H.; Margaret Adele; Mary Elizabeth. Exp.: Grad. Asst., Ill. Inst. of Technol., 1939-41; Radio Engr., Naval Rsch. Lab., 1941-48; Physicist, ibid., 1948-52; Physicist and Br. Hd., Radiation Dir., ibid., 1952-54; Physicist and Assoc. Supt., Radiation Div., ibid., 1954—. Mem.: Fellow, Am. Physical Soc.; R.E.S.A.; Sigma Tau; Sigma Pi Sigma; Sigma Xi. Contbr. to: Physical Rev.; Physical Rev. Letters; Jour. of Applied Physics; Jour. of Am. Nuclear Soc.; Fusion Jour. of Internatl. Atomic Energy Agency. Areas of Rsch.: Nuclear Physics; Plasma Physics.

FAW, Dennis Boyde (Mr.), Chemist, Cone Mills Corp., Greensboro, N. C. Home Add.: Rt. 4, Winston-Salem, N. C. CHEMIST, RESEARCH AND DEVELOPMENT TEXTILE. b. Davidson Co., N. C., Jan. 2, 1921. s. Noah Henry and Mary Alberta (Foltz) F. Edn.: B.S., High Point Coll., 1949; A.B., ibid., 1956. Exp.: H. Schl. Sci. and Math. Tchr., N. C., 1949-50; Chemist, Ca. Paint and Varnish Co., Greensboro, N. C., 1956-57; Chemist, Cone Mills Rsch. Lab., Greensboro, N. C., 1957—. Mem.: Am. Chem. Soc.; Am. Assn. of Textile Colonist and Chemist; Am. Assn. for the Adv. of Sci. Areas of Rsch.: Paint Formulation; Chemical Rsch. Associated with Textile.

FAY, Robert Jesse (Mr.), Partner-Patent Law, Fay and Fay, 1113 East Ohio Bldg., Cleveland 14, Ohio. Home Add.: 15430 Edgewater Dr., Lakewood 7, Ohio. PATENT LAW. b. Cleveland, Ohio, Apr. 9, 1920. s. Horace Byron and Florence (Keating) F. Edn.: S.B., Mass. Inst. of Tech., 1942; L.L.B., Western Reserve Univ., 1948. m. Ann Regan, Sept. 24, 1947. c.: Regan; Laura; Karen; Molly; Michael; Ford; Genny. Exp.: Patent Examiner, U. S. Patent Office, Wash., D. C., 1948-49; Assoc., Fay, Golrick and Fay, Cleveland, Ohio, 1949-51; Partner, Fay and Fay, ibid., 1951—. Hon. Pos.: Chmn., Patent, Trademark and Copyright Comm., Ohio State Bar; Chmn., Lakewood Planning Comm. Mem.: Am. Chem. Soc.; Am. Soc. for Metals; Am. Judicature Soc.; A.A.A.S.; Am. Patent Law Assn.; S.A.E.; Phi Delta Phi; Alpha Chi Sigma. Contbr. to: Cleveland Marshall Law Rev. Serv. Rec.: U. S. Army, 1942-46.

FEASLEY, Charles Frederick (Ph.D.), Supvr. Chemist, Socony Mobil Oil Co., Inc., Paulsboro, N. J. Home Add.: 37 N. Columbia St., Woodbury, N. J. RESEARCH CHEMIST FOR DEVELOPMENT OF TESTS TO ESTABLISH SUITABILITY OF OIL PRODUCTS FOR SERVICE. b. Lexington, Ill., Jan. 21, 1915. s. Charles Lawrence and Mary Jane (Andrews) F. Edn.: A.B., Hanover Coll., 1937; M.S., Purdue Univ., 1940; Ph.D., ibid., 1942. m. Carolyn H. Hammel, Dec. 22, 1940. c.: Charles Edward; William Robert; Richard Allen; Margaret Jane. Exp.: Grad. Asst. in Chem., Purdue Univ., 1937-41; Chemist Rsch. Dept., Socony Mobil Oil Co., Inc., Paulsboro, N. J., 1941-45; Sh. Chemist, ibid., 1945-57; Supvr. Chemist, ibid., 1957—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Delta Epsilon. Author: Outline of Organic Chemistry, Co-Author, 1940; Chemistry of Nitrogen Compound, Co-Author, 1941; Chemistry of Carbohydrates, Co-Author, 1940. Contbr. to: Jour. of Am. Pharm.; Scientific Ed.; The Jour. of Organic Chem. Areas of Rsch.: Antiseptics, Dyes, Lubricating Oil Products, Chemicals and Fuels from Petroleum and Coal, Development of Tests for Suitability of Lubricating Oils for Serv.

FEDER, Allen Martin (Ph.D.), Chf., Terrain Analysis Sect., Sci Servs. Div., Tex. Instruments, Inc., Dallas, Tex. Home Add.: 4417 Hallmark Dr., Dallas 29, Tex. GEOMORPHOLOGY (TERRAIN ANALYSIS, PHOTOGRAMMETRY AND RADAR DISPLAY INTELLIGENCE. b. Buffalo, N. Y., Feb. 19, 1928. s. John and Anna (Macks) F. Edn.: B.A., Univ. of Buffalo, 1945; M.A., ibid., 1960; M.A., St. Andrews, Eng., 1960; Ph.D., ibid., 1960. m. Glenda Schilt, Apr. 16, 1953. c.: Holly Leigh; Andrea Iris; David Paul; Laurie Ellen. Exp.: Geologist, U. S. Geol. Surv., Alaska and Wash., D. C., 1949-50; Photogrammetric Engr., U. S. Navy Hydrographic Office, Wash., D. C., 1950; Intelligence Specialist, Office of Naval Intelligence, ibid., 1950-55; Project Engr. (Radar Applications Project), Opera. Anal., Mech. Engr., Bell Aircraft Corp., Buffalo, N. Y., 1955-58; Instr. in Professional Engrng., Geology for N. Y. St. Adult Edn. Program, Union Free Schl. Dist., Tonawanda, N. Y., 1956-59; Instr. in Astronomy, Buffalo Museum of Sci., Buffalo, N. Y., 1958-59; Operations Analyst, Cornell Aero. Lab., Inc., ibid., 1958-60. Mem.: A.A.A.S.; Soc. of Am. Milit. Engrs.; Masons and Consistory 32°; Natl. Geographic Soc.; Am. Assn. of Geographers, U. S. Naval Inst. Author: Radar Geology, 1960; Moon Reconnaissance by Radar, 1958; Radar Intelligence and Prediction, 1957. Contbr. to: Photogrammetric Engrng.; Am. Soc. of Photogrammetry. Gen. Int.: Letters of Commendation: 3 from U.S.A.F.; one from U.S.N.; one from U. S. Army. Areas of Rsch.: Microwave (Radar) Reradiation Effects from Natural Terrain and Artificial Structures.

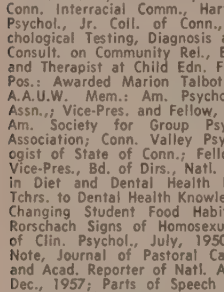


FEDERSPIEL, Charles F. (Ph.D.), Asst. Prof. of Biostatistics, Vanderbilt Univ., Nashville, Tenn. Home Add.: Otter Creek Rd., Brentwood, Tenn. BIOSTATISTICS. b. Flint, Mich., May 3, 1929. s. William G. and Clara (Rolixman) F. Edn.: A.B., Univ. of Mich., 1950; M.A., ibid., 1952; Ph.D., Univ. of N. C., 1959. m. Jo Ann Deason, Aug. 3, 1957. c.: Ingrid Lea. Exp.: Statistician, Communicable Disease Ctr., U.S.P.H.S., Atlanta, Ga., 1952-54; Rsch. Statistician, Eli Lily and Co., Indianapolis, Indiana, summer, 1957; Asst. Prof. of Biostatistics, Vanderbilt Univ., 1959—. Hon. Pos.: Mem. Advisory Bd., Biometric Soc. Mem.: Biometric Soc.; Am. Statistical Assn.; Inst. of Math. Statistics; Am. Math. Assn.; Sigma Xi; Kappa Sigma. Contbr. to: Pub. Health Reports; Jour. Lab. and Clin. Med.; Jour. Tenn. State Med. Assn. Areas of Rsch.: Multiple Regression.

FEDRICK, James Love (Ph.D.), Grp. Ldr., Lederle Labs., Div. of Am. Cyanamid Co., Pearl River, N. Y. Home Add.: 98 Veterans Parkway, Pearl River, N. Y. HETEROCYCLIC CHEMISTRY AND ORGANIC SYNTHESES. b. Lordsburg, N. Mex., Apr. 17, 1930. s. J. R. and C. E. (Jones) F. Edn.: B.S., Univ. of Ariz., 1953; M.S., ibid., 1955; Ph.D., Univ. of Ill., 1959. Exp.: Grp. Ldr., Lederle Labs., 1959—. Mem.: A.A.A.S.; Am. Chem. Soc.; Phi Kappa Phi; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Am. Chem. Soc. Jour.; Jour. Org. Chem. Areas of Rsch.: Sulfa Drugs, Heterocyclic Chemistry and Organic Syntheses.

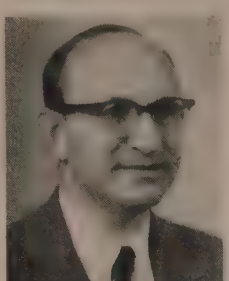
FEEMAN, James Frederic (Ph.D.), Rsch. Assoc., Althouse Chem. Co. Div., Crompton and Knowles Corp., 540 Pear St., Reading, Pa. Home Add.: 1500 Garfield Ave., Wyomissing, Pa. ORGANIC CHEMISTRY; DYES AND TEXTILE CHEMICALS. b. Lebanon, Pa., June 1, 1922. s. Edwin L. and Florence A. (Wenrich) F. Edn.: B.S., Muhlenberg Coll., 1945; M.S., Lehigh Univ., 1947; Ph.D., ibid., 1949. m. June P. Zartman, Apr. 12, 1947. c.: James Frederic, Jr.; Jane Elizabeth; Joan Ann; John Harry. Exp.: Rsch. Assoc., Ohio St. Univ. Rsch. Found., Columbus, Ohio, 1949-50; Rsch. Assoc., Althouse Chem. Co. Div., Crompton and Knowles Corp., Reading, Pa., 1950—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Assn. of Textile Chemists and Colorists; Reading Chemists Club; Sigma Xi; Lions Internatl. Contbr. to: Jour. of the Am. Chem. Soc. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: U. S. and Foreign Patents in Azo Dye Area. Areas of Rsch.: Textile Dyes and Auxiliaries.

FEIN, Leah Gold (Ph.D.), Consult. Psychol., Conn. Comm. on Alcoholism, Alcoholism Clinic, 1952-59; Psychotherapist and Consulting Clin. Psychologist, 1952—; Therapist at Norwalk Psychiatric Clinic, Consultant and Therapist at Child Edn. Found., N. Y., N. Y., 1953-56. On leave from: Lectr. in Edn. and Psychol., Univ. of Bridgeport, Bridgeport, Conn., 1946-47 and 1952-56 (on leave of absence); Rsch. Assoc., High Point Psychiat. Hosp., Port Chester, N. Y., 1952-54; Res. Assoc., Soc. of Human Ecology, 1959-60; Res. Dir. on Study of Psychol. Dimensions of Success in Nursing Schl. at Norwalk Hosp. Nursing School, 1961—; 32 Urban St., Stamford, Conn. PSYCHOLOGICAL DIAGNOSTICIAN AND PSYCHOTHERAPIST. b. Minsk, Russia, Dec. 10, 1910. d. Jacob Lyon and Sara Freda (Meltzer) Gold. Edn.: B.A., Albertus Magnus Coll., 1939; M.A., Yale Univ., 1942; Ph.D., ibid., Grad. Dept. of Edn., 1944. m. Alfred G. Fein, Boston, Mass., June 10, 1944. s. Mr. and Mrs. Elias Fein. c.: Ira Hirsh Fein. Exp.: Dir. of Testing Servs. and Instr. of Psychol. at Carleton Coll., Northfield, Minn., 1944-46; Rsch. Assoc. with Conn. Interracial Comm., Hartford, Conn., 1946; Asst. Prof. of Psychol., Jr. Coll. of Conn., Bridgeport, Conn., 1946-48; Psychological Testing, Diagnosis and Consult., Pvt. Practice, 1948—; Consult. on Community Rel., Bridgeport, Conn., 1946-56; Consult. and Therapist at Child Edn. Found., N. Y., N. Y., 1953-56. Hon. Pos.: Awarded Marion Talbot Fellowship for Rsch., 1943-44 by A.A.U.W. Mem.: Am. Psychological Assn.; Conn. Psychological Assn.,; Vice-Pres. and Fellow, Internatl. Coun. of Women Psychol.; Am. Society for Group Psychotherapy; Mem., World Health Association; Conn. Valley Psychological Assn.; Certified Psychologist of State of Conn.; Fellow, Am. Acad. of Psychotherapists; Vice-Pres., Bd. of Dirs., Natl. Assn. Gifted Children. Author: Test in Diet and Dental Health Knowledge, 1945; Contributions of Tchrs. to Dental Health Knowledge and Behavior of Students, 1945; Changing Student Food Habits Through Schl. Programs, 1945; Rorschach Signs of Homosexuality in Male Coll. Students, Jour. of Clin. Psychol., July, 1950; Religion and Mental Health: A Note, Journal of Pastoral Care, Vol. VII, #2, Summer, 1958; and Acad. Reporter of Natl. Acad. of Religion and Mental Health, Dec., 1957; Parts of Speech Ratio—A Diagnostic and Maturation Index, Psychological Newsletter, Vol. 9, #4, Mar.-Apr., 1958; Lectr. in 8 European Cities on Non-Verbal Communication in the 3DPT, Jan.-Feb., 1959; Nhipping Sex Problems in the Bud, Real Life Guide, Nov. and Dec., 1961. Ph.D. Dissertation: Contributions of Tchrs. to Dental Health Knowledge and Behavior of Students. Travel: England; Scotland; Summer 1953 attended Children's Internatl. Summer Village in Sweden, Served on Rsch. Team. Gen. Int.: Lectr. on Inter-personal and Inter-group Relations; Conducted Radio Programs and Contributed to Newspapers and Periodicals. Listed in: W. W. in Am.; Biographical Encyc. of the World; Outstanding Am. Women, Oct., 1958, Vols. 1 and 2. Areas of Rsch.: Dynamics of Underachieving Gifted; Dynamics of Alcoholics; Religion and Mental Health; Projective Techniques; Personality Evaluation; Creativity; Sex Problems; Tests and Meas.; Standardization of the Three Dimensional Personality Test; A Protective Technique; Dynamics of Prejudice. Book: Pub. Internatl. Univ. Pres., 227 W. 13th St., N.Y.C., 1960.



FELD, Jacob (Ph.D.), Consulting Engr., 114 E. 32nd St., New York, N. Y. Home Add.: Yorktown Heights, N. Y. SOIL MECHANICS APPLICATION; RADIO ASTRONOMY TELESCOPES. b. Austria, Mar. 3, 1899. s. Israel and Gussie R. (Harzopf) F. Edn.: B.S., City Coll. of N. Y., 1918; C.E., Univ. of Cincinnati, 1921; M.A., ibid., 1921; Ph.D., ibid., 1922. m. Ethel Gold, Jan. 26, 1928. c.: Judith Marrus. Exp.: Rsch. Fellow, Univ. of Cincinnati, 1919-22; Various Engrng. and Sci. Work, 1922-26; Consultant, Self Employed, N. Y., 1926—. Hon. Pos.: Chmn., Eng. Div., N. Y. Acad. Sci.; Metropolitan of the Year, 1956, New York; Special Engr. Cons. to USAF, Hdq. Mem.:A.S.C.E.; A.A.A.S.; Am. Conc. Inst.; Int. Congr. Soils Mechanics; Pan-Am. Engr. Congress; Phi Beta Kappa; Sigma Xi; Tau Beta Pi; Chi Epsilon; Natl. and Internatl. Arbitrator. Author: Radio Telescope Structures, 1962. Contbr. to: Eng. News Record; Proc., Am. Soc. C. E.; Jour. Am. Conc. Inst.; Annals, N. Y. Acad. Sci.; Jour. Franklin Inst. Areas of Rsch.: Control and Use of Soils as an Engineering Material; Diagnosis and Repair of Structural Failures; Design of Space Structures.

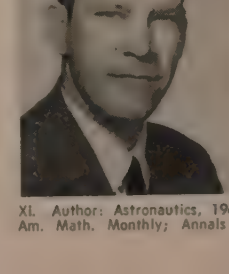
FEINGOLD, S. Norman (Dr.), Natl. Dir., B'nai B'rith Vocl. Serv., 1640 Rhode Island Ave., N.W., Wash. 6, D. C. Home Add.: 9707 Singleton Dr., Ashburton, Bethesda, Md. COUNSELING PSYCHOLOGY. b. Worcester, Mass., Feb. 2, 1914. s. William and Aida (Salit) F. Edn.: A.B., Ind. Univ., 1937; M.A., Clark Univ., 1940; Ed.D., Boston Univ., 1948. m. Marie Goodman, Mar. 24, 1947. c.: Elizabeth Anne; Margaret Ellen; Deborah Carol; Marilyn Nancy. Exp.: Exec. Dir., Jewish Vocl. Serv., Boston, Mass., 1941-58; Exec. Dir., Jewish Vocl. Serv. Work Adjustment Ctr., Boston, Mass., 1957-58; Faculty Mem., Boston Univ., 1953-58; Natl. Dir., B'nai B'rith Vocl. Serv., Wash., D. C., 1958—. Hon. Pos.: President's Com. on Employment of the Physically Handicapped; Former Chmn. of the Mass. Coun. on the Employment of the Aging. Mem.: A.A.A.S.; Am. Psychol. Assn.; Mass. Psychol. Assn.; Am. Pers. and Guid. Assn.; Eastern Psychol. Assn.; Gerontol. Soc.; Natl. Rehab. Assn.; Phi Delta Kappa. Author: Scholarships, Fellowships and Loans, 1955; Vol. 4, 1962, Editor, Counselors' Information Service, Consult. to Scholarships, Fellowships and Loans News Service; How to Choose That Career—Civilian and Military, 1954; Words for Work, 1957. Co-author: Finding Part-Time Jobs, 1962. Contbr. to: Am. Practitioner and Digest of Treatment; Vocl. Guid. Quart.; Am. Pers. and Guid. Jour.; Personnel Psychol.; Cerebral Palsy Rev.; Rehab. Rev. War Record: U. S. Army, 1943-46. Listed in: W. W. in the East; W. W. in Am. Edn. Gen. Int.: Citation, Mass. Commn. on the Blind; Community Serv. Award, Haym Salomon Lodge, B'nai B'rith. Areas of Rsch.: Aging; Student Aid; Handicapped.



FELDER, Virginia Isabelle (Ed.D.), Prof. of Math., Univ. of Sou. Miss., Hattiesburg, Miss. Home Add.: 706 Crestview Dr., Hattiesburg, Miss. MATHEMATICS AND PHYSICS. b. Magnolia, Miss., Nov. 8, 1905. d. Vernon Young and Mamye (Barksdale) F. Edn.: A.B., Miss. State Coll. for Women, 1927; M.S., Tulane Univ., 1931; Ed.D., Tchrs. Coll., Columbia Univ., 1959. Exp.: Math. Tchr., Quitman, Miss., 1926-27; Math. Tchr., Copiah-Lincoln Jr. Coll., Wesson, Miss., 1928-42; Math. Tchr., Delta Jr. Coll., 1944-46; Electronics, Army Air Forces, Chicago, Ill., 1942-43; Physics, Miss. State Univ., 1943-44; Math. Tchr., Odessa Coll., 1946-48; Prof. Math., Univ. of Sou. Miss., 1948—. Hon. Pos.: Pres., Hattiesburg, AAUW; Treas., State Delta Kappa Gamma; Chmn., Miss.-La. Br. of the Natl. Coun. of Tchrs. of Math.; Chmn., Math. Sec. of the Miss. Edn. Assn. Mem.: N.E.A.; M.E.A.; A.A.U.P.; A.A.U.W.; Am. Math. Assn.; Delta Kappa Gamma; Pi Lambda Theta. Contbr. to: Delta Kappa Gamma Quart.; Edn. Advance; Miss. Areas of Rsch.: Tchng. of Mathematics.

FELDMAN, William (Ph.D.), Biochem., Albert Einstein Med. Ctr., Sou. Div., Phila., Pa. Home Add.: 11631 Kelvin Ave., Phila., Pa. BIOCHEMISTRY; METABOLISM OF MICROORGANISMS. b. Phila., Pa., Feb. 9, 1929. s. Jack and Minnie (Cutler) F. Edn.: A.B., Temple Univ., 1950; Ph.D., Univ. of Pa., 1955. m. Rhoda Litt, Aug. 25, 1951. c.: Ilene Beth; Miriam. Exp.: Rsch. Assoc., Hahnemann Med. Coll., Phila., Pa., 1955-57; Rsch. Assoc., Cornell Univ. Med. Coll., N. Y., N. Y., 1957-59; Biochem., Albert Einstein Med. Ctr., Phila., Pa., 1959—. Mem.: Soc. of Am. Bacteriol.; A.A.A.S.; Sigma Xi. Contbr. to: Jour. of Bacteriol. Serv. Rec.: U. S. Navy, 1950-52. Areas of Rsch.: Respiratory Enzymes in Bacteria; Receptor Destroying Enzyme Production by Vibrio Comma; Ergothioneine Synthesis in Neurospora.

FELLING, William Edward (Ph.D.), Dir. of Scientific Liaison, Raytheon Co., Lexington 73, Mass. Home Add.: 68 Longfellow Rd., Wellesley Hills 81, Mass. APPLIED MATHEMATICS, CELESTIAL MECHANICS, ASTROPHYSICS. b. St. Louis, Mo., Nov. 26, 1924. s. R. E. and Mary C. (Kiggins) F. Edn.: B.S., Iowa St. Coll., 1945; M.S., St. Louis Univ., 1949; Ph.D., ibid., 1956. m. Aileen C. Adamson, Aug. 21, 1948. c.: William; Maureen; Mark; Kevin; Ricky; Drew; Tricia; Megan. Exp.: Dir. of Math., Parks Coll. of Aero., Tech. of St. Louis Univ., 1950-58; Res. Sci., McDonnell Aircraft Corp., St. Louis, Mo., 1958-61; Dir. of Sci. Liaison, Raytheon Co., Lexington, Mass., 1961—. Mem.: AAAS; ARS; IRE; Am. Astronomical Soc.; Math. Assn. of Am.; Tau Beta Pi; Eta Kappa Nu; Pi Mu Epsilon; Sigma Xi. Author: Astronautics, 1962. Contbr. to: Astronomical Jour.; Am. Math. Monthly; Annals of Math. Statistics; A.R.S. Jour.



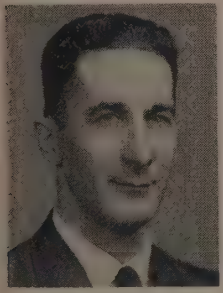
Astronautics. Serv. Rec.: U. S. Navy, W.W. II. Areas of Rsch.: Perturbation Theory; Statistical Sampling Theory; Solar Eclipses.

FELLERS, Francis Xavier (M.D.), Assoc. in Pediatrics, Harvard Med. Schl. and Children's Med. Ctr., Boston, Mass. Home Add.: 992 Memorial Dr., Cambridge 38, Mass. MEDICINE. b. Seattle, Wash., Feb. 6, 1922. s. Prof. Carl R. and Josephine (Sanders) F. Edn.: B.A., Amherst Coll., 1944; M.D., Cornell Univ. Med. Coll., 1947. Exp.: Intern and Asst. Resident in Pediatrics, N. Y. Hosp., 1947-48; Asst. Resident Pediatrics, Boston Floating Hosp., 1953-55; Metabolic Resident, Rsch. Fellow, Children's Hosp., 1955-58; Instr. Pediatrics, Harvard and Children's Hosp., 1958-59; Assoc. in Pediatrics, ibid., 1959—. Mem.: Diplomate, Am. Bd. Ped.; A.A.A.S.; N. Y. Acad. of Scis.; Mass. Med. Soc.; N.E. Ped. Soc.; Soc. for Ped Rsch.; Phi Beta Kappa; Sigma Xi. Contbr. to: Sci.; Am. Jour. Dis. Childhood; Pediatrics; Jour. Maine Med. Assn.; New England Jour. Med. Serv. Rec.: Lt. to Maj., U. S. Air Force, 1948-52. Areas of Rsch.: Medical Rsch. in Pediatric Age Group, Related Mainly to Renal Physiology and Calcium-Phosphorus Metabolism.

FELLOWS, Douglas Merritt (Mr.), Admin. Dir., Ward Schl. of Electronics, Univ. of Hartford, 44 Niles St., Hartford 5, Conn. Home Add.: Amston, Conn. ELECTRONICS GRAPHIC ARTS. b. Everett, Mass., Feb. 23, 1910. s. James Albert Franklin and Elizabeth Douglas (Merritt) F. Edn.: Grad. Study, Univ. of Hartford, 1959-62. m. Catherine Fontaine, Oct. 28, 1932. c.: Varney Douglas; Lura Fellows Butts. Exp.: Asst. Sun Editor, The Hartford Courant, Broad St., Hartford, Conn., 1936-45; Mgr., Hartford Schl. of Music, ibid., 1945-52; Admr. Dir., Ward Schl. of Elec., ibid., 1952—. Hon. Pos.: Pres., Cen. Conn. Indus. Train. Assn.; Pres., Manpower Comm.; Bd. of Dir., Horticultural Soc. Mem.: A.S.E.E.; A.S.T.M.; A.A.A.S.; A.T.E.A.; Am. Ordnance Assn.; Am. Hort. Soc.; Conn. Hort. Soc.; Conn. Guidance Assn.; Garden Writers Assn. of Am.; Alpha Delta Psi. Contbr. to: Conn. Tchr.; Conn. Industry; Publ. Relations. Areas of Rsch.: Consultant on Low Frequency Research on Cancer; Offset and Photo Engraving Techniques, Building Design for 20th Century Education.

FELLOWS, Julian Robert (Mr.), Prof. of Mech. Engrng., Univ. of Ill., Urbana, Ill. HEATING, VENTILATING AND AIR CONDITIONING. b. Nov. 9, 1900, Jackson, Mich. s. Richard John and Lida (McCrum) F. Edn.: B.S. in Mech. Engrng., Univ. of Mich., 1924; M.S., in Mech. Engrng., Univ. of Ill., 1934. m. Mildred Elizabeth of Rives Junction, Mich., Dec. 27, 1919. d. Mr. and Mrs. John Hoyt King. c.: Robert Julian. Exp.: Student Engrng., Westinghouse Elec. Co., 1924; Production Planning Engrng., Hudson Motor Car Co., 1925; ibid., Packard Motor Car Co., 1926; Plant Engrng., Dodge Truck Div., Chrysler Corp., 1927-30; Instr., Prof., Univ. of Ill., 1930. Mem.: Sigma Xi; Am. Soc. for Engrng. Edn.; Am. Soc. for Mech. Engrs.; Am. Soc. of Heat Ref. and A.C. Engrs.; Tau Beta Pi; Pi Tau Sigma; Am. Assn. of Univ. Prof. Author: Vol. I, Engrng. Expt. Sta. Bull. No. 300, 1938. Co-author: Heating, Ventilating and Air-Conditioning Fundamentals, 1949. Co-author, Air Condition and Refrigeration, 1958. Contbr. to: Mech. Engrng.; Coal Heat, Heating-Piping, and Air Conditioning. Gen. Int.: Inventor of Down-Draft Conversion Burner; Co-inventor of Down Draft Coking Furnace; Presently Serving as TCM Guest Prof. and Grp. Ldr. at the Indian Inst. of Technol., Kharagpur, India. Special Int.: Fuels, Combustion, and Burners.

FELLOWS, Robert Francis (Ph.D.), Chief, Chem. Programs, Office of Space Sciences, National Aeronautics and Space Admin., Washington, D. C. Home Add.: 7517 Creighton Dr., College Park, Md. PHYSICAL CHEMISTRY. b. Cleveland, Ohio, July 27, 1920. s. Cornelius Francis and Amanda Esther (Smith) F. Edn.: B.S., Baldwin-Wallace Coll., 1943; Ph.D., Brown Univ., 1951. m. Helen Florence Heeter, Aug. 1943. c.: James; Charles; Frances; Barbara. Exp.: Instr. in Chem., Williams Coll., Mass., 1943-44; Chemist, Spectroscopy Lab., Dow Chem. Co., Midland, Mich., 1951-53; Head of Analytical Lab., Sprague Electric Co., N. Adams, Mass., 1953-58; Chief, Chem. Programs, Office of Space Sciences, Natl. Aeronautics and Space Admin., Wash., D. C., 1958—. Mem.: Am. Chem. Soc.; Am. Geophys. Union; Appl. Spectroscopy Soc.; Am. Assn. Adv. Sci.; Sigma Xi; Alpha Sigma Phi. Contbr. to Encycl. Americana Annuals. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Chemistry and Materials Problems of Electronic Components; Industrial Instrumental Analysis; Aeronomy and Planetary Atomspheres.



FENCHEL, Gerd H(ermann) (Ph.D.), Dir. Psychol. Serv., Wash. Sq. Cons. Center, 35 W. 9th St., N. Y. 11, N. Y. Home Add.: 900 W. 190th St., N.Y.C. CLINICAL PSYCHOLOGY; ANALYTIC GROUP THERAPY, COGNITION, MENTAL PROCESSES. b. Berlin, Germany, Mar. 29, 1926. s. Erich O. and Rose (Goldschmidt) F. Edn.: B.S.S., City Coll. of N. Y., 1949; M.S., ibid., 1950; Ph.D., N. Y. Univ., 1959. m. Elaine Gertzis, 1949. c.: Eric Steven; Karen Elizabeth. Exp.: Psychol. and Grouptherapist, Alfred Adler Cons. Cent., N. Y., 1952—; Coordinator Grouptherapy Dept., Supv. Therapy, L. I. Cons. Center, N. Y., 1953-60; Asst. Dean, Alfred Adler Inst. for Individual Psychol., 1955—; Dir., Inst. for Group Psychotherapy, N. Y., 1959-60; Dir. Psychol. Serv., Wash. Sq. Cons. Cen., N. Y., 1960—. Mem.: Psi Chi; Am. Psychol. Assn.; Co. of Psychoanal. Psychotherapists; Am. Assn. Adv. Sci.; N. Y. St. Psychol. Assn.; Am. Group Psychotherapy Assn.; Individual Psychol. Assn.; Am. Soc. Adlerian Psychol.; Am. Soc. for Group Psychotherapy and Psychodrama. Contbr. to: Jour. Abn. and Soc. Psychol.; Psychoanal. and Psychoanal. Rev.; Psychol. Newsletter; Jour. of L. I. Consul. Center; Books Abroad. Areas of Rsch.: Group Psychotherapy; Mental Cognitive Processes.

FENSKE, Merrell Robert (D.Sc.), Hd., Dept. of Chem. Engrng., Dir., Petroleum Refining Lab., Pa. St. Univ., University Park, Pa. CHEMICAL ENGINEERING, PETROLEUM, REFINING, PETROCHEMISTRY, APPLIED CHEMISTRY. b. Michigan City, Ind., June 5, 1904. s. William A. and Minna (Glassman) F. Edn.: A.B., DePauw Univ., 1925; D.Sc., Mass. Inst. of Tech., 1928. Hon. Deg.: D.Sc., DePauw Univ., 1946. Exp.: Rsch. Assoc., Mass. Inst. of Tech., 1928-29; Asst. Prof., Chem. Engrng., Pa. St. Univ., 1929-34; Assoc. Prof., ibid., 1934-36; Prof., ibid., 1936—; Dir., Petroleum Refining Lab., ibid., 1929—; Dir., Div. of Industrial Rsch., ibid., 1936-45; Hd., Dept. of Chem. Engrng., ibid., 1959—. Hon. Pos.: Chmn., Chem. Eng. Rev. Com. of Argonne National Lab., 1962; Consult. and Official Investigator, Natl. Defense Rsch. Comm., 1941-45; Mem., Sub-Comm. of Natl. Adv. Comm. for Aeronautics, 1951-58; Mem., Sub-Comm. of Natl. Aeronautics and Space Agcy., 1958—; Mem., Rsch. and Engrng. Adv. Panel, Dept. of Defense; Mem., Adv. Panel on Fuels and Lubricants, Defense Rsch. and Engrng., 1954—; Consult., Baruch Rubber Survey Comm., 1941; Consult., Metallurg. Lab., Univ. of Chicago, 1944-45. Mem.: Chemists' Club, N. Y.; Am. Assn. Adv. Sci.; A.A.U.P.; Am. Petroleum Inst.; Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Am. Soc. for Testing Materials; Soc. of Automotive Engrs.; Am. Soc. for Engrng. Edn.; Soc. of Chem. Industry; Fellow, Inst. of Petroleum, London; Fellow, Royal Soc. of Arts, London; Phi Beta Kappa; Tau Beta Pi; Sigma Xi; Phi Lambda Upsilon; Sigma Pi Sigma; Alpha Chi Sigma; Alpha Tau Omega. Contbrng. Author: Science of Petroleum, 1955; Unit Processes in Organic Chemistry, 1958. Contbr. to: Industrial and Engrng. Chem.; Jour. Am. Chem. Soc.; Natl. Petroleum News; Oil and Gas Jour.; Petroleum Refiner; Analytical Chem.; A.I.Ch.E. Jour.; Chem. Engrng. Progress; Lubrication Engr.; Soc. of Automotive Engrs.; Jour. of Inst. of Petroleum. Areas of Rsch.: Chemical Engineering; Petroleum Refining and Petrochemistry; Separational Processes; Lubricants, Fuels and Hydraulic Fluids; Catalysts; Viscometry; Polymers; Hydrogenation; Vapor and Liquid Phase Oxidation of Organic Compounds; Analytical, Physical and Organic Chemistry.

FENTER, Felix West (Ph.D.), Senior Scientist, Ling-Temco-Vought Rsch. Center, Dallas, Tex. Home Add.: 1911 O'Connor Rd., Irving, Tex. AEROSPACE ENGINEERING. b. Paris, Tex., Sept. 16, 1926. s. Felix Franklin and Haidee (West) F. Edn.: B.S., The Univ. of Tex., 1953; M.S., ibid., 1954; Ph.D., ibid., 1960. m. Raye Moore, Jan. 28, 1951. c.: Susan Elaine. Exp.: Rsch. Engr., Defense Rsch. Lab., The Univ. of Tex., 1952-58; Senior Specialist, Chance-Vought Corp., Dallas, Tex., 1958-61; Senior Scientist, Ling-Temco-Vought Rsch. Center, ibid., 1961—. Mem.: Sigma Xi; Inst. of Aerospace Sci.; Am. Assn. Adv. Sci.; Am. Rocket Soc.; Am. Astronautical Soc.; Tau Beta Pi. Contbr. to: Jour. Aeronautical Scis.; Proc. The U. S. Navy Symposium on Aeroballistics. Serv. Rec.: U. S. Navy, 1945-49. Areas of Rsch.: Fluid Mechanics and Gas Dynamics; Specialized in Mechanics of Viscous Fluids; Boundary Layers, Turbulence, and Heat Transfer.

FEODOROFF, Nicholas Vasilievich (D.C.E.), Assoc. Prof., Schl. of Engrng., Manhattan Coll., N. Y. 71, N. Y. Home Add.: 45-A Edgewater Park, N. Y., N. Y. ENGINEERING; FLUID MECHANICS; HYDRAULICS. b. Imperial Russia, Nov. 30, 1901. s. Vasily and Olga (Mjagkov) F. Edn.: B.S., Svobodniya Univ., 1929; B.S., Columbia Univ., 1935; C.E., ibid., 1936. Hon. Deg.: D.C.E., Sequoia Univ., 1952. Exp.: Tchr., Supvr., Organizer of Children's Camps, H. S., Bulgaria, 1921-29; Lab. Asst., Civil Engrng. Dept., Columbia Univ., 1934-36; Rsch. Asst., Fluid Mechanics, ibid., 1936-38; Rsch. Engr., Bd. of Water Supply, Honolulu, T. H., 1938-39; Rsch. Assoc., Fluid Mech. and Hydraulics, Columbia Univ., 1939-52; Visiting Assoc. Prof., Manhattan Coll., 1941-46; Visit. Prof., ibid., 1946-48; Adjunct Prof., Coll. of Engrng., N. Y. Univ., 1946-48; Assoc. Prof., Fluid Mech., Manhattan Coll., 1948—; Adjunct Prof., Schl. of Sci., Fairleigh Dickinson Univ., 1955-60; Lectr., C. C., N. Y., Special Prof. Lectr., June 1960, '61, '62, Lectr., Internatl. Course Hydraulic Engrng., Delft, Holland Technol. Univ. Hon. Pos.: Chmn., Sec. Math. and Engrng., N. Y. Acad. of Sci., 1955-56; A Dir. of the Assn. Natl. Des Croix de Guerre (Groupe de American); Dir., Con. Edison Rsch. Project, 1950-51; Dir., Whirlpool Rsch. Project, 1952-53; Cons. Engr., Rsch. Dev. Corp., Palo Alto, Calif., 1952-56. Mem.: Fellow, Am. Soc. Civil Engrs.; A.S.M.E.; Am. Geog. Union; Natl. and N. Y. State Soc. Profl. Engrs.; Fellow, Royal Soc. of Arts of Gr. Brit.; Fellow, A.A.A.S.; Fellow, N. Y. Acad. of Sci.; Am. Soc. Engrng. Edn.; I.A.H.R.; Sigma Xi; Chi Epsilon, and others Contbr. to:

Jour. of Applied Mech.; Trans. A.G.U.; Proc. A.S.C.E.; Proc., Internatl. Cong. of Applied Mech., and many others. War Record: Russian White or Imperial Army, 1917-20. Gen. Int.: St. George Medal, 1918; Recipient Academic Palm (Medal) and Officer of Natl. Acad. of Sci. of French Repub., 1949; Renaissance Francais Medal, 1953; "Commander" (Cross) de L'ordre de Merite for research and development by the society for the promotion of research and invention—by the French Govt., 1957; The Memorial Cross by Natl. Legion of Greek American War Vets in Am., 1958; "Membre Honoraire"—Association National Des Croix de Guerre (Groupe de Amerique), 1958; Recipient, J. C. Stevens Award, Am. Soc. Civil Engr., 1944; Delegate by N. Y. Acad. of Sci. to the 9th Cong. of Internatl. Assn. for Hydraulic Rsch. and to the 7th Cong. of the Internatl. Comm. Large Dams. Areas of Rsch.: Fluid Mechanics; Hydraulics of Open Channels; Hydraulics in General.

FERGUSON, Donald McHardy (Mr.), Chf., Specialized Engrng., Air Force, Cambridge Rsch. Labs., Bedford, Mass. Home Add.: 292 Pleasant St., Marblehead, Mass. MECHANICAL ENGINEERING. b. N.Y.C., Feb. 20, 1914. s. Donald McHardy and Edith Marvin (Todd) F. Edn.: B.S., Univ. of Mich., Coll. of Engrng., 1939. m. Barbara Jeanette Strode, Aug. 10, 1940. c.: Donald McHardy, III; Anne Elizabeth; Barbara Elaine. Exp.: Draftsman-Designer, Hurd Lock and Mfg. Co., Detroit, Mich., 1936-38; Methods Engr., Yale and Towne Mfg. Co., Stamford, Conn., 1939-40; Lt., Ord. Dept., Springfield Armory, Springfield, Mass., 1940-43; Lt., Ord. Dept., Ord. Research and Develop. Cntr., Aberdeen Proving Ground, Md., 1943-45; Lt., Ord. Dept., Office, Field Div. of Ammunition Plants, St. Louis, Mo., 1945-46; Production Mgr., E. D. Jones & Sons, Pittsfield, Mass., 1946-47; Project Engr., Rsch. Div., United Shoe Machinery Corp., Beverly, Mass., 1947-51; Chf., Mechanical and Specialized Engrng., Air Force, Cambridge Rsch. Labs., L. G. Hanscom Field, Mass., 1951—. Hon. Pos.: Pres., Univ. of Mich. Club of Boston, Mass. Mem.: Am. Soc. of Mechanical Engrs.; Am. Geophysical Union; Phi Kappa Psi; Corinthian Yacht Club. Serv. Rec.: U. S. Army, 1940-46. Areas of Rsch.: Astronautical Rsch. Instrumentation.

FERGUSON, James Williams (Ph.D.), Prof. of Chem. and Exec. Officer, Portland State Coll., Portland 1, Ore. Home Add.: 3115 Lake Rd., Milwaukee 22, Oregon. ORGANIC CHEMISTRY. b. Camden, Ohio, April 9, 1908. s. John B., D. D. and Margaret (Williams) F. Edn.: A.B., Miami Univ., Ohio, 1929; A.M., Oberlin Coll., 1931; Ph.D., Univ. of Mich., 1934. m. Catharine Yoder, June 27, 1931. c.: John C.; Bruce D.; Ellen M. Exp.: Rsch. Chemist, Natl. Aniline & Chem. Co., Buffalo, N. Y., 1934-36; Instr. to Asst. Prof., Ore. St. Coll., 1936-42; Rsch. Chemist, Eli Lilly & Co., Indianapolis, Ind., 1943-48; Assoc. Prof., Butler Univ., 1948-58; Prof., Portland State Coll., 1958—. Hon. Pos.: Pres., Ind. Chem. Soc., 1954. Mem.: Am. Chem. Soc.; Sigma Xi; Rsch. Soc. of Am.; Phi Beta Kappa; Phi Kappa Phi; Phi Lambda Upsilon; Phi Mu Alpha; Ore. Acad. of Sci.; Theta Chi; Ore. Kiwanis Club. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Molecular Rearrangements; Organic Synthesis; Pharmaceuticals—Malonic Esters, Papaverine.

FERGUSON, Marion Lee (Ph.D.), Hd., Physiology Lab., Goodyear Aircraft Corp., Akron 15, Ohio. Home Add.: 235 Seneca Trail, Hartsville, Ohio. GENERAL PHYSIOLOGY. b. Washington, Iowa, Nov. 27, 1923. s. Harry C. and Eliza Ann (Arthur) F. Edn.: B.A., State Univ. of Iowa, Ia. City, Ia., 1949; M.S., Ia. State Univ., Ames, Ia., 1955; Ph.D., ibid., 1959. m. Jean Arneta Mathers, June 8, 1946. c.: Elizabeth Sharon; James Prescott. Exp.: Ranger-Naturalist, U. S. Natl. Park Service, Platt Natl. Park, 1952; Teton Natl. Park, Moose, Wyoming, 1953-57; Grad. Asst., Iowa State Univ., 1952-53; 1955-57; Instr., ibid., 1953-55, 1957-60; Visiting Lectr., Dept. of Biol., Univ. of Colo., summer, 1961; Hd., Physiology Lab., Goodyear Aircraft Corp., Akron, Ohio, 1960—. Mem.: Iowa Acad. of Sci.; Ohio Acad. of Sci.; A.A.A.S.; Phi Eta Sigma; Phi Beta Kappa; Phi Kappa Phi; Gamma Sigma Delta; Sigma Xi. Contbr. to: Physiological Zoology; Jour. of the Biol. Photographic Assn. Serv. Rec.: U. S. Air Force, 1943-45. Areas of Rsch.: Physiological Instrumentation; Cellular and Human Physiology.

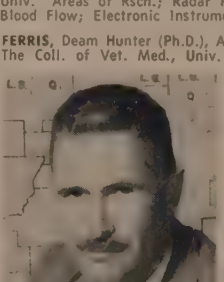
FERGUSON, Raymond Craig (Ph.D.), Chemist, E. I. duPont de Nemours and Co., Elastomer Chem. Dept., Wilmington Del. Home Add.: 1809 Bybrook Rd., Wilmington 3, Del. PHYSICAL CHEMISTRY. INFRARED, NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY: POLYMER STRUCTURE. b. Fort Morgan, Col., May 28, 1922. s. Thomas Parkins and Christine (Craig) F. Edn.: B.S., Ia .St. Coll., 1948; M.S., ibid., 1950; Ph.D., Harvard Univ., 1953. m. Angela Wierzbowski, Jan. 29, 1955. c.: Paul; Eleanor Ann. Exp.: Chemist, E. I. duPont de Nemors and Co., Wilmington, Del., 1953—. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Rsch. Soc. of Am.; A.A.A.S. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Phys. Chem.; Analytical Chem. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Spectroscopy; Physical Chem. and Structure of Polymers.

FERGUSON, William Eugene (Mr.), Hd. of Mathematics Dept., Newton H. S., Newtonville 60, Mass. Home Add.: 40 Laurel Ave., Wellesley Hills 81, Mass. MATHEMATICS. b. Butterfield, Mo., Mar. 30, 1915. s. William Horace and Flora (Hankins) F. Edn.: B.S., Univ. of Mo., 1938; M.A., ibid., 1941. Hon. Deg.: Honorary Doctorate in Edn., Calvin Coolidge Coll., 1958. m. Kathryn Mae Deal, Sept. 6th, 1943. c.: Elana Ruth; Robert Eugene; David Deal; Jonathan Scott; Timothy Mark. Exp.: Tchr. and Prin., Elem. Schl., Purdy, Mo., 1934-36; Math. and Biol. Tchr., Hickman H. S., Columbia, Mo., 1938-40; Instr. in Math., Univ. of Mo., 1940-44; Asst. in Instrn., Yale Univ., 1947-49; Instr. Math. Dept., Connecticut Coll., 1949-54; Mathematician in Rsch. and Devel. Dept., Electric Boat Co., Div. Gen. Dynamics Corp., Groton, Conn., 1954-55; Hd. of Mathematics Dept., Newton H. S., 1955—; Lectr. on Edn., Harvard Univ., 1959—. Mem.: Phi Delta Kappa; Am. Mathematical Soc.; Mathematical Assn. of Am.; Soc. for Ind. and Applied Mathematics; Assn. for Computing Machinery; Natl. Coun. of Tchrs. of Math.; Natl. Edn. Assn.; A.A.A.S. Contbr. to: The Mathematics Tchr. Serv. Rec.: U. S. Navy, 1944-47. Areas of Rsch.: Mathematics Education.

FERNEAU, Thomas Edgar (Mr.), Asst. Dist. Engr., St. of Calif., Div. of Highways, 150 Oak St., San Francisco, Calif. Home Add.: 57 Westdale Ave., Daly City, Calif. HIGHWAY ENGINEERING. b. Auburn, Neb., Aug. 26, 1900. s. Edgar and Ida Florence (Noble) F. Edn.: B.Sc., Univ. of Neb., 1923; C.E., Univ. of Neb., 1938. m. Marian Browne, Mar. 3, 1945. Exp.: Engr., St. of Calif., Div. of Hwys., San Francisco, 1925—. Mem.: Fellow, Am. Soc. of Civil Engrs.; Am. Assn. Adv. of Sci.; Sigma Nu. Contbr. to: Calif. Hwys. and Pub. Works. Serv. Rec.: U. S. Navy Res., 1941-47. Areas of Rsch.: Highway Engineering; Electronic Data Processing; Highway Drainage; Photogrammetry; Highway Administration.

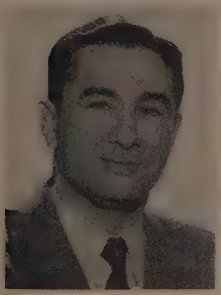
FERRIS, Clifford Duras (D.Sc.), Assoc. Prof., Geo. Wash. Univ., Wash. 6, D. C. ENGINEERING PHYSICS, ELECTROMAGNETIC THEORY, ELECTROMEDICAL INSTRUMENTATION, CIRCUIT THEORY. b. Philadelphia, Pa., Nov. 19, 1935. s. Raymond Henry and Edythe (Fisher) F. Edn.: B.S., Univ. of Pa., 1957; M.S., ibid., 1958; D.Sc., Geo. Wash. Univ., 1962. m. Marcia Marie Lawton, June 1956. Exp.: Burroughs Corp., Paoli Rsch. Center, 1955-56; Engr., Electromed. Lab., Univ. of Pa., 1957-59; Consultant, Depts. of Pharmacol. and Therapeutic Rsch., ibid., 1957-59; Melpar Inc., Systems Analyst, 1959; Consultant, Walter Reed Army Med. Ctr., Wash., D. C., 1961—; Staff Mem., Geo. Wash. Univ., 1959—; Assoc. Prof., ibid., 1962—. Hon. Pos.: Chmn., Technical Grp. on Basic Sci., A.I.E.E., Wash. Sect. Mem.: I.R.E.; Am. Inst. of Elec. Engrs.; Am. Soc. for Engrng. Edn.; A.A.A.S.; Philosophical Soc. of Wash.; Kappa Alpha; Sigma Tau; Tau Beta Pi; Eta Kappa Nu; Pi Mu Epsilon. Author: Linear Network Theory, 1961. Contbr. to: Proc. I.R.E.; Rsch. Publications, Electromed. Lab., Univ. of Pa.; Publications, Ctr. for Measurement Sci., Geo. Wash. Univ. Areas of Rsch.: Radar Radiation Hazards; Measurement of Blood Flow; Electronic Instrumentation for Med. Measurements.

FERRIS, Deam Hunter (Ph.D.), Assoc. Prof. of Pathol. and Hygiene, The Coll. of Vet. Med., Univ. of Ill., Urbana, Ill. Home Add.: 213 Edgebrook, Champaign, Ill. EPIDEMIOLOGY; MICROBIOLOGY. b. Mankato, Minn., July 8, 1912. s. Joseph A. and Ruby (Dawson) F. Edn.: A.B., Drake Univ., 1934; M.A., ibid., 1938; Ph.D., Wis Univ, 1953. m. Merle Wildey F., Nov. 17, 1935. c.: Sara Jo; Tary Jeanne; Deborah Joanne; Karen Joyce. Exp.: Biol. Tchr., Kan. H. Schl., 1935-42; Prof. of Biol., Graceland Coll., Lamoni, Ia., 1948-57; Project Assoc., Univ. of Wis., Madison, Wis., Sums., 1954-57; Assoc. Prof., Univ. of Ill., Urbana, Ill., 1957—. Hon. Pos.: Pres., Audio-Visual Assn. of Ia., 1957; Chmn., Comm. on Epidemiology, Leptospirosis Rschs., Conf.; Chmn., Mem. Comm., Wildlife Disease Assn.; Am. Pub. Hlth. Assn.; N. Y. Acad. of Sci.; Ia. Acad. of Sci. Mem.: Wis. Acad. of Sci.; Fellow, Ia. Acad. of Sci.; Ill. Acad. of Sci.; Am. Pub. Health Assn.; Phi Delta Kappa; Sigma Xi; Phi Zeta; Phi Sigma; Sigma Tau Delta. Contbr. to: Jour. of Infectious Diseases; Cornell Veterinarian; Am. Jour. of Pub. Health; Scientific Monthly; J.A.-V.M.A.; Am. Biol. Tchr.; Ill. Veterinarian; Jour. Wildlife Mgt.; Wildlife Disease. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Demonstrated Insect Transmission of Vesicular Stomatitis Virus, on Scientific Team Which Demonstrated That This Disease is Endemic in the United States and May Have a Wildlife Reservoir. Areas of Rsch.: Epizootiology, Epidemiology and Microbiology.



FERTIG, Henry Harrison (M.D.), Physician, 10515 Carnegie Ave., Cleveland 6, Ohio. Home Add.: 2925 Fairmount Blvd., Cleveland Hgts. 18, Ohio. CARDIOVASCULAR DISEASE. b. Cleona, Pa., Nov. 15, 1918. s. Henry Harrison and Claire (Nye) F. Edn.: B.A., Univ. of Pa., 1940; M.D., ibid., 1944. m. Mary Taylor, Sept. 29, 1944. c.: Janet Evelyn; Gary Harrison. Exp.: Physician, Cleveland, Ohio, 1949—; Dir., Howard Dittrick Mus. of Histor. Med., ibid., 1954—; Depts. of Internal Med. and Rsch., St. Luke's Hosp., ibid., 1949—. Hon. Pos.: Past Ed., Bull. Acad. of Cleveland; Past Pres., Ohio Acad. Med. Hist. Mem. A.A.A.S.; Am. Med. Assn.; Am.; Heart Assn.; Am. Assn. Hist. of Med.; Hist. of Sci. Soc.; Rowfant Club. Contbrng. Author: Medical Physics, 1950. Contbr. to: Ann. Inst. Med.; Am. Heart Jour.; N. Eng. Jour. Med.; Jour. Hist. of Med. and Allied Scis.; Bull. Hist. of Med.; Ohio Med. Jour.; Jour. Am. Med. Assn.; Bull. Cleve. Acad. Med. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Research in Cardiovascular Disease.

FERTMAN, Manuel Harris (M.D.), Physician, Hematologist, Rsch. Investigator, Dept. of Med., Mount Zion Hosp., San Francisco, Calif. Home Add.: 125 San Anselmo Way, San Francisco 27, Calif. HEMATOLOGY AND CANCER RESEARCH. b. Cleveland, Ohio, May 21, 1916. s. Samuel and Lillian (Kaye) F. Edn.: B.S., Univ. of Mich., 1938; M.A., Ohio St. Univ., 1939; M.D., Ohio St. Schl. of Med., 1943. m. Mildred Been, June 14, 1942. c.: Robert; Denise; Sandra. Exp.: Intern, Beth Israel Hosp., Boston, Mass., 1943-44; Resident, Starling-Loving Hosp., Columbus, Ohio, 1944-45; Pvt. Prac., San Francisco, Calif., 1947-61; Clinical Tchng. Staff, Stanford Coll. of Med., San Francisco, 1947-60; Physician, Mount Zion Hosp., San Francisco, 1947—. Mem.: A.M.A.; Calif. Med. Assn.; Am. Heart Assn.; Calif. Heart Assn.; Am. Fed. Clin. Rsch.; Am. Assn. Adv. Sci.; Blood Club; Phi Sigma Delta; Phi Delta Epsilon; Commonwealth Club; Press and Union League Club; Symphony Found.; Patrons of the Arts. Contbr. to: Am. Heart Jour.; Jour. Am. Geriatr. Soc.; Proc. Cent. Soc. Clin. Rsch. and Med. Serv. Rec.: U. S. Med. Corps, 1945-47. Areas of Rsch.: Cancer and Hematologic Research; Authority Field Toxic Anemias.



FERTMAN, Mildred Been (M.D. (dec.), Endocrinol., Dept. Pathol., Mt. Zion Hosp., San Francisco, Calif. Home Add.: 125 San Anselmo Way, San Francisco 27, Calif. ENDOCRINOLOGY AND CANCER RESEARCH. b. Youngstown, Ohio, Oct. 19, 1916. d. Morris and Anna (Heyman) Been. Edn.: B.A., Ohio St. Univ., 1937; M.A., ibid., 1938; M.D., ibid., 1945. m. Manuel Harris Fertman, June 14, 1942. c. Robert Been; Denise Lynn; Sandra Gail. Exp.: Rsch. Fellow, Ohio St. Med. Schl., 1940-49; Physician, Pvt. Prac., Internal Med., Endocrinology, 1947—; Clin. Instr., Endocrin., Stanford Med. Schl., 1950-60; Dept. of Med., 1959 and Dept. of Pathol., 1961, Mt. Zion Hosp., San Francisco. Mem.: A.M.A.; Calif. Med. Soc.; The Endocrine Soc.; Am. Fedn. for Clin. Rsch.; A.A.A.S.; Am. Heart Assn.; Calif. Heart Assn.; San Fran. Co. Med. Soc.; Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon. Contbr. to: Handbook Nutrition; Clin. Nutrition; Arch. Surg.; Ann. Surg.; Arch. Pathol.; Jour. Int. Coll. Surg.; Blood; Klin. Wchnschr.; Arch. Int. Med. (A.M.A.); Jour. Am. Geriatrics Soc. Areas of Rsch.: Endocrinology-Thyroid Metabolism; Obesity; (In Collaboration with Husband—Toxic Anemias); Cancer Rsch. (in progress.)

FEST, Thorrel Brooks (Ph.D.), Chmn., Prof., Dept. of Speech, Univ. of Colo., Boulder, Colo. Home Add.: 1546 Sunset Blvd., Boulder, Colo. CHEMISTRY, SPEECH, SCIENTIFIC TECHNICAL COMMUNICATION. b. Audubon, Ia., Aug. 23, 1910. s. Albert F. and Augusta C. (Boers) F. Edn.: B.A., Ia. St. Tchrs. Coll., 1932; M.Ph., Univ. of Wis., 1938; Ph.D., ibid., 1953. m. C. Lucille Etzler, 1934. c.: Stephen G.; Bruce F. Exp.: Instr., Pub. Schls., Griswold, Ia., 1932-34; Chmn., Sci. Dept., Publ. Schls., Spencer, Ia., 1934-39; Asst. Prof., Univ. of N. D., 1939-40; Asst. Prof., Albion College, 1940-44; Classified Adm., Manhattan Project, Oak Ridge, Tenn., 1944-45; Lectr., Univ. Tenn. Extension Faculty, Oak Ridge, Tenn., 1944-45; Prof., Univ. of Colorado, 1945—. Mem.: Natl. Soc. for Study of Communication, Past Pres.; Speech Assn. of Am.; Adult Edn. Assn.; Western Speech Assn.; Internatl. Insts. of Arts and Letters, Fellow; Lambda Delta Lambda; Delta Sigma Rho; Kappa Delta Pi; Blue Key; Izaak Walton League. Contbr. to: Jour. of Speech and Hearing Disorders; Jour. of Communication; Proc. of Inst. on Scientific and Technical Communication, C.S.U.; Proc. of I.R.E.; Quart. Jour. of Speech; Western Speech; Rocky Mtn. Law Rev. Areas of Rsch.: Communication and Information Theory; Business, Industrial and Organizational Communication; Group Methods.

FETT, Robert Walter (Capt.), Weathr Forecaster and Pilot, U. S. Air Force. Home Add.: 6 Barry Ave., Bay Ridge, Annapolis, Md. METEOROLOGY. b. Rhinelander, Wis., Aug. 3, 1928. s. Walter R. and Alice Bernice (Fries) F. Edn.: B.A., Univ. of Chicago, 1952; M.S., St. Louis Univ., 1961. m. Minnie Lichtman, Sept., 1954. c.: Valerie Alice; Kristy Ann; Walter Robert. Exp.: Weather Observer, U.S.A.F., Thunderstorm Project, Chicago, Ill., 1946-49; Weather Forecaster and Pilot, France, 1953-59; ADV Weather Officer, Meteorol. Satellite Acts., Wash., D. C., 1961—. Mem.: Sigma Xi. Serv. Rec.: U.S.A.F., 1946—. Listed in: W. W. Among Students in Am. Colls. and Univs. Areas of Rsch.: Tropical Meteorology in Conjunction with the Meteorological Satellite Series.

FETTERS, Cecil Raymond (Mr.), Rsch. Chemist, Libbey-Owens-Ford Glass Co., Toledo, Ohio. CHEMISTRY. b. Edon, Ohio, Sept. 10, 1906. s. David D. and Eva (Wiser) F. Edn.: A.B., Bethany Coll., 1928; M.S., Univ. of Chicago, 1940. m. Lucile G. Long, Apr. 12, 1936. Exp.: Chemist, U. S. Rubber Co., Ohio, 1942; Tchr., Rudolph, Ohio, 1928-44; Chemist, Rossford Ordnance Dept., Rossford, Ohio, 1945-47; Asst. Prof. of Chem., Denison Univ., 1947-52; Rsch. Chemist, Libbey-Owens-Ford Glass Co., Toledo, Ohio, 1952—. Mem.: Chmn., Toledo Sect., Am. Chem. Soc., 1958-59; A.A.A.S.; Ohio Acad. of Sci.; A.A.U.P.; Phi Kappa Tau; Alpha Epsilon Delta; Am. Ceramic Soc. Contbr. to: A.C.S. Cooperative General Chem. Tests, 1950-52; Ohio Schls. Special Int.: Glass Films; Alkali Metals.

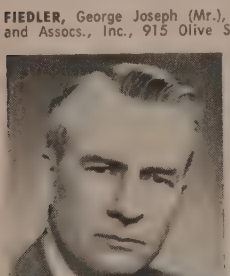
FIALA, Silvio (M.D.), Prin. Investigator, Columbia Univ., N. Y., N. Y. Home Add.: 664 W. 163rd St., N. Y. 32, N. Y. CELL PHYSIOLOGY AND EXPERIMENTAL ONCOLOGY. b. Prague, Jan. 1, 1912. s. Emerich and Maria (Cincera) F. Edn.: M.D., Charles Univ., Prague, 1937. m. Anna Frolka, 1937. c.: Emerich; Anna Elizabeth. Exp.: Hd., Dept. of Virus Diseases, St. Inst. of Pub. Health, Prague, 1942-46; Prin. Investigator, Columbia Univ., 1953—. Mem.: Am. Soc. for Cell Biol.; N. Y. Acad. Sci.; Am. Assn. Adv. Sci.; Am. Assn. Univ. Profs. Contbr. to: Jour. Natl. Cancer Inst.; Endocrinology; Brit. Jour. Cancer; Proc. Soc. Exptl. Biol. and Med.; Proc. Am. Assn. Cancer Rsch.; Jour. Biophys. Biochem. Cytol.; Jour. Histochm. Cytochem.; Arch. Internatl. de Physiol.; Nature; Fed. Procs.; Am. Chem. Soc.; Biol. Listy; Chem. Listy; Biol. Bull. Areas of Rsch.: Cell Physiology and Experimental Oncology.

FEVOLD, Harry Leonard (Ph.D.), Rsch. Coordinator, Baxter Lab., Morton Grove, Ill. Home Add.: 736 Community Dr., La Grange Park, Ill. BIOCHEMISTRY, PROTEIN CHEMISTRY. b. Badger, Ia., Oct. 21, 1902. s. E. E. and Anne (Thompson) F. Edn.: B.A., St. Olaf Coll., 1925; M.S., Univ. of Wis., 1926; Ph.D., ibid., 1928. m. Agnes B. Molstad, June 20, 1928. c.: Richard; Ruth Ann; Kathryn. Exp.: Rsch. Chemist for Biol. Dept., Univ. of Wis., 1928-35; Asst. Prof. of Biochem., Harvard Univ., 1935-41; Hd., Pharmaceutical Sect., Hd., Food Protein and Lipid Sect. of Biochem. Div., Western Regional Rsch. Lab., Bur. Agri. and Industrial Chem., U. S. Dept. of Agric., Albany, Calif., 1941-47; Dir. Res., Quartermaster Food and Container Inst., Chicago, Ill., 1947-51; Dir. of Biochem. Rsch., Baxter Lab., Inc., Morton Grove, Ill., 1951-53; Rsch. Dir., ibid., 1953-55; Dir. of Rsch. and Development, ibid., 1955-57; Rsch. Coordinator, ibid., 1957—.

Mem.: Am. Chem. Soc.; Soc. of Biological Chemists; Fellow, A.A.A.S.; Endocrine Soc.; Soc. Exptl. Biol. and Med.; Fellow, N. Y. Acad. of Sci.; Ill. Acad. of Sci.; Phi Sigma; Pi Lambda Epsilon; Sigma Xi; Alpha Chi Sigma; Gamma Alpha. Contbr. to: Proc. Soc. Exp. Biol. and Med.; Jour. Am. Chem. Soc.; Am. Jour. Physiol.; Endocrinol.; Jour. Biol. Chem.; Jour. Nutrn.; Sci.; Ind. and Eng. Chem.; Arch. Biochem.; Food Technology. Areas of Rsch.: Chem. and Physiology of Ovarian Hormones; Chem. and Phys. of Pituitary Hormones; Blood Proteins; Egg Proteins; Nutrition-Proteins and Vitamins; Enzymes and Enzyme Inhibitors; Antibiotics-Lysozyme, Subilin; Gramicidin; Food Technology-Deterioration, Stabilizing and Processing; Pharmaceuticals.

FICKLEN, Joseph B(urwell), III (Mr.), Consulting Chem. Engr., 1848 East Mountain St., Pasadena, Calif. HEALTH AND EXPLOSION HAZARDS. b. Fredericksburg, Va., Apr. 11, 1902. s. Joseph Burwell, Jr. and Ellen Caskie (London) F. Edn.: B.S., Calif. Inst. of Tech., 1928; Attended, Yale Univ., 1932; Calif. Inst. of Tech., 1941-42. m. Irene Louise Poole, Dec. 15, 1939. c.: Joseph Burwell, IV. Exp.: Supt., Rappahannock Elec. Light and Power Co., Fredericksburg, Va., 1919-23; Chem. Engr., Travelers Ins. Co., Hartford, Conn., 1928-41; Special Health Officer, Co. of Los Angeles, Calif., 1941-42; Asst. Mgr., Sheel Loading Plant, U. S. Rubber Co., Charlotte, N. C., 1942-44; Major, Engr., U. S. Pub. Health Serv., 1944-47; Special Health Officer, Los Angeles Co., Calif., 1947—; Consultant, N. Am. Aviation, Inc., 1947—; Consultant, Aerojet Gen. Corp., 1959—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Inst. Chem. Engrs.; Am. Soc. Mil. Engrs.; Soc. of Chem. Ind., England; Am. Assn. of Engrs.; Am. Ind. Hyg. Assn.; Sou. Calif. Acad. of Scis.; Am. Inst. of Chemists; Am. Inst. of Elec. Engrs.; Am. Rocket Soc.; Assn. for Applied Solar Energy; Natl. Soc. of Profl. Engrs.; Calif. Soc. of Profl. Engrs.; Chemists' Club. Author: Manual of Industrial Health, 1940. Translator: Some Methods for Detection and Estimation of Noxious Gases and Vapors in Air. Contbr. to: Power; Power Plant Engrng.; Am. Chem. Soc. Jours.; Sci. Areas of Rsch.: Matters Pertaining to Occupational Health and Explosion Blast Protection Design.

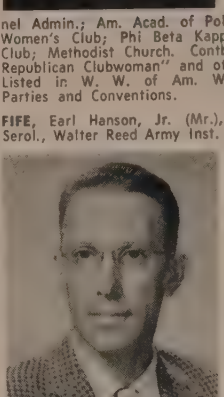
FIEDLER, George Joseph (Mr.), Prin. Engr., Sverdrup and Parcel and Assocs., Inc., 915 Olive St., St. Louis 1, Mo. Home Add.: 8017 Crescent Dr., Clayton 5, Mo. ELECTRICAL ENGINEERING, ELECTRONICS, SERVO MECHANISMS, AUTOMATIC CONTROLS, INSTRUMENTATION. b. Bushton, Kan., Mar. 18, 1904. s. Alois and Theresia (Brodman) F. Edn.: B.S., Kan. St. Univ., 1926; M.S., Univ. of Kan., 1932; Prof. Degree, Elec. Engr., Kan. St. Univ., 1934; Grad. Work in E.E., Univ. of Mich., 1940-42. m. Alice Theresa Doherty, July 6, 1929. Exp.: Engr., Gen. Elec. Co., Schenectady, N. Y., 1926-28; Engr., Radio Corp. of Am., Camden, N. J., 1928-31; Instr., Electrical Engrng. Dept., Univ. of Kan., Lawrence, Kan., 1931-34; Asst. Prof., Union Coll., N. Y., 1934-38; Assoc. Prof., Mont. St. Coll., 1938-42; Assoc. Prof., Univ. of Calif., Berkeley, 1942-44; Chf., Circuit Design Sect., U. S. Naval Electronics Lab., San Diego, Calif., 1944-46; Principal Engr., Sverdrup and Parcel Engr. Co., 1946—. Hon. Pos.: Pres., St. Louis Sect. of the Instrument Soc. of Am. Mem.: Fellow, Inst. of Radio Engrs.; Fellow, Am. Inst. of Electrical Engrs.; Fellow, A.A.A.S.; Sr. Mem., Instrument Soc. of Am.; Natl. Soc. of Profl. Engrs.; Phi Kappa Phi; Eta Kappa Nu; Sigma Tau; Phi Kappa; Engineers' Club of St. Louis. Contbr. to: I.R.E. Trans.; A.I.E.E. Trans.; A.S.M.E. Trans.; I.S.A. Jour.; Proc. of the 1st Congress of the Internatl. Fedn. of Automatic Control, Moscow, Russia; Control Engrng.; Automatic Control. Gen. Int.: Ten Published Technical Papers on Automatic Controls; Theory and Design. Areas of Rsch.: Electronics; Automatic Controls; Instrumentation.



FIELD, Henry, Rsch. Fellow in Phys. Anthropol., Peabody Museum, Harvard Univ., 1950—. Home Add.: 3551 Main Hwy., Coconut Grove, Miami 33, Fla. ANTHROPOLOGY AND PRE-HISTORY OF SOUTHWESTERN ASIA. b. Chicago, Ill., Dec. 15, 1902. Edn.: B.A., Oxford, 1925; M.A., ibid., 1928; D.Sc., ibid., 1937. Exp.: Curator of Phys. Anthropol., Field Museum of Nat. History, 1926-41; Govt. Rsch., Wash., 1941-45. Mem.: A.A.A.S.; A.A.A.; Archeol. Inst. of Am.; Fellow, Royal Geogr. Soc.; Royal Anthr. Inst.; Royal Asiat. Soc. Author: The Anthropol. of Iraq, 1935-52; The Anthropol. of Iran, 1939; The Anthropol. of Caucasus, 1953; The Track of Man, 1953; Ancient and Modern Man in S.W. Asia, 1956, 1961; Bibliography on S.W. Asia: I-VII, 1953-61; North Arabian Desert Archaeological Survey, 1925-50. Contbr. to: Am. Anthropologist; Am. Jour. Archaeology; Southwestern Jour. Anthropol. Special Int.: Southwestern Asia and Western Europe.

FIELDING, Elizabeth May (Miss), Pub. Relations Dir., Natl. Fed. of Republican Women, Cafritz Bldg., 1625 Eye St., N.W., Wash. 6, D. C. Home Add.: 6006 Inwood St., Cheverly, Md. POLITICAL SCIENCE. b. New London, Conn., May 16, 1917. d. Frederick J. and Elizabeth (Martin) F. Edn.: A.B., Conn. Coll. for Women, 1938; M.A., Am. Univ. Schl. of Pub. Affairs, 1944. Exp.: Asst. Dir. of Rsch., Republican Natl. Comm., Wash., D. C., 1948-53; Exec. Secy., Legislative Asst. to U. S. Senator Wiley, Wash., D. C., 1953-54; Assoc. Dir. of Rsch., Republican Natl. Comm., Wash., D. C., 1954-57; Staff Writer, Natl. Assn. of Elec. Companies, Wash., D. C., 1957-60; Public Relations Dir., Natl. Fed. of Repub. Women, Wash., D. C., 1961—. Mem.: Am. Polit. Sci. Assn.; Am. Assn. for the Adv. of Sci.; Soc. for Personnel Admin.; Am. Acad. of Polit. and Soc. Sci.; Am. Newspaper Women's Club; Phi Beta Kappa; Conn. Coll. Club; Capitol Hill Club; Methodist Church. Contbr. to: Editor and Writer of "The Republican Clubwoman" and other Party Publications. Gen. Int.: Listed in W. W. of Am. Women. Areas of Rsch.: Political Parties and Conventions.

FIFE, Earl Hanson, Jr. (Mr.), Supvry., Bacteriologist, Dept. of Serol., Walter Reed Army Inst. of Rsch., Wash., D. C. Home Add.: 6412 Elliott Pl., Hyattsville, Md. IMMUNOLOGY-SEROLOGY. b. Elkton, Ky., Apr. 14, 1915. s. Earl H. and Mabel (Oldham) F. Edn.: B.S., Univ. of Wash., 1948; M.S., Univ. of Md., 1952. m. Mary Skillings, June 14, 1941. c.: Sally Elizabeth; Trudy May; Earl Dennett. Exp.: Rsch. Asst., Swedish Hosp., Seattle, Wash., 1947-48; Supvry. Bacteriol., Walter Reed Army Inst. Rsch., 1948—. Mem.: Am. Soc. Trop. Med. and Hyg.; Trop. Med. Assn. of Wash.; Soc. Exptl. Biol. and Med.; Am. Soc. Microbiol.; A.A.A.S.; N. Y. Acad. of Sci.; Theta Xi; Sigma Alpha Omicron. Contbr. to: Am. Jour. Trop. Med. and Hyg.; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Clin. Pathol.; Jour. Clin. Invest.; Jour. Immunol.; Fed. Proc. Serv. Rec.: U. S. Army, 1942-47. Gen. Int.: Am. Men of Sci. Areas of Rsch.: Development and Improvement of Serodiagnostic Tests for Parasitic Diseases; Mechanisms of Immune Hemolysis and Complement Fixation; Application of Fluorescent Antibody Technics in Serodiagnosis; Factors Affecting Immune Response; Autoantibodies in Health and Disease.

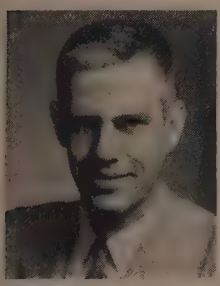


FIGHTMASTER, Walter John, (Mr.), Hd., Life Scis./Human Factors, Advance Systems Design Dept., Bendix Corp., Bendix Systems Div., Ann Arbor, Mich. Home Add.: 908 So. Fifth St., Ann Arbor, Mich. LIFE SCIENCES/HUMAN FACTORS; PSYCHOLOGY: ENGINEERING, RESEARCH, INDUSTRIAL. b. Barberton, Ohio, Dec. 14, 1930. s. Verderman C. and Amanda L. (Stone) F. Edn.: B.S., Univ. of Louisville, Ky., 1952; M.A., ibid., 1954. m. Sue N. Tabler, June 7, 1958. Exp.: Indust. Rsch. Consultant, R. A. Kemper and Assocs., Louisville, Ky., 1952-54; Rsch. Assoc., The George Wash. Univ., Wash., D. C., 1957-58; Senior Human Factors Scientist, The Martin Co., Baltimore, Md., 1958-59; Sr. Human Factors Scientist, Westinghouse Electric Corp., ibid., 1959-60; Hd., Life Scis./Human Factors, Bendix Systems Div., 1960—. Mem.: Am. Psychol. Assn.; Am. Assn. for the Adv. of Sci.; Aerospace Med. Assn.; Am. Rocket Soc.; Midwestern Psychol. Assn.; Mich. Psychol. Assn.; Psi Chi. Contbr. to: The George Wash. Univ.; The Martin Co.; The Bendix Corp.; Westinghouse Electric Corp. Serv. Rec.: U. S. Air Force, 1954-57. Areas of Rsch.: Life Science/Life Support; Bioastronautics; Psychoastronautics; Psychophysiology; Human Factors; Psychology: Engineering, Research, Industrial.

FILLIOS, Louis Charles (Sc.D.), Asst. Prof. of Physiol. Chem., Mass. Inst. of Tech., Cambridge, Mass. Home Add.: 19 Eliot Rd., Lexington, Mass. BIOCHEMISTRY, NUTRITION, ENDOCRINOLOGY. b. Boston, Mass., July 1, 1923. s. Charles L. and Pagona (Kefalas) F. Edn.: A.B., Harvard Coll., 1948; M.S., Harvard Univ., 1953; Sc.D., ibid., 1956. m. Iphigenia Loomis, June 15, 1947. c.: Despena; Diana; Hilary Exp. Rsch Assoc., Harvard Univ., 1956-58; Assoc. in Nutrition, ibid., 1958-61; Rsch. Assoc. in Biochem., M.I.T., 1961-62; Asst. Prof. of Physiol. Chem., ibid., 1961-62. Mem.: Sigma Xi; A.A.A.S.; Am. Inst. of Nutrition. Contbr. to: Am. Jour. of Physiol.; Endocrinol.; Jour. of Biol. Chem.; Circulation Rsch.; Jour. of Exptl. Med.; Metabolism; Jour. of Applied

Physiol.; Jour. of Clin. Nutrition. Serv. Rec.: 1st Lt., U. S. Army Air Force, World War II; Holder of the Distinguished Flying Cross. Gen. Int.: Established Investigator of Am. Heart Assn. Areas of Rsch.: Protein Metabolism; Purine and Pyrimidine Metabolism; Cholesterol Metabolism; Experimental Atherosclerosis.

FILBERT, Robert B., Jr. (Mr.), Asst. Dept. Mgr., Chem. Engrng. Rsch., Battelle Memorial Inst., 505 King Ave., Columbus, Ohio. CHEMICAL ENGINEERING. b. Womelsdorf, Pa., Feb. 15, 1921. s. R. B. and Helen (Luft) F. Edn.: B.S., Penn. State, 1941; M.S., ibid., 1947. m. Joan Brown, July 1, 1950. c.: Thomas R.; Anne R. Exp.: Staff, Hercules Powder Co., Wilmington, Del., 1941-43; U. S. Navy, 1943-46; Staff, Battelle Memorial Inst., 1947—. Mem.: Phi Lambda Upsilon; Tau Beta Pi; Pi Mu Epsilon; Phi Eta Sigma; Am. Chem. Soc.; Am. Inst. Chem. Engrs.; Amer. Ord. Assn.; Natl. Soc. of Professional Engrs.; Chemists Club. Special Int.: Process Design and Development; Chem. Hydrometallurgy Technol.; Fertilizer Technol.; Cost estimating; Rocket propulsion; Nuclear power; Food Processing; Process Control; R. and D. Management.



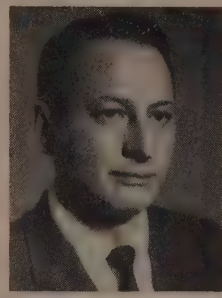
FILSON, Malcolm Harold (Ph.D.), Hd., Dept. of Physics and Chem., Central Mich. Univ., Mt. Pleasant, Mich. ANALYTICAL CHEMISTRY. b. Chattanooga, Tenn., Oct. 19, 1907. s. Verdi Ballard and Imogene (Neal) (dec.) F. Edn.: B.S., Univ. of Ky., 1929; M.S., ibid., 1931; Ph.D., Univ. of Mich., 1936; Mich. St. Univ., 1952-54; NSF., Univ. of Wisc., summer, 1959 (Fellowship); NSF., Cornell Coll., summer, 1960 (Fellowship). m. Elma Florence Hoagbin. c.: Harolyn Jean; Eric Malcolm; Ray Ballard. Exp.: Tchng. Asst., Univ. of Ky., 1929-31; Tchng. Fellow, Univ. of Mich., 1931-34; Asst. Prof. of Chem., Ohio Northern Univ., 1934-35; Prof. of Chem. and Physics, Hd. of Dept., Miss. Womans Coll., 1935-36; Prof., Hd. of Dept. of Chem. and Physics, Central Mich. Univ., 1936—. Mem.: Scientific Rsch. Soc. of Am.; Am. Chem. Soc.; A.A.A.S.; Miss. Acad. of Sci.; Ohio Acad. of Sci.; Mich. Sci. Tchrs. Assn.; Mich. Physics Tchrs. Assn.; Alpha Chi Sigma; Gamma Alpha; Beta Mu Alpha; Sigma Tau Gamma; Sigma Xi; Masons; Odd Fellows; Lions. Contbr. to: Schl. Sci. and Math.; Outline of Organic Chem.; Jour. Chem. Edn. Gen. Int.: Jr. C. of C., Man of the Year Award, 1942; Deputy Dist. Gov., Mich. Lions Club. Areas of Rsch.: Chromyl Chloride and Chromium Plating Baths.

FINDLAY, John Hamley (Ph.D.), Dir. of Electronic Component Development, Sandia Corp., Albuquerque, N. Mex. Home Add.: 705 Loma Linda Pl., S.E., Albuquerque, New Mex. PHYSICS. b. Paisley, Scotland, June 6, 1903. s. John and Eliza J. (Hamley) F. Edn.: B.A., Queens Univ., Can., 1925; B.Sc., ibid., 1927; M.Sc., ibid., 1928; Ph.D., Princeton Univ., 1930. m. Margaret French, Apr. 20, 1940. c.: Jean S.; J. Graham. Exp.: Rsch. Physicist, Union Switch and Signal Co., Swissvale, Pa., 1930-32; X-ray and Microwave Tube Engr., Westinghouse Elec. Co., Bloomfield, N. J., 1933-52; Mgr., Power and Special Tube Engrng., ibid., 1952-53; Engr., Sandia Corp., Albuquerque, N. Mex., 1953—; Dir. of Quality Assurance, ibid., 1958-59; Dir., Electronic Component Dev., ibid., 1959—. Mem.: Am. Physical Soc.; Inst. Radio Engrs.; Am. Assn. Adv. Sci. Contbr. to: Physical Rev.; Electronics; Trans. Royal Soc. of Can. Areas of Rsch.: Atomic Spectra, Electrical Discharges in Gases, Electronic Tubes.

FINDLAY, Blanche (Miss), Schl. Nurse, Clark Co. Schl. Dist., Las Vegas, Nev. Home Add.: 1030 Desert Lane, Las Vegas, Nev. PUBLIC HEALTH NURSING. b. Kanab, Utah, Dec. 1, 1913. d. Gideon Wilson and Dana (Farnsworth) F. Edn.: A.B., Ariz. State Tchrs. Coll., 1940; R.N., Good Samaritan Hosp. Schl. of Nursing, 1946; Cert. in Pub. Health Nursing, Univ. of Wash., 1948. Exp.: Tchr., Mohave Co. Schl., Ariz., 1937-41; First Grade Tchr., Latin Am. Group, Clarkdale, Ariz., 1941-42; File Clerk, Basic Magnesium, Inc., Las Vegas, Nev., 1942-44; Supt., Pediatrics, Good Samaritan Hosp., Phoenix, 1946; Sci. Instr., St. Monica Hosp. Schl. of Nursing, 1946-47; County Nurse, Utah Dept. of Health, 1948-50; Supvr. Dental Health, ibid., 1950-51; Schl. Nurse, Fifth Grade Tchr., Am. Graded Schl., Sao Paulo, Brazil, 1951-53; Sr. Pub. Health Nurse, Alaska Dept. of Health, 1954-56; Nursing Supvr., Bethel Area, ibid., 1956-57; Sr. Pub. Health Nurse #2, ibid., Aleutian Chain and Alaska Peninsula, 1957-59; Schl. Nurse, Clark Co. Schl. Dist., Las Vegas, Nev., 1960—. Hon. Pos.: Pres., Dist. III Alaska Nurses Assn.; Chmn., Pub. Health Nursing Sect., ibid. Mem.: Pi Lambda Theta. Gen. Int.: Establishing a land based Public Health Nursing Service for the people of the Alaska Peninsula and Aleutian Chain. Areas of Rsch.: The Present Physical Conditions of the Native Residence of the Aleutian Chain and the Alaska Peninsula. Problems this Changing Culture has Produced in Regard to Health.

FINERMAN, Aaron (Sc.D.), Prof. of Engrng., Dir. of Computing Ctr., Sta. Univ. of N. Y., Long Island Ctr., Oyster Bay, N. Y. Home Add.: 43 Cambria Rd., Syosset, N. Y. COMPUTING SCIENCES. b. N. Y., Apr. 1, 1925. s. Morris and Rose (Bankalter) F. Edn.: B.C.E., City Coll. of N. Y., 1948; S.M. in C.E., Mass. Inst. of Tech., 1951; Sc.D., ibid., 1956. m. Gloria Blum, Dec. 24, 1949. c.: Jay Sheldon; Ann Hope. Exp.: Inst., City Coll. of N. Y., N. Y., 1948-49; Proj. Engr., Voorhees, Walker, Foley and Smith, N. Y., 1951-54; Instr. and Rsch. Assoc., Mass. Inst. of Tech., Cambridge, Mass., 1954-56; Mgr., Dig. Comp. and Data Proc. Div., Repub. Aviation Corp., Farmingdale, N. Y., 1956-61; Dir. of Comp. Ctr., Prof. of Engrng., St. Univ. of N. Y., 1961—. Hon. Pos.: Pres., Share Org., 1961; Chmn., L. I. Chapt. of ACM, 1960-61. Mem.: Am. Assn. for the Adv. of Sci.; Assn. for Comp. Machinery; Soc. of Indust. and App. Maths.; Tau Beta Pi; Sigma Xi; Prof. Engr., N. Y. Serv. Rec.: U. S. Army, 1944-46, Areas of Rsch.: Computer Applications and Programming; Structural Vibrations.

FINK, Aaron H. (Mr.), Pres., Essex Paper Box Mfg., 281 Astor St., Newark 14, N. J. Home Add.: 20 Crestwood Dr., Maplewood, N. J. CHEMISTRY; PAPER AND PULP. b. Union City, N. J., Apr. 1, 1916. s. Jacob and Tessie (Dubow) F. Edn.: B.A., Johns Hopkins Univ., 1938. m. Roslyn Lamb, Dec. 6, 1942. c.: Elliot; Ilene. Exp.: Treas., Associated Mills, Union City, N. J., 1938-45; Vice-Pres., Gen. Mgr., Essex Paper Box Mfg., Newark, N. J., 1945-48; Pres., ibid., 1948—. Hon. Pos.: Treas., Assoc. Mills, N. J.; Tchng. Assoc., Paper and Pulp Indust. Mem.: Am. Soc. Quality Control Paper and Pulp Indust.; Am. Forestry Assn.; Assn. Am. Museum of Natural History; Am. Mgt. Assn.; Am. Inst. of Mgt. Advisory Bd. and Pres. Coun.; Am. Material Handling Soc.; Alpha Epsilon Pi; Newark Athletic Club; Great Oak Club; Crestmont Country Club. Areas of Rsch.: Nuclear Reactors and Chem. Methods in Paper and Pulp Industry.

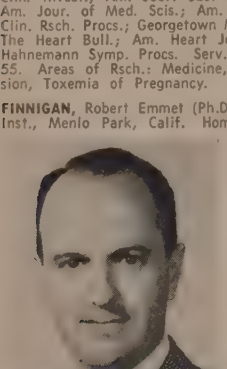


FINK, Harold (M.D.), Physician, 700 Ocean Ave., Brooklyn 26, N. Y. Home Add.: 1901 Dorchester Rd., Brooklyn 26, N. Y. PATHOLOGY. b. Brooklyn, N. Y., Feb. 15, 1902. s. Kopel and Bertha (Cohen) F. Edn.: B.A., Columbia Coll., 1923; M.D., L. I. Coll. Hosp., 1926. m. Johanna Teitelbaum, July 3, 1927. c.: Martin E. Exp.: Internship, Jewish Hosp., Brooklyn, N. Y., 1926-28; Volunteer Asst. Pathologist, Jewish Hosp., ibid., 1928-31; Asst. Attending Physician, Jewish Hosp., ibid., 1928-32; Asst. Attending Physician, Kings Co. Hosp., N. Y., 1929-31; Acting Asst. Med. Examiner, ibid., 1929-31; Pathologist, Coney Island Hosp., N. Y., 1931—; Pathologist, Harbor Hosp., N. Y., 1932-50; Pathologist, Madison Park Hosp., N. Y., 1940-61; Instr., Pathol., Long Island Coll. of Med., 1932-37; Consulting Pathologist, U. S. Naval Hosp., St. Albans, N. Y., 1947-49; Consulting Pathologist, N. Y. Reg. Off., Vet. Admin., 1955-61; Hematologist and Transfusionist, Madison Park Hosp., N. Y., 1940-61; Clin. Prof. of Pathol., Adelphi Coll., 1959—; Consulting Pathologist, St. Joseph's Hosp., Far Rockaway, N. Y., 1955—; Exec. Dir., Coney Island Hosp. Rsch. Inst., Inc., N. Y., 1959—. Mem.: N. Y. Pathol. Soc.; Fellow, Am. Coll. of Physicians; Am. Assn. of Pathol. and Bacteriol.; N. Y. State Soc. of Pathol.; Fellow, Am. Soc. of Clin. Pathol.; Founding Fellow, Coll. of Am. Pathol.; Fellow, N. Y. Acad. of Sci.; Am. Soc. of Hematol.; Soc. for the Study of Blood; Internatl. Soc. of Hematol.; A.A.A.S.; Phi Delta Epsilon; Beta Sigma Rho. Contbr. to: Am. Jour. of Surgery; Annals of Internal Med.; Am. Jour. of Obs. and Gyn.; Jour. of Urol.; U. S. Naval Med. Bull.; Am. Jour. of Phys. Anthrop.; Am. Jour. of Tropical Med.; Am. Jour. of Clin. Pathol.; Proc. Exp. Biol. and Med.; Jour. of Am. Diabetes Assn.; Am. Jour. of Surgery. Serv. Rec.: U. S. Navy, 1943-45.

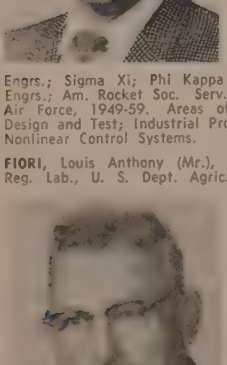
FINKNER, Morris Dale (Ph.D.), Biometrician, N. Mex. State Univ., Box 128, University Park, N. Mex. Home Add.: 605 College Pl., Las Cruces, N. Mex. EXPERIMENTAL STATISTICS (BIOMETRICS). b. Akron, Colo., Feb. 11, 1921. s. A. G. and Atha Iona (Roszell) F. Edn.: B.S., Colo. State Univ., 1943; M.S., Kans. State Univ., 1947; Ph.D., N.C. State Coll., 1952. m. Mary Ella Berry, Sept. 3, 1949. c.: Ronald Wayne; Dale Gordon. Exp.: Asst. Agronomist, Miss. State Univ., 1947-49; Biometrician, Agri. Rsch. Serv., Beltsville, Md., 1956-58; Biometrician, N. Mex. State Univ., 1952-55, 1958—. Mem.: Biometrics; Am. Soc. of Agronomy; Crops Soc. of Am.; Sigma Phi Epsilon; Sigma Xi; Alpha Zeta. Contbr. to: Textile Rsch. Jour.; Am. Soc. of Sugar Beet Technologists; Cereal Chem.; Tappi; Jour. Assn. of Official Agri. Chemists; Agronomy Jour.; Econ. Botany. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Experimental Design, Sampling, Statistical Analysis.

FINNERTY, Frank A., Jr. (M.D.), Physician, 1150 Conn. Ave., N.W., Wash., D. C. Home Add.: 6 Langley Pl., McLean, Va. MEDICINE, CARDIOVASCULAR RESEARCH, HYPERTENSION, TOXEMIA OF PREGNANCY. b. Montclair, N. J., Nov. 3, 1923. s. Frank A., Sr. and Agnes (Fitzsimons) F. Edn.: A.B., Georgetown Univ., 1943; M.D., ibid., 1947. m. Catherine Anderson, Dec. 28, 1946. c.: Francis; Patricia Josephine; Peter Kevin; Robert Dennis; Mary Elizabeth; Shawn Brian. Exp.: Instr., Med., Georgetown Univ. Med. Ctr., Wash., D. C., 1955-58; Chf., Cardiovascular Rsch., Georgetown Univ. Med. Div., D. C. Gen. Hosp., 1955—; Asst. Prof. of Med. and Pharmacol., 1958—; Physician, Wash., D. C., 1959—. Mem.: Am. Soc. for the Adv. of Sci.; Am. Med. Assn.; Sect. of Am. Heart; Am. Fed. for Clin. Rsch.; So. Soc. for Clin. Rsch.; Wash. Heart Assn.; So. Med. Assn.; D. C. Soc. for Internal Med. and Coun. of High Blood Pressure. Contbr. to: Circult.; Proc. Soc. Exptl. Biol. and Med.; Med. Clin. of N. Am.; New England Jour. Med.; Jour. Clin. Invest.; Med. Anns. of D. C.; Proc. of Am. Soc. for Clin. Invest.; Am. Jour. Obs. and Gyn.; Jour. Am. Med. Assn.; Am. Jour. of Med. Scis.; Am. Jour. of Med.; Anns. Int. Med.; Clin. Rsch. Procs.; Georgetown Med. Bull.; Jour. of Appl. Physiol.; The Heart Bull.; Am. Heart Jour.; Jour. of Am. Geriats. Soc.; Hahnemann Symp. Procs. Serv. Rec.: U. S. Army Reserve, 1953-55. Areas of Rsch.: Medicine, Cardiovascular Research-Hypertension, Toxemia of Pregnancy.

FINNIGAN, Robert Emmet (Ph.D.), Sr. Rsch. Engr., Stanford Rsch. Inst., Menlo Park, Calif. Home Add.: 6580 Crow Canyon Rd., Castro Valley, Calif. ELECTRONIC ENGINEERING. b. Buffalo, N. Y., May 27, 1927. s. Charles M. and Marie F. (Jacobs) F. Edn.: B.S., U. S. Naval Acad., 1949; M.S., Univ. of Ill., 1954; Ph.D., ibid., 1957. m. Bette E. Van Horn, Apr., 1950. c.: Charles M.; Dennis P.; Robert E., Jr.; Joan S.; Shawn T.; Thomas E. Exp.: Instr., Air Force Inst. of Tech., Dayton, Ohio, 1955-57; Hd., Reactor Controls Gp., Nuclear Prop. Div., Univ. of Calif. Lawrence Rad. Lab., Univ. of Calif., 1957-62; Sr. Rsch. Engr., Stanford Rsch. Inst., ibid., 1962—. Hon. Pos.: General Chmn., Internatl. Symposium on Aerospace Nuclear Propulsion and Power; Mem., I.R.E. Admin. Comm. Mem.: A.A.A.S.; Inst. of Radio Engrs.; Sigma Xi; Phi Kappa Phi. Contbr. to: Inst. of Radio Engrs.; Am. Rocket Soc. Serv. Rec.: U. S. Navy, 1945-49, U. S. Air Force, 1949-59. Areas of Rsch.: Nuclear Reactor Systems Design and Test; Industrial Process Controls and Instrumentation; Nonlinear Control Systems.



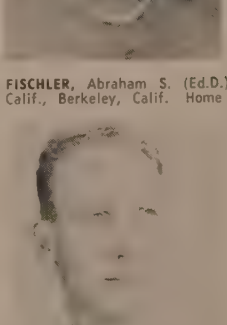
FIORI, Louis Anthony (Mr.), Supvry. Cotton Technologist, Sou. Reg. Lab., U. S. Dept. Agric., New Orleans, La. Home Add.: 1262 Granada Dr., New Orleans, La. HEAD, or DIRECTS PROCESSING EFFICIENCY INVESTIGATIONS ON COTTON FIBERS. b. Clifton, N. J., Sept. 15, 1915. s. Joseph and Isabella (Belli) F. Edn.: B.S., Textile Engrng., Ga. Inst. of Tech., 1942. m. Thelma Joel Breaux, July 27, 1944. c.: Gary Joseph. Exp.: Supvr. Foreman, Botany Worsted Mills, Passaic, N. J., 1935-38; Cotton Technol., Southern Reg. Rsch. Lab., New Orleans, La., 1942-58; Supvr., Cotton Technol., ibid., 1958—. Hon. Pos.: Fellow, The Textile Inst. of Eng.; Secy. of Sub comm. A,-1 on Cotton Fibers, Comm. D-13, Am. Soc. for Testing Materials. Mem.: The Textile Inst. of England; Textile Quality Control Assn.; Fiber Soc.; Scientific Rsch. Soc. of Am.; Phi Psi Textile Hon. Soc.; Am. Soc. for Testing Materials. Contbr. to: Textile World; Textile Industs.; Textile Rsch. Jour.; Cotton Gin and Oil Mill Press; Textile Bull.; Procs. of the Am. Cotton Cong.; Procs. of the Am. Soc. for Quality Control; Textile Praxis, Germany. Serv. Rec.: U. S. Navy, 1942. Gen. Int.: Delegate to the Plenary Conf. of the Internatl. England; U.S.D.A. Superior Serv. Award for Fundamental Studies Relating Fiber Fineness to Processing Performance. Areas of Rsch.: Experiments on Interactions of Mechanical and Physical Properties of Cotton Fibers with Yarn and Fabric Structures, Quality, and Spinning Efficiency; Development of Accelerated Techniques for Evaluating Spinning Performance; Establishment of Optimum Processing Procedures.



FIORIO, Franco E. (Dr.), U. S. Representative Italian Natl. Comm. for Space Rsch., Rome, Italy. Home Add.: 2600 N. Nelson St., Arlington 7, Va. AERONAUTICS AND SPACE SCIENCES. b. Milano, Italy, June 2, 1912. s. Giovanni and Maria (Civita) F. Edn.: Dr., Aeronautical and Mech. Engrng., Politecnico of Milano, Italy, 1934; Master Degree, Ballistics, Politecnico of Torino, Italy, 1937. m. Maria Lanzillotto, 1946. c.: Gianfranco; Maurizio; Alessandro; Livio. Exp.: Scient. Consultant, U. S., Italian Govt., Wash. and N. Y., 1957-62; U. S. Representative Italian Natl. Comm. for Space Rsch., Rome Italy, 1962—. Mem.: Am. Geophys. Union; Inst. of Aerospace Scis.; Am. Rocket Soc.; Am. Nuclear Soc.; Am. Helicopter Soc. Author: Aviazione Moderna, 1962. Contbr. to: Ed. of Missili e Razzi, Italy; La Stampa; Civilta delle Macchine. Serv. Rec.: Italian Air Force, 1936-56. Areas of Rsch.: Space, Sounding Rockets, and Ionospheric Rsch.

FISCHER, Irene K. (Mrs.), Chf. of Geoid Branch, Army Map Serv., Wash. 25, D. C. Home Add.: 301 Philadelphia Ave., Takoma Park 12, Md. GEODESY. b. Vienna, Austria, July 27, 1907. d. Dr. Armand and Mrs. Clara (Loewi) Kaminka. Edn.: Mittelschullehramts or M.A., Univ. of Vienna, Inst. of Tech., 1931. m. Dr. Eric Fischer, 1930. c.: Gay A.; Michael M. J. Exp.: Geodesist, Army Map Serv., Wash. 25, D. C., 1952—. Mem.: Am. Union for Geodesy and Geophysics. Contbr. to: Jour. of Geophys. Rsch.; Bull. Geodesique; Astronomical Jour.; Trans. of Am. Geophys. Union. Areas of Rsch.: Figure of the Earth, Geoid, Geodetic World Datum; Parallax of the Moon.

FISCHLER, Abraham S. (Ed.D.), Assoc. Prof. of Edn., Univ. of Calif., Berkeley, Calif. Home Add.: 438A Kearney St., El Cerrito, Calif. SCIENCE EDUCATION (BIO-CHEMISTRY). b. Brooklyn, N. Y., Jan. 21, 1928. s. Morris and Esther Pauline (Rosenbaum) F. Edn.: B.S.S., Coll. of City of N. Y., 1951; M.A., N. Y. Univ., 1952; Ed.D., Columbia, 1959. m. Shirley Balter, Apr. 9, 1949. c.: Bruce; Michael; Lori. Exp.: Sci. Tchr., Chmn. of Sci. Dept., Ossining H. S., N. Y., 1952-57; Sci. Supvr., Ossining Public Schls., N. Y., 1957-59; Instr., Sci. Dept., Tchrs. Coll., Columbia Univ., 1958-59; Asst. Prof. of Edn., Harvard Univ., 1959-62; Assoc. Prof. of Edn., Univ. of Calif., Berkeley, 1962—. Mem.: N.S.T.A.; A.E.T.S.; Fellow, Am. Assn. for the Adv. of Sci.; Coun. of Elem. Sci. Internatl.; Natl. Council of Tchrs. of Math.; Phi Delta Kappa; Kappa Delta Pi; Masonic Order; Kiwanis. Author: Modern General Sci., 1960. Contbr. to: Sci. Tchr.; Sci. Edn.; Jour. of Tch. Edn.; Natl. Assn. of Secondary Schl. Principals. Serv. Rec.: U. S. Navy. Gen. Int.: DuPont Fellowship, 1956; N.S.F.-A.E.C. Grant, 1958; Sci. Manpower Fellowship, 1958-59; N.S.F. Inst., 1960. Areas of Rsch.: Sci. Curriculum Dev.; Team Teaching; Cognitive Learning; Teacher Preparation.



FISH, Charles John (Ph.D.), Acting Dean, Grad. Schl. of Oceanography, Univ. of R. I., Kingston, R. I. Home Add.: 1291 Kingstowne Rd., Kingston, R. I. BIOLOGICAL OCEANOGRAPHY, BIOLOGY OF ZOOPLANKTON POPULATIONS b Fall River Mass May 13, 1899. s. Charles Frederick and Emily Victoria (Teale) F. Edn.: Ph.B., Brown Univ., 1921; Sc.M., ibid., 1922; Ph.D., ibid., 1923. m. Marie Dennis Poland, Feb. 12, 1923. c.: Marilyn Poland. Exp.: Instr., Brown Univ., 1921-22; Marine Biol., U. S. Bur. of Fisheries, Woods Hole, Mass., 1922-27; Dir., Buffalo

Museum of Sci., Buffalo, N. Y., 1927-34; Asst. Prof. of Zoology, R. I. St. Coll., 1934-35; Assoc. Prof., In Chg. Dept. Zool., ibid., 1935-36; Prof. and Dir. Narragansett Marine Lab., ibid., 1936-46; In Chg., Pacific Ocean Biol. Proj., Woods Hole Oceanogr., Inst., 1946-48; Dir., Narragansett Marine Lab., Univ. of R. I., 1948-61; Acting Dean, Grad. Schl. of Oceanog., ibid., 1961—. Mem.: A.A.A.S.; Atlantic Fishery Biol.; Am. Soc. of Limnology and Oceanography; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Phi Sigma. Author: Encyclopedia of Biological Sci., Plankton Sect., 1961. Contbr. to: Bull. U. S. Bur. of Fisheries; Biol. Bull.; Jour. of Paleontology; Trans. Am. Geophysical Union; Bull. Buffalo Soc. Natural Sci.; Deep Sea Rsch.; Science; Special Sci. Report; U. S. Fish and Wildlife Serv.; Jour. Biol. Bd. of Can. Serv. Rec.: U.S.N.R., 1918, 1942-46. Areas of Rsch.: Biological Oceanography; Biol. of Fresh and Salt Water Zooplankton Populations; Fishery Biol. and Marine Bio-Acoustics.

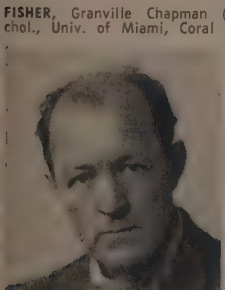
FISHEL, Nathan (Mr.), Geodesist, Corps of Engrs., GIMRADA, Fort Belvoir, Va. Home Add.: 929 N. Van Dorn St., Alexandria, Va.

RESEARCH GEODESIST, CIVIL ENGINEER (TOPOGRAPHIC AND HYDROGRAPHIC MAPPING). b. N. Y., N. Y., July 28, 1926. s. Abraham and Rose (Shugal) F. Edn.: B.S., The Coll. of the City of N. Y., 1949; M.S., Ohio State Univ., 1960. m. Sylvia Rubinstein, June 9, 1959. c.: Karen Leslie. Exp.: Cartographer, U. S. Geol. Survey, Arlington, Va., 1952-55; Geodesist Civil Engr., U. S. Naval Hydrographic Office, Suitland, Md., 1955-61; Geodesist, U. S. Corps of Engrs., Geodesy, Intelligence Mapping Rsch. and Devel. Agency, GIMRADA, Ft. Belvoir, Va., 1961—. Mem.: Am. Geophys. Union. Contributor to: Internatl. Hydrographic Rev.; Monaco. Serv. Rec.: U. S. Navy, 1944. Gen. Int.: Responsible for Electronic Surveys in the Arctic, Decca, Raydist; Participated in 1955 Antarctic Operations. Areas of Rsch.: Lunar Rsch., Geodetic Surveys, Hydrographic Surveys, Geophysical Rsch. (Gravity), Navigation, Geodetic Astronomy.

FISHEL, Vinton Crews (Mr.), Dist. Engr., U. S. Geological Survey, Lawrence, Kan. Home Add.: 1745 Louisiana St., Lawrence, Kan.

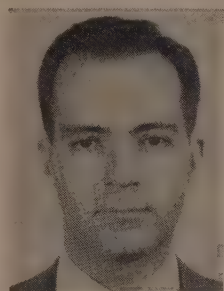
GROUND WATER HYDROLOGY. b. Mt. Erie, Ill., Aug. 5, 1907. s. Elmer J. and Dora (Crews) F. Edn.: B.S., Sou. Ill. Univ., 1931. m. Helen Mayo, May, 1930. c.: Charles Vinton; Vinita Mae. Exp.: Physicist, U. S. Geological Survey, Wash., D. C., 1929-41; Engr., U. S. Geological Survey, Lawrence, Kan., 1941-45; Dist. Engr., ibid., 1945—. Mem.: Am. Geophys. Union; Am. Water Works Assn.; Kan. Acad. of Sci.; Sigma Xi; Sigma Gamma Epsilon. Author: Ground Water Resources of the Kansas City, Kan., Area, 1948; Ground Water Resources of Republic County, Kan., 1948; Ground Water Resources of Pawnee Valley, Kan., 1952. Contbr. to: Kan. Acad. of Sci.; Am. Geophysical Union Trans. Areas of Rsch.: Movement of Ground Water; Soil Moisture; Occurrence of Ground Water.

FISHER, Granville Chapman (Ph.D.), Professor, Dept. of Psychol., Univ. of Miami, Coral Gables, Fla. Home Add.: 3518 S. Moorings Way, Coconut Grove, Fla.



PSYCHOLOGY. b. Nashville, Tenn., Apr. 11, 1906. s. Henry Gordon and Blanche (Dickens) F. Edn.: Ph.B., Univ. of Chicago, 1943; B.D., Meadville Theol. Schl., Univ. of Chicago, 1944; M.A., ibid., 1946; Ph.D., ibid., 1949. Hon. Deg.: F.D., Boswell Soc., Chicago, Ill., 1947. m. Ijourie Bernice Stocks of Miami, Fla., Oct. 7, 1940. d. Gideon J. and Annie Raeburn Stocks. c.: April; Douglas Murray. Exp.: Cartoonist, Architectural Draftsman, Actor, Artist, 1923-32; Art Dir., Surf Club, Miami Beach, Fla., 1932-42; Psycholst., Cook Co. Criminal Ct., Chicago, Ill., 1945-46; Prof. of Psychol., Univ. of Miami, 1946—. Hon. Pos.: Chmn., Fine Arts Commn., City of Miami. Mem.: Am. Psychol. Assn.; Fla. Psychol. Assn.; S.E. Fla. Psychol. Assn.; Sigma Xi; Psi Chi; Kappa Pi; Pres., Miami Art League. Contbr. to: Encyc. Brit. Jr.; Reader's Digest; Cath. Digest. Ph.D. Dissertation: Significant Differences in Sub-Test Scores on the Wechsler-Bellevue Scale of Subjects with General Paresis. Hobbies: Painting; Boating; Fishing; Woodworking; Swimming; Skin-Diving. Listed in: Who Knows—and What; A.M.S. Areas of Rsch.: Personality Theory; Psychotherapy; Hypnotism.

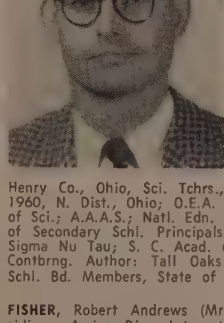
FISHER, Hyman Wendell (M.D.), Pvt. Prac. of Internal Med., Livingston, N. J. Home Add.: 121 E. Northfield Rd., Livingston, N. J.



INTERNAL MEDICINE. b. N.Y.C., N. Y., June 8, 1926. s. Emanuel and Reba F. Edn.: B.S., Chem. Engrng., Mass. Inst. of Technol., 1947; M.S., ibid., 1948; M.D., N. Y. Univ., 1954. m. Rosalie Joseph, 1953. c.: Edward A.; Laura L.; Naomi D. Exp.: Engr., Socony Vacuum Labs., Paulsboro, N. J., 1948-50; Intern and Res., Bellevue, 4th Med. Div., N.Y.C., 1954-57; Res., The Queen's Hosp., Honolulu, Hawaii, 1957-58; Pvt. Prac., Livingston, N. J., 1958—. Hon. Pos.: Asst. Attending, Cardiology, E. Orange Gen. Hosp.; Attending Physician, Home for Cardiac Children, E. Orange, N. J. Mem.: A.A.A.S.; Am. Geriatrics Soc.; Tau Beta Pi; Alpha Omega Alpha; Sigma Xi; B'nai B'rith. Contbr. to: Am. Jour. of Med.; Annals of Internal Med.; Fed. Procs.; Hawaiian Med. Jour.; Jour. of the Med. Soc. of N. J.; Med. Times. Serv. Rec.: U. S. Army, 1945-46. Areas of Rsch.: Medical Director of Radium Research Project of N. J. St. Dept. of Health-Long-Term Radium Toxicity; Cardiology; Catalytic Cracking of Petroleum.

FISHER, Katherine Hammer (Ph.D.), Staff Nutritionist, HRB-Singer, Inc., Science Park, State College, Pa. Home Add.: 230 East Foster Ave., State College, Pa. HUMAN NUTRITION RESEARCH. b. Greensburg, Pa., July 22, 1918. d. Jere A. and Sara (Steiner) Hammer. Edn.: B.A., Seton Hill Coll., 1940; M.S., The Pa. State Univ., 1949; Ph.D., ibid., 1953. m. John L. Fisher, 1944. Exp.: Assoc. Prof., Foods & Nutrition, Pa. State Univ., 1950-61; Staff Nutritionist, HRB-Singer, Inc., Science Park, State College, Pa., 1962—. Mem.: Am. Inst. of Nutrition; Am. Dietetic Assn.; Pa. Dietetic Assn.; Am. Home Econs. Assn.; Pa. Home Econ. Assn.; N. Y. Acad. of Scis.; A.A.A.S.; Sigma Xi; Omicron Nu; Sigma Delta Epsilon. Co-author: Principles of Nutrition, 1959. Contbr. to: Jour. Nutrition; Agric. Expt. Sta. Bull.; Jour. Am. Dietetic Assn.; U. S. Dept. Agri. Yearbook; Jour. of Home Econ. Gen. Int.: Visiting Scholar in Foods and Nutrition, Univ. of Delawere, 1960-61. Areas of Rsch.: Studies Involving Energy, Ascorbic Acid and Calcium Metabolism as well as Ration Studies.

FISHER, Marion LeRoy, Jr. (Mr.), Prin., Poynor Jr. H. S., Florence, S. C. Home Add.: Wildwood Dr., Quinby Estates, Florence, S. C.



PHYSICAL SCIENCE. b. Detroit, Mich., Nov. 20, 1925. s. Marion LeRoy and Clela Mae (Smith) F. Edn.: B.A., Defiance Coll., 1947; B.D., Duke Divinity Schl., Duke Univ., 1950; M.Ed., Bowling Green St. Univ., 1959. m. Mary Annice Hyman, Aug. 27, 1949. c.: Mary Cathryne; Marion LeRoy, III. Exp.: Harmony Charge, The Methodist Church, Harmony, N. C., 1950-52; Audio-Visual Supv., Holgate H. S., Holgate, Ohio, 1952-58; Chmn., Sci. Dept., ibid., 1954-60; Dir. of Sci. Fair, ibid., 1954-60; Prin., ibid., 1958-60; Prin., Poynor Jr. H. S., 1960—. Hon. Pos.: Reg. Dir., Sand Hills, S. C. Sci. Fair, 1961-63; Chmn., Sci. Fair Comm. of S. C. Acad. of Sci., 1962-63; Chmn, Henry Co., Ohio, Sci. Tchrs., 1959-60; Sci. Tchr. of the Year, 1960, N. Dist., Ohio; O.E.A. Delegate, 1959. Mem.: Ohio Acad. of Sci.; A.A.A.S.; Natl. Edn. Assn.; S. C Edntl. Assn.; Natl Assn. of Secondary Schl. Principals; S. C. Assn. of Schl. Principals; Sigma Nu Tau; S. C. Acad. of Sci.; A.A.S.A.; Civitan Internatl. Contbrng. Author: Tall Oaks and Little Acorns, Handbook for Schl. Bd. Members, State of Ohio. Areas of Rsch.: Ecstaticism.

FISHER, Robert Andrews (Mr.), Vice-Pres., Bioferm Corp., Subsidiary, Amino Div., Internatl. Minerals and Chem. Corp., 703 Fifth St., Wasco, Calif. Home Add.: 25 Miner St., Bakersfield, Calif. BIOCHEMIST. b. N. Y., N. Y., Apr. 3, 1919. s. Harry Linn and Nellie Edna (Andrews) F. Edn.: A.B., Columbia Univ., 1941. m. Glory Anne Zahradnik, Jan. 20, 1945. c.: Glenn Andrew; Randall Anthony. Exp.: Analyt. Chemist, Fleischmann Labs., N. Y., 1941-47; Hd., Yeast Dept., ibid., 1947-50; Asst. to Tech. Dir., Standard Brands, Inc., N. Y., 1950-52; Dir. Rsch. and Devel., Pacific Yeast Prods., Inc., Wasco, Calif., 1952-58; Vice-Pres., Bioferm Corp., ibid., 1958—. Hon. Pos.: Chmn., Kern-Kaweah Chapt., Sierra Club, 1958-59. Mem.: Am. Chem. Soc.; Inst. Food Technols.; Assn. of Vitamin Chemists; Animal Nutrition Rsch. Coun.; Animal Health Inst.; Soc. Indust. Microbiols.; Life Mem., Sierra Club; Kern Philharmonic Soc. Contbr. to: Chemist Analyst; Agricl. and Food Chem.; Chem. Engrng. News; Chem. Engrng. Areas of Rsch.: Development of Method of Extraction of Ergosterol from Yeast; Development of Fermentation Process for Vitamin B/12; Co-Development of Fermentation Process for Bioflavonoids; Development of the Microbial Pesticide, Thuricide; Development of A Vitamin Formula for Mountaineering. Field of Rsch : Production of Chemicals by Fermentation.

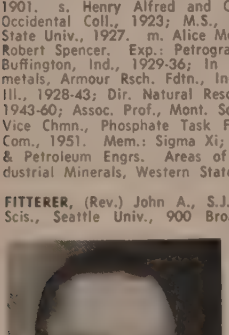
FISHKIN, Arthur Frederic (Ph.D.), Asst. Prof., La. St. Univ., Schl. of Med., New Orleans, La. Home Add.: 108 Yvonne Dr., Westwego, (Avondale), La. BIOCHEMISTRY.

b. N. Y., N. Y., May 27, 1930. s. Sidney L. and Ruth (Schneiderman) F. Edn.: A.B., Ind. Univ., 1951; A.M., ibid., 1953; Ph.D., St. Univ. of Ia., 1957. m. Jane Paul, Sept. 9, 1956. c.: Paul Abraham Samuel; Charles Adlai; James Andrew. Exp.: Fellow, St. Univ. of Ia., Ia. City, Ia., 1953-57; Assoc., Southwest Found., San Antonio, Tex., 1957-58; Instr., L. S. U. School of Med., 1958-62; Asst. Prof., ibid., 1962—. Mem.: Sigma Xi; A.A.A.S.; Am. Chem. Soc.; Phi Lambda Upsilon; Gamma Alpha; Alpha Chi Sigma; Avondale Civic Assn.; Avondale Volunteer Fire Co. Contbr. to: Endocrinology; Archives of Biochem. and Biophys.; Federation Procs. Areas of Rsch.: Biochemistry of Connective Tissue; Tissue Glycoproteins; Hormonal Effects of Metabolism.

FISHLER, Stanley Adrian (Mr.), Assoc. Dir., United Community Servs. of Savannah-Chatham Co. Home Add.: 9136 Brighton Pl., Savannah, Ga. ANTHROPOLOGY; PUBLIC HEALTH; SOCIAL PLANNING. b. Salt Lake City, Utah, May 2, 1926. s. Philip Louis and Alice Ethel (Mabey) F. Edn.: B.A., Univ. of Utah, 1949; M.A., ibid., 1952; Ph.D. Applicant, Harvard Univ., 1952-55. m. Darlene Dougherty, Jan. 10, 1951. c.: Valerie; Kevin Michael; Jeffery Guy; Andrea Lynn; Stacey Ann. Exp.: Field Rsch., Navaho Indians, Ariz., 1949-50; Visiting Lectr. in Sociol. and Econs., Clark Univ., Mass., 1953-54; Thaw Fellow, Harvard Univ., 1954-55; Rsch. Asst., Yale Univ., 1955-56; Community Survey Consult., Ga. Dept. of Pub. Health, Atlanta, Ga., 1956-59; Instr., Ga. St. Coll., 1957-59; Assoc. Dir., United Community Servs., Savannah, Ga., 1959—. Mem.: Am. Anthropological Assn.; Ga. Gerontology Soc.; Am. Folkslore Soc. Author: In the Beginning, A Navaho Creation Myth, 1953; Navaho Picture Writing, 1955. Contbr. to: Jour. Am. Folklore; The Masterkey; El Palacio. Serv. Rec.: U. S. Navy, W.W. II; Korean War, 1950-52. Gen. Int.: The Robert C. Winthrop Scholarship, 1953-54, Harvard Univ.; The Hemenway Fellowship, 1953-54, Harvard Univ. Areas of Rsch.: Navaho; Middle East Anthropology and Archaeology; Community Health Surveys; Gerontology; Am. Health Education, Recreation, and Welfare.

FISK, Henry G. (Ph.D.), Assoc. Prof., Mont. Schl. of Mines, Butte, Mont. Home Add.: 1414 W. Granite, Butte, Mont. MINERALOGY, RESEARCH AND TEACHING. b. San Francisco, Calif., April 26, 1901. s. Henry Alfred and Clotilde (Grunsky) F. Edn.: B.S., Occidental Coll., 1923; M.S., Univ. of Ill., 1924; Ph.D., Ohio State Univ., 1927. m. Alice McCarthy, 1944. c.: Henry Eugene; Robert Spencer. Exp.: Petrographer, Universal Atlas Cement Co., Buffington, Ind., 1929-36; In Charge Rsch., Ceramics and Nonmetals, Armour Rsch. Fdtn., Inc., Ill. Inst. of Technol., Chicago, Ill., 1928-43; Dir. Natural Resources Rsch. Inst., Univ. of Wyo., 1943-60; Assoc. Prof., Mont. Schl. of Mines, 1960—. Hon. Pos.: Vice Chmn., Phosphate Task Force, Columbia Basin Interagency Com., 1951. Mem.: Sigma Xi; Am. Inst. of Mining Metallurgical & Petroleum Engrs. Areas of Rsch.: Mineralogy, Ceramics, Industrial Minerals, Western States Mineral and Fuel Resources.

FITTERER, (Rev.) John A., S.J., Dean of the Coll. of Arts and Scis., Seattle Univ., 900 Broadway and Madison, Seattle 22, Wash. b. Ellensburg, Wash., July 1, 1922. s. C. J. and Violet C. (McMillan) F. Edn.: A.B., St. Louis Univ., 1945; M.A., ibid., 1947; Ph.L., ibid., 1948; S.T.B., Gregorian Univ., Rome, Italy, 1951; S.T.L., ibid., 1954. Exp.: Dean, Coll. of Arts and Scis., Seattle Univ., 1956—; Dir., Summer Session, ibid., 1957-61; Assoc. Prof. of Classical Lang. and Phil., 1958—. Hon. Pos.: Mem. of the Academic Coun., Seattle Univ., 1956—; Chmn., Sci. Com., The Curriculum Com., The Scholarship and Fellowship Com., ibid. Mem.: Archaeological Inst. of Am.; Classical Assn., Pacific States; Exec. Com. of the Coll. and Univ. Dept. of the Natl. Catholic Edn'l. Assn., 1957-59; Chmn. of the Northwest Regional Unit, Natl. Catholic Edn'l. Assn., 1957-59; Northwest Assn. of Secd. and Higher Schls.; Pacific Northwest Conf. on Higher Edn. Travel: Rome, Italy. Gen. Int.: Translation of St. Thomas' Commentary on the Nichomachean Ethics. Hobbies: Writing; Edn'l. Activities. Listed in: Natl. Catholic Dir.; Dir. of the Jesuit Edn'l. Assn.; Catholic Dir. of the Archdiocese of Seattle.



FITZGERALD, John Edward (M.D.), Dir., Inst. of Biophys. Engrng., Westport, Conn. Home Add.: 4 Valley Rd., Westport, Conn. BIOPHYSICS. b. Springfield, Mass., Nov. 8, 1918. s. John Edward and Elizabeth Theresa (Bailey) F. Edn.: B.S., Univ. of Mass., 1942; M.D., Coll. of Physicians and Surg., 1950; Ph.D., Mass. Inst. of Tech., 1955. m. Marie Anton, June 17, 1945. c.: Molly; Julie; Wendy. Exp.: Asst. Prof. Biochem., Univ. of Va., 1955-56; Chief, Biophys. Div., New England Inst. of Med. Rsch., 1956-60; Dir., Inst. of Biophys. Engrng., Westport, Conn., 1960—. Mem.: Fellow, Am. Cancer Soc.; Springfield Acad. of Med.; Am. Chem. Soc.; Biophys. Soc.; N. Y. Acad. of Sci.; Sigma Xi. Contbr. to: Jour. of the Am. Chem. Soc.; Nature; Proc. of the Natl. Soc. of Biophysics. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Protein Physical Chem., Fibrinogen and Protein Fluorescence; Thermoelectrics; Aerosols.

FITZPATRICK, Thomas Bernard (Ph.D.), Edward Wigglesworth Prof. of Dermatology, Harvard Med. Schl., Boston, Mass.; Chmn. of Dept. of Dermatology, Mass. Gen. Hosp., Boston, Mass. Home Add.: 138 Wellesley St., Weston, Mass. DERMATOLOGY AND SYPHILOLOGY. b. Madison, Wis., Dec. 19, 1919. s. Joseph J. and Grace (Lawrence) F. Edn.: B.A., Univ. of Wis., 1941; M.D., Harvard Univ., 1945; Ph.D., Univ. of Minn., 1952. m. Beatrice Devaney, Dec. 27, 1944. c.: Thomas B.; Terry; John L.; Scott; Brian. Exp.: Asst. Prof. Dermat., Univ. of Mich. Med. Schl., 1951-52; Prof., Hd. Div. Dermat., Univ. Ore. Med. Schl., 1952-58; Prof., Chmn. Dept. Dermat., Harvard Med. Schl., 1959—; Chief of Serv., Mass. Gen. Hosp., Boston, Mass., 1959—. Mem.: Alpha Omega Alpha; Sigma Xi. Author: Handbook of Medical Emergencies, 1947; Guide to Dermatologic Diagnosis, co-author, 1962. Contbr. to: Arch. of Dermatology; Jour. of Investigative Derma.; Fed. Proc.; Jour. of Biol. Chem.; Science; Psychol. Rev.; Am. Jour. of Human Genetics; Jour. of the Am. Med. Assn.; Endocrinology; Arch. of Ophthalmology; Nature; Der Hautartz; New England Jour. of Med.; Biol. Bull. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Dermatology; Biochemistry.

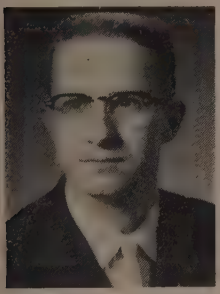
FLANAGAN, Gillis Patrick (Mr.), Inventor, 5102 Linden, Bellaire, Tex. BIO-ELECTRONIC RESEARCH. b. Oaklahoma City, Okla., Oct. 11, 1944. s. Gillis Chas. and Betty (McKiddy) F. Edn.: Senior, Bellaire H. S., Bellaire, Tex., 1962-63. Exp.: Television Tech., Television Ctr., Bellaire, Tex., 1959-62. Mem.: Sertoma Internatl.; Aircraft Owner's and Pilot's Assn. Gen. Int.: Amateur Radio License since age of 11; Private Pilot's License since age of 16; Spectacular Gymnast; Grand Award Winner, Greater Houston Sci. Fair, 1959. Areas of Rsch.: Inventor of Neurophone Radio Hearing Aid for Deaf; Research in Human Factors concerning effects of Radio Waves on Human Nervous System and Muscle Tissue; Research in Radio Detection of Nuclear Blasts.

FLANAGAN, John C(lemans) (Ph.D.), Pres., Am. Inst. for Rsch., 410 Amberson Ave., Pittsburgh 32, Pa. Home Add.: 154 Bellefield Ave., Pittsburgh 13, Pa. PSYCHOLOGY. b. Armour, S. D., Jan. 7, 1906. Edn.: B.S., Univ. of Wash., 1929; M.A., ibid., 1932; Ph.D., Harvard, 1934. m. Katherine Ross (div.), Jan. 18, 1930. m. Ruth C. Boyle, June 21, 1962. c.: J. Ross; Scott C. Exp.: Tchr., Sci. and Math., Renton H. S., Renton, Wash., 1929-30; Tchr., Math., Football Coach, Cleveland H. S., Cleveland, Wash., 1930-32; Assoc. Dir., Cooperative Test Serv., Am. Coun. of Edn., N. Y., N. Y., 1935-41; Pres., Dir. of Rsch., Am. Inst. for Rsch., Pittsburgh, Pa., 1946—; Prof., Psychol., Univ. of Pittsburgh, 1946—. Hon. Pos.: Diplomate, Personnel Psychol., Am. Bd. of Examiners in Prof. Psychol.; Pres., Psychometric Soc., 1952; Pres., Div. on Evaluation and Measurement, Am. Psychol. Assn., 1956; Vice-Pres., Sect. Q, A.A.A.S., 1960; Pres., Div. on Military Psychol., Am. Psychol. Assn., 1961; Dir., N.C.M.E.; Pres.-Elect, Div. of Gen. Psychol., Am. Psychol. Assn., 1962. Mem.: Am. Edn. Rsch. Assn.; Am. Statistical Assn.; N. Y. Acad. of Sci.; Human Factors Soc.; Am. Soc. of Training Dir.; Operations Rsch. Soc.; Am. Sociol. Assn.; Am. Personnel and Guidance Assn.; Sigma Xi. Contbrng. Author: Applications of Psychological Principles and Procedures to the Military Problem, Applications of Psychology, 1952. Contbr. to: Sci. Rsch. Assoc.; Harvard Business Rev.; Public Personnel Rev.; Jour. of Aviation Med.; Edn. Record; Personnel; Management Rev.; Psychometrika; Edn. and Psychol. Measurement; Occupational Psychol. Serv. Rec.: U. S. Army Air Force, 1941-46; Dir., Aviation Psychol. Program. Gen. Int.: Legion of Merit, 1946; Raymond F. Longacre Award for Outstanding Accomplishment in Psychol. and Psychiatric Aspects of Aviation Med., 1954; Personnel and Ind. Relations Assn., Award for Contribution to Ind. and Personnel Relations. Areas of Rsch.: Evaluation and Measurement; Personal. and Social Psychol.; Ind. Psychol.

FLANDERS, Dwight Prescott (Ph.D.), Prof. of Econ., 117 David Kinley Hall, Univ. of Ill., Urbana, Ill. Home Add. 719 S Foley Ave., Champaign, Ill. ECONOMICS. b. Rockford, Ill., Mar. 14, 1909. s. Daniel B. and Lulu I. (Nichol) F. Edn.: B.A., Univ. of Ill., 1931; M.A., Univ. of Ill., 1937; Ph.D., Yale Univ., 1939

m. Mildred M. Hutchison, 1939. c.: James Prescott F.; Thomas Addison F. Exp.: Instr., Secd. Schls., Rockford, Ill., 1934-36; Asst. Prof. of Econ., Syracuse Univ., 1939-42; Lt. Col. in Chg. of Econs., U. S. Milit. Acad., West Point, N. Y., 1942-46; Prof. of Econs., Univ. of Ill., Urbana, 1946—, Grad. Adv., Dept. of Econ., 1948—, Chmn. of Master's Rsch. Seminar, 1947—. Mem.: Econometric Soc.; Am. Econ. Assn.; Midwest Econ. Assn.; Beta Gamma Sigma; Phi Beta Kappa; Phi Kappa Phi. Author: Collection of Rural Real Property Taxes in Illinois, 1938; Sci. and Soc. Sci., 1959. Co-Author: American Regionalism, 1938; Governments of the Major Foreign Powers, 1945; Qualifications of Military Personnel As Voters, 1942. Contbr. to: Am. Econ. Rev.; Accounting Rev.; Jour. of Polit. Sci.; Social Forces; Current Econ. Comment. War Record: W.W. II. Areas of Rsch.: Econ. Theory; Integration of Social Sciences; Housing.

FLANINGAM, Ora Ley (Mr.), Rsch. Chemist, Dow Corning Corp., Midland, Mich. Home Add.: 1108 Ashman St., Midland, Mich. PHYSICAL CHEMISTRY, SURFACE-ACTIVE PROPERTIES OF SILICONES, COLLOID CHEMISTRY OF SILICONES. b. Dixon, Ill., Apr. 27, 1935. s. Ora Wakeley and Ethel May (Cramer) F. Edn.: B.S., Chem., Mich. Coll. of Mining and Tech., 1958; M.S., ibid., 1960. Exp.: Instr., Suomi Coll., Hancock, Mich., 1959-60; Chemist, Dow Corning Corp., Midland, Mich., 1960—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci. Serv. Rec.: U. S. Army, 1960-61. Areas of Rsch.: Surface-Active Properties of Silicones, Colloid Chemistry of Silicones, Kinetics of Polymerization.



FLANNERY, P. Vincent (Prof.), Assoc. Prof. of Phys., Purdue Univ., Calumet Campus, 2233 171 St., Hammond, Ind. Home Add.: 3130 Highway Ave., Highland, Ind. PHYSICS. b. Killaloe, Ireland, Sept. 1, 1914. s. James and Mary Anne (Foley) F. Edn.: B.S., St. Mary's Coll., 1939; M.S., Fordham Univ., 1941. m. Anne Quilligan, 1949. c.: Kevin; Maureen; Brian; Vincent, Jr. Exp.: Instr., Power Memorial Inst., N.Y.C., 1939-41; Instr., Leo H. S., Chicago, Ill., 1941-43; Instr., O'Dea H. S., Seattle, Wash., 1943-47; Instr. to Asst. Prof. to Assoc. Prof., Purdue Univ., Calumet Campus, Hammond, Ind., 1947—. Hon. Pos.: Dir., Calumet Regi. Sci. Fair; Consultant, Calumet Regional Sci. Tchrs. Assn.; Mem., Sci. Seminar for Hammond Area. Mem.: AAUP; AAPT; Am. Inst. of Phys.; AAAS. Co-author: Physics for Technical Institutes, 1963. Areas of Rsch.: Cosmic Rays; Radioisitopes; Atomic Reactors.

FLEISHMAN, Malcolm (M.D.), 2704 Fort Bragg Rd., Fayetteville, N. C. Home Add.: 130 Herndon St., Fayetteville, N. C. INTERNAL MEDICINE. b. Fayetteville, N. C., July 17, 1928. s. Samuel Martin and Hannah (Alk) F. Edn.: A.B., Univ. of N. C., 1950; M.D., ibid., 1954. m. Eleanor Weinstein, July 1955. c.: Lawrence Mark; Kenneth Edwin. Exp.: Intern, Geo. Wash. Univ. Hosp., Wash., D. C., 1954-55; Resident in Med., D. C. Gen. Hosp., ibid., 1955; Fellowship in Med., Duke Univ. Hosp., Durham, N. C., 1957-58; Med. Dr., Fayetteville, N. C., 1958—. Mem.: Am. Fed. for Clin. Rsch.; State, Co. and Am. Med. Assn.; Phi Chi Med.; Kiwanis; B'nai Brith. Contbr. to: Circulation Rsch.; Am. Jour. Physiol.; Clin. Rsch. Proc. of the Central Soc. for Clin. Rsch. Serv. Rec.: U. S. Army Med. Rsch. Lab., 1955-57. Gen. Int.: Attending and Consulting Staff, Cape Fear Valley Hosp. and High Smith Mem. Hosp., Fayetteville N. C.; Clin. Instr. in Med., U.N.C. Schl. of Med., Chapel Hill, N. C. Areas of Rsch.: Peripheral and Renal Circulation; Artificial Kidney; Cardiovascular Physiology.

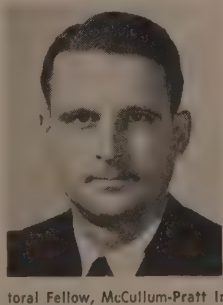
FLEISCHMAN, Alan Isadore (Ph.D.), Biochemist, St. Vincent's Hosp., Montclair, N. J. Home Add.: 248 David Hooper Dr., Westbrook, N. J. LIPID CHEMISTRY. b. Brooklyn, New York, Aug. 10, 1928. s. Louis and Sarah (Schloss) F. Edn.: B.S., City Coll. of N. Y., 1950; M.A., Brooklyn Coll., 1955; Ph.D., St. John's Univ., 1960. m. Harriet Frances Zavodnik (dec.), Dec. 12, 1955, 2nd m. Winifred R. Pountney. c.: Stephen; Jack. Exp.: Chemist, Liebmann Breweries, Brooklyn, New York, 1951-62; Biochemist, St. Vincent's Hospital, Montclair, New Jersey, 1962—. Mem.: Am. Association for the Adv. of Science; Am. Chem. Soc.; Am. Soc. for Microbiology; Soc. for General Microbiology; Soc. for Industrial Microbiology; Am. Soc. of Brewing Chemists; Knights of Pythias. Contbr. to: Proc. of the Am. Soc. of Brewing Chemists; Wallerstein Lab. Comms.; Cereal Chem.; Agri. and Food Chem.; Antimicrobial Agents Annual; Canadian Jour. of Microbiology; Developments in Industrial Microbiology; Bacteriological Proc. Serv. Rec.: U.S.A.R., 1950—. Areas of Rsch.: Microbial Physiology and Enzymology, Lipid Biochemistry.

FLEMING, Charles LeRoy, Jr. (Ph.D.), Vice-Pres., Esso Rsch. and Engrng. Co., Linden, N. J. Home Add.: 745 Norman Pl., Westfield, N. J. ORGANIC CHEMISTRY. b. Penns Grove, N. J., May 16, 1914. s. Charles L. and Florence A. (Thorpe) F. Edn.: A.B., Dartmouth Coll., 1935; Ph.D., Univ. of Ill., 1938. m. Margaret Carleton, 1935. c.: Margaret Hulit; Thomas C.; Barbara L. Exp.: Vice-Pres., Esso Rsch. and Engrng. Co., Linden, N. J., 1956. Mem.: A.C.S.; A.A.A.S.; Sigma Xi; Phi Sigma Kappa; Phi Beta Kappa. Areas of Rsch.: Petroleum Chemistry.

FLEMING, Fred Arthur (Mr.), Chmn. of Sci. Div., McKendree Coll., Lebanon, Ill. Home Add.: 708 Forest Ave., Belleville, Ill. ECOLOGY (PLANTS AND ANIMALS) AND PARISITOLOGY. b. Forest, Ind., Dec. 26, 1906. s. George M. and Zula (Milner) F. Edn.: B.S., Cent. Normal Univ., Ind., 1930; M.S., Univ. of Wyo., 1939. m. Ruth L. Voelkel, Mar. 10, 1945. Exp.: Tchr., Community H. S., Morrisonville, Ill., 1930-42; Assoc. Prof., Air Force Commn. Schl., Scott Air Base, Ill., 1942-47; Assoc. Prof., McKendree Coll., 1947—. Mem.: Am. Phytopathol. Soc.; Ecol. Soc. of Am.; Assn. of Midwestern Coll. Biol. Tchrs.; Natl. Assn. of Biol. Tchrs.; Ill. St. Acad. of Sci. and Am. Forestry Assn.; Masonic Lodge; Sigma Phi Kappa Delta. Contbr. to: Col. Wyo. Acad. of Sci. Jour. Serv. Rec.: U. S. Air Force, 1942-47. Areas of Rsch.: Growth and Food Habits of Small Brook Trout in Government Rearing Ponds; Thorny Headed Worms (Acanthocephala) in Bullheads.

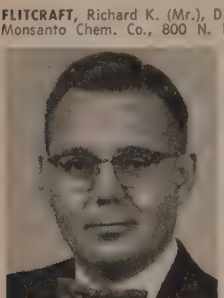
FLEMING, Myrtle Madeline (Mrs.), Tchr., Sci. Dept., Emmanuel Coll., Franklin Springs, Ga. Home Add.: Franklin Springs, Ga. ZOOLOGY. b. Hillman, Mich., Feb. 10, 1913. d. Thomas James and Lottie Mae (Bennett) Crank. Edn.: B.S., East Tenn. State Coll., 1949; M.S., Univ. of Tenn., 1954; Grad. Study, Univ. of Ga., 1960-62. m. May 17, 1930. c.: Charles James. Exp.: Tchr., Couch H. S., Myrtle, Mo., 1950-51; Instr., Lee Coll., 1951-54; Instr., Head, Sci. Dept., Emmanuel Coll., Ga., 1954—. Gen. Int.: Received six Natl. Sci. Fdtn. awards. Areas of Rsch.: Protozoology and Parisitology.

FLEMING, William Henry, II (M.D.), Post-Doctoral Fellow, McCullum-Pratt Inst., Johns Hopkins Univ., Baltimore, Md. Home Add.: 3505 N. Calvert St., Baltimore 18, Md. GASTROENTEROLOGY AND NUCLEAR MEDICINE. b. Augusta, Ga., Mar. 27, 1930. s. William Cornelius and Sarah Virginia (Sibley) F. Edn.: B.S., Ga., 1951; M.D., ibid., 1955. m. Martha Boardman, Apr. 30, 1954. c.: Catherine Boardman; William Henry, III; Thomas Porter, III. Exp.: Intern, Straight Med., Washington Univ. Service, St. Louis City Hosp., St. Louis City, Mo., 1955-56; Asst. Resident, Med., Wash. Univ. Serv., ibid., 1956-57; U.S.P.H. Trainee Gastroenterology, Johns Hopkins Hosp., 1957-58; U. S. P. H. Gastroenterology Rsch. Fellow, ibid., 1958-59; Hd., Spec. Studies, Radioisotope Lab., Bethesda, Md., 1959-61; Post-doctoral Fellow, McCullum-Pratt Inst., Johns Hopkins Univ., Baltimore, Md., 1961—. Mem.: Phi Kappa Phi; Alpha Omega Alpha; Sigma Alpha Epsilon; Phi Rho Sigma. Contbr. to: Bull. Johns Hopkins Hosp.; Proc. Soc. Exptl. Biol. and Med.; N. Y. Lancet, London; Am. Jour. Digestive Diseases; Radiol. Jour.; Am. Jour. Roent. and Rad. Therap.; Gastroenterology; Jour. Nuclear Med.; Manual of Nuclear Med. Serv. Rec.: M. C., U.S.N.R., Lt. Commander. Areas of Rsch.: Action of Plasmin on Various Forms of Fibrin; Gastrointestinal Enzymes; Radiation Hyaline Membrane of Lung.



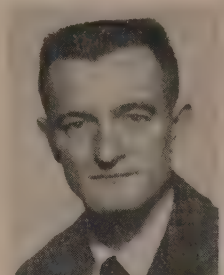
FLICKINGER, Don (Brig. General), U. S. Air Force (Retired), (Med. Corps), Surgeon, Dir. of Life Scis. and Special Asst. for Bioastronautics, HQ Air Rsch. and Development Command, Wash., D. C. and Indep. Consult., Wash., D. C. Home Add.: 4000 Tunlaw Rd., N.W., Wash. 451, D. C. Mail Add.: 1901 Pa. Ave., Suite 406, Wash. 7, D. C. AVIATION AND SPACE MEDICINE. b. Erie, Pa., Nov. 26, 1907. s. George C. and Bonnie (Davis) F. Edn.: A.B., Stanford Univ., 1929; M.D., Stanford Univ. Schl. of Med., 1933. Exp.: Chf., Med. Serv., U. S. Army Hosp., Ft. McClellan, Ala., 1934; Student, Med. Field Serv. Schl., Carlisle Barracks, Pa., 1935; Chf., Surgical Serv., Sta. Hosp., Presidio of Monterey, Calif., 1935-37; Student, Schl. of Aviation Med., Randolph Field, Tex., 1937; Sr. Flight Surg., Wheeler Field, T. H., 1940-41; Flight Surg., 14th Prov. Squad., Clark Field, P. I., 1941; Command Flight Surg., 7th Fighter Command, T. H., 1941-42; Sta. Surg., Mathew Field, Calif., 1942; Wing Surg., Hq. India-China Wing, 1943-44; Exec. Officer, Surgeon's Office, Hq Air Trng. Command, Wash., 1944; Aero Med. Dept., A. F. Schl. of Applied Tactics, Orlando, Fla., 1944-45; Instr., Peter Bent Brigham Hosp., Harvard Med. Schl., 1945-46; Chf., Dept. of Internatl. Med., Schl. of Aviation Med., Randolph AFB, Tex., 1946-47; Dir. of Rsch., ibid., 1947-48; Dir. of Med. Scis., ibid., 1948-49; Air Surg., 8th Air Force, Ft. Worth, Tex., 1949-51; Dir. of Human Factors, Air Rsch. and Development Command, Baltimore, Md., 1951-53; Dir. of Rsch., Asst. Deputy Commander for Tech. Operations, ibid., 1953-55; Commander, A.F. Office of Scientific Rsch., Baltimore, Md., 1955-56; Commander, European Office, Air Rsch. and Development Command, Brussels, Belgium, 1956-57; Surgeon, Dir. of Life Scis., and Special Asst. for Bioastronautics, Hq Air Rsch. and Development Command, Andrews A.F.B. (Ret'd.), 1957—. Mem.: Am. Rocket Soc.; Aero Med. Assn.; Am. Med. Assn.; Fellow, Am. Coll. of Physicians; Assn. of Military Surgeons; Inst. of Aeronautical Scis.; Zeta Psi; Nu Sigma Nu. Contbr. to: Jour. of Aviation Med.; Ann. of Internatl. Med.; Schl. of Aviation Med.; Surgeon General's Office; U.S.A.F., and others. Gen. Int.: Recipient: Theodore C. Lyster Award; Legion of Merit with Oak Leaf Cluster; Distinguished Flying Cross; Soldiers' Medal; Bronze Star; Air Medal. Areas of Rsch.: Organized Air Force Research Activities to Investigate the Physiological and Psychological Problems Involved in Advanced Systems and Space Flight; Continuation of Research Necessary to Develop Techniques and Equipment for Protecting, Sustaining, and Insuring the Optimum Performance of Man in Satellites, Space Stations, and Interplantary Flight.

FLITCRAFT, Richard K. (Mr.), Dir. of Rsch., Inorganic Chems. Div., Monsanto Chem. Co., 800 N. Lindbergh Blvd., St. Louis 66, Mo. Home Add.: 18 Chaminade Park, St. Louis 41, Mo. CHEMICAL ENGINEERING. b. Woodstown, N. J., Sept. 5, 1920. s. H. Milton and Edna (Crispin) F. Edn.: B.S., Rutgers Univ., 1942; M.S., Wash. Univ., 1948. m. Bertha LeSturgeon Hitchner, Nov. 14, 1942. c.: Alyce; Anne; Elizabeth; Richard. Exp.: Mem. Technical Serv., Monsanto Chem. Co., 1942-46; Group Ldr. Tech. Serv., ibid., 1946-48; Supvr. Prod. Dept., ibid., 1948-50; Supt. Tech. Serv., ibid., 1950-52; Asst. Dir. of Rsch., Everett, Mass., 1952-60; Product Bd. Dir., ibid., St. Louis, Mo., 1960; Dir. of Rsch., Inorganic Chems. Div., ibid., 1960—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Assn. for Adv. of Sci.; Am. Soc. for Testing Materials; Rsch. Soc. of Am.; Sigma Xi; Bd. of Trustees, Chaminade Park. Contbr. to: Indust. and Engrng. Chem. Areas of Rsch.: Detergents and Surfactants; Heat Transfer; Materials Handling; Fluid Flow.



FLOCKS, Rubin H. (M.D.), Prof. and Hd., Dept. of Urology, Univ. Hosp., Ia. City, Ia. Home Add.: 514 Grandview Court, Ia. City, Ia. UROLOGY. b. N.Y.C., May 7, 1906. s. Morris and Rose (Blackman) F. Edn.: A.B., Johns Hopkins Univ., 1926; M.D., Med. Schl., ibid., 1930. Exp.: Instr., Univ. Hosps., Ia. City, Ia., 1934-35; Assoc., Univ. of Ia., Coll. of Med., ibid., 1935-37; Asst. Prof., ibid., 1937-39; Assoc. Prof., ibid., 1939-47; Prof., ibid., 1947-49; Prof. and Hd., ibid., 1949—. Hon. Pos.: Pres., Johnson Co. Med. Soc., 1944; Pres., N. Cent. Sect. of Am. Urol. Assn., 1954; Secy., Sect. on Urol. of Am. Med. Assn., 1953-55; Chmn., Sect. on Urology of Am. Med. Assn., 1956; Bd. of Govs., Am. Coll. of Surgeons, 1959-62; Res. Rev. Comm., Am. Med. Assn., 1958—; Coun., Sect. on Urology of the Pan-Am. Med. Assn.; Mem. Bd. of Trustees, Am. Bd. of Urology. Mem.: N. Y. Acad. of Sci.; Soc. for Exptl. Biol. and Med.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Chamber of Commerce; Kiwanis Club. Author: Surgical Urology, 1954; Surgical Urology, 1961; Radiation Therapy of Early Prostatic Cancer, 1960. Contbr. to: Jour. of the Am. Med. Assn.; Jour. of Urology; Mod. Med.; Ia. St. Med. Jour. Areas of Rsch.: Cancer of the Prostate; Urolithiasis.

FLOOK, John Leslie (Mr.), Hd. of Sci. Dept., Enterprise Schl., 1201 W. 45 St., So., Wichita, Kan. Home Add.: 500 Clinton, Haysville, Kan. BIOLOGY. b. Stanley, Kan., May 29, 1933. s. John Lester and Deseret Athena (Noble) F. Edn.: B.S., Kan. St. Tchrs. Coll., 1959. m. Kay Camille Berthot, 1958. c.: Kathy Lynn. Exp.: Hd. of Sci. Dept., Enterprise Schl., Wichita, Kans., 1959—. Mem.: Natl. Sci. Tchrs. Assn.; Am. Assn. for the Adv. of Sci.; Kan. Acad. of Sci.; Am. Legion. Serv. Rec.: U. S. Air Force, 1951-55. Areas of Rsch.: Techniques of Stimulating Students To Do Advanced Work in Individual and Group Projects.



FLOYD, Lyman John (Mr.), Assoc. Engr., The Boeing Co., Seattle, Wash. Home Add.: 5309 Sandpoint, Wy., N.E., Seattle 5, Wash. SOLID STATE PHYSICS—ELECTRONIC DEVICES. b. Logan, Utah, Dec. 14, 1936. s. James Whitney and Virginia (Payne) F. Edn.: B.S., Utah St. Univ., 1959. Exp.: Assoc. Engr., The Boeing Co., 1959—. Mem.: Am. Phys. Soc.; A.A.A.S.; Sigma Phi Epsilon. Areas of Rsch.: General Properties of Ferroelectics and Ferromagnetics.

FOA, Piero Pio (Ph.D.), Dir. of Rsch., Sinai Hosp., 6767 W. Outer Dr., Detroit 35, Mich., Prof., Physiol. and Pharmacol., Wayne St. Univ., Detroit 2, Mich. Home Add.: 21917 Wales, Huntington Woods, Mich. PHYSIOLOGY. b. Torino, Italy, Apr. 13, 1911. s. Carlo and Eloisa (Errera) F. Edn.: M.D., Univ. of Milano, 1934; Ph.D., ibid., 1938. m. Naomi Levin, 1941. c.: Helen S.; Richard P. Exp.: Asst. Prof. Biochem., Univ. of Milano, Italy, 1934-38; Assoc. Prof. Physiol., Univ. of Pavia, Italy; Rsch. Fellow, Univ. of Mich., Ann Arbor, 1939-44; Asst., Assoc., Prof., Physiol., Chicago Med. Schl., Chicago, Ill., 1944-61; Dir. of Rsch., Sinai Hosp., 1962—; Prof., Physiol. and Pharmacol., Wayne St. Univ., 1962—. Mem.: Am. Physiol. Soc.; Endocrine Soc.; Am. Diabetes Assn.; Am. Chem. Soc.; Am. Assn. Adv. Sci.; Fellow, Am. Fed. Clinical Rsch.; Sigma Xi; Am. Heart Assn. Author: Glucagon, Its Function in Health and Disease, 1962. Contbr. to: Am. Jour. Physiol.; Proc. Soc. Exptl. Biol. Med.; Endocrinology; Diabetes; Jour. Clin. Invest.; Am. Jour. Clin. Sci.; Anal. Chem.; Arch. Biochem. Areas of Rsch.: Endocrinology (Pancreas); Insulin; Glucagon; Kidney Function; Hypertension.

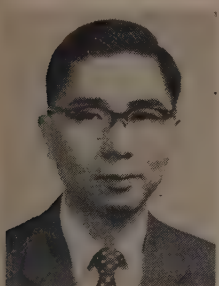
FOCKLER, Herbert Hill (Mr.), Rsch. Grants Program Analyst, National Inst. of Mental Health, Washington, D. C. Home Add.: 10710 Lorain Ave., Woodmoor, Silver Spring, Md. RESEARCH ADMINISTRATION. b. Summersville, W. Va., Feb. 18, 1922. s. Okey and Annie Lee (Fitzwater) F. Edn.: B.A., W. Va. Univ., 1947; M.A., ibid., 1948; M.S. in L.S., Catholic Univ. of Am., 1952; Grad. Study, Oxford Univ., 1948; Harvard Univ., 1949. m. Mary Hildegarde Ziegler, May 15, 1950. c.: Herbert Paul. Exp.: Librarian, Princeton Univ., 1952-54; Govt. Documents Libr., Libr. of Cong., Wash., D. C., 1956-58; Publications Coordinator, White House Conf. on Children and Youth, ibid., 1959-60; Rsch. Grants Program Analyst, Natl. Inst. of Mental Health, ibid., 1960—. Mem.: Am. Assn. Adv. Sci.; Am. Acad. of Polit. and Soc. Sci.; Am. Documentation Inst. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Research Administration.

FOGH, Jorgen Engell (M.D.), Assoc. Mem., Sloan-Kettering Inst. for Cancer Rsch., Rye, N. Y.; Assoc. Prof., SKI Div. of Cornell Univ. Med. Coll., N. Y. Home Add.: 212 Lawn Terrace, Mamaroneck, N. Y. VIRUS AND CELL RESEARCH. b. Copenhagen, Denmark, Feb. 6, 1923. s. K.A.T.A. and Else Agnete (Engell) F. Edn.: M.D., Univ. of Copenhagen, 1949. m. Helle Yde, Jan. 18, 1947. c.: Jens Morten; Peter. Exp.: Asst. Res., Virol., Univ. of Calif., 1953-58; Assoc. Med., Virol., Dept. of Health, N. Y. St., 1958-60; Assoc., Dept. of Microbiol., Albany Med. Coll., Union Univ., 1959-61; Assoc. Cancer Rsch., Roswell Park Meml. Inst., 1960; Assoc. Mem., Sloan-Kettering Inst., Rye, N. Y., 1960—. Mem.: Danish Med. Assn.; N. Y. Acad. of Scis.; Am. Soc. for Cell Biol. Tissue Culture Assn.; Am. Assn. for the Adv. of Sci.; Internatl. Soc. for Cell. Biol.; Electron Microscope

Soc. of Am. Contbr. to: Virology; Proc. Soc. Exptl. Biol. Med.; Cancer Rsch., Jour. Natl. Cancer Inst.; Science; Exptl. Cell Rsch., Archiv f. die gesamte Virus forsch., Pathologie-Biologie. Areas of Rsch.: Virus and Cell Rsch.

FOHS, Ferdinand Julius (Sc.D.), Oil Geologist, San Jacinto Bldg., Houston, Tex. b. N. Y., N. Y., Mar. 1, 1884. s. Mark E. and Fredericka (Baum) F. Hon. Deg.: Sc.D. Tech., Haifa Inst. of Technology, 1957. m. Cora Baldauf, 1908. c.: Ella (dec.); Frances. Exp.: Mine Supt., Ky., 1901; Field Asst., Geologist, U. S. Geol. Survey, 1902; Engr. in Chg. of Mines in Ky., 1902-05; Asst. St. Geologist of Ky., 1905-12; Lectr., Schls. of Mines, St. Univ. of Ky., 1906-08; Special Lectr. in Oil Geol., Columbia Univ., 1927 and 1947; Investigator, Natural and Water Resources of Palestine and Directed Development of Water, 1919, '30, '36, '37; Investigator of Oil Possibilities of Sicily, 1927; Pvt. Report on Natural Resources of Palestine to World Zionist Organization and British War Office, 1919; Humphreys-Fohs Group of Companies, 1914-31; Vice-Pres. and Consulting Geologist, Humphreys Corp.; Pres., Fohs Oil Co., 1932-46; Independent Oil Operator, 1946—; Pres. and Dir., Whiteclay Oil Operators, Inc., 1952—; Vice-Pres., and Dir., Dakamont Exploration Corp., 1952-58; Dir., Independent Petroleum Assn. of Am., 1937-53. Hon. Pos.: Legion of Honor, 50 yrs. mem., 1954, A.I.M. and M.E.; Chmn., Fohs Found., 1937—; Dir., Houston Contemporary Arts Museum, 1952-58. Mem.: Fellow, Geol. Soc. Am.; Am. Inst. Mining and Metallurgical Engrs.; Am. Assn. Petroleum Geologists; A.A.A.S.; British Inst. Petroleum Tech. Gen. Int.: Founded with Mrs. Fohs in 1926, the Ella Fohs Camp for Underprivileged Girls, Which Has Been Developed into a Coeducational Non-Sectarian Institution for 310 Children; Received Certificate of Service, Petroleum Branch, Inst. of Mining and Metallurgical Engineers; Fohs Foundation Also Sponsors Camp for Senior Citizens Located Opposite Children's Camp.

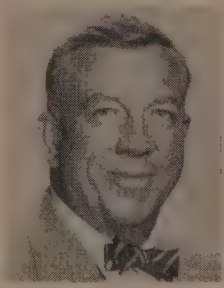
FOK, Thomas D. Y. (Ph.D.), Assoc. Prof. of Engrng., Youngstown Univ., Youngstown, Ohio. Home Add.: 325 S. Canfield-Niles Rd., Youngstown 9, Ohio. STRUCTURAL ENGINEERING; APPLIED MECHANICS, AND ELECTRONIC COMPUTORS. b. Canton, China, July 1, 1921. s. D. H. and C. (Tse) F. Edn.: B.Eng., Szechuan, China, 1945; M.B.A., N. Y. Univ., 1950; Ph.D., Carnegie Inst. of Tech., 1956. m. Maria Liang, Sept. 18, 1949. Exp.: Structural Designer, The Lummus Co., N.Y.C., 1951-53; Design Engr., Richardson, Gordon and Assoc., Pittsburgh, Pa., 1956-58; Assoc. Prof., Engrng., Youngstown Univ., 1958—. Hon. Pos.: Chmn., Legisl. Comm., Mahoning Valley Soc. of Profl. Engrs., 1958—; Vice-Pres., Youngstown Branch, Cleveland Sect., A.S.C.E., 1959-60. Mem.: Fellow, A.S.C.E.; Mem., A.-C.I.; Internatl. Assn. for Bridge and Structural Engrng.; Am. Soc. for Engrng. Edn.; Natl. Soc. of Profl. Engrs.; A.A.A.S.; Soc. of Milit. Engrs.; Beta Gamma Sigma; Sigma Xi; Sigma Tau; Delta Pi Sigma. Contbr. to: Procs., A.S.C.E.; Jour. of A.C.I.; Civil Engrng., A.S.C.E. Gen. Int.: Several Programs for Bendix-G L5 Electronic Computor in Engineering Application. Areas of Rsch.: Structural Engineering; Applied Mechanics; Electronic Computation.



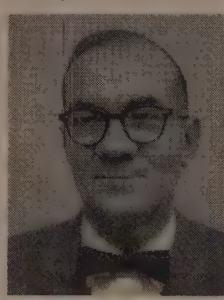
FOLDES, Julius (M.D.), Pathologist, St. Joseph and State Hosp., Hazleton, Pa. Home Add.: 1320 E. Broad St., Hazleton, Pa. b. S. A. Ujhely, Hungary, May 14, 1908. s. Frank and Sarah (Engel) F. Edn.: M.D., Univ. Prague Med. Schl., 1932. m. Mary E. Murphy, Aug. 19, 1939. Exp.: Pathologist, Nanticoke State Hosp., Nanticoke, Pa., 1937-39; Pathologist, Hazleton St. Hosp., 1939—; Pathologist, Coaldale and Locust Mountain St. Hosp., Coaldale and Shenandoch, 1939-45; Pathologist, St. Joseph Hosp., Hazleton, Pa., 1950—. Hon. Pos.: Bd. Mem., Luzerne Co. Cancer Soc.; Mem., City Health Bd.; Chmn., Lab. Comm. Luzerne County Med. Soc. Mem.: Am. Med. Assn.; Penna. Med. Soc.; Am. Soc. Clin. Pathol.; Coll. of Am. Pathol.; Assn of Clin. Scientists; A.A.A.S.; Pa. Assn. of Clinical Pathol.; N. J. Soc. of Pathologist; Phila. Soc. of Pathologist; The Pa. Assn. of Blood Banks; Valley Country Club; Rotary Club. Co-Author: The Pathology and Therapy of Glaucoma, 1954. Contbr. to: Pa. Med. Jour.; Am. Heart Jour.; Am. Jour. Clin. Pathol. Areas of Rsch.: Pathology.

FOLK, Robert Louis (Ph.D.), Prof., Geol., Univ. of Tex., Austin, Tex. Home Add.: 1107 Bluebonnet, Austin, Tex. GEOLOGY—SEDIMENTARY PETROLOGY. b. Cleveland, Ohio, Sept. 30, 1925. s. George Billmyer and Marjorie Marshall (Kinkead) F. Edn.: B.S., Pa. State Coll., 1946; M.S., Ibid., 1950; Ph.D., ibid., 1952. m. Marjorie Thomas, Sept. 7, 1946. c.: Robert Thomas; Jennifer Louise; Charles Marshall. Exp.: Geologist, Gulf Oil Co., Houston, Texas., 1951-52; Asst. to Prof., Geol., Univ. of Tex., 1952—. Mem.: Geol. Soc. of Am.; Soc. of Econ. Paleontolts. and Mineralots.; Tau Beta Pi; Sigma Gamma Epsilon. Author: Petrology of Sedimentary Rocks, 1957. Contbr. to: Jour. of Sediment. Petrol.; Jour. of Geol.; Bull. Am. Assn. of Petrol.; Am. Jour. of Sci. Gen. Int.: Pres. Award for Outstanding Paper, A.A.P.G., 1959. Areas of Rsch.: Petrography of Limestones and Sandstones; Grain Size and Shape Studies; Tertiary Field Geology, East Texas.

FOLLANSBEE, George Little (Litt.D.), Pres., Shady Side Acad., Fox Chapel Rd., Pittsburgh 38, Pa. BIOLOGY; ADMINISTRATION. b. Pittsburgh, Pa., Sept. 12, 1911. s. William U. and Ruth Ann (Harper) F. Edn.: A.B., Princeton Univ., 1934. Hon. Deg.: Litt.D., Wash. and Jeff. Coll., 1958. m. Julianne C. Barnum, June 27, 1945. c.: Caroline Ann; George L., Jr. Exp.: Tchr. of Biol., Phillips Acad., Andover, Mass., 1936-45; Chmn., Dept. of Biol., ibid., 1945-53; Pres., Shady Side Acad., 1953—. Hon. Pos.: Vice-Pres., W.Q.E.D. (Ednl. T.V.), Pittsburgh; V.-Pres., Chautaugua Inst., N. Y.; Elder, Shadyside Presbyterian Church, Pa. Mem.: Cum Laude Soc.; Phi Beta Pi; United Fund; Community Chest; A.A.A.S.; N.E.A.; Natl. Assn. Biol. Tchrs.

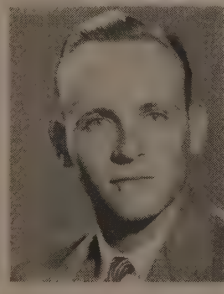


FOLLANSBEE, Harper (Mr.), Chmn., Biol. Dept., Phillips Acad., Andover, Mass. Home Add.: 20 Salem St., Andover, Mass. GENERAL BIOLOGY. b. Pittsburgh, Pa., Sept. 12, 1914. s. William Uhler and Ruth (Harper) F. Edn.: A.B., Princeton Univ., 1937; Ed.M., Harvard Univ., 1954. m. Patience Gibbs Shorey, June 21, 1947. c.: Harper, Jr.; Nathan; Arthur. Exp.: Koppers Co., Tar and Chemical Div., Kearny, N. J., 1937-40; Instr. in Biol., Phillips Acad., Andover, Mass., 1940—; Chmn., Biol. Dept., ibid., 1953—; Ednl. Author, Tchng. Film on Algae, Audio-Visual Ctr., Ind. Univ., Film in progress; Reader, Coll. Entrance Exam. Bd. Advanced Placement Exam. in Biol., 1961-62; Mem., Examining Comm., Coll. Entrance Examination Bd. Achievement Test in Biol., 1961-63; Consult. Editor for Jr. and Sr. H. S. Tests in Biology, Addison-Wesley Publ. Co., Inc., Reading, Mass. Hon. Pos.: Mem., Steering Comm., Am. Inst. of Biological Sci. Biol. Sci. Curriculum Study, 1958-60; Mem., Natl. Sci. Fndtn. Adv. Comm. on Coordination of Curriculum Studies, 1959-60; Mem., Am. Inst. of Biol. Scis., Biol. Sci. Curriculum Study Comm. for Innovation in Lab. Instrn., 1959—. Mem.: A.A.A.S.; Natl. Sci. Tchrs. Assn.; Natl. Assn. of Biol. Tchrs. Co-Author: Laboratory and Field Studies in Biology, A Sourcebook for Secondary Schools, 1960. Contbr. to: The Am. Biol. Tchr.; Sci. Tchr.; Biol. Investigations for Secondary Schl. Students. Serv. Rec.: U. S. Army. Gen. Int.: N.E.A. Sci. Tchr. Achievement Recognition, 1958.



FONKEN, Gerhard Joseph (Ph.D.), Asst. Prof. of Chem., Univ. of Tex., Austin, Tex. Home Add.: 1911 Robbins Pl., Austin, Tex. ORGANIC CHEMISTRY. b. Krefeld, Germany, Aug. 3, 1928. s. Henry and Wilhelmina (vom Eyser) F. Edn.: B.Sc., Univ. of Calif., Berkeley, 1954; Ph.D., ibid., 1957. m. Carolyn Stay, 1952. c.: David; Katherine; Steven; Karen. Exp.: Rsch. Chemist, Procter and Gamble Co., Cincinnati, Ohio, 1957-58; Rsch. Chemist, Stanford Rsch. Inst., Palo Alto, Calif., 1958-59; Asst. Prof. of Chem., Univ. of Tex., 1959—. Mem.: Am. Chem. Soc.; Western Pharmacol. Soc.; Sigma Xi; Phi Lambda Upsilon; Alpha Phi Omega. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Organic Chemistry; Jour. of Biological Chem.; Tetrahedron Letter; Chem. and Industry. Serv. Rec.: U. S. Army, 1946-49, 1950-51. Areas of Rsch.: Natural Products; Stereochemistry; Photochemistry.

FONTAINE, Marc Francis (Ph.D.), Rsch. Chem. Supr., Bellaire Labs., Texaco, Inc., P.O. Box 425, Bellaire, Tex. Home Add.: c/o Texaco, Inc., P.O. Box 425, Bellaire, Tex. CHEMICAL ENGINEERING. b. Mexico City, Mex., Mar. 27, 1926. s. Rene J. P. and Hilda (Pfinder) F. Edn.: B.S., La. St. Univ., 1950; M.S., ibid., 1951; Ph.D., Okla. St. Univ., 1954. m. Dorothy Braswell, Aug. 20, 1949. c.: Alice; Beverly; Charles. Exp.: Rsch. Asst., Okla. St., 1951-53; Math. Instr., Okla. St. Univ., 1953-54; Rsch. Chem. Engr., Texaco Inc., Beacon, N. Y., 1954-60; Sr. Engr., Scientific Liaison, ibid., England, 1960-62; Rsch. Chem. Engr., Texaco, Inc., 1962—. Hon. Pos.: Chmn., Lecture Series for Mid-Hudson Sect. of A.C.S., 1956; Secy., Ch.E. Club, 1957-59. Mem.: Sigma Xi; A.I.Ch.E.; A.C.S.; A.-M.S.; A.S.A.; The Biometric Soc.; A.A.A.S.; The Inst. of Chem. Engrs.; Chem. Soc.; Inst. of Petroleum; Phi Kappa Phi. Serv. Rec.: U.S.A.R., 1954—. Areas

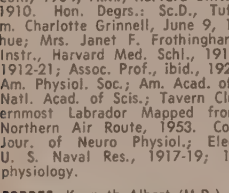


of Rsch.: Motor Fuel Development; Processing; Data Handling and Analysis; Statistics.

FOOTE, Nathan Maxted (Mr.), Assoc. Prof. Phys. Sci., St. Univ. of N. Y. Coll. at Geneseo. Home Add.: P. O. Box 332, Geneseo, N. Y. PHYSICAL CHEMISTRY. b. Woodlawn, Pa., Oct. 8, 1913. s. Myron T. and Ada M. (Maxted) F. Edn.: A.B., DePauw Univ., 1935; M.S., Purdue Univ., 1939. m. Laura B. Gruey, Sept. 5, 1936. c.: Jonathan; L. Nadine; Frances; Willard. Exp.: Engr., Radio Corp. Am., Camden, N. J., 1941-49; Assoc. Prof. Physics, Penn Military Coll., 1950; Physical Chemist, Colgate Palmolive Co., 1951-52; Devel. Engr., B. F. Goodrich Co., 1952-58; Acting Hd. of Physics Dept., Baldwin-Wallace Coll., Berea, Ohio, 1958-60; Visiting Asst. Prof., Penn St. Univ., 1960-61. Mem.: Sigma Xi; Am. Chem. Soc.; A.A.A.S.; Soc. of Rheology; Am. Assn. Physics Tchrs.; Phi Lambda Upsilon. Areas of Rsch.: Thermal Properties, High Vacuum, Physical Measurements.

FORBES, Alexander (M.D.), Prof. of Physiol., Emeritus, Harvard Univ., Cambridge, Mass. Home Add.: 610 Harland St., Milton, Mass. NEUROPHYSIOLOGY. b. Milton, Mass., May 14, 1882. s. William Hathaway and Edith (Emerson) F. Edn.: A.B., Harvard Coll., 1904; A.M., Harvard Univ., 1905; M.D., Harvard Med. Schl., 1910. Hon. Degrs.: Sc.D., Tufts, 1952; Sc.D., Hopkins, 1954. m. Charlotte Grinnell, June 9, 1910. c.: Mrs. Katharine F. Goodhue; Mrs. Janet F. Frothingham; Florence E.; A. Irving. Exp.: Instr., Harvard Med. Schl., 1910-11; Instr., ibid., Boston, Mass., 1912-21; Assoc. Prof., ibid., 1921-36; Prof., ibid., 1936-48. Mem.: Am. Physiol. Soc.; Am. Acad. of Arts and Scis.; Am. Philos. Soc.; Natl. Acad. of Scis.; Tavern Club, Boston, Mass. Author: Northernmost Labrador Mapped from the Air, 1938; Quest for a Northern Air Route, 1953. Contbr. to: Am. Jour. of Physiol.; Jour. of Neuro Physiol.; Electroencephalography. Serv. Rec.: U. S. Naval Res., 1917-19; 1940-45. Areas of Rsch.: Neurophysiology.

FORBES, Kenneth Albert (M.D.), Urological Surgeon, 130 E. Walnut St., Green Bay, Wis. Home Add.: 414 Randall Ave., De Pere, Wis. UROLOGICAL SURGERY. b. Waterford, N. Y., Apr. 28, 1922. s. Joseph and Adelle (Robitaille) F. Edn.: B.S., Univ. of Notre Dame, 1943; M.D., St. Louis Univ. Schl. of Med., 1947. m. Eileen Gibbons, Aug. 4, 1956. c.: Michael R.; Diane M.; Kenneth E.; Thomas J. Exp.: Rotating Intern, St. Louis Univ. Hosp., 1947-48; Resident in Urological Surgery, Deans Comm., V. A. Hosp., Wash. Univ. and St. Louis Univ. Schls. of Med., 1949-52; Asst. Chf. of Urology, Letterman Army Hosp., San Francisco, Calif., 1952-54; Post-Grad. Training, West Roxbury V. A. Hosp. (Harvard Tchng. Unit), Boston, Mass., 1955; Asst. Chf. of Urol., V. A. Hosp., East Orange, N. J., 1955-58; Attending Urologist, St. Mary, St. Vincent, Bellin Meml. Hosp., Green Bay, Wis.; Consultant in Urology, V. A. Hosp., Iron Mt., Mich., 1958—. Mem.: Diplomate, Am. Bd. of Urology; Fellow, Am. Coll. of Surgeons; Fellow, Internatl. Coll. of Surgeons; Am. Urological Assn.; Am. Med. Assn.; Am. Assn. Adv. of Sci.; Wis. St. Med. Assn.; Notre Dame Acad. of Sci.; Mem., N. Y. Acad. of Sci.; Assoc. Mem., Am. Museum of Nat. History, 1960; Phi Beta Pi. Contbr. to: Jour. of Urology; Urologic and Cutaneous Review; Urological Survey. Serv. Rec.: U.S.N.R., 1944-46, 1946-50; U.S.A.R., 1950-54. Areas of Rsch.: Practice Limited to Urology and Urological Surgery, with Special Interest in Pediatric Urology.



FORCE, Ronald Clarence (Mr.), Chf. of Profl. Serv., 3320th Retraining Grp., Amarillo A.F.B., Tex. Home Add.: 1501 S. Beverly, Amarillo, Tex. PSYCHOLOGY. b. Toledo, Ohio, Apr. 10, 1917. s. Rockwell C. and Anna Elizabeth (Briner) F. Edn.: B.A., Heidelberg, 1940; M.A., Miami Univ., 1941. m. Winifred A. Schnatz, Dec. 15, 1942. c.: Eric R.; Hugh B.; Bryan P.; Gregory M. Exp.: Instr., Miami Univ., 1945-48; Rsch. Psychologist, Schl. Aviation Med., Randolph A.F.B., Tex., 1948-51; Clinical and Rsch. Psychologist, 3320th Retrng. Grp., Amarillo A.F.B., Tex., 1952-57; Chf. of Psychological Testing and Rsch. Dept. of Mental Hygiene, Lackland A.F.B., Tex., 1957-60; Chf. of Profl. Servs., 3320th Retrng. Grp., Amarillo A.F.B., Tex., 1960—. Hon. Pos.: Mem., Potter-Randall County Citizens Comm.; Mem., Child Welfare Bd.; Advisor, Friends of Youth; Past Pres., Amarillo Mental Health Soc. Mem.: Fellow, A.A.A.S.; Amarillo Citizens Youth Council; Am. Psychological Assn.; S. W. Psychological Assn.; Am. Corrections Assn.; Tex. Psychol. Assn.; Rsch. Soc. of Am. Contbr. to: Jour. Exptl. Psychol.; Jour. Psychol. Studies; Jour. Soc. Therapy; Am. Corrections Assn. Yearbook; Jour. Appl. Psychol. Serv. Rec.: U.S.A.F. Areas of Rsch.: Personality Assessment; Prognosis of Offense Recidivism; Mass Input Screening.

FORCE, Roland Wynfield (Ph.D.), Dir., Bishop Museum, Honolulu, Hawaii. Home Add.: 161 Kalaiopua Place, Honolulu, Hawaii. ANTHROPOLOGY. b. Omaha, Nebr., Dec. 30, 1924. s. Richard Erwin and Edna Fern (Collins) (dec.) F. Edn.: A.B., Stanford Univ., 1950; M.A., ibid., 1951; M.A., Anthro., ibid., 1952; Ph.D., ibid., 1958. m. Maryanne Tefft, Sept. 16, 1949. Exp.: Instr., Stanford Univ., 1954; Assoc. in Ethnol., Bishop Museum, Hawaii, 1954-56; Curator, Oceanic Archaeol. and Ethnol., Chicago Natl. Hist. Mus., 1956-61; Dir., Bishop Museum, Hawaii, 1962—. Hon. Pos.: Assoc. Editor, Current Anthropol.; Trustee, Town of Dune Acres, Ind., 1960-61. Author: Leadership and Cultural Change in Palau, Fieldiana Anthropology, 1961. Contbr. to: Science; Jour. of the Polynesian Soc.; Archaeol., Am. Anthropologist. Serv. Rec.: Army of U. S., 1943-46. Gen. Int.: Chosen one of Chicago's ten outstanding young men of 1958. Areas of Rsch.: Pacific; Cultural change; Political organization; Social organization, Material culture.

FORD, Charles Alfred (Ph.D.), Vice-Pres. and Editor-in-Chf., F. E. Compton and Co., 1000 N. Dearborn, Chicago 10, Ill. Home Add.: 117 Green Bay Rd., Hubbard Woods, Ill. PSYCHOLOGY (CLINICAL). b. Columbus, Ohio, Jan. 19, 1901. s. Charles D. and Florence (Kendall) F. Edn.: B.S., Ohio St. Univ., 1923; M.A., ibid., 1926; Ph.D., ibid., 1930. m. Marion Lingo, Feb. 3, 1923. c.: Charles Douglass; Robert Stanley. Exp.: Prin., Antwerp H. S., Antwerp, Ohio, 1924-25; Supt. of Schls., Brown Twp., Miami Co., Fletcher, Ohio, 1925-27; Dir. of Rsch., St. Bur. of Juvenile Rsch., Columbus, Ohio, 1927-29; Admin. Asst. to Pres., Temple Univ., Phila., Pa., 1932-41; Dir., Eve. Ext. Div., ibid., 1933-41; Co-Ord. Pa. Area Coll. Ctrs.—Area I, Phila., Pa., 1946-49; Dean, Community Coll., Temple Univ., ibid., 1946-48; Editor-in-Chf., John C. Winston Co., 1948-52; Vice-Pres. and Editor-in-Chf., F. E. Compton and Co., Chicago, Ill., 1952—. Mem.: Fellow, Am. Psychol. Assn.; Fellow, Pa. Psychol. Assn.; Fellow, Ill. Psychol. Assn.; Assocs. of Natl. Coll. of Edn.; Alumni Advisory Comm. for Grad. Schl., Ohio St. Univ.; Franklin Inn Club, Phila.; Cliff Dwellers, Chicago; Naples Athletic Club, Naples, Fla. Contbr. to: Edn. Mag. Serv. Rec.: U. S. Navy, 1941-46. Gen. Int.: From 1946-49, Organized and Operated Martin Coll., Rittenhouse and Sproul Colls. as Emergency Colls. for the St. of Pa.

FORD, Lee (Ph.D.), Prof. of Cytogenetics, Miss. State Coll. for Women, Columbus, Miss. Home Add.: Box 2001, Parkland, Wash. CYTOGENETICS. b. Auburn, Ind., June 16, 1917. d. Arthur W. and Geneva (Muhm) F. Edn.: A.B., Wittenberg Coll., 1947; M.S., Univ. of Minn., 1949; Ph.D., Ia. State Coll., 1952. Exp.: Lab. Asst. in Biol., Wittenberg Coll., 1947; Tchng. and Rsch. Asst., Dept. of Botany, Agronomy and Cytogenetics, Univ. of Minn., 1947-49; Rsch. Asst., Genetics, Calif. Inst. of Tech., 1949; Lab. Asst. in Genetics, Ohio State Univ., 1949-50; Assoc. Prof. of Biol., Gustavus Adolphus College, 1950-51; Industrial Fellow, Cytogenetics, Iowa State Coll., 1951-52; Assoc. Prof. of Biol., Anderson Coll., Ind., 1952-55; Visiting Prof., Sci., Univ. of Alberta, Calgary, Alberta, Can., 1955-56; Assoc. Prof. of Biol., Pacific Lutheran Coll., 1956-62; Prof., Cytogenetics, Miss. State Coll. for Women, 1962—. Mem.: Am. Assn. Adv. Sci.; Am. Assn. Univ. Women; B. and P.W. Club; Ind. Acad. of Sci.; Iowa Acad. of Sci.; Genetics Soc. of Am.; Ecol. Soc. of Am.; Botanical Soc. of Am. Contbr. to: Jour. of Heredity; Jour. of Canine Genetics; Agronomy Jour. Areas of Rsch.: Cytogenetics; Tissue study and Chromosome Counts in Dogs.

FORD, Warren Edward (Mr.), Instr. of Chem. and Nuclear Sci., El Camino Coll., 16007 S. Crenshaw, Torrance, Calif. Home Add.: 610 Longfellow Ave., Hermosa Beach, Calif. CHEMISTRY, PHOTOGRAPHIC CHEMISTRY, RADIATION CHEMISTRY, NUCLEAR CHEMISTRY AND ENGINEERING. b. Carney's Point, N. J., Oct. 21, 1929. s. Ernest Cardot and Helen (Bertholomew) F. Edn.: B.S., St. Univ. of Ia., 1951; M.S., Western Ill. St. Univ., 1952. m. Frances Caroline Chantland, Aug. 20, 1961. Exp.: Rsch., E. I. DuPont de Nemours, Jackson Rsch. Lab., Deepwater, N. J., 1948; Chem. Control, Calif. Packing Corp., Inspection Div., Swedesboro, N. J., 1949; Analytical Chemist, Baldwin-Lima-Hamilton Corp., Chem. and Testing Dept., Chester, Pa., 1951; Grad. Asst., Western Ill. St. Coll., 1951-52; Production Develop. Analyst, N. Am. Aviation Production Develop., Downey, Calif., 1952-53;

Supvr., Union Oil Co., Chem. Dept., Wilmington, Calif.; 1953; Photographic Chemist, Houston Color Film Lab., Burbank, Calif., 1953-55; Photographic Chem., Mutual Film Lab., Hollywood, Calif., 1955; Photographic Chem., Warner Bros. Pictures, Inc., Burbank, Calif., 1955-58; Instr. of Engrng., Valley Jr. Coll., 1957-58; Photographic Chemist, Technicolor Corp., Burbank, Calif., 1958; Instr. of Chem., El Camino Coll., 1958—. Mem.: Am. Chem. Soc.; Am. Nuclear Soc.; Am. Assn. of Univ. Prof.; Pacific Southwest Assn. of Chem. Tchrs.; Natl. Edn. Assn.; Phi Delta Kappa. Serv. Rec.: N.J.G.R., 1949. Areas of Rsch.: Quantum Mechanics; Photographic Chem.; Radiochemistry.

FOREMAN, Harry (M.D.), Assoc. Prof., Univ. of Minn., Schl. of Pub. Health, Minneapolis, Minn. Home Add.: 1564 Burton Ave., St. Paul, Minn. TOXICITY OF RADIOACTIVE MATERIALS. b. Winnipeg, Can., Mar. 5, 1915. s. Monish and Fannie (Decter) F. Edn.: B.Sc., Antioch Coll., 1935; Ph.D., Ohio St. Univ., 1942; M.D., Univ. of Calif., 1947. m. Billie Deane Smith, 1956. c.: Matthew Dean; Pamela Kim. Exp.: Interne Resident in Med., Mt. Zion Hosp., San Francisco, Calif., 1947-49; A.E.C. Fellow, Natl. Rsch. Coun., Crocker Lab., Univ. of Calif., 1949-51; Staff Mem., Univ. of Calif., Los Alamos Scientific Lab., 1951-62; Assoc. Prof., Univ. of Minn., Schl. of Pub. Health, 1962—. Hon. Pos.: Past Secy.-Treas., N. M. Soc. Biol. and Med. Rsch.; Chmn., Rsch. Comm., N. M. Heart Assn.; Chmn., Los Alamos Chapt., Fed. of Am. Scientists. Mem.: Fellow, A.A.A.S.; Soc. Biol. and Med.; Radiation Rsch. Soc.; Sigma Xi; Phi Lambda Upsilon. Contbrng. Author: After the A Bomb, 1951; Metal Binding in Medicine, 1960. Contbr. to: Jour. A.M.A.; Jour. Biol. Chem.; Proc. Soc. Exp. Biol. and Med.; Am. Jour. Roentgenol. and Radiation Therapy; Jour. Lab. Clin. Med.; A.M.A. Arch. Ind. Hygiene; Ind. Med. and Surg.; Am. Jour. Physiol.; Circulation. Serv. Rec.: U. S. Army, 1945. Gen. Int.: Pharmacology and Clinical Application of Chelating Agents. Areas of Rsch.: Chelating Agents; Radioactive Materials; Biological Effects of Magnetic Fields.

FOREMAN, Melvin O. (Ph.D.), Prof., Chem., E. Ill. Univ., Charleston, Ill. Home Add.: 20 W. Johnson St., Charleston, Ill. ORGANIC CHEMISTRY. b. Oak Harbor, Ohio, Sept. 21, 1903. s. John and Caroline (Fietz) F. Edn.: B.S., Capital Univ., 1925; M.S., Univ. of Chicago, 1927; Ph.D., ibid., 1929. m. Doris Elizabeth Kemp, Sept. 2, 1936. c.: Thomas Kurt. Exp.: Rsch. Chemist, DuPont, Wilmington, Del., 1929-32; Mgr., The Colo. Mfg. Co., Oak Harbor, Ohio, 1932-36; Asst. Prof., Kent St. Univ., Kent, Ohio, 1936-46; Prof., E. Ill. Univ., 1946—. Mem.: Am. Chem. Soc.; Sigma Xi; Ill. Acad. of Sci. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Plant Research; Bark Wounds.

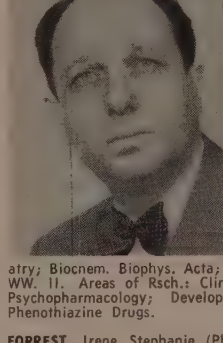
FOREST, Herman Silva (Ph.D.), Rochester, N. Y. PHYCOLOGY.

Rsch. Assoc., Univ. of Rochester, b. Chattanooga, Tenn., Feb. 18, 1921. s. William Hirsh and Frances Silva (Schutzer) F. Edn.: B.A., Univ. of Tenn., 1942; M.S., Mich. St. Univ., 1948; Ph.D., ibid., 1951. Exp.: NRC-AEC Pre-doctoral Fellow, Mich. State Univ., 1949-51; Biol. Staff, Coll. of Wm. and Mary, 1953-54; Botany Staff, Univ. of Tenn., 1954-55; Biol. and Botany Staff, Univ. of Okla., 1955-58; Dir., Students Museum and H. S. Sci. Program, Knoxville, Tenn., 1958-60; Rsch. Asst., Univ. Okla. Med. Center, Oklahoma City, Okla., 1960-61; Postdoctoral Fellow, Univ. of Rochester, Rochester, N. Y., 1961-62; Rsch. Assoc., ibid., 1962—. Mem.: A.A.A.S.; Internatl. and Am. Phycological Soc.; Ecol. Soc.; Nature Conservancy; Tenn. Acad. Sci.; Sigma Xi; Phi Kappa Phi; Rochester Assn. for the United Nations. Author: Handbook of Algae, 1954; Jessie's Children, 1959. Contbr. to: Am. Scientist; Ecology; Castanea; Jour. Am. Micros. Soc. Serv. Rec.: U. S. Army, 1944-46, 1951-53. Areas of Rsch.: Analysis of the Soil Algal Community; Genetics of Blue-Green Algae.

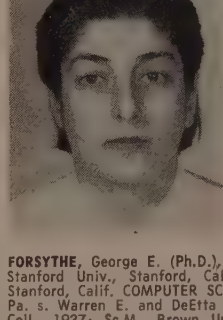
FORMAN, Sylvan Ellis (Ph.D.), Rsch. Chemist, FMC Corp., Princeton, N. J. Home Add.: 106 Darrah Lane, Trenton 8, N. J. ORGANIC CHEMISTRY. b. Baltimore, Md., Apr. 4, 1915. s. David and Ethel (Shapiro) F. Edn.: B.S., Univ. of Md., 1936; M.S., ibid., 1937; Ph.D., ibid., 1940. m. Roslyn Doris Hoffman, Nov. 20, 1943. c.: Donald Lawrence; Eleanor Elizabeth. Exp.: Rsch. Fellow, Univ. of Md., 1940-43; Rsch. Chemist, U. S. Industrial Chem., Inc., 1943-53; Rsch. Chemist, Emerson Drug Company, Baltimore, Md., 1953-55; Rsch. Chemist, FMC Corp., Princeton, N. J., 1955—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemist; A.A.A.S.; Sigma Xi; Phi Kappa Phi. Contbr. to: Jour. Pharm. Exptl. Ther.; Proc. Soc. Exptl. Biol. Med.; Anesthesiology; Jour. Am. Pharm. Soc.; Arch. Inter. Pharmacodynamie; Jour. Biol. Chem.; Jour. Am. Chem. Soc.; Jour. Agri. Food Chem. Areas of Rsch.: Volatile Anesthetics, Organics Nitrites and Nitrates as Vasodilators, Agricultural Pesticides.

FORNOFF, Frank Junior (Ph.D.), Hd., Sci. Sect., Test Develop. Div., Edni. Testing Serv., Princeton, N. J. INORGANIC CHEMISTRY. b. Mar. 29, 1914, Mt. Carmel, Ill. s. Frank and Ada (Arnold) F. Edn.: A.B., Univ. of Ill., 1936; M.S., Ohio St. Univ., 1937; Ph.D., ibid., 1939. Exp.: Procter and Gamble Fellow, Ohio St. Univ., 1938-39; Natl. Rsch. Fellow in Chem., Univ. of Calif., 1939-40; Instr. in Chem., Lehigh Univ., 1940-42; Asst. Prof., ibid., 1942-44; Chem. Engrng., Western Elec. Co., N.Y.C., 1944-45; Asst. Prof., Lehigh Univ., 1945-47; Assoc. Prof., ibid., 1947-53; Assoc. Prof., Kan. St. Coll., 1953-56; Hd., Sci. Sect., Test Develop. Div., Edni. Test. Serv., Princeton, N. J., 1956—; Lectr., Rutgers Univ., 1956—. Mem.: Am. Chem. Soc.; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Phi Lambda Upsilon; Phi Eta Sigma; Theta Chi. Ph.D. Dissertation: The Rare Earth Metals and Their Compounds: A Study on Ceric Oxide. Hobby: Church Boys' Work. Listed in: A.M.S. Special Int.: Rare Earths.

FORREST, Fred Miro (M.D.), Staff Psychiatrist, V. A. Hosp., Palo Alto, Calif. Home Add.: 811 Willow Rd., Menlo Park, Calif. PSYCHIATRY, PSYCHOPHARMACOLOGY. b. Belovar, Yugoslavia, Jan. 8, 1903. s. M. Faust and Seraphine (Altmann) F. Edn.: M.D., Berlin Univ., 1927. m. Irene S. Neuberg, Dec. 30, 1949. c.: Robert; Thomas, M.D. Exp.: Asst. Chief, Neurol. Inst., Berlin, Germany, 1930-32; Asst. Neurol., Hop. Salpetriere, Paris, France, 1932-35; Psychiat., Bellevue Hosp., N. Y., N. Y., 1945; Neuro-Psychiatry, V. A. Hosp., Montrose, N. Y., 1952-55; Chf. of Acute Serv., V. A. Hosp., Brocton, Mass., 1955-61; Staff Psychiatrist, ibid., Palo Alto, Calif., 1961—. Mem.: Am. Psychiatric Assn.; N. Y. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Am. Med. Assn. Contbr. to: Am. Jour. of Psychiatry; Biocnem. Biophys. Acta; Clin. Chem. Serv. Rec.: U.S.A.M.C., WW. II. Areas of Rsch.: Clinical Psychiatry; Clinical Neurology; Psychopharmacology; Development of Rapid Urine Tests for Phenothiazine Drugs.



FORREST, Irene Stephanie (Ph.D.), Dir., Biochemical Rsch. Lab., V. A. Hosp., Palo Alto, M.P. Div., Calif. Home Add.: 811 Willow Rd., Menlo Park, Calif. PSYCHOPHARMACOLOGY, BIOCHEMISTRY. b. Charlottenburg, Germany, Aug. 20, 1908. d. Carl Neuberg and Hela (Lewinski) N. Edn.: Ph.D., Berlin Univ., 1932. m. Fred Forrest, Dec. 30, 1949. c.: Joan Helen Roberts. Exp.: Dir., V. A. Hosp., Brocton, Mass., 1957-61; Biochem. Rsch. Lab., ibid., Palo Alto, M.P. Div., Calif., 1961—. Hon. Pos.: Prog. Chmn., Int. Conf. on Phenothiazine Action Mech., Paris, France, Sept., 1962. Mem.: Am. Chem. Soc.; A.A.A.S.; A.-M.A. Contbr. to: Am. Jour. of Psychiatry; Biochim.; Biophys. Acta; Clin. Chem.; Jour. Neurochem. Areas of Rsch.: Phenothiazine Chemistry; Demonstration of Drug Metabolites in Biological Material.



FORSYTHE, George E. (Ph.D.), Prof. of Math. and Computer Sci., Stanford Univ., Stanford, Calif. Home Add.: 835 Lathrop Dr., Stanford, Calif. COMPUTER SCIENCE. b. Jan. 8, 1917, State Coll., Pa. s. Warren E. and DeEtta (Brodie) F. Edn.: A.B., Swarthmore Coll., 1937; Sc.M., Brown Univ., 1938; Ph.D., ibid., 1941. m. Alexandria Illmer of Cortland, N. Y., 1941. c.: Warren Louis; Diana Elizabeth. Exp.: Instr. in Math., Brown Univ., 1938-39, 1940-41; Instr. of Math., Stanford Univ., 1941-42; Rsch. Engr., Boeing Airplane Co., Seattle, Wash., 1946-47; Asst. Prof. of Meteorol., U.C.L.A., 1947-48; Math., Natl. Bur. of Standards and Visiting Assoc. Prof. of Math., U.C.L.A., 1948-54; Rsch. Math. and Visiting Prof. of Math., U.C.L.A., 1954-57; Consultant, The Ramo-Wooldridge Corp., 1954-59; Sr. Scientist and Visiting Prof. of Math., N. Y. Univ., 1955-56; Prof. of Math. and Computer Sci., Stanford Univ., 1957—; Dir., Stanford Computation Ctr., 1961—; Consultant, Missiles and Space Div., Lockheed Aircraft Corp., 1957—. Mem.: Am. Math. Soc. (mem. of coun.); Sigma Xi; Phi Beta Kappa; Assoc. for Computing Machinery (mem. of coun.); Soc. for Indus. and Appl. Math.; Math. Assoc. Am. Co-Author: Dynamic Meteorol., 1945; Finite-Difference Methods for Partial Differential Equations, 1960. Author: Bibliography of Russian Math. Books, 1956. Contbr. to: Math. Jours. War Record: U. S. Air Force, 1942-46. Listed in: A.M.S. Areas of Rsch.: Numerical Analysis; Math. Edn.

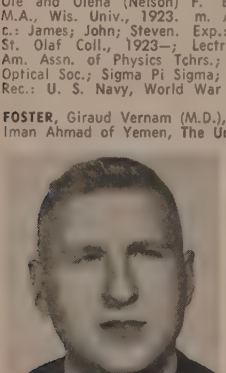
FORTMANN, Henry Raymond (Ph.D.), Asst. Dir., Pa. Agric. Expt. Sta. and Prof. of Agron., Pa. State Univ., 108 Armsby, University Park, Pa. Home Add.: 528 Clarence Ave., State College, Pa. PLANT BREEDING AND BIOMETRY. b. Frederic, Wis., Feb. 28, 1919. s. H. E. and Amanda Kuehl (Meyer) F. Edn.: B.S., Univ. of Wis., 1940; M.S., Ore. State Coll., 1942; Ph.D., Cornell Univ., 1949. m. Elizabeth Ann Bartlett, 1943. c.: Louise Palmer; Catherine Elizabeth; Richard Henry. Exp.: Rsch. Asst. in Plant Breeding Dept., Cornell Univ., 1946-49; Asst. Prof. of Agronomy, Pa. State Univ., 1949-53; Assoc. Prof. of

Agronomy, ibid., 1953-57; Prof. of Agronomy, ibid., 1957—; Asst. Dir., Pa. Agric. Expt. Sta., 1957—. Hon. Pos.: Repr. for Pa. on Northeast Forage Crops Tech. Comm. Reg. Rsch. Projects NE-10; Repr. for 12 Northeastern states on Planning Conf. of Natl. Fdn. Seed Project, 1954-58; Secy., Eastern Alfalfa Improvement Conf., 1953-57; Chmn., Univ. Standing Comm. on Stat. as a Fie.d of Minor Studies for Advanced Degrees, 1955-57; Admin. Advisor Reg. Rsch. Project NE-42, The Role of the Soil Microflora in the Persistence and Decomposition of Herbicides, 1960—. Mem.: Agronomy Soc.; Biometric Soc.; Alpha Zeta; Sigma Xi; Gamma Sigma Delta; Phi Kappa Phi; Delta Theta Sigma; Phi Epsilon Phi. Contbng. Author: Population Genetics in Genetics and Human Heredity, 1955. Contbr. to: Crop Sci.; Agron. Jour.; Jour. of Wildlife Mgmt. Serv. Rec.: U. S. Marine Corps Reserve, 1943-46. Gen. Int.: Co-Developer, Pennlate Orchardgrass. Areas of Rsch.: Forage Crops Breeding, Design of Experiments, Experimental Techniques, Analysis of Data from Biological Research.

FOSS, Noel Elmer (Ph.D.), Dean, Univ. of Md., Schl. of Pharm., 636 West Lombard St., Baltimore 1, Md. Home Add.: 401 Dixie Dr., Baltimore 4, Md. PHARMACEUTICAL EDUCATION. b. Henry, S. D., Sept. 14, 1905. s. Ludwig E. and Gertrude (Kvam) F. Edn.: Ph.D. and B.S., S. D. State Coll., 1929; M.S., Univ. of Mi., 1932; Ph.D., ibid., 1933. m. Mildred Elsberry, Oct. 23, 1936. Exp.: Prof. of Pharm., Duquesne Univ., 1934-37; Works Chemist, Burroughs Wellcome Co., Tuckahoe, N. Y., 1937-42; Tech. Dir. of Pharm. Dept., Calco Chem. Div. of Am. Cyanamid Co., Bound Brook, N. J., 1946-47; Asst. Dean and Prof. of Pharm., Coll. of Pharm., Univ. of Ill., 1947-49; Dean and Prof. of Pharm., Univ. of Md., 1949—. Hon. Pos.: U.S.P. Revision Comm., 1950-60; Secy.-Treas., A.A.C.P. and N.A.B.P., 1959—; 2nd Vice Pres., Am. Pharm. Assn., 1961-62. Mem.: Am. Pharm. Assn.; A.A.A.S.; Phi Kappa Phi; Rho Chi; Sigma Xi; Phi Delta Chi. Contbrng. Author: Two Chap., American Pharmacy, 1960. Contbr. to: Jour. of Am. Pharm. Assn.; Sci. Edition; Jour. of Am. Chem. Soc. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Development of Dosage Forms for Drugs; Stablization of Dosage Forms for Drugs.

FOSSUM, Peter E.(ven) (Mr.), Chmn., Dept. of Physics, St. Olaf Coll., Northfield, Minn. Home Add.: 118 Madison St., Northfield, Minn. PHYSICS. b. Meridean, Wis., Aug. 30, 1895. s. Ole and Olena (Nelson) F. Edn.: B.A., St. Olaf Coll., 1919; M.A., Wis. Univ., 1923. m. Almeda Anderson, June 30, 1937. c.: James; John; Steven. Exp.: Asst., Wis. Univ., 1920-23; Prof., St. Olaf Coll., 1923—; Lectr., Minn. Univ., 1943-45. Mem.: Am. Assn. of Physics Tchrs.; Sigma Xi; Am. Phys. Soc.; Am. Optical Soc.; Sigma Pi Sigma; Gamma Alpha; Rotary Club. Serv. Rec.: U. S. Navy, World War I.

FOSTER, Giraud Vernam (M.D.), Personal Physician to His Majesty Iman Ahmad of Yemen, The United States Legation, Taiz, Yemen.



Home Add.: 1315 Stonewood Rd., Baltimore 12, Md. INTERNAL MEDICINE; ENDOCRINOLOGY. b. N. Y., N. Y., Jan. 13, 1928. s. Giraud Van Nest and Valerie Vernam (McAdoo) F. Edn.: B.S., Trinity Coll., 1952; M.D., Univ. of Md., 1956. m. Carolyn Lindquist, June 14, 1952. c.: Douglas Giraud; David Vernam. Exp.: Intern, Univ. Hosp., Baltimore, Md., 1956-57; Jr. Asst. Resident, ibid., 1957-58; Asst. Res., ibid., 1958-60; Med. Consultant to Medico, Jeremie, Haiti, 1960; Mutual Life Insur. Fund Rsch. Fellow, Dept. of Physiol. Chem., Johns Hopkins Med. Schl., 1960-62; Personal Phys. to His Majesty Iman Ahmad of Yemen, 1962-63; Visiting Rsch. Asst., Postgrad. Med. Schl., London, England, 1963-64. Hon. Pos.: Scientific Coun., Md. Acad. of Sci. Mem.: N. Y. Acad. of Sci.; Md. Acad. of Sci.; Baltimore Med. Soc. Contbr. to: Biochem.; Biophys. Acta. Serv. Rec.: U. S. Marine Corps, 1946-48. Areas of Rsch.: Thyroid Biosynthesis and Intermediate Metabolism.

FOSTER, James H. (Mr.), Chf. Engr., Indianapolis Flood Control Dist., 2301 City-Co. Bldg., Indianapolis 4, Ind. Home Add.: 12 E. Norwich Ave., Columbus 1, Ohio. HYDRAULIC ENGINEERING, AIRFIELD PLANNING ENGINEERING. b. Ohio, Dec. 22, 1899. s. William H. and Banna (Jones) F. Edn.: B.C.E, Ohio St. Univ., 1923. m. Lucy Perkins, 1929. c.: James A.; Thomas W.; Suzanne. Exp.: Hydraulic Engr., U. S. Geol. Survey, Boston, Mass, U. S. Corps of Engrs., Louisville, Ky., 1929-52; Project Engr. Airfields, U.S.A.F., Europe and Middle East, U. S. Corps of Engrs., 1952-60; Chf. Engr., Indianapolis Flood Control Dist., Indianapolis, Ind., 1960—. Mem.: A.S.C.E.; Aero-Space Transport and Hydraulic Div.; Phi Kappa Tau. Contbr. to: U.S.G.S. Publications. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Study using small watersheds to determine effect of Land Use on Run-off and reservoir sedimentation, U. S., 1938-41; Cost-studies using prestressed concrete runways, Memminger, Germany, 1955.

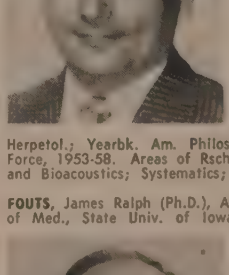
FOSTER, John Stuart, Jr. (Dr.), Lawrence Radiation Lab., Livermore, Calif.

FOSTER, Joseph Franklin (Ph.D.), Prof. of Chem., Purdue Univ., Lafayette, Ind. Home Add.: 328 Laurel Dr., West Lafayette, Ind. PHYSICAL BIOCHEMISTRY. b. Marion, Ind., May 17, 1918. s. DeWitt L. and Grace (Cameron) F. Edn.: B.S., Ia. St. Univ., 1940; Ph.D., ibid., 1943. m. Ruth E. Hobson, June, 1940. c.: Ann E.; Gregory H.; Michael C. Exp.: Postdoctoral Fellow, Harvard Med. Schl., 1943-45; Chemist, Am. Maize-Products Co., Roby, Ind., 1945-46; Asst. Prof., Ia. St. Univ., 1946-51; Assoc. Prof., ibid., 1951-54; Assoc. Prof., Purdue Univ., 1954-57; Prof., ibid., 1958—. Mem.: Am. Chem. Soc.; Am. Soc. Biol. Chem.; Biophysical Soc.; A.A.U.P.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon. Co-Author: Introduction to Protein Chemistry, 1957. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Polymer Sci.; Jour. Biol. Chem.; Arch. Biochem. Biophys.; Biochim. Biophys. Acta; Science; Fed. Proc. Soc. Exptl. Biol. Med.; Compt. Rend. Trav. Lab. Carlsberg. Gen. Int.: Postdoctoral Fellowship of the U. S. Pub. Health Serv. and Conducted Rsch. at Carlsberg Lab., Copenhagen, Denmark, 1959. Areas of Rsch.: Physical Chemistry of Proteins; Reversible Changes of Conformation of Proteins; Molecular Weight and Shape Studies on Macromolecules; Physical Chem. of Polysaccharide Polymers.

FOUCH, Robert S. (Mr.), Mathematics Editor, Sci. Rsch. Assocs., Inc., 259 E. Erie, Chicago 11, Ill. Home Add.: 623 S. Prospect Ave., Park Ridge, Ill. MATHEMATICS. b. Akron, Ohio, Aug. 12, 1918. s. Honor Clyde and Julia (Steiner) F. Edn.: B.S., Univ. of Chicago, 1939; M.S., ibid., 1940. m. Doris Zemek, Jan. 25, 1944. c.: David; Richard. Exp.: Instr. and Asst. Prof., Univ. of Chicago, 1946-50; Asst. Prof., Ariz. St. Univ., 1950-54; Visiting Asst. Prof. and Examiner, Univ. of Chicago, 1954-55; Assoc. Prof. of Edn., Fla. St. Univ., 1955-59; Secondary Supvr., Pub. Schls. of S. Orange and Maplewood, N. J., 1959-60; Visit. Lectr., Columbia Univ. Tchrs. Coll., 1959-60; Mathematics Editor, Sci. Rsch. Assocs., Inc., Chicago, Ill., 1961—. Mem.: A.A.A.S.; Am. Math. Soc.; Assn. for Symbolic Logic; The Mathematical Assn.; Natl. Council of Tchrs. of Math.; Phi Beta Kappa. Author: Fundamental Mathematics, co-author, 1948, '49; The Math. Discovery Board, SRA, 1961. Contbr. to: The Math. Tchr.; Schl. Sci. and Math.; ETC; A Rev. of General Semantics. Serv. Rec.: U. S. Air Force, 1941-46. Areas of Rsch.: Foundations of Math.

FOUQUETTE, Martin John, Jr. (Ph.D.), Asst. Prof., Dept. of Biol., Univ. of S.W. La., Lafayette, La. Home Add.: 301 Downing St., Lafayette, La. HERPETOLOGY; VERTEBRATE SPECIATION; NATURAL HISTORY. b. Phila., Pa., June 14, 1930. s. Martin J. and Ruby (Lowry) F. Edn.: B.A., Univ. of Tex., 1951; M.A., ibid., 1953; Ph.D., ibid., 1959. Exp.: Rsch. Asst.; Tchng. Asst., Univ. of Tex., 1951-53; Tchng. Asst.; Rsch. Scientist II, ibid., 1958-59; Interim Asst. Prof. of Biol., Univ. of Fla., 1959-61; Asst. Prof. of Biol., Univ. of S.W. La., 1961—. Mem.: A.A.A.S.; Sigma Xi; Phi Sigma; Soc. for Study of Evolution; Am. Soc. Icthyol. and Herpetol.; S.W. Assn. of Naturalists; Tex. Acad. of Sci.; Soc. of Systematic Zool.; Herpetol. League. Contbr. to: Evolution; Copeia; Tex. Jour. of Sci.; Southwestern Naturalist; Herpetol.; Yearbk. Am. Philosoph. Soc. Serv. Rec.: U. S. Air Force, 1953-58. Areas of Rsch.: Herpetol.; Amphibian Speciation and Bioacoustics; Systematics; Ecol.; Behavior.

FOUTS, James Ralph (Ph.D.), Assoc. Prof., Dept. Pharmacol., Coll. of Med., State Univ. of Iowa, Iowa City, Ia. Home Add.: 6 Montrose Ave., Ia. City, Ia. BIOCHEMICAL PHARMACOLOGY, DRUG METABOLISM. b. Macomb, Ill., Aug. 8, 1929. s. Ralph B. and Mary M. (Lingenfelter) F. Edn.: B.S., Northwestern Univ., 1951; Ph.D., ibid., 1954. m. Drucilla A. Ames, Nov. 24, 1951. c.: Mary E.; Carolyn A. Exp.: Tutorial Fellow, Northwestern Univ., Med. Schl., Chicago, Ill., 1951-54; Asst. Scientist, U. S. Pub. Health Serv. Natl. Insts. Health, Bethesda, Md., 1954-56; Sr. Asst. Scientist, ibid., 1956; Sr. Rsch. Biochemist, Wellcome Rsch. Labs., Tuckahoe, N. Y., 1956-57; Asst. Prof., Dept. Pharmacology, Coll. of Med., St. Univ. of Iowa, 1957-59; Assoc. Prof., ibid., 1959—. Hon. Pos.: Editorial Bd., Jour. Pharmacol. Exptl. Therapy. Mem.: Am. Soc. Pharmacol. and Exptl. Therap.; Soc. Exptl. Biol. and Med.; Sigma Xi; Am. Chem. Soc.; N. Y. Acad. Sci.; A.A.A.S.; Phi Lambda Upsilon; Phi Beta Kappa. Contbr. to: Jour. Pharmacol. Exptl. Therap.; Proc. Soc. Exptl. Biol. Med. Sci.; Biochem. Pharm. Areas of Rsch.: Drug Metabolism, E



zymes, Biochemical Pharmacology; Physiological and Pathological Conditions Affecting Rate of Drug Metabolism.

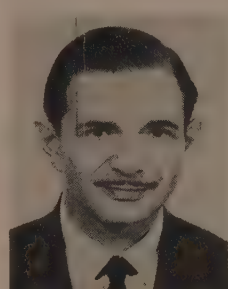
FOWLER, Robert L. (Ph.D.), Agricl. Spec., Latin Am. Bur., Agency for Internatl. Devel., Wash., D. C. Home Add.: 2674 Olive St., Huntington Park, Calif. TROPICAL AGRICULTURE—HORTICULTURE. b. Roanoke, La., Sept. 16, 1910. s. Warren R. and Mary Lorena (McNabb) F. Edn.: A.B., Calif., Univ., L. A., 1934; M.A., ibid., 1935; Ph.D., Neb. St. Univ., 1941. m. (div.). c.: Bobette M. Exp.: Instr., Colo. St. Univ., Ft. Collins, Colo., 1936-38; Sr. Instr., War Relocation Authority, Manzanar, Calif., 1942-43; Agricult., For. Agric. Serv., U.S.D.A., Ecuador, Brazil, 1943-54; Trop. Hort. Adv., Internatl. Co-op. Adm., Brazil, 1954-59; ibid., Colombia, 1959-60; Asst. Chief, Latin Am. Branch, Office of Food and Agric., Internatl. Co-op. Adm., Wash., D. C., 1960; Agricl. Spec., ibid., 1961—. Hon. Pos.: Chmn., Comm. on Ext., Inter-Am. Cacao Conf., Brazil, 1956, Colombia, 1958; Fellow, A.A.A.S., 1960. Mem.: A.A.A.S.; Ecology Soc.; Soc. Hort. Sci.; Sigma Xi; Beta Beta Beta. Contbr. to: Turrialba, Ecol.; Foreign Agric. Gen. Int.: U. S. Operations Mission Meritorious Award and Letter of Commendation for Work on Cacao Production in Brazil. Areas of Rsch.: Horticulture of Tropical Crops—Particularly Cacao; Plant Ecology and Range Management.

FOWLER, Stewart Hampton (Ph.D.), Prof. of Animal Sci., La. St. Univ., Baton Rouge 3, La. Home Add.: 6077 Chandler Dr., Baton Rouge 8, La. PHYSIOLOGY OF REPRODUCTION AND ANIMAL BREEDING. b. St. Paul, Minn., July 20, 1922. s. Talbert Bass, Sr. and Doris Ernestine (Blitch) F. Edn.: B.S.A., Univ. of Fla., 1947; M.S., Auburn Univ., 1950; Ph.D., Tex. A. and M. Coll., 1954. m. Rachel Ann Summerford, Mar. 18, 1950. c.: Stewart Hampton, Jr.; James Jackson. Exp.: Instr., Auburn Univ., 1948-51; Grad. Tchng. Asst. and Instr., Tex. A. and M. Coll., 1951-54; Asst. Prof., Univ. of Md., 1954-55; Assoc. Prof., Wash. St. Univ., 1955-58; Prof., La. St. Univ., 1958—. Mem.: Am. Soc. Animal Sci.; Am. Genetics Assn.; A.A.A.S.; Am. Grassland Coun.; Biometric Soc.; Soc. for Study of Fertility; Alpha Zeta; Phi Kappa Phi; Sigma Xi; Gamma Sigma Delta. Author: The Marketing of Livestock and Meat, 1957 (2nd Ed., 1961). Contbr. to Jour. of Animal Sci.; Jour. of Endocrinology. Serv. Rec.: U. S. Navy Seabees, 1943-45. Gen. Int.: Completed development of Palouse breed of Swine at Wash. St. Univ., from a Landrace X. Chester White foundation, and secured its acceptance and registration as a pure breed in 1957; In Charge of L.S.U.'s Extensive Purebred Beef Cattle Operations. Areas of Rsch.: Factors Affecting Fertility in Domestic Livestock and Inheritance of Defects and Genotype-Environmental Interactions in Animal Breeding.

FOX, (Sister) Alice Marie, B.V.M., Biol. Instr., Clarke Coll., Dubuque, Iowa. COMPARATIVE PHYSIOLOGY AND BIOCHEMISTRY. b. Chicago, Ill., July 23, 1924. d. James J. and Alice (Curtin) F. Edn.: B.S., Mundelein Coll., 1945; M.S., Univ. of Notre Dame, 1957; Ph.D., St. Louis Univ., 1961; Natl. Sci. Found. Pre-Doctoral Fellowships, 1957-60. Exp.: Secondary Schl. Tchr., Sci. and Math., Ill., Minn., Iowa, 1948-56; Biol. Instr., Clarke Coll., 1960—. Mem.: A.A.A.S.; Natl. Assn. Biol. Tchrs.; Iowa Acad. of Scis.; Sigma Xi; Am. Soc. of Zool. Contbr. to: Copeia; Federation Procs.; Am. Jour. of Physiol.; Comp. and Physiol. Areas of Rsch.: Reptilian Physiology; Physiology of Active Transport Process.

FOX, Denis Llewellyn (Ph.D.), Prof., Marine Biochem., Scripps Instn. of Oceanography, Univ. of Calif., La Jolla, Calif. Home Add.: 2459 Ardath Rd., La Jolla, Calif. MARINE BIOCHEMISTRY. b. Udimore, Sussex, England, Dec. 22, 1901. s. John James and Florence M. (Fox) F. Edn.: A.B., Univ. of Calif., Berkeley, 1925; Ph.D., Stanford Univ., 1931. m. Miriam Perdew, Aug. 31, 1932. c.: Ronald Llewellyn; Stephen John P. (dec.); Kathleen Miriam; Alan Denis. Exp.: Instr., Physiol. of Marine Organisms, Scripps Instn. of Oceanography, 1931-36; Asst. Prof., ibid., 1936-37; Asst. Prof., Marine Biochem., 1937-42; Assoc. Prof., Marine Biochem., 1942-48; Prof., ibid., 1948—. Mem.: Sigma Xi; West. Soc. Nat.; Am. Soc. Nat.; Am. Soc. Zool.; A.A.A.S.; Soc. Gen. Physiol.; Am. Soc. Limnol. and Oceanography. Author: Animal Biochromes, 1953. Contbr. to: Sci.; Nature; Jour. of Exptl. Zool.; Jour. Biol. Chem.; Jour. Marine Rsch.; Jour. Comp. Biochem. and Physiol.; Ecology; Sci. Monthly. Areas of Rsch.: Metabolism, Growth, Nutrition and General Biochem. of Marine Animals; Biochemical Cycles in the Metabolism of the Sea; Biochromes (Natural Pigments) of Animals.

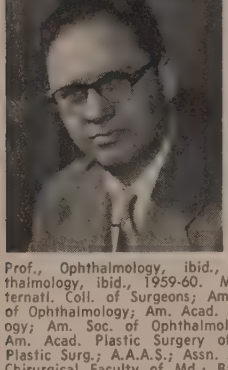
FOX, Elbert Marr (Mr.), Physicist, Box 48371, Briggs Sta., Los Angeles 48, Calif. ELECTRONICS, COMMUNICATION, SPACE TECHNOLOGY. b. Mexico City, Mex., Dec. 3, 1910. s. McLaren and Etta (Small) F. Edn.: B.A., Physics, Univ. of Calif., 1940. Exp.: Radiation Physicist, Los Angeles Tumor Inst., 1940-41; Underwater Sound, U.S.N. Electronics Lab., 1941-42; Physicist, E. M. Fox Lab., 1952-60; Comn. Engrng. and Operations, Jet Propulsion Lab., Calif. Inst. of Tech., 1962; Consult. in Physics and Electronic Engrng., 1946—. Mem.: Am. Physical Soc.; Inst. of Radio Engrs.; Am. Inst. of Phys.; U. S. Naval Inst.; Am. Assn. Adv. Sci.; Life Mem., U.C.L.A. Alumni Assn. Serv. Rec.: U.S.N., W.W. II. Areas of Rsch.: Electromagnetic Fields; Radio Communication; Semiconductor Electronics; Space Technology; Electronic Counter-Measures and Military Electronics; Electroencephalography; Radiation Physics.



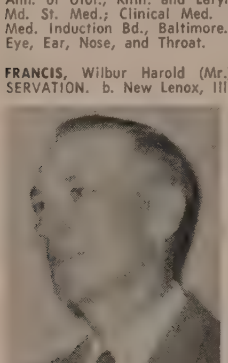
FOX, Jack (Ph.D.), Clin. Psychologist, Patton St. Hosp., Patton, Calif. Home Add.: 1063 Sentinel Ave., Los Angeles 63, Calif. CLINICAL PSYCHOLOGY. b. Vienna, Austria, Nov. 1, 1917. s. Abraham and Regina (Gerlich) F. Edn.: B.A., U.C.L.A., 1949; M.A., ibid., 1952; Ph.D., ibid., 1959. Exp.: Rsch. Asst., Psychol. Dept., Univ. of Calif., Los Angeles, 1950-51; Tchng. Asst., ibid., 1951-53; Asst. Clin. Supvr., Clinic Schl., Psychol. Dept., ibid., 1952-53; Clin. Psychologist, Calif. Med. Facility, Terminal Island, San Pedro, Calif., 1953-55; Clinical Psychologist, Pacific St. Hosp., Pomona, Calif., 1956-58; Clin. Psychologist, Reception - Guidance Center, Calif. Instn. for Men, Chino, Calif., 1959; Clin. Psychologist, Patton St. Hosp., Patton, Calif., 1959—. Mem.: Am. Psychol. Assn.; Western Psychol. Assn.; Calif. St. Psychol. Assn.; Assn. of Clin. Psychologists in Calif. State Civil Serv.; A.A.A.S.; Sigma Xi. Contbrng. Author: Developments in the Rorschach Technique, 1954, 1956. Contbr. to: Jour. of Exptl. Psychol.; Psychol. Reports; Jour. of Projective Techniques; Internatl. Jour. of Clin. and Exptl. Hypnosis; Jour. of Psychol. Studies. Serv. Rec.: U. S. Army, 1941-46. Gen. Int.: Specialized Knowledge: Psychopathology, Psychodiagnosis, Psychotherapy, Personality Theory, Research Methodology. Areas of Rsch.: Rsch. in: Human Learning, Exptl. and Clin. Hypnosis, Projective Techniques, Psychological Scale Construction, Mental Deficiency, Criminal Behavior, Alcoholism, Myopia.

FOX, Samuel (Ph.D.), Prof. of Accountancy, Univ. of Ill., Navy Pier, Chicago 11, Ill. Home Add.: 1200 Talcott Rd., Park Ridge, Ill. BUSINESS SCIENCE AND GOVERNMENT SCIENCE. b. Chicago, Ill., Mar. 18, 1905. s. Maurice and Sara (Nestor) F. Edn.: A.A., Medill Jr. Coll., 1922; Ph.B., Univ. of Chicago, 1924; J.D., Loyola Univ. Law Schl., 1927; LL.M., ibid., 1928; M.B.A., Univ. of Chicago, 1947; Ph.D., Univ. of Notre Dame, 1950. m. Genevieve Kubreener, Jan. 29, 1928. c.: Stanley K.; Lawrence Nestor; Stephen Richard. Exp.: Lectr., Loyola Univ. Law Schl., Chicago, Ill., 1928-32; Att., Luster and Luster, ibid., 1928-32; Att., Fox and Fox, ibid., 1932-39; Budget Accountant, U. S. Rubber Co., Mishawaka, Ind., 1940-41; Controller, Bell and Thorn, Chicago, Ill., 1941-42; Regional Enf. Atty., Office of Pr. Admn., U. S. Govt., ibid., 1943-46; Prof., Univ. of Ill., ibid., 1946—. Mem.: Am. Assn. Adv. Sci.; Am. Soc. Engrng. Edn.; Am. Acctg. Assn.; Am. Bus. Law Assn.; Ill Acad. of Sci.; Am. Econ. Assn.; Am. Finance Assn.; Natl. Assn. Accts.; Acad. of Mgmt.; Organizer and First Pres. of Chicago Bus. Law Assn.; Ill. Bar; Football Writers Assn. of Am.; Boy Scout Merit Badge Counselor. Author: Fundamental Cost Accounting, 1957; Advanced Cost Accounting, 1956; CPA Law Review, 1959; Proportional Representation, and the Principles of American Representative Government, 1952; Casebook on the Law of Wills, 1928. Contbr. to: Ill. Law Rev.; N.A.A. Bull. Gen. Int.: Sports Editor of Park Ridge Herald and Columnist for Des Plaines Suburban Times; Drama Critic for Suburban Times. Areas of Rsch.: Accounting; Labor Economics and Management; Practicing Attorney and Tax Consultant.

FOX, Samuel Louis (M.D.), Assoc. Prof., Ophthalmology, Univ. of Md. Med. Schl., Asst. Prof. Physiology, ibid., Dir., Dept. of Ophthalmology and Otolaryngol., So. Baltimore Gen. Hosp., Bltmre., Md. Home Add.: 3518 Barton Oaks Rd., Baltimore 8, Maryland. OPHTHALMOLOGY, OTOLARYNGOLOGY, NEUROPHYSIOLOGY. b. Baltimore, Md., Dec. 27, 1914. s. Jacob and Ida R. (Sahm) F. Edn.: Ph.G., Univ. of Md., 1934; B.S., ibid., 1936; M.D., ibid., 1938. m. Drusilla Wolff, Dec. 30, 1948. c.: Samuel Louis, Jr.; Richard Alan. Exp.: Instr. of Otolaryngology, Univ. of Md., 1941-49; Assoc. in Otolaryngology, ibid., 1949-55; Assoc. Prof., ibid., 1955-61; Instr., Physiology, ibid., 1949-55; Asst. Prof. Physiology, ibid., 1956—; Instr., Ophthalmology, ibid., 1943-45; Asst. Prof., Ophthalmology, ibid., 1959-62; Assoc. Prof., Ophthalmology, ibid., 1962—; Acting Head of Ophthalmology, ibid., 1959-60. Mem.: Am. Coll. of Surgeons; International. Coll. of Surgeons; Am. Bd. of Otolaryngology; Am. Bd. of Ophthalmology; Am. Acad. of Ophthalmology and Otolaryngology; Am. Soc. of Ophthalmologic and Otolaryngologic Allergy; Am. Acad. Plastic Surgery of Head and Neck; Am. Soc. for Plastic Surg.; A.A.A.S.; Assn. Am. Med. Coll.; A.M.A.; Med. and Chirurgical Faculty of Md.; Baltimore City Med. Soc.; Southern Med. Assn.; Rho Chi; Masons; Scottish Rites; Shriner; Civitan. Contbr. to: Sou. Med. Jour.; Arch. of Otol.; The Laryngoscope; Bull. Schl. of Med.; The Eye, Ear, Nose and Throat Monthly; Ann. of Otol., Rhin. and Laryng.; Jour. of A.M.A.; Am. Clinica; Md. St. Med.; Clinical Med. Serv. Rec.: Ophthalmologist U. S. Med. Induction Bd., Baltimore. Areas of Rsch.: Drug Actions in Eye, Ear, Nose, and Throat.



FRANCIS, Wilbur Harold (Mr.), Rt. 2, Manhattan, Ill. CONSERVATION. b. New Lenox, Ill., July 30, 1906. s. Wilbur A. and Isabella (Rowley) F. m. Dorothy Frazer, June 25, 1930. c.: Loren Alan; Sandra Isabelle. Exp.: Farmer, 1930—. Mem.: A.A.A.S.; Ill. Jr. Acad. of Sci. Areas of Rsch.: Study of Relationship of Legumes and Grasses to Each Other as It Applies to Soil Structure; Water Conservation and Nutrition.



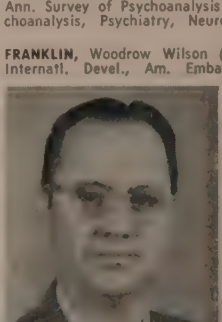
FRANCISCO, Cecil J. (Mr.), Vice Pres., Sinclair Rsch., Inc., 600 5th Ave., New York 20, N. Y. Home Add.: 43 Greenacres Ave., Scarsdale, N. Y. CHEMICAL ENGINEERING. b. Sioux City, Ia., Sept. 23, 1917. s. Cecil J., Sr. and Therese (Dugan) F. Edn.: A.B., Columbia Univ., 1939; B.S., ibid., 1940; M.S., ibid., 1941. m. Martha Daniels, Feb. 5, 1944. c.: David; Alice; Cecil, III; Claudia; Brian. Exp.: Section Ldr., Sinclair Refining Co., East Chicago, Ind., 1942-47; Div., Dir., Sinclair Rsch., Inc., Harvey, Ill., 1947-52; Tech. Mgr., ibid., 1952-58; Vice Pres., ibid., New York, N. Y., 1958—. Hon. Pos.: Mem., Bd. of Dirs., Sinclair Rsch., Inc.; Advisory Comm., Newark Coll. of Engrng. Mem.: Fellow, A.A.A.S.; A.C.S.; A.I.C.H.E.; A.P.I.; Pi Mu Epsilon; Sigma Alpha Epsilon. Areas of Rsch.: Patents and Licensing; Petroleum Refining; Process Engineering; Catalytic Processes.

FRANCKE, Don Eugene (D.Sc.), Dir. Pharm. Ser., Univ. of Mich. Hosp., Ann Arbor, Mich. PHARMACY. b. Athens, Pa., Aug. 28, 1910. s. Edward O. and Margaret C. (Kinney) F. Edn.: B.S., Univ. of Mich. Coll. of Pharm., 1936; M.S., Univ. of Mich. Grad. Schl., 1948. Hon. Deg.: D.Sc., Purdue Univ., 1951. m. Maxine Hafey, Aug. 18, 1937, (divorced, 1955). c.: Markay; Stephanie; David; Michele; Jon. m. 2nd, Gloria Niemeyer, Apr. 15, 1956. Exp.: Chf. Pharmacist, Univ. of Mich. Hosp., Ann Arbor, Mich., 1944—; Assoc. Prof. of Pharm., Univ. of Mich. Coll. of Pharm., Ann Arbor, Mich., 1962—; Asst. Prof., ibid., 1951-62; Lecturer in Hospital Pharm., ibid., 1948-51; Dir., Div. of Hosp. Pharm., Am. Pharmaceutical Assn., Wash., D. C., 1949-55; Ed., The Bull. of the Am. Soc. of Hosp. Pharmacists, 1944-57; Ed., Am. Journal of Hospital Pharmacy, 1958—; Author: Hospital Formulary of Selected Drug; Co-Author, The Art of Compounding; Associate Editor, University of Mich. Medical Bull., 1950-57 Hon. Pos.: Dir., Aud. Pharm. Serv. in Hosp., (PHS Grant), 195 60; Pres., Am. Pharmaceutical Assn., 1951-52; Pres., Am. So Hosp. Pharmacists, 1943, '46; Vice-Pres., Internatl. Pharma. Fe eration, 1959—; Vice-Pres., Sect. Press and Documentation, 1953 and Hosp. Pharmacists, 1955—; Lt. Comdr., Res. Corps, U.S.P.H.S Consult. to Surgeon-Gen. of Army, 1947; Consult. to Vet. Admir 1951—; Pharm. Consult. to WHO, 1959—. Mem.: Am. Soc. Hosp. Pharm.; Am. Coll. Apothecaries, Fellow; A.A.A.S., Fellow Am. Hosp. Assn.; Am. Chem. Soc.; Am. Inst. History of Pharm Rho Chi; Phi Delta Chi. Contbr. to: Jour. Am. Pharm. Assn Am. Prof. Pharm., etc. Gen. Int.: Awarded H.A.K. Whitney Le ture Award, 1953; The J. Leon Lascoff Award, 1948; The J. Le Lascoff Foundation Memorial Award, 1947. Home Add.: 1020 Fe don Rd., Ann Arbor, Mich.

FRANK, Bernard (Prof.), Watershed Mgmt., Colo. State Univ., F Collins, Colo. Home Add.: 629 S. Washington St., Ft. Collin Colo. WATERSHED MANAGEMEN b. New York City, Mar. 7, 190 s. Isaac and Rachel (Rabinowit F. Edn.: B.S., Cornell, 192 M.F., ibid., 1929. m. Miriam Schlum, 1928. c.: Robert Irvin Exp.: Chf., Forest Rsch.; Ass Chf. Forester, TVA; Watersh Flood Control Rsch. in Fore Serv. and Office of Secy. of Agr Wash., D. C., 1934-45; Asst. Di Div. of Watershed Mgmt. Rsch U. S. Forest Serv., Wash., D. 1945-59; Watershed Mgmt. E pert, Food and Agric. Orgn. the UN., India, 1959-60; Pro Watershed Mgmt., Colo. St. Univ 1960—. Hon. Pos.: Editorial Bo Soil Cons. Soc. of Am., 1961- Chmn., Prog. Com., Soil Conserv tion Soc. of Am., 1963; Fello Soc. Am. Foresters; Fellow, A.A.A.S.; Mem., Wash. Acad. Sc Chmn. Prog. Comm., Am. Gephysical Union Hydrol. Sect., 195 58; Chmn. Exec. Comm., The Wilderness Soc.; Chmn. Com on Multiple Use, Soc. Am. For., 1946; Chmn., Rock Cre Watershed Comm., Soil Conservation Soc. of Am., 1954-59. Mem Soc. Am. Foresters; Soil Conservation Soc. Am.; Am. Geophy Union; Wilderness Soc.; A.A.A.S.; Xi Sigma Pi; Sigma X Co-Author: Water, Land and People, 1950. Author: Our Nation Forests, 1955. Contbr. to: Jour. Forestry; Sci.; Trans. A Geophys. Union; Jour. Soil and Water Conservation. Areas Rsch.: Watershed Mgmt.; Land and Water Econ.; Wildla Planning; Wilderness Values.

FRANK, Ian (M.D.), Assoc. Prof. in Psychiatry, State Univ. of N.Y N.Y., N.Y. Home Add.: 45 East 82nd St., N.Y. 28, N.Y. PSYCH ANALYSIS; PSYCHIATRY. b. Tisovec, June 24, 1902. s. Dani and Klementina (Biedermann) F. Edn.: M.D., Univ. of Pragu 1927. m. Elizabeth Kecse Nagy, July 20, 1929. Exp.: Asst. Di Clin. Dir. of State Hosp. of Kosice (Czechoslovakia), 1927-31; H Physician for Neurology and Psychiatry, Eichwald Sanitariu Czechoslovakia, 1931-35; Psychoanalyst, Consulting Psychiatri and Neurologist in Pvt. Practice, Prague, 1935-39; Ship Surgeo Br. Merchant Marine, 1941; First Asst. Supt., Deputy Supt Mental Hosp., Chichester, Sussex, Eng., 1942-46; Sr. Psychiatris Trng. Analyst, Prof. in Schl. of Psychiatry, The Menninger Fdtn 1946-51; Dir., Topeka Inst. for Psychoanalysis, Trng. Analys Lectr., State Univ. of N.Y., 1951-61; Assoc. Prof., ibid., 1961- Mem.: Am. Psycholanalytic Assn.; Internatl. Psychoanalytic Assn Royal Medico-Psychological Assn., London; Charter Mem., Psych analytic Assn. of N.Y.; Hon. Mem., Alumni Assn. of Menning Schl. of Psychiatry, Topeka. Author: Psychoanalyse und Ps chiatrie (Psychoanalysis and Psychiatry), 1932. Co-author: Small book in French, 1933-34 and others. Contbr. to: Jou Czech. Physicians; Nursing Times; Proc. Royal Soc. of Med.; Jou of Mental Sci.; Psychiatry; Bull. Am. Psychiatric Assn.; Jou Am. Psychoanalytic Assn.; The Psychoanalytic Study of the Chil Ann. Survey of Psychoanalysis; and others. Areas of Rsch.: Ps choanalysis, Psychiatry, Neurology.

FRANKLIN, Woodrow Wilson (Ph.D.), Entomol. Adv., Agency f Internatl. Devel., Am. Embassy, Mogadiscio, Somali Republ Home Add.: Santa Cruz, Cal AGRICULTURAL RESEARCH; EC NOMIC ENTOMOLOGY. b. W. Plain Mo., Sept. 4, 1918. s. Willia Claude and Louise (Lockmiller) Edn.: B.S., McPherson Coll., 194 Ph.D., Kans. State Univ., 195 m. Mary Mable Fryer, Apr. 2 1938. Exp.: Instr., Otis, Hil boro, Hill City H. Schls., Ot Hillsboro, Hill City, Kans., 194 46; Asst. Prof., Kans State Col Manhattan, Kans., 1946-53; E tomol. Advr., U. S. Govt., FO ICA, AID, Repub. of Liberi Somali Repub., 1953—. Hon. Pos Chmn., Rocky Mtn. Conf. of E tomolts., 1953. Mem.: Ento Soc. Am.; Am. Assn. Adv. Sci Sigma Xi; Kans. Entom. Soc.; A For. Serv. Assn.; Gamma Sign Delta; Rotary Club, U.S.A. Contbr. to: Jour. Econ. Entomo Jour. Kan. Entom. Soc.; Proc. Cent. States Br. Entom.; Kan Agric. Expt. Sta. Bull. Cir. and Rpts.; Sta. Notes; Liberia Ag



Expt. Stan. Serv. Rec.: U. S. Army, 1946-47. Areas of Rsch.: Insect of Alfalfa and Wheat in United States and the Cacaco, Coffee, and Citrus in the Tropics.

FRANTZ, Charles H., III (M.D.), Lecturer Orthopaedic Surgery, Northwestern Univ. Med. Schl., 1810 Wealthy St. S.E., Grand Rapids 6, Mich. Home Add.: 1408 Ridgewood Ave., S.E., Grand Rapids, Mich. ORTHOPAEDIC SURGEON. b. Bay City, Mich., Mar. 9, 1906. s. Charles H., II and Edith (Twist) F. Edn.: A.B., Univ. of Mich., 1928; M.D., Univ. of Mich. Med. Schl., 1932. m. Jane Robinson, 1938. c.: Melissa Jane; Charles Robinson. Exp.: Chf. Staff, Blodgett Memorial Hosp., 1952-54; Chf. Staff, Mary Freebed Childrens Hospital, 1954-56; Pres., Clinical Orthopaedic Soc., 1960-61. Hon. Pos.: Chmn., Sub-Com. Child Prosthetic Problems; Comm., Prosthetic Rsch. and Dvlpt., The Natl. Rsch. Counc.; Natl. Acad. of Sci. Mem.: Am. Coll. of Surgs.; Am. Acad. of Orthopaedic Surgs.; Am. Orthopaedic Assn.; The Clinical Orthopaedic Soc.; Assn. of Am. Milit. Surg.; Internatl. Soc. of Orthopaedic Surg. and Traumatology; Phi Rho Sigma. Contbr. to: Jour. of Bone and Joint Surg.; Clinical Orthopaedics; Med. Times; Annals of Surg.; Instructional Courses; The Am. Acad. of Orthopaedic Surg. Serv. Rec.: U.S. Army, Lt. Col. M.C., Retired. Areas of Rsch.: Clin. Rsch. in Prosthetics for the Child Amputee. Clin. Rsch. in Deficiencies of the Skeleton of the Extremities. Recent Publication of a Classification of Skeletel Extremity Deficiencies.

FRANZKE, Clifford James (Mr.), Agronomist and Prof., S. Dak. State Coll., Brookings, S. Dak. Home Add.: 1125 5th St., Brookings, S. Dak. PLANT BREEDING. b. Bijou Hills, S. Dak., April 27, 1896. s. William and Anna (Melchert) F. Edn.: B.S., S. Dak. State Coll., 1924. m. Rose Marion Norman, 1924. c.: Clifford James, Jr.; Yvonne Ardell. Exp.: Asst. Prof., S. Dak. State Coll., Brookings, S. Dak., 1924-32; Assoc. Prof., ibid., 1932-47; Prof., ibid., 1947—. Mem.: Am. Soc. Agro.; Alpha Zeta; Kiwanis; Mason; Eastern Star. Author: Crops Lecture Manuals and Lab. Manuals, 1929; Grasses Lecture Manual Part I and Legumes Lecture Manual Part II, 1930; Weed Identification and Crops Judging Manual. Serv. Rec.: AUS, 1917-18. Areas of Rsch.: Plant Breeding—Coldicine and Its Use as a Breeding Tool Inducing Nutants from Pure Lines and Inducing Pure Lines from F_2 Progenies of a Cross.

FRAZIER, John Earl (Sc.D.), Professional Engr., Frazier-Simplex, Inc., 436 E. Beau St., Washington, Pa. Home Add.: 36 Morgan Ave., Wash., Pa. CERAMICS. b. Butler Co., Pa., July 4, 1902. s. Chauncey E. and Mary Ellen (Gibson) F. Edn.: B.S., Wash. and Jefferson Coll., 1922; S.M., M.I.T., 1924; Sc.D., Univ. of Brazil, 1938. m. Frances Sprague Lang, June 23, 1936. c.: John Earl, II; Thomas Gibson. Exp.: Instr., Gen. Chem., Wash. and Jefferson Coll., 1919-20; Chem. Engr., Berney Bond Glass Co., Clarion, Pa., 1924-26; Fuel Engr., Simplex Engrng. Co., Wash., Pa., 1926-28; Asst. Secy., Asst. Treas., ibid., 1928-30; Secy., Treas., ibid., 1930-38; Vice-Pres., Treas., Frazier-Simplex, Inc., 1938-45; Pres., Secy., ibid., 1945—. Hon. Pos.: Mem., Advisory Bd., Pittsburgh Natl. Bank; Dir., Pres., Wash. Co. Motor Club, 1958-62; Past Pres., Ceramic Camera Club; Past Pres., Dir. Wash., Pa. C. of C., 1950; Pres., Wash. Co. Alumni Assn. of Wash. and Jefferson Coll., 1957-58, Past Mem. of Bd. of Dirs.; Bd. Dirs., Gen. Alumni Assn.; Vice Pres., Culver Milit. Academy's Fathers' Assn., 1957-59; Past Pres., Pa. Ceramics Assn., 1950; Pres., Wash. Union Trust Co.; Mem. of Pa. Acad. of Sci.; Mem. of Boys Baseball Coun. of Wash., Pa. Mem.: Royal Soc. of Arts of England (Hon.); Benjamin Franklin Fellow; A.A.A.S. (Fellow); Am. Cer. Soc. (Fellow); Soc. of Glass Tch. of England (Fellow); Past Pres., Pa. Cer. Assn.; Am. Chem. Soc.; Am. Soc. of Milit. Engrs.; Natl. Inst. of Cer. Engrs.; Druids; Varsity Football Letterman's Club, Wash. and Jefferson Col., 1918; Keramos; Keramos-Frazier Libr. of Dept. of Ceramic Technol., Pa. State Univ.; Am. Chem. Soc.; Phi Beta Kappa; Phi Chi Mu; Kappa Sigma. Author: Kilns for National Encyclopedia, 1932. Co-author: Glass Sand and a Glass Industry in Puerto Rico, 1945; Glass Industry for Venezuela, 1951; Glass Plant Designs, Alfred Univ., Alfred, N. Y., 1960. Gen. Int.: Dist. Citizen Award by Wash., Pa. City Coun., 1960; Recipient of Achievement Citation (Engineering), Wash. and Jefferson Coll., 1953; Award of Merit, Wash. Co. Alumni Assn. of Wash. and Jefferson Coll., 1957; Life Mem., Bd. of Trustees, Wash. and Jefferson Coll., 1960; Fortnightly Literary Club of Washington, Pa., 1956; Kappa Sigma Man of Year, 1962.

FREAR, Donald E(lisha) H(arding) (Ph.D.), Prof. of Agric. and Biol. Chem., Penn. State Univ., Univ. Park, Pa. Home Add.: 531 Kennard Rd., State Coll., Pa. ARGICULTURAL BIOCHEMISTRY (PESTICIDES). b. South Eaton, Pa., Sept. 16, 1906. s. Arthur and Letitia (Miller) F. Edn.: B.S., Pa. State Univ., 1926; M.S., Univ. of N. H., 1928; Ph.D., Pa. State Univ., 1939. m. Hazel Eaton, 1928. c.: Donald Stuart; Scott Eaton; Joann Elizabeth. Exp.: Grad. Asst., Univ. of N. H., Durham, N. H., 1926-28; Asst. Chemist, R. I. State Coll., Kingston, R. I., 1928-30; Instr. to Prof., Pa. State Univ., 1930—. Mem.: Am. Chem. Soc.; Ent. Soc. of Am.; Alpha Zeta; Alpha Chi Sigma; Alpha Gamma Rho; Phi Lambda Upsilon; Sigma Xi; Gamma Sigma Delta. Author: Chemistry of Insecticides and Fungicides, 1942; Chemistry of Insecticides, Fungicides and Herbicides, 1948; Chemistry of the Pesticides, 1955; Catalogue of Insecticides and Fungicides, 1947, 1948; Agricultural Chemistry, 1950, 1951. Contbr. to: Sci. Jour. Areas of Rsch.: Chemistry of the Pesticides.

FREDELL, Walter George (Mr.), Rsch. Pharm., Strong, Cobb, Arner Co., 2654 Lisbon Rd., Cleveland, Ohio. Home Add.: 3556 Ingleside, Shaker Heights 22, Ohio. PHARMACEUTICAL CHEMISTRY. b. St. Paul, Minn., Jan 13, 1906. s. Gustaf and Amanda (Johanson) F. Edn.: Ph.C., Univ. of Minn. Coll. of Pharm., 1927; B.S., Univ. of Minn. 1929; M.S., ibid., 1939. m. Helen Wilcox, May 30, 1937. Exp.: Lab. Instr., Univ. of Minn. Coll. of Pharm., Mpls., Minn., 1937-41; Asst. Prof., St. Louis Coll. of Pharm., St. Louis, Mo., 1941-42; Assoc. Prof., Drake Univ., Des Moines, Iowa, 1942-45; Chf. Pharmacist, Lambert Pharmacal Co., St. Louis, Mo., 1945-56; Sr. Scientist, Warner-Lambert Pharm. Co., Morris Plains, N. J., 1956-61; Asst. Secy., Am. Med. Assn., Chicago, Ill., 1961-62; Rsch. Pharm., Strong, Cobb, Arner Co., 1962—. Mem.: A.A.A.S., Fellow, 1953; APh.A.; ACS; Soc. Am. Bact.; Am. Soc. of Pharmacognosy; Fed. Intern. Pharm.; Am. Document. Inst.; Soc. Chem.; Soc. Pharm. in Industry; Phi Delta Chi; Rho Chi. Contbr. to: Jour. Am. Pharm. Assn.; Proc. of Sci. Sect. of TGA; Am. Perf.; JSCC. Areas of Rsch.: Pharmaceutical Chemistry, Phytochemistry, Cosmetics.

FREDRICK, Jerome F. (Ph.D.), Dir. of Rsch., Dodge Chem. Co., 3425 Boston Post Rd., N. Y., N. Y. Home Add.: 1240 Burke Ave., N. Y., N. Y. ENZYMOLOGY; CHELATION CHEMISTRY; PROTEIN CHEMISTRY; BIOCHEMISTRY. b. N. Y. City, Feb. 23, 1926. s. August V. and Lena (Pisotti) F. Edn.: B.Sc., City Univ., City Coll. of N. Y., 1949; Ph.D., N. Y. Univ., 1955. m. Miriam Macklin, June 1946. c.: Alan Mark; Naomi J. Exp.: Instr.: City Coll. of N. Y., N.Y.C., 1948-50; Rsch. Biochem., V.A. Hosp., ibid., 1949-50; Rsch. Chemist, Treas. Labs., N.Y.C., 1950-53; Asst. Dir. Rsch., Dodge Chem. Co., Boston, Mass., 1953-54; Dir. Rsch., ibid., N. Y., 1954—; Lecturer in Enzymology, Dodge Inst. for Advanced Studies, 1957—; Bd. of Dirs., Med. Fund, Inc., N.Y.C., 1961—. Hon. Pos.: Chmn., N. Y. Acad. of Sci. Chelation Symposium, 1959; Tremaine Fellow, Biol., 1947-48; Consultant, Natl. Rsch. Coun., Handbook of Biol. Data Comm., 1952-54. Mem.: N. Y. Acad. of Scis.; A.A.A.S.; A.C.S.; Scandanavian Soc. of Plant Physiol.; Am. Genetics Assn.; N. Y. Microscopical Soc. Author Chelation Phenomena, 1960. Contbr. to: Internatl. Jour. Exptl. Botany; Archives of Biochem. and Biophysics; Annals N. Y. Acad. of Scis.; Biol. Rev.; Physiol. Plant. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Electrophoresis; Enzyme Chem.; Biochemical Evolution and Comparative Biochemistry; Chelation and Co-ordination Chemistry.

FREEMAN, Erika Padan (Mrs.), Psychotherapist, N.Y.C. Home Add.: 50 West 96th St., N. Y., N. Y. SOCIAL PSYCHOLOGY, PSYCHOANALYTIC PSYCHOTHERAPY. b. Vienna, Austria, July 1, 1927. d. Arthur and Rachel (Grau) Gross. Edn.: B.A., Hunter Coll., 1956; M.A., Columbia Univ., 1959. m. Paul Freeman, 1955. Exp.: Tchng. Assoc., Tchrs. Coll., Columbia Univ., 1958-59; Psychotherapist, Theodor-Reik Clinic, N.Y.C., 1959-60; Psychotherapist, N.Y.C., 1959—. Mem.: A.A.A.S.; Am. Psychological Assn.; Assn. for Applied Psychoanalysis; Natl. Coun. on Family Relations; N. Y. Soc. of Clin. Psychologists; Am. Assn. of Marriage Counsellors; N. Y. St. Psychological Assn.; Kappa Delta Pi. Areas of Rsch.: Psychoanalysis; Psycho-Social Development of the Artistic-Creative Personality; Psychol. of Politics; Studies on the Family, Its Dynamics, Fonction and Influence.

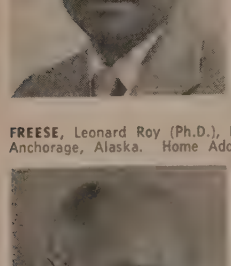
FREEMAN, Leslie Willard (M.D.), Prof. of Surg. and Dir., Surg. Experimental Labs., 1100 W. Michigan St., Indianapolis 7, Ind. Home Add.: 5601 E. St. Clair, Indianapolis, Ind. NEUROPHYSIOLOGY, NEUROSURGERY. b. Escanaba, Mich., Aug. 17, 1915. s. William and Julia (Berg) F. Edn.: A.B., Augustana Coll., 1937; Ph.D., Univ. of Chicago, 1940; M.D., ibid., 1943. m. Margaret V. McLean, Dec. 26, 1938. c.: Julia B.; Leslie K.; Mary Jane; Frances H.; Willard A.; Robert M. Exp.: Instr., Univ. of Ill.,

Coll. of Med., 1940-41; Asst. Prof., Yale Univ., 1947-48; Prof., Ind. Univ. Schl. of Med., 1948—. Hon. Pos.: Chmn., Med. Advisory Comm., Natl. Paraplegia Fdtn.; Dir., Surg. Exper. Lab., Ind. Univ. Med. Center. Mem.: A.A.A.S.; Am. Physiological Soc.; Ohio Valley Sect. of Exper. Biol. and Med.; Southern Neurosurg. Soc.; A.M.A.; Am. Neurological Assn.; Am. Acad. of Neurology; Sigma Xi. Contbr. to: Jour. of Neurosurg.; Clin. Neurosurg.; Exper. Med. and Surg.; Annals of Surg.; Neurology; The Milit. Surg.; Jour. of Am. Med. Assn.; Jour. of Ind. State Med. Assn.; Surgery; Archives of Surg. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Spinal Cord Injury and Disease.

FREEMAN, Monroe E. (Ph.D.), Dir., Sci. Information Exchange, Smithsonian Institution, 1825 Conn. Ave., Wash. 9, D. C. Home Add.: 1400 So. Joyce St., Arlington, Va. BIOCHEMISTRY. CLINICAL CHEMISTRY, AND RESEARCH MANAGEMENT. b. Wash., D. C., Apr. 1, 1906. s. Edward M. and Grace (Studeman) F. Edn.: B.S., Univ. of Minn., 1928; M.S., ibid., 1929; Ph.D., ibid., 1931. m. Christina Gray Clinch, 1929. c.: Mary Gray Kelly; Monroe E., Jr. Exp.: Instr., Univ. of Ariz., Tucson, Ariz., 1929-30; Asst. Prof., Univ. of Me., Orono, Me., 1930-36; Prof., Univ. of Mass., Amherst, Mass., 1936-47; Chf., Biochem., Walter Reed Army Instit. of Rsch., Wash., D. C., 1947-53; Rsch. and Devel., U. S. Army Gen. Staff, Wash., D. C., 1953-56; Chf., European Rsch. Office, U. S. Army, Frankfurt, Germany, 1956-60; Rsch. and Devel., Office of the Secy. of Defense, Wash., D. C., 1960-61; Dir., Sci. Information Exchange, Smithsonian Institution, 1961—. Hon. Pos.: Pres., Am. Assn. of Clinical Chemists, 1954-55; Secy., Internatl. Comn. of Clinical Chem., 1959-60; Pres., ibid., 1960—; Pres., Internatl. Fed. of Clinical Chemists, 1960—; Mem., Am. Bd. of Clinical Chemists, Inc., 1958—; Chmn., Natl. Acad. of Scis. Natl. Rsch. Coun. Comm. on Clinical Chem., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. of Clin. Chems., Fellow; Fellow, Am. Assn. for the Adv. of Sci.; Soc. Exptl. Biol. and Med.; Wash. Acad. of Sci.; Internatl. Union of Pure and App. Chem.; Acad. of Med., Wash.; Sigma Xi; Delta Upsilon. Contbr. to: Biochem. and Clinical Chem. Jours. Serv. Rec.: U. S. Army, 1953-60. Areas of Rsch.: Clinical Chemistry, Research Administration, and Management.

FREEMAN, Robert Clarence (Ph.D.), Rsch. Chemist, Monsanto Chemical Co., Agriculture Div., St. Louis 66, Mo. Home Add.: 4647 Penrose St., St. Louis 15, Mo. SYNTHETIC AND MECHANISTIC CHEMISTRY AND ORGANOPHOSPHORUS CHEMISTRY. b. Harrelsville, N. C., Oct. 14, 1927. s. Rupert C. and Genie (Manley) F. Edn.: B.S., N. C. Coll. at Durham, 1950; M.S., ibid., 1952; Ph.D., Wayne State Univ., 1956. m. Donnie Joyner, July, 1954. Exp.: Rsch. Chemist, Monsanto Chemical Co., St. Louis, Mo., 1956—. Mem.: ACS; Soc. of Sigma Xi; AAAS; Kappa Alpha Psi; Beta Kappa Chi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. of Organic Chem. Areas of Rsch.: The Chemistry of Epoxyethers, Ketenimines, Enamines, Alphahalocarbonyls, Acylions and Organophosphorus Compounds.

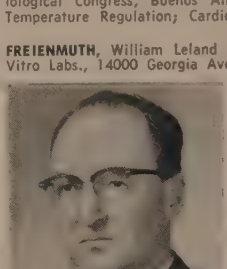
FREESE, Leonard Roy (Ph.D.), Prof. of Biol., Alaska Meth. Univ., Anchorage, Alaska. Home Add.: Alaska Meth. Univ., Anchorage, Alaska. PHYCOLOGY; SPECIAL INTEREST IN DIATOMOLOGY. b. Gaylord, Kan., Feb. 3, 1906. s. Henry W. and Mary (Warkentin) F. (both dec.). Edn.: B.A., Univ. of Colo., 1932; M.A., ibid., 1940; Ph.D., Northwestern Univ., 1951. Exp.: Tchr., Elem. Schls. in Kan., 1923-28; H.S. Tchr. and Athletic Coach in Kan., Ark. and Colo., 1932-39; Tchr., Tex. Milit. Acad., Tex., 1940-42; Instr. of Sci., Natl. Coll. of Edn., Ill., 1945-48; Asst. Prof. to Prof. of Biol., Univ. of Houston, 1948-58; Tchr. of Math. in Houston Independent Schl. Dist., 1958-60; Prof. of Biol., Alaska Meth. Univ., Anchorage, Alaska, 1960—. Hon. Pos.: Chmn., Biol. Dept., Univ. of Houston, 1951-52; Fellow, Tex. Acad. of Sci., 1952—. Mem.: A.A.A.S.; Ecological Soc. of Am.; Am. Soc. of Limnology and Oceanography; The Phycological Soc. of Am.; Lambda Chi Alpha; Sigma Xi; Phi Kappa Phi. Contbr. to: Tex. Journal of Science; Procs. of Acad. of Natural Science of Philadelphia. Serv. Rec.: U. S. Naval Res., Med. Corps, 1942-45. Listed in: W. W. in Am. Edn.; W. W. in Am.; A.M.S. Areas of Rsch.: Taxonomy of Diatoms; Present Rsch., Diatoms of Alaska.



FREER, Ruskin Skidmore (Sc.D.), Prof. of Biol., Lynchburg Coll., Lynchburg, Va. Home Add.: 1158 Timber Lake Dr., Lynchburg, Va. BOTANY, FLORISTICS, CENTRAL VIRGINIA BLUE RIDGE. b. Kenton, Ohio, April 2, 1894. s. Charles A. and Bessie (Skidmore) F. Edn.: B.S., Hiram Coll., 1917; M.A., Ohio Wesleyan Univ., 1924; Sc.D., Culver-Stockton Coll., 1960. Hon. Deg.: Sc.D., Culver-Stockton Coll., 1960. m. Dorothy Scoggan, 1934. c.: Jane E. Brinkley; David R. Exp.: Prof. Sci., Milligan Coll., 1917-20; Instr., Ohio Wesleyan Univ., 1923-24; Prof. Biol., Lynchburg Coll., 1924—; Chmn., Div. Natl. Sci., ibid., 1932-61. Hon. Pos.: Pres., Va. Acad. Sci.; Pres., Va. Soc. Ornithology; Pres., Southern Appalachian Botanical Club; Chmn., Va. Chap., The Nature Conservancy. Mem.: A.A.A.S.; Va. Acad. of Sci.; Am. Soc. of Plant Taxonomists; Assn. of Southeastern Biol.; Sigma Xi. Contbr. to: Ohio Jour. of Sci.; Castanea. Areas of Rsch.: Life Hist. of a Fern; Flora of Central Va. Blue Ridge; Birds of Central Virginia.

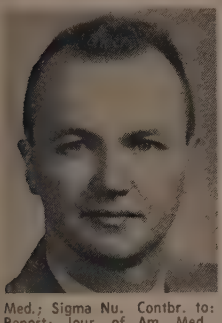
FREGLY, Melvin James (Ph.D.), Assoc. Prof. of Physiol., Univ. of Fla., Gainesville, Fla. Home Add.: Route 4, Box 715B, Gainesville, Fla. PHYSIOLOGY. b. Patton, Pa., May 26, 1925. s. Frank and Nellie (Wellings) F. Edn.: B.S., Bucknell Univ., 1949; M.S., ibid., 1949; Ph.D., Univ. of Rochester, 1952. m. Marilyn Southwick, 1956. Exp.: Instr. in Physiol., Harvard Med. Schl., 1952-56; Asst. Prof. of Physiol., Univ. of Fla., 1956-60; Assoc. Prof. of Physiol., ibid., 1960—. Mem.: Am. Physiol. Soc.; Endocrine Soc.; Soc. of Zoologists; N. Y. Acad. of Sci.; Sigma Xi Soc.; A.A.A.S.; Phi Sigma Biological Fraternity; Soc. for Exptl. Biol. and Med. Contbr. to: Am. Jour. of Physiol.; Jour. of Applied Physiol.; Endocrinol.; Acta Endocrinologica; Soc. for Exptl. Biol. and Med.; Metabolism; Circulation Rsch.; Canadian Jour. of Biochem. and Physiol. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Recipient of Am. Physiological Soc. Award to Attend XX Physiological Congress, Brussels, Belgium, 1956; Recipient of Natl. Acad. of Scis. Award to Attend XXI Physiological Congress, Buenos Aires, 1959. Areas of Rsch.: Body Temperature Regulation; Cardiovascular Hypertension.

FREIENMUTH, William Leland (Mr.), Mgr., Rsch. and Devel. Br., Vitro Labs., 14000 Georgia Ave., Silver Spring, Md. Home Add.: 26014 Mt. Vernon Ave., Damascus, Md. ELECTRICAL ENGINEERING. b. Tongonoxie, Kans., Aug. 15, 1920. s. W. Hans and Lela Mae (Walters) F. Edn.: B.S., E.E., Univ. of Kans., 1947. m. Easter Risner, Sept. 1, 1943. c.: Susan Marie; William Kenneth; Karl Stanley. Exp.: Consulting Engr., A. D. Ring and Co., Wash., D. C., 1947-48; Engr., Vitro Labs., Silver Spring, Md., 1948-57; Asst. Dept. Hd., ibid., 1957-60; Asst. Technl. Operations Mgr., ibid., 1960—. Mem.: Am. Inst. of Elect. Engrs.; Instit. of Radio Engrs.; Kappa Eta Kappa; Lions; Montgomery Co. Md., Coun. of PTA's. Serv. Rec.: U. S. Army, 1940-46, Gen Int. Two Patents on Electronic Circuits Related to Telemetry. Areas of Rsch.: Underwater Communication and Telemetry; Remote Control Underwater Vehicles Radio Communication and Telemetry; Research and Development Management.



FREITAG, Herta Taussig (Ph.D.), Hd., Dept. of Mathematics, Hollins Coll., Hollins College, Va. Home Add.: 7076 Brookview Rd., Hollins, Va. MATHEMATICS. b. Vienna, Austria, Dec. 6, 1908. d. Joseph H. Taussig and Paula C. (Roth) T. Edn.: A.B., Real Gymnasium, Vienna, 1927; M.A., Columbia Univ., 1948; Ph.D., ibid., 1953. m. Arthur H. Freitag, Dec. 26, 1950. Exp.: Hd., Dept. of Math., The Mount Schl., 1941-44; Hd., Dept. of Math., Greer Schl., 1944-48; Hd., Dept. of Math., Hollins Coll., 1948—. Hon. Pos.: Vice-Pres., Md. Dist. Coll., Va. Sect. MAA; Secy., ibid., 1960-62; Pres., 1962-63. Mem.: M.A.A.; A.M.S.; N.C.T.M.; Va. Academy of Sci.; Central Assn. of Sci. and Math. Tchrs.; A.A.A.S.; A.A.U.P.; Kappa Delta Pi; Eastern Star. Author: The Number Story, co-author, 1960. Contbr. to: Scripta Math.; The Math. Tchr. Areas of Rsch.: Hist. and Foundations of Math., Math. Edn.

FREMMING, Benjamin DeWitt (D.V.M.), Manager, Astrobiotics Sect., Westinghouse Astronuclear Lab., Pittsburgh, Pa. Home Add.: 4929 Carlyn Dr., Pittsburgh 36, Pa. ASTROBIOTICS. b. Minneapolis, Minn., Oct. 27, 1924. s. Benjamin Henry and Myrtle (Marshall) F. Edn.: D.V.M., Colo. St. Univ., 1946; M.P.H., Univ. of Calif., 1952. m. Louisa Johnson, Apr. 30, 1955. c.: Bret Gorden. Exp.: Scientist, Walter Reed Rsch. and Grad. Center, 1952-53; Chief, Vet. Rsch. Gr., Radiobiological Lab., Univ. of Tex., 1953-56; Sr. Scientist, Westinghouse Astronuclear Lab., Pittsburgh, Pa., 1961 —. Hon. Pos.: Chmn., Com. on Non-human Primates, Natl. Rsch. Coun.; Bd. Mem., Inst. of Lab. Animal Resources, Natl. Rsch. Coun., 1953-58. Mem.: Am. Vet. Med. Assn.; Am. Bd. of Vet. Publ. Health; Am. Coll. of Lab. Animal Med.; Sigma Nu. Contbr. to: Am. Jour. of Vet. Rsch.; USAFSAM Report; Jour. of Am. Med. Assn.; Am. Vet. Med. Assn.; The Am. Rev. of Tuberculosis and Pulmonary Diseases; Am. Jour. of Applied Pathol.; Mod. Vet. Practice; Jour. of Vet. Rsch.; Scienti-c Monthly; Jour. of the Animal Care Panel. Serv. Rec.: U. S. Army, 1946-48; U. S. Air Force, 1948-56. Gen. Int.: Pres., Am. Coll. of Lab. Animal Med., 1960-62. Areas of Rsch.: Radiobiology, Experimental Surgery, Laboratory Animal Medicine.



FREMONT, Rudolph Eric (M.D.), Chf., Cardiovascular Sect., V. A. Hosp., Bklyn., N. Y. Home Add.: 310 E. 44th St., N. Y., N. Y. CARDIOVASCULAR DISEASES. b. Vienna, Austria, Dec. 12, 1912. Edn.: Att., Univ. of Vienna, 1931-36; M.D., ibid., 1936. c.: Maureen Judith. Exp.: Chf., C-V, Sect., Halloran VA Hosp., N. Y., 1947-51; Chf., C-V Sect. and Asst. Chf. of Med. Serv., Albany VA Hosp., Albany, N. Y., 1951-53; Chf., C-V Sect., Bklyn. VA Hosp., 1953—; Instr., Albany Med. Coll., 1951-52; Asst. Prof., ibid., 1953; Clin. Asst. Prof. of Med., St. Univ. Coll. of Med., 1956—; Assoc. Prof., ibid., 1961—; Chf., Cardiovascular Sect., V.A. Hosp., Bklyn, N. Y., 1961—. Hon. Pos.: Chmn., Sci. Exhibit on Cardiov. Function Testing, Am. Coll. Chest Phys.; Examiner of Am. Bd. Int. Med. and Natl. Bd. Med. Mem.: A.M.A.; New York Co. and State Med. Soc.; Am. Heart Assn.; A.A.A.S.; Assn. Milit. Surg.; N. Y. Acad. of Sci.; N. Y. Acad. of Med.; Am. Coll. Chest Phys.; Am. Coll. of Cardiol.; Am. Geriat. Soc.; Am. Coll. of Angiol. Author: Chest Pain, Co-Author, 1961. Contbr. to: Jour. Am. Med. Assn.; Dis. of the Chest; Archives of Int. Med.; Am. Jour. Cardiol.; Circul.; Abstract Circ.; Proc. Soc. Exptl. Biol. and Med.; Zeitschr. F. Klin. Med.; Am. Heart Jour. Serv. Rec.: U. S. Army, 1944-47. Areas of Rsch.: Coronary Artery and Peripheral Vascular Disease; Cardiopulmonary Physiology; Study of Vasoactive Agents.

FRENCH, Leslie Howson (M.D.), Physician Specialist (Internal Med. & Cardiology). Home Add.: 6803 Pineway, University Park, Hyattsville, Md. CLINICAL PHYSIOLOGY, CARDIOLOGY AND ELECTROCARDIOLOGY, MEDICAL EDUCATION. b. London, England, Mar. 8, 1893. s. Edgar James and Lydia Louisa (Kefford) F. Edn.: M.D., George Washington Univ., 1924. m. Margaret Scruggs, 1928. Exp.: Assoc. Prof. Anatomy, George Wash. Univ., 1920s'; Prof. and Hd. of Dept. of Physiol., ibid., 1924-32; Assoc. Prof. Clin. Med., Georgetown Univ. Schl. of Med., 1933-58; Chf., Dept. of Med. and Cardiologist, Dir. of Med. Edn., Prince Georges General Hosp., Cheverly, Md., 1945-60; Dir. of Med. Edn., Rsch. Grant Hosp., Columbus 15, Ohio, 1961—. Mem.: Am. Med. Assn.; Diplomate, Am. Bd. of Int. Med.; Am. Coll. of Phys.; Am. Coll. of Cardiol.; Am. Coll. of Chest Phys.; Alpha Kappa Kappa. Author: Outline, Human Physiology, 1930; Teaching Outlines: Applied Physiol. and Electrocardiography. Areas of Rsch: Applied Cardio-Vascular Physiology and Electrocardiology.

FRETER, Rolf (Ph.D.), Assoc. Prof. of Microbiol., Jefferson Med. Coll., Phila. 7, Pa. Home Add.: 121 Township Line Rd., Jenkintown, Pa. BACTERIOLOGY (MEDICAL). b. Hamburg, Germany, Jan. 5, 1926. s. Rudolf and Paula (Duhn) F. Edn.: Ph.D., Goethe Univ , Frankfurt, Germany, 1951. m. Gloria Goicochea, 1955. c.: Rolf; Albert John. Exp.: Instr., Univ. of Chicago, Chicago, 1952-54; Asst. Prof., Loyola Univ., Chicago, Ill., 1954-57; Assoc. Prof., Jefferson Med. Coll., Phila., Pa., 1957—. Mem.: Am. Assn. Immunos.; Am. Soc. Microbiol.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Jour. Exptl. Med.; Jour. Infect. Dis.; Zentralblatt f. Bakteriol.; Bacteriol. Procs.; Fed. Procs. Phytopathol. Zeitschr. Areas of Rsch.: Pathogenicity and Immunity in Enteric Infections; Experimental Enteric Infections; Bacterial Antagonisms; Characterization of Antibodies, Coproantibody.

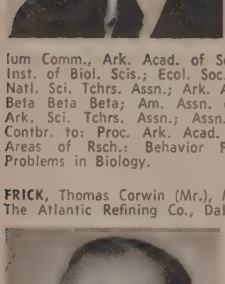
FREUND, Rudolf Bernard (M.D.), Release Officer, Prof. Emer. of Internal Med., Utica St. Hosp., Utica, N. Y. Home Add.: 1213 Court St., Utica, N. Y. EXPERIMENTAL MEDICINE (EXPERIMENTAL PATHOLOGY; CHEMOTHERAPY; PREVENTIVE MEDICINE; PSYCHIATRY). b. Breslau, Germany, Aug. 22, 1896. s. Salo (dec.) and Elfriede (Glogauer) F. Edn.: M.D., Friedrich Wilhelms Univ., Breslau, 1921; Dr. Med., Habilitation, Univ. Berlin, 1929; Dr. med. habil., Priv. Dozent. m. Margaret S. Zwillenberg, 1948. c.: Ronald S. K. Exp.: Asst., Med. Univ. Hosp., Breslau, 1920-21; Asst. and Mem., Inst. for Infectious Diseases, "Robert Koch," Berlin, Germany, 1922-25; Dir. of Lab., Hd. of Dept. of Infectious Diseases, Univ. Hosp., Charite, Berlin, Prof. Emer. of Int. Med., 1925-35; Consulting Physician on Tropical Diseases and Hygiene in M. E., 1935-47; Supervising Psychiatrist, Acting Asst. Dir. Clin. Rsch. Office, Utica State Hosp., 1947-61. Hon. Pos.: Pres. of Mohawk Valley Neuro-Psychiatric Soc. Mem.: Am. Psychiatric Assn.; A.A.A.S.; Fellow, Am. Geriatric Soc.; Acad. of Religion and Mental Health; Med. Soc. of St. of N. Y. and County on Oneida; Assn. for Psychiatric Treatment of Offenders; Am. Heart Assn. Contbr. to: Jour. Z. f. Hyg. and Inf. Dis.; Z. f. Immun. & Exptl. Ther.; Virchow's Archiv; D.M.W.; D. Z. f. Nerv. hlk.; Z. f. Klin. Med.; Med. Welt; Immun., Allergy & Inf. Dis.; Med. Klin.; Schw. M. W., Biochem.; Z., Arch. Int. Med.; Psych. Quart.; Ann. Inst. Pasteur and others. Areas of Rsch.: Chemotherapy of Infectious and Tropical Disease; Drug Resistance of Trypan. & Bacteria; Ret. Endoth, Syst., Chemotherapy of Spirochaeta Sogdianum, Strep. & Staph. Dis., Chemotherapy with Aurum; Psychopharmacology.

FREY, Charles N. (Ph.D.), Lectr., Mass. Inst. Tech., Cambridge, Mass.; Lectr., Columbia Univ., N.Y.C. Home Add.: 45 Cambridge Rd., Scarsdale, N. Y. MICROBIAL CHEMISTRY; FOOD TECHNOLOGY. b. Hopkins, Mich., Oct. 21, 1885. s. August and Maria G. (Klaus) F. Edn.: B.S., Mich. St., 1911; M.S., Univ. of Wisc., 1915; Ph.D., ibid., 1920. Hon. Deg.: D.Sc., Mich. St. Univ., 1946. m. Julia L. Leary, Dec., 1920. c.: Martha Anne; Charles Frederick; Florence Elizabeth. Exp.: Instr., So. Haven HS., South Haven, Mich., 1911-14; Asst. and Instr., Univ. of Wisc., 1915-17, 1919-20; Fellow, Mellon Inst., 1920-22; Rsch. Chem., Ward Baking Co., N.Y.C., 1922-24; Rsch. Chemist, Fleichmann Lab., N.Y.C., 1924-26; Dir., ibid., 1926-30; Dir. Rsch., Standard Brands, Inc., N.Y., N.Y., 1930-45; Dir. Scientific Relations, ibid., 1945-51; Lectr., Mass. Inst. of Tech., Cambridge, Mass.; Lectr., Columbia Univ., N.Y.C. Hon. Pos.: Mem., Food and Nutrition Bd., 1942-45; Comm. Mem., Natl. Resources Planning Bd., 1940; Pres., Am. Assn. of Cereal Chems., 1941-42; Pres., Inst. of Food Techs., 1951-52; Chmn., Agric. and Food Div., Am. Chem. Soc., 1942; Chmn., N. Y. Sec. Am. Chem. Soc., 1943; Councilor, A.C.S., 1958-61; Div. Councilor, A.A.A.S., 1958, '59, '60. Mem.: Sigma Xi; Phi Sigma; Fellow, A.A.A.S.; Am. Chem. Soc.; Cereal Chems.; Soc. Am. Bacteriols.; Inst. of Nutrition; Inst. Food Tech.; Phi Tau Sigma; Gamma Alpha; Town Club, Scarsdale, New York; Scarsdale Golf Club; Emer. Mem., Dir. of Industrial Research and Industrial Research Inst. Contbrng. Author: Colloid Chemistry, Vol. IV, 1932; Enzymes in Wheat Technology, 1946; Chapter on Chemicals in Foods, F. C. Blanck Handbook of Food and Agriculture, 1955. Contbr. to: Jour. Am. Chem. Soc.; Cereal Chem.; Jour. Biol. Chem.; Food Tech.; Ind. and Engrng. Chem. Serv. Rec.: U. S. Army, 1917-19. Gen. Int.: Patents and Processes on Yeast Production, Production of Vit. D. and Vit. B_1; B_1 Produced by Biol. Synthesis; Bread Enrichment; Production of Enzymes; Production of Active Dry Yeast; Production of Vitamin D Milk; Recipient, Babcock Hart Award, Inst. of Food Technologists, 1953; Recipient, Nicholas Appert Award, Inst. of Food Technologists, 1954; Recipient, Honor Scroll, N. Y. Sect., Am. Inst. of Chemists, 1956; Received Distinguished Alumni Award, Mich. State Univ., 1960. Areas of Rsch.: Microbial Chemistry and Technology; Food Technology.

FREYTAG, Paul Harold (Mr.), Rsch. Asst., Dept. of Zool. and Entomology, Ohio State Univ., Columbus 10, Ohio. Home Add.: 1413 Kearney St., Laramie, Wyo. ENTOMOLOGY. b. Laramie, Wyo., Dec. 3, 1934. s. Fred C. and Evelyn (Potter) F. Edn.: B.S., Univ. of Wyo., 1956; M.S., Ohio State Univ., 1960. Exp.: Tchng. Asst., Ohio State Univ., 1956-57; Rsch. Asst., Dept. of Zool. and Entomol., Ohio State Univ., 1957—. Mem.: Entomological Soc. of Am.; Ecological Soc. of Am.; Ohio Acad. of Sci.; A.A.A.S.; A.I.B.S.; Sigma Xi; Gamma Sigma Delta; Gamma Alpha. Contbr. to: Annals of the Entomological Soc. Serv. Rec.: U. S. Army, 1957-59. Areas of Rsch.: Insect Taxonomy.

FRIBOURGH, James Henry (Ph.D.), Prof., Biol., Little Rock Univ., Little Rock, Ark. Home Add.: 8 Fairmont Dr., Little Rock, Ark. BIOLOGY CURRICULUM; ANIMAL BEHAVIOR. b. Sioux City, Iowa, June 10, 1926. s. Johann Gunder and Edith Katherine (James) F. Edn.: B.A., State Univ. of Iowa, 1949; M.S., ibid., 1949; Ph.D., ibid., 1957. m. Cairdenia Minge, 1955. c.: Cynthia; Rebecca; Abbie. Exp.: Instr., Little Rock Jr. Coll., 1949-56; Assoc. Prof., Little Rock Univ., 1957-59; Prof., ibid., 1960—; Zool. Consultant, Little Rock Dist. Consolidated Vet. Admin. Hosp. Radioisotope Lab. Hon. Pos.: Visiting Scient., Natl. Sci. Fdtn., Ark. Acad. of Sci., 1960—; Mem., St. Selection Comm., Fulbright Scholarship Prog., 1959—; Fish Farming Exptl. Station, U. S. Fish and Wildlife Serv., Summers, 1961, 1962; Chmn., Biol. Curriculum Comm., Ark. Acad. of Sci., 1960—. Mem.: A.A.A.S.; Am. Inst. of Biol. Scis.; Ecol. Soc. of Am.; Natl. Assn. Biol. Tchrs.; Natl. Sci. Tchrs. Assn.; Ark. Acad. of Sci.; Ark. Sci. Fair Assn.; Beta Beta Beta; Am. Assn. of Univ. Profs.; Ark. Edn. Assn.; Ark. Sci. Tchrs. Assn.; Assn. for the Edn. of Tchrs. of Sci. Contbr. to: Proc. Ark. Acad. Sci.; Epsilon Bull.; Turtox News. Areas of Rsch.: Behavior Problems (amphibians); Curriculum Problems in Biology.

FRICK, Thomas Corwin (Mr.), Mgr., Natural Gas and Prods. Div., The Atlantic Refining Co., Dallas, Tex. Home Add.: 6516 Park Lane, Dallas 25, Tex. PETROLEUM ENGINEERING. b. Caney, Kans., Apr. 20, 1909. s. William Ralph and Lena (Huggins) F. Edn.: B.S., Univ. of Tulsa, 1933. m. Aina Farnsworth, Nov. 3, 1934. c.: Charles M.; Mrs. Martha Pigeon. Exp.: Engr. Clerk, Phillips Petrol. Co., Bartlesville, Okla., 1933-36; Assoc. Prof., Univ. of Tulsa, Tulsa, Okla., 1936-41; Mgr., Natural Gas and Prods. Div., The Atlantic Refining Co., 1941—. Hon. Pos.: Pres. of Soc. of Petrol. Engr. of AIME, 1956; Vice Pres., AIME, 1958-59. Mem.: AIME; Am. Assn. for the Adv. of Sci.; Kappa Alpha; Pi Epsilon Tau. Editor: Handbook of Petroleum Production, 1962.



FRICKE, Howard Henry (Ph.D.), Microbiology Grp. Ldr., Dept. of Microbiology, Abbott Lab., No. Chicago, Ill. Home Add.: Rt. 1, Box 3, Grayslake, Ill. BIOCHEMISTRY, MICROBIOLOGY—ISOLATION WORK. b. Oct. 3, 1916, Idaho Falls, Idaho. s. Louis J. and Ida E. (Hoffman) F. Edn.: B.S., Wash. State Coll., 1937; M.S. in Pharm., ibid., 1938; Ph.D., Biochem., Univ. of Pittsburgh, 1943. m. Cora E. Cremin of Lake Villa, Ill., Oct. 3, 1947. d. Frank Cremin. c.: Paul Howard; Douglas Henry. Exp.: Tchng. Asst., Wash. State Coll., 1936-38; Received Blumauer Frank Award and Lehn Fink Award, Grad. Tchng. Asst., Pittsburgh Coll. of Pharm., 1938-42; Registered Pharmacist, Hite's Friendly Drug Store, 1940-43; Sr. Rsch. Chem., Abbott Lab., 1943—. Hon. Pos.: Chmn., Abbott Picnic, 1955—; Mem., Abbott Supn. Comm.; Chmn., Grayslake Civil Defense Radiol. Unit; Received Award for Meritorious Rsch., 1950. Mem.: Pres., Rho Chi; Pres., Abbott Golf League; Sigma Xi; Pi Beta Upsilon; Phi Sigma; A.A.A.S.; A.C.S.; Kappa Psi; Renwood Country Club; Grayslake Meth. Church; Trustee, Village of Grayslake. Contbr. to: Jour. B. C.; Jour. A.C.S.; Proc. Soc. Exptl. Biol. Med. Ph.D. Dissertation: Preparation and Properties of Some Synthetic Monounsaturated Fatty Acid Glycerides. Hobbies: Golf; Bowling; Fishing; Hunting. Listed in A.M.S. Special Int.: Vitamin B12 and Antibiotics and Viruses.

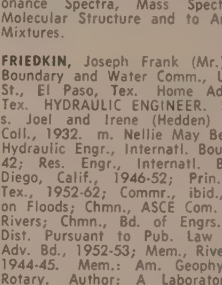
FRIDLEY, Harry Marion (Ph.D.), Prof. of Geol., West Va. Univ., Morgantown, W. Va. Home Add.: 373 Rotary St., Morgantown, W. Va. GEOMORPHOLOGY. b. Conde, S. Dak., Aug. 19, 1893. s. James K. and Rebecca L. (Danner) F. Edn.: B.S., S.D., State Coll., 1916; M.S., Cornell Univ., 1925; Ph.D., ibid., 1928. m. Alta Furnish, Sept. 2, 1920. c.: Thomas Marshall. Exp.: Instr., Cornell Univ., 1925-28; Asst. Prof., W. Va. Univ., 1928-35; Assoc. Prof., ibid., 1935-43; Prof. and Hd. Dept., ibid., 1951-61. Mem.: Geol. Soc. of Am.; A.A.A.S.; Assn. of Geol. Tchrs.; Sigma Xi; Sigma Gamma Epsilon. Contbr. to: Jour. Geol.; Am. Jour. of Sci.; W. Va. Geol. Survey; U. S. Bur. Chem. and Soils. Serv. Rec.: W. W. I. Areas of Rsch.: Geomorphology the Appalachians; Stream Diversion

FRIEDEL, Robert A. (D.Sc.), Proj. Coordinator, Spectrometry, Bur. of Mines, Pittsburgh 13, Pa. Home Add.: 302 Locust Lane, Pittsburgh 28, Pa. MOLECULAR SPECTROMETRY, STRUCTURE OF MATTER BY INFRARED, ULTRAVIOLET-VISIBLE, NUCLEAR MAGNETIC RESONANCE, ELECTRON MAGNETIC RESONANCE AND MASS SPECTROMETRY. b. Kenton, Ohio, Aug. 14, 1917. s. Charles F. and Gladys (Trout) F. Edn.: A.B., Ohio State Univ., 1939; M.S., Carnegie Inst. of Tech., 1940; D.Sc., ibid., 1943. m. Margaret McCredie, July 27, 1942. c.: Patricia; Teresa. Exp.: Tchng. Asst. and Instr., Carnegie Inst. of Tech., Pittsburgh, Pa., 1939-42; Rsch. Chemist, Shell Oil Co., Houston, Tex., 1942-45; Chief Spectrometry, U. S. Bur. of Mines, 1945—. Hon. Pos.: Chmn., Spect. Soc. of Pittsburgh; Chmn., Coblentz Soc.; Chmn., ASTOM Com. E-14 on Mass Spect.; Chmn., Pgh. Conf. on Anal. Chem. and Appl. Spect., 1950; Co-Chmn., Carbon Conf.; Chmn., Pgh. Sect., A.C.S.; Natl. Rsch. Coun. Subcomm. on Physico-Chem. Standards; Mem., Tenth International Conf. on Spectroscopy Program Comm.; Mem., O.S.A. Conf. on Nuclear Magnetic Resource Spectroscopy Program Comm.; Asst. Dir., Church Choir. Mem.: Am. Assn. Adv. Sci.; Natl. Rsch. Couns., Comm. on Spect.; Sigma Xi; Sigma Delta Phi; Home Owners Assn. Author: Ultraviolet Spectra of Aromatic Compounds, 1951; Encyc. of Spectroscopy, Contbrng. Author, 1960; Contbrng. Author, Air Pollution, 1952. Contbr. to: Jour. of Chem. Soc.; Jour. Chem. Phys.; Sci.; Nature; Jour. of Chem. and Industry; Fuel; Brennstoff Chemie; Jour. Opt. Soc. Am.; Analyt. Chem.; Rev. Scient. Instruments; Spectrochimica Acta; Appl. Spectroscopy. Gen. Int.: Nomination by U. S. Dept. of Interior for Fleming Award. Areas of Rsch.: Molecular Spectra Investigations of Molecular Structure; Infrared, Electronic, Microwave and Radiofrequency Spectra, Including Nuclear and Electronresonance Spectra, Mass Spectrometry, Applied to Studies of Molecular Structure and to Analysis of Complex Substances and Mixtures.

FRIEDKIN, Joseph Frank (Mr.), Commr., U. S. Sect., International Boundary and Water Comm., U. S. and Mex., 206 San Francisco St., El Paso, Tex. Home Add.: 2618 Frankfort St., El Paso, Tex. HYDRAULIC ENGINEER. b. Brooklyn, N. Y., Oct. 18, 1909. s. Joel and Irene (Hedden) F. Edn.: B.S.M.E., Tex. Western Coll., 1932. m. Nellie May Berry, 1937. c.: Jonell; Kim. Exp.: Hydraulic Engr., International Boundary Comm., El Paso, Tex., 1934-42; Res. Engr., International Boundary and Water Comm., San Diego, Calif., 1946-52; Prin. Engr., Supvng., ibid., El Paso, Tex., 1952-62; Commr., ibid., 1962—. Hon. Pos.: ASCE Com. on Floods; Chmn., ASCE Com. on Regulation and Stabilization of Rivers; Chmn., Bd. of Engrs. on Credit to Imperial Irrigation Dist. Pursuant to Pub. Law 750, 1953; Mem., Imperial Dam Adv. Bd., 1952-53; Mem., River Stabiliz. Bd., Miss. River Comm., 1944-45. Mem.: Am. Geophys. Union; Am. Soc. Civ. Engrs.; Rotary. Author: A Laboratory Study of the Meandering of Alluvial Rivers, 1945. Serv. Rec.: U. S. Army, Engrng. Corps, 1942-46. Areas of Rsch.: Dams and Stream Control; Water Control and Utilization; Planning River Regulation; Surface Waters.

FRIEDLANDER, Martin (Mr.), Dir., Rsch. Instrument Lab., Dept. of Chem., Columbia Univ., New York 27, N. Y. Home Add.: 434 West 120 St., New York 27, N. Y. CHEMISTRY, INSTRUMENTAL ANALYSIS. b. Brooklyn, N. Y., Oct. 9, 1933. s. Arthur and Blanche (Nelson) F. Edn.: Columbia Univ., 1954. Exp.: Dir., Rsch. Instrument Lab., Columbia Univ., 1958—. Hon. Pos.: Pres., Gamma Chap., Phi Lambda Upsilon, 1959. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; Phi Lambda Upsilon. Areas of Rsch.: General Chem. Instrumentation; Chemical Electrical, Electronic, Optical.

FRIEDMAN, Emanuel A. (M.D.), Assoc. Prof. of Obstetrics and Gynecology, Columbia Univ. Coll. of Phys. and Surgeons, 630 W. 168 St., N. Y., 32, N. Y. Home Add.: 36 Churchill Rd., Tenafly, N. J. OBSTETRICS AND GYNECOLOGY. b. N.Y.C., June 9, 1926. s. Louis and Pauline (Feldman) F. Edn.: A.B., Brooklyn Coll., 1947; M.D., Columbia Univ., 1951; Med. Sc.D., ibid., 1959. m. E. Judith Salomon, 1948. c.: Lynn Alice; Meryl Ruth; Lee Martin. Exp.: Intern, Bellevue Hosp., Cornell Med. Div., N.Y.C., 1951-52; Asst. Res., Sloane Hosp. for Women, Columbia-Presby. Med. Ctr., N.Y.C., 1952-56; Chief Res., ibid., 1956-57; Chief Res., Francis Delafield Hosp., N.Y.C., 1957; Asst. Obst. and Gynecologist, Sloane Hosp. for Women, N.Y.C., 1957-59; Asst. Att. Gynecol., Francis Delafield Hosp., ibid., 1958—; Asst. Att. Obstet. and Gynecol., Sloane Hosp. for Women, ibid., 1959-62; Assoc. Att. Obstet. and Gynecol., Sloane Hosp., ibid., 1962—; Instr. in Obstet. and Gynecol., Faculty of Med., Columbia Univ. Coll., N.Y.C., 1957-59; Assoc. in Obstet. and Gynecol., ibid.,



1959-60; Asst. Prof., ibid., 1960-62; Assoc. Prof., ibid., 1962—; Assoc. Editor, Bull. of the Sloane Hosp. for Women, 1958—; Assoc. Editor, Bull. of the Sloane Hosp. for Women, 1958—; Assoc. Co-Ord. and Asst. Project Dir., Child Develop. Program for the Study of the Pathogenesis of Cerebral Palsy and Related Neurol. Disorders, Columbia Univ., 1958—. Mem.: Diplomate of the Natl. Bd. of Med. Examiners; Diplomate of the Am. Bd. of Obstet. and Gynecol.; Fellow, Am. Coll. of Obstetns. and Gynecols.; Am. Stat. Assn.; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Sci.; Soc. for Gynecol. Investigation; Am. Soc. of Abdominal Surgeons; Am. Assn. for Maternal and Infant Health; Am. Assn. of Univ. Profs.; Am. Med. Assn.; Med. Soc. of the Co. of N. Y.; Med. Soc. of the St. of N Y.; Alpha Omega Alpha. Contbr. to: Am. Jour. of Obstetrics and Gynecol.; Obstetrics and Gynecol.; Bull. of the Sloane Hosp. for Women; Jour. of Clin. Invest.; Bull. of the Am. Coll. of Nurse-Midwifery; Procs. of the Internatl. Fed. of Obstet. and Gynecol.; Procs. of the New England Obstet. and Gynecol. Soc.; Anesthesiology; Obst. and Gynec Survey. Gen. Int.: Awards of the Joseph Mather Smith Prize, Columbia Univ., 1958. Areas of Rsch.: Graphicostatistical Analysis of Human Parturitional Processes; Physiology and Physio-Pathology of Placenta; Lactation and Milk-Ejection Functions.

FRIEDMAN, Eugene (D.D.S.), Chmn. and Section Hd., Section on Oral Surgery, L. I. Jewish Hosp., 4770 Sunrise Hwy., Massapequa Park, L. I. Medical Center, N. Y. Home Add.: 105 Bryan Ave., Amityville, L. I., N. Y. ORAL AND MAXILLO-FACIAL SURGERY. b. Rochester, N. Y., Apr. 4, 1922. s. Abraham and Eva (Goldman) F. Edn.: D.D.S., Univ. of Ill., 1945; B.S., Univ. of Ill., 1952; Certificate Basic Sciences and Head and Neck Surgery, Bellevue-N. Y. Post-Graduate Medical School, 1953-54. m. Muriel Ravitz, Apr. 3, 1956. c.: Stuart Andrew; Kathy; Pamela; Craig. Exp.: Intern, Resident Oral Surgery, Lenox Hill Hosp., N. Y. C., 1945-47; Graduate Seminar Oral Pathology, N. Y. Univ., 1948-50; Chief Oral Surgery, USAF, Ellington AFB, Houston, Tex., 1950-52; Resident Anesthesiology, Lenox Hill Hosp., 1953—; Asst., Oral Surgery, ibid., 1957—; Attending Oral Surgery Doctor's Hosp., Freeport, N. Y.; Attending Surgeon, Oral, Good Samaritan Hosp., West Islip, N. Y.; Attending Surgeon, Oral, Southside Hosp., Bayshore, L. I., N. Y.; Attending Surgeon, Oral, Lakeside Hosp., Copiague, L. I., N. Y.; Attending Surgeon, Hempstead Gen. Hosp., Hempstead, N. Y.; Chief Oral Surgery and Attending Surgeon, Mid. Island Hosp., Bethpage, L. I., Chief Oral Surgery and Attending Surgeon, Brunswick Hosp. Center, Amityville L. I., N. Y.; Consultant in Oral and Maxillo-Facial Surgery, Central Islip State Hosp., Central Islip L. I., N. Y.; Consultant Oral Surgeon, Central Gen. Hosp., Plainview, L. I.; Consultant Oral Surgery Long Island Home, Amityville, L. I., N. Y. Hon. Pos.: Natl. Chmn., Hosp. Oral Surg., Am. Soc. Oral Surgs.; Mem., Med. Bd., Brunswick Hosp. Center, Amityville, L. I., N. Y. Mem.: Natl. Recuscitation Soc.; Am. Bd. of Oral Surg.; Am. Soc. Oral Surgs.; N. Y. Bd. of Oral Surgery; Metropolitan N. Y. Soc. of Oral Surgeons; A.A.A.S.; N. Y. Acad. of Sci.; Assn. of Military Surgeons; Pan Am. Med. Assn.; Nassau Acad. of Med.; Bd. of Dirs., Am. Cancer Soc., Massapequa Div.; Phi Eta Sigma; Nassau Physicians Guild. Contbr. to: Oral Surgery; Oral Med.; Oral Pathology; Jour. of Oral Surgery; Jour. Am. D. Soc. of Anesthesiology; Am. Pub. Health Assn. Serv. Rec.: U.S.A.F. Areas of Rsch.: Oral Surgery, Traumatic Maxillo-Facial Surgery, Oral Pathology, Oral Diagnosis, Anesthesiology, Oral Medicine, Dental Surgery and Pathology.

FRIEDMAN, Herman (Ph.D.), Head, Microbiol. Dept., Einstein Med. Ctr., Philadelphia, Pa. Home Add.: 243 Leona Ave., Huntingdon Valley, Pa. MICROBIOLOGY, IMMUNOLOGY. b. Philadelphia, Pa., Sept. 22, 1931. s. Max and Rose (Shechtman) F. Edn.: B.A., Temple Univ., 1953; M.A., ibid., 1955; Ph.D., Hahnemann Med. Coll., 1957. m. Ilona M. Gottfried, Dec. 27, 1958. c.: Franklin Douglas. Exp.: Instr., Hahnemann Med. Coll., 1957-58; Chf., Allergy Rsch., V. A. Hosp., Pittsburgh, Pa., 1958-59; Head, Microbiol. Dept., Albert Einstein Med. Ctr., and Asst. Prof., Microbiol., Temple Univ., Schl. of Med., 1959—. Hon. Pos.: Chmn., Program Comm., Eastern Pa. Chapt., Am. Soc. for Microbiol. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Soc. Gen. Microbiol., Britain; Sigma Xi; Pi Lambda; Am. Soc. for Microbiol. Contbr. to: Jour. Immunol.; Jour. Biol. Chem.; Arch. Biochem. and Biophys.; Bacteriol. Reviews; Jour. Bacteriol.; Fed. Proc.; Ann. Allergy; Jour. of Allergy; Internatl. Arch. Allergy. Areas of Rsch.: Metabolism of Microbes, Antibody Formation; Antigens of Ragweed and Antibodies to Allergens.

FRIEDMAN, Henry Tauber (M.D.), 435 North Roxbury Dr., Beverly Hills, Calif. Home Add.: 614 North Foothill Rd., Beverly Hills, Calif. ALLERGY. b. St. Louis, Mo., Feb. 19, 1914. s. Louis B. and Dora (Tauber) F. Edn.: A.B., Wash. Univ., St. Louis, 1936; M.D., Wash. Univ. Schl. of Med., 1940. m. Suzanne Ehrlich, Sept. 25, 1944. c.: Suzanne Louise; Jane Emily. Exp.: Clin. Instr., Med. (Allergy), Univ. of Calif. Med. Center, Los Angeles, 1953-56; Asst. Clin. Prof. of Med., U.C.L.A., 1956-60; Chmn., 1st Post Grad. course, Allergies, Med. Ext., U.C.L.A., 1959—. Hon. Pos.: Pres., Sou. Calif. Alumni Club of Wash. Univ., 1957-59; Chmn., Alumni Fund, Sou. Calif., 1957; Chmn., Com. on Cottonseed, Food Comn. Rsch. Coun., Am. Acad. Allergy, 1960. Mem.: A.A.A.S.; N. Y. Acad. Sci.; A.H.A.; Am. Acad. Allergy, Fellow; Assoc., A.C.P.; Amer. Therap. Soc.; Western States Allergy Soc.; Pres., H.T.F. Research Foundation; Fellow, Internal. Soc. of Allergology; Internatl. Corr. Soc. of Allergists; Calif. Allergy Soc.; L. A. Soc. Int. Med.; A.M.A.; L.A.C.M.A.; C.M.A.; Diplomate, Am. Bd. of Int. Med., Med. Rsch. Assn. of Calif.; Sigma Alpha Mu; Beverly Hills C. of C. Contbr. to: Jour. Am. Med. Assn.; Calif. Med.; Ariz. Med.; Jour. of Allergy; New Eng. Jour. of Med.; Modern Med.; Letters; Internatl. Corr. Soc. of Allergists. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: Established Allergy Serv., Dept. of Med., U.C.L.A. Med. Center, 1955. Areas of Rsch.: Biochem-Steroid Chem.-Physiol.; Immunol.; Pulmonary Disease; Endocrinology; Pharmacology; Allergy; Psychopharmacology.

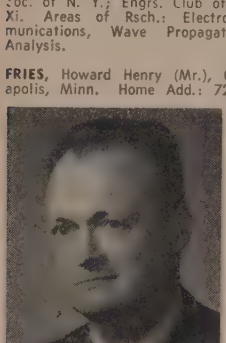
FRIEDMAN, Jacob Henry (M.D.), 1749 Grand Concourse, N. Y., N. Y. Home Add.: 1749 Grand Concourse, N. Y. 53, N. Y. NEUROPSYCHIATRY. b. N. Y. C., July 17, 1903. s. William and Sadie (Kleinman) F. Edn.: B.S., Coll. of the City of N. Y., 1925; M.D., Tulane, 1929. m. Ida Simon, Nov. 3, 1954. c.: Alice Sue. Exp.: Gen. Internship, Conemaugh Memorial Hosp., Johnstown, Pa., 1929-30; Resident Physician, Stetson Hosp., Phila., Pa., 1930-31; Intern in Psychiatry, Worcester State Hosp., Worcester, Mass., 1931-32; Asst. Resident in Neurology, Mt. Sinai Hosp., N. Y. C., 1932-33; Resident in Psychiatry, Hillside Hosp., N. Y. C., 1933-34; Clinical Asst. in Mental Hygiene Clinic, Mt. Sinai Hosp., 1934-39; Volunteer Asst. in Neuropathology, Mt. Sinai Hosp., 1934-40; Chief of Mental Hygiene Clin., Lebanon Hosp., Bronx, 1936-42; Chf., Mental Hyg. Clin., Lebanon Hosp., 1936-42 and 1946-58; Dir. of Mental Hygiene Clin., ibid., 1958—; Dir. of Neuropsychiatric Serv., Fordham Hosp., Bronx., N. Y., 1950—; Neuropsychiatrist, ibid., 1935-50; Consultant in Neurology, Union Hosp., N. Y., 1957—. Hon. Pos.: Neuropsychiatrist to Selective Serv. System, 1939-42; Secy. of Bronx Soc. of Neurology and Psychiatry; Pres., Bronx Soc. of Neurology and Psychiatry; Mem. of Executive Bd. of Bronx Soc. of Mental Health. Mem.: Assn. for Rsch. in Nervous and Mental Disease; N. Y. Soc. of Clin. Psychiatry; Am. Acad. of Neurology; Bronx County Med. Soc.; N. Y. State Med. Soc.; Am. Med. Assn.; Bronx Soc. of Neurology and Psychiatry; N. Y. Acad. of Sci.; Am. Grp. Psychotherapy Assn.; Fellow, Am. Phychiatric Assn.; Assn. for Adv. of Psychotherapy; A.A.A.S.; Am. Soc. of Psychoanalytic Physicians; Fellow, Am. Geriatic Soc. Contbr. to: Mental Hyg.; Jour. Nerv. and Mental Dis.; Am. Jour. Psychotherapy; Jour. Mt. Sinai Hosp.; Dis. Nerv. System; Jour. Hillside Hosp.; N. Y. State Jour. of Med. Serv. Rec.: U.S.A. Med. Corps, 1942-46, Major to Lt. Col. Areas of Rsch.: Neuropsychiatry.

FRIEDMAN, Lester (Ph.D.), Asst. Prof. Chem., Case Inst. of Tech., Cleveland, Ohio. Home Add.: 3618 Concord Dr., Beachwood 22, Ohio. ORGANIC CHEMISTRY. b. New York, N. Y., Sept. 14, 1928. s. Joseph and Sally (Greenman) F. Edn.: B.S., Purdue Univ., 1951; Ph.D., Ohio State Univ., 1959. m. Carolyn Ruth Rosen, May 27, 1956. c.: Renee Frances; Robert Mark. Exp.: Asst. Prof., N. Y. Univ., 1957-60; Asst. Prof., Case Inst. of Tech., 1961—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Am. Chem. Soc.; A.A.U.P.; Chem. Soc. (London). Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem.; Tetrahedron; Tetrahedron Letters; Organic Syntheses. Serv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Synthetic Organic Chem.; Reaction Mechanisms; Organophosphorus and Boron Chem.; Natural Products.

FRIEDRICH, Benjamin Charles (D.Ed.), Asst. Prof. Sci. Edn., Northeastern Univ., Boston 15, Mass. Home Add.: 48 The Fenway, Boston 15, Mass. SCIENCE EDUCATION. b. Fond du lac, Wis., Feb. 2, 1929. s. Benjamin E. and Anna (Bloede) F. Edn.: B.S., St. Cloud Minn. Tchrs. Coll., 1954; M.S., Ind. Univ., 1957; D.Ed., Penn. State Univ., 1961. Exp.: Instr. in Chem., Luther Jr. Coll., Wahoo, Nebr., 1954-56; Instr., Sci., Ind. University, Bloomington, Ind., 1957-59; Asst. Prof. Sci. Edn., Northeastern Univ., Boston, Mass., 1961—. Hon. Pos.: Dir., Natl. Sci. Fdn.; Sponsored In-Service Inst. in Sci. for Elem. Schl. Tchrs., 1962-63. Mem.: A.A.A.S.; N.S.T.A.; N.C.T.M.; Am. Chem. Soc.; Tau Kappa Alpha; Kappa Delta Pi; Pi Delta Epsilon; Civil Air Patrol. Serv. Rec.: U.S.N. Areas of Rsch.: Analysis of High School Chemistry Teachers Attitudes Toward and Emphasis on Certain Contemporary Topics in Chemistry.

FRIEND, Albert W(iley), (S.D.), Consulting Engr. and Scientist, Pres., Amicon Corp., 5903 City Ave., Philadelphia 31, Pa. ELECTRONICS, MAGNETIC, ACOUSTICS, COMMUNICATIONS, WAVE PROPAGATION, ELECTRIC POWER, OPERATIONS ANALYSIS. b. Morgantown, W. Va., Jan. 24, 1910. s. Lemuel Ellsworth and Louisa Gertrude (Michael) F. Edn.: B.S.E.E., W. Va. Univ., 1932; M.S., ibid., 1936; S.D., Harvard Univ., 1948. m. Evelyn Augusta Hall, Aug. 6, 1931. c.: Albert W., Jr.; Mrs. Evelyn Joyce Everett; John Robert. Exp.: Instr., W. Va. Univ., 1934-37; Asst. Prof., ibid., 1937-44; Development Engr., Radio Corp. of Am., Camden, N. J., 1944-47; Rsch. Staff, Labs., ibid., Princeton, N. J., 1947-51; Dir., Engrng., Daystrom Indust. Div., Elizabeth, N. J., 1951; Dir. of Engrng. and Development, Magnetic Metals Co., Camden, N. J., 1951-53; Consultant, Philadelphia, Pa., 1953—; Transmission and Distribution Engr., Ohio Power Co., Steubenville, Ohio, 1933-34; Instr., Harvard Univ., 1939-41; Staff, Radiation Lab., M.I.T., 1941-42; Tech. Dir., Heat Rsch. Lab., ibid., 1942-44; Engrng. Consult. Radio Facilities, ibid., 1933-39; Electronic Rsch., Cruft Lab., Harvard Univ., 1946-48; Pres., Amicron Corp., Philadelphia, Pa., 1961 . Mem.: Inst. of Radio Engrs., Fellow; Am. Inst. of Elect. Engrs.; Am. Phys. Soc., Fellow; A.A.A.S., Fellow; Acous. Soc. of Am.; Am. Geophysical Union; Electrochem. Soc.; Am. Ord. Assn.; Air Force Assoc., Franklin Inst.; Am. Inst. of Physics; Harvard Engrng. Soc. of N. Y.; Engrs. Club of Philadelphia; Tau Beta Pi; Sigma Xi. Areas of Rsch.: Electronics, Magnetics, Acoustics, Communications, Wave Propagation, Electric Power, Operations Analysis.

FRIES, Howard Henry (Mr.), Owner, Fries Engrng. Lab., Minneapolis, Minn. Home Add.: 724 East 58th St., Minneapolis 17, Minn. DESIGN AND MANUFACTURING OF SPECIAL EQUIPMENT FOR MEDICAL, SURGICAL RADIATION RESEARCH. b. St. Paul, Minn., May 29, 1912. s. Jacob H. and Christene (Kauffman) F. Edn.: B.S., Univ. of Minn., 1938; M.E., ibid., 1940. m. Theo Ann Wetterlin, June 14, 1940. c.: Janet Ann. Exp.: Mechanical Engr., Minneapolis Honeywell Reg. Co., Minneapolis, Minn., 1937-38; Instr. of Mach. Work, Dunwoody Inst., Minneapolis, Minn., 1939-40; Head, Machine Dept., Minneapolis Technical Inst., 1940—. Mem.: Phi Delta Kappa; Am. Soc. for Metals; Am. Soc. of Tool Engrs.; Am. Soc. for the Advancement of Sci. Areas of Rsch.: Freezing of Body Fluids; Design of Microtome Attachments for Slicing of Body Fluids and Curretings.

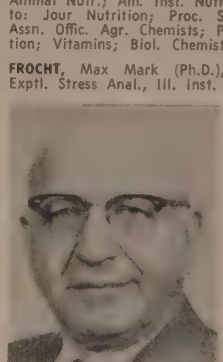


FRIGYESI, Tamas (M.D.), Spec. Fellow, Neurol. Surg., Columbia Univ., N. Y., N. Y. Home Add.: 25 Sunnyside Dr., Yonkers, N. Y. NEUROLOGY. b. Budapest, Hungary, June 7, 1927. s. Joseph and Margaret (Kis) F. Edn.: M.D., Kir. Magyar Pazmany Petrus Tud. Egy., 1951. Exp.: Intern, Univ. Hosp., Budapest, 1950-51; Res., Dept. of Neurology, Post-Grad. Med. Schl., Univ. of Budapest, 1950-54; Lecturer in Neurology, ibid., 1954-55; Asst. Prof. in Neurology, ibid., 1955-56; Intern, Morrisania City Hosp., New York, N. Y., 1957-58; Chief Res. and Rsch. Fellow, Dept. of Neurol., Monrefiore Hosp., ibid., 1958-59; Assoc. in Neurol., Columbia Univ., 1959-60; Clin. Dir., Pineland Hosp. and Training Center, Pownal, Me., 1959-60; Rsch. Assoc. in Neurol., N. Y. Med. Coll., 1960-62; Instr. in Physical Med. and Rehabilitation, ibid., 1960-62; Assoc. in PM&R, Flower and Fifth Ave., Hosp., 1960-62; Rsch. Assoc., N. Y. Med. Coll., 1962—; Spec. Fellow, Neurol. Surg., Columbia Univ., 1962—. Mem.: Am. Acad. of Neurol.; Am. Acad. on Mental Retardation. Contbr. to: Percept. Not. Skills; Yearbook of Neur., Psychiarr., and Neurosur.; Jour. of Me. M.A.; Proc. Sec. Inst. Conf. on Mental Retard.; Neurology. Areas of Rsch.: Neurophysiology.

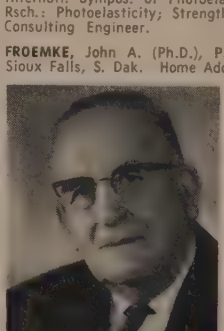
FRISBIE, Harry Earl (D.D.S.), Prof. of Oral Histology, Emeritus, Schl. of Dentistry, Univ. of Calif., San Francisco Med. Center, San Francisco 22, Calif. Home Add.: 226 Cambridge Ave., Berkeley 8, Calif. ORAL HISTOLOGY. b. Oakland, Calif., Feb. 3, 1894. s. C. Eugene and Lena (Unger) F. Edn.: D.D.S., Univ. of Calif., 1918. m. S. Josephine McIntyre (dec.), May 10, 1927. c.: Joan M. Neff. Exp.: Instr., Operative Dentistry, Univ. of Calif., 1923-27; Asst. Prof., Operative Dentistry, ibid., 1927-47; Assoc. Prof., Oral Histology and Oral Pathol., Univ. of Calif., 1947-55; Prof., Oral Histology, ibid., 1955—; Chmn., Sect. of Oral Histology, ibid., 1953-60. Hon. Pos.: Fulbright appointment as Visiting Prof. of Dentistry, Univ. of Manchester, England, 1950-51. Mem.: Am. Dental Assn.; Internatl. Assn. for Dental Rsch., Fellow; Am. Coll. of Dentists, Fellow; A.A.A.S.; N. Y. Acad. of Scis.; Acacia; Delta Sigma Delta; Omicron Kappa Upsilon. Contbrng. Author: Orban, Balint, Oral Histology and Embryology, 3rd and 4th Editions. Contbr. to: Jour. Am. Dent. Assn.; Jour. of Dent. Rsch.; Oral Surgery, Oral Med. and Oral Pathol.; Jour. Am. Coll. of Dentists; Science; N. Y. State Dental Jour.; Internatl. Dent. Jour.; Arch. of Oral Biol. Serv. Rec.: U. S. Naval Reserve Force, 1917-18. Areas of Rsch.: Amelogenesis; Dentinogenesis; Organic matrix of enamel; Histopathology of caries of the enamel, dentin and cementum; early tooth development; Histology of tooth and tooth supporting structures; Cementogenesis.

FRITZ, James Clarence (Mr.), Dir. of Nutrition Rsch., Dawe's Labs., Inc., 4800 S. Richmond St., Chicago 32, Ill. Home Add.: 156 Villa St., Elgin, Ill. NUTRITION. b. Berlin, Pa., May 15, 1910. s. Robert L. and Emma E. (Cober) F. Edn.: B.S., Pa. State Univ., 1929. m. Jeanette M. Blair, July 30, 1933. c.: Margaret (Mrs. C. H. Baker, Jr.); Richard B. Fritz. Exp.: Grad. Asst., Univ. of N. H., 1929-30; Jr. Biol. and Asst. Biochemist, U.S.D.A., Beltsville, Md., 1930-37; Lab. Dir., The Borden Co., Elgin, Ill., 1937-51; Dir. Nutr. Rsch., Dawe's Lab., Inc., Chicago, Ill., 1952—. Hon. Pos.: Pres., Assn. of Vitamin Chemists, 1950; Chmn., Animal Nutrition Rsch. Council, 1952. Mem.: A.A.A.S.; Am. Chem. Soc.; Soc. Exptl. Biol. and Med.; Poultry Sci. Assn.; Animal Sci. Assn.; Agri. Rsch. Inst.; Assn. of Vitamin Chem.; Animal Nutr.; Am. Inst. Nutrition; Phi Lambda Upsilon. Contbr. to: Jour. Nutrition; Proc. Soc. Exptl. Biol. and Med.; Jour. Assn. Offic. Agr. Chemists; Poultry Sci. Areas of Rsch.: Nutrition; Vitamins; Biol. Chemistry.

FROCHT, Max Mark (Ph.D.), Rsch. Prof. of Mech., Dir. of Exptl. Stress Anal., Ill. Inst. of Technol., Chicago 16, Ill. Home Add.: 4940 S. East End Ave., Chicago 15, Ill. PHOTOELASTICITY AND STRENGTH OF MATERIALS. b. Russia-Poland, June 3, 1894. s. Meyer Loeb and Eva (Egerwald) F. Edn.: B.S., Univ. of Mich., 1922; M.S., Univ. of Pittsburgh, 1926; Ph.D., Univ. of Mich., 1931. m. Dora Lipkin, Oct. 16, 1918. Exp.: Instr., Carnegie Inst. of Technol., 1922-26; Asst. Prof., ibid., 1926-31; Assoc. Prof., ibid., 1931-46; Prof. of Mech., Ill. Inst. of Technol., 1946—; Rsch. Prof. of Mech., Dir. Exptl. Stress Anal., ibid., 1947—. Mem.: Fellow, A.A.A.S.; Am. Soc. Mech. Engrs.; Hon. Mem., Soc. Exptl. Stress Anal.; Am. Assn. Univ. Profs.; Am. Soc. Engrng. Edn.; Sigma Xi; Pi Tau Sigma; Tau Beta Pi. Author: Photoelasticity, 1941, 1948 Translated into Russian and Spanish; Strength of Materials, 1951. Contbr. to: Appl. Mech. Rev.; Jour. Appl. Mech.; Proc. Soc. Exptl. Stress Anal.; Jour. Appl. Phys.; Mech. Engrng.; Jour. Franklin Inst. Bull. Polish Acad. Sci. Serv. Rec.: W.W. I. Gen. Int.: Wm. M. Murray Lectureship of SESA, 1959; Chmn., 1st U. S. Internatl. Sympos. of Photoelasticity and Ed. of Proc. Areas of Rsch.: Photoelasticity; Strength of Materials, Numerical Methods. Consulting Engineer.



FROEMKE, John A. (Ph.D.), Prof. of Nat. Sci., Augustana Coll., Sioux Falls, S. Dak. Home Add.: 2013 S. Covell Ave., Sioux Falls, S. Dak. PHYSICAL CHEMISTRY. b. Marion, N. Dak., Nov. 12, 1893. s. K. Ludwig and Rosa (Schoen) F. Edn.: B.A., Univ. of N. Dak., 1924; M.S., ibid., 1927; Ph.D., ibid., 1931. m. Mary Sidlo, May 25, 1929. c.: Donald John. Exp.: Prin., Grade Schls., Temvik, N. Dak., 1915-17; ibid., Wales, N. Dak., 1917-18; Prin. of Schls., Perth, N. Dak., 1920-22; Grad. Asst., Univ., of N. Dak., 1923-30; Prof. of Natural Sci., Augustana Coll., Sioux Falls, S. Dak., 1930—. Hon. Pos.: Pres., S. Dak. Acad. Sci.; Chmn., Sioux Valley Section, Amer. Chem. Soc. Mem.: Amer. Chemical Soc.; A.A.A.S.; Sigma Xi; S. Dak. Acad. of Sci. Contbr. to: South Dak. Acad. of Sci. Proc.; Phys. Chem.; Special Int.: Condensation of Gases of Mixed Liquid in Air; Variation of Viscosity of Chemically Reacting Associated Liquids; Investigation of Effects of pH on Gen. Qualitative Analysis.

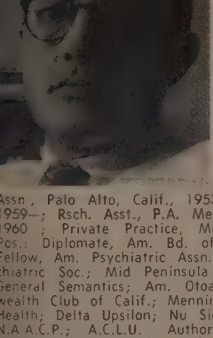


FRY, David L. (Mr.), Supvr. Chem. Physics, Physics Dept., Rsch. Lab., Gen. Motors Corp., Warren, Mich. Home Add.: 685 Princeton Rd., Berkley, Mich. CHEMICAL PHYSICS, SPETROSCOPY. b. Detroit, Mich., Sept. 22, 1918. s. Fred and Linda Irene (Fry) F. Edn.: M.S., Ohio State Univ., 1942; B.A., Kalamazoo Coll., 1940. m. Alma Loriene Jones, Mar. 21, 1942. c.: David; Lawrence; Randall. Exp.: Senior Physicist, Rsch. Labs., Gen. Motors Corp., 1942-53; Supvr., Chem. Physics, ibid., 1953—. Hon. Pos.: Chmn., Comm. E-2 on Emission Spectroscopy, ASTM, 1956-60; Chmn., Det. Sect. of Opt. Soc. of Am., 1947-48; Chmn., Gen. Motors Spect. Comm., 1950-52. Mem.: Am. Assn. for the Adv. of Sci.; Opt. Soc. of Am.; Am. Phys. Soc.; Am. Soc. for Test. Mats.; Sigma Pi Sigma; Sigma Xi. Editor: Methods for Emission Spectrochemical Analysis; 1957-1960. Contbr. to: Jour. App. Physics; Jour. Chem. Physics; Jour. Opt. Soc. of Am.; Spectrochimica Acta; App. Spectroscopy. Gen. Int.: Chmn. of Bd. of Trustees of First Unitarian Universalist Church of Detroit. Areas of Rsch.: Emission Spectroscopy, Infrared Spectroscopy, Mass Spectroscopy; Nuclear Magnetic Resonance; Diffusion of Gases in Solids, Chemical Reactions at Surfaces.

ROST, Bettina Mary (Ph.D.), Rsch. Assoc., Merck Inst. for herap. Rsch., Rahway, N. J. Home Add.: 126 Salter St., pringfield, N. J. BACTERIOLOGY (MEDICAL). b. Ithaca, N. Y., ov. 21, 1916. s. Dr. James N. and Edna G. (Berens) F. Edn.: .B., Cornell Univ., 1939; B.S., ibid., 1940; Ph.D., Rutgers niv., 1958. Exp.: Agent, Bur. of Animal Ind., Cornell Univ., 941-42; Med. Tech., Presby. Hosp., Newark, N. J., 1942-44; sch. Asst., Merck Inst. for Therap. Rsch., Rahway, N. J., 944-49; Rsch. Assoc., ibid., 1949—. Mem.: A.A.A.S.; Am. oc. Microbiol.; N. Y. Acad. Sci.; Sigma Xi; Theobald Smith oc.; Phi Delta Gamma. Contbr. to: Jour. Bacteriol.; Antib. nd Chemo.; Antibiot. Med.; Proc. Soc. Exptl. Biol. and Med.; m. Rev. TB; Antibiot. Ann. Areas of Rsch.: Chemotherapy of xperimental Infections; Antibiotic Resistance.

RY, John Craig (Lt. Cmdr.), U. S. Navy, Destroyer Dev. Group acific, U. S. Naval Sta., Long Beach, Calif. Home Add.: 2928 Nipomo St., Long Beach, Calif. PHYSICAL OCEANOGRAPHY. b. Salem, Ore., Dec. 11, 1926. s. Orris J. and Bernice C. (Craig) F. Edn.: B.S., U. S. Naval Acad., 1947; M.S., Univ. of Calif., 1952. m. Tanya Alicia Ojeda, Sept. 3, 1949. c.: John; David; Matthew. Exp.: Duty in Destroyers and Oceanographic Survey Ship, USS REHOBOTH (AGS 50), 1947-49; 1952-57; Project Officer, USN Underwater Sound Lab., New London, Conn., 1957-59; Grad. Student, Scripps Inst. of Oceanography, Univ. of Calif., La Jolla, 1959-60; Destroyer Dev. Group Pacific, U. S. Naval Sta., Long Beach, Calif., 1960; U. S. Navy, 1947—. Mem.: Am. Geophys. Union; U. S. Naval Inst.; Am. ssn. Adv. Sci.; Sigma Xi. Contbr. to: Jour. of Geophys. Rsch.; our. of Underwater Acoustics; U. S. Naval Inst. Proc.; Proc. f Conf. on Sound Reflection From The Sea Bottom; Office f Naval Rsch. Serv. Rec. (See positions above). Areas of sch.: Physical Oceanography; Underwater Acoustics.

RY, William Finley, Jr. (M.D.), Psychiatrist, 1050 University Dr., Menlo Park, Calif. Home Add.: 345 Golden Hills Dr., Portola Valley, Menlo Park, Calif. PSYCHIATRIST, PHYSICIAN. b. Cincinnati, Ohio, Mar. 25, 1924. s. William Finley and Sylvia (Luebbert) F. Edn.: M.D., Univ. of Cincinnati, 1949. m. Elizabeth Stockett, 1951. c.: Peter Finley; Stephen Stockett; Susan Elizabeth. Exp.: Intern, Queens Hosp., Honolulu, Hawaii, 1949-50; Res., V. A. Hosp., Palo Alto, Calif., 1950-53; Physician, Agnews State Hosp., Agnews, Calif., 1953-54; Clin. Asst., Univ. of Calif. Med. Schl., 1953-58; Clin. Asst., Langley Porter Clin., San Francisco, Calif., 1953-58; Consultant, San Mateo Co. Psychiatric Clin, San Mateo, Calif., 1956-60; Rsch. Asst., Stanford Univ., 1953-60; Consultant, Palo Alto Family Service



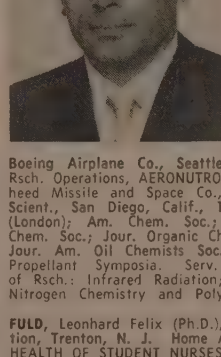
Assn., Palo Alto, Calif., 1953-59; Clin. Instr., Stanford Univ., 1959—; Rsch. Asst., P.A. Med. Rsch. Fndtn., Palo Alto, Calif., 1960; Private Practice, Menlo Park, Calif., 1953-. Hon. Pos.: Diplomate, Am. Bd. of Neurol. and Psychiatry. Mem.: Fellow, Am. Psychiatric Assn.; Am. Med. Assn.; N. Calif. Psychiatric Soc.; Mid Peninsula Psychiatric Soc.; Internatl. Soc.; General Semantics; Am. Otoanalytic Assn.; A.A.A.S.; Commonwealth Club of Calif.; Menninger Fdtn.; World Fed. for Mental Health; Delta Upsilon; Nu Sigma Nu; Lee Evans Round Table; N.A.A.C.P.; A.C.L.U. Author: Sweet Madness: A Study of Humor; Topical Problems of Psychotherapy, 1962. Contbr. to: A.M.A. Archives of Neurol and Psychiatry; Calif. Med.; Psychiatric Quart.; Psychoanalysis and the Psychoanalytic Rev.; Jour. of Orthopsychiatry; Family Process. Serv. Rec.: U. S. Army, 1943-46, U.S.N.R., 1954-56. Special Contribution: New Theory of Structure of Humor. Areas of Rsch.: Behavioral Sciences; Communications Theory; Psychiatry and Psychology, Ethnology and Anthropology; Family Structure and Interaction, General Semantics.

FRYE, John C. (Ph.D.), Chf., Ill. State Geol. Survey, Urbana, Ill. GEOLOGICAL SURVEY, PLEISTOCENE STRATIGRAPHY, GEOMORPHOLOGY AND GROUND WATER GEOLOGY. b. July 25, 1912, Marietta, Ohio. s. Harley E. and Maud (Chapman) F. Edn.: A.B., Marietta Coll., 1934; Sc.D., 1955; Grad. Study, Ohio State Univ., 1934-35; M.S., State Univ. of Ia., 1937; Ph.D., ibid., 1938. m. Ruth Heizer of Columbus, Ohio, Aug. 29, 1936. d. Rev. and Mrs. G. H. Heizer. c.: Sally Jean; John Douglas; Terri Ruth. Exp.: Grad. Asst., Tchng., Ia., 1935-37; Rsch. Asst., Ia., 1937-38; Ia. and Ill. Geol. Surveys, 1937; U. S. Geol. Survey. July, 1938-41; Asst State Geol. and Asst. Dir., State Geol. Survey of Kan., 1942-45; in Chg., ibid., 1942-45; Exec. Dir., 1945-54; Asst. Prof., Univ. of Kan., 1942-45; Assoc. Prof., 1945-52; Prof. Geol., ibid., 1952-54; State Geologist, ibid., 1952-54; Chf., Ill. State Geol. Survey, 1954; Part-time, summers, rsch. geologist, Bur. of Econs., Geol., the Univ. of Tex., 1954-61. Hon. Pos.: Repr. of S.E.P.M. on Natl. Rsch. Coun.; Am. Comm. on Stratigraphic Nomencl., Chmn., 1957-59; Assoc., Am. State Geologists, Editor, Secy.-Treas., Vice-Pres., Pres.-Elect, 1959-60, Pres., 1960-61; Fellow: Geol. Soc. of Am., Coun., 1958-61; A.A.A.S.; Am. Assn. Petr. Geol.; Am. Geophys. Union; Ill. Acad. of Sci.; V.-Pres., 1961-62; Soc. of Econ. Paleontologists; Soc. Econ. Geol.; A.I.M.E.; Ill. Mining Inst.; The Blast Furnace and Coke Assn. of Chicago; Sigma Xi; Alpha Sigma Phi; Scientific Manpower Commn., 1956-58; Sigma Gamma Epsilon; Rotary. Contbr. to: Jour. Geol.; Jour Geomorphology; Am. Jour. Sci.; State Geol. Survey of Kan.; Ill. Geol. Survey; Bur. of Econ. Geol., The Univ. of Tex. Ph.D. Dissertation: Additional Studies on the Hist. of Miss. Valley Drainage. Listed in: A.M.S.; A.A.A.S.; Summarized Proceeding; Who's Who in Am.

FRYE, Royal Merrill (Ph.D.), Prof. of Physics and Dean of Faculty Coll. of Advanced Sci., Canaan, N. H. 11 Whitcomb St., Belmont 79, Mass. RELATIVITY AND SPECTROSCOPY. b. Milford, N. H., May 27, 1890. s. Frank B. and Elsie W. (Merrill) F. Edn.: A.B., Boston Univ., 1911; A.M., ibid., 1912; Ph.D., ibid., 1934. m. Louise Alexander of Boston, Mass., June 11, 1915. d. Geo. and Annie K. Alexander. Exp.: Instr., Boston Univ., 1913-15; Instr., M.I.T., 1915-31; Instr. of Physics, Boston Univ., 1932-36; Asst. Prof., 1936-42; Prof., ibid., 1942-50; Chmn. of Physics Dept., Boston Univ. Grad. Schl., 1942-49; Prof. of Phys. and Hd. Phys. Dept., Simmons Coll., 1950-59; Prof. of Physics and Dean of Faculty, Coll. of Advanced Sci., Canaan, N. H., 1959—; Scientific Consult., Operation Crossroads, 1946. Hon. Pos.: Pres., Boston Ctr. for Adult Edn. (1950-53). Mem.: Phi Beta Kappa; A.A.A.S.; Amer. Physical Soc.; Amer. Assn. of Phys. Tchrs.; A.A.U.P.; N. Y Acad. of Sci. Author: Essentials of Applied Pnysics, 1947, and several other books. Contbr. to: Astrophysical Jour.; Physical Rev. and other tech. jours. Ph.D. Dissertation: A Modification of Minkowski's four-dimensional spacetime Continuum Consistent with the results of Dayton C. Miller's Repetition of the Michelson-Morley Experiment. Travel: Can.; Mex.; Pacific. Listed in: Who's Who in Amer.; Who's Who in the East; Who's Who in N. Eng.; A.M.S.; Who's Who in Methodism. Special Int.: Fine Structure, Infrared, Molecular Spectra.

FRYER, Frederick Herbert (Mr.), Group Leader, Standard Brands, Inc., Indianapolis, Ind. Home Add.: 1524 Akane Way, Indianapolis, Ind. ORGANIC CHEMISTRY, EDIBLE FATS AND OILS. b. Philadelphia, Pa., Apr. 19, 1924. s. Karl C. and Erna (Schiller) F. Edn.: B.S., Univ. of Miami, 1955; M.S., Butler Univ., 1961. m. Betty June Garrett, June, 1955. c.: Frederick A.; Karin; Brian K.; Charles K. Exp.: Asst. Chemist, Rohm and Haas, Philadelphia, Pa., 1947-50; Chemist, E. I. Du Pont, Wilmington, Dela., 1955-58; Group Leader, Standard Brands, Inc., Indianapolis, Ind., 1958—. Mem.: A.C.S.; A.O.C.S.; A.A.A.S.; Alpha Sigma. Contbr. to: Jour. A.O.C.S. Serv. Rec.: U.S.A.F., 1942-45, 1950-54. Areas of Rsch.: Edible Fats and Oil Rsch.; Instrumental Analysis; GLC, IR, NMR; Flourinated Hydrocarbons, Surfactants.

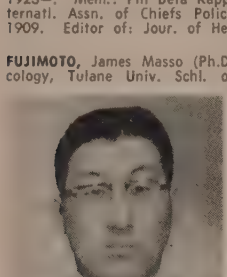
FUGGER, Joseph (Ph.D.), Rsch. Scientist, Lockheed Missile and Space Co., Palo Alto, Calif. Home Add.: 4912 Dixie Drive, San Diego 9, Calif. SOLID PROPELLANTS; ORGANIC NITROGEN CHEMISTRY AND POLYMER CHEMISTRY. b. Jesenice, Yugoslavia, Feb. 11, 1921. s. Joseph Jacob and Gertrude (Rotar) F. Edn.: B.S., Univ. of Pittsburgh, 1946; M.S., ibid., 1948; Ph.D., ibid., 1952. m. Ann Reed, Oct. 31, 1953. c.: Scot Reed. Exp.: Research Intern, U. S. Dept. Agri., N.R.R.L., Peoria, Ill., 1949-50; Asst. Prof. Rsch., Antioch Coll., Yellow Spgs., Ohio, 1952-53, Rsch. Chem., Buckeye Cellulose Corp., Memphis, Tenn., 1954-56; Post-doctoral Rsch. Fellow, Chem. Dept., Harvard Univ., 1956-57; Rsch. Group Leader, Thiokol Chem. Corp., Elkton, Md., 1957-58; Rsch. Specialist, B.S.R.L., Boeing Airplane Co., Seattle, Wash., 1958-59; Staff Scientist, Rsch. Operations, AERONUTRONIC, 1959-60; Rsch. Scientist, Lockheed Missile and Space Co., Palo Alto, Calif., 1961-62; Rsch. Scient., San Diego, Calif., 1962—. Mem.: Fellow, Chem. Soc. (London); Am. Chem. Soc.; A.A.A.S. Contbr. to: Jour. Am. Chem. Soc.; Jour. Organic Chem.; Chem. and Industry (London); Jour. Am. Oil Chemists Soc.; Joint Army-Navy-Air Force Solid Propellant Symposia. Serv. Rec.: U.S.A.F., 1942-45. Areas of Rsch.: Infrared Radiation; Solid Rocket Propellants; Organic Nitrogen Chemistry and Polymer Chemistry.



FULD, Leonhard Felix (Ph.D.), Pres., Helene Fuld Health Foundation, Trenton, N. J. Home Add.: 93 Fuld St., Trenton 8, N. J. HEALTH OF STUDENT NURSES. b. N. Y. C., Aug. 12, 1883. s. Bernhard and Helene (Schwab) F. Edn.: A.B., A.M., LL.B., LL.M., Ph.D., Columbia Univ., 1903-09. Exp.: Chf. Examiner, Municipal Civil Serv., N. Y., 1907-18; Personnel Dir., Cities Serv., N. Y. C. 1918-23; Pres., Helene Fuld Health Foundation, Trenton, N. J.,

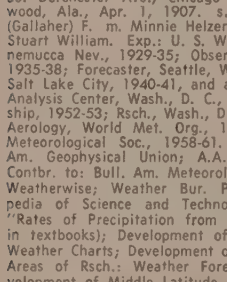
1923—. Mem.: Phi Beta Kappa; Am. Bar; Am. Pub. Health; Internatl. Assn. of Chiefs Police. Author: Police Administration, 1909. Editor of: Jour. of Helene Fuld Health Foundation.

FUJIMOTO, James Masso (Ph.D.), Assoc. Prof., Dept. of Pharmacology, Tulane Univ. Schl. of Med., 1430 Tulane Ave., New Orleans 12, La. Home Add.: 1508 Mandolin St., New Orleans, La. DRUG METABOLISM, NARCOTIC ANALGETIC, CANCER CHEMOTHERAPY. b. Vacaville, Calif., May 10, 1928. s. Tsuneki (dec.) and Nui (Kimura) F. Edn.: A.B., Univ. of Calif., 1951; M.S., ibid., 1953; Ph.D., ibid., 1956. Exp.: Instr., Tulane Univ. Schl. of Med., Dept. of Pharm., 1956-58; Asst. Prof., ibid., 1958-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Soc. for Pharmacol. and Exptl. Therapeutics; Am. Assn. for the Adv. of Sci.; Sigma Xi; Phi Eta Sigma; Mem. Soc. for Exptl. Biol. and Med. Contbr. to: Fed. Proc.; Jour. Pharm. Exptl. Ther.; Jour. lab. Clin. Med.; Jour. Am. Pharm. Assn.; Jour. Am. Med. Assn.; Proc. Soc. Exptl. Biol. and Med.; Biochem. Pharmacol. Areas of Rsch.: Drug Metabolism, Narcotic Analgetic, Cancer Chemotherapy.



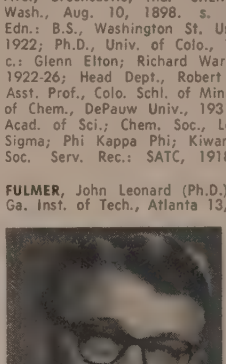
FULKS, Joe Robert (Mr.), Meterologist in Charge, U. S. Weather Bur., 5730 So. Woodlawn Ave., Chicago 37, Ill. Home Add.: 5635 So. Dorchester Ave., Chicago 37, Ill. METEOROLOGY. b. Rockwood, Ala., Apr. 1, 1907. s. James Harlan and Minnie Blaine (Gallaher) F. m. Minnie Helzer, July 8, 1939. c.: Gordon Joseph; Stuart William. Exp.: U. S. Weather Bur., 1929—; Observer, Winnemucca Nev., 1929-35; Observer and Forecaster, Portland, Ore., 1935-38; Forecaster, Seattle, Wash., 1938-39; Supvng., Forecaster, Salt Lake City, 1940-41, and at Kansas City, Mo., 1941-42; Chf., Analysis Center, Wash., D. C., 1942-52; Univ. Stockholm, Scholarship, 1952-53; Rsch., Wash., D. C., 1953-55; U. S. member, Comm. Aerology, World Met. Org., 1953—. Hon. Pos.: Councilor, Am. Meteorological Soc., 1958-61. Mem.: Am. Meteorological Soc.; Am. Geophysical Union; A.A.A.S.; Ill. Acad. Scis.; Sigma Xi. Contbr. to: Bull. Am. Meteorological Soc.; Monthly Weather Rev.; Weatherwise; Weather Bur. Publications; McGraw Hill Encyclopedia of Science and Technology. Gen. Int.: Computation of "Rates of Precipitation from Adiabatically Ascending Air" (used in textbooks); Development of Methods for Preparing Prognostic Weather Charts; Development of a Physical Model of the Tornado. Areas of Rsch.: Weather Forecasting; Severe Local Storms; Development of Middle Latitude Cyclones.

FULLER, Richard Buckminster (Sc.D.), Prof., Gen. Design Sci., Exploration, So. Ill. Univ., Carbondale, Ill. Home Add.: 407 S. Forest, Carbondale, Ill. COMPREHENSIVE DESIGN SCIENCE EXPLORATION. b. Milton, Mass., July 12, 1895. s. Richard Buckminster and Caroline Wolcott (Andrews) F. Edn.: Dr. of Design,, N. C. Univ., 1954; D.Arts, Mich. Univ., 1955; D.Sci., Wash. Univ., 1957; Dr.Arts, So. Ill. Univ., 1959; Dr.Human, Rollins Coll., 1960. m. Anne Hewlett, July 12, 1917. c.: Alexandra Willets (dec.); Allegra. Exp.: Apprentice Machine Fitter, Richards, Atkinson and Haserick, Boston, Mass.,1914; Staff, Armour and Co., N.Y.C., 1915-17; Asst. Export Mgr., N.Y.C., 1919-21; Natl. Acct. Sales Mgr., Kelly-Springfield Truck Co., 1922; Pres., Stockade Bldg. Syst., 1922-27; Founder, Pres. 4-D Co., Chicago, Ill., 1927-32; Founder, Dir. and Chf. Engr., Sanitary Mfg. Co., Dymaxion Corp., Bridgeport, Conn., 1932-35; Asst. to Dir. Rsch. and Devel., Phelps Dodge Corp., 1936-38; Techn. Consult., Fortune Mag., N. Y., 1938-40; Vice-Pres., Chf. Engr., Dymaxion Co., Inc., Del., 1941-42; Chf. Mech. Engrng. Secy., Bd. Econ. Warfare, 1942-44; Spl. Asst. to Dir. Fgn. Econ. Admin., 1942-44; Chmn. Bd. and Admin. Engr., Dymaxion Dwelling Machines, 1944-46; Pres., Synergetics, Inc., Raleigh, N. C., 1955-58; Prof., Gen. Design Sci. Exploration, So. Ill. Univ., 1959—. Hon. Pos.: Chmn. Bd. Trustees Fuller Rsch. Found., Wichita, Kan., 1946—; Pres., Geodesics, Inc., Raleigh, N. C., 1954—; Pres., Plydomes, Inc., Des Moines, Ia., 1957—; Chmn. Bd. Tetrahelix Corp., Hamilton, Ohio; Chmn. Bd. Buckminster Fuller Inst., Carbondale, Ill. Mem.: Benjamin Franklin Life Fellow Royal Soc. of Arts, England, 1960; Fellow, Am. Assn. for the Adv. of Sci., Life; Hon. Life Mem., Am. Inst. Architects; Century Assn. N. Y.; The Coffee House, N. Y.; Harvard Engrng. Soc.; Am. Soc. Profl. Geographers; Arch. League; N. Y., I.A.M.; Authors Club, London; Alpha Rho Chi. Author: Nine Chains to the Moon, 1938; Dymaxion World of Buckminster Fuller, 1960. Contbrng. Author: Convoy Mag.; Shelter Mag.; Fortune Mag. Serv. Rec.: U. S. Navy, 1917-22. Gen. Int.: Recipient Award of Merit N. Y. A.I.A., 1952; Award of Merit, U.S.M.C., 1954; Gran Premio, Trienniale de Milano, Italy, 1954-57; Centennial Award Mich. St. Univ., 1955; Gold Medal Scarab Natl. Arch. Soc., 1958; Gold Medal Phila., A.I.A. 1960; Franklin Inst., 1960 Frank P. Brown Medal; Inventor o Dymaxion 3-Wheeled Auto, 1932-35; Designer Dymaxion Deploy ment Unit Steel Igloo in Kan. City. Areas of Rsch.: A Topologic Transformations Cartographic "Projection," Showing Whole Earth Simultaneously Without Visible Distortion of Relative Shapes o Sizes of Any World Dry Land Masses and Without Any Sinuses i the Land Area; Testing Ground Taxiing Behaviors of Eventua Twin-Jetorientable Stilts, Wingless Flying Vehicle Invented 1927.



FULMER, Jervis Moissan (Ph.D.), Prof. and Hd., Dept. of Chem. DePauw Univ., Greencastle, Ind. Home Add.: 612 Highwood Ave., Greencastle, Ind. CHEMISTRY, ANALYTICAL. b. Pullman Wash., Aug. 10, 1898. s. H. Elton and Helen (Aughey) F Edn.: B.S., Washington St. Univ., 1920; M.S., Univ. of Minn. 1922; Ph.D., Univ. of Colo., 1925. m. Marguerite Jones, 1923 c.: Glenn Elton; Richard Warren. Exp.: Instr., Univ. of Colo. 1922-26; Head Dept., Robert Coll., Istanbul, Turkey, 1926-30 Asst. Prof., Colo. Schl. of Mines, 1930-31; Head and Prof., Dept of Chem., DePauw Univ., 1931—. Mem.: Am. Chem. Soc.; Ind Acad. of Sci.; Chem. Soc., London; Beta Theta Pi; Alpha Ch Sigma; Phi Kappa Phi; Kiwanis. Contbr. to: Jour. Am. Chem Soc. Serv. Rec.: SATC, 1918. Areas of Rsch.: Chemistry.

FULMER, John Leonard (Ph.D.), Prof. of Industrial Management Ga. Inst. of Tech., Atlanta 13, Ga. Home Add.: 224 Upland Rd. Decatur, Ga. ECONOMICS. b. Little Mountain, S. C., Sept. 24 1911. s. Charles C. and Lillia (Sease) F. Edn.: B.S., Clemson Coll., 1933; M.S., Cornell Univ. 1937; Ph.D., Univ. of Va., 1939 Special Study in Statistics, Am Univ., 1941-42; and Va. Poly Tech., Summer, 1947. m. Mar A. Wise, June 30, 1936. c.: Jun Wise Fortson; John Leonard, Jr Exp.: Asst. Prof. and Asst. Agri Economist, Clemson Coll., 1934 37; Assoc. Prof., Rural Econs. Univ. of Va., 1939-41; Rsch. Econ omist, Bd. of Econ. Warfare Wash., D. C., 1941-42; Hd. Con struction Rsch., Corps of Engrs. ibid., 1942; Assoc. Prof., Rura Econs., Univ. of Va., 1945-51 Bus. Economist, Office of Price Stabilization, Wash., D. C., 1951-53; Assoc. Prof., Bus. Admin Emory Univ., 1953-56; Rsch. Prof. of Econs., Ga. Inst. Tech. 1956-57; Rsch. Prof. and Sr. Rsch. Economist, ibid., 1958-59 Prof. of Industrial Management, ibid., 1959—. Hon. Pos.: Mem. Governor's Advisory Coun. on the Va. Econ., 1948-51; Pres. Atlanta Chapt., Am. Stat. Assn., 1961-62. Mem.: Am. Statistica Assn.; Am. Marketing Assn.; A.A.U.P.; Sou. Econ. Assn.; Regional Sci. Assn.; Y.M.C.A.; Parkwood Civic Club Author: Agricultural Progress in Cotton Belt Since 1920, 1950; Georgia's New Frontiers, 1957. Contbr. to: Quart. Jour. Econs.; Jour. Farm Econs.; Sou. Econ. Jour.; Rev. of Econs. and Statistics; Mfgs Rec.; Emory Univ. Quart.; Jour. of Pub. Law. War Record: U. S Army, W.W. II. Areas of Rsch.: Regional Economic Analysis; Per Capita Income Estimates; Analysis of State Per Capita Income Differentials; Industrial Development Research; Economic Projections; Measuring Market Demand Potentials; Population Forecasts; Labor Market Area Determinations; Analysis of Effects o Risk on Business Decisions; Economic Policy with Special Reference to Agriculture.



FULTON, Francis Marvin (Mr.), Pres., Applied Sci. Corp., P.O. Box 632, Santa Paula, Calif. Home Add.: P.O. Box 489, Santa Paula, Calif. APPLIED RESEARCH AND SYSTEMS ENGINEERING. b. Okmulgee, Okla., Jan. 2, 1925 s. Francis M., Sr. and Irene (Neff) F. Edn.: B.S., M.E., Univ of N. Mex., 1948. m. Kathryn E. Gaines, June, 1948. c.: Joan K.; Linda R.; Francis N. Exp.: Engr., U. S. Naval Ord. Test Sta., China Lake, Calif., 1948 54; Head, Air Weapons Div. USNOTS, ibid., 1954-56; Assoc Hd., Weapons Devel. Department USNOTS, ibid., 1956-58; Assoc Hd., Propulsion Devel., Dept USNOTS, ibid., 1958-59; Mem Thor-Vanguard Rev. Comm., N.A.S.A., 1958-59; Mem., Advance Fleet Ballistics Missile Rsch Comm., Navy, 1960-61; Assoc Tech. Dir. for Devel., USNOTS ibid., 1959-61; Dir., Applied Sci. Div., Hycon Mfg. Co., Santa Paula, Calif., 1961-62; Pres., Applied Sci. Corp., ibid., 1962- Mem.: Am. Ord. Soc.; Am. Rocket Soc.; Dist. Chmn., Boy Scouts of Am. Contbr. to: Astronautics Mag. Serv. Rec.: U. S Navy, W.W. II. Gen. Int.: Navy's L. T. E. Thompson Award 1961. Areas of Rsch.: Originator hybrid rockets, Variable thrust liquid rockets, Techniques of limited and unconventional warfare, solid rockets, weapon systems, nuclear and convention warheads.

UNCKES, Arnold J. (M.D.), Med. Officer, 706 E. Adams St., hoenix 34, Ariz. Home Add.: 4311 N. 15th Dr., Phoenix, Ariz. BIOCHEMISTRY; PHARMACOLOGIST; PHYSICIAN. b. Mich., Nov. 11, 1926. s. John and Gertrude (Jacobs) F. Edn.: B.A., Hope Coll., 1950; Ph.D., Univ. of Mo., 1953; M.D., ibid., 1958. m. Marjorie Keane, Dec. 17, 1949. c.: Cynthia; Carol; David; Catherine. Exp.: Instr., Biochem., Univ. of Mo. Schl. of Med., Columbia, Mo., 1953-54; Rotating, Intern, Youngstown Hosp. Assn., Youngstown, Ohio, 1958-59; Supvry. Chemist and Med. Officer, CDC Phoenix Field Station, U. S. Pub. Health Serv., Phoenix, Ariz., 1959—. Mem.: Sigma Xi; Alpha Chi Sigma; Phi Chi. Contbr. to: Exptl. Cell Rsch.; Jour. of Indust. and Envir. Health. Serv. Rec.: U. S. Naval Reserve, 1944-46. Gen.

nt.: Served for Three Months as Medical Toxicologist in Africa vith World Health Organ. Group. Areas of Rsch.: Cytochemistry; Pharmacology; Medical Toxicology.

FUREY, (Sister) Mary Dorothy, O.S.U., Sci. Tchr., St. Ursula Acad. H. S., 4025 Indian Rd., Toledo 6, Ohio. BIOLOGY. b. Toledo, Ohio. d. Charles J. and Jane M. (Gaffney) F. Edn.: B.S., St. John's Univ., Toledo, 1927; M.S., Univ. of Notre Dame, 1942. Exp.: 7th Grade Tchr., St. Ursula Acad., 1921; 5th and 6th Grade Tchr., Good Shepherd Schl., 1922; 1st and 2nd Grade, St. Ursula Acad., 1922-26; 5th and 6th Grade Tchr., Our Lady of Perpetual Help, 1926-27; Kindergarten and 7th Grade Tchr., St. Angela Hall, 1927-38; Tchr., 5th and 6th Grades, St. Francis De Sales, 1929; Biol. and Chem. Tchr., Calvert H. S., 1930-33; Instr., Mary Manse Coll., 1933-37; Sci. Tchr., St. Ursula Acad. H. S., 1937—. Mem.: Life Mem., A.A.A.S.; Life Mem., Natl. Sci. Tchrs. Assn.; Mem., Natl. Assn. Biol. Tchrs.;

Ohio Sci. Edn. Assn.; Ohio Acad. Sci. Gen. Int.: National Science Foundation Academic Year In-Service Inst. Grant in Biol., at Univ. of Toledo.

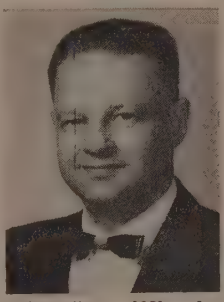
FURNESS, Lawton Williams (Mr.), Chief, Hydrologic Studies Sect., U. S. Geological Survey, Topeka, Kans. Home Add.: 4805 West 2nd St., Topeka, Kans. APPLIED RESEARCH IN HYDROLOGY. b. Stafford, Conn., Dec. 21, 1906. s. Robert L. and Maud (Beard) F. Edn.: B.S., Carnegie Inst. of Technol., 1928. m. Mildred Humphrey, June 4, 1932. c.: Ann E. Howard. Exp.: Draftsman, Blaw Knox Co., Pittsburgh, Pa., 1928-29; Hydraulic Engr., U. S. Geol. Survey, Augusta, Maine; Hartford, Conn., Indianapolis, Ind., 1929-50; Chief, Hydrologic Studies Sect., U. S. Geol. Survey, Lincoln, Nebr., Topeka, Kans., 1950—. Mem.: Fellow, Am. Soc. Civil Engrs.; Am. Geophys. Union; Natl. Soc. Prof. Engrs.; Kans. Engr. Soc. Author: Floods in Nebraska, Magnitude and Frequency, 1955; Balanced Stream-

gaging Program for Kansas, 1957; Kansas Stream Flow Characteristics: Flow Duration, 1959; Low Flow Frequency, 1960; Storage Requirements, 1962. Co.-Author: Flow Characteristics Elkhorn River, 1962; Water Resources Wichita Area, Kansas, 1962. Contbrng. Author: WSP966 Minor Floods in North Atlantic States, 1947. Contbr. to: Am. Geo. Union. Gen. Int.: Registered Engr., Kans. Areas of Rsch.: Hydrologic and Hydraulic Studies.

FURFEY, Paul Hanly (Rt. Rev. Monsignor), Hd. Dept. of Sociol., Catholic Univ. of Am., Washington, D. C. Home Add.: Catholic Univ. of Am., Wash., D. C. SOCIOLOGY. b. Cambridge, Mass., June 30, 1896. s. James Arthur and Margaret Hanly (Connell) F. Edn.: A.B., Boston Coll., 1917; M.A., St. Mary's Univ., 1918; Ph.D., Catholic Univ. of Am., 1926; Ordained a Priest, Sulpician Sem., 1922. Hon. Deg.: LL.D., Duquesne Univ., 1944. Exp.: Instr., Catholic Univ., 1925-31; Assoc. Prof., ibid., 1931-40; Acting Hd. of Dept., ibid., 1934-40; Prof., ibid., 1940—; Hd., Dept. of Sociology, ibid., 1940—. Hon. Pos.: Hon. Prof., Universidad de America, Bogota, Colombia, 1956; Recipient of Medal Pro Ecclesia et Pontifice, 1958; Domestic Prelate, 1958. Mem.: Am. Sociol. Soc.; Am. Catholic Sociol. Soc.; Am. Psychol. Assn.; Am. Catholic Psychol. Assn.; Soc. for the Study of Social Problems; A.A.A.S.; Am. Rocket Soc. Author: The Gang Age, 1926; Social Problems of Childhood, 1929; The Growing Boy, 1930; Fire on the Earth, 1936; Three Theories of Society, 1937; A History of Social Thought, 1942; The Mystery of Iniquity, 1944; The Scope and Method of Sociology, 1953. Contbr. to: Catholic Charities Rev.; Catholic Edn. Rev.; Jour. of Edn. Psychol.; Social Problems; Catholic Biblical Quart.; Schl. and Soc.; Am. Ecclesiastical Rev.; Jour. of Edn. Psychol.; Primative Man; Child Develop.; Jour. of Sociol Psychol.; Ped. Sem. and Jour. Genet. Psychol.; Am. Jour. of Psychol.; Mental Hygiene. Areas of Rsch.: Logic of Sci.; Social Problems, Psycho-Sociology of Childhood, Theory of Data Processing.

FURMAN, Walter Laurie (Ph.D.), Asst. Prof. of Math., Spring Hill Coll., Mobile, Ala. MATHEMATICS. b. Charlotte, N. C., Nov. 30, 1913. s. Henry Sylvester and Edna (Jenkins) F. Edn.: B.S., The Citadel, 1933; M.S., Univ. of Fla., 1941; Ph.D., ibid., 1961. Exp.: Instr., Spring Hill Coll., 1943-46, 1951-53; Instr., Univ. of Fla., 1955-57; Asst. Prof., Spring Hill Coll., 1957-59, 1960—. Mem.: A.A.A.S.; Math. Assn. of Am.; Ala. Acad. of Sci. Areas of Rsch.: Math. in Latin American Universities.

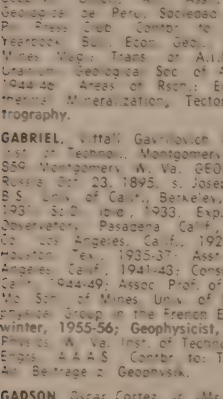
FURSTE, Wesley Leonard, II (M.D.), Surgeon, 113 Medical Arts Bldg., 327 E. State St., Columbus 15, Ohio. Home Add.: 3125 Bembridge Rd., Columbus 21, Ohio. SURGERY. b. Cincinnati, Ohio, April 19, 1915. s. Dr. Wesley Leonard and Elizabeth (Deckebach) F. Edn.: A.B., cum laude, Harvard Coll., 1937; M.D., ibid., 1941. m. Leone James, Mar. 28, 1942. c.: Nancy Dianne; Susan Deanne; Wesley Leonard, III. Exp.: Fellow, Coll. of Med., Univ. of Cincinnati, 1945-46; Asst., Coll. of Med., ibid., 1946-49; Asst. Surgical Resident, Cincinnati Gen. Hosp., 1946-49; Sr. Asst. Resident and Chf. Surgical Resident, Ohio St. Univ. Hosps., 1949-51; Instr. and Clinical Asst. Prof., Coll. of Med., Ohio State Univ., 1951—; Surgical Staff of Univ., Riverside Meth. Hosp.; Mt. Carmel, Children's Grant, Mercy, and St.



Anthony Hosps., 1951—; Surgical Consultant, Benjamin Franklin Tuberculosis Hosp., Columbus, Ohio, 1953—; Surgical Consult., Columbus St. Schl., 1951—; Surgical Consultant, Dayton V.A., Hosp., 1954—; Surg. Consult., Ohio St. Penitentiary, 1957—. Hon. Pos.: Advisory Comm., Am. Red Cross Regional Blood Prog., 1955—; Chmn., Advisory Comm., Am. Red Cross Regional Blood Prog., 1958—. Mem.: Am. Bd. of Surgery; Am. Coll. of Surgeons; Am. Assn. for the Surgery of Trauma; Soc. for Surg. of the Alimentary Tract; Ohio State Surgical Assn.; Columbus Surgical Soc.; Am. Med. Assn.; Ohio St. Med. Assn.; Columbus Acad. of Med.; Acad. of Med. of Cincinnati; Am. Geriatrics Soc.; Robert M. Zollinger Club; Mont Reid Surgical Soc.; Am. Med. Writers Assn.; A.A.A.S.; Harvard Club of Boston; Univ. Club of Cincinnati; Scioto Country Club; Ohio St. Univ. Faculty Club; Ohio St. Univ. Golf Club; Mediaeval Acad. of Am. Contbrng. Author: Advances in Military Medicine, 1948. Contbr. to: Am. Jour. of Surgery; Annals of Surg.; Surgery Gynecol. and Obstetrics; Am. Med. Assn. Archives of Surgery; Am. Surgeon; Am. Jour. of Obstetrics and Gynecol.; Ohio State Med. Jour.; Military Med.; Jour. of Am. Geriatrics Soc.; Jour. of the Am. Med. Assn.; Diseases of Colon and Rectum; Am. Jour. of Gastroenterol.; Ohio Dental Jour. Serv. Rec.: U. S. Med. Corps, 1942-46. Areas of Rsch.: Surgery: Etiology, Diagnosis, and Treatment of Acute Abdominal Pain, Gas Gangrene, Transmetatarsal Amputation, Trauma, Tracheotomy, Radical Surgery for Cancer of the Extremities, Intestinal Performations; Gastro-Intestinal Submucosal Lipomata.

FUSCALDO, Kathryn Elizabeth (Ph.D.), Asst. Prof., Dept. of Biol., St. John's Univ., Grad. Schl., Jamica, N. Y. Home Add.: 33 Cuba Hill Rd., Greenlawn, N. Y. BIOCHEMICAL GENETICS. b. N. Y. C., Jan. 4, 1931. s. Alfred and Elizabeth (DeLiso) F. Edn.: B.S., Queens Coll., 1952; M.A., Hofstra Coll., 1955; Ph.D., Mich. St. Univ., 1960. Exp.: Bacteriologist, N. Y. St. Dept. of Health, Rsch. Div., Albany, N. Y., 1952-53; Rsch. Asst., Dept. of Genetics, Carnegie Inst. of Wash., 1955-56; Instr., Hofstra Coll., 1955-56; Grad. Rsch. Asst., Mich. St. Univ., 1956-60; Asst. Prof., St. John's Univ., 1960—. Mem.: A.A.A.S.; A.I.B.S.; Genetics Soc. of Am.; A.S.M.; Am. Soc. Cell Biol.; Sigma Xi; Sigma Delta Epsilon; N. Y. Acad. of Sci.; A.A.U.P. Contbr. to: Jour. of Ultra Structure Rsch.; Genetics; Carnegie Inst. of Wash. Yearbook. Areas of Rsch.: Biochemical Genetics; Immunogenetics; Research into the Genetic Control of Protein Synthesis.

GABELMAN, John Warren (D.Sc., Chief, Resource Appraisal Br., Div. Raw Materials U. S. Atomic Energy Comm., Wash. 25, D. C. Home Add.: Cropus Drive 613, Rockville, Md. GEOLOGY. b. Manila, Philippine Islands, May 18, 1921. s. Charles Grover and Clementina Turcott G. Edn.: Geological Engr., Colo. Schl. of Mines, 1943; M.Geol.Engring., ibid., 1948; D.Sc., ibid., 1949. m. Olive Thompson, Sept., 1945. c.: Joan-Lynn; Barbara-Grace. Exp.: Instr., Colo. Schl. of Mines, Golden, Colo., 1946-49; Jr. Engr., New Jersey Zinc Co., Colo., 1943-46; Geologist, Colo. Fuel and Iron Corp., Colo., 1949-52; Geologist, American Smelting and Refining Co., Western U. S., 1952-54; Dist. Geologist, Gr. Jct. Operations Office, U. S. Atomic Energy Comm., Wash., D. C., 1954-58; Geol. Adviser to Raw Mat. Representative for Latin Am., Div. Raw Materials, ibid., 1958-61; Geologist, Acting Chief, Resource Appraisal Br., Div. Raw Materials, ibid., 1961-62; Chf., ibid., 1962—. Mem.: Geological Soc. of Am.; Soc. of Econ. Geologists; Am. Inst. Min. Met. and Petroleum Engrs.; Am. Geophysical Union; Am. Assn. Petroleum Geologists; Sociedad Geologica de Peru; Sociedad Geologica del Mexico; Beta Theta Pi; Press Club. Contbr. to: Jour. of Geology; Mining Assn. Yearbook; Bull. Econ. Geol.; Bull. Am. Assn. Petroleum Geol.; Mines Mag.; Trans. of A.I.M.E.; United Nations Papers on Uranium; Geological Soc. of Am. Bull. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Economic Mineral Deposits; Hydrothermal Mineralization, Tectonics and Structural Geology; Petrography.



GABRIEL, Vittali Gavrilovich (D.Sc.), Prof. of Physics, W. Va. Inst. of Technol., Montgomery, W. Va. Home Add.: P. O. Box 550 Montgomery, W. Va. GEOPHYSICS; TH. PHYSICS. b. Irkutsk, Russia, Oct. 23, 1895. s. Joseph W. and Bertha Peskin G. Edn.: B.S., Univ. of Calif., Berkeley, 1925; M.S., Colo. Schl. of Mines, 1931; Sc.D., ibid., 1933. Exp.: Asst. in Seismology, Mt. Wilson Observatory, Pasadena, Calif., 1925-27; Seismologist, Shell Oil Co., Los Angeles, Calif., 1927-28; Geophysicist, Fohs Oil Co., Houston, Tex., 1935-37; Asst. Geologist, U. S. E. Dept., Los Angeles, Calif., 1941-43; Consulting in Geophysics, Los Angeles, Calif., 1944-49; Assoc. Prof. of Geophysics and Structural Geology, Mo. Schl. of Mines, Univ. of Mo., 1949-55, In Chg. of Am. Geophysical Group in the French Equatorial Africa, Fort-Lamy, F.E.A., winter, 1955-56; Geophysicist, Houston, Tex., 1956-57; Prof. of Physics, W. Va. Inst. of Technol., 1957—. Mem.: A.G.U.; A. Mil. Engrs.; A.A.A.S. Contbr. to: Tr. Am. Geophys. Union; World Oil; Am. Beitrage z. Geophysik.

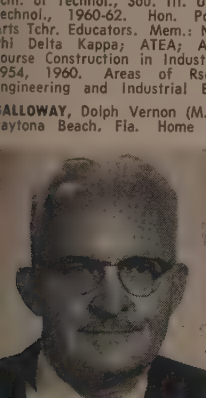
GADSON, Oscar Cortez, Jr. (Mr.), Chf., Bacteriology Sec., Veterans Hosp., Tuskegee, Ala. Home Add.: 111 Azalia St., Tuskegee Inst., Ala. MEDICAL BACTERIOLOGY. b. Lakeland, Fla., Mar. 16, 1920. s. Oscar C. and Emma Gadson. Edn.: M.T.ASCP Communicable Disease Ctr., Chamblee, Ga., 1954. m. Carrienelve Flanagan, Dec. 29, 1956. c.: Jan; Victor; Ronald; Linda; Robert. Exp.: Lab. Tech., Orlando Air Force Base, Orlando, Fla., 1945-47; Med. Tech., Fla. St. TB Sanitorium, Orlando, Fla., 1947; Chf. Bact. Med. Tech., Veterans Hosp., Tuskegee, Ala., 1948—. Hon. Pos.: Former Secy. Bd. of Trustees, Wash. Pub. Schl., Tuskegee, Ala. Mem.: A.A.A.S.; Am. Soc. of Med. Techs.; Casamanana Club. Contbr. to: Am. Jour. of Med. Tech. Serv. Rec.: A.U.S., 1941-45. Gen. Int.: Investigation of Water Pollution in the Tuskegee Area Resulted in a New Water Intake Point for Veterans Hosp., Tuskegee Area. Areas of Rsch.: Med. Bacteriol.; Med. Mycol.; Pulmonary Tuberculosis; Urinary Tract Infections of the Aged.

GABRILOVE, Jacques Lester (M.D.), 79 E. 79th St., N. Y. 21, N. Y. Home Add.: 25 E. 86th St., N. Y. 28, N. Y. INTERNAL MEDICINE, ENDOCRINOLOGY. b. N. Y. C., Sept. 21, 1917. s. Benjamin and Pauline Levine G. Edn.: B.S., City Coll. of N. Y., 1936; M.D., N. Y. Univ., 1942. m. Hilda Aussy, May 19, 1946. c.: Sandra Leslie; Janice Lynn. Exp.: Intern, Mt. Sinai Hosp., N. Y. C., 1940-41; Rotating Intern, ibid., 1941-43; Volunteer in Radiol., ibid., 1943; Resident in Med., ibid., 1943-44; Libman Fellow in Med., Yale Univ. Med. Schl., 1945; Blumenthal Fellow in Med., Mt. Sinai Hosp., 1946-48; Res. Asst. Med., ibid., 1949-51; Asst. Attending Physician, ibid., 1952-60; Assoc. Attending Physician, ibid., 1960—; Clin. Asst. Prof. of Med., St. Univ. of N. Y. Med. Schl., 1957 and 1959. Panel on Metabolic and Rheumatoid Diseases, U. S. Pharmacopoeia, XVI, 1956; Consultant in Endocrinology, V.A. Hosp., E. Orange, N. J., 1958; Consultant in Endocrinology, Fort Dix, N. J., 1958; Consultant in Endocrinology, Fort Dix, N. J., 1958; Consultant in Endocrinology, Fort Dix

GALLAHER, B. Shannon (M.D.), Physician, 1445 Harper St., Augusta, Ga. Home Add.: 1001 Hammond Dr., N. Augusta, S. C. MEDICINE. b. Phila., Pa., June 5, 1920. d. Shannon Davenport and Margery (Murrow) G. Edn.: R.N., Ga. Baptist Schl. of Nursing, 1941; B.A., Temple Univ., 1946; M.D., Hahnemann. Med. Coll., 1950. Exp.: Instr., Dept. of Med., Med. Coll. of Ga., Augusta, Ga., 1954-56; Assoc., ibid., 1956-58; Asst. Prof., ibid., 1958-59; Asst. Clin. Prof., ibid., 1959—. Hon. Pos.: Fellow, Am. Coll. of Chest Physicians; Assoc., Am. Coll. of Physicians; Diplomate, Am. Bds. of Internal Med.; Diplomate, Natl. Bd. of Med.; Bd. of Dirs., Augusta Area TB Assn.; Bd. of Dirs., Aiken Co. TB Assn.; Bd. of Dirs., Ga. TB Assn.; Rehabilitation Comm., Ga. Heart Assn.; Steering Comm., Stroke Rehabilitation Program, Ga.; Exec. Comm., Richmond, Co. Heart Coun.; Pres., Augusta Area TB Assn. Mem.: Am. Med. Assn.; Med. Assn. of Ga.; Richmond Co. Med. Soc.; Am. Heart Assn.; Ga. Heart Assn.; Am. Thoracic Soc.; Ga. Thoracic Soc.; Ga. and S. C. TB Assn.; Pres., Augusta Chapt., Am. Med. Women's Assn.; Am. Federation of Clin. Rsch.; Alpha Omega Alpha; Southern Med. Assn.; A.A.A.S.; Assn. of Am. Med. Colls.; Am. Soc. of Internal Med.; Ga. Soc. of Internal Med.; Alpha Epsilon Iota; A.A.U.W.; First V.-Pres., Quota Club. Contbr. to: Jour. of Med. Assn. of Ga.; Am. Review of Respiratory Disease. Areas of Rsch.: Pulmonary Diseases.

GALLINGTON, Ralph Ora (Ed.D.), Prof., Sou. Ill. Univ., Carbondale, Ill. Home Add.: Rt. #2, Carbondale, Ill. PHYSICAL SCIENCES AND INDUSTRIAL ENGINEERING AND EDUCATION. b. Jennison, Ill., Nov. 18, 1908. s. Ora Albert and Nora Bell (Crockett) G. Edn.: B.S., Ind. State Coll., 1931; M.A., Columbia Univ., 1937; Ed.D., George Washington Univ., 1947. m. Mary K. Roales, Aug. 30, 1931. c.: Roger W.; Daniel J. Exp.: Tchr., Kenwood H. S., Towson, Md., 1931-37; Asst. Prof., Univ. of Md., 1937-43; Ind. Engr., Prod., Des. Engr. and Plant Supt., Lofstrand Co., Rockville, Md., 1943-47; Assoc. Prof., E. Ill. Univ., 1947-48; Prof., Pa. State Univ., 1948-55; Prof., Schl. of Technol., Sou. Ill. Univ., 1955—; Acting Dean, Schl. of Technol., 1960-62. Hon. Pos.: Pres., Am. Coun. of Indus. Arts Tchr. Educators. Mem.: Natl. Edn. Assn.; NSPE; ISPE; ASEE; Phi Delta Kappa; ATEA; AVA; Rotary Internatl. Co-Author: Course Construction in Industrial Arts and Vocational Education, 1954, 1960. Areas of Rsch.: Physical Sciences, Industrial Engineering and Industrial Education.

GALLOWAY, Dolph Vernon (M.D.), Dir., Volusia Co. Health Dept., Daytona Beach, Fla. Home Add.: 105 Sunrise Blvd., Daytona Beach, Fla. MEDICINE—PUBLIC HEALTH. b. Sunbright, Tenn., Apr. 20, 1901. s. Franklyn Perry and Ella Jane (Stonecypher) G. Edn.: B.S., Univ. of Miss., 1923; M.D., Univ. of Tenn., 1925; M.P.H., Harvard Univ., 1932. m. Edna Faye Spears, July 31, 1926. c.: Patricia Faye; Phyllis Joan; Peggy Ann. Exp.: Co. Health Officer, Tishomingo Co., Hinds Co., and Coahoma Co., Miss., 1926-32; Dir., City-Co. Health Dept., Lauderdale Co., Meridian, Miss., 1932-39; State Supvr., Venereal Disease Control, Miss., 1939-42; Dir., Div. of Health Edn. of the State Bd. of Health, and Med. Dir. of Schl. Health Program, Jackson, Miss., 1942-46; Exec. Dir., Miss. Comm. on Hosp. Care, 1946-51; Dir. of Div. of Maternal and Child Health, Miss. St. Bd. of Health, Jackson, Miss., 1951-57; Dir., Volusia Co. Health Dept., Daytona Beach, Fla., 1957—. Hon. Pos.: Pres., Miss. Conf. of Soc. Work, 1943; Col. on Gov. T. L. Bailey's Staff, 1944; Mem. and Founders Group, Am. Bd. of Preventive Med. and Pub. Health, 1949; 1st Pres., Natl. Assn. of Hosp. Planning Agencies, Atlantic City, N. J., 1950; Delegate to Sou. Branch, Am. Pub. Health Assn., 1957. Mem.: Fla. St. Med. Assn.; Am. Med. Assn., Ill.; Volusia Co. Med. Assn.; Am. Pub. Health Assn.; Fellow, Am Pub. Health Assn.; Delta Omega; Theta Kappa Psi.



GAMMELL, John (Mr.), Coordinator of Professional Placement, Allis Chalmers, Milwaukee, Wis. Home Add.: 3227 N. 104th, Milwaukee, Wis. ELECTRICAL ENGINEERING. b. Burton, Wash., Oct. 17, 1907. s. James and May (Ely) G. Edn.: B.S., Univ. of Wash., 1928. m. Harriet Dickson, June 18, 1938. c.: Louise; Joan. Exp.: Engr. Trainee, Application Engr., Sales Engr., Allis Chalmers, Milwaukee, Wis. and Philadelphia, Pa., 1928-42; Chf., Elec. Equip. Br., Industrial Equip. Div., War Production Bd., Wash., D. C., 1942-44; Sales Engr., Allis Chalmers, Philadelphia, Pa., 1944-49; Supvr., Sales Training, Dir., Grad. Training, Dir. of Development, Coordinator, Professional Hiring, ibid., Milwaukee, Wis., 1949—. Hon. Pos.: Treas., A.S.E.E.; Chmn., Edn. Comm., A.S.M.E.; Chmn., Comm. for the Devel of Young Engr., E.C.P.D.; Chmn., Ethics Comm., A.S.E.E.; Pres., Wis. Soc. Professional Engrs. Mem.: A.I.E.E.; A.S.M.E.; N.S.P.E.; A.S.E.E.; Engrng. Soc. of Milwaukee; Am. Interprofessional Inst. Contbr. to: A.I.E.E. Jour.; A.S.M.E. Jour.; A.S.E.E. Jour.; Am. Engr. Areas of Rsch.: Indusl. Recruiting and Trng. of Grad. Engrs.

GANGSTAD, Edward Otis (Ph.D.), Sr. Agronomist, Tex. Rsch. Foundation, Renner, Tex. Home Add.: 945 Abrams Rd., Richardson, Tex. AGRONOMY AND PLANT BREEDING. b. Chippewa Falls, Wis., Dec. 18, 1917. s. John Otis and Della Beatrice (Brunberg) G. Edn.: B.S., Univ. of Wis., 1942; M.S., ibid., 1947; Ph.D., Rutgers Univ., 1950. m. Ruth Margaret Fletcher, 1946. c.: James Otis; John Erik; Karl Edward; Lillis Marie. Exp.: Rsch. Asst., Univ. of Wis., Madison, Wis., 1946-47; Tchng. Asst., Rutgers Univ., New Brunswick, N. J., 1947-50; Rsch. Agron., U.S.D.A.-A.R.S., Belle Glade, Fla., 1950-54; Sr. Agronomist, Tex. Rsch. Found., Renner, Tex., 1954—. Hon. Pos.: Chmn., Adv. Comm. Hoblitzelle Award, Fellow, A.A.A.S. Mem.: Am. Soc. of Agron.; Weed Soc. of Am.; Biometric Soc.; A.A.A.S.; Phi Eta Sigma; Alpha Zeta; Sigma Xi. Contbr. to: Jour. Biol. Chem.; Agron. Jour.; Crops and Soils; Jour. of Heredity; Weeds; Trop. Agri.; Turrialba; Soil Sci. of Fla.; Fla. Agri. Expt. Sta.; Hoblitzelle Agri. Lab. Serv. Rec.: A.U.S., R.O.T.C., 1937-39, A.U.S., O.R.C., 1943-45; Capt., U. S. Army Air Corps, 1946, Reserves, 1946-51. Areas of Rsch.: Plant Growth, Breeding, Production and Utilization; Forage Crops for Livestock Production in the Southwest.

GANN, Leonard Albert (Mr.), Staff Asst., The Marquardt Corp., Ogden, Utah. Home Add.: 923 Cook St., Ogden, Utah. QUALITY CONTROL AND RELIABILITY ENGINEERING. b. Chicago, Ill., Aug. 3, 1912. s. George L. and Agnes Telander (Ekstrom) G. Edn.: B.S., Armour Inst. of Tech., 1933; B.S.M.E., Northwestern Univ., 1937; M.A.B.A., Univ. of Chicago, 1948. m. Mary K. Flotz, Aug. 3, 1930. c.: Robert; Virginia; Marshall. Exp.: Plant Mgr., Rheem Mfg. Co., Chicago, Ill., 1945-50; Plant Mgr., Advance Transf. Co., Chicago, Ill., 1950-52; Sect. Supvr., Ford Motor Co., Chicago, Ill., 1952-58; Staff Asst. to Q.C. Mgr., Marquardt Corp., Ogden, Utah, 1958—. Hon. Pos.: Chmn., Ogden Chapter A.S.T.-M.E. Mem.: Inst. of Aerospace Scis.; Am. Soc. for Metals; A.A.A.S.; Am. Soc. Tool and Mfg. Engrs. Contbr. to: A.S.T.M.E. Jour.; Design of Special Machinery and Equipment. Areas of Rsch.: Plant and Engr. Management, Quality Control and Reliability Analysis of Engineering Designs, Failures, etc.

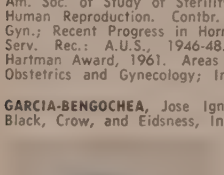
GARAI, Josef Ernest (Ph.D.), Asst. Prof. of Psychol., Pratt Inst., Brooklyn 5, N. Y. Home Add.: 14 West 85th St., N. Y. 24, N. Y. SOCIAL PSYCHOLOGY, SOCIOLOGY, SOCIAL PSYCHIATRY. b. Nuernberg, Germany, July 5, 1914. s. Ignaz (dec.) and Cilly (Loewenberger) (dec.) G. Edn.: B.A., Washington Sq. Coll., N. Y. Univ., 1953; Ph.D., Grad. Schl. of Arts and Sci., ibid., 1959. Exp.: Prin., Evening Schl. for Languages, Ramat Gan, Israel, 1944-51; Instr. in Psychol., Schl. of Commerce, N. Y. Univ., 1957-59; Instr. in Psychol., Pratt Inst., N. Y. 1957-59; Instr. in Psychol., Cooper Union Schl. of Engr., 1958-59; Asst. Prof. in Psychol., Sociol., Staten Island Community Coll., 1959-62; Instr. in Psychol., Juilliard Schl. of Music, 1957-60; Asst. Prof. in Psychol., Pratt Inst., 1962—. Mem.: Am. Assn. of Social Psychiatry; Am. Psychol. Assn.; Eastern Psychol. Assn.; Am. Sociol. Assn.; Am. Assn. Adv. of Sci.; Am. Acad. of Polit. and Social Sci.; A.A.U.P.; Society for the Psychological Study of Social Issues; Psi Chi; Alpha Kappa Delta. Co-Author: Where the States Stand on Civil Rights, 1961. Contbr. to: Jour. of Abnormal and Social Psychol.; Jour. of Edn'l. Sociol. Serv. Rec.: Israeli Defense Army, 1947-48. Areas of Rsch.: Language and Speech Development in Children, Curricula of Junior Colleges, Parent-Child Relations, Social Pressures Toward Conformity, Information of College Students on Current Affairs; Old Age and Marital Problems; Sex Differences in Intelligence, Achievement and Personality Traits; Conflict Resolution by Peaceful Means.

GARBER, Morris Joseph (Ph.D.), Assoc. Biometrician, Univ. of Calif. Citrus Rsch. Ctr. and Agric. Expt. Sta., Riverside, Calif. Home Add.: 3504 Bryce Way, Riverside, Calif. BIOMETRY. b. N.Y.C., N. Y., Nov. 6, 1912. s. Isadore and Ethel (Shevack) G. Edn.: B.S., Columbia Univ., 1933; Ph.D., A.&M. Coll. of Tex., 1951. m. Gloria Routman, 1943. c.: David; Diana. Exp.: Instr. of Genetics, A.&M. Coll. of Tex., 1947-51; Asst. Prof., ibid., 1951-56; Asst. Biometrician, Univ. of Calif. Citrus Expt. Sta., 1956-60; Assoc. Biometrician, ibid., 1960—. Mem.: A.A.A.S.; Fellow, Tex. Acad. Sci.; Sigma Xi; Am. Genetic Assn.; Am. Stat. Assn.; Biometric Soc.; A.C.M.; B'nai B'rith. Contbr. to: Plant Disease Reporter; Calif. Agri.; Soil Sci.; Phytopathology; Proc. Am. Soc. Hort. Sci.; Hilgardia; Bot. Gazette; Jour. Econ. Entomol.; Jour. Agri. and Food Chem. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Design and Interpretation, Agricultural Experiments.

GARCIA, Celso Ramon (M.D.), Dir., Training Program, Reproductive Physiology, Worcester Foundation for Exptl. Biol., Shrewsbury,

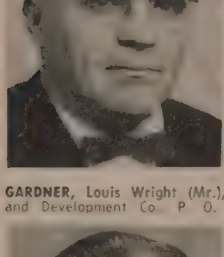
Mass. Home Add.: 308 Hill St., Whitinsville, Mass. REPRODUCTIVE PHYSIOLOGY—OBSTETRICS AND GYNECOLOGY. b. N. Y., N. Y., Oct. 31, 1921. s. Celso and Oliva del (Valle) G. Edn.: B.S., Queens Coll., 1942; M.D., Long Island Coll. of Med., 1945. m. Shirley Jean Stoddard, Oct., 1950. c.: Celso-Ramon, Jr. Exp.: Intern, Norwegian Lutheran Hosp., Brooklyn, N. Y., 1945-46; Chf. Ob. Gyn., A.U.S., 206th Sta. Hosp., Ladd Field, Fairbanks, Alaska, Surgical Ward Officer, Ob. Gyn. and Female Surg. Sec., Valley Forge Gen. Hosp., Phoenixville, Pa., 1947-48; Resident (Pathology), Cumberland Hosp., Brooklyn, N. Y., 1948-49; Rsch. Fellow, Ob. Gyn., ibid., 1949-50; Res., Ob. Gyn., ibid., 1950-53; Assoc. Ob. Gyn., Schl. of Med., Univ. of Puerto Rico, San Juan, P. R., 1953-54; Assoc. Ob. Gyn., San Juan City Hosp., Santurce, Puerto Rico, 1953-55; Asst. Prof. Ob. Gyn., Schl. of Med., Univ. of Puerto Rico, 1954-55; Rsch. Fellow in Gynec., Harvard Med. Schl., 1955-56; Rsch. Fellow in Gynec., Free Hosp. for Women, Brookline, Mass., 1955-57; Asst. Obst., Boston Lying-In Hosp., 1956-59; Asst. Dir., Rock Reproductive Study Ctr., Brookline, Mass., 1956-58; Co.-Dir., ibid., 1958-61; Dir., Trng. Prog. in the Physiol. of Reproduction, Worcester Ftdn. for Exp. Biology, 1961-62; Asst. Obst. and Gynec., Boston Lying-in-Hosp., 1959—; Instr. in Obst. and Gynec., Harvard Med. Schl., 1960—. Mem.: Am. Coll. of Surgeons; Am. Coll. of Obs. and Gyn.; A.A.A.S.; Endocrine Soc.; Am. Soc. of Study of Sterility. Contbrng. Author: Essentials of Human Reproduction. Contbr. to: Science; Am. Jour. Obs. and Gyn.; Recent Progress in Hormone Rsch.; Fertility and Sferility. Serv. Rec.: A.U.S., 1946-48. Gen. Int.: Received the Carl Hartman Award, 1961. Areas of Rsch.: Reproductive Physiology; Obstetrics and Gynecology; Infertility Surgery.

GARCIA-BENGOCHEA, Jose Ignacio (Ph.D.), Civil Sanitary Engr., Black, Crow, and Eidsness, Inc., 700 S.E. Third St., Gainesville, Fla. Home Add.: 229 S.W. 23rd Terrace, Gainesville, Fla. WATER SUPPLY ENGINEERING. b. La Habana, Cuba, June 1, 1927. s. Francisco and Angela (Bengochea) G. Edn.: Civil Engr., Univ. of Havana, Cuba, 1950; M.S.E., Univ. of Fla., 1960; Ph.D., ibid., 1963. m. Carmen Fernandez, June 24, 1951. c.: Ignacio; Carmen; Elena; Jorge. Exp.: Engr., Comision de Fomento Nac., Havana, Cuba, 1950-54; Head, Water Works Dept., Ingenieria Vame, S. A., Havana, Cuba, 1954-59; Civil Sanitary Engr., Black, Crow, and Eidsness, Gainesville, Fla., 1959—. Mem.: A.G.U.; A.S.C.E.; Am. Water Works Assn.; Interam. Assn. of Sanitary Engrs.; Phi Kappa Phi; Sigma Xi; Gainesville Golf and Country Club. Areas of Rsch.: Ground Water Hydrology.



GARDINER, Eli (Ph.D.), Owner and Dir., Gardiner Labs., 108-17 72 Ave., Forest Hills 75, N. Y. Home Add.: 72-32 Juno St., Forest Hills 75, N. Y. CLINICAL CHEMISTRY. b. Meriden, Conn., Dec. 25, 1906. s. Joseph and Rose (Polinsky) G. Edn.: B.A., Amherst Coll., 1927; Ph.D., N. Y. Univ., 1934. m. Gertrude Silverberg, 1930. c.: Peter; Richard; Nancy. Exp.: Assoc. Dir., L. I. Labs., Forest Hills, N. Y., 1935-40; Owner and Dir., Gardiner Labs., Forest Hills, N. Y., 1940—. Mem.: Am. Chem. Soc.; Fellow, Am. Inst. Chemists; A.A.A.S.; Fellow, Am. Assn. of Clin. Chems.; Am. Soc. of Prof. Biol.; Am. Soc. Microl.; Am. Pub. Health Assn.; Sigma Xi; Am. Bd. of Clin. Chem. Areas of Rsch.: Biochemistry and Clinical Chemistry.

GARDNER, Louis Wright (Mr.), Dir., Geophysics Div., Gulf Rsch. and Development Co., P. O. Drawer 2038, Pittsburgh 30, Pa. Home Add.: 747 N. Ave., Pittsburgh 21, Pa. GEOPHYSICS. b. Peoria, Ill., May 1, 1904. s. Wright Austin and Mabel (Anderson) G. Edn.: B.S., Ala. Polytechnic Inst., 1923; M.S., Univ. of Calif., 1928. m. Gladys Jackson, Nov. 2, 1935. c.: Patricia May; Gladys Gay. Exp.: Geophysicist, Gulf Rsch. and Development Co., Pittsburgh, Pa., 1930-37; Sect. Hd., ibid., 1937-50; Tech. Advisor, ibid., 1950-60; Dir., Geophysics Div., ibid., 1961—. Hon. Pos.: Chmn., S.E.G. Rsch. Comm. Mem.: Pittsburgh Physical Soc.; Am. Assn. of Petroleum Geologists; Pittsburgh Geological Soc.; Soc. of Exploration Geophysicists; European Assn. of Exploration Geophysicists; Am. Geophysical Union. Contbr. to: Geophysics. Areas of Rsch.: Seismograph Prospecting.



GARDNER, Marjorie Hyer (Ph.D.), Dir., Vistas of Sci., Natl. Tchrs. Assn., 1201 16th St., Wash., D. C. Home Add.: 7214 Rd., Wash., D. C. SCIENCE CATION. b. Logan, Utah, Apr 1923. d. Saul Edward and Gl (Christiansen) Hyer. Edn.: Utah St. Univ., 1946; M.A., St. Univ., 1958; Ph.D., 1960. m. Paul Gardner, 1947. c.: Pamela Jean; Elizabeth. Exp.: Tchr., Chem. Journalism, Pub. Schls., Richm Utah; Tchr., Journalism, Schls., Las Vegas, Nev., 194 Tchr. of Biol. and Chem., Schls., Columbus, Ohio, 195 Instr. in Chem. and Sci. Ohio St. Univ., Columbus, 1958-60; Dir., Vistas of Sci Wash., D. C., 1961—; Asst. Secy., Natl. Sci. Tchrs. A Wash., D. C., 1962—. Hon. Council for Elem. Sci. Inter Mem.: Natl. Sci. Tchrs. Assn.; Assn. for the Edn. of Tchrs Sci.; Natl. Assn. for Rsch. in Sci. Tchng.; Am. Chem. Soc.; A.S.; Alpha Sigma Nu; Kappa Delta; Delta Kappa Gamma. Co to: The Science Teacher; Nation's Schools; Edn. Rsch. Areas of Rsch.: Science Education and Chem.

GARFUNKEL, Irving M(inturn) (Mr.), Sr. Assoc., Planning Corp., Los Angeles, Calif. Home Add.: 209 21st Place, Monica, Calif. APPLIED MA MATICS, OPERATIONS RESEA SYSTEMS ANALYSIS. b. Je City, N. J., July 14, 1925. Jacob and Daisy (Ressler) Edn.: B.S., N. Y. Univ., 1 M.S., ibid., 1948. m. R Schreiner, Sept. 21, 1947. Reva Linda; Jeremy David. Rsch. Assoc., Willow Run Labs., Univ. of Mich., 1948 Mathematician, Naval Ordn Test Station, Pasadena, C 1951-54; Systems Analyst, Rh Mfg. Co., Ordnance Div., Dow Calif., 1954-58; Sr. Mathemati System Devel. Corp., Santa Mo Calif., 1958-59; Sr. Assoc., ning Rsch. Corp., Los Ang Calif., 1959—. Mem.: Am. M Soc.; Operations Rsch. Soc. Am.; Soc. for Industrial and Applied Math. Contbr. to: N Rsch. Logistics Quarterly. Areas of Rsch.: Applied Mathema Operations Rsch.; Systems Analysis and Synthesis.

GARGANO, Fredie Patrick (M.D.), Assoc. Prof., Univ. of M Schl. of Med., Jackson Meml. Hosp., Miami, Fla. Home A 8080 S.W. 54th Ct., Miami, RADIOLOGY. b. Elizabeth, N. Mar. 22, 1926. s. Charles Caroline (Casale) G. Edn.: George Washington Univ., 1 M.D., ibid., 1952. m. Ev Grace Scone, Jan. 19, 1953. Caron Beth; Christopher Rol Exp.: Staff Radiologist, V.A. H Coral Gables, Fla., 1958-59; str. of Radiol., Univ. of Mi 1959; Asst. Prof. of Radiol., 1959-61; Assoc. Prof., ibid., —. Mem.: A.M.A.; Fla. Assn.; Dade Co. Med. As Greater Miami Radiological S Fla. St. Radiological Soc.; Coll. of Radiol.; Radiological of N. Am.; Am. Assn. of U Radiologists; A.A.A.S.; Alpha Omega; Phi Chi; Howard F. K King Scholarship Soc. Contbr. to: Am. Jour. of Roentgenol Radium Therapy and Nuclear Medicine. Serv. Rec.: U.S. 1944-45; U. S. Air Force, M.C., 1953-55. Areas of Rsch.: Ra active Isotopes and Neuroradiology and Bone Diseases.

GAROUTTE, Bill Charles (M.D.), Assoc. Prof., Anat. and Neurol Univ. of Calif. Med. Center, San Francisco 22, Calif. Home A 105 Molino Ave., Mill Valley, Calif. NEUROPHYSIOLOGY; NEU ANATOMY. b. Absarokee, Mont., Mar. 15, 1921. s. Bernar and Anna (Kosir) G. Edn.: M.D., Univ. of Calif. Med. Schl., 1 Ph.D., Univ. of Calif., Berkeley, 1954. m. Sally Jeter, July 1948. c.: Brian; Susanna; David; Katherine. Exp.: Instr., A and Neurol., Univ. of Calif., 1952-55; Asst. Prof., Anat. Neurol., ibid., 1955-59; Assoc. Prof., ibid., 1959—; Visit. Prof., Anat. and Neurol., Univ. Indonesia Fakultas Kedokte Djakarta, 1956-57. Mem.: Am. Acad. Neurol.; Soc. Exptl. Med.; Am. Assn. Anatomists; A.A.A.S.; Western Electroence lographic Soc. (Pres., 1961-62); Royal Soc. Med.; Sigma Xi. Record: U.S.N.R., 1946-47. Areas of Rsch.: Neurophysiol Electroencephalography; Neuroembryology.

GARMAN, Raymond LeRoy (Ph.D.), Vice-Pres., Engrng. and Rsch., General Precision Equipment Corp.; Vice-Pres., Chf. Scientist, General Precision, Inc., Tarrytown, N. Y. Home Add.: 50 Summit Dr., Hastings-on-Hudsn, N. Y. PHYSICS AND ELECTRONICS. b. Schoeneck, Pa., July 21, 1907. s. Albert and Amelia (Wagner) G. Edn.: B.S., Franklin and Marshall Coll., 1929; M.Sc., N. Y. Univ., 1931; Ph.D., ibid., 1932. m. Grace Ross, 1933. c.: Elizabeth; Robert. Exp.: Tchng. Fellow, N. Y. Univ., 1929-30; Sr. Tchng. Fellow, ibid., 1930-32; Rsch. Asst., Physical Chemistry, ibid., 1932-37; Instr., Physical Chemistry, ibid., 1937-40; Asst. Prof., ibid., Grad. Schl., 1940-42; Group Leader, Mass. Inst. of Technol. Radiation Lab., 1941-45; Staff Consultant, Radio Rsch. Lab., Harvard Univ., 1943-45; Dir. of Rsch., G.P.L. Div., Pleasantville, N. Y., 1945-48; Vice-Pres., Dir. of Rsch., ibid., 1948-54; Mgng. Dir., ibid., 1954-57; Chmn., Bd. and Technical Dir., ibid., 1957-59; Vice-Pres., Engrng. and Rsch., General Precision Equipment Corp., Tarrytown, N. Y., 1957—; Vice-Pres., Chf. Scientist, General Precision, Inc., 1960—. Co-Author: Experimental Electronics, 1940. Hon. Pos.: Chmn., Video Techniques Comm., I.R.E.; Theatre TV Comm., S.M.P.T.E.; Films Comm., ibid., Test Films Comm., ibid.; Mem., Rsch. and Devel. Bd., Guided Missile Comm., ibid. Mem.: Am. Physical Soc.; Am. Chemical Soc.; Optical Soc. of Am.; Acoustical Soc. of Am.; Inst. of the Aerospace Scis.; Instrument Soc. of Am.; Inst. of Navigation; Fellow, Inst. of Radio Engrs.; S.M.P.T.E.; N. Y. Acad. of Scis. Gen. Int.: Recipient of Presidential Certificate of Merit, 1946; Listed in, W.W. in Am., etc.

GARNER, William (D.Sc.), Chmn., Dept. of Physics, Univ. of Bridgeport, Bridgeport, Conn. Home Add.: 3808 Redding Rd., Fairfield, Conn. SUB ATOMIC PARTICLE ACCELERATION. b. Leeds, England, Aug. 15, 1916. s. Sir Frederick James and Elizabeth Ann (Brown) G. Edn.: B.Sc., Leeds Univ., England, 1938; M.A., and D.Sc., ibid., 1945. Exp.: Asst. Dir. of Rsch., Ministry of Supply, London, England, 1938-44; Asst. Lectr., London Univ., England, 1955-57; Hd. Physics Dept., Long Island Univ., L. I., N. Y., 1960-61; Chmn. Physics Dept., Univ. of Bridgeport, Conn., 1961 —. Mem.: Am. Inst. of Phys. Author: High Particle Accelerators, 1945; Cosmic Fields, 1947. Contbr. to: Nature; Science; Scientific American. Serv. Rec.: Royal Army Service Corps, 1939-42. Areas of Rsch.: Sub Atomic Particles.

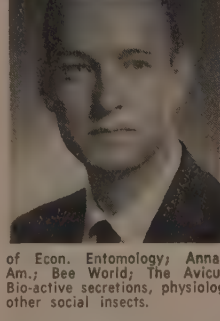
GARREN, Robert Earl (Ph.D.), Assoc. Prof., Dept. of Mgmt., Ga. St. Coll., Atlanta, Ga. Home Add.: 3795 Greenhill Dr., Chamblee, Ga. BEHAVIORAL SCIENCE. b. Brevard, N. C., Aug. 18, 1920. s. Thomas L. and Eva (Jones) G. Edn.: B.A., Univ. of Calif., 1950; M.A., Univ. of N. C., 1953; Ph.D., ibid., 1955. m. Jessie McNeil, 1949. c.: Thomas Irving; Kittredge McCrary. Exp.: Instr., Univ. of N. C., Chapel Hill, N. C., 1954-55; Asst. Prof., Auburn Univ., Auburn, Ala., 1955-59; Visiting Prof., Tex. Western Coll., El Paso, Tex., 1958; Assoc. Prof., Ga. St. Coll., Atlanta, Ga., 1959 —. Hon. Pos.: Past Vice-Pres., Ala. Acad. of Sci. and Chmn. Soc. Sci. Div.; Past Chmn., Bd. Beta Zeta Assn. of Theta Xi. Mem.: A.A.A.S.; Southern Econs. Assn.; Southern Sociol. Soc.; Population Reference Bureau; Theta Xi; Alpha Kappa Psi. Contbr. to: Miss. Quarterly; Ala. Acad. of Sci. Serv. Rec.: A.U.S.A.C., 1942-45. Areas of Rsch.: Human Ecology and Population; Resources Administration; Technological Change; Arid Lands Development; Human Relations.

GARRETT, Romeo Benjamin (LL.D.), Assoc. Prof. of Sociol., Bradley Univ., Peoria, Ill. Home Add.: 304 W. Seventh Ave., Peoria, Ill. ANTHROPOLOGY AND SOCIOLOGY. b. Natchez, Miss., Feb. 2, 1910. s. Charles and Pinkie (Duncan) G. Edn.: A.B., Dillard Univ., 1932; M.A., Bradley Univ., 1947. Hon. Deg.: LL.D., Natchez Coll., 1949. m. Naomi Sanders, Nov. 29, 1945. Exp.: Social Worker, New Orleans Welfare Dept., New Orleans, La., 1932-34; Supvr. of Adult Edn., ibid., 1934-42; Prof. of Anthropol. and Sociol., Bradley Univ., 1947—. Hon. Pos.: Pres., Bradley Univ. Chap., A.A.U.P.; Chmn. of the Anthropol. Div. of the Peoria Acad. of Sci. Mem.: Amer. Sociol. Soc.; Midwest Sociol. Soc.; Soc. for Applied Anthropol.; Natl. Negro Hist. Assn.; Ill. State Acad. of Sci.; Ill. State Archeological Soc.; Pi Gamma Mu. Contbr. to: Jour. of Ill. State Archeological Soc.; Negro Hist. Bull. War Record: U. S. Army, 1942-45. Areas of Rsch.: Anthropology; Race Relations; Religion; Gerontology.

GARRETT, Richard Marvin (Mr.), Pres., Margar Co., 1613 Pacific Coast Hwy., Hermosa Beach, Calif. Home Add.: 424 7th, Manhattan Beach, Calif. CHEMICAL ENGINEERING. b. Lakewood, Ohio, June 30, 1921. s. Harold Ballou and Lorraine Robison G. Edn.: B.S., Ohio St. Univ., 1943; M.B.A., Univ. of Calif., 1948. m. Bernice Stewart, Aug. 11, 1951. c.: William Loren; Diana Suzanne; Sheryl Ann. Exp.: Chem. Engr., Rohm & Haas Co., Bristol, Pa., 1943-44; Partner, Silver Plastic Co., El Segundo, Calif., 1952-54; Pres., Margar Co., Hermosa Beach, Calif., 1954—. Hon. Pos.: Pres., Los Angeles Coun. of Engrng. Soc.; Chmn., Sou. Calif. Sect., Am. Inst. of Chem. Engrs. Mem.: Natl. Assn. of Corrosion Engrs.; U. S. Naval Inst. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Corrosion Engrng.; Protective Coatings; Heat Conductive Cements; Fluid Agitation; Filtration.

GARRISON, Geraldine (Ed.D.), Consultant, Speech and Hearing Services, Conn. State Dept. of Edn., Hartford, Conn. SPEECH PATHOLOGY AND AUDIOLOGY, PSYCHOLOGY. b. Springfield, Mo. Edn.: B.A., Okla. Central State Coll., 1925; M.A., Columbia Univ., 1938; Ed.D., ibid., 1953. Exp.: Tchr. of Speech and English, Wood River, Ill., 1925-27; Dir. of Speech Activities, Neodesha, Kansas, Pub. Schls., 1929-41; Acting Dir., Speech Clinic, Univ. of Mo., in Chg. of Speech Therapy in Army Air Force Officer Candidate Schl., 1941-42; Instr., Grad. Schl., Western Reserve Univ. and Clinical Dir. of Univ. Speech and Hearing Clinic, 1942-46; Mem. of Staff, Conn. State Dept. of Edn., Hartford, Conn., 1946—; Staff, Cleveland Guid. Center, 1942-46; Vice-Pres. of New England Speech Assn., 1954-55; Hon. Pos.: Pres. New England Speech Assn., 1955-56; Vice-Chmn., Speech in the Elem. Schl., Speech Assn. of Am., 1955-56; Chmn. Speech in the Elem. Schl., Speech Assn. of Am., 1956-57; Chmn. of State Edn. Dirs. of Speech and Hearing Programs, 1957-58; Consulting Ed., The Speech Tchr.; Fellow, Natl. Chmn. of Rsch. Study, Am. Speech and Hearing Assn. Mem.: Conn. Speech and Hearing Assn.; A.A.A.S.; Delta Kappa Gamma; New England Lip Reading Tchrs. Assn.; Natl. Audubon Soc.; Hartford Audubon Soc.; Amer. Speech and Hearing Assn.; Speech Assn. of Am.; Am. Hearing Soc.; Speech Assn. of Eastern States; Am. Acad. of Polit. and Soc. Sci.; Adv. Comm. of Conn. Child Study and Treatment Home, 1950—; Comm. for Preparation of Pub. Schl. Speech and Hearing Therapists, Am. Speech and Hearing Assn., 1955-58; Bus. and Prof. W.; Pi Lambda Theta; Shakespeare Club; Acad. of Polit Sci.; Assoc. Editor: Trends, 1961-62. Contbr. to: Am. Schl. Bd. Jour.; Quart. Jour. of Speech; Hearing News; Elem. Schl. Prin.; etc. Ed.D. Dissertation: A State Program for Speech and Hearing Services. Hobbies: Antique bottles; Early Amer. Glass; Birds. Areas of Rsch.: Speech Pathol. and Audiol.

GARWIN, Richard L., President's Sci. Advisory Comm., Washington, D. C.



GARY, Norman Erwin (Ph.D.), Asst. Prof., Dept. of Entomol. and Parasitol., Univ. of Calif., Davis, Calif. ENTOMOLOGY AND BIOCHEMISTRY. b. Ocala, Fla., Nov. 1, 1933. s. J. Morris and Myrtle (Murphy) G. Edn.: B.S., Univ. of Fla., 1955; Ph.D., Cornell Univ., 1959. m. Joyce Thompson, Feb. 2, 1954. c.: Stephen Douglas; Donna Lynne. Exp.: Rsch. Asst., Univ. of Wis., Madison, Wis., 1959; Rsch. Assoc., Cornell Univ., Itaca, N. Y., 1959-62; Asst. Prof. of Apiculture, Univ. of Calif., Davis, Calif., 1962—. Hon. Pos.: Chmn., Sec. Cb Apiculture, Entomological Soc. of Am., 1961-62. Mem.: Entomological Soc. of Am.; A.A.A.S.; Assn. for the Study of Animal Behaviour; Bee Research Assn.; Internatl. Union for the Study of Soc. Insects; Sigma Xi; Alpha Zeta. Contbr. to: Science; Jour. of Econ. Entomology; Annals of The Entomological Soc. of Am.; Bee World; The Avicultural Magazine. Areas of Rsch.: Bio-active secretions, physiology, and behavior of honey bees and other social insects.

GATES, Allen Hazen, Jr., (Ph.D.), Rsch. Assoc., Dept. of Obst. and Gynec., Stanford Univ. Schl. of Med., Palo Alto, Calif. Home Add.: 770 Coleman Ave., Apartment L, Menlo Park, Calif. PHYSIOLOGY AND GENETICS OF REPRODUCTION. b. Rockville, Conn., Nov. 7, 1929. s. Rev. Allen H. and Isabel (Eddy) G. Edn.: B.S., La. State Univ., 1951; Ph.D., Univ. of Edinburgh, 1959. Exp.: Rsch. Fellow, Roscoe B. Jackson Mem. Lab., Bar Harbor, Me., 1957-59; Assoc. Staff Scientist, ibid., 1959-60; Rsch. Assoc., Stanford Univ. Schl. of Med., Palo Alto, Calif., 1960—. Hon. Pos.: Vice Pres. and Charter Mem., Bd. of Dirs., Northern Calif. Branch of Animal Care Panel. Mem.: A.A.A.S.; Am. Soc. Zool.;

Genetics Soc. Am.; Animal Care Panel. Contbr. to: Anat. Record; Jour. Hered.; Nature; Jour. Endocrin.; Fertil. and Steril.; Am. Zoologist. Areas of Rsch.: Differentiation between maternal and genetic influences on embryonic development; Genetic influences on maturation of the female reproductive system in the mouse; Superovulation of the immature mouse.

GASCHE, Fred (Mr.), Pres. and Gen. Mgr., Autoclave Engrs., Inc., 2930 West 22 St., Erie, Pa. Home Add.: 4225 Sassafras St., Erie, Pa. HIGH PRESSURE DESIGN. b. Langenselbold, W. Germany, June 22, 1903. s. Heinrich and Elizabeth (Dauth) G. Edn.: M.E., Friedberg Polytechnikum, Germany, 1925. m. Martha Stern, Nov. 20, 1928. c.: Marilyn Gasche. Exp.: Design Engr., Pittsburgh Steel, Monessen, Pa., 1928-29; Design Engr., Blaw Knox, Blaw Knox, Pa., 1929-37; Chf. Engr. and Mgr., Struthers Wells Marine and Process Div., Titusville, Pa., 1937-45; Pres. and Genl. Mgr., Autoclave Engrs., Inc., Erie, Pa., 1945—. Hon. Pos.: Bd. of Corporators of Hamot Hospital, Erie, Pa. Mem.: Pa. Soc. of Professional Engrs.; A.S.M.E.; A.S.M.; I.S.A.; Pa. Soc.; Rotary; Univ. Club of Erie. Serv. Rec.: U.S.N., W. W. II. Gen. Int.: Certificate of Commendation from U. S. Navy for Outstanding service during W. W. II. Areas of Rsch.: High Pressure Design.

GATES, Howard Perry, Jr. (Mr.), Vice Pres., Teledyne, Inc., 1625 E. 126th St., Hawthorne, Calif. Home Add.: 727 Brooktree Rd., Pacific Palisades, Calif. ELECTRONICS ENGINEERING. b. Los Angeles, Calif., Aug. 10, 1917. s. Howard P. and Nina (Williams) G. Edn.: B.S., Univ. of Calif., 1939. m. Patricia Bonnell, June 18, 1945. c.: Ann; Carol; Douglas; Teresa; Guilbert. Exp.: Group Head, Bur. of Ships, Navy Dept., Wash., D. C., 1940-45; Sect. Head, U. S. Navy Electronics Lab., San Diego, Calif., 1945-50; Sect. Head, Hughes Aircraft Co., Culver City, Calif., 1950-54; Vice Pres., West Coast Electronics, Culver City, Calif., 1954-58; Program Mgr., Litton Industries, Beverly Hills, Calif., 1954-60; Cons. Engr., Synthesis, Los Angeles, Calif., 1960-61; Vice Pres., Teledyne, Inc., Los Angeles, Calif., 1961—. Hon. Pos.: Natl. Rsch. Coun. Delegate, IXth Gen. Assembly, U.R.S.I.; Consultant, Office of Naval Rsch., Marine Corps Air Defense Study Group; Consultant, Air Rsch. and Development Command, Human Factors Study Group. Mem.: I.R.E.; A.G.U.; Aerospace Electrical Soc. Areas of Rsch.: Large-Scale Data-Processing System Design and Development; High-Speed Data Communication System Design and Development; Operations Analysis and Design, Integrated Air-defense and Command-control Systems; Rsch. Ionospheric Propagation; Development, Ionospheric Communication and Electronic Navigation Systems.

GATES, Marvin (Mr.), Pres., Construction Estimating, Inc., So. Windsor, Conn. Home Add.: 32 Dover Rd., Newington, Conn. CONSTRUCTION ENGINEERING; ESTIMATING PROCEDURE, COST CONTROL, ECONOMICS OF CONSTRUCTION. b. Bronx, N. Y., Oct. 29, 1929. s. Sam. and Pauline (Struver) G. Edn.: C.E., Cooper Union, Evening Schl. of Engrng., 1954; I.E., Syracuse Univ., 1952; LL.B., Blackstone Schl. of Law, 1963; U. S. Army Leaders Schl., 1951. m. Norma Friedlander, June 24, 1956. c.: Julia. Exp.: Field Engr., Long Island R. R., N. Y. C., 1947-50; Res. Engr., N. Y. Cent. R.R., 1951-53; Chf. Inspect., D. B. Steinman, N. Y. C., 1953-56; Proj. Engr., Goodkind and O'Dea, Bloomfield, N. J., 1956-57; Instr., Essex Co. Voc. Schl., N. J., 1956-57; Chf. Engr., Macari Bros. Constrn. Co., 1957-61, Pres., Construction Estimating, Inc., 1961—. Hon. Pos.: Comm. on Safe Sight Distances at Highway-Railway Grade Crossings, Am. Railway Engr. Assn. Mem.: Fellow, Am. Assn. Adv. of Sci.; Am. Soc. of Civil Engrs.; Am. Railway Engrng. Assn.; Soc. of Am. Milit. Engrs.; Conn. Soc. Civil Engrs.; Assoc. Mem., Natl. Acad. of Scis. Author: Aspects of Competitive Bidding, 1959; A Statistical Correlation and Economic Analysis of a Bidding Trend, 1960. Contbr. to: Proc. Am. Soc. Civil Engrs.; Proc. Am. Railway Engrng. Assn.; Proc. Conn. Soc. of Civil Engrs.; Civil Engrng.; Engrng. News-Record; Milit. Engr. Serv. Rec.: Instr., Cartography, U. S. Army Schls., 1950-51. Gen. Int.: Rec'd. "Open Award" for best paper, Conn. Soc. of Civil Engrs., 1959; Awarded "James Laurie Prize" by Am. Soc. of Civil Engrs., 1962. Areas of Rsch.: Competitive Bidding Practice, Construction Contracts and Specifications, Piled Foundations, Construction Mensuration and Costing.

GATZY, John Thomas (Ed.D.), Prof., Head, Sci. Dept., Edinboro State Coll., Edinboro, Pa. Home Add.: 208 Meadville St., Edinboro, Pa. BIOLOGY. b. Sharon, Pa., Oct. 25, 1903. s. John T., Sr. and Elizabeth (Tack) G. Edn.: B.S., Waynesburg Coll., 1927; M.S., Univ. of Pittsburgh, 1930; Ed.D., Rutgers Univ., 1946. m. Mildred Bartels, 1932. c.: John T., Jr. Exp.: Tchr., H. S., Connellsville, Pa., 1927-31; Tchr., H. S., Cranford, N. J., 1931-46; Prof., Edinboro State Coll., 1946—. Mem.: Phi Sigma; Tri-Beta; Phi Delta Kappa; Kappa Delta Pi; P.S.E.A.; N.E.A.; Rotary. Contbr. to: Audio-Visual Guide. Areas of Rsch.: Ecology and Entomol.

GAUGHRAN, George Richard Lawrence (Ph.D.), Assoc. Prof., Ohio State Univ., Columbus, Ohio. Home Add.: 588 S. Tinchcomb, Columbus, Ohio. GROSS HUMAN ANATOMY. b. Allentown, Pa., Oct. 19, 1919. s. Eugene and Sarah (Roth) G. Edn.: B.A., Lehigh Univ., 1942; M.S., Univ. of Mich., 1947; Ph.D., ibid., 1952. m. Talvina Matus, Mar. 6, 1943. c.: Timothy. Exp.: Rsch. Assoc., Mass. Inst. of Tech., Cambridge, Mass., 1942-43; Instr. to Asst. Prof., Univ. of Mich., Ann Arbor, Mich., 1951-61; Assoc. Prof., Ohio State Univ., 1961—. Mem.: Phi Kappa Phi; Sigma Xi; Phi Sigma; Alpha Epsilon Delta; Am. Assn. of Anatomists. Contbr. to: Anat. Rec.; Anns. of Otol., Rhn. and Laryngol. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: Fasciae and Fascial Compartments of Head and Neck.

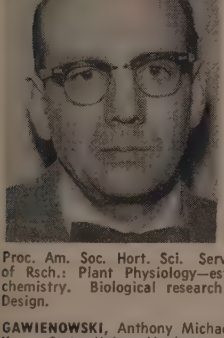
GAUL, Richard Joseph (Ph.D.), Professor and Director, Department. of Chem., John Carroll Univ., Cleveland 18, Ohio. Home Add.: 23380 Comstock Rd., Bedford Heights, Ohio. ORGANIC CHEMISTRY. b. Pittsfield, Mass., Oct. 3, 1929. s. Joseph Michael; Pearl Margaret (Bourdon) G. Edn.: B.S., Spring Hill Coll., Ala., 1949; Ph.D., Mass. Inst. Tech., 1954. Exp.: Tchng. Fellow, Mass. Inst. Tech., 1949-52; Rsch. Fellow, ibid., 1952-54; Rsch. Chemist, Am. Cynamid Co., Stamford Rsch. Labs., Stamford, Conn., 1954-59; Assoc. Prof., Acting Dir., Dept. of Chem., John Carroll Univ., 1959-62; Prof. and Dir., ibid., 1962—. Hon. Pos.: Hon. Mem., Mobile, Ala. Acad. of Sci., 1949. Mem.: Am. Chem. Soc.; Sigma Xi; Ohio Acad. of Sci.; Albertus Magnus Guild; Alpha Sigma Nu; Trustee, Bedford Heights Home Owners Assn., Inc. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Org. Chem. Areas of Rsch.: The Chemistry of Acrylonitrile; Rocket fuels Rsch.; Chemistry of Antibiotics and Natural Products; Chemistry of 2-thiazoline-2-thiols and related sulfur heterocycles; Sulfur containing heterocycles.

GAUNT, Stanley Newkirk (Ph.D.), Prof., Dairy and Animal Sci., Univ. of Mass., Amherst, Mass. Home Add.: 23 N. Maple St., R.F.D. #2, Hadley 20, Mass. ANIMAL SCIENCE—POPULATION GENETICS IN ANIMALS. b. Elmer, N. J., June 30, 1915. s. Oscar and Elizabeth (Newkirk) G. Edn.: B.S., Rutgers Univ., 1938; Ph.D., N. C. State Coll., 1955. m. Elsie Saville, 1939. c.: Roger Newkirk; David Hamilton. Exp.: Admin. Asst., Agr. Adjust. Admin., Hunterdon Co., N. J., 1938-39; Assoc. Co. Agent, Comm. Agr. Extension Serv., Litchfield Co., 1939-45; Prof., Univ. of Mass., Amherst, Mass., 1945—. Hon. Pos.: Chmn., Over All Comm. of Am. Dairy Sci. Assn. on Milk Components. Mem.: Am. Dairy Sci. Assn.; Am. Soc. of Animal Production; Biometric Soc.; Sigma Xi; Alpha Zeta; Epsilon Sigma Phi; Dairy Shrine Club. Contbrng. Author: Dairy Handbook and Dictionary, 1958. Periodical Editor: Massachusetts Dairy Digest. Contbr. to: Jour. Dairy Sci.; Mass. Repr. to Am. Guernsey Cattle Club. Areas of Rsch.: Dairy Sire Evaluation-Development of Measures minimizing environmental influences and maximizing gentic. Making several studies of the Genetic and Environmental Factors Affecting Milk Composition, Especially Protein—goal to switch the dairy industry from a butterfat base to protein in breeding cattle and selling milk.

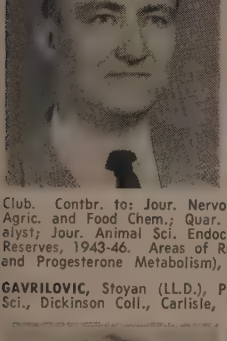
GAUNT, Robert (Ph.D.), Dir., Biological Rsch, CIBA Pharmaceutical Co., Summit, N. J. Home Add.: 9 Hilltop Terrace, Chatham, N. J. ENDOCRINOLOGY; PHARMACEUTICAL BIOLOGY. b. Macon, Mo., Apr. 13, 1907. s. R. Earl and Mary Elizabeth (Summers)

C. Edn.: B.A., Univ. of Tulsa, 1929; M.A., Princeton Univ., 1930; Ph.D., ibid., 1932. m. Josephine Howland, July, 1933. c.: Robert H. Exp.: Prof. of Biol., Coll. of Charleston, S. C., 1932-35; Asst. Prof., N. Y. Univ., New York City, N. Y., 1935-42; Assoc. Prof. Biol., ibid., 1942-45; Prof. of Zool. and Chmn. of Dept., Syracuse Univ., N. Y., 1945-51; Dir. of Endocrine Rsch., CIBA Pharmaceutical Co., Summit, N. J., 1951-57; Dir. of Biol. Rsch., ibid., 1957—. Hon. Pos.: Council, The Endocrine Soc.; Editorial Bds. of Endocrinology, Am. Jour. of Physiol.; Jour. of Applied Physiol.; Bd. of Trustee, Biol. Abstracts; Mem. Endocrinol. Panel, Cancer Chemotherapy Natl. Serv. Center. Mem.: Endocrine Soc.; Am. Physiol. Soc.; Am. Assn. of Anatomists; Am. Soc. of Zool.; Soc. for Expti. Biol. and Med.; A.A.A.S.; N. Y. Aacd. of Sci.; Sigma Xi. Areas of Rsch.: Physiology of adrenal cortex; endocrine control of electrolyte and water metabolism; endocrine pharmacology.

GAUSMAN, Harold Wesley, (Ph.D.), Prof., 402 Deering Hall, Univ. of Maine, Orono, Me. Home Add.: 52 Penobscot St., Orono, Me. PLANT PHYSIOLOGY IN AGRONOMY. b. Morris, Minn., Dec. 23, 1921. s. Emil H. (dec.) and Katie Emma (Heick) G. (dec.). Edn.: B.S., Univ. of Me., 1949; M.S., Univ. of Ill., 1950; Ph.D., ibid., 1952. m. Laura Ellen Davis, Feb., 1945. c.: Donald Harris. Exp.: Assoc. Agronomist, Texas A. & M. Coll., College Station, Tex., 1952-54; Asst. Rsch. Specialist, Rutgers Univ., New Brunswick, N. J., 1954-55; Prof., Univ. of Me., Orono, Me., 1955—. Mem.: A.A.A.S.; Am. Soc. of Plant Physiol.; Am. Soc. of Agronomy; Am. Potato Assn.; Alpha Zeta; Gamma Sigma Delta; Sigma Xi; Phi Kappa Phi; Phi Sigma. Contbr. to: Agron. Jour.; Pot. Jour.; Bot. Gaz.; Plant Physiol.; Sci.; Proc. Am. Soc. Hort. Sci. Serv. Rec.: A.U.S., 1942-44-45. Areas of Rsch.: Plant Physiology—esterfication of phosphorus and soil chemistry. Biological research with radioisotopes. Experimental Design.



GAWIENOWSKI, Anthony Michael (Ph.D.), Asst. Prof. of Biochem., Kans. State Univ., Manhattan, Kans. Home Add.: 1724 Winne Dr., Manhattan, Kans. BIOCHEMISTRY. b. Newark N. J., Oct. 30, 1924. s. Witold and Tekla (Mieczkiewicz) G. Edn.: B.S., Villanova Coll., 1948; M.S., Univ. of Mo., 1953; Ph.D., ibid., 1956. m. Clotilda Brewington, July 30, 1955. c.: John; Anthony; Margaret. Exp.: Control Chemist, Merck and Co., Rahway, N. J., 1948-49; Profl. Service Representative, Schering Pharmaceutical Corp., Bloomfield, N. J., 1949-52; Rsch. Scientist IV, Biochem. Inst., Univ. of Tex., 1956-57; Asst. Prof., of Chem., Kansas State Univ., 1957—. Mem.: Sigma Xi; A.A.A.S.; Am. Chem. Soc., Am. Assn. of Univ. Profs.; Phi Lambda Upsilon; Gamma Sigma Delta; Gamma Alpha; Kansas Acad. of Sci.; K-State Flying Club. Contbr. to: Jour. Nervous and Mental Diseases; Jour. of Agric. and Food Chem.; Quar. Jour. on Studies of Alcohol; Analyst; Jour. Animal Sci. Endocrinol. Serv. Record: U. S. Naval Reserves, 1943-46. Areas of Rsch.: Hormone Chemistry (Estrogen and Progesterone Metabolism), Copper Metabolism.



GAVRILOVIC, Stoyan (LL.D.), Prof. of Internatl. Law and Polit. Sci., Dickinson Coll., Carlisle, Pa. Home Add.: 179 W. Louther St., Carlisle, Pa. GOVERNMENTAL SCIENTIST IN THE FIELD OF DIPLOMACY AND INTERNATIONAL RELATIONS. b. Belgrade, Yugoslavia, Aug. 22, 1896. s. Bodgan and Ruzica (Markovic) G. Edn.: LL.B., Belgrade Univ., 1923; LL.D., Geneva Univ., 1932. m. Vera Prendic, June 22, 1924. c.: Ivan. Exp.: Diplomat and Delegate at Intergovernmental Meetings and Conferences for Govt. of Yugoslavia, 1923-47; Lectr., Dept. of Hist., Temple Univ., 1948-53; Consult., U. N. Secretariat, N. Y., 1953-55; Visiting Prof. and Prof. of Internatl. Law and Polit. Sci., Dickinson Coll., 1957—; Consult., U. S. Army War Coll., Carlisle Barracks, Pa., 1960—; Lectr., U. S. Army Civil Affairs Trng. Schl., Pittsburgh Univ., 1943-44. Hon. Pos.: Mem., Bd. of Dirs., Br. Inst., Belgrade, 1939-41; Mem., Bd. of Dirs., Anglo-Am. Yugoslav Club, Belgrade, 1925-41; Del. Cl. and Assm., League of Nations, 1939; Hon. Mem., Atheneum Club, London; Delegate Com. of Jurists, Rev. of Statute of Permanent Court of Internatl. Justice, Washington, 1945; Del. U. N. Conf. on Internatl. Organization, San Francisco, 1945; Del. U. N. Preparatory Comm., London, 1945; Del. U. N. Gen. Assembly, London, 1946; Del. U. N. Exec. Comm., London, 1945; Chmn., Com. in Chg. of U. N. Location, U. S. A., 1946; Mem., U. N. Hdqrs. Com., N. Y., 1946-47. Mem.: Am. Assn. Adv. Sci.; Am. Soc. Internatl. Law; Indian Soc. Internatl. Law; Pa. Acad. of Sci.; Pi Gamma Mu; Omicron Delta Kappa. Contbr. to: Indice Historico Espanol; Historical Abstracts: Bibliography of the World's Periodical Lit.; Annual Digest of Pub. Internatl. Law Cases; Jour. Mod. Hist.; Internatl. Rev. of Administrative Scis.; H.A.H.R.; Proc. Pa. Acad. of Sci.; Inter-Am. Rev. of Bibliography. Serv. Rec.: War Office, London, Eng., 1916-19. Areas of Rsch.: Internatl Law; Contemporary Environment; Historical Precedents; Processing and Coordination.

GAW, Esther Allen (Ph.D.), Emer. Dean of Women, Prof. of Psychol., The Ohio State Univ. Home Add.: 1517 Virginia Way, Arcata, Calif. PSYCHOLOGY-COUNSELING. b. Hudson, Ohio, 1879. d. Clarence Emir and Corinne Marie (Tuckerman) Allen. Edn.: B.A., Western Res. Univ., Cleveland, Ohio, 1900; Cert., Stern Cons., Berlin, Germany, 1906; Ph.D., St. Univ. of Ia., 1919. m. Henry Clinton Gaw, 1910. c.: Emir Allen. Exp.: Tchr., H.S., 1900-10; Tchr., Westminster Coll., Salt Lake City, Utah, 1910-15; Instr., Violin and Psychol., St. Univ. of Iowa, 1919; Prof., S. C., San Francisco, Calif., 1920-22; Assoc. Dan, Mills Coll., Calif., 1922-27; Dean of Women and Prof. of Psychol., Ohio St. Univ., 1927-44; Emer. Dean of Women, Prof. of Psychol., Ohio State Univ., 1944—; Visiting Prof., Universidad de Chile, 1938; Visiting Prof., Univ. de Costa Rica, 1941; Testing Students and Tchr. Consult. in El Instituto Colon, Guadalajara, Mex., part-time yearly since 1955; Seminar for Tchrs., Inst. Colon, Guadalajara, Mex., 1955—. Mem.: Phi Beta Kappa; Sigma Xi; Pi Lambda Theta; A.A.A.S.; Amer. Psychol. Assn.; A.A.U.W.; Natl. Assn. of Deans of Women; Internatl. Coun. of Women Psychologists; Altrusa Club; P.E.O.; D.A.R.; Bus. and Professional Women. Contbr. to: Schl. and Soc.; Jour. of Higher Edn.; Jour. of A.A.U.W.; Psychol. Monographs; Jour. of Edn'l. Rsch.; Mills Quart.; The Personnel Jour.; The Psychol. Clinic; Edn'l. Rsch. Bull.; Bull. of the Assn. Amer. Colls.; Bull., Pan Amer. Union; Women's Panhellenic Assn.; Internatl. Altrusan; Revista de Psicogogia General y Aplicada, Madrid y Espana. Ph.D. Dissertation: Musical Talent of Music Students. Travel: Germany; Holland; England; So. Amer.; Mex.; Cent. Amer. Listed in: Who's Who; Who's Who in Amer. Edn. Areas of Rsch.: Audition (Psychology); Guidance and Counseling (Psychology).

GAYER, H. Kenneth (Ph.D.), Deputy Dir., Applied Sci. Div., Mass. Inst. of Tech., Cambridge, Mass. Home Add.: 10 Nashoba Rd., Sudbury, Mass. OPERATIONS RESEARCH—RESEARCH MANAGEMENT. b. Trinidad, Colo., Sept. 14, 1913. s. Daniel and Elsie (Kessler) G. Edn.: B.A., Oberlin Coll., 1936; Ph.D., Wash. Univ., 1941. m. Dorothy Zimmerman, 1937. c.: Alan; Gordon; Janet; David; Peter. Exp.: Dir., Rsch. and Devl., Federal Civil Defense Admin., Wash., D. C., 1950-54; Sr. Analyst, Hq., U. S. Air Force, Wash., D. C., 1954-58; Chf. of Operations Analysis, U. S. Air Forces, Europe, Wiesbaden, Germany, 1958-61; Deputy Dir., Applied Sci. Div., Mass. Inst. of Tech., Cambridge, Mass., 1961—. Mem.: Sigma Xi; Phi Sigma; A.A.A.S.; Operations Rsch. Soc. of Am.; Wash. Philos. Soc. Contbr. to: Jour. of Exptl. Zool. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Effects of Nuclear weapons, Analysis of Air Warfare, Operations Research.

GAYNOR, Joseph Ph.D.), Proj. Mgr., Information Materials Systems, Gen. Electric, 1 River Rd., Schenectady, N. Y. Home Add.: 1537 Barclay Pl., Schenectady, N. Y. CHEMICAL ENGINEERING, POLYMER CHEMISTRY, SOLID STATE CHEMISTRY. b. N. Y. C., Nov. 15, 1925. s. Morris and Rebecca (Schnapper) G. Edn.: B.Ch.E., Brooklyn Polytechnic Inst., 1950; M.S.Ch.E., Case Inst. of Technol., 1952; Ph.D., ibid., 1955. m. Elaine Bauer, Aug. 19, 1951. c.: Barbara Lynne; Martin Scott; Paul David; Andrew Douglas. Exp.: Rsch. Asst., Case Inst. of Technol., 1953-55; Proj. Engr., Gen. Elect., Schenectady, N. Y., 1955-58; Chem. Process Engr., ibid., 1958-61; Proj. Mgr., ibid., 1961—. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; A.I.Ch.E.; A.A.A.S.; Alpha Chi Sigma; Tau Beta Pi; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Chem. and Eng. Data; Chem.

Eng. Prog. Modern Plastics; Jour. Plastics Technol.; S.P.E. Jour.; Trans. A.S. Mech. Engrs.; Talanta; Product Finishing; A.S.M.E. Preprint. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Adhesion, Boundary Lubrication, Fluidization, Mechanisms of Coating and Film Formation, Diffusion of Solvents in Polymers, Use of Known or Inferred Physical and/or Chemical Phenomena to Sense, Record and Store Information Available as Localized Energy Pulses.

GEBHARD, Louis August (Mr.), Supt., Radio Division, U. S. Naval Rsch. Lab., Wash. 25, D. C. Home Add.: 2142 Br. Ave., S. E., Wash. 20, D. C. RADIO RESEARCH. b. Buffalo, N. Y., June 11, 1896. s. August and Caroline (Deuter) G. Edn.: LL.B., Georgetown Univ., 1924; B.S., George Wash. Univ., 1930. m. Marguerite Strauss, Aug. 6, 1931. c.: Katharine Gebhard. Exp.: Radio Rsch. at U. S. Naval Stations, Great Lakes, Ill. and Belmar, N. J., 1917-19; Radio Rsch., U. S. Naval Aircraft, Radio Lab., Wash., D. C., 1919-23; Radio Rsch., U. S. Naval Rsch. Lab., 1923-32; Supt. Radio Engineering Div., ibid., 1932-34; Supt., Aircraft Div., ibid., 1934-35; Asst. Supt., Radio Div., ibid., 1935-45; Supt., Radio Div., ibid., 1945—. Mem.: Inst. Radio Engineers; Am. Physical Soc.; A.A.-A.S.; Scientific Rsch. Soc.; Armed Forces Communication and Electronics Assn. Gen. Int.: Received the Presidential Certificate of Merit for Achievements in Radar, 1946. Areas of Rsch.: Radio Communication, Radar, Radio Navigation, Radio Countermeasures; Radio Tech. Satellite (Radio), The Determination and Control of Standard Time and Frequency.

GEDDES, Leslie Alexander (Ph.D.), Assoc. Prof. Physiology, Dir. Lab. of Biophysics, Baylor Med. College, Houston, Texas. Home Add.: 200 M. D. Anderson Blvd., Houston, Tex. PHYSIOLOGY AND ENGINEERING. b. Port Gordon, Scotland, May 24, 1921. s. Alexander and Helen (Humphrey) G. (dec.). Edn.: B.Eng., McGill Univ., 1945; M.Eng., ibid., 1953; Ph.D., Baylor Med. Coll., 1958. m. Irene Phyllis Bloomer (Div.), m. 2nd LaNelle Evelyn Nerger, 1962. c. James Alexander. Exp.: Demonstrator in Elect. Engrng. Demonstration Dept. Neurol. and Neurosurg., McGill, 1945-47; Rsch. Assoc., Dept. Neurol. and Neurosurg., ibid., 1945-52. Partner and Co-owner in firm "Electrodesign"; Consulting Engr., Prov. Quebec, Canada, 1947-52; Consulting Engr., Tex. 1952—; Biophysicist, Dept. of Physiol., Baylor and Southwestern Poliomyelitis Resp. Center, Div. Lab. Biophysics, Baylor Med., 1952—; Asst. Prof. Physiology, Univ., of Texas Dental Coll., 1956—; Assoc. Prof., Physiology, Baylor Univ., 1960—. Hon. Pos.: 1960 F.I.E.R. Scholar in Bioastronautics; Consultant, U. S. Air Force, Wright Air Development Division and School of Aerospace Medicine, 1959-60, 61, 62; Editor, "Slide Rule," Official publication of Houston Eng. and Scientific Soc.; First Chmn., Inst. of Radio Engrs., Prof. Group on Audio; Chmn., Prof. Group Biomedical Electronics, 1960-61. Mem.: Corp. Prof. Engineers (Quebec); Tex. Soc. Prof. Engineers; Natl. Soc. Prof. Engrs.; Soc. of Military Engrs.; Aerospace Medical Assn.; Houston Eng. and Scientific Soc.; Council on Medical Television; Assn. of Amer. Med. Colleges; Tex. Medical Cntr. Rsch. Soc. Contbr. to: E.E.G. Clin. Neurophysiol.; Jour. Applied Physiol.; Jour. Med. Edn.; Bull. Jour. I.R.E.; Trans. on Biomed. Electronics; Aerospace Med. Jour. Serv. Rec.: Can. Army Instr., Officer 1940-45.

GEDDES, Wilburt Hale (Mr.), Head, Airborne Sect., U. S. Navy Hydrographic Office, Wash., D. C. Home Add.: Rt. 1, Box 713, Accokeek, Md. GEOPHYSICS. b. Okla., Jan. 10, 1926. s. William H. and Jewel A. (Coker) G. Edn.: B.S., N. C. State Coll., 1949. m. Margery L. Erwin, 1946. c.: Timothy; Norman; Janet; Gary; Glenn. Exp.: Cartographer, U. S. Geological Survey, Wash., D. C., 1949-52; Geophysicist, U S. Navy Hydrographic Office, Wash., D. C., 1952—. Mem.: A.G.U.; Scientific Rsch. Soc. of Am. Serv. Rec.: U. S. Navy, 1943-46. Areas. of Rsch.: Geomagnetism.

GEERTSMA, Jan (Mr.), Sr. Rsch. Engr., Shell Development Co., Houston, Tex. Home Add.: 6805 Rowan Lane, Houston 36, Tex. APPLIED MECHANICS OF SEDIMENTARY ROCKS. b. Leiden, Netherlands, July 11, 1922. s. Anne and Louise Maria (Kohler) G. Edn.: Final in Aeronautics, Polytechnic Schl. of Haarlem, 1943; Final in Mech. Engrng., Delft Tech. Univ., 1951. m. Hermina Femina Kylstra, Sept., 1951. c.: Taco Sypko Anne; Wietske; Folkert Jan; Eelco. Exp.: Rsch. Specialist, Gusto, Mining Dept., Schiedam, Holland, 1951-53; Rsch. Specialist, Kon./Shell Lab., Oil Prod. Dept., Amsterdam, Holland, 1953-61; Sr. Rsch Engr., Shell Development Co., Houston, Tex., 1961—. Mem.: Am. Inst. of Mining; Metallurgical and Petroleum Engrng.; Am. Geophysical Union; Soc. of Exploration Geophysicists; Fellow British Interplanetary Soc.; Royal Dutch Inst. of Engrs. Contbr. to: Jour. of Petroleum Tech.; Soc. of Petroleum Engrs. Jour.; Geophysics; Jour. of Mechanics and Phys. of Solids; De Ingenieur (Dutch); Chemisch Weekblad (Dutch). Areas of Rsch.: Rock and Soil Mechanics, Fluid Flow, Mechanics and Thermodynamics of Porous Materials.

GEERDES, James D. (Ph.D.), Supervisor, E. I. du Pont de Nemours and Co., Tech. Sect., Seaford, Delaware. Home Add.: 112 Spruce Road, Nanticoke Acres, Seaford, Delaware. BIO-ORGANIC CHEMISTRY. b. Davenport, N. Dak., Apr. 13, 1924. s. William A. and Martha (Buchholz) G. Edn.: B.S., North Dak. Agric., Coll., 1949; M.S., ibid., 1950; Ph.D., Univ. of Minn., 1953. m. Irene Przybyl, Feb., 1947. c.: Andrew Byron. Exp.: Instr., Univ. of Minn., 1950-53; Rsch. Chem., E. I. duPont de Nemours, 1954-58, Richmond, Va.; Supvr. Tech. Sect., ibid., Seaford, Del., 1958—. Mem.: A.C.S.; Del. Acad. of Sci.; Nant. Rocket Soc.; A.A.A.S.; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Gamma Alpha; Kiwanis Internatl. Contbr. to: Jour. Am. Chem. Soc.; Cereal Chem.; Anal. Chem. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Synthetic and Biological Polymer Chemistry, Carbohydrate Chemistry; Biochemistry, Organic Chemistry, Adhesives, Textile Fiber Chemistry and Development.

GEIERMANN, Margaret M., Sister Mary John, R.S.M., Chief Pharmacist, Mercy Hospital, 2221 Madison Ave., Toledo 2, Ohio. PHARMACY AND BACTERIOLOGY. b. Clifford, Mich. d. Peter and Mary Ann (Crilley). G. Edn.: R.N., Grad. St. Vincent's Hosp. Schl. of Nursing, Toledo, Ohio, 1911; Grad. Toledo Univ. Schl. of Pharmacy, 1924; B.S., Tchrs. Coll., 1932. Grad. in Anesthesiology, Western Reserve, 1937. Hon. Deg.: D.S., Univ. of Toledo, 1960. Exp.: Nurse, U. S. Army, France and Germany, 1917-19; Joined Sisters of Mercy of Toledo, 1919; Nurse, X-ray Tech. and pharmacist, Mercy Hospitals, 1919-40; Chief Pharmacist and Supvr. of Central Supply, ibid., 1940—. Mem.: Women's Overseas Service League (Hon.); Pharmacist Guild of St. James, (Hon.); A.A.A.S., (Fellow); Am. Coll. of Apothecaries (Fellow); Am. Pharmaceutical Assn.; Am. Soc. of Hosp. Pharmacists; Federation Internationale Pharmaceutique. Author: The Importance of Alcohol 70 Per cent by Weight; Parachlormetaxylenol; Should the Sterile Central Supply be Under the Supervision of the Pharmacy; Facteurs Dans la Selection des Bactericides en Usage dans les Hospitaux; Toledo Academy of Medicine Formulary and Therapeutic Guide; Control of Staphlococcic Infections a Challenge to the Pharmacist; Wound Healing May be Aided by the Use of Fewer Gauze Dressings; Maintaing Sterility of Gauze Dressings by Proper Packaging. Contbr. to: Am. Jour. of Hosp. Pharm.; Am. Coll. of Apothecaries Bull.; Jour. of the Am. Pharmaceutical Assn.; Jour Mondial de Pharmacie; Federation Internationale Pharmaceutique. Gen. Int.: Citation from the Catholic Hosp. Assn., 1956 for Distinguished Service in Advanced Programs of Hosp. Pharm.; Recipient of the H. A. K. Whitney Award Lecture in N. Y., 1957. Areas of Rsch.: Testing Disinfectants Under Actual Conditions of Use.

GEISLER, Philip Howard, (M.D.), Rsch. Assoc., Cardeza Foundation and Instr. in Pathol., Jefferson Med. Coll., Philadelphia, Pa. Home Add.: 153 Erdenheim Rd., Philadelphia 18, Pa. PATHOLOGY. b. Philadelphia, Pa., June 15, 1925. s. Howard D. and Eleanor (Wirt) G. Edn.: B.A., Lehigh Univ., 1950; M.D., Jefferson Med. Coll., 1955. Exp.: Resident in Path., Natl. Inst. of Health, Bethesda, Md., 1956-60; Asst. to the Dir. Clin. Pathol., Dept., ibid., 1960-61; Rsch. Assoc., Cardeza Found., Jefferson Med. Coll., Phila., Pa., 1961—. Hon. Pos.: Diplomate, Clin. Pathol., Am. Bd. of Pathol. Mem.: Coll. of Am. Pathols.; Assn. of Clin. Scientists; A.A.A.S.; Theta Delta Chi; Theta Kappa Psi; Alpha Epsilon Delta. Contbr. to: Annals of Internal Med.; Stain Technology; Anesthesiology; A.M.A. Archives of Ophthalmology; Clin. Physiol. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Clinical Pathology, Hematology, Blood Coagulation.

GEIST, Harold (Ph.D.), Clin. Psycholst., 2614 Telegraph Ave., Berkeley, Calif. Home Add.: 2255 Hearst Ave., Berkeley, Calif. PSYCHOLOGY. b. Pittsburgh, Pa., July 22, 1916. s. Alexander and Edna (Liebhaber) G. Edn.: A.B., Cornell Univ., 1936; A.M., Columbia Univ., 1937; Ph.D., Stanford Univ., 1951. Exp.: Psycholst., Community Center, Paterson, N. J., 1945-46; Assoc. Advisement and Guidance Officer, V.A., Washington, D. C., 1946-47; Psycholst. in Charge of Amputees, Mare Island Naval Hosp., Mare Island, Calif., 1947-48; Chief Clin. Psycholst., U. S. Naval Hosp., ibid., 1951-53; Lectr., Univ. of Calif., Extension and East Contra Costa Jr. Coll., 1951—; Clin. Psychol., Private Practice, 1951—; Consult., Solano Co. Schls., 1953-54; Panel Mem., Bur. Voc. Rehab., Calif. St. Dept. of Edn.; Consult., Pittsburg, (California), Schooi District, 1956—; Visiting Prof., Univ. of Puerto Rico, 1955, '56; Consult., Psychological Test Construction, Dept. of Public Instrn., Commonwealth of Puerto Rico, 1959—; Prin. Investigator, Office of Bocl. Rehab., U. S. Dept. of Health, Edn. and Welfare, Rsch. Grant for Constrn. of Pictorial Interest Test for the Deaf, 1959—. Hon. Pos.: Chmn., Northern Calif. Br. of Natl. Vocl. Guid. Assn. Ethical Practice Com. Mem.: Amer. Assn. for the Advancement of Science; Amer. Psychological Assn.; Amer. Personnel and Guid. Assn.; Natl. Vocl. Guid. Assn.; Natl. Rehabilitation Assn.; Phi Sigma Delta. Contbr. to: Understand the Child; Edncl. and Psychol. Measurements; Jour. of Clin. Psychol.; Jour. Clin. and Expmtl. Psychopathology. Ph.D. Dissertation: A Comparison of Personality Test Scores and Medical Psychiatric Diagnoses by the Inverted Factor Technique. War Record: U. S. Army Med. Service Corps, 1942-46. Travel: France; Philippines; Japan; Caribbean. Hobby: Tennis. Listed in: Amer. Men of Sci. (The Soc. and Behavorial Scis.). Areas of Rsch.: Cause of Idiopathic Epilepsy; Nature and Development of Children's Vocational Interests.

GEIST, Jacob M. (Ph.D.), Assoc. Dir. R. & D.—Air Products, Inc., Allentown, Pa. Home Add.: 1201 N. 35th St., Allentown, Pa. CHEMICAL ENGINEERING. b. Bridgeport, Conn., Feb. 2, 1921. s. David and Ann (Steinschreiber) G. Edn.: B.S., Purdue Univ., 1940; M.S., Pa. State, 1942; Ph.D., Univ. Mich., 1950. m. Adelaide Gluck, Feb. 23, 1945. c.: Eric D.; Ellen A.; David C. Exp.: Instr., M.I.T., 1950-51; Asst. Prof., ibid., 1951-52; Sr. Lectr., Chem. Engrng., Israel Inst. Tech., 1952-55; Process Mgr., Air Products, Inc., 1955-58; Tech. Asst. to Dir., R. & D., ibid., 1958-59; Assoc. Dir., R. & D., ibid., 1959—; Lectr., Chem. Engrng., Lehigh Univ., Bethlehem, Pa., 1959—. Mem.: A.I.Ch.E.; A.C.S.; A.A.A.S. Contbr. to: Proc. Cryogenics Engrng. Conf.; Ind. Engrng. Chem.; Analytical Chem.; Trans. A.S.M.E. Serv. Rec.: U. S. Army, 1944-45. Areas of Rsch.: Cryogenics; Thermodynamics; Heat Transfer; Process Design.

GELBART, Abe (Ph.D.), Dean, Belfer Grad. Schl. Sci., Yeshiva Univ., Amsterdam Ave. and 186th St., N. Y. 33, N. Y. Home Add.: 120 Voorhees St., West Englewood, N. J. MATHEMATICAL ANALYSIS AND APPLIED MATHEMATICS. b. N. J., Dec. 22, 1913. s. Wolt and Pauline (Landau) G. Edn.: B.S., Dalhousie Univ., 1938; Ph.D., Mass. Inst. of Technol., 1940. m. Sara Goodman, July 2, 1939. c.: Carol Marie; Judith Sylvia; William Mitchael; Stephen Samuel. Exp.: Rsch. Assoc., Brown Univ., 1941-42; Asst. Prof., Syracuse Univ., 1943-47; Assoc. Prof., ibid., 1947-56; Mem., Inst. for Advanced Study, Princeton, N. J., 1947-48; Fulbright Lectr., Norway, 1951-52; Prof. of Math., Syracuse Univ., 1956-58; Dean, Grad. Schl. of Sci., Yeshiva Univ., 1958. Hon. Pos.: Editor, Scripta Mathematica. Mem.: A.M.S.; M.A.A.; Sigma Xi. Contbr. to: Quart. of Appl. Math.; Am. Jour. of Math. Areas of Rsch.: Mathematical Analysis and Appl. Math.

GELEERD, Elisabeth Rozetta (M.D.), Psychiatrist, Psychoanalyst, Child Analyst, 1148 Fifth Ave., New York 28, N. Y. Home Add.: 1148 Fifth Ave., New York 28, N. Y. PSYCHIATRY, PSYCHOANALYSIS. b. Rotterdam, Netherlands, Mar. 20, 1909. d. Moses Geleerd and Bertha (Haas) G. Edn.: M.D., Univ. of Leyden, 1936; Univ. of Vienna, 1936-38; Psychoanalytic Inst., Vienna, 1936-38; Psychoanalytic Inst., London, 1938-40. m. Rudolph M. Loewenstein, July 13, 1946. c.: Richard Joseph. Exp.: Staff Mem., The Menninger Clinic, Topeka, Kans., 1940-45 Dir. of Psychotherapy, The Southard Schl., ibid., 1943-44; Instr., The Psychoanalytic Inst., ibid., 1943-44; Training Analyst, N. Y. Psychoanalytic Inst., 1947—. Mem.: Fellow, Am. Orthopsychiatric Assn.; Fellow, Am. Psychiatric Assn.; Am. Med. Assn.; Am. Psychoanalytic Assn.; N. Y. Psychoanalytic Soc.; Acad. of Child Psychiatry; Am. Acad. of Sci.; A.A.A.S. Contbr. to: Psychoanalytic Study of the Child; Psychoanalytic Quart.; Am. Jour. of Orthopsychiatry; Jour. of Am. Psychoanalytic Assn.; Bull. of Menninger Clinic. Areas of Asch.: Psychoanalysis; Specialized Knowledge: Child and Adolescent Psychology.

GELLENBECK, Sister Mary Mercy, R.S.M., Asst. Prof., Mercy Coll., 8200 West Outer Dr., Detroit 19, Mich. MICROBIOLOGY. b. Nashville, Tenn., Jan. 13, 1934. d. Francis Richard and Helen (Pinet) G. Edn.: B.A., Mercy Coll., 1956; M.S., Catholic Univ. of Am., 1958; Ph.D., ibid., 1961. Exp.: Tchr., Mercy Coll., Detroit, Mich., summer sessions, 1958; Tchr., Mt. Mercy Acad. Grand Rapids, Mich., 1958-59; Asst. Prof., Mercy Coll., Detroit, Mich., 1961—. Mem.: A.A.A.S.; Delta Epsilon Sigma; Am. Soc. Microbiol.; Sigma Xi; Albertus Magnus Guild; Natl. Assn. Biol. Tchrs. Contbr. to: Jour. of Bacteriol. Gen. Int.: Received Pius XI Edward A. Pace Scholarship, 1959; National Sci. Foundation Cooperative Grad. Fellowship. Areas of Rsch.: Microbial Physiology-Staphylococcus aureus.

GELL-MANN, Murray (Dr.), Calif. Inst. of Technol., Pasadena, Calif.

GELORMINI, Otto (Ph.D.), Internist, 1019 James St., Syracuse, N. Y. Home Add.: 2109 James St., Syracuse, N. Y. INTERNAL MEDICINE. b. Italy, Dec. 16, 1894. s. Gennaro and Rosaria (Ciasulli) G. Edn.: B.S., Syracuse Univ., 1916; M.S., ibid., 1922; Ph.D., ibid., 1926; M.D., Upstate Med. Ctr., 1934. m. Angelina Cardinale, June 24, 1925. c.: Otto James. Exp.: Instr., Syracuse Univ., 1919-22; Asst. Prof., ibid., 1922-34; Instr. in Med., Med. Schl., ibid., 1939-53. Hon. Pos.: Sr. Consultant, Hon. Attending Physician, Univ. Hosp. Mem.: Phi Beta Kappa; Sigma Xi; N. Y. Acad. of Scis.; A.A.A.S., Fellow; Am. Soc. of Internal Med.; Am. Coll. Physicians, Fellow; Am. Geriatric Soc., Fellow; Alpha Chi Sigma. Contbr. to: Jour. of A.C.S. Areas of Rsch.: Organic and Physical Chem.; Med. Biochem.

GEMANT, Andrew (Ph.D., M.D.), Rsch. Assoc., The Grace Hosp., Detroit, Mich. Home Add.: 4501 W. Outer Dr., Detroit 35, Mich. PHYSICAL CHEMISTRY. b. Nagyvarad, Hungary, July 27, 1895. Edn.: M.D., Univ. of Budapest, 1919; Ph.D., Univ. of Berlin, 1922. m. Sophie I. Staap, 1933. Exp.: Physicist, Siemens-Schuckert Cable Co., Berlin, 1925-31; Privatdocent, Tech. Univ. Berlin, 1928-33; Rsch. Assoc., Oxford Univ., 1934-37; Rsch. Assoc., Univ. of Wis., 1938-39; Staff Physicist, The Detroit Edison Co., 1940-60; Rsch. Assoc., The Grace Hospital, Detroit, 1961—. Mem.: Fellow, Am. Physical Soc.; Fellow, A.A.A.S.; Natl. Rsch. Coun. Conf. on Electrical Insulation; Electrochem. Soc.; German Physical Soc.; Sigma Xi. Author: Colloid Physics, 1925; Electrophysics of Insulating Materials, 1930; Liquid Dielectrics, 1933 (Reprint, 1960); Frictional Phenomena, 1950; The Nature of the Genius, 1961; Ions in Hydrocarbons, 1962. Contbr. to: ZS. Physik. Chemie; ZS. Techn. Physik; Philosoph. Mag.; Trans. Farad. Soc.; Applied Sci. Rsch.; Jour. Applied Physics; Jour. Physical Chem.; Jour. Chem. Physics; Physical Rev.; Jour. Scientific Instruments; Jour. Electrochem. Soc.; Trans. A.I.E.E. Gen. Int.: Promotion of the Field of Electrical Insulation and Electrochem. of Hydrocarbons. Areas of Rsch.: Physical Chemistry; Colloid Chemistry; Dielectrics; High-Voltage Physics; High-Voltage Cables; Electrochemistry; Radioactive Tracers; Ions in Hydrocarbons; Biochemistry of Cholesterol.

GENERALES, Constantine Demosthenes John (M.D., Ph.D.), Asst. Prof. of Space Medicine, Formerly Coordinator of Space Med. Program, New York Medical College, New York 29, N. Y. Office Add.: 115 Central Park West, New York 23, N. Y. Home Add.: 390 West End Ave., New York 24, N. Y. SPACE MEDICINE, INTERNAL MEDICINE: CHEST DISEASES: CONSULTANT IN SPACE MEDICINE AFFAIRS. b. Athens, Greece, Nov. 10, 1908. s. Dr. Demosthenes J. and Urania (Tselepis) G. Edn.: Harvard Coll., 1925-28; Universities of Athens, 1929; Heidelberg, 1930; Zurich, 1931; Paris, 1932; Berlin, M.D., 1936 and Ph.D., 1937. m. Johanna Schellekens, 1938. Exp.: Instr. in Med., N. Y. Med. Coll., N. Y., 1940—; Asst. Prof., Space Med. and and Coordinator of Space Med. Program and Consultant in Space Medicine Affairs, Advanced Military Systems, David Sarnoff Rsch. Center, Radio Corp. of Am., Princeton, N. J., 1962—. Hon. Pos.: Founded the Sec. on Space Med., N. Y. Med. Soc.; Founded the Comm. on Space at the Explorers Club, N. Y.; Chmn., Sect. on Space Med., N. Y. State Med. Soc.; Hon. Life Mem., Hellenic Astronautical Soc.; Mem., British Interplanetary Soc., Fellow; German Genetic Soc.; Am. Coll. of Chest Physicians, Assoc. Fellow; Inst. of Radio Engineers; Am. Geriatrics Soc., Fellow; Soc. of Biol. Rythm; Inst. of Aerospace Scis., Sr. Mem. Author: Erbkrankheit und Fertilitaet, 1937, Germany; Neue Biometrische Untersuchungen von Spermien und Fertlitaet, 1938, Germany. Contbr. to: N. Y. State Med. Soc. Jour.; Procs. of Bahamas Conf. on Space Travel and Biology; M.D. Magazine; Scope Mag.; Medical Tribune. Serv. Rec.: U.S.A.A.F., W.W. II. Gen. Int.: Recipient of Hellenic Astronautical Soc. Award for

Pioneer Space Medicine Research in Collaboration with Dr. Wernher Von Braun. Areas of Rsch.: Space Medicine which is the art and science of the care of life in health and illness beyond the Earth.

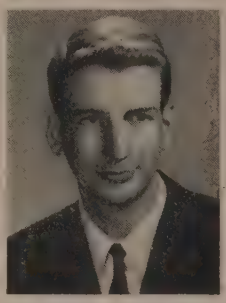
GENEVESE, Frank (Ph.D.), Deputy Tech. Dir., Defense and Space Grp. Hdqtrs., Westinghouse Electric Corp., 1000 Connecticut Ave., Washington, D. C. Home Add.: 9606 Hillridge Dr., Kensington, Md. NUCLEAR PHYSICS, ATOMIC WEAPONS PHENOMENOLOGY, SYSTEMS EVALUATION. b. N. Y. C., Nov. 15, 1911. s. Frank and Marie C. (Cambria) G. Edn.: B.A., Cornell Univ., 1935; M.A., ibid., 1936; Ph.D., Univ. of Mich., 1949. m. Louise C. Cassidy, June 21, 1941. c.: Carole Leigh; Laurene Marie; Stephen Francis; Gabrielle Marie; Douglas Warren. Exp.: Rsch. Physicist, Corning Glass, Corning, N. Y., 1936-40; Dir., New Developments Sec., U. S. Army Field Artillery Schl., Ft. Sill, Okla., 1942-46; Chf., Rsch. Sect., Directorate of Intelligence, Hqtrs., U. S. Air Force, Wash., D. C., 1950-56; Rsch. Physicist; Inst. for Defense Analysis, Pentagon, Wash., D. C., 1956-57; Asst. Dir., Propulsion of Fluids Rsch. Div., Armour Rsch. Fdtn., Chicago, Ill., 1957-60; Deputy Dir., Advanced Planning Group, Defense and Space Grp. Hqtrs., Westinghouse Elec. Corp., Wash., D. C., 1960—. Mem.: Am. Physical Soc.; Am. Assn. for Adv of Sci.; Sigma Xi; Am. Rocket Soc.; Natl. Rocket Club; Assn. of the U. S. Army; Philosophical Soc. of Wash. Editor: Proceedings Third Symposium on Hypervelocity Impact, Vol. I and Vol. II, 1959. Contbr. to: Physical Review. Serv. Rec.: Lt. Col., USAR; U. S. Army, 1942-46. Gen. Int.: U. S. Army Commendation Award, 1946; Rackham Research Fellow, Univ. of Mich., 1947, 1948; U. S. Air Force, Exceptional Civilian Serv. Award, 1957. Areas of Rsch.: Experimental Nuclear Physics, Atomic Weapons Phenomena and Effects, Operations Rsch., Long-Range Technical Planning, Systems Synthesis and Evaluation.

GENUA, Albert John (Ph.D.), Prof., Phys. Sci., Westfield St. Coll., Westfield, Mass. Home Add.: 14 Pine Tree Lane, Avon, Conn. NATURAL SCIENCES. b. Waterbury, Conn., Nov. 13, 1910. Edn.: B.S., Catholic Univ. of Am., 1934; M.A., Columbia Univ., 1943; Ph.D., Fordham Univ., 1952. m. Edith Milanese, 1933. c.: Albert, Jr.; Anne. Exp.: Head of Sci. Dept., New Canaan H. S., New Canaan, Conn., 1943-45; Hd. Sci. Dept., Woodrow Wilson H. S., Middletown, Conn., 1940-43; Prof. of Physics, Seton Hall Univ., 1945-50; Prof. of Phys. Sci., Westfield St. Coll., 1952—. Mem.: A.A.U.P.; Am. Chem. Soc.; Am. Inst. of Physics. Author: Anatomy and Physiology for Nurses, 1940; How to Score High in Scholastic Aptitude Tests, 1962. Gen. Int.: Founder of The Hartford Institute of Criminology and The Hartford Tutoring School; Science television programs: "Its A Fact" presented in 1954; "This Is Chemistry" in 1955. Areas of Rsch.: Forensic Chemistry; The use of the laboratory in criminology; and experimentation in elementary science.

GEORGIA, Carlita L. (Ph.D.), Asst. Prof. of Biol., State Univ. of N. Y., College at Oswego, N. Y. Home Add.: R.D. #3, Oswego, N. Y. BIOLOGY: NATURAL HISTORY. b. Staten Island, N. Y., Dec. 9, 1926. d. Karl O. and Carla E. (Hoffmeyer) Nesslinger. Edn.: B.A., Woman's Coll., Univ. of N. C., 1948; M.A., Mount Holyoke Coll., 1950; Ph.D., Cornell Univ., 1955. m. Frederick R. Georgia, June, 1956. c.: Deborah E.; Frederica E. Exp.: Tchng. Asst., Mount Holyoke Coll., South Hadley, Mass., 1948-50; Rsch. Assoc., Cornell Univ., Ithaca, N. Y., 1952-53; Instr., Grinnell Coll., Grinnell, Ia., 1956; Asst. Prof., N. Y. State Univ. Coll., Oswego, N. Y., 1962—. Mem.: A.A.A.S.; A.I.B.S.; A.A.-U.W.; Am. Nature Study Soc.; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi; Sigma Delta Epsilon; Staten Island Inst. Arts and Sci.; Carolina Bird Club. Contbrng. Author: The Avian Embryo, 1961. Contbr. to: Jour. Mammalogy; Jour. Parasitology; Proc. Staten Island Inst. Arts and Scis. Areas of Rsch.: Vertebrate and Invertebrate Zoology, Natural History.

GENYS, John B. (Ph.D.), Rsch. Asst. Prof., Natural Resources Inst., St. Office Bldg., Univ. of Md., Annapolis, Md. Home Add.: Rt. 4, Box 75, Annpls., Md. FOREST GENETICS; FOREST SOILS. b. Lithuania, Aug. 12, 1923. s. Bruno and Amelia (Polujanskas) G. Edn.: Diploma-Forester, Georgiae Augustae Univ. of Gottingen, Germany, 1949; Ph.D., Mich. St. Univ., 1960. Exp.: Rsch. Aid, Lake States Forest Expt. Sta., Rhinelander, Wis., 1955-57; Grad. Asst., Mich. St. Univ., 1957-60; Instr., Univ. of Wis., 1960-61; Rsch. Asst. Prof., Nat. Resources Inst., Univ. of Md., Annapolis, Md., 1961—. Mem.: Soc. of Am. Foresters; Xi Sigma Pi; A.A.-A.S. Areas of Rsch.: Forest Genetics; Forest Soils.

GERHOLD, Henry D. (Ph.D.), Asst. Prof., Forestry Bldg., Pa. State Univ., University Park, Pa. Home Add.: 816 S. Sparks St., State College, Pa. FOREST GENETICS. b. Mahwah, N. J., Feb. 1, 1931. s. Heinrich and Louise (Fischer) G. Edn.: B.S., Pa St Univ., 1952; M.F., ibid., 1954; Ph.D., Yale Univ., 1959. m. Marilyn Quigley, Mar. 10, 1956. c.: Maureen Lynn; David Lee. Exp.: Soil Conservation Aid, Soil Conservation Serv., Hackensack, N. J., 1949; Laborer, Forester, Rsch. Forester, U. S. Forest Serv., Troy, Mont., Boise, Ida., Upper Darby, Pa., 1951-55; Instr., Asst. Prof., Pa. State Univ., 1956—. Hon. Pos.: Chmn., St. Expt. Sta., Reg. Rsch. Project. Mem.: Sigma Xi; Soc. of Am. Foresters; Xi Sigma Pi; Phi Epsilon Phi. Contbr. to: Der Zuchter; Silvae Genetica; Forest Sci.; Northeastern Forest Tree Improvement Conf. Proc. Areas of Rsch.: Forest Genetics; Insect Resistance of Trees; Christmas Tree Improvement.



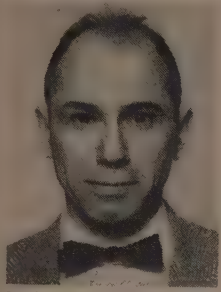
GERJUOY, Edward (Ph.D.), Dir., Plasma and Space Applied Physics, R.C.A. Labs., Princeton, N. J. Home Add.: 16 Balsam Lane, Princeton, N. J. PLASMA AND SPACE APPLIED PHYSICS. b. Brooklyn, N. Y., May 19, 1918. s. Abraham and Clara (Hirshkowitz) G. Edn.: B.S., N. Y. City Coll., 1937; M.A., Univ. of Calif., 1940; Ph.D., ibid., 1942. m. Clark Jacqueline Reid, Aug., 1940. c.: Neil; David Leif. Exp.: Rsch. Staff Mem., Columbia Div. of War Rsch., N. Y., Wash., D. C., 1942-46; Asst. and Assoc. Prof., Univ. of Sou. Calif., 1946-51; Assoc. Prof. and Prof., Univ. of Pittsburgh, 1952-58; Tech. Staff, Gen. Atomic Div. of Gen. Dynamics, San Diego, Calif., 1958-60; Tech. Staff, E. H. Plesset Assn., San Diego, Calif., 1960-61; Dir., Plasma and Space Applied Physics, R.C.A. Labs., 1961—. Mem.: Am. Inst. of Physics; Am. Phys. Soc.; Physical Soc. Div. of Plasma Physics; A.G.U.; Phi Beta Kappa; Sigma Xi. Contbr. to: Physical Rev.; Rev. of Modern Physics; Am. Jour. of Physics; Encyc. of Sci. and Technol.; Physical Soc. of London.

GERMAN, John Paul (Ph.D.), Prof. of Elec. Engrng. and Rsch. Engr., Tex. Engrng. Expt. Sta., A. & M. College of Tex., College Station, Tex. Home Add.: 608 Mary Lake Dr., Bryan, Tex. ELECTRICAL ENGINEERING (ELECTROMAGNETIC FIELDS). b. Livingston, Tex., June 10, 1917. s. Sam Houston and Mattie Elizabeth (Peters) G. Edn.: B.S., E.E., Univ. of Tex., 1940; M.S., E.E ibid., 1949; Ph.D., ibid., 1955. m. Mary Frances Keith, Aug. 2, 1941. c.: Margaret Keith G. Exp.: Rsch. Engr., Elec. Engr. Rsch. Lab., Univ. of Tex., 1946-55; Assoc. Prof., Elec. Engr., Purdue Univ., 1955-58; Prof., Elec. Engrng., A. & M. Coll. of Tex., 1958—. Mem.: Inst. of Radio Engrs., Sr. Mem.; Am. Soc. for Engrng. Edn.; Registered Prof. Engr. of Tex.; Eta Kappa Nu; Sigma Pi Sigma; Sigma Xi; Phi Kappa Phi. Contbr. to: IRE Trans. on Antennas and Propagataion; Elec. Engrng.; Electronica Engrng.; Nerem Record. Serv. Rec.: U. S. Army, Signal Corps, 1942-46. Gen. Int.: Faculty Distinguished Achievement Award Winner, 1961, A. & M. Coll. of Tex. Areas of Rsch.: Antennas, Propagation.

GERJUOY, Herbert George (Ph.D.), Rsch. Psychol., Ednl. Testing Serv., Princeton, N. J. Home Add.: 16 Fisher Ave., Princeton, N. J. PSYCHOLOGY. b. Brooklyn, N. Y., Apr. 22, 1929. s. Abraham and Clara (Hirschkowitz) G. Edn.: A.B., Univ. of Southern Calif., 1949; M.A., State Univ. of Iowa, 1952; Ph.D., ibid., 1953. m. Irma Rossman, 1953. c.: Judith Hope and Amy Beth. Exp.: Rsch. Asst., State Univ. of Iowa, 1951-53; Rsch. Assoc., ibid., 1953-54; Instr., Ind. Univ., 1954-57; Consult., Humrro, 1957-60; Rsch. Assoc., Ind. Univ., 1955-56; Clinical Psycholst., Carter Mem. Hosp., 1956-57; Consult., Central State Hosp., Indianapolis, Ind., 1956-57; Assoc. Prof., Univ. of Toledo, 1957-62; Staff Psychologist, Toledo State Hosp., 1958-60; Chmn, Dept. Psy., Univ. of Toledo, 1959-61; Rsch. Psychol., Ednl. Testing Serv., Princeton, N. J., 1962—. Hon. Pos.: Vice-Pres. and

Program Chmn., Northwest Ohio Psychological Assn., 1959; Pres., Northwest Ohio Psychological Assn., 1960. Mem.: Am. Psychological Assn.; A.A.A.S.; Sigma Xi; Am. Inst. of Physics; Am. Stat. Assn.; Am. Assn. Univ. Profs.; Psi Chi; Internatl. Soc. for Gen. Semantics; Soc. for Gen. Systems Rsch.; Human Factors Soc.; Pan-Am. Psychol. Assn.; Sigma Xi; Psychometr. Soc.; Ecological Soc. of Am.; Am. Soc. of Zoologists; Am. Assn. for Rehabilitation Therapy. Co-author: Generalization Effects in Successive Discrimination Learning as Measured by Response Similarity, 1955; An Approach to Milieu Therapy with Chronic Schizoephrenics, 1960. Editor: Proc. of 1st Natl. Rehab. Workshop, 1962. Contbr. to: Psychological Record; Am. Arch. Rehab. Therapy; Soc. Sci.; Jour. of Psychol.; Am. Jour. of Psy.; Jour. Consulting Psy.; Proc. of Ind. Acad. of Sci.; Jour. Health Human Behavior; Jour. General Psychol.; Jour. Clinical Psychol. Areas of Rsch.: Research Methodology; Statistics; Theory of Measurement; Experimental Clinical Methodology; Philosophy of Science; Group Dynamics Research.

GERSON, Nathaniel Charles (Mr.), Consulting Physicist, Trapelo Rd., S. Lincoln, Mass. PHYSICS OF THE UPPER ATMOSPHERE



b. Boston, Mass., Oct. 15, 1915. s. Benjamin Kolman and Julia (Blumenthal) G. Edn: B.S., Univ. of P.R., 1944; M.S., N. Y. Univ., 1948. m. Sareen Ruth Epstein, Aug. 26, 1945. c.: Donald Franklin; Stanton Laurence; Richard Kelvin; Martha Blythe; Stephanie Lynn. Exp.: Meteorological Observer, U. S. Weather Bureau, Boston, New Haven, San Juan, P.R., 1938-43; Asst. Chf., Technical Investigations Sect., U. S. Weather Bureau, Washington, D. C., 1944-46; Asst. on Propagation, L. F. Loran System, Watson Labs., U.S.A.F., Red Bank, N. J., 1946-48; Chf., Ionospheric Physics Lab., Geophysics Rsch. Directorate, A.F.C.R.C., Cambridge, Mass., 1948-55; Consulting Physicist, A. F., Cambridge Rsch. Center; Natl. Acad. of Scis.; Lincoln Lab.; Arctic Inst. of N. Am.; Advanced Rsch. Projects Agency; Lincoln, Mass., 1956—. Hon. Pos.: Secy., U. S. Natl. Comm. for the Internatl. Geophysical Yr.; Secy., Exec. Comm., ibid.; Vice-Chmn., Arctic Comm., ibid.; Chmn., Advertising Comm., Am. Geophysical Union. Mem.: A.A.A.S.; Am. Meterological Soc.; Arctic Inst. of N. Am.; Canadian Assn. of Physicists; Rsch. Soc. of Am.; Cosmos Club. Contbrng. Author: Advances in Geophysics, Vols. 1, 5, 1952, 1958; Reports on Progress in Physics, London, Vol. 8, 1951; Geophysics and the Internatl. Geophysical Year, 1958. Editor: Radio Wave Absorption in the Ionosphere, 1962. Contbr. to: Reviews of Modern Physics; Canadian Jour. of Physics; Jour. of Atmospheric and Terrestrial Physics; Jour. of Geophysical Rsch.; Annales de Geophysics; Jour. Am. Meteorological Soc.; Proc. of the Physical Soc., London; Tellus, Geophysica pura e applicata. Areas of Rsch.: Ionospheric Physics; Solar-Terrestrial Relationships; The Polar Ionosphere; Radio Wave Propagation.

GERSTEN, John (M.D.), Tchr., Dept. of Anatomy, Ohio St. Univ., Columbus, Ohio. Physician, 350 East Broad St., Columbus, Ohio. Home Add.: 2715 Sherwood Road, Columbus 9, Ohio. ANATOMY AND OTOLARGYNGOLOGY. b. New York, N. Y., June 25, 1904. s. Harris and Rachel (Pronin) G. Edn.: B.A., Univ. of Pa., 1926; M.D., Ohio St. Univ., 1933. m. Selma Brandt, Nov. 24, 1934. c.: Rachel; Davida. Exp.: Physician, Columbus, Ohio, 1955—; Assoc. Prof., Dept. of Anatomy, Ohio St. Univ., Columbus, Ohio, 1959; Asst. Clinical Prof., Dept. of Otolaryngology, 1961—. Hon. Pos.: Vice-Pres., Am. Med. Soc. of Vienna. Mem.: Columbus Acad. of Med.; Ohio St. Med. Assn.; A.M.A.; Columbus Soc. of Ophthalmol. and Otolaryngol.; A.A.A.S.; Ohio Acad. of Sci.; Ohio Med. Hist. Soc.; Sigma Xi; A.A.O.&O.; Life Mem., Am Med. Soc. of Vienna. Contbr. to: Ohio Jour. of Sci. Areas of Rsch.: Human Gross Anatomy; Otolaryngology; Autoradiography.

GERTZ, Boris (Ph.D.), Clinical Psychologist, S. C. St. Hosp., Columbia, S. C. Home Add.: 2320 Pine Belt Rd., Columbia 4, S. C. CLINICAL PSYCHOLOGY.

b. Havana, Cuba, June 14, 1926. s. Morris and Sarah (Shoob) G. Edn.: B.A., N. Y. Univ., 1950; M.A., Univ. of Conn., 1952; Ph.D., Fla. St. Univ., 1956. m. Eileen Deutsch, Aug. 31, 1952. c.: Jeri Rae; Michael Alan. Exp.: Intern, Springfield St. Hosp., Sykesville, Md., 1954-55; Psychologist, S. C. St. Hosp., Columbia, S. C., 1956—; Lectr., Univ. of S. C., 1956—; Soc. Sci. Internship, Natl. Trng. Labs., Bethel, Me., 1962-63. Hon. Pos.: Pres., S. C. Psychol. Assn., 1961-62; Bd. of Examiners for S. C. Psychol. Assn. Mem.: Am. Psychol. Assn.; Fla. Psychol. Assn.; Am. Group Psychotherapy Assn., Inc.; A.A.A.S.; B'nai B'rith. Contbr. to: Jour. of Comparative and Physiological Psychol.; Jour. of Clin. Psychol.; Jour. of Consulting Psychol. Serv. Rec.: A.U.S., 1944-46. Gen. Int.: Managing Dir., Gertz, Nickerson and Jones, Pvt. Firm of Consulting Psychologists. Areas of Rsch.: Clinical Psychology, Psychodiagnostic Testing, Individual and Group Psychotherapy; Personality Theory and Development; Dynamics of Small Groups; Human Relations Training; Therapeutic Ward Development Programs in Hospitals.

GETTNER, Mark Earl (Mr.), Lectr.; Chmn., Biol. Dept., Faculty of Sci., Univ. of Shiraz, Shiraz, Iran. Home Add.: So. Jamesport, L. I., N. Y. MOLECULAR CYTOLOGY; ULTRA STRUCTURE OF BIOLOGICAL TISSUES, BACTERIA VIRUSES, AND CELL COMPONENTS.

b. N. Y., June 5, 1920. s. Julius and Agnes (Simon) G. Edn.: B.S., Long Island Univ., 1952; M.A., Columbia Univ., 1957. m. Seyedeh Motamedi, June 12, 1948. c.: Shirin. Exp.: Rsch. Assoc., Sloan Kettering Inst., N. Y., N. Y., 1949-52; Rsch. Assoc. in Zool., Columbia Univ., 1952-57; Tech. Specialist in Biol., Brookhaven Natl. Lab., Upton, L. I., N. Y., 1957-60; Lectr. and Chmn., Biol. Dept., Lectr. and Acting Chmn. of Sci., Univ. of Shiraz, Shiraz, Iran, 1960-62, on contract; Instr., Pahlevi Univ., Shiraz, Iran, 1962-63. Mem.: A.A.-A.S.; Electron Microscope Soc. of Am.; N. Y. Soc. of Electron Microscopists; Philadelphia Soc. of Electron Microscopists. Author: Physical Techniques in Biological Research, V. III. Contbr. to: Sci., Vol. III, Ch. XIII; Jour. of Applied Physics; Review of Scientific Instruments; Anatomical Rec.; Jour. Biophysical and Biochem. Cytol.; Biochim. Biophys. Acta; Jour. Bact. Gen. Int.: Patent on Ultra Microtome; UNESCO Conf.; Vice-Pres., Precision Edge Lab., Inc., 1957-61. Areas of Rsch.: Electron Microscopy; Ultra Microtomy; Ultra Structure of Cilia; Nuclear Membrane; Bacteria; Cell Membrane; Gamma Radiation Polymerization of Some Polymers at Extreme Low Temperatures; Bacteriophage.

GETZEN, Forrest William (Ph.D.), Assoc. Prof., N. C. St. Coll., Raleigh, N. C. Home Add.: 2802 Gloucester Rd., Raleigh, N. C. PHYSICAL CHEMISTRY.

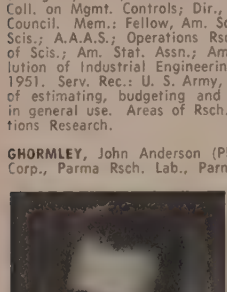
b. Stuart, Fla., Feb. 28, 1928. s. Thompson Hart and Rachael (Clonts) G. Edn.: B.S., Va. Military Inst., 1960; Ph.D., Mass. Inst. of Technol., 1956. m. Evangeline Sferes, Sept. 16, 1956. c.: Thompson Hart, II; Katherine Anna; Peter Lindsay. Exp.: Instr. in Chem., Va. Military Inst., 1950-51; Rsch. Scientist, Humble Oil and Refining Co., 1956-61; Tchg. and Rsch. Assoc. Prof. in Chemistry, N. C. St. Coll., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Am. Soc. for Quality Control; Am. Inst. of Mining, Metallurgical and Petrol. Engrs.; Sigma Xi. Serv. Rec.: U. S. Air Force, 1951-53. Areas of Rsch.: Classical Thermodynamics; Chemical Kinetics; Physical Properties of Gases; The Analysis of Multi-Component Gas Mixtures.

GHAFFARI, Abolghassem (Ph.D.), Prof. of Maths., Teheran Univ. and Aeronautical Rsch. Scientist, U. S. Natl. Bur. of Stand., Wash. 25, D. C. Home Add.: 3801 Connecticut Ave., N.W., Wash. 8, D. C. ORDINARY DIFFERENTIAL EQUATIONS, COMPRESSIBLE FLUID DYNAMICS, PARTIAL DIFFERENTIAL EQUATIONS, CELESTIAL MECHANICS.

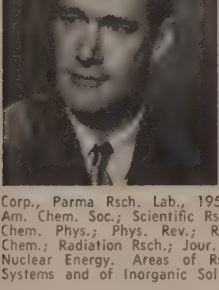
b. Teheran, Iran, June 15, 1909. s. Hossein and Massoumeh Ghaffari. Edn.: L-es-Sc., Univ. of Nancy, France, 1932; Diplomas in Astro. and Phys., ibid., 1933-34; D.Sc., Univ. of Paris, Sorbonne, 1936; Ph.D., London Univ., 1948 Exp.: Assoc. Prof. of Math., Teheran Univ., Teheran, Iran, 1937-42; Prof. of Maths., ibid., 1942—; Rsch Asst. in Math., King's Coll., London Univ., 1947-48; Rsch. Assoc. in Math., Harvard Univ., 1950-51; Mem., Inst. for Advanced Study, Princeton, N. J., 1951-52; Rsch. Assoc. in Math., Princton Univ., 1951-52; Sr. Mathematician, Natl. Bur. of Standards, Wash., D. C., 1956-57; Aeronautical Rsch. Scientist, ibid., 1957—; Professorial Lectr. of Maths. and Statistics, Am. Univ., Wash., D. C., 1958—; Staff Mem., Maths. Rsch. Ctr., U. S. Army, 1958-59. Mem.: Societe Mathematique de France; London Math. Soc.; Am. Math. Soc.; Am. Astronomical Soc.; A.A.A.S.; Math. Assn. of Am.; N. Y. Acad. of Scis.; Wash. Acad. of Scis.; Philosophical Soc. of Wash.; Sigma Xi. Author: Sur l'Equation fonctionnelle de Chapman-kolmogoroff, 1936; Astronomy, 1938; The Use of Astronomy in Geodesy, 1939; The Hodograph Method in Gas Dynamics, 1950. Contbr. to: Quart. Jour. of the Royal Aero. Soc.; Bull., Am. Math. Soc.; Jour. of Rsch., Natl. Bur. of Standards; Bull. des sciences Mathematiques. Serv. Rec.: Reserve Officer of the Iranian Army. Areas of Rsch.: Mathematical Analysis, Fluid Mechanics and Celestial Mechanics.

GHORMLEY, Glen E. (Mr.), Glen E. Ghormley and Assoc., San Gabriel, Calif. Home Add.: 521 Milton Dr., San Gabriel, Calif. MANAGEMENT SCIENCES. b. Humbird, Wis., May 23, 1900. s. Newton Baxter and Rachel Josephine (Baird) G. m. Mildred V. Cornell, 1961. c.: Gene R.; Glenna M. Curtis; Betty Jane G. Foegle; Rachel J. Zion; Grace L. G. Lauderman. Exp.: Civil Engr., Land Evaluation, St. Louis & Santa Fe R.R., 1923-27; Schl. Supt., Monowi, Neb., 1927-32; Rsch. Asst. and Asst. Dir., Engrng. Rsch. Lab., Lockheed Aircraft Corp., 1933-36; Asst. Works Mgr., ibid., 1942-45; Prop. and Mgr., Glen E. Ghormley Assocs., 1945-54; Rsch. Engr., Convair, Pomona, Calif., 1954-55; Mgr., Mgt. Rsch. Dept., Cannon Elec. Co., 1955-61; Glen. E. Ghormley and Assocs., 1961—; Visiting Lectr., Univ. of Sou. Calif., 1954-57; Visiting Lectr., Univ. of Calif., Los Angeles, 1957-59. Hon. Pos.: Dir. Student Chapt., Soc. Adv. of Mgmt.; Pres., TIMS Coll. on Planning; Dir., S.W. Region TIMS Coll. on Mgmt. Controls; Dir., Los Angeles Co. Industry-Education Council. Mem.: Fellow, Am. Soc. Quality Control; Inst. for Mgmt. Scis.; A.A.A.S.; Operations Rsch. Soc. of Am.; Sou. Calif. Acad. of Scis.; Am. Stat. Assn.; Am. Inst. Indusl. Engrs. Author: Solution of Industrial Engineering Problems by Statistical Methods, 1951. Serv. Rec.: U. S. Army, 1919. Gen. Int.: Developed method of estimating, budgeting and scheduling engineering work, now in general use. Areas of Rsch.: Management Planning and Operations Research.

GHORMLEY, John Anderson (Ph.D.), Group Leader, Union Carbide Corp., Parma Rsch. Lab., Parma, Ohio. Home Add.: 26900 Wolf Rd., Bay Village, Ohio. RADIATION CHEMISTRY. b. Sioux City, Ia., Mar. 4, 1917. s. Harry Knox and Edna Martha (Laughlin) G. Edn.: B.S., Univ. of Wash., 1941; M.S., ibid., 1943; Ph.D., Univ. of Tenn., 1952. m. Dorothy Gunn, July 28, 1943. c.: John William; Elizabeth Ann. Exp.: Scientific Deck Hand, on Univ. of Wash's. Rsch. Ship, Catalyst, 1940-42; Tchng. Fellow, Oceanography, Univ. of Wash., 1941; Tchng. Fellow, Chem., ibid., 1941-43; Rsch. Assoc., Metallurgical Lab., Univ. of Chicago, 1943-45; Rsch. Chemist, Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1945-57; Rsch. Chemist, Natl. Carbon Co., 1957-59; Group Ldr. in Nuclear and Radiation Chem., Union Carbide Corp., Parma Rsch. Lab., 1959—. Mem.: Radiation Rsch. Soc.; Am. Chem. Soc.; Scientific Rsch. Soc. of Am. Contbr. to: Jour. Chem. Phys.; Phys. Rev.; Rev. Sci. Instruments; Jour. Phys. Chem.; Radiation Rsch.; Jour. Am. Chem. Soc.; Nucleonics; Jour. Nuclear Energy. Areas of Rsch.: Radiation Chem. of Aqueous Systems and of Inorganic Solids; Nuclear Energy Conversion.



GIBB, Elizabeth Glenadine (Ph.D.), Prof. of Math., St. Coll. of Iowa, Cedar Falls, Ia. Home Add.: 1108 Floral Court, Cedar Falls, Ia. MATHEMATICS EDUCATION. b. Biggsville, Ill., June 8, 1919. d. Clarence P. and Ida May (Glenn) G. Edn.: B.Ed., Western Ill. Univ., 1941; M.A., George Peabody Coll. for Tchrs., 1944; Ph.D., Univ. of Wis., 1953. Exp.: Math. and Sci. Tchr., Mendon Twp. H. S., Mendon, Ill., 1941-45; Math. Tchr., Geneseo Twp. H. S., Geneseo, Ill., 1945-46; Instr. in Math. to Prof. of Math., St. Coll. of Ia., 1946—. Hon. Pos.: Editor, The Arithmetic Teacher, 1960; V.-Pres., Natl. Coun. of Tchrs. of Math.; Assoc. Editor of the Arithmetic Tchr., 1957-60. Mem.: Natl. Coun. of Tchrs. of Math.; Natl. Edn. Assn.; Central Assn. of Sci. and Math. Tchrs.; Am. Edn. Rsch. Assn.; Math. Assn. of Am.; Ia. St. Edn. Assn.; Am. Statistical Assn.; Am. Assn. of Univ. Prof.; Am. Assn. of Univ. Women; Delta Kappa Gamma; Pi Lambda Theta. Author: General Mental Functions Associated with Division, 1957, co-author; Charting the Course, 1960, co-author; National Council of Teachers of Mathematics, contbrng. author, 1958, '60, '61 yearbooks. Contbr. to: Rev. of Edn. Rsch.: Jour. of Expdr. Edn.; The Arith. Tchr.; The Math. Tchr.; The Grade Tchr.; Natl. Edn. Assn. Jour. Areas of Rsch.: Psychology of Learning School Mathematics.



GIBBON, John Heysham, Jr., Samuel D. Gross Prof. of Surgery and Hd. of Dept. of Surgery, The Jefferson Med. Coll. and Hosp., Philadelphia, Pa. Home Add.: Lynfield Farm, Providence Rd., Media, Pa. SURGERY AND SURGICAL RESEARCH. b. Philadelphia, Pa., Sept. 29, 1903. s. John H. and Marjorie (Young) G. Edn.: A.B., Princeton Univ., 1923; M.D., Jefferson Med. Coll., 1927; Sc.D., (Honorary, Univ. of Buffalo, 1959). m. Mary Hopkinson, Mar., 1931. c.: John; Mary; Alice; Marjorie. Exp.: Prof. of Surgery and Dir. of Surgical Rsch., Jefferson Med. Coll., 1946-56; Asst. Prof. of Surgery, Univ. of Pa., 1945-46; Chief, Surgical Serv., Mayo Gen. Hosp., 1945; Surgeon to the Pa. Hosp., 1937-50; Asst. Surgeon, Bryn Mawr Hosp., 1936-46; Harrison Fellow of Surgical Rsch. Univ. of Pa. Schl. of Med., 1936-42; Fellow in Med., ibid., 1931-32; Rsch. Fellow in Surgery, Harvard Med. Schl., 1930-31, 1933-34. Hon. Pos.: Chmn., Editorial Bd., Annals of Surgery, 1947-57; Mem., Bd. of Health, City of Phila., 1952-58. Mem.: F.A.C.S. and Gov., Am. Coll. of Surgeons; F.R.C.S., London; Am. Surgical Assn.; Am. Assn. for Thoracic Surgery; Emeritus Mem., Am. Bd. of Surgery; Soc. of Clinical Surgery; Phila Acad. of Surgery; Bd. of Scientific Counselors; Natl. Heart Inst.; Conference Comm. on Graduate Training in Surgery; Editorial Bd.; Annals of Surgery and Circulation Rsch.; AOA; The Phila. Club; Franklin Inn Club. Contbr. to: Jour. Thorac. Surg.; Surgery; Circulation; ACS Surgical Forum; Surg. Gynec. and Obst.; Anesthesiology; Arch. Surg.; Ann. Surg.; Progress in Cardiovascular Diseases; Surg. Cl. of N.A.; Am. Jour. Surg.; Med. Cl. of N.A.; Med. Record and Annals; J.A.M.A.; Minn. Med.; Pa. Med. Jour.; Internatl. Jour. Surg.; Lab. and Clin. Med.; Arch. Neurol. E. and Psychiat. Serv. Rec.: U.S.A. Gen. Int.: Received John Scott Medal, Bd. of Dir. of City Trusts, Phila., Pa., 1953 (Invention of Heart-Lung Apparatus. Areas of Rsch.: Surgery.

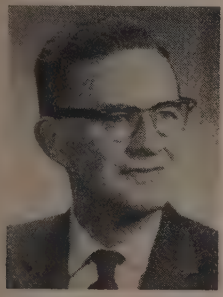
GIBBONS, Louis Charles (Ph.D.), Assoc. Rsch. Dir., The Marathon Oil Co., Box 269, Littleton, Colo. Home Add.: 2715 E. Flora Pl., Denver 10, Colo. CHEMISTRY. b. Lost Springs, Wyo., Aug. 8, 1914. s. Frank E. and Kathleen (Crew) G. Edn.: B.S., Ohio Univ., 1936; M.S., Ohio St. Univ., 1938; Ph.D., ibid., 1940. m. Margaret Shook, 1940. c.: David. Exp.: Rsch. Chem., Natl. Advisory Comm. for Aeronautics, 1941-42; Hd., Fuels Synthesis Sect., ibid., 1942-45; Chief, Fuels Br., ibid., 1945-50; Assoc. Chf., Fuels and Combustion Div., ibid., 1950-55; Hd., Rsch. Chem. Dept., The Ohio Oil Co., 1955-62; Assoc. Rsch. Dir., ibid., 1962—. Hon. Pos.: Chmn., Colo. Sect., Am. Chem. Soc. Mem.: Am. Chem. Soc.; A.A.A.S.; Soc. of Petrol. Engrs. of A.I.M.E.; Am. Assn. of Petrol. Geologists; Am. Petrol. Inst.; Geochemical Soc.; Sigma Xi; City Club of Denver. Contbr. to: Jour. Am. Chem. Soc.; Indusl. and Engrng. Chem. Serv. Rec.: U.S.A.F., Reserve, 1942-45. Areas of Rsch.: Hydrocarbons; Aircraft Fuels; Rsch. Admin.

GIBSON, Everett Douglas (Mr.), Math. Tchr., Webster H. S., Minden, La. Home Add.: P. O. Box 823, Minden, La. MATHEMATICS. b. Heflin, La., Aug. 21, 1930. s. Ulysses and Ethel (Iles) G. Edn.: B.S., Southern Univ., 1951; M.S., Univ. of So. Calif., 1958. m. Trini Stovall, Sept., 1953. c.: Andrea Dawn. Exp.: Math. Tchr., Southside H. S., Ringgold, La., 1953-54; Math. Tchr., Crawford H. S., Arcadia, La., 1954-58; Math. Tchr., Webster H. S., Minden, La. Hon. Pos.: Chmn., North La. Regl. Math. Clin.; Webster Parish Chap. of S.U. Alumni Pres. Mem.: A.A.A.S.; N.C.T.M.; La. Inst. of Sci.; Omega Psi Phi. Contbr. to: La. Edn. Jour.; Trends in Sec. Schl. Math. Serv. Rec.: Capt., U. S. Air Force. Res. Gen. Int.: Read Paper Before La. Inst. of Sci., 1960.

GIBBONS, (Rev.) William J(oseph), Visiting Lectr. in Demography, Fordham Univ., N. Y. 58, N. Y. ECONOMICS; ECONOMIC DEVELOPMENT; POPULATION TRENDS AND PROBLEMS. b. Ardmore, Pa., Oct. 5, 1912. s. Joseph H(ector) and Helen A(ugusta) (Sweet) G. Edn.: A.B., Woodstock Coll., 1936; Ph.L., ibid., 1937; S.T.L., ibid., 1944; B.S. in L.S., Drexel Inst. of Tech., 1938. Exp.: Tchr., English and Latin, Gonzaga H. S., Wash., D. C., 1938-40; Assoc. Editor, Catholic Supplement to Standard Catalog for H. S. Libraries, N. Y., N. Y., 1940-45; Editor, ibid., 1945-48; Assoc. Editor, America (Weekly), 1945-48; Legislative Representative, Natl. Catholic Rural Life Conf., Des Moines, Iowa, 1946-53; Instr. in Econ., Loyola Coll., Baltimore, 1953-56; Asst. Prof., ibid., 1956-57; Dir. of Library, ibid., 1953-57. Participant, World Population Conference, 1954; Observer, ten other [illegible] conferences, 1951—. Mem.: Am. Sociol. Soc.; Popular

tion Assn. of Am.; Am. Econ. Assn.; Am. Statistical Assn.; Internatl. Union for Scientific Study of Population; Internatl. Agric. Economists. Contbr. to: Am.; Commonweal; Am. Ecclesiastical Review; Eugenics Quarterly. Travel: Europe; Latin Am. Hobbies: Hiking; Boating. Listed in: Who Knows and What; Am. Men of Sci.

GIBSON, George (Ph.D.), Act. Chmn., Dept. of Chem., Bklyn Coll., Bklyn. 10, N. Y. Home Add.: 636 Baldwin Ave., Baldwin, L. I., N. Y. INORGANIC CHEMISTRY.

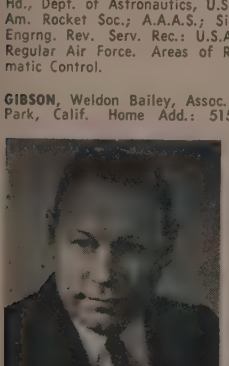


b. Yonkers, N. Y., March 20, 1909. s. John and Louisa (Sutherland) G. Edn.: B.S., Bklyn. Polytechn. Inst., 1932; M.S., ibid., 1935; Ph.D., ibid., 1942. m. Victorine Robinson, Aug. 17, 1940. c.: Janet Andre; David George. Exp.: Chemist, DuPont Nemours and Co., 1935-42; Prof., Ill. Inst. of Techn., Chicago, Ill., 1942-60; Prof., Dept. of Chem., Bklyn. Coll., 1960—. Mem.: Am. Chem. Soc.; Phi Lambda Upsilon; Sigma Xi; Alpha Chi Rho. Contbrng. Author: Inorganic Synthesis, Vol. I, 1939; Inorganic Synthesis, Vol. V, 1957. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Am. Ceramic Soc.; Jour. of Inorg. and Nucl. Chem.; Jour. of Chem. Physics; Analyt. Chem. Areas of Rsch.: Chemistry of Uranium; Reaction of Metal Oxides with Oxides of Nitrogen, Coordination Chemistry.

GIBSON, Ralph Edward (Ph.D.), Dir., Applied Physics Lab., The Johns Hopkins Univ., 8621 Ga. Ave., Silver Spring, Md. Home Add.: 3607 Dunlop St., Chevy Chase 15, Md. PHYSICAL CHEMISTRY; ADMINISTRATION OF RESEARCH IN THE FIELDS OF GUIDED MISSILES AND SATELLITES. b. King's Lynn, Norfolk, England, Mar. 30, 1901. s. John and Jane (Ferry) G. Edn.: B.Sc., Univ. of Edinburgh, 1922; Ph.D., ibid., 1924. m. Elizabeth Derby, Apr. 4, 1927. d. Elmer and Alice D. c.: John Douglas; Ann Katharine Kumm; Ronald Malcolm. Exp.: Mem. of Staff of Geophys. Lab., Carnegie Inst. of Wash., 1924-46; Lectr. in Chem., The Geo. Wash. Univ., 1929-32; Adjunct Prof. of Chem., ibid., 1932-45; Vice-Chmn., Section H., Div. 3, Natl. Defense Rsch. Com., 1941-44; Dir. of Rsch., Allegany Ballistics Lab., 1944-46; 1946—, Mem. of Staff, Applied Physics Lab., Johns Hopkins Univ., 1946-47, Acting Dir., 1948; Dir., 1948—. Hon. Pos.: Chmn., Rocket Propellant Panel, Joint Chf. of Staff. Mem.: A.C.S.; Philos. Soc. of Wash., Pres., 1940; Am. Phys. Soc.; Wash. Acad. of Sci.; Sigma Xi; Cosmos Club. Author: Author of a number of articles in scientific publications. Ph.D. Dissertation: I. Electrolysis of Mixtures of Acetates and Trichloracetates. II. The Mechanisms of Kolbe's Electrosynthesis. War Rec.: Natl. Defense Rsch. Comm. Gen. Int.: Organist and Choir Dir., St. Columbas' Episcopal Church, 1935—; Pres., Cosmos Club; Pres., Washington Acad. of Sci., 1956. Listed in: A.M.S.; Who Knows—and What; W.W.A. Special Int.: Rockets; Guided Missiles; Satellites.

GIBSON, Richard Cushing (D.Sc.), Prof. and Head, Dept. of Astronautics, U.S.A.F. Acad., Colo. Home Add.: QTRS 4162, U.S.A.F. Acad., Colo. INSTRUMENTATION AND GUIDANCE. b. Cambridge, Mass., Dec. 31, 1919. s. Alec Cushing Gibson and Ethel (Howe) Gibson Cary. Edn.: S.B., Mass. Inst. of Tech., 1942; S.M., ibid., 1946; Sc.D., ibid., 1953. m. Olive White, May 29, 1942. c.: Richard C., Jr.; Virginia R.; Anne C. Exp.: Communications and Radar Officer, U.S.A.A.F., 1942-45; Asst. Prof. of Elec. Engrng., Air Force Inst. of Technol., 1947-51; Chf., Guid. Br., Air Force Rsch. and Develop. Command, 1953-56; Deputy Chf. of Staff, Operations, Air Force Missile Develop. Center, 1956-59; Prof. and Hd., Dept. of Astronautics, U.S.A.F. Acad., Colo., 1960—. Mem.: Am. Rocket Soc.; A.A.A.S.; Sigma Xi. Contbr. to: Aeronautical Engrng. Rev. Serv. Rec.: U.S.A.A.F., 1942—; Rank of Colonel in Regular Air Force. Areas of Rsch.: Inertial Guidance and Automatic Control.

GIBSON, Weldon Bailey, Assoc. Dir., Stanford Rsch. Inst., Menlo Park, Calif. Home Add.: 515 Chaucer St., Palo Alto, Calif ECONOMICS—RESEARCH ADMINISTRATION. b. El Dorado, Tex., Apr. 23, 1917. s. Oscar and Susie (Bailey) G. Edn.: Wash. State Coll., 1938; M.S., Stanford Grad. Schl. of Bus., 1940; Ph.D., ibid., 1949. m. Helen Mears, Mar. 1, 1941. c.: Arthur Elliott; David Mears. Exp.: Dir. of Econs. Rsch., Stanford Rsch. Inst., Menlo Park, Calif., 1947-56; Assoc. Dir., ibid., 1956—. Hon. Pos.: Co-Dir., Internatl. Indusl. Dev. Conf., San Francisco, Calif., 1957. Mem.: Am. Econ. Assn.; A.A.A.S.; Alpha Kappa Psi. Author: Industrial Mobilization Planning, 1946; Pacific Skyways, 1947. Assoc. Author: Global Geography, 1944-47; World Political Geography, 1948. Co-Author: World Economic Geography, 1951. War Record: U.S.A.F., W.W. II. Areas of Rsch.: Indusl. Econs.; Internatl. Scientific Rsch.



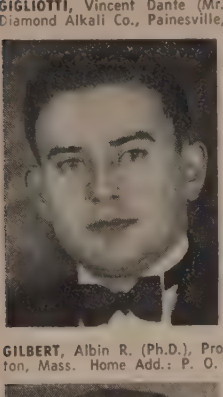
GIBSON, William Wallace (Ph.D.), Asst. Prof. of Biol., S. F. Austin St. Coll., Nacogdoches, Tex. ENTOMOLOGY WITH INTEREST IN TEACHING AND RESEARCH. b. Phila., Pa., Sept. 26, 1928. s. W. Wallace and Edna (Davies) G. Edn.: B.S., Univ. of R. I., 1951; M.S., Kan. St. Univ., 1955; Ph.D., ibid., 1957. m. Ethelind Sigloch, June, 1951. c.: Rebecca Davies; Karl Sigloch; Diana Mundy. Exp.: Temp. Scientific Aide, Rockefeller Found., Mexico City, Mex., 1956-58; Res. Entomologist in N.W. Mexico, Asgrow Seed Co., New Haven, Conn., 1958-61; Asst. Prof., Northeast La. St. Coll., 1962; Asst. Prof. of Biol., S. F. Austin St. Coll., 1962—. Mem.: Entomological Soc. of Am.; Kan. Entomol. Soc.; Kan. Acad. of Sci.; Sociedad Mexicana de Entomologia; Lions Club; Phi Kappa Phi; Phi Sigma; Alpha Zeta; Gamma Sigma Delta; Sigma Xi. Contbr. to: Jour. Kan. Ent. Soc.; Trans. Kan. Acad. Sci.; Bull. of the Secya. de Agric. y ganad., Mex. D.F. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Vectors of Wheat-Streak Mosaic; Vectors of Lettuce Mosaic; Biol. and Taxonomy of Coprophagous Scarab Beetles; Insect Collections.

GIDDENS, Paul Henry (Ph.D.), Pres., Hamline Univ., St. Paul 4, Minn. PETROLEUM HISTORY. b. Bellflower, Mo., Feb. 3, 1903. s. Jackson and Bertha A. (Patterson) G. Edn.: A.B., Simpson Coll., 1924; A.M., Harvard Univ., 1926; Ph.D., St. Univ. of Iowa, 1930; LL.D., Simpson Coll., 1953. m. Marie J. Robins, Mar. 18, 1927. c.: Jackson Alfred; Thomas Robins; Judith Ann. Exp.: Inst. Hist., Univ. Kan., 1926; Instr. in Hist. and Govt., Iowa St. Coll., 1926-28; Fellow Hist., St. Univ. Iowa, 1929; Instr. in Hist., St. Univ. of Iowa, summer, 1929-31; Asst. Prof. of Hist., Ore. St. Coll., 1930-31; Asst. Prof. of Hist. and Political Sci., Allegheny Coll., 1931-37; Assoc. Prof. of Hist. and Political Sci., ibid., 1937-38; Prof. of Hist. and Political Sci. and Hd. of Dept., ibid., 1938-53; Guggenheim Fellow, 1945-46; Pres., Hamline Univ., 1953—. Mem.: Am. Historical Assn.; Miss. Valley Historical Soc.; A.A.U.P.; Alpha Tau Omega; Pi Delta Kappa; Pi Gamma Mu; Phi Alpha Theta. Author: Birth of the Oil Industry, 1938; Beginnings of the Petroleum Industry, 1941; Pa. Petroleum, 1750-1872: A Documentary History; Early Days of Oil, 1948; Standard Oil Co. (Ind.); Oil Pioneer of the Middle West, 1956. Special Int.: History of the Petroleum Industry.

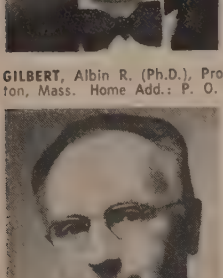
GIESEKING, John Eldon (Ph.D.), Prof. of Soil Chemistry, 293 Davenport Hall, Univ. of Ill., Urbana, Ill. SOIL AGRICULTURE. b. Altamont, Ill., Oct. 1, 1905. s. Henry and Melva Belle (Young) G. Edn.: B.S., Univ. of Ill., 1926; M.S., ibid., 1927; Ph.D., ibid., 1934. m. Flossie Mable Young of Urbana, Ill., Sept. 12, 1936. d. Leonard and Lucy Young. c.: Carl Wilbert. Exp.: Asst. in Agry., Univ. of Ill., 1927-29; Asst. in Agry., ibid., 1930-32; Asst. in Soils, Univ. of Mo., 1932-34; Asst. Prof., Assoc. Prof., and Prof., Univ. of Ill., 1934—. Hon. Pos.: Past Pres. of Champaign-Urbana Toastmaster's Club; (Past) Chmn. of the Soil Chem. Div. of the Soil Sci. Soc. of Am.; Mem. of Natl. Hwy. Rsch. Bd. of the Natl. Acad. of Sci.; Lectrship., Univ. of Neb. Rsch. Council, 1958; Secy., Soil Minerol. Div., Internatl. Soc. of Soil Sci. Mem.: Am. Inst. of Mgt.; Am. Chem. Soc.; A.A.A.S.; Am. Soc. of Agry.; Soil Sci. Soc. of Am.; Alpha Tau Omega; Gamma Alpha; Sigma Xi; Alpha Zeta; Alpha Tau Alpha; Toastmaster's International, Champaign-Urbana Toastmaster's Club; Torch Club. Contbr. to: Soil Science; Encyclopedia Brit. Ph.D. Dissertation: Podsolic Features in Illinois Soils. Travel: Asia; Africa; Canada; Europe. Hobbies: Gardening; Flying; Travel. Listed in: W. W. in the Western Hemisphere; W. W. in Chicago and the State of Illinois; A.M.S. Special Int.: Physical and Colloid Chem. of Soils; Soil Minerology.

GIFFEN, Martin M. (M.D.), Diplomate, Am. Bd. of Psychiatry and Neurol., Chmn., Dept. of Psychiatry, U.S.A.F. Hosp., Lackland A.F.B., Tex. Home Add.: 215 Eastridge Dr., San Antonio, Tex. MEDICINE (PSYCHIATRY). b. Pittsburgh, Pa., Sept. 13, 1919. s. I. Lewis and Diana (Brener) G. Edn.: B.A., Univ. of Mich., 1941; M.D., Univ. of Pittsburgh, 1945. m. Margaret J. Duncan, Mar., 1941. c.: Marsha Dee; Cheryl Benita. Exp.: Wing Surgeon, 6332 Med. Grp., Okinawa, 1949-51; Res. in Psychiatry, Walter Reed Army Hosp., Wash., D. C., 1951-54; Chf. of Psychiatry, Psychiatric Serv., U.S.A.F. Hosp., Eglin A.F.B., Fla., 1954-57; Consultant in Psychiatry, U. S. Air Forces, Europe, 1957-61; Chief Psychiatric Serv., U.S.A.F. Hosp., Wiesbaden, Germany, 1957-61; Chmn., Dept. of Psychiatry, U.S.A.F. Hosp., Lackland A.F.B., Tex., 1961—. Mem.: Aerospace Med. Assn.; Assn. of Military Surgeons; Am. Psychiatric Assn.; Am. Med. Assn.; Alpha Kappa Delta. Co-Author: Psychological Techniques in Diagnosis and Evaluation, 1960. Contbr. to: Am. Jour. of Psychiatry; Armed Forces Med. Jour.; Military Surgeons; Archiv. f.d. gesamte psychologic. Serv. Rec.: Col., Sr. Flight Surg., U.S.A.F., 1946—. Areas of Rsch.: Psychiatry.

GIGLIOTTI, Vincent Dante (Mr.), Supvr., Soda Prod. Div. Labs., Diamond Alkali Co., Painesville, Ohio. Home Add.: 306 Normandy Dr., Painesville, Ohio. CHEMISTRY. b. Johnsonburg, Pa., June 29, 1913. s. Battista and Frances (Chirillo) G. Edn.: Carnegie Inst. of Tech.; B.S., St. Vincent Coll., 1940. m. Virginia P. Owen, May 3, 1952. c.: Vincent D., Jr.; Francis B. Exp.: Chemist, N. Y. and Pa. Paper Co., Johnsonburg, Pa., 1940-44; Rsch. Chem., Diamond Alkali Co., Painesville, Ohio, 1944-52; Chem. Supvr., ibid., 1952—. Hon. Pos.: Publicity Chmn., A.C.S. Northeastern Ohio Sect. Mem.: A.C.S.; A.A.A.S.; Diamond Tech. Soc.; Alpha Phi Delta, Rho. Areas of Rsch.: Alkalies; Corrosion; Instrumentation and Quality Control.

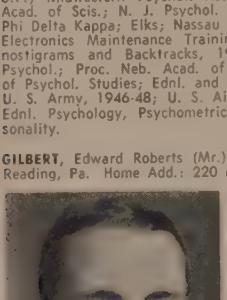


GILBERT, Albin R. (Ph.D.), Prof. of Psychol., Wheaton Coll., Norton, Mass. Home Add.: P. O. Box 986, Norton, Mass. PSYCHOLOGY. b. Prague, Bohemia, Sept. 3, 1897. s. Leopold G. and Katherine (Pick) G. Edn.: Ph.D., Charles Univ., Prague, Bohemia, 1930. m. Louise Elizabeth Ohs, 1926. c.: Mrs. Renee Suzanne G. Rizzoni. Exp.: Dir., Youth Guidance Clinic, German Soc. Ethical Culture, Prague, 1931-38; Prof. of Psychol. and Edn., German Sect., St. Conservatory of Music, Prague, 1931-38; Edn. Consultant, Chapel Hill Schl., Waltham, Mass., 1939-41; Asst. Prof. of Psychol., Middlesex Univ., 1941-44; Spec. Instr., Civil Affairs Training Schl., A.S.T.P., Boston Univ., 1943-44; Asst. Field Repr., O.W.I., 1945; Edn. Adviser, German Occupation Zone, U. S. Dept. of Army, 1945-49; Prof. of Psychol., Wheaton Coll., 1949—. Mem.: A.P.A.; Am. Philos. Assn.; Soc. St. Relig.; Inter-Am. Soc. Psychol.; A.A.U.P. Author: Humanitaet und Politik, 1938. Contbrng. Author: Perspectives in Personality Theory, 1957. Contbr. to: Jour. Psychol.; Psychol. Beitrage; Papers 2nd World Cong. Sociol.; Kyklos, Internatl. Rev. for Soc. Scis.; Psychol. Rundschau. Areas of Rsch.: Theory of Stratification of Personality; Personality Assessment Through Timed Cross-Examination; Programmed Texts for Tchng., utilizing principles of Gestalt Psychol.

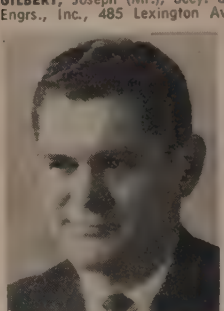


GILBERT, Arthur C. F. (Ph.D.), Clinical Psychologist, U. S. Air Force. Mailing Add.: U.S.A.F. Hosp., Chanute A.F.B., Rantoul, Ill. PSYCHOLOGY. Edn.: B.Sc., Univ. of Neb., 1950; M.A., ibid., 1954; Ph.D., ibid., 1957. Exp.: Project Dir. (Rsch. Psychologist), Edntl. Rsch. Corp., 1956-57; Asst. Dir. Counseling Serv., Princeton Univ., 1957; Acting Dir., Counseling Serv., ibid., 1957-58; Dir., Counseling Serv., ibid., 1958-59; Lectr., ibid., 1957-59; Consultant, Princeton Family Serv. Clinic, 1958-59; Consulting Editor, Jour. of Psychological Studies, 1961—; Clin. Psychologist, U. S. Air Force, 1959—. Mem.: Am. Psychol. Assn.; A.A.A.S.; Am. Personnel and Guidance Assn.; Am. Coll. Personnel Assn.; A.A.U.P.; Midwestern Psychol. Assn.; Eastern Psychol. Assn.; Neb. Acad. of Scis.; N. J. Psychol. Assn.; Psi Chi; Sigma Tau Delta; Phi Delta Kappa; Elks; Nassau Club (Princeton, N. J.). Co-author: Electronics Maintenance Training; Experimental Tryout of Diagnostigrams and Backtracks, 1958. Contbr. to: Jour. of Edntl. Psychol.; Proc. Neb. Acad. of Scis.; Psychol. Newsletter; Jour. of Psychol. Studies; Edntl. and Psychol. Measurement. Serv. Rec.: U. S. Army, 1946-48; U. S. Air Force, 1951-53. Areas of Rsch.: Edntl. Psychology, Psychometrics, Human Engrng., Learning, Personality.

GILBERT, Edward Roberts (Mr.), Asst. Prof., Psychol., Albright Coll., Reading, Pa. Home Add.: 220 Mayer Ave., Pennside, Reading, Pa. EDUCATIONAL AND EXPERIMENTAL PSYCHOLOGY. b. Sharon, Pa., Mar. 17, 1935. s. John F. and Ruth (Roberts) G. (dec.). Edn.: B.A., Dickinson Coll., 1957; M.S., Penn. St. Univ., 1958. m. Phyllis Wiest, June 13, 1959. Exp.: Instr. of Psychol., Albright Coll., Reading, Pa., 1958-62; Asst. Prof. of Psychol., ibid., 1962—; Instr., Temple Univ., Grad. Schl., 1961 Hon. Pos.: Bd. of Dirs., Am. Red Cross; Bd. of Dirs., Campfire Girls, Reading Chapt. Mem.: Am. Psychol. Assn.; Pa. Psychol. Assn.; Eastern Psychological Assn.; A.A.U.P.; Sigma Chi; Psi Chi. Gen. Int.: Have had papers read before Natl. Assn. of Accountants; Industrial Mgmt. Club of Reading, Pa. Areas of Rsch.: Critical Incident Technique; Industrial Consultant; Psycho-Physical Methods; Human Intelligence; Delinquency; Physiological Psychology.



GILBERT, Joseph (Mr.), Secy. and Gen. Mgr., Soc. of Automotive Engrs., Inc., 485 Lexington Ave., N. Y. 17, N. Y. Home Add.: 864 Troy St., Elmont, L. I., N. Y. ENGINEERING. b. Cleveland, Ohio, Dec. 18, 1920. s. Morris Gelbert and Yetta (Schwedock) G. Edn.: B.C.E., City Coll. of N. Y., 1942; M.Sc., Industl. Engrng., Columbia Univ., 1950. m. Doris Chaiken, June 20, 1943. c.: Jeffrey A.; Karen Sue. Exp.: Engr., U. S. Corps of Engrng., Ellicott Square Bldg., Buffalo, N. Y., 1942; Draftsman, Gibbs and Hill, Inc., N.Y.C., 1942; Tech. Editor, Soc. of Automotive Engrs., Inc., N. Y., N. Y., 1946-51; Industrial Production Editor, Bus. Week, McGraw-Hill Publ. Co., 1951-52; Asst. Mgr. of Publications, Soc. of Automotive Engrs., Inc., N. Y., N. Y., 1952-56; Managing Editor, SAE Jour., ibid., 1952-56; Staff Rep. Meeting Div., ibid., 1952-56; Mgr., SAE Tech. Com. Div. and Sec. of SAE Tech. Bd., ibid., 1956-57; Asst. Gen. Mgr., ibid., 1957-60; Gen. Mgr. and Secy., ibid., 1960—. Hon. Pos.: Secy., Coun. of Engrng. Soc. Secretaries, 1961-62; Vice-Pres., ibid., 1962-63. Mem.: Am. Rocket Soc.; Am. Soc. of Mech. Engrs.; Am. Soc. for Metals; Am. Soc. for Testing and Materials; Am. Soc. for Tool and Mfg. Engrs.; Inst. of the Aerospace Scis.; Soc. of Automotive Engrs.; Associazione Tecnica Automobile, Italy; Societe des Ingenieurs de l'Automobile, France; The Instn. of Automotive and Aeronautical Engrs., Australia; The Instn. of Mech. Engrs., England; Soc. of Automotive Engrs. of Japan, Inc.; The Engrng. Soc. of Detroit. Contbr. to: Encycl. Britannica. Serv. Rec.: U. S. Army Air Force, 1943-46.

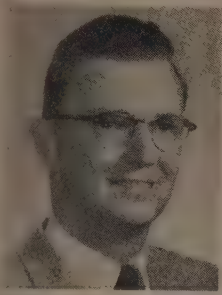


GILKEY, Herbert James (Sc.D.), Prof. and former Hd. of Dept., Theoretical and Applied Mechanics, Ia. St. Univ., Rm. 212, Marston Hall, Ia. St. Univ., Ames, Ia. ENGINEERING MATERIALS ESPECIALLY CONCRETE. b. Montesano, Wash., Jan. 2, 1890. s. Herbert Luville and Mary Olive (Karr) G. Ancestry: Scotch Irish and English. Edn.: Pub. Schls., Medford & Grants Pass, Ore.; B.S. (C.E.), Ore. St. Univ., 1911; B.S. (C.E.), Mass. Inst. of Tech., 1916; B.S. (C.E.), Harvard Univ., 1916; M.S. (T.&A.M.), Univ. of Ill., 1923; Sc.D. (hon.), Buena Vista Coll., 1939. m. Mildred Virginia Talbot of Urbana, Ill., Aug. 18, 1923. d. Arthur Newell and Virginia Mann Hammet (Talbot). c.: Herbert Talbot; Arthur Karr (dec.). Exp.: State Govt. and Pvt. Surveys, Ore. and Calif., 1911-12; Asst. Engr., Tumalo Irrig. Proj., Ore., 1913-14; Asst. Engr., Pa. R.R., Chicago, Ill., 1916-17; Structural Engr., A. R. Lord, Chicago, Ill., 1919-21; Rsch. and Tchng., Dept. T.&A.M., Univ. of Ill., under Talbot, 1921-23; Asst. Prof., Assoc. Prof., and Prof. of Civil Engrng., Univ. of Colo., 1923-31; Organized, also Prof. and Hd., Dept. T.&A.M., Iowa St. Univ., Ames, Ia., 1931-55; Prof., ibid., 1955—. Hon. Pos.: Past Pres., Sigma Xi (local chapt.); Tau Beta Pi; Phi Kappa Phi; Chi Epsilon. Mem.: Am. Soc. of C.E. (Life mem.); Am. Soc. for Engrng. Edn. (Mem., Natl. Coun.), 1936-39; Chmn., Div. of Mechanics, 1936-39; Natl. Vice-Pres., 1943-44; Mem., Special Comm. on Aims and Scope of Engrng. Curricula, 1939-40; Am. Concrete Inst., (Hon.) Pres., 1949; Wason Medal for Most Meritorious Paper, 1939; Turner Gold Medal, 1958; Am. Soc. Testing Materials (Hon.); A.A.A.S. (Fellow); Soc. Am. Military Engrs. (Charter); Western Soc. Engr. (Life Mem.); Iowa Engrng. Soc. Medal for Maper on Hoover (Boulder) Dam, 1937; Distinguished Serv. Plaque, 1960; Registered Engr., St. of Iowa; Osborn Rsch. Club, Ch., 1938; Am. Relief Admn. Assn. Author: About 150 Titles Including: Engr. Foundation Arch Dam Report, Vol. II, 1934 (with J. L. Savage, I. E. Houk and Fredrik Vogt); A Manual of Materials Testing, 1939 (with Glenn Murphy and E. O. Bergman); Cement Products, Encycl. Chem. Technol. (Kirk-Othmer), Vol. III, pp. 438-500, 1949; Cement and Concrete, part 7, Urquhart's Civil Engrng. Handbook, 3rd Edition, 1950; Materials Testing, 1941. Contbr. to: Technical Pubs. such as Engrng. News-Record, Civil Engrng.; J.A.S.E.E.; Jour. Am. Concrete Inst.; Tech. Papers. War Rec.: 1st Lt., Engrs. (later Capt., Engrs. Res.); Serv. Medal with Star, 1917-18; Milit. Mapping, U. S. Borders in N. Mex. and Va., 1918; A.E.F. (G-2-C; 29th Engr.); Topog. Br. of Intelligence, 1919; with Herbert Hoover at Paris Hdqrs. (Am. Relief Admin.). Travel: N. Am.; Eng.; Belgium; France. Achievements of Gen. Int.: Advised informally with Lorado Taft on Construction of Fountain of Time, Chicago, 1920-21; Concrete Consultant, City of Denver on Eleven Mile Canyon Dam, 1930-31; Consultant, U. S. Govt on Concrete for Hoover (Boulder) Dam, 1931-33. Mem.: 3rd Joint Comm. on Specifications for Concrete, 1931-40. Recreation and Hobby: Rsch. in Materials. Listed in: W. W. in Am.; W. W. in Engrng.; A.M.S. Special Int.: Engrng. Pedagogy, Curricula, Tchng. and Admin.

GILLES, Kenneth Albert (Ph.D.), Chmn., Dept. of Cereal Technol., N. Dak. State Univ., Fargo, N. Dak.; Editor, Cereal Chemistry. Home Add.: 925 Park Dr., Fargo, N. Dak. AGRICULTURAL BIOCHEMISTRY b. Minneapolis, Minn., March 6, 1922. s. Albert P. and Alma R. (Stodghill) G. Edn.: B.S., Univ. Minn., 1944; Ph.D., ibid., 1952. m. Beverly E. Barrows, July 1, 1944. c.: Jeffrey Alan; Diane Elaine. Exp.: Chem. Engr., Pillsbury Mills, 1946-49; Instr., Biochem., Univ. Minn., 1949-51; Rsch. Fellow, ibid., 1950-52; Project Ldr., General Mills, 1952-60; Chmn., Dept. of Cereal Technol., N. Dak. State Univ., Fargo, N. Dak., 1960—. Mem.: Sigma Xi; Am. Assn. Cereal Chem.; A.A.A.S.; Am. Chem. Soc.; Inst. Food Technologists; Assn. Op. Millers; Gamma Alpha. Co-author: Chemistry of Wheat and Wheat Products, 1961. Contbr. to: Analytical

Chem.; Cereal Chem.; Bakers Digest; Nature. Serv. Rec.: U.S.N.R., Lt., 1944-46; 1949-54. Areas of Rsch.: Cereal Chemistry and Technology; Carbohydrates; Lipids; Enzymes; Chromotography.

GILLETTE, Norman John (Ph.D.), Assoc. Prof. Botany, Syracuse Univ., Syracuse 10, N. Y. Home Add.: R.D. #3 Clay, New York, N. Y. BOTANY, PALEOBOTANY.



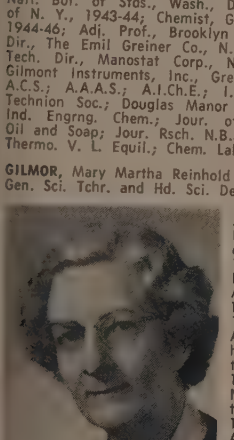
b. Cicero, N. Y., Mar. 17, 1911. s. Durward E. and Edna (Wichie) G. Edn.: A.B., Syracuse Univ., 1932; M.A., ibid., 1933; Ph.D., Univ. of Chicago, 1937. m. Elise Himberg, Aug. 7, 1937. c. Elaine Susanne; David Alan; Robert Kent. Exp.: Asst. in Botany, Univ. of Chicago, 1935-37; Asst. Prof. Botany, Univ. of Idaho, 1937-47; Asst. Prof. Botany, Syracuse Univ., 1947-53; Assoc. Prof., ibid., 1953—. Hon. Pos.: Chmn., Northeastern Sec. of Botanical Soc. of Am., 1960-61. Mem.: Botan. Soc. of Am.; A.A.A.S.; Internatl. Soc. of Plant Morphologists; Sigma Xi; Gamma Alpha; Phi Beta Kappa; Pi Mu Epsilon; Kappa Phi Kappa. Contbr. to: Botanical Gazette; Northwest Sci.; Am. Midland Naturalist. Areas of Rsch.: Paleobotany; Plant Morphology; Cytology and Cytogenetics.

GILMAN, John Richard, Jr. (Mr.), Tech. Dir., John H. Breck, Inc., 115 Dwight St., Springfield 3, Mass. Home Add.: 21 School St., Springfield 5, Mass. ASTROPHYSICS. b. Malden, Mass., July 6, 1925. s. John Richard and Philomene (Gradie) G. Edn.: A.B., Harvard Univ., 1945. m. Julia Streeter, Feb. 6, 1960. c.: Derek. Exp.: Dir. of Publicity, John H. Breck, Inc., Springfield, Mass., 1949-53; Asst. Avt. Mgr., ibid., 1950-53; Dir. of New Products, ibid., 1955-56; Tech. Dir., ibid., 1956—. Mem.: Soc. of Cosmetic Chemists; N. Y. Acad. of Scis. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Management of Science Research; Photography; Cosmetics and Hair Preparations.

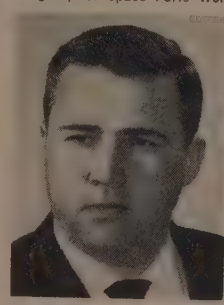
GILMAN, Lauren Cundiff (Ph.D.), Assoc. Prof. of Zool., Univ. of Miami, Coral Gables, Fla. GENETICS: PROTOZOOLOGY, INVERTEBRATE ZOOLOGY. b. Bozeman, Mont., Nov. 24, 1914. s. Ralph Webster and Pearl (Cundiff) G. Edn.: A.B., Baker Univ., 1936; Ph.D., Johns Hopkins Univ., 1940. Exp.: Asst. Prof. of Zool., Univ. of S. Dak., 1946-47; Assoc. Prof. of Zool., Univ. of Miami, 1947—. Mem.: Fla. Acad. of Sci.; N. Y. Acad. of Sci.; A.A.A.S.; Assn. of Southeastern Biologists; Soc. of Protozoologists; Phi Beta Kappa; Sigma Xi; Beta Beta Beta; Gamma Alpha; Alpha Delta Sigma. Contbr. to: Am. Naturalist; Biol. Bull. Ph.D. Dissertation: Mating Types in Diverse Races of Paramecium Caudatum. Serv. Rec.: Inducted, 11 Aug., 1941; Discharged with Rank of Capt., 1946. Listed in: A.M.S.; Who Knows—and What. Special Int.: Protozoan Genetics.

GILMONT, Roger (D.Ch.E.), Pres., Roger Gilmont Instruments, Inc., 1 Great Neck Rd., Great Neck, N. Y. Home Add.: 38-41 240 St., Douglaston 63, N. Y. THERMODYNAMICS AND CHEMICAL LABORATORY INSTRUMENTS. b. N. Y. C., Dec. 30, 1916. s. Abraham and Anna (Schaevitz) G. Edn.: B.Ch.E., Cooper Union Inst., 1939; M.Ch.E., Brooklyn Polytechnic Inst., 1943; D.Ch.E., ibid., 1947. m. Shirley Gepner, July 3, 1941. c.: Jacqueline. Exp.: Engr., Bur. of Real Estate Bd. of Estimate, N. Y. C., 1939-40; Draftsman, U.S.C and G.S., Wash., D. C., 1940-41; Engr., War Dept., Rsch. Engrng., Wash., D. C., 1941; Chemist, Natl. Bur. of Stds., Wash., D. C., 1941-43; Tchr., City Coll. of N. Y., 1943-44; Chemist, Gen. Foods Corp., Hoboken, N. J., 1944-46; Adj. Prof., Brooklyn Polytechnic Inst., 1949—; Tech. Dir., The Emil Greiner Co., N. Y. C., 1947-60; Vice Pres. and Tech. Dir., Manostat Corp., N. Y. C., 1955-60; Pres., Roger Gilmont Instruments, Inc., Great Neck, N. Y., 1961—. Mem.: A.C.S.; A.A.A.S.; A.I.Ch.E.; I.S.A.; Sigma Xi; A.I.Ch.E.; Am. Technion Soc.; Douglas Manor Assn. Contbr. to: Anal. Chem.; Ind. Engrng. Chem.; Jour. of Electrochem.; Inst. and C.S.; Oil and Soap; Jour. Rsch. N.B.S.; Pet. Refiner. Areas of Rsch.: Thermo. V. L. Equil.; Chem. Lab. Instruments; Food Tech.

GILMOR, Mary Martha Reinhold (Mrs.), Pres., Pa. Sci. Tchrs. and Gen. Sci. Tchr. and Hd. Sci. Dept., Cochran Jr. H.S., Johnstown, Pa. Home Add.: 326 Park Ave., Johnstown, Pa. NATURAL SCIENCES: SCIENCE FAIRS. b. Allendale, Cambria Co., Pa., Jan. 16, 1904. d. Franklin Pierce and Laura Elizabeth (Troxell) R. Edn.: Attended Ind. St. Tchrs. Coll., 1923; B.S., Univ. of Pittsburgh, 1930. m. Allen Gilmor, 1931. c.: Alyce Betsy Bannon; Lydia Reinhold Costlow. Exp.: Tchr., Johnstown Pub. Schls., Johnstown, Pa., 1923-30; Sub. Tchr., N.W.C. Schls., N. Y., N. Y., 1932; Tchr., Johnstown Pub. Schls., Johnstown, Pa., 1935—. Hon. Pos.: Dir., Pa. Jr. Acad. of Sci.; Chmn., Johnstown's First Sci. Fair; Chmn., Reg. Sci. Fair; Mem. of Pa. Dept. of Pub. Instrn., Sci. Writing Conf.; Mem., Pa. Governor's Sci. Survey; Comm., Pennsylvania Junior High Curriculum Committee. Mem.: Pennsylvania Sci. Tchrs. Assn.; A.A.A.S.; Pa. Acad. of Sci.; Western Pa. Conservancy. Author: A Students Manual for Science Fairs, 1960. Gen. Int.: Mem., NSTA Convention Program, Chicago Science Fair, 1961; San Francisco Open and Closed TV for Science Edn.; Science Fair Schoolmasters Program WJAC Open TV. Areas of Rsch.: Science Fairs; Specialized Training in Science Research for Science Projects.

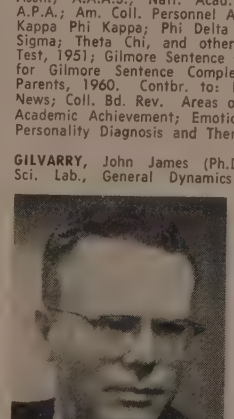


GILMORE, Harold L(awrence) (Mr.), Chmn., Data for Designers Subgroup of Space Parts Working Groups, AVCO, Waltham, Mass. Home Add.: 87 Foster St., North Andover, Mass. RELIABILITY ENGINEERING. b. Whitinsville, Mass., Apr. 30, 1931. s. Lawrence Merton and Olga (Johnson) G. Edn.: B.S.E.E., Norwich Univ., 1958; Post-Grad., Northeastern Univ., 1962. m. Mary Frieswyk, June, 1955. c.: Tod Harold; Jill Mary. Exp.: Engr., Westinghouse Electric Co., Pittsburgh, Pa., 1953-54; Reliability Analy. Engr., ibid., Baltimore, Md., 1958-61; Sr. Staff Engr. Reliability, AVCO RAD Div., Waltham, Mass., 1961—. Hon. Pos.: Chmn., Data for Designers Subgroup; Program Chmn., Boston Sec., PGRQC of IRE. Mem.: Am. Mgmt. Assn.; A.Q.A.; N.S.P.E.; A.S.Q.C.; I.R.E.; A.I.E.E.; Sigma Iota Epsilon. Contbr. to: Industrial Quality Control; PGRQC Trans. of I.R.E.; I.R.E. Newsletter; Proc. 4th Internatl. Symposium on Space Technol. and Sci. Serv. Rec.: U.S.A.R., 1954-57. Gen. Int.: Received Federick Asher Spencer Award in E.E., Norwich, 1953; Registered Profl. Engr. Areas of Rsch.: Reliability Engineering and Demonstration Techniques.



GILMORE, John V. (Ed.D.), Professor, Psychology, Boston Univ., Boston, Mass. Home Add.: 105 Albion Rd., Wellesley Hills, 81, Mass. CLINICAL AND COUNSELING PSYCHOLOGY. b. Enon Valley, Pa., May 4, 1907. s. David W. and Iva (Patterson) G. Edn.: A.B., Allegheny Coll., 1930; Ed.M., Univ. of Pittsburgh, 1941; Litt.M., ibid., 1943; Ed.M., Harvard Univ., 1942; Ed.D., ibid., 1947. m. Eunice C. Crocker, June 22, 1944. c.: Margaret C.; John Vaughn, Jr.; Martha P. Exp.: Instr., Evening Div., Geneva Coll., 1936-43; Psychologist, Beaver Falls Pub. Schls., Beaver Falls, Pa., 1937-43; Psycholst., Reading Clinic, Univ. of Pittsburgh, 1941-43; Dir., Assoc. Schl., Boston, Mass., 1943-45; Psycholst., Judge Baker Guid. Clinic., Boston, Mass., 1943-45; Chf. Psycholst., Assoc. Prof., Psychol., Boston Univ., 1945-49; Psycholst., Mass. Inst. of Technol., 1949-51; Assoc. Prof., Psychol., Boston Univ., 1949-62; Prof., ibid., 1962—. Hon. Pos.: Chmn., Comm. on Ph.D. Training Program in Counseling Psychol., Boston Univ.; Chmn., Steering Comm., Personnel and Guid. Assn., Boston Univ., Pres., Allegheny Coll. Alumni Assn. of New Eng., 1957-59; Consultant, Vet. Administration; Consultant, Soc. Security Admin. Mem.: Fellow, Mass. Psychol. Assn.; Fellow, Am. Orthopsychiatric Assn.; A.A.A.S.; Natl. Acad. of Religion and Mental Health; A.P.A.; Am. Coll. Personnel Assn.; A.A.U.P.; Sigma Xi; Psi Chi; Kappa Phi Kappa; Phi Delta Kappa; Pi Delta Epsilon; Psi Chi Sigma; Theta Chi, and others. Author: Gilmore Oral Reading Test, 1951; Gilmore Sentence Completion Test, 1954; Scoring Key for Gilmore Sentence Completion Test, 1954; Suggestions for Parents, 1960. Contbr. to: Harvard Ednl. Rev.; Tech. Engrng. News; Coll. Bd. Rev. Areas of Rsch.: Non-intellectual Factors in Academic Achievement; Emotional Factor in Mental Retardation; Personality Diagnosis and Therapy; Test Construction.

GILVARRY, John James (Ph.D.), Senior Staff Scientist, Space Sci. Lab., General Dynamics Astronautics, San Diego, Calif. Home Add.: 2818 Jarvis St., San Diego 6, Calif. THEORETICAL PHYSICS (including ATOMIC, NUCLEAR, SOLID-STATE AND PLASMA PHYSICS; ASTROPHYSICS AND GEOPHYSICS. b. Manchester, Eng., July 15, 1917. s. John and Honoria (Kelly) G. Edn.: B.S., Coll. of the City of N. Y., 1939; M.A., Ph.D., Princeton Univ., 1943. Exp.: Instr., Princeton Univ., 1943; Physicist, Naval Ord. Lab., Wash., D. C., 1943-46; Supvry. Physicist, N. Am. Aviation Co., L. A., Calif., 1946-48; Physicist, Rand Corp., Santa Monica, Calif., 1948-56; Sr. Scientist, Allis-Chalmers Mfg. Co., Milwaukee, Wis., 1956-61; Sr. Staff Scientist, Space Sci. Lab., General Dynamics Astronautics, San Diego, Calif., 1961—. Mem.: Am. Phys. Soc.; Am. Math. Soc.; Am. Astron. Soc.; Math. Assn. of Am.; Am. Assn. of Physics Tchrs.; Am. Geophys. Union;



Italian Soc. of Physics; Astron. Soc. of the Pacific; Phi Beta Kappa; Sigma Xi. Contbr. to: Phys. Rev.; Astrophys. Jour.; Jour. of Geophys. Rsch.; Nature; Science; Jour. of Applied Physics; Jour. of Chem. Physics; Rev. of Scientific Instruments; Quart. of Applied Math.; Physics of Fluids; Publ. of Astron. Soc. of the Pacific; Jour. of Atmospheric and Terrestrial Physics; Trans. of Am. Inst. of Mining, Metal and Petr. Engineers; Am. Jour. of Physics. Areas of Rsch.: Atomic, Nuclear and Solid-State Plasma Physics; Astrophysics and Geophysics.

GINGRICH, Newell Shiffer (Ph.D.), Prof. of Physics, Univ. of Mo., Columbia, Mo. Home Add.: 313 E. Brandon Rd., Columbia, Mo. PHYSICS. b. Orwigsburg, Pa., Jan. 29, 1906. s. F. M. and Minnie B. (Shiffer) G. Edn.: B.A., North Central Coll., 1926; M.A., Lafayette Coll., 1927; Ph.D., Univ. of Chicago, 1930. m. Fern P. Riedel, June, 1928. c.: Phillip Riedel; Katherine Ann. Exp.: Instr. of Phys., Lafayette Coll., Easton, Pa., 1927-28; Asst. Prof., Mt. Allison Univ., Sackville, N. B., Canada, 1930-31; Instr., Mass. Inst. of Tech., Cambridge, Mass., 1931-36; Asst. Prof. to Prof., Univ. of Missouri, Columbia, Mo., 1936—. Mem.: Am. Physical Soc. (Fellow); AAAS (Fellow); Am. Assn. Phys. Tchrs.; Sigma Xi; Am. Crystallographic Assn. Author: Physics—A Textbook for Colleges, 1950-57. Contbr. to: Phys. Review; Jour. Chem. Phys.; Am. Jour. Phys.; Jour. Chem. and Phys. Solids; Acta Crystallographica. Areas of Rsch.: Diffraction of X-rays and Neutrons; Structure of Liquids.

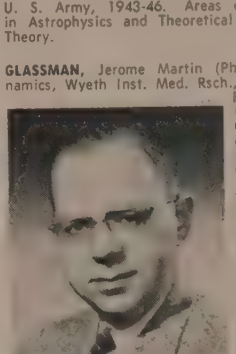
GIRIFALCO, Louis A. (Ph.D.), Assoc. Prof., Schl. of Metallurgical Engr., Univ. of Pa., Philadelphia, Pa. Home Add.: 155 Union Ave., Bala-Cynwood, Pa. SOLID STATE PHYSICS. b. N.Y.C., July 3, 1928. s. Anthony and Santa (Compagnino) G. Edn.: B.S., Rutgers, 1950; M.S., Univ. of Cincinnati, 1952; Ph.D., ibid., 1954. m. Catherine Lyons, Sept. 3, 1950. c.: Sandra; Anthony; Mary; John; Robert; Theresa. Exp.: Rsch. Chemist, E. I. Du Pont, Wilmington, Del., 1954-55; Solid State Physicist, N.A.S.A. Lewis Rsch. Ctr., Cleveland, Ohio, 1955-58; Head, Solid State Physics Sect., ibid., 1958-61; Assoc. Prof. Metallurgical Engr., Univ. of Pa., 1961—. Mem.: Am. Phys. Soc.; A.A.A.S. Contbr. to: Jour. Phys. Chem.; Jour. Chem. Phys.; Phys. Rev.; Jour. Phys. Chem. Solids; Acta Met. Areas of Rsch.: Diffusion and Defects in Solids; Statistical Mechanics; Solid State Theory; Physics of Surfaces.

GITHENS, John Horace (M.D.), Prof. and Chmn., Dept. of Pediatrics, Univ. of Kentucky, Lexington, Ky. Home Add.: 1879 Parker's Mill Rd., Lexington, Ky. PEDIATRIC HEMOTOLOGY. b. Woodbury, N. J., Jan. 2, 1922. s. J. Horace and Gladys (Jones) G. Edn.: B.A., Swarthmore Coll., 1942; M.D., Temple Univ. Med. Schl., 1945. m. Virginia Freeman, 1945. c.: James S.; Wendy G. Exp.: Asst. Prof., Univ. of Colo., Denver, Colo., 1952-57; Assoc. Prof., ibid., 1957-60; Prof., Univ. of Ky., Lexington, Ky., 1961—; Chmn., Dept. of Pediatrics, ibid., Med. Center, 1961—. Mem.: Soc. for Pediatric Rsch.; Southern Soc. for Pediatric Rsch.; Am. Federation for Clin. Rsch.; Kappa Sigma; Phi Chi. Co-Author: Teaching Comprehensive Medical Care: A Psychological Study of a Change in Medical Education, 1959. Contbr. to: Penn. Med. Jour.; Jour. of Ped.; Post-Grad. Med.; Quart. Review Ped.; Circ. Am. Jour. Dis. Child.; Anti-bio. Med. and Clin. Ther.; Jour. Am. Med. Assn.; Current Therapy; Blood; Jour. Clin. and Lab. Med. Serv. Rec.: USNR, 1946-48. Gen. Int.: Received Ross Award in Pediatric Education presented by the Western Society for Pediatric Research, 1957. Areas of Rsch.: Pediatrics and Pediatric Hemotology.

GLASER, Donald Arthur (Ph.D.), Prof. of Physics, Univ. of Calif., Berkeley, Calif. Home Add.: 2911 Avalon, Berkeley, Calif. PHYSICS. b. Cleveland, Ohio, Sept. 21, 1926. s. William Joseph and Lena Glaser. Edn.: B.Sc., Case Inst. of Technol., 1946; Ph.D., Calif. Inst. of Technol., 1949. Hon. Deg.: D.Sc., Case Inst. of Technol., 1959. m. Ruth Louise Thompson, Nov. 28, 1961. Exp.: Prof. of Physics, Univ. of Mich., 1955-60; Prof. of Physics, Univ. of Calif., Berkeley, 1960–; Visiting Prof. of Biol., Mass. Inst. of Technol., 1961-62. Mem.: Am. Phys. Soc.; Natl. Acad. of Scis.; Am. Assn. Adv. Sci.; Sigma Xi; Tau Beta Pi. Contbr. to: Phys. Rev.; Bull. Am. Phys. Soc.; Nuovo Cimento; Proc. of CERN Symposium on High Energy Accelerators and Pion Physics, 1956; Proc. of 5th and 7th Annual Rochester Conferences; Proc. of 2nd U. N. Geneva Conf., 1958; Handbuch der Physik; Proc. of Kiev Conf., 1959; Yearbook of the Phys. Soc., London, 1958. Gen. Int.: Henry Russel Award, 1955; Charles Vernon Boys Prize, 1959; Am. Phys. Soc. Prize, 1959; Nobel Prize, 1960; Natl. Sci. Fdn. Fellow, 1961; Guggenheim Fellow, 1961. Areas of Rsch.: Cosmic Rays; Nuclear Physics; Elementary Particle Physics.

GLASER, Harold (Ph.D.), Special Asst. to Asst. Dir. for Math., Physical and Engrng. Scis., N.S.F., Wash. 25, D. C. Home Add.: 11208 Lund Ct., Kensington, Md. RANDOM PROCESSES; ELECTROMAGNETIC THEORY. b. Kurseni, Lithuania, Aug. 28, 1924. s. Joseph and Emma (Greenspan) G. Edn.: B.S., Roosevelt Coll., 1948; M.S., Northwestern Univ., 1949; Ph.D., ibid., 1953. m. Margaret V. Stoney, Dec. 29, 1945. c.: Roberta Lee; Miriam Louise; Ruth Helen. Exp.: Instr., Roosevelt Coll., 1949-51; Physicist, Applied Physics Lab., Johns Hopkins Univ., 1952-54; Head, Theortical Analysis Sect., Naval Rsch. Lab., Wash., D. C., 1954-57; Instr., Univ. of Md., 1956; Physicist, Office of Naval Rsch., 1957-62; Special Asst., N.S.F., Wash., D. C., 1962—. Mem.: Am. Physical Soc.; Am. Geophysical Union; Rsch. Soc. of Am.; Philosophical Soc. of Wash.; Sigma Xi. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Administered Programs in Astrophysics and Theoretical Physics, also in Electromagnetic Theory.

GLASSMAN, Jerome Martin (Ph.D.), Hd., Dept. of Pharmacodynamics, Wyeth Inst. Med. Rsch., P. O. Box 8299, Philadelphia 1, Pa. Home Add.: 420 Rittenhouse Circle, Havertown, Pa. PHARMACOLOGY; TOXICOLOGY. b. Philadelphia, Pa., Mar. 2, 1919. s. Dr. Martin K. and Dorothea (Largeman) G. Edn.: A.B., Univ. of Pa., 1939; M.A., ibid., 1942; Ph.D., Yale Univ., 1950. m. Justine H. Rizinsky, June 15, 1952. c.: Martin Jorge; Lorna Rae; Gary Jay. Exp.: Statistician, Bureau of Census, Wash., D. C., 1940-43; Hematologist, Div., Pharmacol. Food and Drug Admin., Wash., D. C., 1943-45; Instr. Microanatomy and Physiol., Essex Coll. Med. and Surg., N. J., 1945-46; Rsch. Assoc., Biol. Div., Schering Corp., N. J., 1946; Instr., Biol. Sci., Hunter Coll., 1946-47; U. S. Public Health Asst., Sect. Occupational Health, Yale Univ., 1949-50; Rsch. Asst., Lab. Applied Physiol., ibid., 1950-51; Sr. Rsch. Pharmacologist and Dept. Hd., Wyeth Inst. Med. Rsch., 1951—. Hon. Pos.: Pres., W. T. Salter Soc., 1956; Tech. Comm., Soc. Toxicol., 1961—. Mem.: Fellow, A.A.A.S.; Am. Soc. Pharmacol. Exptl. Therap.; Soc. Exptl. Biol. Med.; Soc. Toxicol.; Biometrics Soc.; N. Y. Acad. of Sci.; Sigma Xi; Delt Phi Alpha; Gamma Alpha; Scoutmaster, Dist. Chmn. Leadership Training B.S.A. Contbr. to: Yale Jour. Biol. Med.; Occ. Med. Antibiotics and Chemotherap.; Arch. Industry Hygiene and Occ. Med.; Jour. Pharmacol. Exptl. Therap.; Proc. Soc. Exptl. Biol. Med.; Am. Jour. Med. Sci.; Antibiotics Ann.; The Cornell Vet.; Fed. Proc. Gen. Int.: Awarded Certificate, Office of Scientific Rsch. and Development, Wash., D. C., 1945. Areas of Rsch.: Nature of Fibrillae of Cells; Toxicology of DDT; Toxicology of Benzidine and Its Congeners; Pharmacology and Toxicology of N, N'-Dibenzylethylenediamine Dipenicillin-G and Other Penicillin Salts; Adsorbents and Anticholinergic Drugs; Pharmacology of Hyaluronidase; Cardiotonicity and Cardiotoxicity of Sympathomimetic Amines; Inflammation; Bioassay; Local Anesthetics; Analgesic Agents; Psychopharmacologic Agents; Pulmonary Edema.

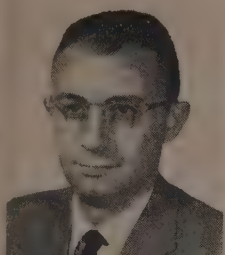


GLAUSEN, Frank, Jr. (Mr.), Supt., C. and S., 370 Jay St., Brooklyn, N. Y. Home Add.: 529 E. 235 St., Box 70, New York, N. Y. ELECTRIC RAILROADS AND AUTOMATIC SWITCHING. b. New York, N. Y., Nov. 20, 1911. s. Frank Sr. and Theresa (dec.) G. Edn.: B.E.E., N. Y. Univ., 1954. m. Marguerite Ford, Apr. 29, 193[illegible] c.: Theresa, Frank, III. Exp.: Elect. Consultant, K and G Mfg. Co., Inc., Mt. Vernon, N. Y., 1959—; Supt. C and S, N. Y. Transit Auth., Jay St., Brooklyn, N. Y., 1928—. Mem.: A.I.E.E.; A.A.A.S.; N. Y. Univ. Alumni Assn.; Eastern Car Foreman's Assn. Contbr. to: Electrical Engrng.; Science; Iron Age; Mod. Railroads. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Personnel Training; Basic Scis. and Job Procedure. Cam and Transistorized Controls for Rapid Transit Cars.

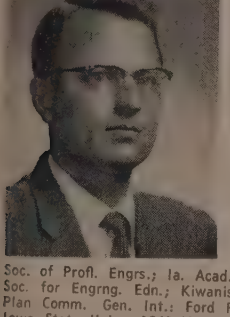
GLEEKMAN, Wallace Joseph (Mr.), Tchr., Sci. Dept., Brookline H.S., Brookline, Mass. Home Add.: 35 Rangeley Rd., Newton 6, Mass. SECONDARY SCIENCE EDUCATION. b. Boston, Mass., Feb. 3, 1930. s. Horace W. and Rose F. (Wantman) G. Edn.: B.S., Bridgewater State Coll., 1951; Ed.M., Boston Univ., 1952; Univ. Coll., 1955; Harvard Univ., 1958. m. Barbara A. Zonis, June, 1957. c.: Nina. Exp.: Hd. of Sci. Dept., Wrentham H. S., Mass., 1954-57; Sci. Dept., King Philip Reg. H.S., Wrentham, Mass., 1957-58; Tchr. Sci. Dept., Brookline H.S., Mass., 1958—. Hon. Pos.: Chmn., Newell Awards Comm.; Chmn., Greater Boston H.S. Sci. Quiz Comm.; Chmn., Brookline Schls. Safety Comm. Mem.: AAAS; ACS; Natl. Sci. Tchrs. Assn.; New Eng. Chem. Tchrs. Assn.; Chem. Edn. Comm. Northeastern Sec. ACS; New Eng. Sci. Sci. Adv. Coun.; Dir., Norfolk Co. Tchrs. Assn.; Phi Delta Kappa; Kappa Delta Phi. Serv. Rec.: AUS, 1952-54; USNR, 1954-

Gen. Int.: Received General Electric Science Fellow, 1955. Areas of Rsch.: Secondary School Science Curricula; Tchng. Secondary School Chemistry, Biology and Physics; Advanced Placement Evaluation.

GLEISSNER, Gene Heiden (Mr.), Hd., Computation Div., U. S. Naval Weapons Lab., Dahlgren, Va. Home Add.: P. O. Box 162, Dahlgren, Va. MATHEMATICS: DIGITAL COMPUTATION. b. Brooklyn, N. Y., Feb. 1, 1928. s. Rudolf W. and Amata (Heiden) G. Edn.: A.B., Columbia Univ., 1947; M.A., ibid., 1948. Exp.: Lectr. in Mathematics, Columbia Univ., New York, N. Y., 1948-50; Deputy Hd., Programming and Coding Br., Naval Weapons Lab., 1950-55; Hd., Computation Div., ibid., 1955—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Soc. for Indsl. and Applied Math.; Assn. for Computing Machinery; Fellow, A.A.A.S.; Phi Beta Kappa. Serv. Rec.: U.S.N.R., 1955-58. Areas of Rsch.: Direction of and Planning for Large-Scale Analysis and Computation Center Including Research Programs in Applied Math., Automatic Programming, Computer and System Design.

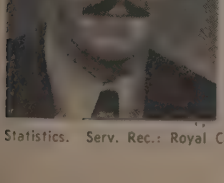


GLENN, George Rembert (Mr.), Asst. Prof., Dept. of Engrng., Sou. Ill. Univ., Carbondale, Ill. Home Add.: 1301 W. Freeman St., Carbondale, Ill. CIVIL ENGINEERING (SOIL ENGINEERING). b. Anderson, S. C., Sept. 2, 1923. s. William Keith and Ora Jane (Browne) G. Edn.: B.C.E., Clemson A. and M. Coll., 1943; B.D., Sou. Bapt. Theol. Sem., 1955; M.S., Clemson A. and M. Coll., 1957. m. Virginia Henderson, Apr. 30, 1944. c.: Shirley Ann; Katherine Elizabeth; George Rembert, Jr. Exp.: Consulting Engr., Sylacauga, Ala., 1950-51; Instr., Speed Scientific Schl., Louisville, Ky., 1951-55; Prof. of Engrng., Bluefield Coll., 1955-57; Dir. of Engrng., Wingate Coll., 1957-58; Asst. Prof., Sou. Ill. Univ., 1958 . Hon. Pos.: Bd. of Dirs., Ill. Soc. of Professional Engrs. Mem.: Am. Soc. of Civil Engrs.; Natl. Soc. of Profl. Engrs.; Ia. Acad. of Sci.; Am. Men. of Sci.; Am. Soc. for Engrng. Edn.; Kiwanis Internatl.; Carbondale, Ill. City Plan Comm. Gen. Int.: Ford Fdn. grant for pre-doctoral study, Iowa State Univ., 1961-62, Soil Engrng. Contbr. to: Proc. Am. Soc. for Testing and Materials; Proc. Ia. Acad. of Sci. Serv. Rec.: Corps of Engrs., 1943-46. Areas of Rsch.: Soil Engrng., Stabilization; Testing of Materials.



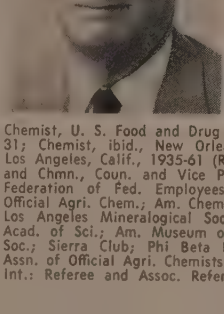
GLENN, Harley Wilber (Mr.), Tech. Asst., Schl. of Fine Arts, Ohio State Univ., Columbus, Ohio. Home Add.: 1394 W. Third Ave., Apt. B., Columbus 12, Ohio. DESIGN, ARCHAEOLOGY AND EDUCATION. b. Chillicothe, Ohio, Oct. 31, 1905. s. Joshua and Laura (Clark) G. Edn.: LL.B., Columbus Coll. of Law, Franklin Univ., 1942; B.S., Ohio Univ., 1929. m. Margaret Comer, July 23, 1927. c.: John W. Exp.: Tchr., Erie Co. Bd. of Edn., Erie Co., Ohio, 1927-28; Real Estate Appraiser, Ohio River Div. of Engrs., Cincinnati, Ohio, 1946-48; Real Estate Business, Denton and Glenn, Columbus, Ohio, 1955—. Hon. Pos.: Pres., Archaeol. Soc. of Ohio; Past Master, Masonic Blue Lodge. Mem.: Archaeology Soc. of Ohio; F. and A.M. Lodge; Scottish Rite. Contbr. to: Ohio Archaeologist. Areas of Rsch.: Archaeol.; Bldg. Construction; Real Estate Appraisal Field.

GLENN, William Alexander (Ph.D.), Statistician, Rsch. Triangle Inst., P. O. Box 490, Durham, N. C. Home Add.: 906 King St., Cary, N. C. STATISTICS. b. Arcola, Saskatchewan, Can., Jan. 25, 1922. s. Thomas Alexander and Emily (Smiley) G. Edn.: B.A., Univ. of New Brunswick, Can., 1948; M.S., Va. Poly. Inst., 1958; Ph.D., ibid., 1960. m. Thelma Goldsworthy, Oct., 1943. c.: Thomas Alexander; Donna Elizabeth. Exp.: Asst. Prof. of Math., Mt. Allison Univ., Sackville, N. B., Can., 1949-56; Assoc. Prof. of Stat., Va. Poly. Inst., Blacksburg, Va., 1956-60; Statistician, Rsch. Triangle Inst., Durham, N. C., 1960—. Mem.: Am. Statistical Assn.; Inst. of Mathl. Statistics; Biometric Soc.; Canadian Mathl. Congress; Sigma Xi; Phi Kappa Phi; Pi Mu Epsilon. Contbr. to: Biometrics; Biometrika; Applied Statistics. Serv. Rec.: Royal Can. AF, 1941-45.



GLESER, Goldine Cohnberg (Ph.D.), Assoc. Prof. of Psychol., Dept. of Psychiatry, Cincinnati General Hosp., Cincinnati 29, Ohio. Home Add.: 3604 Lansdowne Ave., Cincinnati 36, Ohio. RESEARCH in CLINICAL PSYCHOLOGY AND MEASUREMENT THEORY. b. June 15, 1915, in St. Louis, Mo. d. Julius and Lena (Goldberg) Cohnberg. Edn.: B.A., Wash. Univ., 1935; M.S., ibid., 1936; Ph.D., ibid., 1950. m. Sol M. Gleser, June 4, 1936. c.: Judith; Malcolm; Leon. Exp.: Rsch. Asst. to Rsch. Assoc. in Neuropsychiatry, Washington Univ., St. Louis, Mo., 1950-54; Rsch. Asst. in Anatomy, Washington Univ., 1950-51; Rsch. Consultant, Bureau of Educational Rsch., Univ. of Ill., 1951-55; Asst. to Assoc. Prof. of Psychol., Univ. of Cincinnati, Coll. of Med., 1956—; Asst. to Assoc. Rsch. Prof., Dept. of Edn., Univ. of Ill., 1957—. Mem.: Am. Psychol. Assn.; Midwest Psychol. Assn.; Cinti. Psychol. Assn.; Psychometric Soc.; AAAS; Am. Statistical Assn.; Sigma Xi; Phi Beta Kappa. Author: Psychological Tests and Personnel Decisions, 1957; Prediction in Encyclopedia of Educational Research, 1960; Discussion in Comparative Psycholinguistic Analysis of Two Psychotherapeutic Interviews, 1961. Contbr. to: Am. Jour. Phys. Anthrop.; Psychometrika; Sci.; EEG Clin. Neurophysiol.; Am. Jour. Psychol.; Psychol. Bull.; A.M.A. Arch. Gen. Psychol.; Jour. Nerv. and Ment. Dis.; Brit. Jour. Med. Psychol.; Jour. Clin. Psychol.; Jour. Edn. Psychol.; Psychosom. Med. Areas of Rsch.: Measurement; Statistics; Research Methodology.

GLICK, Perry Aaron (Mr.), Entomologist, Entomol. Rsch. Div., Pink Bollworm Rsch. Ctr., Brownsville, Tex. ECOLOGY; INSECTS IN RELATION TO CONSERVATION; INSECT POPULATIONS IN COTTON FIELDS AS AFFECTED BY INSECTICIDES; INSECT MIGRATION AND DISEMINATION; RESPONSE OF INSECTS TO CERTAIN ULTRA-VIOLET AND VISIBLE RADIATION. b. Hamilton, Mo., Dec. 21, 1895. s. M. M. and Eva Alice (Morgan) G. Edn.: A.B., Univ. of Ill., 1921; M.S., ibid., 1922. m. Jessie Odom, Nov. 11, 1928. c.: Dorothy (Stepdaughter). Exp.: Asst. Entomol., Ariz. Comm. of Agri. and Hort., 1922-23; Plant Quarantine Inspector, Fed. Hort. Bd., N. Y. and Wash., D. C., 1923-25; Asst. Entomol., Bur. of Entomol., La., Ga., Tex., 1925-40; Assoc. Entomol., ibid., 1940-45; Entomol., Bur. of Entomol. and Plant Quarantine (Entomol. Rsch. Br.), ibid., 1945—. Mem.: Fellow, Entomol. Soc. of Am.; Southwestern Branch Entomology Soc. of Am.; Fellow, A.A.A.S.; Fellow, Tex. Acad. of Sci.; The Lepidopterists' Soc.; Ecol. Soc. of Am.; Royal Entomol. Soc. of London, Fellow; Sigma Xi; Kappa Delta Pi; Kappa Alpha Mu; Lions Internatl. Contbr. to: Jour. of Econ. Entomol. Special Int.: Insect Ecology; Collecting Insects by Airplane; The Relation of Insects to Disease with Special Reference to Allergy; Collection of World-wide Lepidoptera, with special interest in Ornithoptera, Agrias, Morpho, Catocala and Papilio.



GNAGY, M(uriel) J(asper) (Mr.), Chemist, U. S. Food and Drug Admin., Los Angeles, Calif. (Ret.) Home Add.: 700 Washington St., Alhambra, Calif. FOOD AND DRUG CHEMIST, ANALYTICAL AND RESEARCH. b. Hamilton, Ind., Aug. 2, 1891. s. John Sherman and Mary Elizabeth (Mathews) G. Edn.: B.S., State Coll. of Wash., 1917; M.S., Univ. of Wash., 1929. m. Lydia May Jamieson (dec.), June, 1920. c.: Walter Lewis; Richard MacArthur; Merle Wesley. Exp.: Chemist, Am. Mineral Production Co., Valley, Wash., 1917-20; Chemist, Granby Con. Min. Smelt. and Power Co., Anyox, B. C., Canada, 1917-19; Rsch. Chem., Anaconda Copper Mining Co., Anaconda, Mont., 1919-20; Tchr., H.S., Philippines, Capiz and Lucena, P. I., 1921-23; Tchr., H.S. Schls., State of Wash., Everett and Prosser, Wash., 1924-28; Chemist, U. S. Food and Drug Admin., Minneapolis, Minn., 1929-31; Chemist, ibid., New Orleans, La., 1931-35; Chemist, ibid., Los Angeles, Calif., 1935-61 (Ret.). Hon. Pos.: Pres., Local Chap. and Chmn., Coun. and Vice Pres., Calif. State Federation, Natl. Federation of Fed. Employees, Los Angeles. Mem.: Assn. of Official Agri. Chem.; Am. Chem. Soc.; Inst. of Food Technologists; Los Angeles Mineralogical Soc.; Natl. Geographical Soc.; Calif Acad. of Sci.; Am. Museum of Natural Hist.; AAAS; Wilderness Soc.; Sierra Club; Phi Beta Kappa; Mason. Contbr. to: Jour. Assn. of Official Agri. Chemists. Serv. Rec.: AUS, 1918-19. Gen. Int.: Referee and Assoc. Referee on Gums in Foods, and Assoc.

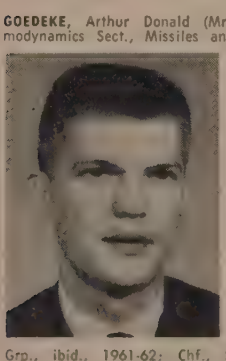
Referee on Chlorogenic Acid in Coffee, for the Assn. of Official Agricultural Chemists. Areas of Rsch.: Development of methods for the determinations of gums and other stabilizers in various foods, and the development of methods for the determination of chlorogenic acid in coffee.

GNAEDINGER, John Phillip (Mr.), Pres., Soil Testing Serv., Inc., 1827 N. Harlem Ave., Chicago 35, Ill. Home Add.: 1441 Linden Ave., Highland Park, Ill. SOIL AND FOUNDATION ENGINEERING. b. Chicago, Ill., Jan. 11, 1926. s. Robert Joseph and Edna (Metz) G. Edn.: B.C.E., Cornell Univ., 1946; M.S. in C.E., Northwestern Technological Inst., 1947. m. Elizabeth Williams, Mar., 1956. c.: John Phillip, Jr. Exp.: Structural Engr., Shaw Metz and Dolio, Chicago, Ill., 1946-49; Pres., Soil Testing Serv., Inc., Chicago, Ill., 1948–. Hon. Pos.: Trustee, Western Soc. of Engrs.; Membership Sec'y., ASTM Comm. D-18; Pres., Ill. Engrng. Coun.; Tech. Studies Adv. Comm. of Bldg. Rsch. Adv. Bd. Mem.: Am. Soc. of C.E.; Am. Soc. of Testing Materials; Natl. Soc. of Prof. Engrs.; Highway Rsch. Bd.; Am. Concrete Inst.; Western Soc. of Engrs.; Sigma Xi; Chi Epsilon; Tau Beta Pi. Contbr. to: Transactions ASCE; ASTM Bull.; Jour. of Am. Chem. Soc. Gen. Int.: Elected 10 Outstanding Young Men in Chicago, 1960. Areas of Rsch.: Soil and Foundation Engineering, Soil Stabilization.

GOATES, Wallace A. (Ph.D.) 975 E. 1st South and Prof., Univ. of Utah, Salt Lake City, Utah. Home Add.: 2419 Stringham Ave., Salt Lake City, Utah. AUDIOLOGY AND SPEECH PATHOLOGY. b. Lehi, Utah, Aug. 20, 1907. s. George A. and Della (Jensen) G. Edn.: B.A., Univ. of Utah, 1929; M.A., State Univ. of Iowa, 1935; Ph.D., ibid., 1937. m. Roma Tolton, 1931. c.: Delbert T.; Julie M. M.; W. David T.; R. Louise T. Exp.: Asst. Prof. and Dir. of Speech Clinic, Utah State Univ., 1935-37; Dir. and Founder, Speech Sci. Lab., Univ. of Utah, 1937-43; Prof. of Speech, Univ. Utah, 1946–; Dir. and Founder, Speech and Hearing Center, Univ. of Utah, 1946-57; Lectr., Dept. Anatomy, Coll. of Med., Univ. of Utah, 1949-55; Clinical Lectr., Dept. Surgery, Coll. Med., Univ. of Utah, 1950–; Dir. and Founder, Inst. for Special Edn., Univ. of Utah, 1954-55; Consultant in Logopedics, Vets. Admin. Hosp., (Ft. Douglas), Salt Lake City, Utah, 1954–; Clinical Lectr., Dept. Psychiatry, Coll. Med., Univ. of Utah, 1954–; Consultant in Speech Pathol. and Audiol., St. Marks Hosp., Salt Lake City, Utah, 1959–; Private Practice, ibid., 1957–; Assoc. Dir., Speech and Hearing Clinic, 1961–. Hon. Pos.: Natl. Hon. Bd. of Dir., Natl. Educational Advisory Bd., Representative Dir., United Cerebral Palsy Assn.; Pres., Utah Speech and Hearing Assn.; Vice Pres., Bd. of Dirs., Utah Soc. for Crippled Children and Adults; Chmn., Mem. Bd. of Dir., United Cerebral Palsy Assn. of Utah. Mem.: A.A.A.S.; Utah Neurological Soc.; Am. Speech and Hearing Assn.; Utah Acad. of Sci.; Pi Kappa Alpha; Council for Exceptional Children; Natl. Sons of Pioneers. Contbr. to: Annals of Otol.; Rhinol. and Laryngol.; Jour. of Speech and Hearing Disorders; Pediatrics; Utah Ednl. Rev. Serv. Rec.: U.S.N.R. Gen. Int.: Advanced Clinical Certification in Audiology, Speech Pathology, Am. Speech and Hearing Assn.; Past Cmdr., Bennion Post, Am. Legion; Utah State Centennial Staff. Areas of Rsch.: Psychoacoustics and Physiology of Speech and of Hearing and their deviations.

GODWIN, Julius George (D.D.S.), Staff Mem. and Tchr., Jewish Hosp., St. Louis, Mo. Home Add.: 15 Sackston Woods, St. Louis 41, Mo. DENTISTRY. b. Munich, Germany, Mar. 14, 1915. s. George and Sophie (Lewin) G. Edn.: D.D.S., Wash. Univ. Schl. of Dentistry, 1941. m. Florence Silk, July 9, 1950. c.: Gary Stephen; Susan Ann. Exp.: Intern and Residency in Oral Surg., and Anesthesia, Jefferson Davis Hosp., Houston, Tex., 1941-43; Instr. in Oral Surg., St. Louis Univ. Dent. Schl., St. Louis, Mo., 1943-48; Staff Mem.: Jewish Hosp., St. Louis, Mo., 1952–; Tchng. Staff, ibid., 1962–. Mem.: Am. Dental Assn.; Internatl. Assn. for Dent. Rsch.; Fed. Dentaire Internatl.; Sigma Alpha Mu; Omicron Kappa Upsilon; A.A.A.S. Contbr. to: Jour. Am. Dental Assn.; Dental Items of Interest; Am. Jour. of Orthodont. and Oral Surg.; Jour. Lancet; Jour. Mo. Dent. Assn.; Dent. Digest. Serv. Rec.: U.S.A.F., 1953-55. Areas of Rsch.: Peridontia, Oral Surgery, Endodontia.

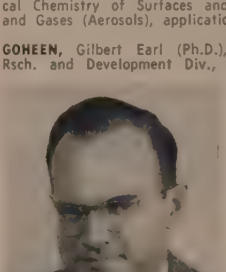
GOEDEKE, Arthur Donald (Mr.), Chf., Space Phys. and Thermodynamics Sect., Missiles and Space Systs. Div., Douglas Aircraft, 3000 Ocean Park Blvd., Santa Monica, Calif. Home Add.: 6451 Lubao Ave., Woodland Hills, Calif. COSMIC RAY PHYSICS (SOLAR COSMIC RADIATION, SPACE ENVIRONMENT, SPACE RADIATION SHIELDING, GEOPHYS, IONOSPHERIC PHYSICS). b. Wash., Mo., Sept. 10, 1934. s. Arthur Goedeke and Veronica Johanna (Ashley) G. Edn.: B.S., Rockhurst Coll., 1956; Compl. Stud. M.S., St. Univ. Ia., 1959. m. Patricia Ann Duryea, Nov. 22, 1956. c.: Elizabeth Ann; Lori Kathleen; Lynn Patricia. Exp.: Rsch. Asst., St. Univ. of Ia., 1956-59; Space Rad. Spect., Missiles and Space Systs., Douglas Co., 1959-61; Asst. to Design Engr., ibid., 1961; Hd., Space Phys. and Planetary Sci. Grp., ibid., 1961-62; Chf., Space Phys. and Thermodynamics Sect., ibid., 1962–. Hon. Pos.: Mem. of the U. S. Delegation to COSPAR, 1960 and 1962. Mem.: Am. Phys. Soc.; Am. Geophys. Union; Am. Astronaut. Soc.; Delta Upsilon. Contbr. to: Aerospace Engrng.; Missiles and Rockets; Space Exploration; Procs. of I.E.S.; Procs. of 3rd Internatl. Space Sci. Symp. Areas of Rsch.: Solar Cosmic Radiation; Solar Flares; Earth-Sun Relationships; Geophysics; Space Radiation Shielding; Ionospheric Physics; Riometer Measurements; Space Environment.



GOERTZ, Grayce E. (Ph.D.), Prof. of Foods & Nutrition, Kans. State Univ., Manhattan, Kans. Home Add.: 915 Claflin Rd., Manhattan, Kans. FOOD CHEMISTRY. b. Carnduff, Sask., Can., July 9, 1919. d. John P. and Elizabeth (Flaming) G. Edn.: B.S., Kans. State Univ., 1941; M.S., ibid., 1947; Ph.D., ibid., 1952. Exp.: Instr., Home Econ., Windom Rural H.S., Kans., 1941-44; Foods Instr., Pratt H.S. and Jr. Coll., Kans., 1944-46; Grad Rsch. Asst., Kans. State Univ., 1946-47; Instr. of Foods, ibid., 1947-48; Instr. of Foods, Ill. Univ. 1948-49; Grad. Rsch. Asst., Kans. State Univ., 1949-52; Asst. Prof. of Foods, Ore. State Univ., 1952-55; Prof. of Foods and Nutrition, Kans. State Univ., 1955–; Visiting Prof., Ore. State Coll., s.s., 1959. Mem.: Omicron Nu; Phi Kappa Phi; Sigma Xi; Gamma Sigma Delta; Phi Upsilon Omicron. Contbr. to: Food Rsch.; Food Technology; Poultry Sci.; Jour. of Am. Home Econ. Assn.; Jour. of Am. Dietetics Assn. Areas of Rsch.: Organoleptical, Histological and Chemical Studies of Meat and Poultry.

GOETZ, Alexander (Ph.D.), Assoc. Prof. of Physics, Calif. Inst. of Tech., Pasadena, Calif. Home Add.: 1317 Boston St., Altadena, Calif. MOLECULAR PHYSICS. b. Wiesbaden, Germany, Nov. 17, 1897. s. Dr. Carl and Ellinor (Elbers) G. Edn.: Ph.D., Univ. Freiburg, 1921; Ph.D., Univ. of Gottingen, 1923. m. Sylvia Scott, June 29, 1936. c.: Alexander Franklin Hermann; Ellinor Margaretta. Exp.: Asst., Privatdozent, a.o. Prof. of Physics, Univ. of Goettingen, Germany, 1923-30; Rockefeller Fellow to Calif. Inst. of Tech., 1927-29; Guest Prof. in Japan and China, 1929-30; Assoc. Prof., Calif. Inst. of Tech., 1930–; Scientific Consultant to Chem. Corps, U. S. Army, 1948-51; Scientific Consultant, Air Pollution Control Dist., 1956–; Scientific Consultant, Calif. St. Pub. Health Dept., 1960–. Mem.: Fellow, Am. Phys. Soc.; German Phys. Soc.; Am. Assn. Adv. of Sci., Soc. Am. Bacteriologists; Soc. of Bioclimatology; Sigma Xi; Los Angeles Yacht Club. Author: Physik und Technik des Hochvakuums, 1926; Monograph; The Oligodynamic Effect of Silver, 1940. Contbr. to: Proc. Natl. Acad. of Scis.; Phys. Rev.; Rev. Scient. Instrs.; Zs f. Physik; Physikal. Zeitschr.; Science Rep. Tohoku Univ.; Verh. Dtsch. Physik. Ges.; Proc. Am. Phil. Soc.; Jour. Appl. Phys.; Zeits. f. Kristallographie; Mining Congress Jour.; Science; Trans. Electrochem. Soc.; Chem. Revs.; Am. Jour. of Pub Health; Jour. Am. Water Works Assn.; Jour. Air Poll. Contr. Assn.; Zeits. f. Aerosolforschg. Serv. Rec.: German Army, World War I. Gen. Int.: During World War II: Emergency desalting of sea water. Areas of Rsch.: Molecular Physics; Physical Chemistry of Surfaces and Colloidal Suspensions in Liquids and Gases (Aerosols), applications to Air Pollution.

GOHEEN, Gilbert Earl (Ph.D.), Asst. Dir., Southern Utilization Rsch. and Development Div., Agricultural Rsch. Service, U. S. Dept. of Agril., New Orleans, La. ORGANIC CHEMISTRY. b. Barry, Ill., May 8, 1912. s. William M. and Nettie May (Thompson) G. Edn.: B.S., Univ. of Ill., 1934; M.S., Univ. of Iowa, 1935; Ph.D., ibid., 1938. m. Eleanor V. Boots, Aug. 19, 1939. c.: E. Virginia; Elizabeth M. and William E. Exp.: Rsch. Chemist, Sun Oil Co., Norwood, Pa., 1938-42; Chem., Process Development Dept., General Aniline Works, 1942-49; Asst. to Dir. of Rsch. and Assoc. Dir. of Central Rsch. Lab., Gen. Aniline and Film Corp., 1949-52; Dir. of Rsch. and Devel., J. T. Baker Chem. Co., Phillipsburg, N. J., 1952-54; Asst. Dir., Div., U.S.D.A., New Orleans, La., 1955–. Mem.: Am. Chem. Soc.; A.A.A.S.; Am. Oil Chemists Soc.; Am. Assn. Textile Chemists and Colorists; Phi Lambda Upsilon; Alpha Chi Sigma; Sigma Xi; R.E.S.A.; Phi Kappa Phi. Contbr. to: Jour. Am. Chem. Soc.; Indus. Engrng. Chem.; Inorganic Syntheses; Encyclopedia of Chem. Tech. Special Int.: Haloamines and Their Reaction with Ketenes; Pyrrolidines; Conversion of Naphthenic Acids to Naphthene Hydrocarbons; Multicyclopentyl Hydrocarbons; Dyes, Color Formers; Detergents; Utilization of Tech. Information; Utilization of farm commodities.



GOIN, Coleman Jett (Ph.D.), Prof. of Biol. Sci., Univ. of Fla., Gainesville, Fla. HERPETOLOGY. b. Gainesville, Fla., Feb. 25, 1911. s. Newbold L. and Mariam (Jett) G. Edn.: B.S., Univ. of Fla., 1939; M.S., ibid., 1941; Ph.D., ibid., 1946. m. Olive Bown, June 7, 1940. c.: Olive Lynda; Coleman Jett, Jr. Exp.: Instr., Univ. of Fla., Gainesville, Fla., 1945-47; Asst. Prof., ibid., 1947-51; Assoc. Prof., ibid., 1951-56; Prof., ibid., 1956–; Vice Pres., Am. Soc. Ichthyologists and Herpetologists, 1942-47; Treas., ibid., 1952-57; Rsch. Assoc., Carnegie Museum, 1950. Mem.:

Am. Soc. of Ichthyologists and Herpetologists; Am. Soc. Naturalists; Herpetologists' League; Fla. Acad. Sci.; Soc. for the Study of Evolution; Soc. of Systematic Zool.; Nat. Hist. Soc. of Jamaica; Sigma Xi; Phi Sigma; F. and A. M. Contbr. to: Copeia; Annals Carnegie Museum; Herpetologica; Fla. Entomologist; Proc. New England Zool. Club; Proc. Fla. Acad. Sci.; Fauna; Natural Hist. Miscellanea; etc. Special Int.: Ecology, Evolution and Genetics of the Amphibia.

GOLD, Raymond (Ph.D.), Prof. and Head of Dept. of Nuclear Sci. and Engrng., Lowell Technological Inst., Lowell, Mass. Home Add.: 40 Beaudry St., Lowell, Mass. NUCLEAR SCIENCE. b. N. Y. C., N. Y., Oct. 3, 1927. s. Harry and Hilda (Krauss) G. Edn.: B.A., N. Y. Univ., 1951; M.S., ibid., 1954; Ph.D., Ill. Inst. of Tech., 1958. m. Judith Reiner, May 24, 1951. c.: Ilyse Karen; Warren Glenn; Mark David. Exp.: Physicist, Columbia Univ., Pupin Physics Lab., N. Y., 1953-54; Physicist, Gen. Electric Co., A.N.-P.D. Cinn., Ohio, 1954-55; Rsch. Physicist, Armour Rsch. Found., Chicago, Ill., 1955-58; Prof., Lowell Technological Inst., 1958—. Mem.: Am. Physical Soc.; A.A.A.S.; Sigma Xi; Am. Inst. of Physics; Am. Soc. for Engrng. Edn. Contbr. to: Jour. of Molecular Spectroscopy; Physical Review; Nucleonics. Serv. Rec.: U.S.N. Gen. Int.: Consultant in the Field of Nuclear Radiation Shielding. Areas of Rsch.: Molecular Physics; Beta Ray Spectroscopy; Multiple Scattering of Photons; Ionosphere Physics; Applied Mathematics.

GOLDBERG, Bernard (M.D.), Ophthalmologist, 213 Madison Ave., New York 16, N. Y. Home Add.: 118-11 84th Ave., Kew Gardens 15, N. Y. OPHTHALMOLOGY. b. New York City, N. Y., Oct. 27, 1919. s. David T. (dec.) and Bertha (Spivack) G. Edn.: B.A., N. Y. Univ., 1940; M.D., Boston Univ. Schl. of Med., 1950. Exp.: Asst. Prof., Albert Einstein Schl. of Med., Yeshiva Univ., Bronx, N. Y., 1954-57; Asst. Surgeon, N. Y. Eye and Ear Infirmary, New York, N. Y., 1954—; Asst. Dir., Dept. of Rsch., ibid., 1956—. Mem.: Alpha Omega Alpha; N. Y. Acad. of Sci.; Assn. for Rsch. in Ophthal.; A.A.A.S.; Am. Acad. of Ophthalmolg. and Otolaryngology; Phi Beta Kappa. Contbr. to: Am. Jour. of Ophthalmology; Arch. of Ophthalmology. Serv. Rec.: A.U.S. Areas of Rsch.: The use of radio-active phosphorus (P^{32}) in the diagnosis of ocular tumors.

GOLDBLITH, Samuel Abraham (Ph.D.), Prof. of Food Sci. and Tech.; Exec. Officer, Dept. of Food Technology, Mass. Inst. of Tech., Cambridge 39, Mass. Home Add.: 76 Norman Road, Melrose 76, Mass. APPLICATION OF IONIZING RADIATION TO FOOD PRESERVATION. b. Lawrence, Mass., May 5, 1919. s. Abraham and Fannie (Rubin) G. Edn.: S.B., Mass. Inst. Tech., 1940; S.M., ibid., 1947; Ph.D., ibid., 1949. m. Diana L. Greenberg, April 27, 1941. c.: Errol David; Judith Ann; Jonathan Mark. Exp.: Biochem. Rsch., Arthur D. Little, Inc., 1940-41; Rsch. Assoc., Mass. Inst. Tech., 1949-52; Asst. Prof., Dept. Food Tech., ibid., 1952-55; Assoc. Prof. and Exec. Officer, Dept. of Food Tech., ibid., 1955-61; Prof., ibid., 1961—. Hon. Pos.: Tech. Aide, Natl. Rsch. Coun., 1953-56; Chmn., Northeast Sec., Inst. of Food Techst., 1956-57. Mem.: Inst. of Food Technolst.; Am. Chem. Soc.; Radiation Rsch. Soc.; Am. Nuclear Soc.; Sigma Xi; Phi Tau Sigma; Mason. Contbr. to: Food Rsch.; Food Technol.; Sci.; Jour. of Biol. Chem.; Arch. of Biochem. and Biophysics; Radiation Rsch.; Food Engrng. War Rec.: U. S. Army, 1941-46. Areas of Rsch.: Radiation Application to Foods.

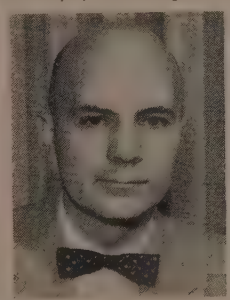
GOLDEN, Alfred (M.D.), Dir. of Labs., Jennings Memorial Hosp., Blain, Saratoga Hospitals, Detroit, Mich. Home Add.: 26764 York Rd., Huntington Woods, Mich. PATHOLOGY (MEDICAL). b. New York, Aug. 4, 1908. s. Bernard and Rheba (Dryer) G. Edn.: B.S., Univ. of Wisc., 1933; M.S., ibid., 1935; M.D., Wash. Univ. Schl. of Med., 1938. m. June Baker, Sept. 1939. c.: David Alfred; Frederick Leonard. Exp.: Rsch. Asst., Bacteriol., Univ. of Wisc., 1934-36; Rsch. Assoc., Wash. Univ. Schl. of Med., 1936-38; Pathol. Consultant, Exec. Officer, Armed Forces Inst. Pathol., Wash., D. C., 1941-45; Med. Officer in Charge, Tropical Disease Investigation Unit, OIAA, D. C., 1945-46; Assoc. Prof. of Pathology, Univ. of Tenn., 1946-49; Assoc. Prof. of Pathology, Univ. of Buffalo, 1951-55; Assoc. Prof. of Pathol., Wayne Univ., 1955-56; Dir. of Labs., Jennings Memorial Hosp., 1956—. Hon. Pos.: Consultant, Buffalo Eye Bank and Rsch. Soc.; Consultant, McGregor Found., Detroit, Mich.; Pres., Wash., D. C. Soc. Pathologists; Pres., Tenn. State Soc. Pathol. Mem.: Am. Coll. Physicians; Coll. Am. Pathologists; Am. Assn. Pathol.; Am. Soc. Clin. Pathol.; Soc. for Exp. Pathol.; Sigma Xi; A.A.A.S. Contbr. to: Am. Jour. of Pathology; Jour. Soc. Clin. Pathol.; Bull. Johns Hopkins Hosp.; Archives Pathol. Serv. Rec.: M.C.-A.U.S., 1940-45. Areas of Rsch.: Cancer Research, Infectious Diseases, Diseases of the Lungs and Respiratory System.

GOLDFARB, Alvin Frank (M.D.), Assoc. in Ob. and Gyn., Jefferson Med. Coll., Philadelphia, Pa. Home Add.: 1301 N. Woodbine Ave., Narberth, Pa. GYNECOLOGIC ENDOCRINOLOGY AND HUMAN REPRODUCTION. b. New York, N. Y., May 16, 1923. s. Dr. Frank M. and Mrs. Mona (Schlaten) G. Edn.: B.A., Vanderbilt Univ., 1943; M.D., ibid., 1947. m. Arlyne Goodman, Sept., 1948. c.: Michael Paul; Robert Goodman; Daniel Jon; Lisa Beth. Exp.: Instr., N. Y. Med. Coll., N. Y., N. Y., 1953-58; Assoc., Dept. of Obs. and Gynecol., Jefferson Med. Coll., Philadelphia, Pa., 1958—. Hon. Pos.: Editorial Board, International Jour. of Fertility. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Am. Soc. Study of Ster.; Am. Coll. of Obs. and Gyn.; Acad. of Psychosomatic Med.; Am. Soc. of Cytology; Psycho-Endocrine Rsch. Assn.; Alpha Epsilon Pi; Phi Delta Epsilon. Contbr. to: Am. Jour. of Obs. and Gyn.; Obs. and Gyn. Lancet; Internatl. Correspondence Soc. of Obs. and Gyn. Serv. Rec.: U.S.N.R. Gen. Int.: Organization of a Fetal Salvage Clinic at Jefferson Med. Coll. Hosp.; Former N.C.I. Trainee with Interest in a Total Care Program for Terminal Pelvic Cancer. Areas of Rsch.: Cytohormonology in reproductive problems; Production of Congenital Anomolies in Experimental Animals.

GOLDIE, Harry, Senior Project Engr., Boeing Aircrafts, Seattle, Wash.

GOLDIE, Horace (M.D.), Prof. Exptl. Oncology (Surgery), Dir., Lab. for Exptl. Oncology, Meharry Med. Coll., Nashville 8, Tenn. Home Add.: 212 Mockingbird Rd., Nashville 5, Tenn. CANCER RESEARCH (ONCOLOGY), RADIOLOGY (RADIOISOTOPES), IMMUNOLOGY. b. Rezenne, France, July 31, 1900. s. Ithamar and Sabina (Sobel) G. Edn.: M.D., Univ. of Paris, 1924; D.T.M., London Schl. of Trop. Med., 1926. m. Lee Hechtman, Jan. 31, 1943. c.: Catherine Sabina; Marie Geraldine. Exp.: Rsch. Assoc., Pasteur Inst., France, 1928-40; Guest Scient., Lederle Lab., 1940-45; Rsch. Bacteriologist, New York City Health Dept. Lab., 1945-47; Biologist, Natl. Cancer Inst., Bethesda, Md., 1947-50; Dir., Lab., Meharry Med. Coll., 1950—. Mem.: Am. Soc. for Nuclear Med.; Am. Assn. for Cancer Rsch.; Fed. of Am. Biol. Soc.; A.A.A.S.; N. Y. Acad. of Sci.; Am. Soc. Exptl. Pathol.; Am. Assn. Immunologists; Royal Soc. of Med. (Affiliate). Contbr. to: Cancer Rsch.; Sci.; Proc., Soc. of Exptl. Biol. and Med.; Annals of N. Y. Acad. of Sci.; Jour. of Infectious Diseases; Jour. Natl. Cancer Inst. War Rec.: French Army, 1917-19. Areas of Rsch.: Free tumor cell growth in body fluids; mechanism and treatment of tumor metastases; colloidal and particulate isotopes in body fluids.

GOLDING, David R. V. (Ph.D.), Supvr., Sr. Technical Specialist, Rocketdyne, 6633 Canoga Ave., Canoga Park, Calif. Home Add.: 7316 Birdview Drive, Malibu, Calif. CHEMISTRY. b. Chicago, Ill., 1919. s. M. Earle and Nondas C. (Greene) G. Edn.: A.B., Harvard Univ., 1941; Ph.D., Calif. Inst. of Technol., 1944. m. Marijane Smith, 1952. c.: Margot; Sabina; Rex. Exp.: Rsch. Chemist, Caltech, Pasadena, Calif., 1944-46; E. I. du Pont de Nemours, Wilmington, Del., 1946-59; Sr. Technical Specialist, Rocketdyne, Canoga Park, Calif., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; R.E.S.A.; Am. Rocket Soc.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Solid Rocket Propellants, Synthetic Fiber Properties, Processing and Technol., Industrial Chem. Processing Devel. and Rsch., Catalysis and Kinetics.



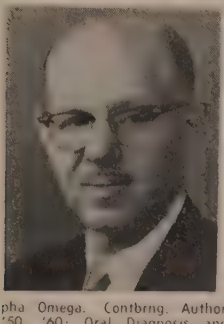
GOLDMANN, Franz (M.D.), Assoc. Prof. of Med. Care, Emer., Boston 15, Mass. Home Add.: 48 Seaview Ave., New Rochelle, N. Y. ORGANIZATION AND ADMINISTRATION OF MEDICAL CARE PROGRAMS. b. Elberfeld, Germany, Jan. 2, 1895. s. Felix and Wally (Warschauer) G. Edn.: M.D., Friedrich-Wilhelms Univ., Berlin, 1920. m. 1st, Elizabeth A. Warburg (dec.), June 10, 1939; 2nd, Gladys Jacoby Wilson, Apr. 18, 1960. Exp.: Cent. Health Dept., City of Berlin, 1922-29; Div. of Health Servs., Reich's Ministry of the Interior, Oberregierungsrat, 1929-33; Consultant, Health Sect., League of Nations, 1933; Privatdozent Med. Schl., Friedrich-Wilhelms Univ., 1932-33; Lectr., Socialhygienische Akademie Charlottenburg, 1931-33; Yale Schl. of Med., Dept. of Public Health, 1937-47; Fellow, 1937-39; Assoc. Clin. Prof. of Public Health, 1939-46; Clin. Prof., Pub. Health, 1946-47; N. Y. Schl. of Social Work, Columbia Univ., Lectr., 1942-47; Harvard Schl. of Pub. Health, Assoc. Prof. of Med. Care, 1947-57; Lectr., Simmons Coll. Schl. of Social Work, Boston, 1947-57; Lectr., Boston Univ. Schl. of Med., 1951-57. Mem.: Am. Coll. Pre-

ventive Med ; Am. Pub. Health Assn.; Am. Pub. Welfare Assn.; Am Acad. of Polit. and Social Scis.; Natl. Conf. of Social Work; Mass. Pub. Health Assn., Pres , 1958-59; Delta Omega, Natl. Pres., 1958-59. Author: 130 Scientific Publications, including 5 Books and 9 Monographs in Textbooks. Contbr. to: Jour. of A.M.A.; Am. Jour. of Pub. Health; New Eng. Jour. of Med.; Annals of Am. Acad. of Polit. and Soc. Sci.; Am. Ec. Rev.; Social Work Yearbook; Soc Serv. Rev.; Pub. Health Nursing; Geriatrics. Gen. Int.: Recd. Ernst P. Boas Award for Adv. of Social Med., 1959. War Rec.: Off. of Strategic Servs., Wash., 1944. Travel: Scandinavian Countries; Great Britain; Germany; Luxemburg; France; China. Hobby: Gardening. Listed in: Who's Important in Med.; A.M.S.; World Biog.; Who's Who in New Eng.; Who's Who in Am. Edn. Special Int.: Socio-Econ. Aspects of Health and Disease; Organization of Health Services; Admin. of Med. Care Programs.

GOLDMAN, Alan Stewart (Ph.D.), Professional Staff, Tempo/GE Santa Barbara, Calif. Home Add.: 2320 Las Canoas Rd., Santa Barbara, Calif. ECONOMICS, STATISTICS. b. Boston, Mass., Apr. 2, 1925. s. Edward and Celia (Porter) G. Edn.: B.S., Univ. of N. H., 1949; M.S., Ia. State Univ., 1950; Ph.D., ibid., 1953. m. Phyllis Herman, June 27, 1946. c.: Chris Eric; Jamie Lynne. Exp.: Statistician, Gen. Elec. Company, Schenectady, N. Y., 1954-56; Asst. to Vice-Pres., Norden-Ketay Corp., Stamford, Conn., 1956-58; Profl. Staff, Tempo Ge, Santa Barbara, Calif , 1958 . Mem.: Inst. of Mgmt. Scis.; Alpha Zeta; Citizen's Advisory Comm. on Edn. Contbr. to: Inst. of Mgmt. Sci.; Internatl. Aerospace Scis.; Jour. of Farm Econs. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Logistics; Reliability and Maintainability of Complex Systems; Mgmt. Organization; Electronic Data Processing Systems.

GOLDSCHMIEDT, Henry (Ph.D.), Hd. of Dept. of Cellular Physiol., Inst. of Applied Biol., 144 E. 90th St., New York, N. Y. Home Add.: 310 Riverside Dr., Suite 1901, New York 25, N. Y. BIOCHEMISTRY. b. Vienna, Austria, April 9, 1906. s. Emanuel and Caroline (Preis) G. Edn.: Ph.D., Univ. of Vienna, Austria, 1927. Exp.: Consultant, Pharmaceutical and Cosmetic Industries, New York, 1939—; Hd. Dept. of Cellular Physiol., Inst. of Applied Biol., New York, N. Y., 1956—. Hon. Pos.: Exec. Vice Pres. and Founder, Soc. for the Promotion of Int'l. Scientific Relations. Mem.: Am. Chem. Soc. Author: The Junior Chemist, 1962. Areas of Rsch.: Studies and Tests on Skin Respiration.

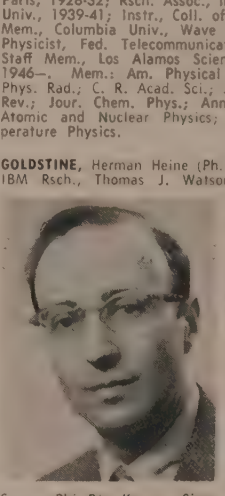
GOLDSTEIN, Abraham (D.D.S.), Assoc. Prof. in Periodontia and Oral Med , 334 East 3rd St., Brooklyn 18, N. Y. Home Add.: 272 Webster Ave., Brooklyn 30, N. Y. DENTIST PERIODONTIA AND ORAL MEDICINE. b. Brooklyn, N. Y., Mar. 14, 1913. s. Louis and Rose (Heller) G. Edn.: B.S., Brooklyn Coll., 1934; D.D.S., N. Y. Univ., 1938. m. Roslyn Berg, June, 1941. c.: Barry Jay. Exp.: Instr., N. Y. Univ. Coll. of Dentistry, N. Y., 1938-48; Asst. Prof., ibid., 1948-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: Pres., Am. Acad. of Dental Med. Mem.: Fellow, Am. Coll. of Dentists; Fellow, Am. Acad. of Dental Med.; Am. Dental Assn.; Am. Acad. Dental Med.; Am. Acad. of Periodontol.; Scientific Rsch. Soc. of Am.; A.A.A.S.; A.A.U.P.; N. Y. Acad. of Sci.; Natl. Geographic Soc.; Omicron Kappa Upsilon; Alpha Omega. Contbrng. Author: Textbook of Periodontia, 1943, '50, '60; Oral Diagnosis and Treatment, 1957; Dynamics of Psychosomatic Dentistry, 1953. Contbr. to: Jour. of Dental Med.; Jour. of Periodontol. Areas of Rsch.: Periodontia and Oral Medicine.



GOLDSTEIN, Eli (M.D.), Physician, 150 E. 94th St., New York 28, N. Y. INTERNAL MEDICINE. b. Russia, May 21, 1897. s. Julius and Yente (Komshutz) G. Edn.: M.D., L. I. Med. Coll., 1922; B.S., Columbia Univ., 1926. m. Caroline Kleppner, 1924. c.: Judith G. Groch; Dr. Naomi G. Feldman. Exp.: Intern, Fifth Ave. Hosp., N. Y. C., 1922-24; Fellow in Pathol., N. Y. C. Hosp., 1924; Asst. Attending Physician, Fifth Ave. Hosp., 1924-28; Chf., Med Clinic, ibid., 1924-36; Post Grad. Work in Pathol. and Internal Med., Vienna, 1926; Chf., Diabetic Clinic, Fifth Ave. Hosp., N. Y. C., 1927-34; Assoc. Attending Physician, Flower-Fifth Ave. Hosp., N. Y. C., 1928-36; Assoc. Attending Physician, Sydenham Hosp., N. Y. C., 1939-40; Asst. Clin. Prof. of Med., N. Y. Med. Coll., 1944-49; Assoc. Clin. Prof. of Med., ibid., 1949-55; Assoc. Attending Physician, Flower-Fifth Ave. Hosp., N. Y. C., 1949-61; Dir. of Med. and Attending Physician, Hebrew Home for the Aged, Riverdale, N. Y., 1950 ; Visiting Physician, Bird S. Coler Mem. Hosp., N. Y. C., 1953 ; Visiting Physician, Metropolitan Hosp., N. Y. C., 1953 ; Assoc. Prof. of Med., N. Y. Med. Coll., 1955-61; Attending Physician, Flower-Fifth Ave. Hosp., N. Y. C., 1961 ; Prof. of Clinical Med., N. Y. Med. Coll., 1961 . Mem.: N. Y. Acad. of Med., Fellow; Am. Bd. of Internal Med., Diplomate; Am. Coll. of Physicians, Fellow; Am. Geriatrics Soc., Fellow; Am. Acad. of Jewish Rsch.; A.A.A.S.; A.M.A.; Internatl. Soc. of Internal Med.; Rudolph Virchow Med. Soc., Med Soc. of Co. of N. Y.; N. Y. State Med. Soc.; Lions Club of Yorkville, Harmonie Club. Serv. Rec.: U. S. Army, W.W. II. Areas of Rsch.: Cardiology; Hematology.

GOLDSTEIN, Louis (Sc.D.), Scientific Staff, Los Alamos Scientific Lab., P. O. Box 1663, Los Alamos, N. Mex. Home Add.: 1300 Canyon Rd., Los Alamos, N. Mex. THEORETICAL PHYSICS. b. Dombrad, Hungary, March 25, 1904. s. Morris M. and Josephine (Stern) G. Edn.: Testimonium Maturitatis, Coll. of the City of Nagyvarad, Hungary, 1922; License es Sc., Univ. of Paris, 1926; D. es Sc., Paris, 1932. m. Ella Trammer, Nov. 14, 1933. c.: John C. Exp.: Rsch. Worker, Institut Henri Poincare, Univ. of Paris, 1928-32; Rsch. Assoc., ibid., 1932-39; Rsch. Worker, N. Y. Univ., 1939-41; Instr., Coll. of the City of N. Y., 1941-44; Staff Mem., Columbia Univ., Wave Propagation Gr., OSRD., 1944-46; Physicist, Fed. Telecommunications Lab., I. T. and T., 1946; Staff Mem., Los Alamos Scientific Lab., Los Alamos, N. Mex., 1946—. Mem.: Am. Physical Soc. (Fellow). Contbr. to: Jour. Phys. Rad.; C. R. Acad. Sci.; Annales de Physique, The Physical Rev.; Jour. Chem. Phys.; Annals of Physics. Areas of Rsch.: Atomic and Nuclear Physics; Statistical Mechanics; Low Temperature Physics.

GOLDSTINE, Herman Heine (Ph.D.), Dir., Mathematical Scis Dept., IBM Rsch., Thomas J. Watson Rsch. Center, P. O. Box 218, Yorktown Heights, N. Y. Home Add.: 18 Hayrake Lane, Chappaqua, New York. MATHEMATICS. b. Chicago, Ill., September 13, 1913. s. Isaac O. and Bessie (Lipsey) G. (dec.). Edn.: B.S., Univ. of Chicago, 1933; M.S ibid., 1934; Ph.D ibid., 1936 m. Adele Katz, 1941. c.: Madlen; Jonathan. Exp.: Rsch. Asst. and Instr., Univ. of Chicago, Ill., 1936-39; Asst. Prof., Univ. of Mich., Ann Arbor, Mich., 1939-45; Proj. Dir., Inst. for Adv. Study, Princeton, N. J., 1946-50; Perm. Mem., ibid., 1946—; Rsch. Dir. Math. Scis., IBM Rsch. Center, Yorktown Hgts., N. Y., 1958—. Mem.: Am. Mathl. Soc.; Mathl. Assn. of Am.; Circolo Matematico di Palermo; Natl. Rsch. Coun.; Phi Bta Kappa; Sigma Xi. Co-Author: Preliminary Discussion of the Logical Design of an Electronic Computing Instrument, 1946; Planning and Coding of Problems for an Electronic Computing Instrument, 1947; Planning and Coding of an Electronic Computing Instrument, 1948; Planning and Coding of Problems for an Electronic Computing Instrument, 1948. Contbr. to: Bull. Am. Math. Soc.; Duke Math. Jour.; Proc. Am. Math. Soc.; Proc. of Symposium at UCLA; Proc. Eastern Joint Computer Conf.; Science; Encyclopedia Britannica; Ill. Jour. of Maths.; Jour. of Assn. for Computing Machinery; Digitale Informationswandler. Serv. Rec.: AUS, 1942-46. Areas of Rsch.: Numerical Analysis and Digital Computers.



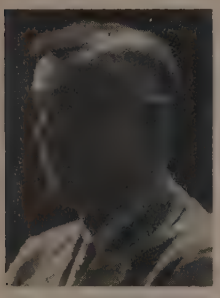
GOLDTHWAIT, Richard P(arker) (Ph.D.), Dir., Inst. of Polar Studies, Prof., Dept. of Geol., Ohio State Univ., 125 S. Oval Dr., Columbus 10, Ohio. Home Add.: 452 Colonial Ave., Worthington, Ohio. GLACIAL GEOLOGY, GEOMORPHOLOGY, GLACIOLOGY. b. Hanover, N. H., June 6, 1911. s. James Walter and Edith Dunnels (Richards) G. Edn.: A.B., Dartmouth Coll., 1933; M.A., Harvard Univ., 1937; Ph.D., ibid., 1939. m. Katherine Davenport Burnham, June 12, 1937. c.: Jane; Susan; Betsy; Thomas. Exp.: Instr., Dartmouth Coll., 1934-35; Instr. to Asst. Prof., Brown Univ., 1939-43; Assoc. Prof., Prof., Ohio State Univ., 1946 -. Hon. Pos.: Pres., Ohio Acad. of Sci.; Governor, Arctic Inst. of N. Am., Fellow; A.A.A.S., Fellow; Geol. Soc. of Am., Fellow; Am. Geog. Soc., Fellow; Ohio Acad. of Sci., Fellow. A.G.U.; British Glaciological Soc.; Sigma Xi; Gamma Alpha, Zeta Psi; Phi Beta Kappa. Co-Author: Geology of New Hampshire, Part II, 1951. Contbr. to: Ohio Jour. of Sci.; Jour. of Geol.; Am. Jour. of Sci.; Geographical Jour. Gen. Int.: A.A.F. Award of Distinguished Merit. Areas of Rsch.: Glacial Geology, Glaciology.

GOLTZ, Robert William (M.D.), Clin. Assoc. Prof., Div. of Dermatology, Univ. of Minn. Med. Schl., Minneapolis, Minn. Home Add.: 4601 Sunnyside Rd., Minneapolis 24, Minn. DERMATOLOGY. b. St. Paul, Minn., Sept. 21, 1923. s. Dr. Edward Victor and Claire 'O'Neill) G. Edn.: B.S., Univ. of Minn., 1943; M.D. ibid., 1945. m. Patricia Sweeney, Sept. 27, 1945. c.: Lenn, Paul. Exp.: Clin. Assoc. Prof., Univ. of Minn., 1960 . Hon. Pos.: Pres., Minn. Acad. of Occupational Med. and Surg., 1961. Mem.: Am. Dermatological Assn.; Soc. for Investigative Dermatology; Histchem. Soc.; Minn. Dermatological Soc., Minn. Acad. of Med ; Minneapolis Acad. of Med ; Minn. Acad. of Occupational Med. and Surg.; Nu Sigma Nu. Contbr. to: Archives of Dermatology; Jour. of Investigative Dermatology; New Eng. Jour. of Med. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Histopathology of the Skin, Histochem., Clinical Dermatology.

GONG, Joseph Kwock (Ph.D.), Investigator, Biophysics Branch, USNRDL, San Francisco, Calif. Home Add.: 2750 Dwight Way, Berkeley 4, Calif. RADIO BIOLOGY. b. San Francisco, Calif., Dec. 13, 1925. s. Harry (dec.) and Fung (Tai, dec.) G. Edn.: A.B., Univ. of Calif., 1951; M.A., ibid., 1959; Ph.D., ibid., 1962. Exp.: Rsch. Assoc., USNRDL, San Francisco, Calif., 1951-54; Investigator, Radio Biology, ibid., 1954—. Mem.: Radiation Rsch. Soc.; Sigma Xi; A.A.A.S.; Pi Alpha Phi. Contbr. to: Am. Jour. of Physiol.; Jour. of Growth; Nucleonics; A.M.A. Archives of Industrial Hygiene; Proc. of the Soc. for Expt. Biol. and Med.; Radiation Rsch.; Archives of Industrial Hygiene and Occupational Med.; Jour. A.P.C.A. Serv. Rec.: U. S. Air Force, 1944-46. Areas of Rsch.: Radioactive Particulate Inhalation, Internal Contamination and Decontamination, Radiation Effects on Bone Marrow, Volumes and Densities of Bone and Bone Marrow; Fission Product uptake by Marine Animals, high Altitude on Bone Marrow Cellularity.

GONSHOR, Harry (Ph.D.), Assoc. Prof., Math., Rutgers Univ., New Brunswick, N. J. Home Add.: 345 W. 86th, New York City, N. Y. MATHEMATICS. b. Montreal, Can., Sept. 26, 1928. s. Wolfe and Rose (Zabitzky) G. Edn.: B.Sc., McGill Univ., 1948; M.Sci., ibid., 1949; Ph.D., Harvard Univ., 1953. Exp.: Asst. Prof., Univ. of Miami, Fla., 1954-55; Asst. Prof., Penn. State Univ., College Park, Pa., 1955-57; Asst. Prof. to Assoc. Prof., Rutgers Univ., New Brunswick, N. J., 1957—. Mem.: Sigma Xi; Am. Mathl. Soc.; Can. Mathl. Congress; Pi Mu Epsilon. Contbr. to: Can. Jour. of Math.; Proc. of Edinburgh Mathl. Soc. Areas of Rsch.: Functional Analysis, Genetic Algebras.

GOODELL, Carrol John (Prof.), former editor, The Shorthorn World. ANIMAL HUSBANDRY. b. Sheldon, Ill., Mar. 19, 1888. s. Charles J. and Helen Maie (Isaacson) G. Edn.: Valparaiso Coll. (later Univ.), Ind., 1903-04; Purdue Univ., 1904-08; B.S.A., Grad. Work, Miss. State Coll., 1924; Purdue Univ., Summer, 1931; Univ. of Ill., Summer, 1932; Visited Midwestern State Inst., Summer, 1933; Ia. State Coll. of Agri., 1934. m. Josephine M. Barsalou of Momence, Ill., June 15, 1910. d. Esadore A. and Artimise (Barnes) B. c.: Helen Maie (Mrs. W. O. Murphy). Exp.: Farm Mgr., Brazil, Ind., 1908-10; Farm Opr., Momence, Ill., 1910-14; Schl. Dir., Searls Schl., Geneer Twp., Kankakee Co., Ill., 1912-14; Agt. in Animal Husb., U.S.D.A., and Beef Cattle Spec., Agri. Consult., Grant Park, Ill.,



Univ. of Ga., 1914-17; Sci. Asst., B.A.I., Wash., D. C., 1917; Leader in Animal Husby. Ext., State Coll., Miss., 1918-21; Assoc. Prof. of Animal Husb., ibid., 1921-24, 1925-27; Assoc. Prof. of Agri. Econ., ibid., 1924; Dairy Spec., Holmes County, Miss., 1927-28; Asst. County Agt. and Dairy Spec., Lowndes County, Miss., 1929-30; Dairy Ed., Southland Dairy Farmer, 1928-29; Hd., Animal Husb. Dept., Miss. State Coll., 1930-35; Animal Husb. Ext. Spec., Miss. State Coll. Ext. Serv., 1935-38; Mem., Kankakee County Soil and Crop Assn., 1912—; Mem., Am. Farm Bur.; Mem., County Agts. Assn., also Assn. of Coll. Eds. Publications Ed., 1938-41; Ed., 1941-44; Ed., The Shorthorn World, 1944-54. Mem.: Miss. Cattle Feeders Assn. (Sec., 1918-21); Mgr., Livestock Dept., Meridian and Jackson, Miss., Fairs, 1918-21; Sec., Sou. Cattlemen's Assn., 1926; Vice-Pres., 1927; Mem., Miss. Livestock Sanitary Bd., 1930-35; Am. Assn. for the Adv. of Sci.; Am. Gen. Assn.; Soc. of Animal Prod.; Purdue Mem. Union; Purdue Alumni Assn.; M.E.A. (Past Mem.); Fellow (Past Mem.) Am. Geog. Soc.; Alpha Zeta; Pi Gamma Mu; Alpha Gamma Rho; Lambda Gamma Delta; Epsilon Sigma Phi; Shrine; Saddle and Sirloin Club; Past Mem., Rotary; Exchange. Listed in: Who's Who in the Southwest; The Internatl. Blue Book; Who's Who in Chicago and Ill.; Who's Who in the Midwest; Mostly About Shorthorns; Who's Who in Am. Edn.; Men of Sci. Gen. Int.: Listed in RUS (Register of Rural Leadership in the United States and Canada), 1920, 1925, 1930; Cited in the Bureau of Animal Industry (U.S.D.A.)—Its Establishment, Achievements, and Current Activities, 1924, as first employee of Dept. for improvement of beef cattle in tick fre'ed areas, and for work in movement of cattle from 1917 drought areas of the Southwest; Who's Who in Club Work, in the Miss. Club Boy, 1920.

GOODFELLOW, Elsie Florence (Ph.D.), Asst. Prof. of Anatomy, Creighton Univ. Med. Schl., Omaha 2, Neb. Home Add.: 301 Union St., Council Bluffs, Iowa. NEUROPHYSIOLOGY. b. Westcliff-on-Sea, Essex, Eng., Apr. 30, 1924. d. Thomas G. and Florence (Elsom) Hyett. Edn.: B.Sc., Univ. of London, Eng., 1954; Ph.D., ibid., 1960. m. John McKay G., 1948. Exp.: Lectr. in Chem., Southend Municipal Coll., Essex, Eng., 1954-55; Rsch. Asst., May and Baker Pharmaceutical Co., Dagenham, Essex, Eng., 1955-56; Rsch. Assoc., Creighton Univ. Med. Schl., 1956-60; Asst. Prof. of Anat., ibid., 1960—. Mem.: Am. Physiological Soc.; Am. Assn. of Anatomists; A.A.A.S.; A.A.-U.W. Contbr. to: Neurol.; E.E.G. and Clin. Neurophysiol.; The Physiologist; Anatomical Record. Areas of Rsch.: Neurophysiol., The Influence of the Rhinencephalon on Animal Physiol. and Behavior.

GOODHUE, Elva (Miss), Hd. of Sci. Dept., Lindsey Wilson Junior College. Home Add.: P. O. Box 252, Columbia, Ky. CHEMISTRY; PHYSICS. b. Gadsden, Ala., Mar. 30, 1888. d.: David and Virginia (Shaver) G. Edn.: Grad., Judson Coll.; B.S., Univ. of Chicago, 1913; M.A., Columbia Univ., 1926. Exp.: Asst. in Sci., Judson Coll., 1906-10; Prin. of Acad. and Assoc. in Sci., Judson Coll., 1912-15; Hd. of Dept. of Sci., Greenville Woman's Coll., 1915-18; Prof. of Chem. and Bot., Christian Coll., 1919-21; Prof. Chem. and Physics, Greensboro Coll., 1921-24; Prof. of Chem., Queens Coll., 1926-28; Prof. of Chem., Dodd Coll., 1928-29; Hd. of Dept. of Sci., Lindsey Wilson Coll., 1929—. Mem.: Kappa Mu Sigma; A.C.S.; A.A.A.S.; Ky. Acad. of Sci.; Delta Kappa Gamma; Chi Omega; D.A.R.; Women's Club, Columbia Chap. Gen. Int.: W. W. in Ky., 1936; W. W. in Genealogy.

GOODMAN, George Jones (Ph.D.), Prof. of Botany, Univ. of Okla., Norman, Okla. Home Add.: 1229 Avondale Dr., Norman, Okla. PLANT TAXONOMY. b. Evanston, Wyo., Nov. 5, 1904. s. Arthur D. and Elizabeth (Jones) G. Edn.: B.A., Univ. of Wyo., 1929; M.S., Washington Univ., 1930; Ph.D., ibid., 1933. m. Marcia McCay, 1948. Exp.: Instr. to Asst. Prof., Univ. of Okla., Norman, Okla., 1933-36; Asst. Prof. to Assoc. Prof., Iowa State Coll., Ames, Ia., 1936-45; Prof., Univ. of Okla., Norman, Okla., 1945—. Mem.: A.A.A.S.; A.A.U.P.; Am. Soc. of Plant Taxonomists; Botanical Soc. of Am.; Internatl. Assn. of Plant Taxonomists; Southwestern Assn. of Naturalists; Colo.-Wyo. Acad. of Sci.; Iowa Acad. of Sci.; Okla. Acad. of Sci.; Phi Beta Kappa; Phi Kappa Phi; Phi Sigma; Sigma Xi; Sigma Delta Pi. Contbr. to: Leafl. of Western Botany; Proc. of the Okla. Acad. of Sci.; Rhodora. Areas of Rsch.: Flora of Oklahoma, Tribe Eriogoneae (Polygonaceae).

GOODMAN, Leo A. (Ph.D.), Prof. of Statistics and Sociol., Univ. of Chicago, Chicago 37, Ill. Home Add.: 1126 E. 59 St., Chicago 37, Ill. MATHEMATICAL AND APPLIED STATISTICS; SOCIOLOGY. b. Brooklyn, N. Y., Aug. 7, 1928. s. Abraham and Mollie (Sacks) G. Edn.: A.B., summa cum laude, Syracuse Univ., 1948; M.A., Princeton Univ., 1950; Ph.D., ibid., 1950. Exp.: Lab. Asst., Syracuse Univ., 1948; Rsch. Asst., Princeton Univ., 1948-49; Rsch. Trng. Fellow, Soc. Sci. Rsch. Counc., ibid., 1949-50; Asst. Prof., Sociol. and Statistics, Univ. of Chicago, 1950-53; Assoc. Prof., ibid., 1953-55; Adv. Rsch. Scholar, Fulbright Award, and Honorary Fellowship Soc. Sci. Rsch. Counc., Cambridge Univ., England, 1953-54; Senior Postdoctoral Fellowship of the Natl. Sci. Found., and Fellowship of the John Simon Guggenheim Memorial Found., Cambridge Univ. and London Schl. of Economics and Polit. Sci., England, 1959-60; Visiting Prof. of Mathl. Statistics and Sociol., Columbia Univ., 1960-61; Prof. of Statistics and Sociol., Univ. of Chicago, 1955—. Mem.: Inst. of Math. Statistics (Fellow, 1953); Am. Statistical Assn. (Fellow, 1956); Am. Sociological Soc. (Fellow, 1959); Econometric Soc.; Biometric Soc.; Am. Mathl. Soc.; Am. Assn. for Adv. of Sci. (Fellow, 1958); Counc., Inst. of Math. Statistics (1955-57); Sigma Xi; Phi Beta Kappa. Contbr. to: Annals of Math. Statistics; Jour. of the Am. Statistical Assn.; Am. Sociological Rev.; Am. Jour. of Sociol.; Proc. of the Am. Math. Soc.; Bull. of Math. Biophysics; Social Forces; Biometrics; Psychometrika; Psychol. Bull.; Annals of the Inst. of Statistical Math. (Tokyo); Cowles Comm. Papers (New Series); The Language of Social Rsch.; Decision Processes; Biometrika; Jour. of the Royal Statistical Soc.; Sankhya (Calcutta); Teoriya Veroyatnostei i ee Primeneniya (Moscow); Annals of Human Genetics (London); Modern Language Notes; Technometrics; Econometrica; Studies in Pub. Communication; Jour. of Mkt.; Essays in Econometrics, and Math. Econs. Areas of Rsch.: Math. and Applied Statistics; Sociol.; Math.; Estimation Problems; Distribution Theory; Prediction; Soc. Welfare; Decision Theory; Population Growth; Learning Theory; Sociol. and Phychol. Rsch. Methods.

GOODMAN, Sander (M.D.), Internist, Gastroenterologist, 210 Wm. Howard Taft Rd., Cincinnati 19, Ohio. Home Add.: 4016 Beechwood, Cincinnati 29, Ohio. INTERNAL MEDICINE, GASTROENTEROLOGY. b. July 8, 1911. s. Samuel and Cyma Goodman. Edn.: M.D., Univ. of Cincinnati Coll. of Med., 1935; M.S., Univ. of Cincinnati Grad. Schl. of Arts and Scis., 1938. m. Eleanor Darack, July 11, 1948. c.: Cynthia; Nancy; Susan. Exp.: Intern, Cincinnati Gen. Hosp., 1935-36; Resident, ibid., 1936-37; Fellow in Internal Med. (Gastroenterology) Cincinnati Gen. Hosp., 1937-38; Asst. to the Dean (Full Time) Univ. of Cincinnati Coll. of Med., 1938-46; Assoc. Clinl. Prof., Univ. of Cincinnati. Professional Positions: Cincinnati Gen. Hosp. O.P.D. Clinic, 1938—; Asst. Attending Physician, Cincinnati Gen. Hosp., 1947—; Attending Physician, 1949—; Attend. Consult., Gastroenterol., Brown V.A. Hosp., Dayton, Ohio, 1947-54; Consult. in Gastroenterol., Cincinnati V.A. Hosp., 1954—; Attend. Physician and Assoc. Med. Dir., Drake Mem. Hosp., Cincinnati, Ohio, 1947—; Senior Active Physician, Jewish Hospital, Cincinnati, Ohio, 1947—; Consultant Physician in Gastroenterology, Veterans' Hosp., Cincinnati, Ohio, 1962—; Consultant in Gastroenterol., Longview State Hosp., 1948—. Mem.: FACP; Am. Gasteroenterol. Assn.; Am. Endoscopic Soc.; Assn. of Am. Med. Coll.; Sigma Xi; Cincinnati Acad. of Med.; Ohio State Med. Assn.; Am. Med. Assn.; World Med. Soc. Serv. Rec.: Capt., Med. Corps, Army of U. S., June, 1942 and discharged as Maj., Med. Corps, 1946. Contbr. to: Ohio State Med. Jour.; Am. Jour. of Digestive Diseases, Cincinnati Jour. of Med. Annals of Internal Med.; Surgery, Gynecol. and Obstetrics; Jour. A.M.A.; Arch. of Internal Med.; Antibiotics Annual; Gastroenterology. Areas of Rsch.: Internal Medicine, Gastroenterology.

GOODRICH, Frank Chauncey (Ph.D.), Sr. Rsch. Chemist, Calif. Rsch. Corp., Richmond, Calif. Home Add.: 530 The Alameda, Berkeley 7, Calif. PHYSICAL CHEMISTRY. b. Peking, China, Apr. 4, 1924. s. L. Carrington and Anne (Swann) G. Edn.: A.B., Williams Coll., 1947; Ph.D., Columbia Univ., 1952. m. Madeleine Munn, June 16, 1946. c.: Carole Anne; Glenn Carrington. Exp.: Instr., Williams Coll., 1947; Rsch. Chemist, Calif. Rsch. Corp., Richmond, Calif., 1952—; Instr., Univ. Calif. Extension Ctr., Berkeley, Calif., 1956—. Mem.: A.C.S.; A.A.A.S.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Chem. Phys.; Jour. Polymer Sci.; Jour. Phys. Chem.; Proc. Roy. Soc., London. Serv. Rec.: U. S. Air Force, 1942-45. Areas of Rsch.: Thermodynamics, Statistical Mechanics, Colloid Chemistry, Polymer Chemistry.

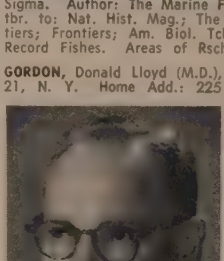
GOODRICH, Max (Ph.D.), Prof. of Physics, Dean, Grad. Schl., La. State Univ., Baton Rouge, La. Home Add.: 1708 Hood Ave., Baton Rouge, La. PHYSICS. b. Calhoun, Mo., Dec. 11, 1905. s. Henry Charles and Elma (Shafer) G. Edn.: A.B., Westminster Coll., 1927; Ph.D., Univ. of Minn., 1936. m. Marian Guyer, 1929. c.: Mrs. Mary Lee Ann G. Matthews; Marna Jean. Exp.: Instr., Westminster Coll., 1927-29; Instr. to Prof., La. State Univ., 1936—; Sr. Physicist, Oak Ridge Inst., Oak Ridge, Tenn., 1949-50; Dean, Grad. Schl., La. State Univ., 1961—. Mem.: Am. Physical Soc.; A.A.P.T.; A.A.A.S.; La. Acad. of Scis.; Sigma Xi; Sigma Pi Sigma. Contbr. to: Physical Rev.; Nuclear Physics. Areas of Rsch.: Beta and Gamma-Ray Spectroscopy; Physical Electronics.

GOODWIN, Martin Brune (M.D.C.M.), Radiologist, 1001 Pile, Clovis, N. Mex. Home Add.: 2917 Prince, Clovis, N. Mex. MEDICINE, RADIOLOGY. b. Vancouver, B. C., Can., Aug. 8, 1921. s. Ray Starr and Emma Augusta (Brune) G. Edn.: B.S.A., Univ. of British Columbia, 1944; M.D.-C.M., McGill Univ., 1948. m. Bette-Jane H. Wilson, June 18, 1947. c.: Nancijane Margo. Exp.: Instr., Univ. of Tex. Postgrad. Schl., Temple, Tex., 1952-53; Consultant, Cannon Air Force Base, Clovis, N. Mex., 1955—; Private Practice of Radiol., ibid., 1955—. Hon. Pos.: Pres., Cury-Roosevelt Co. Med. Soc., 1962; Pres., N. Mex. Thoracic Soc., 1961-63; Pres., N. Mex. Assn. of Radiologists and Path., 1961-62; Bd. of Dir., N. Mex. Tuberculosis Assn. Mem.: Am. Coll. of Radiology; Radiological Soc. of N. Am.; A.A.A.S.; Rocky Mountain Radiological Soc.; Tex. Radiological Soc.; Soc. of Nuclear Med.; Am. Thoracic Soc.; Am. Coll. of Chest Physicians; Coll. of Phys. and Surgs. of British Columbia; Kappa Sigma; Nu Sigma Nu; Lions Club; B.P.O.E. Contbr. to: Archives of Surg. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Clinical diagnostic radiology.

GOODWIN, Maurice Roy (M.D.), Otolaryngologist, 724 Pelham Parkway So., New York 62, N. Y. Home Add.: 146 Fox Meadow Rd., Scarsdale, N. Y. OTOLARYNGOLOGY. b. New York, N. Y., Nov. 27, 1911. s. Harris and Mary (Grossman) G. Edn.: B.S., N. Y. Univ., 1928; M.D., Vienna, 1929, Graz, 1931. m. Mary Karp, Sept. 21, 1933. c.: Sheilah Helen; Lynne Ellen. Exp.: Residence and Internship, Bellevue Hosp., N. Y. C., Surgical 1931-32; ibid., Fordham Hosp., N. Y. C., Medical, 1932-33; Clin. Asst., Visiting Phys., Fordham Hosp., 1934-40; Clin. Asst., Phys. in Otolaryn., Mt. Sinai Hosp., 1938-41; Asst. Adjunct Surgeon in Otolaryn., Jewish Memorial Hosp., 1938-41; Asst. Adjunct Surg. in Otolaryn., Bronx Hosp., 1938-49; Asst. Visiting Phys. in Otol., Montefiore Hosp., 1943-47; Adjunct Attending Surgeon, Otol. and Head and Neck, Montefiore Hosp., 1956—; Acting Dir. Otolaryn. and Head and Neck, Lebanon Hosp., 1956—; Asst. Visiting Head and Neck Surgeon, Bronx Municipal Hosp. Center, 1961—; Asst. Attending in Dept. of Surg. (Otolaryn.), Misericordia Hosp., 1962; Tchng. Asst., Dept. of Otolaryngology, New York Univ. Medical and Post-Graduate Medical Coll., 1956—; Clin. Instructor in Head and Neck Surgery, The Albert Einstein Coll. of Medicine, 1961—. Hon. Pos.: Director, Borough of Bronx W.P.A., 1935-37; Instructor, Am. Red Cross, 1942; Examiner for Veterans, 1945; Diplomate Am. Bd. of Otolaryngol., 1957—. Mem.: Fellow, Am. Bd. of Ophths. and Otolaryngol.; Am. Coll. of Chest Phys.; Internatl. Coll. of Surgs.; N. Y. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Am. Geriatric Soc.; Soc. for Plastics Surg.; Am. Soc. of Facial Plastic Surg.; Am. Med. Assn.; N. Y. St. Med. Assn.; Bronx Co. Med. Soc.; Alumnus of Bell. Montefiore and Fordham Hosps. Contbr. to: Dental Items of Interest; The Eye, Ear, Nose and Throat M.D.; Arch. of Otolaryn. Pen. Int.: Scholarship in Chem. to Study under Prof. Pregl, Nobel Prize Winner; Scholarship in Art to Rome, 1929. Areas of Rsch.: Otolaryngology.

GORDON, Bernard Ludwig, Instructor, Northeastern Univ., Dept. of Natural Sci., Boston, Mass. Home Add.: 12 White Ave., Chestnut Hill 67, Mass. MARINE BIOLOGY; ICHTHYOLOGY: INVERTEBRATE ZOOLOGY. b. Westerly, R. I., Nov. 6, 1931. s. Julius Victor and Mollie (Meltzer) G. Edn.: B.Sc., Univ. of R. I., 1955; M.Sc., ibid., 1958. m. Esther Saranga, July 19, 1959. c.: Jocelyn Fay. Exp.: Sci. Instr., Ware, Mass. High Schl., 1955-56; Biol. Instr., Rhode Island Coll., 1956-60; Tchng. Fellowship, Boston Univ., 1960-61; Instr. of Natural Sci., Northeastern Univ., 1961—. Hon. Pos.: Mem., Bd. of Dirs., Rhode Island Wildlife Federation. Mem.: Am. Soc. of Ichthyologists and Herpetologist; Am. Fisheries Soc.; Soc. of Systematic Zoologist; Ecol. Soc. of Am.; A.A.A.S.; A.A.U.P.; I.O.F.; Sigma Xi; Phi Sigma. Author: The Marine Fishes of Rhode Island, 1960. Contbr. to: Nat. Hist. Mag.; The Biologist; Nature Mag.; Sea Frontiers; Frontiers; Am. Biol. Tchr. Gen. Int.: Caught Two World Record Fishes. Areas of Rsch.: Fishery Research; Science Edn.

GORDON, Donald Lloyd (M.D.), Surgeon, 40 East 61st, New York 21, N. Y. Home Add.: 225 Davison Place, Englewood, N. J. SURGEON. b. New York, N. Y., Oct. 24, 1923. s. Richard E. and Virginia (Ryan) G. Edn.: M.D., N. Y. Med. Coll., 1947; M.S., Univ. of Minn., 1956. m. Adlynn Hartley, May, 1948. c.: Donald, Jr.; Adlynn; Douglas; Wendy; Derek. Exp.: Asst. Attending Phy., St. Clares Hosp., New York, N. Y., 1956—; Asst. Prof., N. Y. Med. Coll., 1956—; Clin. Prof., Polyclinic Med. Schl. and Hosp., New York, N. Y., 1960—. Mem.: Am. Bd. of Surgery; Am. Coll. of Surg.; N. Y. Acad. of Med.; Phi Chi. Author: Polyps of the Colon in Children, 1956. Contbr. to: Arch. of Surgery. Serv. Rec.: U.S.N.R., W.W. II, 1944-45, 1950-52.



GORDON, David (Mr.), Consulting Engr., Gordon Service, 771 Lindley St., Bridgeport, Conn. PHYSICS, STEREO OPTICS: RESEARCHER. b. Ukraine, Russia, Nov. 20, 1906. s. Jacob and Anna Gordon (dec.). Edn.: Attended Pratt Inst. and Fed. Schl. of Design. Exp.: Employee, Gen. Elec. Co., Bridgeport, Conn., 1943-49; Employee, Sikorsky Aircraft, Bridgeport, Conn., 1956-58; Consulting Engr., Gordon Serv., 1960. Mem.: Hon. Mem., Internatl. Mark Twain Soc.; Hon. Mem., Eugene Field Soc.; Am. Assn. Adv. Sci.; Astronomical Soc. of the Pacific (past mem.); Odd Fellows. Author: The Atom of the Solar System, 1946; The Five Stories of Man, 1948; How to Draw in 3rd Dimension, 1955. Contbr. to: Popular Science Monthly; Photogrammetric Engrng.; Optometric Weekly; Am. Cinematographer; Mechanical Engrng. Areas of Rsch.: New Methods in Optical and Stereo

3-D Viewing; Principles on the Solar System; Gravity, Laws of Nature; Radiations; Stereoscopic Photog. and Drawings; Mechanics of Solar Sys.; Satellities, Unified Laws of Nature, Invisible radiations, Electron Microscope, Related Subjects.

GORDON, Morris Aaron (Ph.D.), Assoc. Rsch. Scientist, New York State Dept. of Health, Albany, N. Y. Home Add.: 97B Elsmere Ave., Delmar, N. Y. MEDICAL MYCOLOGY. b. Waterbury, Conn., April 3, 1920. s. Samuel and Anna (Rubinstein) G. Edn.: B.S., City Coll. of N. Y., 1940; M.S., Univ. of Chicago, 1942; Ph.D., Duke Univ., 1949. m. Ruth Kathryn McKee, May 22, 1945. c.: Barbara Jean; David Spencer; Sarah Elizabeth. Exp.: Chief, Bacteriol. Lab., ASF Regional Hosp., 1945-46; Mem., Mycology Unit, Communicable Disease Cntr., Pub. Health Serv., 1949-53; Chief, Special Projects Sect., ibid., 1953-54; Biol. Warfare Specialist, Chem. Corps., U. S. Army, 1954-55; Asst. and Assoc. Prof. of Microbiol. and Mycology, Med. Coll. of S. C., 1955-59. Mem.: Am. Soc. for Microbiol.; Mycol. Soc. of Am.; Internatl. Soc. for Human and Animal Mycology; N. Y. Acad. of Sci.; Sigma Xi; Phi Beta Kappa. Contributing Author: Handbook of Tropical Dermatology and Medical Mycology, 1953; Handbook of Biological Data, 1956. Contbr. to: Jour. of Bacteriol.; Mycologia; Archives of Dermatol.; Jour. of Investigative Dermatol.; Am. Jour. of Clin. Pathol.; Jour. of Lab. and Clin. Med.; Science; Proc., Soc. Exptl. Biol. and Med.; Archives of Industrial Hyg.; Annals of Allergy; Auburn Veterinarian. Serv. Rec.: U. S. Army Med. Dept., 1942-46. Areas of Rsch.: Medical Mycology, Fluorescent Antibody.

GORDON, Richard Edwards (M.D., Ph.D.), Psychiatrist, 275 Grand Ave., Englewood, N. J.; River Rd., Ulster Park, N. Y. Home Add.: 184 Engle St., Tenafly, N. J. PSYCHIATRY AND EXPERIMENTAL PSYCHOLOGY. b. N. Y., N. Y., July 15, 1922. s. Richard E. and Virginia (Ryan) G. Edn.: B.S., Yale Univ., 1943; M.D., Univ. of Mich., 1945; M.A., Columbia Univ., 1956; Ph.D., ibid., 1961. m. Katherine L. Kline, Nov. 12, 1949. c.: Richard; Katherine; Virginia; Laurie. Exp.: Intern, City Hosp., N. Y. C., 1945-46; Res., N. Y. Psychiatric Inst., N. Y. C., 1947-48; Res., Manhattan St. Hosp., N. Y. C., 1948-49; Dir., Mental Health Rsch., Englewood Hosp., N. J., 1953—; Adj. Prof., Psychol., Wagner Coll., 1960—; Adj. Prof., Psychol., Fairleigh-Dickinson Univ., 1961—. Hon. Pos.: Mem., N. J. Mental Health Commission. Mem.: A.M.A.; Am. Psychiatric Assn.; Am. Psychol. Assn.; A.P.H.A.; A.A.A.S.; Sigma Xi. Author: The Prevention of Postpartum Emotional Problems, 1961; The Split-Level Trap, 1961. Contbr. to: J.A.M.A.; A.M.A. Archives Neurol. and Psychiat.; Intern. Jour. Soc. Psychiat.; Jour. Med. Soc. N. J.; Obst. and Gyn.; Am. Jour. Obst. and Gyn. Serv. Rec.: U. S. Army Med. Corps, W.W. II; Korean War, 1951-53. Areas of Rsch.: Social and Preventive Psychiatry.

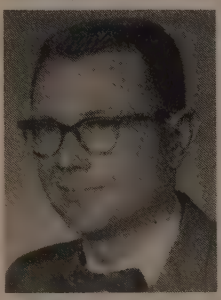
GORDON, Robert Stanley (Mr.), Sci. Coordinator, North Shore Schls., Glen Head, N. Y. Home Add.: 23 Stuyvensant St., Huntington, N. Y. SCIENCE EDUCATION. b. New York City, N. Y., Oct. 5, 1923. s. Louis and Betha (Weinstien) G. Edn.: B.S., Cortland State Tech. Coll., 1950; M.S., Hofstra Coll., 1952. m. Sara Summers, Nov. 2, 1948. c.: Lawrence; Susan. Exp.: Tchr., Wantagh Schl., Wantagh, N. Y., 1950-51; Tchr., Herricks Schl., New Hyde Pk., N. Y., 1951-59; Sci. Coord., North Shore Schls., Glen Head, N. Y., 1959—. Hon. Pos.: Elem. Chmn., North Nassau Sci. Congress; Sec. Dir., Sci. Tchrs. Assn. of N. Y.; Dir., North Nassau Tchrs. Assn.; Mem., Advisory Group to Vistas of Science Program of Nat. Sci. Tchrs. Assn. Mem.: A.A.A.S.; N.S.S.A.; Sci. Tchrs. Assn. of N. Y.; N.E.A.; N. Y. Sci. Tchr. Assn. Contbr. to: Natl. Sci. Tchrs. Assn. Serv. Rec.: U.S.A.A.F. Gen. Int.: Winner of Sci. Tchrs. Achievement Recognition S.T.A.R. Award. Areas of Rsch.: Elem. Sci. Curriculum.

GORDON, Richard S(eymour) (Ph.D.), Dir. of Rsch., Monsanto Chem. Co., St. Louis 66, Mo. Home Add.: 20 Westmoreland Pl., St. Louis 8, Mo. PHYSIOLOGICAL NUTRITION, MICROBIOLOGY, BIOCHEMISTRY. b. N.Y.C., June 28, 1925. s. Jacques and Ruth (Juneway) G. Edn.: A.B., Univ. of Rochester, 1947; A.M., Harvard Univ., 1954; Ph.D., Mass. Inst. of Technol., 1954. m. Emily Conover Evarts, Sept. 8, 1951. c.: Richard E.; Elizabeth J.; Jacques N.; Helen E. Exp.: Rsch. Assoc., Mass. Inst. of Technol., 1951-55; Scientist, Monsanto Chem. Co., Boston, Mass. and St. Louis, Mo., 1951-60; Dir. of Rsch., Monsanto Chem. Co., St. Louis, Mo., 1960—. Hon. Pos.: Mem., Visiting Com., several Med. Schls. and Universities. Mem.: Am. Chem. Soc.; Am. Soc. for Microbiol.; The Chem. Soc., England; Poultry Sci. Assn.; Am. Assn. Adv. Sci.; Sigma Xi; Harvard Club; M.I.T. Club; New Music Circle. Contbr. to: Jour. of Nutrition; Science; Poultry Sci.; Nature; Arch. Biochem.; Jour. Oil Chemists; Jour. Animal Sci. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Co-Discoverer of Factors Influencing Vitamin E Deficiency. Areas of Rsch.: Protein and Amino Acid Requirements, Protein-Calorie Inter-Relationships, Fatty Acid Requirements, Role of Dietary Fatty Acid in Modifying Structural Lipid, Vitamin E and Antioxidant Requirements, Disease-Nutrition Inter-Relationships, Control of Animal Diseases.

GORDON, Samuel Morris (Ph.D.), Consulting Chemist, 2270 Sloat Blvd., San Francisco, Calif. MEDICINAL CHEMISTRY. b. Boston, Mass., Sept. 28, 1898. s. Hyman and Ida (Bazol) G. Edn.: B.S., Tufts Coll., 1922; M.S., State Univ. of Ia., 1923; Ph.D., Univ. of Wis., 1926. m. Charlotte Blank, Dec. 25, 1923. c.: Robert B.; Ruth. Exp.: Grad. Asst., Univ. of Ia., 1922-23; Chemist, Portland Cement Assn., Chicago, Ill., 1923-24; Natl. Rsch. Coun. Fellow in Biochem., Univ. of Wis., 1926-28; Chf., Am. Dental Assn., Bur. of Chem., Chicago, Ill., 1928-38; Secy., Council on Dental Therapeutics, ibid., 1930-38; Vice Pres., Dir. of Rsch., Endo Labs., Richmond Hill, N. Y., 1938-59; Assoc. Rsch. Specialist, Dept. of Poultry Husbandry, Univ. of Calif., 1960—. Hon. Pos.: Editorial Bd., Jour. of Dental Rsch., Chem. Bull., Chicago; Consultant on Drug Control, N. Y. City Dept. of Health; Rsch. Comm., Columbia Univ. Schl. of Pharm. Mem.: A.C.S.; Soc. Exptl. Med. and Biol.; Affiliate, A.M.A.; The Harvey Soc., N. Y. Acad. of Sci., Fellow; Am. Inst. of Chemists, Fellow; Am. Med. Writers Assn., Fellow; Am. Coll. of Angiol., Fellow; A.A.A.S., Fellow; Sigma Xi; Alpha Omega, Honorary; Pi Lambda Phi. Author: Dental Science and Dental Art, 1938, Accepted Dental Remedies. Contbr. to: Jour. Am. Pharmaceutical Assn.; Jour. Dental Rsch.; Jour. Am. Dental Assn.; Botanical Gazette; Proc. Soc. Exp. Biol. and Med.; J. Biol. Chem.; Jour. Am. Med. Assn.; Sci. Serv. Rec.: U. S. Army, W.W. I, W.W. II, Lt. Col., U.S.A.R. Ret. Areas of Rsch.: Medicinal Chem.; Chem. of Dental Drugs.

GORDON, Ted, NASA, Saturn Rocket, Project Engr.

GORE, Willis Carroll (Dr. Eng.), Assoc. Prof. of Elect. Engr., Johns Hopkins Univ., Baltimore 12, Md. Home Add.: 1400 Glendale Rd., Baltimore 12, Md. ELECTRICAL ENGINEERING-INFORMATION THEORY. b. Baltimore, Md., May 20, 1926. s. John William and Emma Maria (Knoch) G. Edn.: B.E., Johns Hopkins Univ., 1948; Dr. Engr., ibid., 1952. m. Betty Christle, Dec. 16, 1950. c.: Carol Lynn; Catherine Marie; Edward Louis. Exp.: Instr. to Assoc. Prof. of Elect. Engr., Johns Hopkins Univ., Baltimore, Md., 1949—. Mem.: I.R.E.; A.A.A.S.; A.I.E.E.; Tau Beta Pi; Omicron Delta Kappa; Eta Kappa Nu. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Information Theory; Computers.



GORMAN, William Shelton, Jr. (Mr.), Hd., Rsch. Lab., Hallmark Cards, Inc., Kansas City, Mo. Home Add.: 23 West 39th St., North, Kansas City 16, Mo. CHEMICAL ENGINEERING (PAPER-MAKING AND GRAPHIC ARTS). b. Walsenburg, Colo., July 25, 1927. s. William S. and Bess A. (Warner) G. Edn.: B.S., Purdue Univ., 1950. m. Carolyn J. Sprague, May 29, 1952. c.: Sharon Elizabeth; Stephen Edward; Geoffrey Sprague. Exp.: Grad. Stu., Purdue Univ., W. Lafayette, Ind., 1950-51; Rsch. Engr. and Quality Supv., Natl. Gypsum Co., Buffalo, N. Y., 1951-59; Hd. of Rsch. Lab., Hallmark Cards, Inc., Kans. City, Mo., 1959—. Mem.: A.A.A.S.; Tech. Assn. of the Pulp and Paper Ind.; Am. Chem. Soc.; Tech. Assn. of Graphic Arts; Am. Inst. of Chem. Engrs.; Bd. of Dir., Y.M.C.A. Author: Water Repellent Paper and Sheathing Board, 1960. Contbr. to: Chem. Engrng. Serv. Rec.: A.U.S., 1946-47. Areas of Rsch.: Papermaking; Coatings; De-inking; Printing Inks; Plastics; Adhesives.

GOTAAS, Harold Benedict (Sc.D.), Dean and Prof., Tech. Inst., Northwestern Univ., Evanston, Ill. Home Add.: 618 Colfax, Evanston, Ill. CIVIL ENGINEERING, SANITARY SCIENCE, WATER SUPPLY AND WATER POLLUTION. b. Mellett, S. Dak., Sept. 3, 1906. s. Helfden C. (dec.) and Emma E. (Cady) G. (dec.). Edn.: B.S. in C.E., Univ. of S. Dak., 1928; M.S. in C.E., Iowa State Univ., 1930; S.M., Harvard Univ., 1937; Sc.D., ibid., 1942. Hon. Deg.: D.Sc., Univ. of S. Dak., 1955. m. Alice E. McLaughlin, April, 1931. c.: Richard McLaughlin. Exp.: Draftsman, Am. Bridge Co., Ambridge, Pa., 1930-31; Bridge Designer, Iowa State Highway Commission, Ames, Ia., 1931; Chf. Draftsman, Clinton Iowa Bridge Works, 1931-32; Asst. Prof. of C.E. and City and Cons. Engr., Univ. of S. Dak., Vermillion, S. Dak., 1932-36; Asst. Prof. to Prof., Sanitary Engrng. Grad. Schl. Pub. Health, Univ. of N. C., Durham, N. C., 1937-42; Chf. Engr. and Asst. Dir., Div. of Health and Sanitation, Inst. Inter-Am. Affairs, 1942-44; Dir. and Exec. Vice Pres., ibid., 1944-45; Pres., ibid., 1945-46; Prof. of San. Engrng., Univ. of Calif., Berkeley, Calif., 1946-47; Dir., San. Engrng. Lab., ibid., 1949-57; Chmn., Div. of Civil Engrng., ibid., 1948-54; Dean, Tech. Inst., Northwestern Univ., Evanston, Ill., 1957—. Hon. Pos.: Natl. Health Adv. Coun., Dept. Hlth., Edn., and Welfare, 1956-60; Consultant, World Health Organization, 1954—; Coun. on Bioastronautics Natl. Rsch. Coun., 1959-60; Pres., U. S. Sect., Intern.-Am. Assn. of Sanitary Engrs., 1959-60; Mem., Bd. of Dir., Engrs. Coll. Rsch. Coun., 1958-61; Great Lakes Commission, 1961—; Trustee, Chicago Planetorium Soc., 1958-61; Chmn., N.E. Ill. Metropolitan Area Water Resources Comm., 1962—; Am. Soc. of Civil Engrs., Chmn., Sanitary Engrng. Div., 1951-52 and Chmn., Rsch. Comm., 1959-60. Mem.: Am. Water Works Assn.; Water Pollution Control Fed. (Pres., Calif. Sect., 1951-52); Western Soc. of Engrs.; Natl. Soc. of Profl. Engrs.; Am. Public Health Assn.; Am. Soc. for Engrng. Edn.; Am. Acad. of Sanitary Engrs.; Intern.-Am. Assn. of Sanitary Engrs.; Kappa Sigma; Sigma Pi Delta; Triangle; Phi Kappa Phi; Tau Beta Pi; Chi Epsilon; Delta Omega. Author: Composting, Sanitary Disposal of Organic Wastes, 1956. Contbr. to: Trans. Am. Soc. of Civil Engrs.; Jour. of Am. Water Works; Water Pollution Control Jour.; Jour. of A.P.H.A.; Applied Biol.; many other Jours. Serv. Rec.: A.U.S., Capt. to Col., 1942-46. Gen. Int.: Rec'd James Croes and Rudolf Herring Medals, Am. Soc. of C.E.; Harrison P. Eddy Medal and Kenneth Allen Award, Water Pollution Control Fdtn. for Rsch.; Engr. of the Year, 1961, for Ill.; Decorations, Legion of Merit; Condor of Andes, Bolivia; Cross of Boyaca, Colombia; Order of Merit, Chile; Order of Honor and Merit, Haiti. Areas of Rsch.: Water Resources, Sanitary Engrng., Water and Air Pollution, Economic Development.

GOTTFRIED, Sidney Paul (Ph.D.), Biochemist, Bridgeport Hosp., Bridgeport, Conn.; Adj. Asst. Prof. of Chem., Univ. of Bridgeport, Bridgeport, Conn. Home Add.: 107 Bennett St., Fairfield, Conn. CLINICAL CHEMISTRY. b. New York City, N. Y., Oct. 11, 1912. s. Morris and Fannie (Merker) G. Edn.: B.S., N. Y. Univ., 1933; M.A., Columbia Univ., 1935; Ph.D., N. Y. Univ., 1941. m. Lenore Koblentz, Jan. 6, 1946. c.: Jonathan Mark. Exp.: Biochemist, Jewish Hosp. of Brooklyn, Brooklyn, N. Y., 1935-42, 1945-46; Instr., Hunter Coll., N. Y. City, N. Y., 1946-52; Prof. of Chem., Univ. of Bridgeport, Conn., 1951—; Biochemist, Bridgeport Hosp., Conn., 1950—; Biochemist, V.A. Hosp., Northport, L. I., N. Y., 1947-50. Mem.: Am. Chem. Soc.; N. Y. Acad. of Sci.; A.A.A.S.; Certified by Am. Bd. of Clin. Chem.; Am. Men of Sci.; Phi Lambda Upsilon. Contbr. to: Jour. Biol. Chem.; Clin. Chem.; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Clin. Pathol.; Am. Jour. Diseases of Child.; Am. Jour. Med. Sci.; Arch. Neurol. and Psychiat.; Jour. Lab. Clin. Med.; Circulation, J.A.C.S.; Jour. Pediatrics, Geriatrics, Psychosomatic Med. Serv. Rec.: A.U.S., 1942-46. Areas of Rsch.: Organic Chemistry, Clinical Chemistry, Geriatrics, Atherosclerosis, Biochemistry of Mental Diseases.

GOTTLIEB, Gilbert (Ph.D.), Head, Psychol. Lab., Dorothea Dix Hosp., Raleigh, N. C., and Adj. Asst. Prof. of Psychol., N. C. State Coll.; Rsch. Scientist, Div. of Research, N. C. Hosps. Bd. of Control. CLINICAL AND DEVELOPMENTAL PSYCHOLOGY; EFFECTS OF EARLY EXPERIENCE UPON SUBSEQUENT BEHAVIOR. b. N. Y., Oct. 22, 1929. s. Leo and Sylvia (Sherman) G. Edn.: A.B., Univ. of Miami, 1955; M.S., ibid., 1956; Ph.D., Duke Univ., 1960. Exp.: Tchng. Asst., Univ. of Miami, 1955-56; Rsch. Asst., Duke Univ., 1956-57; Clinical Psychol. Internship, U. S. Public Health Predoctoral Trainee, Duke Med. Center, 1957-58; Rsch. Assoc. in Med. Psychol., Ibid., 1958-59; Staff Psychologist, Dorothea Dix Hosp., 1959-61; Hd., Psychol. Lab., Ibid., 1961—; Adj. Asst. Prof. of Psychology, N. C. St. Coll., 1961—; Rsch. Scientist, N. C. Hosps. Bd. of Control, 1962—. Mem.: Am. Assn. Adv. Sci.; Am. Psychol. Assn.; Ecological Soc. Am.; Sigma Xi. Contbr. to: Jour. of Comparative and Physiological Psychol.; Behaviour; Zeitschrift fur Tierpsychologie; Jour. Nerv. Mental Disease; Arch. General Psychiatry. Serv. Rec.: U. S. Army, Counter Intelligence Corps, 1951-53. Areas of Rsch.: Comparative Animal Behavior; Imprinting and Associated Development Processes; Neuropsychological Aspects of Depression.

GOUIN, Walter Francis (Mr.), Independent Geologist and Oil Producer, Box 208, Duncan, Okla. GEOLOGY. b. Winnipeg, Canada, June 7, 1894. s. John Francis and Florence (Hazelwood) G. Woodhull. Edn.: B.A., Univ. of N. Mex., 1916. m. Gertrude Hazeltine, June, 1920. c.: June G. Wood; Phillis G. Kelly; Frank Lomer; Gayle G. Ritch. Exp.: Field Geologist, Empire Gas and Fuel Co., Mid Continent, 1916-19; Dist. and Div. Geologist, Atlantic Refining Co., Oklahoma, 1919-25; Independent Geologist, Duncan, Okla., 1925—; Oil Producer, Southern Okla., 1930—. Hon. Pos.: Past Chmn., Boy Scout Comm., A.A.P.G.; Past Dir., Independent Petroleum Assn. of Am.; Mem. Natl. Coun., B.S.A., Mem., Natl. Conservation Comm., B.S.A.; Past Pres. and Coun. Commissioner, ibid.; Past Pres., Duncan Rotary Club; Past Dist. Governor, Rotary Internatl.; Past Comdr., Duncan Post, Am. Legion. Mem.: Okla. City Geol. Soc.; Ardmore Geol. Soc., Am. Geophys. Union; G.S.A.; A.A.A.S.; A.A.P.G.; Sigma Chi; Sigma Gamma Epsilon. Contbr. to: A.A.P.G. Bull.; Oil Weekly. Serv. Rec.: A.U.S., W.W. I. Areas of Rsch.: Southern Okla. Geology.

GOUGE, Susan Cornelia (Mrs.), Rsch. Asst. in Dental and Oral Histopathology, U. S. Army Inst. of Dental Rsch., Walter Reed Army Med. Ctr., Washington 12, D. C. Home Add.: 4101 Maryland Ave., Brookmont, Md. DENTAL AND ORAL HISTOPATHOLOGY RESEARCH. b. Chicago, Ill., April 18, 1924. d. Harry LeRoy Jones and Gladys (Moon) J. Edn.: B.S., George Washington Univ., 1948. m. John Oscar, Jr., Aug. 7, 1943. c.: John Ronald; Richard Michael; Claudia Renee. Exp.: Med. Technician, Childrens Hosp. Res. Lab., Washington, D. C., 1948-49; Bacteriologist, G.W.U. Rsch. Lab., D. C. General Hosp., ibid., 1950-53; Med. Microbiologist, WRAIR, ibid., 1953-61; Rsch. Asst. in Dental and Oral Histopathology, U. S. Army Inst. of Dental Rsch., Walter Reed Army Med. Ctr., ibid., 1961—. Mem.: A.A.A.S.; Am. Assn. of Clin. Chemists; Am. Soc. for Microbiol.; Pi Kappa Delta. Contbr. to: Jour. of Periodontol.; Clin. Chem.; Presented Paper "A Comparison of the Salivary Lysozyme Content of Caries-Active and Caries-Inactive Individuals" at the Internatl. Congress on Clinical Chemistry, New York City, 1956. Areas of Rsch.: Dental and Oral Microbiology and Histopathology.

GOULD, Henry Wadsworth, Asst. Prof., Math., West Va. Univ., Morgantown, W. Va. Home Add.: 204 Constitution Ave., Portsmouth, Va. MATHEMATICS. b. Portsmouth, Va., Aug. 26, 1928. s. Robert Edward Lee and Alice Gertrude (Temple) G. Edn.: B.A., Univ. of Va., 1954; M.A., ibid., 1956. Exp.: Part-time Instructorship in Math., Univ. of North Carolina, 1957-58; Instr. in Math., West Va. Univ., 1958-61; Asst. Prof., ibid., 1961—; Principal Investigator in Natl. Sci. Found. Rsch. Grant, ibid., 1960—; Consultant to Sci. Service, Wash., D. C., 1959. Mem.: Am. Mathematical Soc.; Mathematical Assn. of Am.; Inst. of Mathematical Statistics; Deutsche Mathematiker-Vereinigung; Soc. for Industrial and Applied Math.; Am. Assn. for the Adv. of Sci.; The Soc. of Sigma Xi; Va. Acad. of Sci.; West Va. Acad. of Sci.; Pi Mu Epsilon. Contbr. to: Duke Mathematical Jour.; Am. Mathematical Monthly; Proceedings of Am. Math. Soc.; Mathematics Magazine; Mathematica Scandinavica; Nordisk Matematisk Tidsskrift. Serv. Rec.: U. S. Army Signal Corps, 1951. Gen. Int.: Past Experience Includes Work as Broadcast Radio Operator and Some Experience in the Electronics Industry; Operates an Amateur Radio Station, out of this Grew the Interest in Mathematics. Areas of Rsch.: Theory of Binomial Coefficient Summations, which is Related to Combinatorial Analysis and Number Theory.

GOULD, Howard Woodham (Ph.D.), Prof. of Chem., No. Ill. Univ. Home Add.: 137 Normal Road, DeKalb, Ill. INORGANIC CHEMISTRY, METALLURGY. b. June 21, 1896, Bone Gap, Ill. s. Rolla A. and Emily A. (Woodham) G. Edn.: B.S., McKendree Coll., Lebanon, Ill., 1918; M.S., Univ. of Ill., 1922; Ph.D., State Univ. of Ia., 1929; Further Study at Univ. of Ia., Chicago, Mich., and Calif. Inst. of Technol. m. Alice L. Everett of Waverly, Ill., June 18, 1922. d. Mr. and Mrs. E. C. Everett. c.: Alice Emily; Constance Gabrielle. Exp.: Instr. in Eng., McKendree Acad., 1919-20; Asst. and Instr. in Chem. and Physics, McKendree Coll., 1920-22; Asst. in Chem., Univ. of Ill., 1923-25; Asst. and Assoc. Prof. of Chem., James Millikin Univ., 1925-27; Research Engineering, The Mueller Company, Illinois, 1926-27; Professor of Physics, No. Illinois University, 1927-

31; Hd., Dept. of Phys. Sci., ibid., 1931-61; Prof. of Chem., ibid., 1961—. Hon. Pos.: V. Pres., Joliet Sect., Am. Chem. Soc.; Vice Pres., Ill. State Acad. of Sci.; Natl. Pres., Sigma Zeta, 1939; Natl. Historian, ibid., 1959—. Mem.: A.A.A.S.; A.C.S.; N.A.R.S.T.; N.S.T.A.; Am. Assn. Univ. Prof.; Ill. State Acad. of Sci.; Ill. Edn'l. Assn.; N.E.A.; Phi Lambda Upsilon; Sigma Zeta; Kiwanis Internatl.; Pres., DeKalb Club, 1949; Am. Assn. Physics Tchrs.; A.A.U.P.; Ill. St. Acad. of Sci. Author: Textbook of Chem. and Physics, 1933, '35, '37; Principles of Chemistry, 1962. Contbr. to: Metals and Alloys; Jour. of Chem. Edn. Ph.D. Dissertation: Effects of Silicon on the Properties of Brass. War Rec.: U. S. Marine Corps (U. S. and W. Indies-Haiti). Travel: U. S., Except in W. W. Hobbies: Chess; Music; Athletic Games. Listed in: A.M.S.; Who's Who in Midwest; W. W. in Am. Edn.; W. W. in Am. Areas of Rsch.: Rare Earths; Search for Element #43; Porosity in Brass; Ternary Copper-Zinc-Silicon System; Science Curriculum Studies.

GOULD, Ira A., Jr. (Ph.D.), Prof., Chmn., Dept. of Dairy Technol., Ohio State Univ., Columbus, Ohio. Home Add.: 2216 Dorset Rd., Columbus, Ohio. BIOCHEMISTRY AND MICROBIOLOGY WITH REFERENCE TO MILK AND MILK PRODUCTS. b. Atchison, Kans., Sept. 28, 1905. s. Ira Alfred and Nettie (Adams) G. Edn.: B.S., W. Va. Univ., 1931; M.S., Mich. State Coll., 1933; Ph.D., Univ. of Wis., 1938. m. Genevieve M. Wilson, May 4, 1929. c.: Kaye Harter. Exp.: Instr., Assoc. Prof., Mich. State Univ., 1933-44; Prof., Univ. of Md., 1944-49; Prof., Chmn., Dept. of Dairy Technol., Ohio State Univ., 1949—. Hon. Pos.: Vice Pres., Pres., Am. Dairy Sci. Assn. Mem.: Inst. of Food Technol.; A.C.S.; Internatl. Assn. of Milk and Food Sanitarians; Wash. Acad. of Sci.; Alpha Zeta; Gamma Sigma Delta; Phi Lambda Upsilon; Optimist, Internatl. Contbr. to: Jour. of Dairy Sci.; Jour. of Milk and Food Technol. Gen. Int.: Borden Award, A.C.S.; U. S. Delegate to Internatl. Dairy Congress. Areas of Rsch.: Dairy Technol; Dairy Chem. and Microbiol.; Mgmt.

GOULIAN, Dicran, Jr. (D.D.S.), (M.D.), Clin. Inst. of Surgery (Plastic), Cornell Univ. Coll. of Med., 1300 York Ave., New York 21, N. Y. Home Add.: 445 East 68th St., New York 21, N. Y. INVESTIGATIVE SURGERY. b. Weehawken, N. J., Mar. 31, 1927. s. Dicran and Shamiram (Mzrakjian) G. Edn.: B.A., Columbia Coll., 1948; D.D.S., Columbia Univ. Schl. of Dentistry, 1951; M.D., Yale Univ. Schl. of Med., 1955. m. Jean Aldreany, Dec., 1954. c.: Linda Susan; Dicran III; Beverly Ann; Elizabeth Jean. Exp.: Intern, Surgery, Grace-New Haven Hosp., Conn., 1955-56; Resident, Surgery, ibid., 1956-58; Natl. Sci. Found. Post Doct. Fellow, Yale Univ. Med. Schl., New Haven, Conn., 1956-57; Resident, Plastic Surg., N. Y. Hosp., N. Y., 1958-60; Instr., Surg., Cornell Univ. Coll. of Med., 1959—; U. S. Pub. H. Serv. Post Doct. Fellow, Cornell Univ., 1960-61; Asst. Attending Surg., N. Y. Hosp., N. Y., 1961—; Asst. Adjunct Surg., Lenox Hill Hosp., N. Y., 1961—; Asst. Consulting Plastic Surgeon, Bronx Vet. Hosp., 1960—; Visiting Plastic Surgeon, Bellevue Hosp., N. Y., 1961—. Mem.: A.A.A.S.; N. Y. Acad. of Med.; N. Y. Acad. of Sci.; Am. Assn. for Cleft Palate Rehabilitation. Candidate Member: Am. Coll. of Surgeons and Am. Soc. of Maxillo-facial Surgeons; Am. Soc. of Plastic and Reconstructive Surg. Contbr. to: Transplantation Bull.; Plastic and Recons. Surg.; Annals of N. Y. Acad. of Sci.; Surgl. Forum; Yale Jour. of Biol. and Med.; Proc. Soc. Exptl. Biol. and Med.; Jour. of Clin. Investig.; Clinical Abst. Editor, Jour. of Transplantation. Serv. Rec.: U.S.N., 1945-46. Gen. Int.: 1951 recipient of Ella Marie Ewell Medal for Outstanding Proficiency in Dentistry by Columbia Univ. Areas of Rsch.: Basic Studies on Rejection Response to Honologously Transplanted Tissues; Studies on Methods of Assaying Degree of Burn Injury Early in its Clinical Course.

GRACE, Alonzo Gaskell, Jr. (Mr.), Mgr., EDP Customer Trng. and Special Edn. Projects, RCA, Camden, N. J. Home Add.: 111 Forest Road, Moorestown, N. J. MATHEMATICS AND COMPUTER EDUCATION. b. Bottineau, N. Dak., June 25, 1923. s. Alonzo Gaskell and Jeannette (Meland) G. Edn.: B.S., Trinity Coll., 1949; M.A., Yale Univ., 1955. m. Betty Myers, Sept. 1, 1945. c.: Alonzo G., III; Alexa; Laurie; Elizabeth Ann. Exp.: Instr. in Math., Trinity Coll., 1949-52; Asst. in Edn., Yale Univ., 1952-55; Instr. in Physics, Trinity Coll., 1954-56; Operations Rsch. Analyst, Gen. Dynamics Corp., 1956-58; Admin. Mgr., Computer Div., ibid., 1958-59; Lectr. in Math., Univ. of Conn. Grad. Center at New London, 1957-59; Mgr., EDP Customer Trng. and Special Edn. Projects, RCA, Camden, N. J., 1959—; Mgr., Scientific Computer Trng. and Educational Rsch., 1960—. Mem.: Math. Assn. Am.; Am. Inst. of Physics; Am. Assn. Physics Tchrs.; Soc. Industrial and Applied Math.; Assn. for Computing Machinery; Am. Assn. Adv. Sci.; Phi Beta Kappa; Sigma Pi Sigma; Psi Upsilon. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Automatic Teaching Devices and Educational Programming, particularly as applied to Digital Computer Training. The Effect of the High Speed Computer on American Education; and Modern Language Development (e.g., ALGOL, COBOL).

GOVE, Norwood Babcock (Ph.D.), Physicist, Nuclear Data Project, 2101 Constitution Ave., Washington 25, D. C. Home Add.: 2512 Qst N.W., Washington 7, D. C. NUCLEAR PHYSICS. b. New York City, N. Y., Oct. 23, 1932. s. Philip B. and Grace (Potter) G. Edn.: B.A., Harvard Univ., 1953; M.S., Univ. of Ill., 1954; Ph.D., ibid., 1958. m. Ruth Miller, Oct., 1959. Exp.: Physicist, Nuclear Data Project, Natl. Acad. of Sci., Wash., D. C., 1958—. Mem.: Am. Physical Soc.; A.A.A.S.; Sigma Xi. Contbr. to: Physical Review; Nuovo Cimento. Areas of Rsch.: Gamma-Ray Spectroscopy.

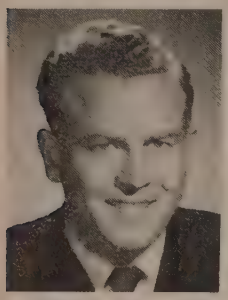
GRADY, John J. (Mr.), Programmer, Dept. of Defense, Canberra, Australia. Home Add.: Flat 4, Block 1, Lachlan Court, Barton A.C.T., Australia. ASTRONOMY, CONTROL SYSTEMS, ATMOSPHERIC OPTICS. b. Australia, Mar. 21, 1925. s. John Joseph and Nina (Ives) G. Edn.: Attended, Univ. of Sydney, Australia, 1948-49. Exp.: Tech. Officer, Weapons Rsch. Establishment, Woomera, Australia, 1950-59; Operations Officer, Smithsonian Astrophysical Observatory, Cambridge, Mass., 1959-61; Programmer, Australian Dept. of Defense, Canberra, Australia, 1962—. Hon. Pos.: Sec., Salisbury Dist. Hosp., South Australia; Past Consultant, CCDD, U. S. Air Force. Mem.: Am. Astronomical Soc.; Am. Geophys. Union; Soc. of Photographic and Instrumentation Engrs.; Armed Forces Communications and Electronics Assn.; British Computer Soc.; Assn. for Computing Machinery. Contbr. to: Australian Meteorological Mag.; Trans of I.R.E. Serv. Rec.: Royal Australian A. F., 1943-46. Gen. Int.: Responsible for Development and Operation of Smithsonian Optical Satellite Tracking System (Baker-Nunn Cameras) in ten countries, 1959-61. Areas of Rsch.: Operation and Control of large scale tracking systems; Positional and Observational Astronomy; Transmission of light and contrast by the atmosphere.

GRAHAM, Hermann Leslie Warren (Mr.), Owner, Graham Clinical Lab., Houston, Tex.; Technologist, St. Elizabeth's Hosp., Houston, Tex. Home Add.: 1426 Demaree Lane, Houston 29, Tex. MEDICAL LABORATORY TECHNOLOGY. b. Beaumont, Tex., Mar. 20, 1923. s. Charles F. L. N., Sr. and Ida (Youngblood) G. Edn.: B.S., Tillotson Coll., 1943; M.T., Imperial Technical Inst., 1946; M.T., Meharry Med. Coll., 1947. c.: Hermann L. W., Jr. Exp.: Chf. Technologist, St. Elizabeth's Hosp., Houston, Tex., 1948-53; Owner-Dir., Graham Clinical Lab., Houston, Tex., 1951—; Chief Technologist, Heights Med. Bldg., Houston, Tex., 1959-60. Hon. Pos.: Past-Pres., Houston Medico-Tech Forum. Mem.: Am. Med. Technologists; A.A.A.S.; Pleasantville Civic League. Contbr. to: Jour. of Tex. St. Soc.; Am. Med. Technologists. Serv. Rec.: U. S. Army, 1944. Gen. Int.: Recipient, Am. Med. Technologists, "Distinguished Achievement Award," 1956. Areas of Rsch.: Usefulness of VDRL Emulsion Past the One-Day Limit; Presently Involved on Causes of Sickle-Cell Anemia.

GRAF, G(ottfried) C(hristian), (Ph.D.), Prof. and Hd. Dept. of Dairy Sci., Va. Poly. Inst., Blacksburg, Va. PHYSIOLOGY OF LACTATION AND CATTLE NUTRITION. b. Louisville, Ky., Jan. 23, 1911. s. Gottfried and Anna (Dapp) G. Edn.: B.S., Mich. State Univ., 1934; M.S., Univ. of Minn., 1940; Ph.D., ibid., 1951. m. Gwendolyn Evans of Port Huron, Mich., June 14, 1938. d. Byron and Pearl Evans. Exp.: Instr., Voc. Agri., Bay Port, Mich., 1934-35; Dairy Herd Supvr., Univ. of Conn., 1935-42; Instr. Dairy, 1942-43, ibid.; Asst. Prof., and Asst. Dairy Specialist, 1943-45, ibid.; Assoc. Prof. and Assoc. Dairy Specialist, Va. Poly. Inst., 1945-50; Assoc. Prof., ibid., 1950-52; Prof. and Hd. of Dept. of Dairy Sci., ibid., 1952—; Chmn. of Agri. Faculty; Pres., V.P.I. Chapter A.A.U.P.; Chmn., Faculty Handbook Comm., A.A.U.P.; Agri. Faculty Representative on V.P.I. Comm. on Ten-

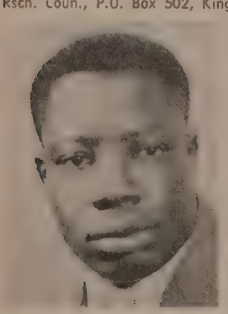
ure and Academic Freedom; Dir. of So. Div., A.D.S.A.; Assoc. Dir., Atlantic Dairy Assn.; Chmn., School of Agriculture Recruitment Comm. Mem.: A.A.A.S.; Am. Assn. of Univ. Profs.; Am. Soc. of Animal Production; Am. Dairy Sci. Assn.; Dairy Soc. Internatl.; Va. Acad. of Sci.; Va. Dairy Fieldmen's Assn.; Va. Dairy Products Assn.; Va. State Dairymen's Assn.; Dairy Found. of Va.; Dairy Shrine Club; Epsilon Sigma Phi; Sigma Xi. Contbr. to: Jour. of Dairy Sci.; Jour. of Animal Sci.; Jour. of Nutrition; Jour. of the Va. Acad. of Sci. Areas of Rsch.: Urea as a feed for Dairy Cattle; Study of Stress Conditions in Dairy Cattle; Comparative Value of Hard and Commercially Softened Water for Lactating Dairy Cattle; Pasture Evaluation for Dairy Cattle; Feed Digestibility Techniques; Arsanilic Acid in Calf Rations; Milk Secretion.

GRAHAM, Dean McKinley (Ph.D.), Pres., Graham Labs., N. Blenheim, N. Y. Home Add.: Provident Acres, N. Blenheim, N. Y.



PHARMACEUTICAL RESEARCH AND MANUFACTURING. b. Santa Ana, Calif., May 9, 1923. s. Howard E. and Mary L. (Fernandez) G. Edn.: Ph.B., Univ. of Wis., 1943; Ph.D., Univ. of Calif., 1953. m. Dolores M. Vradenburg, July 1, 1947. c.: Barry Denton; Darlene Yvonne; Deborrah Michelle; Dorenna Meris. Exp.: Contractor, Graham Gen. Bldg. Contractor, San Bernardino, Calif., 1947-49; Rsch. Scientist, Atomic Energy Comm., Univ. of Calif., 1949-53; Sr. Scientist, The Upjohn Co., Kalamazoo, Mich., 1953-57; Dir., Pharmaceutical Rsch., Stanford Rsch. Inst., 1957-58; Dir., Pharmaceutical Rsch., White Labs., Kenilworth, N. J., 1958-60; Vice-Pres., K-V Pharmacal, St. Louis, Mo., 1960-61; Pres., Graham Labs., 1961—. Mem.: A.A.A.S.; Am. Pharmaceutical Assn.; Am. Chem. Soc.; N. Y. Acad. of Sci.; Sigma Xi. Contbr. to: Circulation; The Am. Jour. of Medicine; Review of Scientific Instruments; A.M.A. Arch. of Internal Medicine; Wis. Med. Jour.; Analytical Chem. Serv. Rec.: U. S. Navy, 1943-47. Areas of Rsch.: Atherosclerosis, Physiol. of the Digestive Tract, Circulatory System, Physiol. and Pharmacol. of Drug Absorption, Design of Drug Dosage Forms.

GRAHAM, Horace Delbert (Ph.D.), Sr. Scientific Officer, Scientific Rsch. Coun., P.O. Box 502, Kingston, Jamaica, West Indies. Home Add.: Shelly Rd., Bamboo P. O. Saint Ann, Jamaica, British West Indies. FOOD TECHNOLOGY. b. Camaguey, Cuba, Aug. 7, 1925. s. Ernest Elisha (dec.) and Rose Jane (Duncan) G. Edn.: B.Sc., McGill Univ., Canada, 1950; M.S., Mich. State Univ., 1952; Ph.D., Univ. of Ill., 1958. Exp.: Treasury Clerk, Govt. of Jamaica, Kingston, Jamaica, W. I., 1944-46; Rsch. Asst., Univ. of Ill., Urbana, Ill., 1955-58; Rsch. Associate, Carver Fdn., Tuskegee Inst., Ala., 1959-62; Sr. Scientific Officer, Scientific Rsch. Council, Kingston, Jamaica, W. I., 1962—. Mem.: Inst. of Food Tech.; Sigma Xi; Am. Pharml. Assn.; Am. Dairy Sci. Assn. Contbr. to: Jour. of Food Sci.; Analytical Chem.; Jour. of Pharm. Sci.; Plant Physiology; Nature; Food Tech.; Tuskegee Veterinarian. Areas of Rsch.: Food Chemistry and Technology.



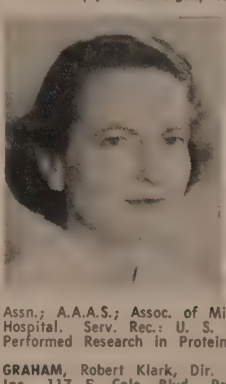
GRAHAM, Jack Bennett (Ph.D.), Partner, Leggette, Brashears and Graham, 551 Fifth Ave., N. Y. 17, N. Y. Home Add.: 87 Poplar St., Garden City, N. Y. GROUND-WATER GEOLOGY. b. Superior, Neb., Oct. 16, 1913. s. Robert Arnold and Ethel Anne (Shippen) G. Edn.: A.B., York Coll., 1935; B.S., Univ. of Nebr., 1937; M.S., Univ. of Ia., 1940; Ph.D., ibid., 1942. m. Lucy Ann Neylan, Aug. 9, 1941. c.: John Michael; Patricia Anne; Elizabeth Jane; Mary Catherine; Robert Shippen. Exp.: Chief of Field Party, Morrill Paleontol. Expts., Nebr. Sta. Museum, Nebr., Summers, 1938-39; Field Asst., Ia. Geol. Survey, Ia. Summers, 1940-41; Tchng. and Rsch. Asst., Univ. of Ia., 1938-42; Jr. Geolt., Ground-Water Br., U. S. Geol. Survey, Wyo., 1942-43; Asst. Geolt., ibid., Pa., 1943-45; Assoc. Geolt., ibid., 1945-48; Dist. Geolt., ibid., 1948-52; Chf., Water Utilization Sect., Techn. Coord. Br., U. S. Geol. Survey, Wash., D. C., 1952-54; Consult. Ground-Water Geolt., Partner, Leggette, Brashears and Graham, N. Y. City, 1955—. Hon. Pos.: Secy., Sect. E, Geol. and Geog., Am. Assn. for the Adv. of Sci., 1953-54. Mem.: A.A.A.S.; Geol. Soc. Am.; A.I.M.E.; Am. Geophys. Union; Acad. Natl. Sci. of Phila.; Explorers Club; Sigma Xi; Gamma Alpha. Author-Co-Editor: Water for Industry, 1956. Contbr. to: Internatl. Assn. of Scient. Hydrol.; Am. Water Wks. Assn.; Econ. Geol.; Water Resources Pubns. of U. S. Geol. Survey; Water Well Jour.; Paper Trade Jour.; Jour. of Pa. Water Works Operator's Assn. Areas of Rsch.: Ground-Water Geology and Hydrology.

GRAHAM, James H. (Ph.D.), Dir. of Public Relations, Graham Associates, Inc., Bloomingdale, N. Y. Home Add.: Syracuse, N. Y.

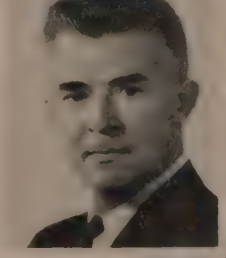
PHYSICS (EDUCATION) SOLID STATE. b. Syracuse, N. Y., Mar. 31, 1924. s. William W. and Helena (Hatton) G. Edn.: B.S., Syracuse Univ., 1949; M.S., L. I. Univ., 1953; Ph.D., Columbia Univ., 1958. m. Anne Both, May 26, 1958. c.: Karin; James William. Exp.: Asst. Prof., Nassau Coll., Charwick, Eng., 1948-52; Asst. Prof., Hofstra Coll., 1955-58; Assoc. Prof., P.M.C., Chester, Calif., 1958-60; Dir. of Public Relations, Graham Associates, Inc., Bloomingdale, N. Y., 1960—. Hon. Pos.: Asst. Chmn., Buris Fdtn. Mem.: A.A.A.S.; N.Y.A.S.; Am. Inst. of Physics; Am. Inst. of Physics Tchrs.; N.E.A.; Alpha Pi Phi; B.P.O.E.; Lions. Author: Encouragement to the Gifted, 1962. Contbr. to: Atlantic City Press Mag.; Astronomical and Edntl. Jour. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Micro Meteoric Particles; Tchng. of Physics—Undergrad. Level.

GRAHAM, Jay E. (Mr.), Mgr., Entomologist, Salt Lake Co., Mosquito Abatement Dist., P.O. Box 307, Midvale, Utah. Home Add.: 1531 East 4160 South, Salt Lake City 17, Utah. ENTOMOLOGY. b. Salt Lake City, Utah, Oct. 27, 1922. s. E. L. and Elna (Toolgren) G. Edn.: B.S., Univ. of Utah, 1947; M.S., ibid., 1950. m. Margery Lehn, Dec. 22, 1944. c.: Mark; Ellen. Exp.: Asst. Prof., Westminster Coll., Salt Lake City, Utah, 1953-55; Mgr., Entomologist, Salt Lake Co. Mosquito Abatement Dist., Midvale, Utah, 1953—; Instr., Coll. of Saint Mary's of the Wasatch, Salt Lake City, Utah, 1957-58, part-time. Hon. Pos.: Dir., Am. Mosquitto Cont. Assn.; Pres., Utah Mosq. Abt. Assn.; Dir., Utah Pest Cont. Assn.; Secy.-Treas., Utah Mosq. Abt. Assn. Mem.: A.A.A.S.; Ent. Soc. Am.; Ecological Soc. Am.; Am. Mosq. Control Assn.; Utah Acad. Sci.; Sigma Xi. Contbr. to: Mosq. News; Utah Acad. Sci.; Proc. and Papers, N. J. Mosq. Exterm. Assn.; Proc. Calif. Mosq. Cont. Assn.; Proc. Utah Mosq. Abt. Assn. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Measurement of Mosquito Populations; Mosquito Larval Ecology.

GRAHAM, Margaret Eleanor (Miss), Asst. Chief, Dietetic Serv., V. A. Hosp., Canandaigua, N. Y. Home Add.: V. A. Hosp., Canandaigua, N. Y. NUTRITION. b. Perry County, Ala., Aug. 29, 1923. d. L. T. and Ida (Couch) G. Edn.: B.S., Univ. of Ky., 1943; M.S., Univ. of Md., 1951; Exp.: Internship, Walter Reed Gen. Hosp., Wash., D. C., 1944-45; Admin., Dietitian, Watts Gen. Hosp., Durham, N. C., 1947; Therapeutic Dietitian, U. S. Public Health Serv., Baltimore, Md., 1948-51; Therapeutic and Rsch. Dietitian, ibid., Lexington, Ky., 1951-53; Asst. Chief, Dietetic Serv., V. A. Hospital, Fort Howard, Md. 1953-58; Clinic-Education Dietitian, ibid., Baltimore, Md., 1958-61; Asst. Chief, Dietetic Serv., V. A. Hosp., Canandaigua, N. Y., 1961—. Hon. Pos.: Pres., Md. State Dietetic Assn. Mem.: Am. Dietetic Assn.; A.A.A.S.; Assoc. of Mil. Surg. Contbr. to: The Modern Hospital. Serv. Rec.: U. S. Army, 1945-47. Areas of Rsch.: Performed Research in Protein Utilization of College Women.



GRAHAM, Robert Klark, Dir. of Research, Armorlite Lens Co., Inc., 117 E. Colo. Blvd., Pasadena, Calif.; Assoc. Prof., Los Angeles, Calif.; Special Lectr. in Optics, Loma Linda Univ., Los Angeles, Calif. Home Add.: 1425 Ontario Ave., Pasadena, Calif. OPHTHALMIC OPTICS. b. Harbor Springs, Mich., June 9, 1906. s. Dr. F. A. and Ellen Fern (Clark) G. Edn.: A.B., Mich. State Univ., 1932; B.Sc., Ohio State Univ., 1937. m. Marta ve Everton, M.D. c.: David; Gregory; Robin; Janice; Robert; Wesley. Exp.: Special representative, Bausch & Lomb Optical Co., Rochester, N. Y., 1937-40; Sales Mgr., Univis Lens Co., Dayton, Ohio, 1940-46; Dir. of Rsch., Armorlite Lens Co., Inc., 1947—. Hon. Pos.: Natl. Chmn., Contact Lens Sect., Am. Acad. of Optometry. Mem.: Fellow, Am. Assn. Adv. Sci.; Fellow, Optical Soc. of Am.; Am. Ordnance Assn.; A.A.U.P.; Am. Acad. of Optometry; Phi Mu Alpha; Alpha Epsi-

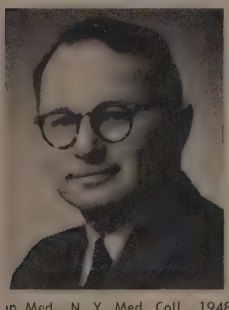


lon Mu; Omega Epsilon Phi; Omega Beta Sigma. Contbr. to: Jour. Optical Soc. Am.; Jour. Applied Physics; Archives of Ophthal.; Am. Jour. Ophthal.; Am. Jour. Optometry. Gen. Int.: Invented variable focus lens; Directed project which developed the first hard resin lenses. Areas of Rsch.: Hard Resin Lenses; Contact Lenses.

GRAHAM, William Bagley (Mr.), Head, Electronics Dept., The Rand Corp., 1700 Main St., Santa Monica, Calif. Home Add.: 781 Ranch Lane, Pacific Palisades, Calif. PHYSICS, RADIO ENGINEERING. b. Eugene, Ore., Aug. 14, 1920. s. David M. and Mildred (Bagley) G. Edn.: B.S., Mass Inst. of Technol., 1942. m. Dorothy Reilly, Feb. 1946. c.: David; Kathleen. Exp.: Lab. Asst., Mass. Inst. of Technol., 1940-42; Walker Mem. Staff, ibid., 1940-42; Engr., Lockheed Aircraft, Burbank, Calif., 1942; Radio Engr., Federal Telephone and Telegraph Labs., Nutley, N. J., 1942-43; Radar Technical Officer, U.S.N.R., 1943-46; Rsch. Engr., Sperry Gyroscope Co., Garden City, L. I., N. Y., 1946-50; Rsch. Staff, The Rand Corp., Santa Monica, Calif., 1950-58; Assoc. Head, Engrng. Div., ibid., 1958-60; Head, Electronics Dept., ibid., 1960 . Hon. Pos.: Consultant and Panel Mem., President's Sci. Advisory Comm.; Consultant, U.S.A.F. Scientific Advisory Bd.; U.S.A.F. Space Systems Div. Advisory Group; Ballistic Missile Scientific Advisory Comm. to Secy. of Defense; U. S. Delegate, Tripartite Missile Defense Conf., London; U. S. Repr., Joint U. S.-U. K. Guided Weapons Conf. Mem.: A.A.A.S.; Calif. Acad. of Sci.; Kappa Sigma. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Radar System Design; Weapon System Analysis.

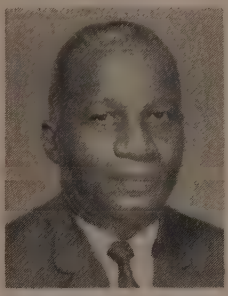
GRANEK, Irving (Mr.), Asst. Regional Supvr., U.S.D.A., P.O. Box 96, Hicksville, N. Y. Home Add.: 100 President St., Lynbrook, N. Y. NEMATOLOGY AND ENTOMOLOGY. b. Corona, L. I., N. Y., Nov. 7, 1911. s. Max and Gussie (Scheer) G. Edn.: B.S., Cornell Univ., 1935. m. Evelyn Chernoff, June 14, 1942. c.: Robert Michael; Daniel Ellis. Exp.: Tree Inspector, N. Y. C. Dept. of Parks, Brooklyn, N. Y., 1939-47; Lab. Supvr., U.S.D.A., Hicksville, N. Y., 1947—. Mem.: A.A.A.S.; Helminthological Soc. of Wash.; Entomological Soc. of Am.; N. Y. Entomological Soc.; Soc. of Nematologists. Contbr. to: Plant Disease Reporter. Serv. Rec.: Capt., U. S. Army, 1942-46. Gen. Int.: Superior Serv. Award, U.S.D.A. Areas of Rsch.: Nematol., Taxonomy of Cyst Forming Nematodes.

GRANIRER, Louis W. (M.D.), Chief of Arthritis Clinic, Queens Hosp. Center, Jamaica, N. Y. Home Add.: 135-02 Blvd., Belle Harbor, L. I., N. Y. INTERNAL MEDICINE, RHEUMATIC DISEASES. b. N.Y.C., Oct. 24, 1901. s. Salomon and Dora (Wolf) G. Edn.: B.A., Columbia Coll., 1923; M.D., Coll. of Physicians and Surgeons, Columbia Univ., N. Y., 1926. m. Minna Banner, 1927. c.: Doral Schmidt; Sara Milstein; Martha Barotz; Samuel Banner. Exp.: Intern, Williard Parker Hosp., Rockaway Beach Hosp., Bushwick Hosp., N. Y., 1926-27, 1927; Post-Grad. Studies, Mt. Sinai Hosp., N.Y.C., 1928; N. Y. Post Grad. Med. Schl., Temple Univ. Med. Schl., Univ. Pa., 1935-40; Mass. Gen. Hosp.; Jefferson Med. Coll., 1940-42; Lectr. on Rheumatic Diseases and Arthritis, N. Y. Post-Grad. Med. Schl., 1944-50; Assoc. in Med., N. Y. Med. Coll., 1948; Asst. Attending Physician, Bellevue Hosp., N.Y.C., 1948; Assoc. Physician, Queens Gen. Hosp., 1948; Consultant in Arthritis, Peninsula Gen. Hosp., 1959—. Mem.: Fellow, Am. Heart Assn.; A.A.A.S.; Fellow, Am. Coll. Physicians; Diplomate, Am. Bd. Int. Med.; Fellow, Am. Coll. Angiology; Fellow, N. Y. Acad. of Medicine; Fellow, Royal Soc. of Med., London; N. Y. Rheumatism; Am. Rheumatism Assn.; Queens Co. and N. Y. State Med. Soc.; Honor Legion N.Y.C. Police Dept.; Internatl. Soc. Int. Med.; Fellow, Am. Federation for Clin. Rsch. Contbr. to: Am. Jour. Med.; Annals of Int. Med.; N. Y. State Med. Jour.; Conn. State Med. Jour.; Med. Clinics of North Am.; Jour. Am. Med. Assn.; Excerpta Medica. Gen. Int.: Participant in First Int. Pharmacological Meeting, Stockholm, Sweden, 1961; Participant in 6th Internatl. Congress Int. Med., Basle, Switz., 1960; Participant, Am. Cong. for Phys. Med. and Rehab., N. Y., 1962. Areas of Rsch.: Arthritis and Rheumatic Diseases.



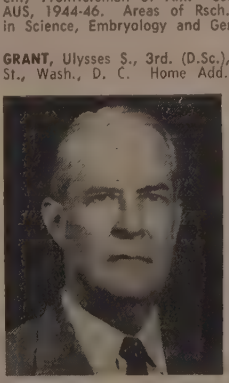
GRANT, Clarence Lewis (Ph.D.), Rsch. Assoc. Prof., Univ. of N. H., Durham, N. H. Home Add.: 5 Garden Lane, Durham, N. H. ANALYTICAL CHEMISTRY AND SPECTROSCOPY. b. Dover, N. H., July 8, 1930. s. Merton E. and Susan O. (Hutchins) G. Edn.: B.S., Univ. of N. H., 1951; M.S., ibid., 1956; Ph.D., Rutgers, The St. Univ., 1960. m. Helen M. Garland, Dec. 27, 1952. c.: David A.; Philip W.; Stephen R. Exp.: Instr., Morristown Schl., Morristown, N. J., 1951-52; Instr., Univ. of N. H., Durham, N. H., 1952-56; Rsch. Asst. Prof., ibid., 1956-58; Rsch. Fellow, Rutgers, The St. Univ., New Brunswick, N. J., 1958-60; Assoc. Prof., ibid., 1960-61; Rsch. Assoc. Prof., Univ. of N. H., 1961—. Mem.: Am. Chem. Soc.; Sigma Xi; Soc. for Appl. Spectrosc.; Am. Soc. for Testing Materials; Alpha Chi Sigma; Lambda Chi Alpha. Contbr. to: Analyt. Chem.; Sci.; Assn. Off. Agr. Chem.; Jour. Biol. Chem.; Soil Sci.; Jour. Geophys. Rsch.; Jour. of Bacteriol. Areas of Rsch.: Use of Spectroscopy and Related Analytical Tools in the Study of Trace Element Problems in Biology and Agriculture.

GRANNUM, Eustace Stanley (M.D.), Administrator, Whitaker Memorial Hosp., Newport News, Va. Home Add.: 1411-26th St., Newport News, Va. HOSPITAL ADMINISTRATION. b. Georgetown, Br. Guiana, S. Am., June 9, 1907. s. William Adolphus and Ethel Elizabeth (Grant) G. Edn.: M.D., Boston Coll. of Physicians and Surgeons, 1940. m. Naomi Roberta Wright, Aug. 4, 1951. c.: Gail Faustina. Exp.: Resident Physician and Asst. to Administrator, Good Samaritan-Waverly Hosp., Columbia, S. C., 1940-41; Administrator, ibid., 1941-43; Asst. Administrator, Norfolk Community Hosp., Norfolk, Va., 1943-44; Administrator, Whittaker Mem. Hosp., 1944—. Hon. Pos.: Advisory Hosp. Coun. of St. of Va., Dir., Peninsula Family Serv., Travelers Aid; Dir., Peninsula United Fund; Mem., Episcopal Diocesan Policy Comm. of Sou. Va. Mem.: Fel., Am. Coll. of Hosp. Administrators; Fel., Am. Geriatrics Soc.; Mem., Royal Soc. of Health of London, England; Phi Beta Sigma; Mason; Am. and Va. Public Health Assn.; Am. Assn. of Hosp. Accnts.; Am. Hosp. Assn.; Peninsula Med. Soc.; Am. Acad. of Polit. and Soc. Sci.; Am. Assn. for the Adv. of Sci.; Old Dominion Med. Soc.; Natl. Med. Assn. Contbr. to: The Modern Hosp.; Hosp. Administration. Listed in: Am. Med. Dir.; Am. Men of Sci.; W. W. in South and Southwest; Am. Coll. of Hosp. Administrators. Areas of Rsch.: Hospital Administration.



GRANT, Joseph Nathaniel (Prof.), Sci. Adviser, UNESCO, Ministry of Edn., Lagos, Nigeria. Home Add.: 415 Magnolia Dr., Rocky Mount, N. C. TEACHING OF BIOLOGICAL SCIENCE, GENETICS, EMBROYOLOGY. b. Tarboro, N. C., April 4, 1925. s. William and Allena (Hudson) G. Edn.: B.S., North Carolina Coll., 1948; M.S., N. C. Coll., 1949; M.A., Columbia Univ., Tchrs. Coll., 1952; Prof. Dpl., ibid., 1953. m. Maye Holden, Mar., 1950. c.: Margret-Jo. Exp.: Instr., Wash. H.S., Reidsville, N. C., 1948-51; Dir. of Sci. Acts., Ft. Valley Sta. Coll, Ft. Valley, Ga., summer, 1957; Assoc. Prof. of Biol., Delaware Sta. Coll., Dover, Del., 1953-61; Adv. on Sci. Edn., United Nations UNESCO, Lagos, Nigeria, 1961—. Hon. Pos.: Chmn., Natl. Defense Student Loan Fund, D.S.C.; Chmn., Dept. of Biol., D.S.C., Chmn., Adv. Panel, State Math. Sci. Study Group, Bas. Omega Psi Phi. Mem.: AAAS; Natl. Biol. Tchrs. Assn.; Natl. Sci. Edn. Fellow; Omega Psi Phi; Beta Kappa Chi; Frontiersman of Am. Contbr. to: Biol. Tchr. Serv. Rec.: AUS, 1944-46. Areas of Rsch.: Factors in Student Achievement in Science, Embryology and Genetic Research.

GRANT, Ulysses S., 3rd. (D.Sc.), Pres. Govt. Serv. Inc., 1135 21st St., Wash., D. C. Home Add.: (Winter) 1900 Q Street, Wash., D. C. (Summer) Coll. Hill, Clinton, N. Y. RIVER AND HARBOR ENGINEERING; MILITARY ENGINEERING; CITY AND REGIONAL PLANNING; AMERICAN HISTORY. b. Chicago, Ill., July 4, 1881. s. Maj. Gen. Frederick D. and Ida (Honore) G. Edn.: Theresianum, Vienna, Austria, 1892; Cutler Schl., N. Y., N. Y., 1898; Columbia Univ., 1898; B.S., U. S. Milit. Acad., 1903; Engr. Schl., U. S. Army, 1908; Army War Coll., 1934. Hon. Pos.: D.Sc., Washington-Jefferson; LL.D., Gettysburg and George Washington Univ.; Dr. Humanities, Lincoln Mem. Univ. m. Edith Root, Nov. 27, 1907. c.: Edith Grant Griffiths; Clara Frances Grant Ruestow; Julia Grant Dietz. Exp.: U. S. Army, 1903-45; Vice-Pres., George Washington Univ., 1946-51; Pres., Government Service, Inc., Washington, D. C., 1947 . Hon. Pos.: Chmn., U. S. Civil War Cent. Comm.; Pres., Columbia Hist. Soc.; Cmdr.-in-Chf., Milit. Ord. of Loyal Legion, 1957-61; Past Cmdr.-in-Chf., Sons of Union Vets. of C.W.; Past Pres., Am. Planning and Civic Assn.; Past Pres., Am. Peace Soc.; Vice-Pres., Geo. Wash. Univ., 1946-51; Vice-Pres., Wash. Acad. of Scis.; Past Vice-Chmn., Natl. Trust for Hist. Preservation. Mem.: Columbia Hist. Soc.; Natl. Trust for Hist. Preservation; Am. Inst. of Planners; Soc. Am. Milit. Engrs.; Am. Hist. Assn.; Assn. Mem., A.S.C.E.; A.A.A.S.; Natl. Genealogical Soc.; Am. Geog. Soc.; Am. Assn. for State and Local Hist.; Sigma Xi; Omicron Delta Kappa; Lambda Sigma; Delta Phi. Gen. Int.: Recipient, Distinguished Service Medal, U.S.A. Legion of Merit, and Decorations from Six Foreign Countries. Areas of Rsch.: River and Harbor Improvements, Flood Control; History of the Civil War; City and Regional Planning.



GRANT, Robert Byron (Sc.D.), Mgr., Engineering and Operations Analysis Div., Phillips Petroleum Co., Bartlesville, Okla. Home Add.: 145 Fleetwood Place, Bartlesville, Okla. MANAGEMENT SCIENCE, OPERATIONS RESEARCH: DIGITAL COMPUTER APPLICATION TECHNOLOGY. b. St. Louis, Mo., Jan. 15, 1922. s. Gordon Gilbert and Mary Agnes (Byron) G. Edn.: B.S., Washington Univ., 1943; M.S., ibid., 1948; Sc.D., ibid., 1951. m. Mary Bell Greenwell, June, 1948. c.: Victoria Mary; Martin Vincent; Alexander Joseph. Exp.: Lecturer, Washington Univ., St. Louis, Mo., 1946-51; Rsch. Mgr., Southwest Rsch. Inst., San Antonio, Tex., 1951-55; Tech. Consultant, Phillips Petroleum Co., Bartlesville, Okla., 1955-57; Mgr. Engrng. and Operations Analysis Div., ibid., 1957—. Mem.: AAAS; Am. Inst. Chem. Engrs.; Inst. of Management Sci.; Operations Rsch. Soc. of Am.; Assn. for Computing Machinery; Tau Beta Pi; Industrial and Appl. Math. Soc.; Sigma Xi; Pi Mu Epsilon. Contbrg. Author: Analog Computers, Their Industrial Applications, 1956; Proceedings of Petroleum Mgmt. Conference Series. Contbr. to: Reviewer, Appl. Mechanics Review; New and Unorthodox Methods of Petroleum Exploration Bull.; Tex. Jour. of Sci.; Tomorrow Through Rsch.; Natl. Assn. of Accts. Bull.; Am. Inst. of Chem. Engrs. Symposia Series. Serv. Rec.: AUS, 1944-46. Areas of Rsch.: Operations Analysis of Production, Inventory and Transportation Systems, Systems Analysis of Management Control and Information Systems.

GRANZOW, Kenneth Donald (Mr.), Staff Mem., Physical Scis. Rsch. Dept., Sandia Corp., Sandia Base, Albuquerque, N. Mex. Home Add.: 1013 Maxine N.E., Albuquerque, N. Mex. ELECTRICAL ENGINEERING, THEORETICAL PHYSICS. b. Oak Park, Ill., Mar. 26, 1933. s. Daniel B. and Martha W (Leber) G. Edn.: B.S., Univ. of Ill., 1958; M.S., ibid., 1959. m. Elinor R. Parsons, Dec., 1952. c.: Mark Stephen; Barbara Ann; Glen David. Exp.: Engr., The Magnavox Co., Urbana, Ill., 1957-59; Staff Mem., Sandia Corp., Albuquerque, N. Mex., 1959—. Mem.: AAAS. Contbr. to: Physical Review; Physics of Fluids. Serv. Rec.: AUS, 1953-55. Areas of Rsch.: High Voltage Discharges, Electron Scattering.

GRAVES, Arthur H. (Ph.D.), Consultant in Genetics, Conn. Agri. Expt. Station, 255 S. Main St., Wallingford, Conn. BREEDING CHESTNUT TREES TO DEVELOP BLIGHT RESISTANT HARDY CULTIVARS. b. New Haven, Conn., Jan. 22, 1879. s. Joseph Alvin and Mary Frances (Harmount) G. Edn.: B.A., Yale Coll., 1900; Ph.D., Yale Univ., 1907. m. Helen Freeman Tiffany, May 1, 1939. c.: Elizabeth Wing. Exp.: Asst. in Botany, Sheffield Sci. Schl., Yale Univ., 1902-04; Instr., Forest Bot., Forestry Schl., 1904-06; Instr. in Botany, Yale Univ., 1906-09; Asst. Prof., ibid., 1909-14; Assoc. Prof. of Biol., Conn. Coll. for Women, 1916-17; Pathologist and Collaborator, Div. Forest Pathol., U. S. Dept. Agri., 1909—; Counsulting Pathologist, Conn. Expt. Station, 1947-59; Consultant in Genetics, ibid., 1959—; Curator, Brooklyn Botanic Garden, 1921-47; Emeritus Curator, ibid., 1947—. Mem.: A.A.A.S.; Torrey Bot. Club; Conn. Bot. Soc.; Mycol. Soc.; Am. Bot. Soc.; Am. Phytopath. Soc.; Phi Beta Kappa; Sigma Xi. Author: A Tchng. Guide to the Trees and Shrubs of Greater N. Y., 1933; Illustrated Guide to Trees and Shrubs, 1952. Contbr. to: Bull. Torrey Bot. Club; Phytopathol.; Am. Jour. Botany. Special Int.: Forest Pathol., especially the Blight of the Am Chestnut; Breeding Chestnuts since 1930 to Develop Blight Resistant Hardy Cultivars.

GRAVES, Artis Paris (Ph.D.), Chmn., Biol. Dept., Greensboro A. and T. Coll., Greensboro, N. C. Home Add.: 612 Douglas St., Greensboro, N. C. ZOOLOGY. b. Hiawatha, W. Va., Sept. 23, 1907. s. Peter David and Lilia Crumo (Hemphill) G. Edn.: B.S., Bluefield State Coll., 1931; M.S., Univ. of Ia., 1938; Ph.D., ibid., 1943. m. Anne Collins, 1939. c.: Ann P.; Lynn D.; Anita. Exp.: Instr., Morristown Coll., 1931-34; Instr., Shorter Coll., 1934-35; Instr. to Prof., Morris Brown Coll., 1936-50; Dir. of Sci. Workshop, Sou. Univ., 1944, summer; Prof., Chmn., Biol. Dept., Tex. Sou. Univ., summer, 1950; Prof., Chmn., Biol. Dept., Greensboro A. and T. Coll., 1951—. Mem.: Sigma Xi; A.A.A.S.; Natl. Assn. of Biol. Tchrs.; N.I.S.; Beta Kappa Chi; Soc. for Exptl. Biol. and Med.; Am. Soc. of Zoologists; Alpha Phi Alpha; Y.M.C.A.; Urban League. Contbr. to: Anat. Rec.; Am. Jour. Anat.; Am. Biol. Tchr.; Proc. Jour. N.I.S. Areas of Rsch.: Embryology; Amphibian and Rodent.

GRAY, Thomas James (Ph.D.), Prof. of Phys. Chem., Dir. of Grad. Progs. in Catalysis and Materials, State Univ. of N. Y., Coll. of Ceramics, Alfred, N. Y. Home Add.: Reynolds St., Alfred, N. Y. CHEMICAL PHYSICS OF SOLIDS. b. Witherley, Atherstone, England, July 28, 1917. s. Thomas J. H. and Ellen E. (Webb) G. Edn.: B.S., Univ. of Bristol, England; Ph.D., ibid. m. E. Betty Scott, Nov., 1941. c.: Peta; Duncan; Nigel. Exp.: Lectr., Univ. of Bristol, Bristol, England, 1946-53; Prof. Phys. Chem., and Dir. Grad. Prog., State Univ. of N. Y., 1953—. Mem.: Faraday Soc.; Am. Chem. Soc.; Am. Ceramic Soc.; Am. Phys. Soc.; Allegany Co. Shrine Club; Keuka Yacht Club; Hornell Country Club. Author: Defect Solid State, 1957. Contbr. to: Trans. of the Faraday Soc.; Jour. of the Am. Chem. Soc.; Jour. of the Am. Ceramic Soc. Serv. Rec.: British Army, 1939-46. Areas of Rsch.: Fuel Cells; Catalysis; Semiconductors; Special Ceramics.

GRAYSON, John F. (Ph.D.), Rsch. Group Supervisor of Palynology, Pan American Petroleum Corp., Rsch. Center, P. O. Box 591, Tulsa 2, Okla. Home Add.: 6525 East 58th St., Tulsa, Okla. PALYNOLOGY-PALEONTOLOGY. b. Bay City, Mich., Mar. 23, 1928. s. William F. and Marie (Nowak) G. Edn.: B.S., Univ. of Mich., 1951; M.S., ibid., 1952; Ph.D., ibid., 1956. m. Louise Moore, 1951. c.: Kathleen; Susan; Nancy; David. Exp.: Tchg. Fellow, Univ. of Mich., Ann Arbor, Mich., 1952-54; Sr. Rsch. Technologist, Socony Mobil Oil Co., Dallas, Tex., 1954-62; Rsch. Group Supervisor, Pan American Oil Corp., Tulsa, Okla., 1962—. Hon. Pos.: Mem., Adv. Comm. of Catalog of Fossil Spores and Pollen. Mem.: AAPG; Sigma Xi; Phi Sigma; AAAS; Botanical Soc. of Am.; Dallas Geological Soc.; Am. Inst. of Biological Sci.; RESA; Ecological Soc. of Am.; Delta Chi. Contbr. to: Ecology, Micropaleontology, Oil and Gas Jour. Serv. Rec.: AUS, 1945-47. Areas of Rsch.: Palynology-Paleoecology-Paleogeography.

GRECO, Edward Carl (Mr.), Sr. Rsch. Assoc., United Gas Corp., Rsch. Dept., Shreveport, La. Home Add.: 1604 Capt. Shreve Dr., Shreveport, La. CHEMISTRY. b. Marsala, Italy, Nov. 2, 1911. s. Camelo and Domenica (LoGacono) G. Edn.: B.S., Northwestern State Coll., 1934. m. Marcia Dudley, Apr. 20, 1938. c.: Edward Carl, Jr.; Marcia Scott. Exp.: Analytical Chemist, Chemical Dept., United Gas Pipe Line Co., La., 1938-42; Chief Explosives Chemist, U. S. Army Ordnance, Lone Star Ordnance Plant, Texas, 1942-43; Special Chemist, Development, E. I. DuPont Explosives Div., Tenn., 1943-44; Sr. Rsch. Chemist, Supervisor of the Corrosion and Chemistry Sec., Rsch. Dept., United Gas Corp., 1944—. Hon. Pos.: Pres., Natl. Assn. of Corrosion Engrs.; Past Pres., La. Acad. of Scis.; Past Chmn., Councilor, Ark.-La.-Tex. Section Am. Chem. Soc.; Organizer and State Dir. of Sci. Fairs; Mem., Corrosion Subcomm., Natl. Acad. of Scis.; Pres., Second International Congress on Metallic Corrosion. Mem.: Am. Chemical Soc.; Fellow, Am. Assn. for the Advancement of Scis.; La. Acad. of Scis.; Natl. Assn. of Corrosion Engrs.; Fellow, Am. Inst. Chem.; Lambda Zeta; Beta Beta Beta. Contbrg. Author: Condensate Well Corrosion. Contbr. to: Corrosion; Proceedings of the Louisiana Acad. of Scis.; The Oil and Gas Jour.; Gas and Proceedings of the Natural Gasoline Assn. of Am. Gen. Int.: Development of Chemical Techniques for Control of Vegetation on Pipeline Right of Ways and Elimination of Water Hyacinths; Directed and Carried out Early Rsch. on Causes and Control of Corrosion. Areas of Rsch.: Rsch. in the Fundamentals of Corrosion of Ferrous Metals; Reactions of Ferrous Metals in the Presence of the Acidic Gases Carbon Dioxide and Hydrogen Sulfide. This Includes the Mechanism of these Reactions.

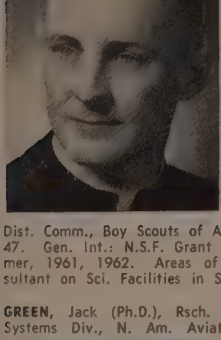
GREELEY, Paul Orson (Ph.D., M.D.), Med. Dir., Stu. Health Center, Univ. of So. Calif., University Park, Los Angeles 7, Calif. Home Add.: 14825 Sierra Highway, Saugus, Calif. INTERNAL MEDICINE. b. Los Angeles, Calif., Jan. 19, 1901. s. Frank Leslie and Cora A. (Parker) G. Edn.: B.A., Univ. of So. Calif., 1921; M.D., ibid., 1937; Ph.D., Univ. of Mich., 1930; M.A., Univ. of So. Calif., 1923. m. Zoe V. Cooper, Oct. 19, 1945. Exp.: Instr. of Biol., Univ. of So. Calif., Los Angeles, Calif., 1926; Instr. Med. Physiol., Univ. of Mich., Ann Arbor, Mich., 1927-31; Instr. of Physiol. and Assoc. Prof. of Physiol., Univ. of So. Calif., 1932-42; Govt. Contracts Aviation Med., Office of Scientific Rsch. and Dev., Univ. of So. Calif., 1942-46; Med. Dir., Stu. Health Center, Univ. So. Calif., Los Angeles, Calif., 1946—; Assoc. Clin. Prof. of Med., Clinical Rsch., Med. Schl., ibid., 1946—. Hon. Pos.: Past Pres., Am. Coll. Health Assn. Mem.: Los Angeles, Co. Med. Assn.; Soc. Experimental Biol. and Med.; Am. Physiology Soc.; Am. L.A. Diabetic Assn.; AAAS; Phi Beta Kappa; Sigma Xi; Theta Kappa Psi; Phi Kappa Phi. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Physiol.; Jour. Urol.; Arch. Int. Med.; Am. Jour. Med. Sci.; Jour. Clin. Endoc.; Calif. and West Med.; Science. Areas of Rsch.: Aviation Physiology, Heart and Lung Circulation, and Diabetes.

GREEN, Ferris Milton (Mr.), Orchard Consultant, Austin, Colo., HORTICULTURE; TREE FRUITS. b. Milwaukee, Wis., March 22, 1894. s. Frederick C. and Carrie (Ferris) G. Edn.: B.S., Ore. Agri. Coll., 1922. m. Effie Elnora Cofer, June 17, 1921. c.: B. Dale G. Lawson; Rita Louise G. Smith. Exp.: County Fruit Inspector, Hood River, Ore., 1922-23; Asst. Prof., Colo. Agri. Coll. and Chf. Dept. Sta. Hort., 1923-30; In Chg. Coll. Farm, Austin, Colo., Chf. Deputy State Hort., 1930-40; In Chg. Coll. Farm, Supt. Western Slope Br. Sta., Austin, Colo., 1940-59 (Ret.); Orchard

Consultant, Austin, Colo., 1959–. Mem.: A.A.A.S.; Am. Soc. for Hort. Sci.; Am. Pomological Soc.; Alpha Zeta. Serv. Rec.: A.E.F., Nov. 28, 1917-July 22, 1919. Areas of Rsch.: Fruit Tree Nutrition (Chlorosis); Fruit Tree Roots-Stocks; Tree Fruit Varieties Orchard Irrigation; Soil Management; Pruning of Fruit Trees; Orchard Spraying; Chemical Control of Orchard Weeds.

GREEN, Charles Adam (Mr.), Dir. of Special Edn., Northville State Hosp., Northville, Mich. Home Add.: 16154 Wildemere, Detroit 21, Mich. PSYCHOLOGY, SOCIOLOGY. b. Detroit, Mich., Oct. 17, 1927. s. Fred and Charlena (Cragwall) G. Edn.: B.A., Univ. of Mich., 1952; M.A., Wayne State Univ., 1957. m. Mildred Wilson, Jan. 4, 1957. c.: Iris; Robin Charles. Exp.: Tchr., Detroit Bd. of Edn., 1953-58; Dir., Special Edn., Northville State Hospital, 1958–. Hon. Pos.: Pres., Council on Children with Behavioral Disorders. Mem.: A.A.A.S.; Mich. Acad. of Sci., Arts, and Letters; Am. Acad. of Political and Soc. Sci.; Natl. Geographic Soc.; Detroit Psychol. Assn.; Am. Assn. on Mental Deficiency; Michigan Sociol. Assn.; C.E.C.; Alpha Phi Alpha; Phi Delta Kappa Serv. Rec.: U. S. Army Air Force.

GREEN, Rev. Gerard Leo, Dir. of Sci., Bishop Turner H. S., 185 Lang Ave., Buffalo 15, N. Y. CHEMISTRY. b. Batavia, N. Y., July 27, 1928. s. George Leo and Marian Louise (Powers) G. Edn.: B.S., Mt. St. Mary's Coll., 1952; M.A., St. Bonaventure Univ., 1958. Exp.: Lab. Tech., Eastman Kodak Co., Rochester, N. Y., 1947-48; Chemist, Haloid, Xerox, Rochester, N. Y., 1952; Dir. of Sci., Bishop Turner H.S., Buffalo, N. Y., 1959–; Chem. Instr., ibid., 1959–; Sci. Curriculum Comm., Buffalo Diocesan Dept. of Edn.,. Buffalo, N. Y., 1961–. Hon. Pos.: Representative, Buffalo Diocesan H.S., N.S.F. Summer Inst. at Univ. of Buffalo; Chmn., Diocesan Chem. Textbook Revision Comm. Mem.: N. Y. St. Tchrs.; N. Y. Sci. Tchrs. Assn.; Natl. Catholic Edn. Assn.; A.A.A.S.; Natl. Sci. Tchrs. Assn.; Knights of Columbus; V.F.W.; Dist. Comm., Boy Scouts of Am. Serv. Rec.: U. S. Army, 1946-47. Gen. Int.: N.S.F. Grant in Chem., Notre Dame Univ., Summer, 1961, 1962. Areas of Rsch.: Tchng. Chem., Biol.; Consultant on Sci. Facilities in Secd. Schls.



GREEN, Jack (Ph.D.), Rsch. Geologist, Space and Information Systems Div., N. Am. Aviation, Downey, Calif. Home Add.: 1520 N. Antoinette Dr., La Habra, Calif. EXTRATERRESTRIAL GEOLOGY, GEOCHEMISTRY AND GEOPHYSICS. b. Poughkeepsie, N. Y., June 19, 1925. s. Louis and Marie (Harris) G. Edn.: B.S., Va. Polytechnic. Inst., 1950; Ph.D., Columbia Univ., 1953. m. Renee Utley, Sept. 21, 1952. c.: Kathy; Jeffrey; Nathaniel; Teresa; Terrence; Ronald. Exp.: Geologist, U. S. At. En. Comm., Marysvale, Utah, 1951-53; Geologist, Standard Oil of Calif., Mont. and N. D., 1953-59; Rsch. Geologist, N. Am. Aviation, Downey, Calif., 1959–. Hon. Pos.: Steering Comm., Lunar and Planetary Exploration Colloquium; Asst. Editor, Geochem. Soc. Mem.: A.A.A.S., Fellow; Geological Soc. of Am., Fellow; Mineralogical Soc., Fellow; Geochem. Soc.; Yellowstone Big Horn Rsch. Assn.; A.C.S.; Sigma Gamma Epsilon; Sigma Xi. Co-Author: Marysvale, Utah, Uranium Area, 1952. Contbrng. Author: Advances in Space Science, 1961. Contbr. to: Bull. Soc. of Am. Military Engrs.; Geological Soc. of Am.; Geochimica et Cosmochimica Acta; Trans. of N. Y. Acad. of Scis.; Astronautical Scis. Rev.; Jour. Geophysical Rsch; Trans. Internatl. Geological Congress, Copenhagen; Trans. Internatl. Astronomical Union, Leningrad; Am. Astronautic Soc. Bull.; Chem. Abstracts. Gen. Int.: 10th Annual Prosewriter's Contest 1st Award, N. Y. Univ.; N. Y. St. Veteran's Scholarship; A.C.S. Hon. Lectr. Appointment. Areas of Rsch.: Lunar Volcanological Processes; Distribution of Elements and Volcanic Mineralization Under Extraterrestrial Conditions; Morphology and Genesis of Craters; Properties of Rock Dusts Under Lunar Conditions; Application of the Newer Logging Devices to Extraterrestrial Exploration; Selective Volatilization and Metallurgy of Possible Lunar Surface Materials.

GREENBERG, Irving Nathan (Mr.), Physical Scientist, Solid State, USASRDL, Fort Monmouth, N. J. Home Add.: 36 Arno St., Oakhurst, N. J. PHYSICAL CHEMISTRY. b. New York, N. Y., Mar. 13, 1911. s. Meyer (dec.) and Nettie (Halpern) G. Edn.: B.S., City Coll. of N. Y., 1942. m. Ruth Malmet, Mar. 13, 1937. c.: Charles J.; Robert S. Exp.: Instr., Army Air Forces Tech. Cmd., Seymour Johnson Field, N. C., 1942-43; Res. Assoc., Columbia Univ., 1943-45; Res. Chemist, Fercleve Corp., 1945; Res. Chemist, F. W. Berk and Co., Wood Ridge, N. J., 1945-46; Hd., Radiation Physics Dept., Amperex Corp., Brooklyn, N. Y., 1946-47; Assoc. Chemist, Brookhaven Natl. Lab., Upton, N. Y., 1947-50; Consultant, Neucleonics, J. Beeber Co., New York, N. Y., 1950; Physical Sci., Solid State, USASRDL, Ft. Monmouth, N. J., 1950–. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; A.A.A.S.; Am. Ordnance Assn. Contbr. to: Phys Rev.; Jour. of Appl. Physics; Solid State Electronics; Instruments and Control Systems; Semiconductors and Phosphors; Interscience Publs. Areas of Rsch.: Semiconductors, Solid State Physics, Radiation Damage.

GREENBERG, Joseph (M.D.), Prof., Dir., Depts. of Nuclear Med. and Endocrinol., N. Y. Polyclinic Med. Schl. and Hosp., 345 W. 50th St., N. Y. 19, N. Y. Home Add.: 106 Clover Dr., Great Neck, L. I. N. Y. NUCLEAR MEDICINE AND ENDOCRINOLOGY. b. N. Y. City, Oct. 6, 1926. s. Morris and Ruth (Milman) G. Edn.: B.A., N. Y. Univ., 1947; M.D., ibid., 1951. m. Barbara Rae Brodoff, Sept. 12, 1954. c.: Paula Merle; Janis Ruth. Exp.: Consultant, U. S. Naval Hosp., St. Albans, N. Y., 1956–; Prof., Dir., Depts. of Nuclear Med. and Endocrinol., N. Y. Polyclinic Med. Schl. and Hosp., 1960–; Consultant, Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1961–. Hon. Pos.: Pres., Greater N. Y. Chapt., Mem., Bd. of Trustees, Exec. Comm., Soc. of Nuclear Med.; Med. Advisor, Leukemia Soc. Mem.: A.A.A.S., Fellow; Am. Nuclear Soc.; Am. Physiological Soc.; Am. Assn. for Cancer Rsch.; A.M.A.; N. Y. Cancer Soc.; N. Y. Acad. of Scis.; N. Y. St. Med. Soc.; Beta Lambda Sigma; Mu Chi Sigma; Caduceus. Contbrng. Author: Trace Metal Metabolism in Medicine, 1959; Pack and Ariel's Tumors of Bone and Soft Tissues, 1962. Contbr. to: Am. Jour. of Physiol.; Sci.; Proc. Soc. Biol. and Med.; Fed. Proc.; Jour. Natl. Cancer Inst.; Am. Jour. Roentgenol., Radium Therapy and Nuclear Med.; Jour. of Nuclear Med.; Jour. Lab. and Clin. Med.; Proc. Am. Assn. for Cancer Rsch. Serv. Rec.: U. S. Navy, Korean War. Areas of Rsch.: Nuclear Med.; Endocrinol.; Trace Metal, Rare Earth, Yttrium and Chelate Metabolism.

GREENE, Luther Wilson (D.Engr.), Consulting Chemist and Chemical Engr., 42 Idlewild St., Bel Air, Md. DESIGN AND OPERATION OF CHEMICAL PLANTS: RESEARCH AND DEVELOPMENT IN CHEMICAL WARFARE AND RADIOLOGICAL WARFARE. b. Portsmouth, Va., Nov. 3, 1900. s. Luther Wilson and Ruth (Fulford) G. Edn.: B.S., N. C. State Coll., 1922. Hon. Deg.: Dr. of Engrng., N. C. State Coll. m. Elizabeth Holland, Oct. 20, 1923. c.: Barbara Greene Cusack. Exp.: Chem. Engr., E. I. du Pont de Nemours & Co., Philadelphia, Pa., 1922-29; Chem. Engr., Chem. Warfare Serv., U. S. Army, Edgewood Arsenal, Md., 1929-41; Chf. Chem. Engr., C.W.S., Huntsville Arsenal, Ala., 1941-42; Active Duty in Army, 1942-46; Technical Dir., Chem. Corps, Chem. and Radiological Labs., Army Chem. Center, Md., 1946-56; Chf. Tech. Advisor, Chem. Corps Chem. Rsch. and Devlpt. Labs., 1956-61; Consulting Chemist and Chem. Engr., Bel Air, Md., 1961–. Hon. Pos.: Registered Professional Engineer, Maryland. Mem.: Am. Chemical Soc.; Armed Forces Chemical Assn.; Gamma Sigma Epsilon; Scientific Rsch. Soc. of Am. Author: Where to Find Information on the German Chem. Industry, 1946; The German Chem. Industry: A Bibliography of the Chem., Metallurgical, and Process Industry, 1950. Contbr. to: Jour. Chem. Edn.; Am. Jour. Pharm.; Oil and Soap; Foundry; Textile Colorist; Armed Forces Chem. Jour.; Chemical Abs. (Abstractor). Serv. Rec.: Lt. Col., 1942-44; Col., 1944-46; Col., O.R.C., 1946-60; Col., A.U.S. (Ret.), 1960–. Special Int.: Chem. Engrng.; Chem. and Radiological Warfare; Rsch. Mgmt.; Oils, Fats, Waxes and Essential Oils; Chem. Microscopy.

GREENE, Charles Herbert (Ph.D.), Chmn., Dept. Glass Tech., State Univ. of N. Y., Coll. of Ceramics, Alfred Univ., Alfred, N. Y. Home Add.: Box 804, Alfred, N. Y. GLASS. b. Troy, Pa., Sept. 26, 1904. s. Charles Nelson and Minna Piersol (Silliman) G. Edn.: B.A., Haverford Coll., 1926; M.A., Harvard Univ., 1927; Ph.D., ibid., 1931. m. Winifred Moores, July, 1930. c.: Charles Moores; David Graham Silliman; Megan Elizabeth. Exp.: Instr., Harvard Univ., Cambridge, Mass., 1931-37; Glass Tech., Corning Glass Wks., Corning, N. Y., 1930-31 and 1937-53; Prof., State Univ. of N. Y. Coll. of Ceramics, Alfred Univ., Alfred, N. Y., 1953—. Mem.: AAAS; Am. Chem. Soc.; Am. Cer. Soc.; Soc. Glass Tech.; Glastech. Gesellschaft; Spanish Ceramic Soc.; Italian Cer. Soc.; Lambda Chi Alpha; Alpha Chi Sigma; Rotary; Phi Beta Kappa; Sigma Xi. Contbrng. Author: Handbook of Glass Engineering, 1958. Contbr. to: Jour. Am. Chem. Soc.; Jour. Anal. Chem.; Jour. Am. Cer. Soc.; Glass Ind.; Science; Jour. Japanese Cer. Soc.; Jour. Spanish Cer. Soc.; Freiberger Festschrift. Areas of Rsch.: Glass.

GREENE, Robert (Mr.), Sr. Bridge Designer, Steinman, Boynton, Gronquist and London, 117 Liberty St., N. Y. C. Home Add.: 144-18 Coolidge Ave., Jamaica 35, N. Y. CIVIL ENGINEERING. b. N. Y. C., June 29, 1907. s. Joseph and Jeanette (Morris) G. Edn.: B.S., N. Y. Univ., 1933; C.E., ibid., 1935; M.C.E., Brooklyn Polytech. Inst., 1936. m. Frances Deitch, 1935. c.: Ruth Trudy. Exp.: Civil Engr., City of N. Y., 1938-57; Sr. Bridge Designer, Steinman, Boynton, Gronquist and London, N. Y. C., 1957—. Mem.: A.A.A.S. Serv. Rec.: U. S. Army, 1942-46, Lt. Col. C.E. U.S.A.R. Areas of Rsch.: Bridges and Miscellaneous Structural Design; All Types of Sanitary Structures Design.

GREENWOOD, Mary Kathryn (Miss), Digital Computer Programmer, Dept. of Health, Education and Welfare, 3rd and Independence, S.W., Washington, D. C. Home Add.: 2152 N. Pierce Street, Arlington, Virginia. DIGITAL COMPUTER PROGRAMMING AND SYSTEMS OPERATIONS. b. Philadelphia, Pa., May 9, 1940. d. James W., Jr. and Mary Agnes (Sweeney) G. Exp.: Digital Computer Instr., Programming and Systems Inst., Wash., D. C., 1961; Digital Computer Systems Operator and Programmer, Dept. of Health, Edn. and Welfare, Publ. Health Serv. Office of Electronic Systems, Wash., D. C., 1961—. Mem.: Wash. Jr. Acad. of Scis.; Assn. for Computing Machinery; A.A.A.S. Author: International Business Machines Tape Systems and Their Functions, 1962. Areas of Rsch.: Digital Computer Programming; Marine Biological Studies (Specializing in Protozoa); Microscopic Studies of Suspended Animation of Protozoa in Anthracite Coal.

GREENWOOD, Robert E. (Ph.D.), Prof., Math., Univ. of Texas, Austin 12, Texas. Home Add.: 3203 Breeze Terrace, Austin 2, Tex. MATHEMATICS. b. Navasota, Tex., June 21, 1911. s. Robert E. and Lula (Lewis) G. Edn.: B.A., Univ. of Texas, 1933; M.A., Princeton Univ., 1938; Ph.D., ibid., 1939. m. Mary Brown, Dec. 15, 1951. c.: Barbara Frances. Exp.: Instr., Univ. of Texas, 1938-42; Asst. Prof., ibid., 1946-50; Assoc. Prof., ibid., 1952-57; Prof., ibid., 1957—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Sigma Xi. Contbr. to: Am. Math. Monthly; Bull. Am. Math. Soc.; Ann. of Math. Statistics. Serv. Rec.: U.S.N.R., 1942-46, 1950-52. Areas of Rsch.: Numerical Analysis; Theory of Combinations.

GREGG, Russell Taaffe (Ph.D.), Prof. of Edn., Univ. of Wis., Madison 6, Wis. Home Add.: 1202 Edgehill Dr., Madison, Wis. THEORY AND PRACTICE OF EDUCATIONAL ADMINISTRATION. b. Fairfield, Ill., July 24, 1903. s. John L. and Bertha Lee (Taaffe) G. Edn.: B.S., Univ. of Ill., 1928; M.A., ibid., 1929; Ph.D., ibid., 1934. m. Genevieve C. Owen, June 7, 1930. c.: Jane G. Steinhauer; Richard Owen. Exp.: Asst. Prin., Univ. H.S. and Instr. in Edn., Univ. of Ill., 1934-36; Asst. Prof. of Edn., Syracuse Univ., 1936-39; Assoc. Prof. of Edn., ibid., 1939-42; Assoc. Prof. of Edn., Univ. of Wis., 1945-48; Prof. of Edn., ibid., 1948—; Visiting Prof., Univ. of So. Calif., summer session, 1950; Visiting Prof., Univ. of Calif., Berkeley, summer session, 1955; Visiting Prof., U.C.L.A., summer session, 1960. Hon. Pos.: Chmn., Natl. Conf. of Profs. of Ednl. Admin., 1948-49; Mem., Bd. of Trustees, Univ. Council on Edn. Admin., 1958-61. Mem.: Am. Ednl. Rsch. Assn.; Natl. Soc. for the Study of Edn.; Am. Assn. of Schl. Administrators; A.A.A.S.; A.A.U.P.; Natl. Conf. of Profs. of Ednl. Admin.; Natl. Edn. Assn.; Phi Delta Kappa; Phi Eta Sigma; Phi Kappa Phi; Acacia; Univ. Club, Madison; Blackhawk Country Club, Madison. Co-Author: Functional Program of Teacher Edn., 1941; Schools in Our Democratic Society, 1951. Co-Editor: Administrative Behavior in Education, 1957. Contbr. to: Nations Schls.; Schl. Exec.; Ednl. Admin. and Supervision; Schl. Rev.; Am. Schl. Bd. Jour.; Phi Delta Kappan; Jour. of Ednl. Rsch.; Jour. of Wis. Edn. Assn. Serv. Rec.: U.S.N.R., 1943-45. Areas of Rsch.: Administrative Behavior, Decision-Making in Education, Public School Finance, School Organization.

GREGG, Wendell Olive (M.D.), Medical Dir., Wells Industrial Hosp., 4317 Downey Rd., Los Angeles 58, Calif. Home Add.: 2200 S. Harvard Blvd., Los Angeles 18, Calif. INDUSTRIAL MEDICINE AND SURGERY; INVERTEBRATE ZOOLOGY. b. Pomona, Mich., April 27, 1898. s. Frank Albert Gregg and Elizabeth (Stanton) Gregg Wilson. Edn.: B.A., Emmanuel Missionary Coll., 1918; M.D., Coll. of Med. Evangelists, 1922. m. Ruby Atkinson, 1924 (div.). c.: Elizabeth Barbara Poirier; Elaine Janey. Exp.: Med. Dir, Wells Industrial Hosp., 1953—. Hon. Pos.: Chmn., Am. Malacol. Union, Pacific Div., 1952; Pres., Conchol. Club of So. Calif., 1931-32, 1945-47. Mem.: A.A.A.S.; Am. Malacol. Union; Malacol. Soc. of London; Herpetol. League; Am. Soc. Ichthology and Herpetology; Soc. Systematic Zool.; Calif. Acad. of Scis.; S. Calif. Acad. Sci.; Conchological Club of So. Calif.; Fellow, So. Calif. Acad. of Sci. Contbr. to: Bull. of So. Calif. Acad. of Sci.; Nautilus. Areas of Rsch.: Comparative Anatomy of West Am. Nonmarine Gastropods.

GREGORY, Hollingsworth Franklin (Brig. Gen., USAF Ret.), Asst. to the Chmn. of Bd., Midwestern Instruments, Inc. P. O. Box 7509, Tulsa, Okla. Home Add.: 3108 East 58th Pl., Tulsa, Okla. AERONAUTICS, ASTRONAUTICS. b. Rockwall, Tex., Jan. 13, 1906. s. Louis Franklin and Glennie (Hollingsworth) G. Edn.: B.A., Miss. Coll., 1926; Air Corps Flying Schls, 1928, 1929; Armed Forces Staff Coll., 1945; Industrial Coll. of the Armed Forces, 1947; Strategic Intelligence Schl., 1950. m. Sarah Elizabeth Kohr, June 24, 1944. c.: Glennie Elizabeth; Hollingsworth Franklin, Jr. Exp.: Squadron Officer, Maxwell Field, Montgomery, Ala., 1929-31; Engrg. Officer, Post Fld., Fort Sill, Okla., 1932-36; Officer in Charge Autogiro Tests, Office Chief of Air Corps, Wash., D. C., 1937-38; Asst. Comdt., Air Corps. Autogiro Schl., Patterson Field, Dayton, Ohio, 1938; Chf., Miscellaneous Aircraft Projects, Tech. Staff Engr. Div., Materiel Comd., Wright Field, Dayton, Ohio, 1939-44; Asst. Chf. of Staff, Intelligence, Hq. 7th AF, Pacific Ocean Areas, 1944; Asst. Chief of Staff, Materiel, Hq. 7th, Pac. Ocean Area, 1945; Asst. Chf. of Staff, Operations, Hq. 7th A.F., ibid., 1946; Chf., Reconnaissance Br., Dir. of Requirements, DCS/Operations, Hq. USAF, Wash., D. C., 1947-48; Rsch. and Dev. Bd., Off. of Secy. of Defense, Wash., D.C., 1948-49; Milit. Asst. to Dr. Theodore Von Karman as Chf. Scientific Adv., Arnold Engrng. Dev. Div., 1950-51; Air Attache, Am. Embassy, Paris, France, 1952-56; Comdr., A. F. Office of Sci. Rsch., ARDC, Wash., D.C., 1956-58; V.-Pres., Midwestern Instruments, Tulsa, Okla., 1958-61; Asst. to Chmn. of Bd., ibid., 1961—. Mem.: Hon. Fellow, Am. Helicopter Soc.; AAAS; Natl. Aeronautical Assn.; AF Assn.; Am. Ordnance Assn.; Automobile Club of France; C. of C.; Fellow, Inst. Aerospace Scis. Author: Anything a Horse Can Do—The Story of the Helicopter, 1944. Contbr. to: Jour. of the Aerospace Scis.; Aerospace Engrng. Serv. Rec.: USAF, 1929-58. Gen. Int.: First Military man to fly the wingless autogiro, and the helicopter; made first telephone wire conversation between heavier than air craft and ground, Ft. Bragg, N. C., 1937; made first helicopter landings on small platform on ships at sea, 1943; exceeded all world records for helicopters in testing; Won Thurman H. Bane Award for most outstanding aeronautical development, 1943; Holder of Legion of Merit, Bronze Star, Air Medal, Army Commendation Ribbon, French Legion of Honor; French Medal of Aeronautics; Ed., Vistas in Astronautics. Areas of Rsch.: Helicopter Engrng.

GREGORY, John Edward (M.D.), Physician and Surgeon, Internal Med. and Endocrinology, 45 So. Mentor Ave., Pasadena, Calif. Home Add.: 870 Orlando Rd., San Marino, Calif. MEDICAL RESEARCH. b. Bakersfield, Calif., Aug. 29, 1904. s. Robert Fremont and Christina Cornelia (Moon) G. Edn.: B.S., Pacific Union Coll., 1927; M.D., Coll. of Med. Evangelists, 1933. m. Evelyn Meleen, Oct. 13, 1929. Exp.: Attending Physician, L. A. Co. Hosp., Los Angeles, Calif., 1934-42; Prof. of Med., Coll. of Med. Evangelists, Los Angeles, Calif., 1934-42; Pres., Pasadena Rsch. Labs., Inc., Pasadena, Calif., 1938—; Pres., Fremont Rsch. Fdtn., Pasadena, Calif., 1946—. Mem.: A.M.A.; Electron Microscope Soc.; N. Y. Acad. of Sci.; AAAS; Author: Pathogenesis of Cancer, 1st ed., 1948, 2nd ed., 1952; 3rd. ed., 1955; Imminent Prophecies for Today's World, Vol. I, 1959, Vol. II, 1962; The Love of Christ, 1959, 2nd ed., 1962; God's Decalogue of Love, 1961. Contbr. to: Experimental Med. and Surg.; Southern Med. Jour.; Medical Times; Mich. State Med. Jour.; Extrait de ACTA Union Internatl. Contre Le Cancer. Gen. Int.: Received First Prize for Exhibit on Pathogenesis of Cancer at So. Med. Meeting, Miami, 1950; Received Honorable Mention for Exhibit on Pathogenesis of Cancer, So. Med., Miami, 1952; Gave Paper at Ve Congress Internatle. Contre of Cancer on Virus as the Cause of Human Cancer, Paris, Fr., 1950; Developed the first spectographic lab. in 1947-48 that perfected the techniques for quantitative mineral analyses of blood serum using an optical emission spectograph with diffraction grating. This lab has been

used in medical rsch. since that time. Rsch. on virus theory of cancer, first isolated and indentified human cancer virus, 1946, using electron microscope and fulfilled cocci postulates, establishing the virus etiology of human cancer. Areas of Rsch.: Endocrinology, Chemistry, Virology, Physiology, Electron Microscopy, Cancer Rsch. since 1946.

GREGORY, Robert Todd (Ph.D.), Assoc. Prof. of Math., Sr. Rsch. Mathematician, Computation Ctr., Univ. of Tex., Austin 12, Tex. Home Add.: 2703 Mountain Laurel Dr., Austin, Tex. MATHEMATICS (NUMERICAL ANALYSIS). b. Owensboro, Ky., Mar. 19, 1920. s. Richeson Todd and Jennie Guthrie (Howard) G. (both dec.). Edn.: B.S., U. S. Naval Acad., 1942; M.S., Ia. State Univ., 1948; Ph.D., Univ. of Ill., 1955. m. Margaret Bentzinger, Dec. 29, 1944. c.: Rosalie; Carl. Exp.: Mathematician, U. S. Naval Proving Ground, Dahlgren, Va., 1949; Instr., Fla. State Univ., 1949-50; Rsch. Asst., Univ. of Ill., 1950-55; Asst. Prof., Univ. of Calif., 1955-59; Consultant, Space Technol. Labs., Los Angeles, Calif., 1956-58; Visiting Mathematician, Natl. Bur. of Standards, Wash., D. C., 1959; Assoc. Prof. of Math., Sr. Rsch. Mathematician, Computation Ctr., Univ. of Tex., 1959—; Visiting Assoc. Prof., Univ. of Ill., 1960. Mem.: Am. Math Soc.; Math. Assn. of Am.; Soc. for Industrial and Applied Math.; Assn. for Computing Machinery; Sigma Xi; Pi Mu Epsilon. Contbr. to: Am. Math. Monthly; Jour. of Soc. for Industrial and Applied Math.; Math. of Computation; Math. Mag.; S.I.A.M. Rev.; Computing Revs. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Numerical Analysis; Computational Problems in Linear Algebra and Differential Equations.

GREGORY, Wilbur Smith (Ph.D.), Prof. of Psychol., Univ. of Redlands, Redlands, Calif. PSYCHOLOGY. b. Johnstown, Pa. Oct. 6, 1912. s. Albert M. and Darl (Smith) G. Edn.: A.B., Muskingum Coll., 1933; M.A., Syracuse Univ., 1936; Ph.D., ibid., 1937. m. Stella Thompson of Pasadena, Calif., Nov. 23, 1944. d. Mr. and Mrs. F. W. Thompson. Exp.: Instr. in Psychol. and Special Advisor to Freshmen, 1937-40; Univ. of Neb.; Asst. Prof. in Psychol. and Guid. Consultant, 1940-42; Military Serv., 1942-46; Hd. of Counseling and Testing Serv., Univ. of N. Mex., 1946-47; Assoc. Prof. of Psychol., Univ. of Redlands, 1947-51; Prof., ibid., 1951—. Mem.: Am. Psychol. Assn.; Am. Coll. Personnel Assn.; A.A.A.S.; Western Psychol. Assn.; Sigma Xi; Calif. Psychol. Assn. Author: Gregory Academic Interest Inventory. Contbr. to: Character and Personality; Jour. of Soc. Psychol.; Jour. of Psychol. Special Int.: Test Dev. in Areas of Interest and Personality Measurement; Guidance Methods.

GRESSITT, Judson Linsley (Ph.D.), Chmn., Entomology Dept., Bishop Museum, Honolulu 17, Hawaii. Home Add.: 1053A Ilima, Honolulu 17, Hawaii. ENTOMOLOGY: SYSTEMATICS, ZOOGEOGRAPHY. b. Tokyo, Japan, June 16, 1914. s. James Fullerton and Edna (Linsley) G. Edn.: B.S., Univ. of Calif., 1938; M.S., ibid., 1939; Ph.D., ibid., 1945. m. Margaret Kriete, Mar., 1941. c.: Sylvia; Rebecca; Carolyn; Ellyn. Exp.: Instr., Lingnan Univ., Canton, China, 1939-43; Entomologist, Lt. Jg., USNR, Guam, Okinawa, Japan, 1945-46; Asst. Prof., Lingnan Univ., Canton, China, 1946-48; Assoc. Prof., ibid., 1948-50; Assoc. Specialist, Univ. of Calif., Japan, Taiwan, 1951; Entomologist, Pacific Sci. Bd., Micronesia, Hawaii, 1951-52; Entomologist, Bishop Museum, Honolulu, Hawaii, 1953—. Hon. Pos.: Chmn., Standing Comm. Pacific Ent.; Editor Pacific Insects; Org. Chmn., Zool. Ent., X Pacific Sci. Congress. Mem.: Ent. Soc. Am.; Soc. Syst. Zool.; Ent. Soc. Japan; Hawaiian Ent. Soc.; Hawaiian Acad. Sci.; Calif. Acad. Sci.; AAAS; Sigma Xi. Author: Longicorn Beetles of China, 1951; Introduction, Insects of Micronesia, 1954; Coconut Rhinoceros Beetle, 1953; Problems in Zoogeography of Pacific and Antarctic Insects, 1961. Contbr. to: Pacific Insects; Proc. Hawaiian Entomol. Soc.; Annual Review of Entomol.; Pan Pacific Entomologist; Science. Serv. Rec.: USNR, 1945-46. Areas of Rsch.: Zoogeography; Systematics Pacific Island Insects; Dispersal; Evolution; Ecology; Subantarctic Islands.

GRIFFIN, Gus Mitchell (Mr.), Pres., Griffin Chem. Co., 1326 S. 7th St., Louisville 8, Ky. Home Add.: 422 Country Lane, Louisville 7, Ky. CHEMICAL ENGINEERING. b. Owensboro, Ky., Jan. 14, 1918. s. Albert S. and Louise (Mitchell) G. Edn.: B.S., Mass. Inst. Tech., 1939. m. Elizabeth Sanders, Feb., 1949. c.: Albert S.; Eleanor B. Exp.: Jr. Engr., Socony-Vacuum Oil, Buffalo, N. Y., 1939; Jr. Engr., Ken-Rad Tube and Lamp, Owensboro, Ky., 1940-41; Foreman, Tech. Man., Goodrich Chem. Co., Louisville, Ky., 1946-53; Pres., Griffin Chem. Co., Louisville, Ky., 1953—. Mem.: AAAS; AWWA; ACS; Ky. Soc. of Profl. Engrs.; Delta Psi. Contbr. to: Chem. Engrg.; Ind. and Engrg. Chem. Serv. Rec.: AUS, 1941-46. Areas of Rsch.: Water Treatment, Metal Treatment, Detergents.

GRIFFIN, Harriet Madeline (Ph.D.), Prof. of Math., Brooklyn Coll., Brooklyn, N. Y. MATHEMATICS. b. April 6, 1903, Brooklyn, N. Y. d. Harry and Madeline (Gully) G. Edn.: A.B., Hunter Coll., 1925; M.A., Columbia Univ., 1929; Ph.D., N. Y. Univ., 1939. Exp.: Tutor and Instr., Hunter Coll., 1926-30; Instr., Brooklyn Coll., 1930-41; Asst. Prof., ibid., 1941-50; Assoc. Prof., ibid., 1950-56; Prof., ibid., 1956—. Mem.: Phi Beta Kappa; Key Pin Soc.; Pi Mu Epsilon; Sigma Xi; Math. Assn. of Am.; A.M.S.; A.A.A.S.; Catholic Round Table of Sci. Author: The Concepts of the Theory of Numbers, 1947; Elementary Theory of Numbers, 1954. Ph.D. Dissertation: The Abelian Quasi-Group. Travel: N. Am.; S. Am.; Europe. Listed in: W. W. in the East; A.M.S. Special Int.: Abstract Algebra; Theory of Numbers.

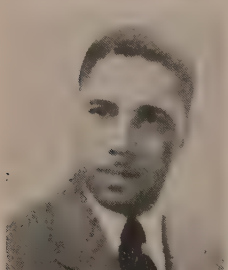
GRIFFITH, George Cupp (M.D.), Prof. of Medicine, Univ. of So. Calif., Schl. of Med., Los Angeles, Calif. Home Add.: 821 Valley Crest, La Canada, Calif. CARDIOLOGY. b. Meyersdale, Pa., April 12, 1898. s. Harvey L. and Linda (Cupp) G. Edn.: B.A., Juniata Coll., 1921; M.D., Jefferson Med. Coll., 1926. Hon. Deg.: Sc.D., Univ. of So. Calif., 1961. m. Leona Moore, Jan. 25, 1952. c.: Paul; George; Michael. Exp.: Asst. Prof., Grad. Schl., Univ. of Pa., Phila., Pa., 1929-46; Clin. Prof., Univ. of So. Calif., L. A., 1946-51; Prof., ibid., 1951—. Hon. Pos.: Pres., Am. Therap. Soc., 1961-62; Governor, Am. Coll. of Physicians. Mem.: Fellow, N. Y. Acad. of Sci.; A.O.A. Contbr. to: Jour. Am. Med. Assn.; Am. Jour. of Cardiology; Annals of Internal Med. Circulation. Serv. Rec.: USN, Lt. Comdr. Areas of Rsch.: Anticoagulants; Trace Metals.

GRIFFITH, Ruth Ester (Ph.D.), Assoc. Prof. of Biol., Hood Coll., Frederick, Md. Home Add.: 130 W. 3rd St., Frederick, Md. AQUATIC BIOLOGY; PHYTOPLANKTON. b. Emporia, Kan., Nov. 21, 1927. d. Fred R. and Ester (Carlson) G. Edn.: B.S., Kan. State Tchrs. Coll., 1948; B.A., ibid., 1948; M.S., Wash. State Univ., 1950; Ph.D., Northwestern Univ., 1954. Exp.: Lab. Asst., Kan. State Tchrs. Coll., Emporia, Kan., 1946-48; Aquatic Biologist, Kan. State Fish and Game Comm., summer, 1948; Tchng. Fellow, Wash. State Univ., 1948-50; Instr. of Biol., Wells Coll., N. Y., 1950-51; Instr. of Zool., Univ. of New Hampshire, Durham, 1951-52; Tchng. Asst., Northwestern Univ., 1952-54; Asst. Prof., Biol., Hood Coll., 1954-57; Assoc. Prof. Biol., ibid., 1957—; Rsch. Assoc., Chesapeake Biological Lab., Solomons, Md., 1956—. Hon. Pos.: Pres., Local Chapt., A.A.U.P., 1960-62; Secy.-Treas., Atlantic Estuarine Soc., 1961-62. Mem.: Sigma Xi; A.A.A.S.; Ecological Soc. Am.; Soc. Limnol. and Oceanog.; Am. Soc. Animal Behavior; Am. Microscopical Soc.; Atlantic Estuarine Rsch. Soc.; Md. Biol. Tchrs. Assn.; Am. Assn. Univ. Profs.; Phi Sigma; Kappa Delta Pi; Lambda Delta Lambda; Alpha Sigma Tau; Beta Beta Beta. Author: Phytoplankton of Chesapeake Bay: An Illustrated Guide to the Genera, 1961. Contbr. to: Trans. Am. Micro. Soc.; Ecology; Am. Biol. Tchr.; Chesapeake Sci. Gen. Int.: Participated N.S.F. Inst. for Coll. Tchrs. of Animal Ecology, 1959, 1960; Danforth Found. Workshop Higher Edn., 1960; Participated, N.A.T.O. Advanced Studies Inst., Algae and Man, 1962. Areas of Rsch.: Aquatic Biology, Phytoplankton Freshwater and Estuarine.

GRIFFITTS, Fred Albert (Ph.D.), Prof. of Chem., Maryville Coll., Maryville, Tenn. INORGANIC AND PHYSICAL CHEMISTRY. b. Philadelphia, Tenn., Apr. 11, 1903. s. Fred W. and Lou Ann (Mitchell) G. m. Ruby Irene Miller of Knoxville, Tenn., 1933. Edn.: A.B., Maryville Coll., 1925; M.S., Iowa State Coll., 1930; Ph.D., Ind. Univ., 1936. Exp.: Instr. in Chem., Maryville Coll., 1925-30; Chem., Du Pont Expt. Sta., Summer, 1926; Asst. in Chem., Iowa State Coll., Summer, 1927; Assoc. Prof. of Chem., Maryville Coll., 1930-37; Asst. in Chem., Ind. Univ., 1935-36; Prof. of Chem., Maryville Coll., 1937—; Chmn., Dir. of Natural Sci., 1950—; Staff of the Chem. Faculty, Ind. Univ., Summer, 1937; Staff, Chem. Faculty, Univ. of Tenn., 1946-48, 52-53; Chem. Staff, Birmingham-Southern Coll., Summer, 1956, 1958; Chem. Staff, Lincoln Memorial Univ., summer, 1957; Ala. Coll.,

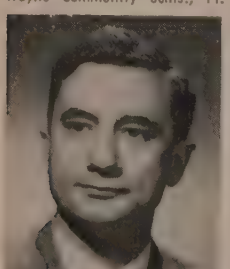
Summer, 1959, '60; Chem. Staff, Univ. of Kentucky, Summer, 1961; Chem. Staff, Colorado Coll., Summer, 1962. Mem.: Phi Lambda Upsilon; Sigma Xi; The Am. Chemical Society; A.A.U.P.; N. Y. Acad. of Sci. Ph.D. Dissertation: Y. Acad. of Sci. Ph.D. Dissertation: The Catalytic Activity of Cobalt Sulfide. Author: A Lab. Manual of Liberal Arts Chem. Contbng. Author: Encyclopedia of Chem., 1957, '58. Contbr. to: Jour. of Physical Chem.; Ia. State Coll. Jour. of Sci.; The Chemist; Jour. Tenn. Acad. Sci. Gen. Int.: Inorganic and Physical Chem. Special Int.: Nonaqueous Solvents; Catalytic Poisons.

GRIFFITHS, Norman Henry Campbell (D.Sc.), Professor and Chmn., Division of Denture Prosthesis, Howard Univ., Washington 1, D. C. Home Add.: 3135 Chestnut St., N.E., Wash. 18, D. C. PROSTHETIC DENTISTRY. b. Costa Rica, C. A., Apr. 18, 1916. s. Arthur Alexander and Olive (Campbell) G. Edn.: D.D.S., Howard Univ., 1947; M.S.D., Northwestern Univ., 1948; D.Sc., Univ. of Pa., 1957. m. Peggy Strauss, Sept. 10, 1950. c.: Stephanie Denise; Norman Dwight; Michael Craig; Arthur Alexander; Peggy Manel. Exp.: Asst. Prof., Howard Univ., 1948-52; Assoc. Prof. and Chmn., ibid., 1952-61; Prof., ibid., 1961–; Exchange Prof., Ind. Univ., 1958; Smith-Mundt Visiting Prof., Univ. of Ceylon, 1958-59; Visiting Prof., Dental Schls., India, 1959. Hon. Pos.: Editorial Consultant to Bull., Natl. Dental Assn.; Consultant, Freedman Hospital; International Lecturer to Dental Societies and Dental Schools in the United States, India and Ceylon. Mem.: Fellow, A.A.A.S.; Fellow, Am. Pub. Health Assn.; N.C.C. for W.H.O.; N. Y. Acad. of Scis; Am Medical Writers Assn.; Materials Group; Internatl. Assn. for Dental Rsch.; Freeman Dental Soc.; Natl. Dental Assn.; Asia Soc.; Howard Univ. Senate; Omicron Kappa Upsilon; Chi Lambda Kappa. Contbr. to: Bull., Natl. Dental Assn.; Jour. of Dental Edn.; Jour. Dental Rsch. Areas of Rsch.: Dental Materials, Prosthetic Dentistry; Maxillo-Facial Prosthesis; Dental Edn. System in India and Ceylon.



GRIGG, Emanuel Radu Newman (M.D.), Attending Radiologist, Cook Co. Hosp., Chicago 12, Ill. Home Add.: Box 293, Champaign, Ill. CLINICAL RADIOLOGY; MEDICAL HISTORY (ESPECIALLY OF RADIOLOGY, ONCOLOGY, AND TUBERCULOLOGY). b. Sept. 8, 1916. s. James Newman and Eugenie (Herschens) G. Edn.: M.D., Univ. of Cluj (Roumania), 1940. m. Marie Monica Irimescu, 1946. c.: Steve Andrew; Madelyn Mary; Richard Allen; Sandra Lillian; Susan Kathlyn; Louise Jane; Charles Lawrence; John Jeffrey; Peter Anthony. Exp.: Att. Radiolst., Cook Co. Hosp., Chic., Ill., 1956–; Consulting Radiologist of several Hosps. in State of Ill.; Paris, Charleston, Paxton, and Harvard, 1956–. Mem.: Am. Coll. of Radiol.; Radiol. Soc. of N. Am.; Soc. of Nuclear Med.; Am. Nuclear Soc.; Am. Thoracic Soc.; Hist. of Sci. Soc.; Renaissance Soc.; Internatl. Coll. of Surgs.; Aero-Space Med. Assn.; Flying Physicians Assn. Author: La Pandemie Tuberculeuse (in French, Paris, Fr.), 1948; Trail of the Invisible Light, 1962 Contbr. to: Radiology; Am. Jour. of Roentgenology. Gen. Int.: Certified in 1956 by Am. Bd. of Radiology (in Diagnosis, Therapy, and Isotopes). Areas of Rsch.: History of Medicine (especially Radiology, Oncology, and Tuberculology); Philosophy of Biology; Clinical Radiology.

GRIGGS, David Ancel (Mr.), Tchr. of Sci., Chmn. of Sci. Dept., Ft. Wayne Community Schls., Ft. Wayne, Ind. Home Add.: 7612 Wohama Dr., Ft. Wayne, Ind. BIOLOGY. b. Bedford, Ind., July 9, 1925. s. Cecil C. and Goldie Marie (May) G. Edn.: B.S., Ind. Univ., 1946; M.A., ibid., 1949. m. Mary Jane Richardson, Nov., 1956. c.: Daniel David; John Edward. Exp.: Tchr., Lawrenceburg Consol. H.S., Lawrenceburg, Ind., 1946-48; Tchr., Ft. Wayne Community Schl., Ft. Wayne, Ind., 1949–; Lectr., Ind. Univ. Ctr., Ft. Wayne, Ind., 1949-60; Naturalist, Ind. Dept. of Conservation, Indianapolis, Ind., summer, 1948-55; Chf. Naturalist, ibid., summers, 1956-62. Hon. Pos.: Pres., Sci. Sec., Northeast Div., Ind. State Tchrs. Assn.; Pres., Biol. Sec., Central Div., I.S.T.A. Mem.: A.A.A.S.; Natl. Assn. of Biol. Tchrs.; Natl. Sci. Tchrs. Assn.; NEA. Areas of Rsch.: Flowering of Grasses.



GRIMINGER, Paul (Ph.D.), Assoc. Prof. of Poultry Nutrition, Dept. of Poultry Science and Rutgers Nutrition Council, Rutgers University, New Brunswick, New Jersey Home Add.: 125 N. Fourth Avenue, Highland Park, N. J. NUTRITION VITAMINS AND MINERALS. b. Vienna, Austria, Aug. 29, 1920. s. Sigmund and Frieda (Klein) G. Edn.: B.S., Univ. of Ill., 1952; M.S., ibid., 1953; Ph.D., ibid., 1955. m. Olga Maria Egger, Aug. 20, 1954. c.: Jane Nurith; Elaine Katherine; Karen Anne. Exp.: Rsch. Asst., Univ. of Ill., 1952-55; Asst. Prof., Univ. of Nebr., 1955-57; Asst. Prof., Rutgers Univ., 1957-62; Assoc. Prof., ibid., 1962–. Mem.: Am. Inst. of Nutrition; Soc. of Exptl. Biol. and Med.; Poultry Sci. Assn.; Sigma Xi; N. Y. Acad. of Scis.; A.A.A.S.; Am. Heart Assn.; Phi Kappa Phi. Contbr. to: Jour. of Nutrition; Poultry Sci.; Sci.; Proc. Soc. Exptl. Biol. Med.; Jour. Agri. Sci. Serv. Rec.: British Armed Forces, 1942-46. Areas of Rsch.: Vitamin K, Calcium,; Amino Acids; Poultry Nutrition.

GRIMSLEY, Elbert Allen (Mr.), Geophysicist, Pan Am. Petroleum Corp., P. O. Box 268, Lubbock, Tex. Home Add.: 2310 48th St., Lubbock, Tex. SEISMOLOGY, GEOPHYSICS. b. Stanberry, Mo., Feb. 2, 1924. s. Albert Freeman and Ica Dott (Haulman) G. Edn.: B.S., Mo. Schl. of Mines and Metallurgy, 1949. m. Marian Cutler, Aug. 27, 1955. c.: Catherine Ann; Thomas Allen; John Freeman. Exp.: Geophysicist, Pan Am. Petrol. Corp., Lubbock, Tex., 1956–; Asst. Instr., Univ. of Mo., 1954-56; Corrosion Engr., Great Lakes Pipeline Co., Kansas City, Mo., 1952-54. Mem.: Soc. of Exploration Geophysicists; European Assn. of Exploration Physicists; Am. Geophysical Union; Air Force Assn.; Lubbock Geological Soc.; Pi Mu Epsilon; St. Pat's Bd. Serv. Rec.: U.S.A.A.F., W.W. II; U.S.A.F., Korean War. Areas of Rsch.: Mathematical Analysis; Corrosion Engrng.; Reflection Seismograph Fault and Reef Interpretation; Electronics; Communications.

GRINIUS, Alphonse Frank (M.D.), Dr. Med. Sci., Pathologist, Rsch. Assoc. Home Add.: 1533 So. 51st Ave., Cicero 50, Ill. PATHOLOGY, CYTOLOGY, BIOCHEMISTRY (EXPERIMENTAL). b. Alvitas-Stol, Lith., Apr. 8, 1925. s. Frank G. (Grinevic) and Izabelia (Grun) G. Edn.: M.D., Univ. of Cologne, 1948; D.M.S. (hon.), Univ. Clinics Vienna (Austria), 1949; Heidelberg, Munich, Cologne, Bonn (Germany). Exp.: Interpreter with the Milit. and Emmigration Authorities, Physician, Univ. Clinics, Cologne, 1950; Research Asst., Rush Medical College, Chicago, Illinois, 1950-51; Intern, Res. (Pathol.), Rsch. Fel., Chicago's W. Side Med. Ctr. (Presby., Cook County, R. E. Hosp., Univ. of Ill.), 1951-56. Hon. Pos.: U.S.P.H. Rsch. Fellow, 1957–; Clark Univ. Worcester Found. Exp. Biol., Armed Forces Inst. Path., Walter Reed Army Med. Ctr., Wash., D. C.; Vice-Pres. and Secy.-Treas. of International Student Body at Cologne. Mem.: International Acad. of Pathol.; World Health Assn.; Am. Pub. Health Assn.; Am. Med. Writer's Assn.; Aerospace Med. Assn.; Am. Heart Assn.; Am. Linguistic Soc.; Natl. Cit. Comm., World Health Org.; Ill. Soc. Med. Rsch.; Soc. Med. Hist. of Chicago; Am. Acad. Polit. and Social Scis.; A.A.A.S.; G. D. Ch. Areas of Rsch.: For. Path.; Histopathol. Changes due to Steroids; Radiation; Electronmicr.; Path. Cytochem. (Histochem.); Sex. Hormonology; Internatl. Hlth Soc. Probl.; Teaching.

GRISWOLD, Ruth Mary (Ph.D.) Assoc. Prof., Dept. of Home Econ., Ind. Univ., Bloomington, Ind. Home Add.: 508 East Fourth St., Bloomington, Ind. FOOD CHEMISTRY. b. Chicago, Ill., Nov. 3, 1908. d. Frederic Howard and Ruth (Hardy) G. Edn.: A.B., Vassar Coll., 1930; M.S., Univ. of Chicago, 1932; Ph.D., ibid., 1944. Exp.: Home Economist, Commercial Foods, Pillsbury Flour Mills Co., Minneapolis, Minn., 1933-36; Rsch. Asst. and Asst. Prof., Foods, Mich. State Univ., 1936-45; Asst. Prof., Food Chem., Univ. of Chicago, 1945-51; Assoc. Prof. of Foods, Ind. Univ., 1951–. Hon. Pos.: Vice-Chmn., Foods and Nutrition Rsch., Sect. of Am. Home Econs. Assn. Mem.: Am. Assn. Adv. Sci. (Fellow), Am. Home Econs. Assn.; Am. Schl. Food Serv. Assn.; Inst. of Food Technolsts.; Sigma Delta Epsilon; Sigma Xi. Author: The Experimental Study of Foods, 1962. Contbr. to: Jour. Food Sci.; Jour. Am. Dietetics Assn.; Ind. and Engrng. Chem.; Jour. Agric. and Food Chem.; Mich. Agric. Expt. Sta. Bulls. Areas of Rsch.: The Chemistry of Foods and the Changes Undergone by Foods During Cooking, Freezing, and Canning.

GROBMAN, Arnold Brams (Ph.D.), Dir., Biological Sci. Curr. Study, University of Colorado, Boulder, Colo. ZOOLOGY. b. Newark, New Jersey, April 28, 1918. s. Samuel and Sophia (Brams) G. Edn.: B.S., Univ. of Michigan, 1939; M.S., Univ. of Rochester, 1941; Ph.D., ibid., 1943. c.: Marc Ross; Beth Allison. Exp.: Instructor in Zoology, Univ. of Rochester, New York,

1943-44; Rsch. Assoc. Med. Genetics, Univ. of Rochester, 1944-46; Asst. and Assoc. Prof. of Biol., Univ. of Fla., 1946-61; Dir., Fla. State Museum, Univ. of Fla., 1952-61; Dir., Biol. Sciences Curr. Study, Univ. of Colo., 1959—. Hon. Pos.: Pres., Southeastern Museums Conference; Vice-Pres., Secy., Am. Soc. Ichthyol. and Herpetol.; Exec. Comm., A.I.B.S.; Coun., A.A.A.S. Mem.: Soc. Zool.; Genetics Soc.; Soc. Vert. Paleo.; Acad. of Zool.; Am. Soc. Ichthyol. and Herpetol.; Am. Assn. of Museums; Soc. Syst. Zool.; Soc. Naturalists; Evol. Soc.; Sigma Xi; Phi Sigma; Alpha Epsilon Delta. Author: Our Atomic Heritage, 1951. Co-Author: Island Life in Lake Michigan, 1948; The Univ. and Med. Edn., 1954; Genetic Effects of Chronic X-Irradiation Exposure in Mice, 1960. Contbr. to: Copeia; Herpetologica; Anatomical Rec.; Curator; Edn. Leadership; A.I.B.S. Bull.; Am. Biol. Tchr.; Proc. Biol. Soc. Wash.; Am. Naturalist; Quart. Rev. of Biol.; State Gov.; Sci.; Edn. Rec.; Jour. Med. Edn.; Jour. Heredity; Genetics. Gen. Int.: A. Cressy Morrison Prize, 1943. Areas of Rsch.: Systematics and Distribution of Amphibians and Reptiles; Mammalian Genetics; Biological Education.

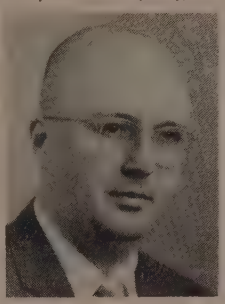
GRODBERG, Marcus Gordon (Mr.), Dir., Rsch. and Devel., Hoyt Pharmaceutical Corp., 215 California St., Newton 58, Mass. Home Add.: 111 Hyde St., Newton 61, Mass. BIOCHEMISTRY. b. Worcester, Mass., Jan. 27, 1923. s. Isaac and Rosalie (Hirsch) G. Edn.: A.B., Clark Univ., 1944; M.S., Univ. of Ill., 1948. m. Shirley Merkle, 1951. c.: Joel David; Kim Gordon. Exp.: Jr. Rsch. Chemist, Schenley Labs., Inc., Lawrenceburg, Ind., 1944-47; Rsch. and Dept. Chemist, Marine Products Co., Boston, Mass., 1948-50; Rsch. and Dept. Chem., Brewer and Co., Inc., Worcester, Mass., 1950-55; Tech. Dir., Gray Pharmaceutical Co., Inc., Newton, Mass., 1955-58; Dir., Rsch. and Devel., Hoyt Pharmaceutical Corp., Newton, Mass., 1958—. Mem.: Am. Chem. Soc.; A.C.S., Northeastern Sect.; A.C.S., Medicinal Chem. Sect.; Am. Pharmaceutical Assn.; Internatl. Assn. for Dental Rsch.; Phi Alpha. Areas of Rsch.: Pharmaceutical Nutritional Supplements Including Vitamins, Amino Acids, Fluoride, Enzymes, Unsaturated Fatty Acids.

GROENING, Abe A. (Ph.D.), Chmn., Physics Dept., Lewis and Clark Coll., Portland 19, Ore. Home Add.: 0520 S.W. Palatine Hill Rd., Portland 19, Ore. PHYSICS AND CHEMISTRY. b. Hillsboro, Kans., Mar. 17, 1894. s. Abram and Agnes (Klassen) G. Edn.: B.A., Tabor Coll., 1915; M.A., Univ. of Ore., 1919; Ph.D., Univ. of Kans., 1926. m. Lisa Nickel, Aug. 8, 1917. c.: Victor Hugo; Homer Philip; Mrs. Ellene G. Monnes. Exp.: Prof., Albany Coll., 1930-36; Dean, ibid., 1931-36; Prof., Linfield Coll., 1936-42; Prof., Chmn., Physics Dept., Lewis and Clark Coll., 1942—. Hon. Pos.: Pres., A.A.P.T.; Pres. Ore. Acad. of Sci. Mem.: Sigma Xi; Kiwanis; Portland City Club. Contbr. to: Jour. of Physical Chem. Areas of Rsch.: Electricity and Nuclear Physics.

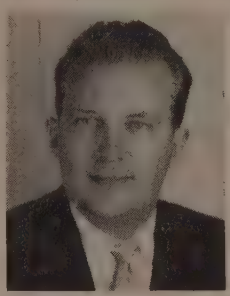
GROFFMAN, Martin (Mr.), Chmn. Sci. Dept., Springfield Gardens Jr. H. S., Springfield Gardens 13, N. Y. Home Add.: 121-07 237 St., Laurelton 22, N. Y. TEACHING NATURAL SCIENCES. b. N. Y., N. Y., Aug. 24, 1923. s. Joseph and Ruth (Raff) G. Edn.: B.A., Brooklyn Coll., 1948; M.A., Tchrs. Coll. of Columbia, 1949. m. Constance Fischer, June 30, 1946. c.: Steven Eric; Susan Gail. Exp.: Chmn. Sci. Dept., Springfield Gardens Jr. H. S., Springfield Gardens, N. Y., 1956—; Edni. Consultant, Sci. Apparatus and Supplies Co., Inc., Westbury, N. Y., 1961—. Mem.: Natl. Sci. Tchrs. Assn.; Am. Astronautical Soc.; Gen. Sci. Tchrs. Assn. of N. Y.; A.A.A.S. Author: Earth Science Activities in the Field and Laboratory, 1961; Handbook of Earth Science, 1961. Serv. Rec.: U. S. Army Air Force, Navigator, Weather Observer, 1942-45. Areas of Rsch.: Participant in N.S.F. Earth Science Inst. at Brown Univ., 1959, Cornell Univ., 1960, Ind. Univ., 1961.

GRONDAL, Florence Armstrong (Mrs. Bror L.), Author, 2019 N. E. 80th, Seattle 15, Washington. ASTRONOMY. b. N.Y.C., N. Y., Oct. 8, 1899. d. Charles E. and Eloise (Barker) Foye. Edn.: Univ. of Wash. 1910-11 1927. m. Dr. Bror L. Grondal, Apr. 7, 1912. c.: Eloise Margaret; Bror Philip. Exp.: Author, Seattle, Wash., 1925 . Hon. Pos.: Asst. Dir., Am. Meteor Soc. for Western Wash., 1952; Co-Founder of Seattle Astronomical Soc., 1952; Trustee, 1952-56; Dir., Natl. League of Am. Pen Women Branch Project, 1957-60; Chmn., Beaver Lake Obs. Project, 1955-57. Mem.: A.A.A.S.; Internatl. Meteoritical Soc.; Am. Meteor Soc.; Seattle Astronomical Soc.; Pacific Northwest Acad. of Arts; Natl. League of Am. Pen Women. Author: The Music of the Spheres, 1926; The Romance of Astronomy, 1937; Stars: Their Facts and Legends, 1940. Gen. Int.: Participated in the Broadcast of an Eclipse of the Sun at dawn from high-flying plane on nation-wide hook-up, 1945; Assembled Personal Collection of Meteorites, exhibited three years at Univ. of Washington Museum, 1955-58. Areas of Rsch.: Files of Rsch. for Future Planetarium; Rsch. in Astronomy, visiting all important observatories and planetaria, for writing; Ten Years Rsch. on Rainbow for Large Ms.

GRONE, Alexander Robert (Mr.), Asst. Prof. of Physics, Hudson Valley Comm. Coll., Troy, N. Y. Home Add.: 5-2 Blatchford Dr., Troy, N. Y. SOLID STATE PHYSICS, EXPERIMENTAL. b. Danville, Pa., June 21 1931. s. Robert Y. and Ethel (Lloyd) G. Edn.: B.S., Rensselaer Poly. Inst., 1953. m. Mae Gademan, April, 1953. c.: Carl Joseph. Exp.: Mathematician, Gen. Elec. Co., Malta, N. Y., 1957; Rsch. Asst., Rensselaer Poly. Inst., Troy, N. Y., 1958-60; Physicist, Watervliet Arsenal, Watervliet, N. Y., 1960-61; Asst. Prof., Hudson Valley Comm. Coll., Troy, N. Y., 1961—. Mem.: Assoc. Mem., Sigma Xi; A.A.A.S.; Am. Physical Soc.; Mason. Contbr. to: Jour. Phys. Chem. Soc. Serv. Rec.: U.S.M.C. Areas of Rsch.: Background in Electronics, Fluid Dynamics, and Solid State Physics.

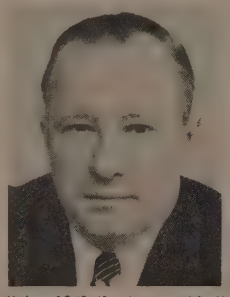


GROPPE, Ernest Henry, Jr. (Mr.), Partner, Mares and Groppe, 1534 Tenn. Bldg., Houston 2, Tex. Home Add.: 12907 Butterfly Lane, Houston 24, Tex. HYDROCARBON CHEMISTRY; CHEMICAL ECONOMICS. b. West, Tex., Mar. 23, 1926. s. Ernest Henry, Sr. and Anna (Heitmiller) G. Edn.: B.S., Univ. of Tex., 1946. Exp.: Rsch. and Devel. Engr., Dow Chem. Co., Midland, Mich.; Freeport, Tex., 1946-48; Process Engr., Tex. Co., Lawrenceville, Ill., 1948; Asst. to Mgr., Refining, Arabian Am. Oil Co., Saudi Arabia, 1948-50; Asst. Dir., Rsch. Dev., Plastics Div., Monsanto Chem. Co., Tex. City, Tex., 1950-55; Consult., Mares and Groppe, Houston, Tex., 1955—; V.-Pres. and Gen. Mgr., Tex. Petrogas Co.; Dir., Southwest Chemical and Plastics Co. Mem.: A.C.S.; Am. Inst. of Chem. Engrs.; A.A.A.S.; Tex. Acad. of Sci.; Natl. Soc. of Professional Engrs.; Phi Eta Sigma; Omega Chi Epsilon; Tau Beta Pi. Contbr. to: Chem. Engrng. Progress; Indusl. and Engrng. Chem.; Petrol. Refiner; Chem. Wk. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Hydrocarbon Cracking and Polymerization Reaction; Chem. Econ.



GROSE, Herschel Gene (Ph.D.), Hd., Dept. of Chem., Marietta Coll., Marietta, Ohio. Home Add.: 215 Ingleside Ave., Marietta, Ohio. ORGANIC CHEMISTRY. b. Clinton C., Ind., Feb. 1, 1921. s. Herschel Kenneth and Anna Myrtle (Heaton) G. Edn.: B.S., Ind. Central Coll., 1942; Ph.D., Ind. Univ., 1951. m. Charlotte Mabel Wilson, Apr. 14, 1944. c.: Ruth Suzanne; Steven Lee; David Lee; Sandra Jeanne; Gregory Gene; Bonnie Louise. Exp.: Control Chemist, U. S. Rubber Co., Indianapolis, Ind., 1941-43; Rsch. Chemist, E. I. du Pont de Nemours and Co., Waynesboro, Va., 1951-53; Asst. Prof., Chem., Marietta Coll., 1953-55; Assoc. Prof. Chem., ibid., 1955-57; Prof. of Chem., ibid., 1957—. Mem.: Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon; Omicron Delta Kappa. Contbr. to: Am. Chem. Soc. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Heterocyclic Chemistry, Polymers.

GROSSE, Aristid V. (Dr.Engr.), Pres., Rsch. Inst. of Temple Univ., 4150 Henry Ave., Phila. 44, Pa. Home Add.: 456 Glyn Wynne Rd., Haverford, Pa. CATALYTIC CHEMISTRY OF HYDROCARBONS. b. Riga, Russia, Jan. 4, 1905. s. Victor and Ella (Lieven) G. Edn.: Dr.Engr., Technische Hochschule, Berlin, Charlottenburg, Germany, 1927. m. Irene Lieven, 1932. c.: Aristid V., Jr. Exp.: Rsch. Chem., Kaiser Wilhelm Inst. for Chem., Berlin-Dahlem, Germany, 1927-28; Med. Analysis Lab., Shanghai, China, 1928-29; Rsch. Assoc., Technische Hochschule, Berlin, Charlottenburg, Germany, 1929-32; Visiting Asst. Prof. of Chem., Univ. of Chicago, 1931-40; Rsch. Assoc., Universal Oil Products Co., Chicago, Ill., 1930-35; Assoc. Dir. of Rsch., ibid., 1935-40; John Simon Guggenheim Rsch. Fellow, Dept. of Physics, Columbia Univ., 1940-41; Assoc. with H. C. Urey in War Rsch. Lab., ibid., 1942-43; Cons. on Synthetic Rubber, Houdry Process Corp., Phila., Pa., 1942; Chf. Consultant on Synthetic Rubber, W.P.B., Wash., D. C., 1942-43; Dir. Rsch., Houdry Labs., Houdry Process Corp. of Pa., 1943-48; Pres., Rsch. Inst. of Temple Univ., Phila., Pa., 1948—. Hon. Pos.: Mem. Am. Rubber Mission to Soviet Union, 1942-43. Mem.: Am. Chem. Soc.; A.A.A.S.; Physical Soc.; Am.



Rocket Soc.; Sigma Xi. Co-Author: Chemie der Metallorganischen Verbindungen, 1937. Contbr. to: Jour. Am. Chem. Soc.; Jour. Ind. and Engr. Chem.; Jour. Inorg. and Nucl. Chem.; Combustion and Flame; Science; Rsch. Reviews; Analytical Chem.; Trans. of A.S.M.; Record of Chem. Progr.; Jour. Org. Chem.; Inorganic Chem.; Adv. in Chem. Series; Z. Natur.; Jour. Optical Soc. Gen. Int.: Discovered with V. N. Ipatieff, Reactions of Paraffins with Olefins, Aromatics, Dehydrogenation of Paraffins to Olefins, Etc.; Help Discover Cyclization of Straight Chain Hydrocarbons to Aromatics; Dehydrogenation of n-Butane and n-Butenes to Butadiene; Hydrogen Fluoride Catalytic Alkylation Process for Production of Aviation Gasoline; Radioactivity; Isolated Element 91, Protactinim; Proved Slow Neutron Fission of Uranium 235, 1940; Developed Fundamentals of Diffusion Process for Separation of U^{235}; Discovered with Other Cosmic Ray Corbon; Cosmic Ray Tritium; High Ttemperature Rsch.; Flame Studies; New Oxidizers and Fuels for Rocket Propulsion and Detronation; Ozone Studies.

GROSSFELD, Henry David (M.D.), Rsch. Specialist, Rutgers, The State Univ., New Brunswick, N. J. Home Add.: 218 Lawrence St., New Brunswick, N. J. CELL PHYSIOLOGY. b. Krakow, Feb. 2, 1887. s. Solomon and Deborah (Neufeld) G. Edn.: M.D., The German Charles Univ. in Prague, 1918; D.Sc., Univ. of Lwow, 1939. c.: Olga; Stephan. Exp.: Adj., Charite, Berlin Univ., 1928-34; Prof. of Physiol., Lwow Univ., 1939; Fellow, World Hlth. Organ. of the UN at the Rockefeller Inst. for Med. Rsch., N. Y., 1949; Tissue Culture Lab., Coll. of Phys. and Surg., Columbia Univ., 1953-59; Rsch. Spect., Rutgers, The State Univ. of N. J., 1959—. Mem.: Soc. for Cell Biol.; Tissue Culture Assn.; N. Y. Acad. of Sci. Contbr. to: Z. fur Zellforschung; Archiv fur exp. Zellforschung; Biochem. Zeitschrift; Compt. r. Soc. de Biologie; Z. fur Krebsforschung; Nature, London; Sci.; Experientia; Proc. Soc. Exptl. Biol. and Med.; Endocrinol.; Exptl. Cell. Rsch.; Am. Jour. of Ophthal.; Jour. of Biophys. and Biochem. Cytol.; Jour. of the Natl. Cancer Inst. Areas of Rsch.: Tissue Culture; Mucopolysaccharides; Steroid Hormones; Cancer Research.

GROSSWALD, Emil (Ph.D.), Prof., Dept. of Math., Univ. of Pa., Phila., Pa. Home Add.: 318 S. St. Bernard St., Phila. 43, Pa. ANALYTIC NUMBER THEORY. b. Bucharest, Roumania, Dec. 15, 1912. s. Paul and Elsa (Iscovitsch) G. Edn.: B.S., Sem. Ped., Univ., M. Eminescu, 1929; M.S., Univ. of Bucharest, 1932; Ph.D., Univ. of Pa., 1950. m. Elizabeth Ronald, Nov. 20, 1950. c.: Blanche Diana; Vivian Mathilde. Exp.: Lectr., Univ. of Saskatchewan, 1950-51; Temporary Mem., Inst. for Adv. Study, Princeton Univ., 1951-52; Assoc., Dept. of Math., Univ. of Pa., 1952-54; Asst. Prof., ibid., 1954-57; Assoc. Prof., ibid., 1957-60; Prof., ibid., 1960—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Fr. Math. Soc.; Soc. Cubana de Ci Fis. Y Mat.; SIAM; A.A.A.S.; A.A.U.P.; etc. Contbr. to: Am. Math. Jour.; Trans. of Am. Math. Soc.; Am. Math. Monthly; Proc. Am. Math. Soc.; Duke Math. Jour.; Bull. Am. Math. Soc.; Ill. Math. Jour.; Jour. of Math. and Mech.; SIAM Jour.; etc. Areas of Rsch.: Analysis in particular Analytic Number Theory.

GROVE, Cornelius Sherman, Jr. (Ph.D.), Prof., Chem. Engr., and Dir., Engrng. Rsch., Syracuse Univ., Syracuse 10, N. Y.; Pres., Onondaga Assocs., Inc., Syracuse 14, N. Y. CHEMICAL ENGINEERING AND PHYSICAL CHEMISTRY. b. Sept. 8, 1905, Oneida, N. Y. s. Cornelius Sherman and Ada Mae (Weller) G. Edn.: A.B., Lenoir Rhyne Coll., 1925; B.S., N. C. St. Coll., 1928; Ch.E., ibid., 1932; M.S., M.I.T., 1934; Ph.D., Univ. of Minn., 1942. m. Suzanne Treadwell, Oct. 8, 1960. Exp.: Asst. Prof. Chem. Engrng., N. C. St. Coll., 1930-35; Instr., Univ. of Minn., 1935-41; Rsch. Chem. Engrng., DuPont, 1941-45; Prof., Hd. Chem. Engrng., St. Univ. of Iowa, 1945-47; Prof., Syracuse Univ., 1947—; Dir. Engrng. Rsch., ibid., 1954—; Pres., Onondaga Assocs., Inc., 1953—. Mem.: A.I.Ch.E.; Am. Chemical Soc.; A.S.E.E.; S.P.E.; A.A.U.P.; A.A.A.S.; Tau Beta Pi; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Faculty Club; Kiwanis. Contbr. to: Industrial Engineering Chem.; Chemical Engineering Progress; and other Tech. Jours. Ph.D. Dissertation: Crystal Growth in Aqueous Solutions (Potassium Alum). Hobbies: Gardening. Listed in: Chem. Who's Who; W. W. in Engrng.; A.M.S.; Who Knows—and What. Special Int.: Fibers; Crystallization; Organic Unit Processes; Fluid Flow of Multiphase Systems, e.g., Foams; Rsch. Admin.

GROVE, Ernest Wilson (Ph.D.), Staff Asst., Price Div., ASCS, USDA, Washington 25, D. C. Home Add.: 5429 So. 5th St., Arlington 4, Va. ECONOMICS. b. New Kensington, Pa., June 14, 1910. s. Edward Thomas and Blanche Adelaide (Wilson) G. Edn.: B.A., Univ. of Calif., 1932; Ph.D., ibid., 1949. m. Esther Elizabeth Krewson, Mar., 1947. c.: Kathryn Frances; Daniel Edward. Exp.: Economist, Bur. of Agric. Econ., U.S.D.A., Wash., D. C., 1936-41 and 1946-53; Hd., Farm Income Estimates Sec. and Editor, Farm Income Situation, ibid., 1954-60; Staff Asst., Agric. Stabilization and Conservation Serv., ibid., 1960—. Mem.: A.A.A.S.; Am. Econ. Assn.; Am. Statistical Assn.; Am. Farm Econ. Assn.; Conf. on Rsch. in Income and Wealth; Southern Econ. Assn.; Phi Beta Kappa; Delta Sigma Rho; Artus. Contbr. to: Jour. of Farm Econ.; Jour. of Am. Statistical Assn.; Rural Sociology; Agri. Econs. Rsch.; Studies in Income to Wealth; Farm Income Situation; Tech. Bull. and Agric. Handbook Series. Serv. Rec.: A.U.S., 1942-45. Gen. Int.: Decorated, Legion of Merit, Dec., 1945. Areas of Rsch.: National and Farm Income; Social Accounting; Agricultural Finance, Prices, and Policy; Economic Indicators, Business Cycles and Forecasting.

GROVE, E(wart) L(ester) (Ph.D.), Rsch. Chem., Armour Rsch. Found. of Ill. Inst. of Technol., 10 W. 35 St., Chicago 16, Ill. Home Add.: 166 Lawler Ave., Lombard, Ill. ANALYTICAL AND PHYSICAL CHEMISTRY. b. Greensburgh, Kan., May 31, 1913. s. W. E. and Theo Etha (Grove) G. Edn.: B.E., St. Tchrs. Coll., St. Cloud, Minn., 1938; M.A., U. St. Univ., 1945, Ph.D., Western Reserve Univ., 1951. m. Ethel Lucille Metcalf, Galion, O., June 12, 1944. d. Edward G. and Anna Maud Metcalf. c.: Edward Lester; Ernest William. Exp.: Tchr., Tyler H. S., Tyler, Minn., 1938-40; Tchr., Cuyahoga Hts. H. S., Cleveland, O., 1940-47; Faculty, St. Cloud St. Coll., Minn., 1947-48; Assoc. Prof. Chem., Univ. Ala., 1951-59; Rsch. Chem., Armour Rsch. Found. of Ill. Inst. of Technol., 1960—. Mem.: Am. Chem. Soc.; Am. Inst. Chem.; Soc. Applied Spectroscopy; Ala. Acad. Sci.; A.A.U.P.; Sigma Xi; Alpha Chi Sigma; Gamma Sigma Epsilon; Meth. Ch. Contbr. to: Analytical Chem.; Applied Spectroscopy; Jour. Chem. Physics; Sci. Edn.; Schl. Sci. and Math.; Jr. Am. Chem. Soc.; Jr. Phys. Chem. Co-Author: Algebra and Its Use, Books I and II, 1956, 1960; Basic Mathematics, Book I, 1961. Areas of Rsch.: Arc-Spark, Flame Emission Spectroscopy, Absorption Spectroscopy, Conductance, High-Frequency, and Dielectric Constant Measurements and Determination, Development of Classical and Instrumental Analytical Procedures, Propellant Sensitivity.

GROSVENOR, Melvin Malcolm (M.D.), Assoc. Prof. of Pediatrics, Columbia Univ., Coll. of Physicians and Surgeons, N. Y. 32, N. Y. Home Add.: 4530 Livingston Ave., Riverdale 71, N. Y. PEDIATRICS, ENDOCRINOLOGY, METABOLISM. b. N. Y. C., Dec. 21, 1925. s. E. and Adele (Weil) G. Edn.: M.D., Columbia Univ., 1948. m. Madeleine F. Butt., Dec. 1, 1951. c.: Ethan M.; Kevin L.; A. Havemeyer. Exp.: Resident, Babies Hosp., Columbia Presbyterian Med Ctr., N. Y. C., 1949-51; Oak Ridge Inst. of Nuclear Studies, 1952; Fellow, Johns Hopkins Univ. Med. Schl., 1953-55; Instr. to Assoc. Prof., Columbia Univ., Coll. of Physicians and Surgeons, 1955—; Asst. Pediatrician to Assoc. Attending Pediatrician, Babies Hosp., Presbyterian Hosp., N. Y. C., 1955—. Mem.: Editorial Bd., Jour. of Clin. Endocrinol. and Metabolism, 1957—; Study Sect., N.I.H., U.S.P.H.S.; Am. Soc. Clin. Investigation; Am. Pediatric Soc.; Pediatric Rsch.; Endocrine Soc.; Harvey Soc.; Am. Soc. Human Genetics; A.A.-A.S.; Teratol. Soc.; N. Y. Acad. of Sci.; Alpha Omega Alpha;

GRUITCH, Jerry Morris (Mr.), Dir.-Govt. Prods., The O. M. Edwards Co., Inc., 501 Plum St., Syracuse 3, N. Y. and the Excel Corp., Elkhart, Ind. Home Add.: 620 Rugby Rd., Syracuse 3, N. Y. THERMODYNAMICS. b. Serbia, Aug. 16, 1904. s. Peter and Helen (Marich) G. Edn.: B.S., Univ. of Mich., 1933; M.M.E., M.S., Chrysler Inst. of Engrng., 1940. m. Ruth Storrs Lovejoy, Dec. 4, 1933. c.: Judith Ellen. Exp.: Experimental Engr., Chrysler Corp., 1934-37; Chf. Engr., Airtemp Div., Chrysler, 1937-41; Chf., Tech. Devel. Air Ordnance Office, Hq. U.S.A.F., 1941-46; Asst. Chf. Engr., Dodge Div., Chrysler Corp., 1946-47; Vice-Pres. and Dir., A. O. Sutton Corp., Wichita, Kan., 1947; Dir., Rsch. and Devel., AC & F Div., ACF Industries, Inc., 1947-58; Dir., Defense Prods., ibid., 1958-59; Dir., Govt. Prods., ibid., 1959-61; Dir., Govt. Prods., The O. M. Edwards Co., Inc., and the Excel Corp., 1962—. Hon. Pos.: Chmn., Vehicles Technical Panel on Ordnance, Office of Asst. Secy. of Defense Rsch. and Engrng., Wash., D. C.; Mem., Tech. Advisory Grp., Hq. Air Force Armament Ctr., A.R.D.C.; Chmn., Production Techniques Div., Am. Ordnance Assn.; Dir., N. Y. Post Am. Ordnance Assn. Mem.: Inst. of Metals; Am. Soc. of Mech. Engrs.; Air Force Assn.; Natl. Security Ind. Assn.; Am. Rocket Soc. (Sr. Mem.); Soc. of Automotive Engrs.; Am. Ordnance Assn.; Sigma Xi; Tau Beta Pi; Triangles; Military, Scabbard and Blade; The Union League Club, N.Y.C.; Engineers' Club, N.Y.C.; The Army and Navy Club, Washington, D. C. Contbr. to: Am. Soc. of Mechanical Engineers; Science. Serv. Rec.: Colonel, U. S. Air Force Reserve, 1941-46. Gen. Int.: Holder of Legion of Merit; Awarded: Bronze Star; Army Commendation Medal with 2 Oak Leaf Clusters; European-African-Middle Eastern Campaign Ribbon with Star; Am. Defense Service Medal; Asiatic-Pacific Campaign Ribbon; W. W. II Victory Medal; Army of Occupation Medal with Japan Clasp; Armed Forces Reserve Medal; Participated in Natl. Strategy Seminar, Natl. War Coll., 1962. Areas of Rsch.: Thermodynamics, Heat Transfer; Refrigeration; Ordnance; Propellants; Gun Mechanisms; Bombs; Fuses; Vehicles; Propulsion, Railroad Equipment, Missiles.

Sigma Xi. Contbrng. Author: Cecil and Loeb Textbook of Medicine, 1960; Holt, McIntosh, Barnett Pediatrics, 13th ed., 1962; Recent Progress Hormone Research, 1958; Ciba Foundation Colloquia Endocrinology, 1955, 1962; Astwood, Clinical Endocrinology, 1960. Contbr. to: Jour. Clin. Endocrinol. and Metabolism; Jour. Clin. Investigation; Nature; Pediatrics; Jour. of Pediatrics; Proc. Soc. Exptl. Biol. and Med.; Proc. Natl. Acad. of Scis.; Lancet; Acta Cytologica; Ann. Human Genetics. Serv. Rec.: U.S.A.F., (M.C.), 1951-53. Gen. Int.: Joseph M. Smith Prize, Columbia Univ., 1962. Areas of Rsch.: Pediatric Endocrinol. and Metabolism Cytogenetics.

GUDAITIS, Algirdas Victor (Mr.), Biochemist, Lab. of Clin. Pathology, Bryn Mawr Hosp., Bryn Mawr, Pa. Home Add.: 204 Aronimink Dr., Newton Sq., Pa. CLINICAL CHEMISTRY, PHYSIOLOGY. b. Kaunas, Lithuania, June 6, 1924. s. Michael Otto and Maria (Pozela) G. Edn.: Student of Med., Univ. of Erlangen, Bavaria, Germany, 1945-49; M.S., Univ. of Louisville, Ky., 1960. m. Dzidra Liepins, Dec. 24, 1947. c.: Algird-Michael; Dzidra-Maria. Exp.: Chemist, St. Catherines Hosp., Brooklyn, N. Y., 1950-53; Supv., Labs., Ky. Baptist Hosp., Louisville, Ky., 1953-60; Biochemistry, Lab. of Clin. Pathol., Bryn Mawr Hosp., Bryn Mawr, Pa., 1960—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Am. Assn. of Clin. Chemists. Contbr. to: Bull. N. Y Acad. of Med.; Am. Jour. Clin. Path.; Jour. Ky. Med. Assn.; Am. Jour. Ob. Gyn.; Jour. Lab. Clin. Med. Areas of Rsch.: Clinical Chemistry and Pathology; Thyroid Physiology.

GUIDRY, Marion Antoine (Ph.D.), Asst. Prof. Biochem., Pathol., La. State Univ., Schl. of Med., New Orleans, La. Home Add.: 6700 Blanke St., Metairie, Louisiana. BIOCHEMISTRY-STEROIDS, GENERAL LIPID CHEMISTRY. b. Lafayette, La., Oct. 1, 1925. s. Bertin and Elizabeth (Theriot) G. Edn.: B.S., Tulane Univ., 1947; M.S., ibid., 1949; Ph.D., ibid., 1952. m. Margaret Boudreaux, Aug., 1946. c.: Joy Marie; Janet Raye; John Bertin. Exp.: Asst. Prof., Univ. Southwestern La., Lafayette, La., 1951-53; Asst. Prof., Tulane Univ., New Orleans, La., 1953-56; Asst. Prof., La. St. Univ., New Orleans, La., 1956—. Mem.: Am. Chem. Soc.; Sigma Xi; Soc. for Exptl. Biol. and Med.; Am. Oil Chem. Soc. Contbr. to: Proc. Soc. Exper. Biol. Med.; Endocrinology; Am. Jour. of Ophthalmology; Arch. of Ophthalmology. Gen. Int.: P.H.S. Pre-Doctoral Fellow, 1949-51. Serv. Rec.: U. S. Navy, 1942-44. Areas of Rsch.: Steroid Estrogens; Lipid Chemistry.

GUILHEMPE, Edmund Joseph (Mr.), Tchr., Thos. Jefferson H. S., Brooklyn, N. Y.; Tchr., Rhodes Schl., N.Y.C., N. Y. Home Add.: 935 East 9th St., Brooklyn 30, N. Y. PHYSIOLOGY; BIOCHEMISTRY. b. Boston, Mass., Sept. 14, 1924. s. Dr. Nemorin and Mrs. Mary R. (Camuso) G. Edn.: B.A., Columbia Univ., 1947; M.A., ibid., 1949. m. Patricia Longan, Sept. 11, 1954. c.: Edmund Gaston; Lawrence Gregory. Exp.: Asst., Columbia Univ., N.Y.C., N. Y., 1951-52; Staff Mem., Chas. Pfizer Chem. Rsch. and Dev., Brooklyn, N. Y., summers, 1959-60; Tchr., Thos. Jefferson H. S., Brooklyn, N. Y. and Rhodes Schl., N.Y.C., 1957—; 1961—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; N. Y. Biol. Tchrs. Assn.; Chem. Tchrs. Club; Physics Club; Kappa Delta Pi; Phi Delta Kappa. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Physiology; Biochemistry.

GUNBERG, David L. (Ph.D.), Assoc. Prof. Anatomy, Univ. of Ore. Med. Schl., Portland 1, Ore. Home Add.: 10355 S. W., Walnut, Tigard 23, Ore. ANATOMY. b. Minneapolis, Minn., May 1, 1922. s. David and Brita S. (Ness) G. Edn.: A.B., Univ. of Redlands, 1949; M.A., Univ. of Calif., 1952; Ph.D., ibid., 1954. m. Jorraine A. Jacobson, June 23, 1946. c.: David L., Jr.; Robert S.; Nancy K.; Rebecca J.; Monica. Exp.: Tchng. Asst. in Anatomy, Univ. of Calif., 1950-54; Instr. in Anatomy, Univ. of So. Calif. Med. Schl., 1954-55; Asst. Prof. of Anatomy, Univ. of Ore. Med. Schl., 1955-60; Assoc. Prof. of Anatomy, ibid., 1960—. Hon. Pos.: Exec. Bd. Mem., Am. Teratol. Soc., 1959-61. Mem.: Am. Assn. of Anatomists; A.A.A.S., Sigma Xi; The Am. Teratol. Soc.; Ore. Acad. of Sci. Contbr. to: Anatomical Record; Acta Haematologica; Jour. of Lab. and Clin. Med.; Animal Behavior. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Experimental Mammalian Teratology, Mammalian Reproduction, Experimental Lathyrism, Endocrinology of Reproduction.

GUNDLE, Sigmund (M.D.), Physician, 751 E. 63rd St., Kansas City 10, Mo. Home Add.: 5926 Windsor Dr., Mission, Kan. MEDICINE, SPECIALIZED IN PSYCHIATRY. b. Munich, Germany, 1915. s. Julius G. and Elsa (Oettinger) G. Edn.: M.D., Wash. Univ., 1943. m. Beatrice Achtenberg, 1943. c.: Michael Julian; Ruth Elizabeth; Barbara Felice. Exp.: Psychiatrist, Student Health Serv., Univ. of Kan.; Lectr., Depts. of Soc. Wk. and Psychol., ibid.; Dir., Bert Nash Clinic, Lawrence, Kan.; Faculty Mem., Schl. of Med., Univ. of Kan., 1949—; Tchng. Staff, The Menninger Fdtn. Schl. of Psychiatry; Pvt. Prac., Kansas City, Mo., 1954; Clinical Assoc. Prof., Univ. of Kan. Med. Schl., 1955; Staff, Menorah Med. Ctr., Kansas City, Mo., K. C. Gen. Hosp., 1955; Consultant, Family Serv., Kansas City, Mo., Gillis Home for Children, Jewish Family Serv., Kansas City, Mo., 1956; Consultant, Student Health Serv., Univ. of Kan., Assoc. Mem., Topeka Inst. for Psychoanaly. Mem.: Am. Psychiatric Assn.; Am. Assn. Adv. Sci.; Sigma Xi; A.M.A.; Jackson Co. Med. Soc.; Central EEG Soc.; Assn. of Am. Med. Colls.; N. Y. Acad. of Sci.; APA Western Mo. Dist. Branch; Mo. State Med. Assn.; Mid-Continent Psychiatric Assn. Contbrng. Author: Handbook of Abnormal Psychology, 1950. Contbr. to: Jour. of the Kansas Med. Soc.; Bull. of the Menninger Clinic; Jour. of Med. Edn. Serv. Rec.: Major M. C., 1944-47. Areas of Rsch.: Psychiatry in Med. Edn.; Psychiatric Aspects of Student Health Servs. (Natl. Survey, 1953); Hypnosis.

GUNN, Samuel Albert (M.D.), Rsch. Prof., Dept. of Pathology, Schl. of Med., Univ. of Miami, Coral Gables, Fla. Home Add.: 9357 Abbott Ave., Surfside, Fla. CLINICAL CANCER CYTOLOGY, EXPERIMENTAL PATHOLOGY. b. Winnipeg, Manitoba, Can., Feb. 11, 1910. s. David Joseph and Dora (Gam) G. Edn.: B.S., Univ. of Ill., 1934; M.D., ibid., 1937. m. Elsie Chestler, Dec. 27, 1932. c.: Michela Faith. Exp.: Gen. Med. Prac., Chicago, Ill., 1937-42; Gen. Med. Prac., ibid., 1946-50; Cytologist and Rsch. Assoc., Cancer Inst. at Miami, Fla., 1952-55; Instr. Path., Univ. of Miami Schl. of Med., 1955-58; Res. Asst. Prof. Path., ibid., 1958-59; Res. Assoc. Prof. Path., ibid., 1959-62; Res. Prof. Path., ibid., 1962—. Mem.: A.A.A.S.; A.M.A.; Am. Soc. Exp. Pathology; Chicago Med. Soc.; Dade Co. Med. Assn.; Fla. St. Med. Assn.; Intersociety Cytology Coun.; Soc. Exp. Biol. and Med. Contbr. to: Proc. Soc. Exp. Biol. and Med.; Jour. Endocr.; Acta Endocrinologica; Am. Jour. Pathology; Lab. Invest.; Arch. Path.; J.A.M.A.; Jour. Urology; Obstet. Gyn.; Endocrinolgy; Anatomical Record; Am. Jour. Physiology; Psychosomatic Med. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Clin. Cancer Cytology; Endocrinology; Experimental Pathology.

GUNST, Samuel Burton (Ph.D.), Fellow Scientist, Bettis Atomic Power Lab., Westinghouse Elec. Corp., Box 1468, Pittsburgh 30, Pa. Home Add.: 187 Woodhall Dr., Pittsburgh 36, Pa. EXPERIMENTAL NUCLEAR PHYSICS. b. Pittsburgh, Pa., Sept. 24, 1917. s. Joseph Rudolph and Anna Elizabeth (Aland) G. Edn.: A.B., Olivet Coll., 1939; M.S., Univ. of Pittsburgh, 1948; Ph.D., ibid., 1953. m. Phyllis Belle Allison, July 21, 1951. c.: Gail Allison; Gary Burton. Exp.: Physicist, Rsch. Labs., Am. Soc. Heating and Ventilating Engrs., Pittsburgh, Pa., 1939-41; Supv. Engr., Gulf Rsch. and Devel. Co., ibid., 1941-50; Rsch. Assoc. Radiation Lab., Univ. of Pittsburgh, 1950-53; Fellow Scientist, Bettis Atomic Power Lab., Westinghouse Elec. Corp., 1953—; Appointed Pittsburgh Nuclear Activities Coun., 1956-57. Mem.: A.A.A.S.; Am. Physical Soc.; Am. Nuclear Soc.; Sigma Xi; Sigma Pi Sigma; Phi Alpha Pi. Contbr. to: Phys. Rev.; Rev. of Scientific Instruments; Nuclear Sci. and Engrng.; Trans. of A.S.-M.E.; A.S.H.V.E. Jour. Sec. of Heating, Piping and Air Conditioning. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Nuclear Physics of Elementary Particles; Neutron Detectors; Reactivity of Irradiated Nuclear-Reactor Fuels; Instruments for the Petroleum Industry; Hydrocarbon Thermodynamics.

GUSSEN, John (M.D.), Dir., Dept. of Psychiatry, Cedars of Lebanon Hosp., 4833 Fountain Ave., Los Angeles 29, Calif. Home Add.: 867 Victoria Ave., Los Angeles 5, Calif. PSYCHIATRY. b. Stockholm, Sweden, May 21, 1919. s. Leo and Elizabeth (Brailov) G. Edn.: B.S., Karolinska Inst., Stockholm, Sweden, 1938; M.D., Columbia Univ., 1950. m. Ruth Marcus, December 25, 1949. c.: James L. Exp.: Purcell Fellow in Bacteriol., Yale Univ., 1944-46; Asst. in Psychiatry, Cornell Univ., 1952-54; First Asst. Physician in Child Psychiatry, Nyboda Children's Hosp., Stockholm, Sweden, 1954; First Asst. Psychiatrist, Karolinska Univ. Hosp., Stockholm, Sweden, 1955; Dir., Psychiatric Outpatient Dept., Univ. of Okla. Med. Ctr., 1955-58; Asst. Prof. of Psychiatry and Neurol., ibid., 1955-58; Asst. Clin. Prof. of Psychiatry, Univ. of Calif., 1958-59; Chief, Day-Night Hosp., Langley-Porter Neuropsychiatric Inst., San Francisco, Calif., 1958-59; Asst. Prof. of Psychiatry, ibid., 1959; Assoc. Clin. Prof. of Psychiatry, Univ. of Sou. Calif., Schl. of Med., 1959—; Dir., Dept. of Psychiatry, Cedars of Lebanon Hosp., Los Angeles, Calif., 1959—. Mem.: Fellow, Am. Psychiatric Assn.; Am. Med. Assn.; N. Y. Acad. of Sci.; Am. Geriatrics Soc.; Gerontological Soc. Contbr. to: Mental Hosp.; Jour. of Med. Edn. Areas of Rsch.: Psychophysiological Med., Psychodynamics, Geriatrics, Social Psychiatry.

GUSTAFSON, Robert Lennart (Mr.), Dir., Gustafson Biorsch. Lab., Brooklyn 1, N. Y. Home Add.: 286 Clinton St., Brooklyn 1, N. Y. BIOLOGY, BIOPHYSICS. b. N. Y., N. Y., May 10, 1925. c. Gustav Anders and Anna S. (Anderson) G. Edn.: A.B., Hunter Coll., 1950. m. Angela T. DeVita, Nov. 18, 1950. Exp.: Electronic Technician, N. Y., 1941-43; Med. Technologist, 10th Sta. Hosp., U. S. Army, 1944; St. Univ. of N. Y. Coll. of Med., Brooklyn, 1950-52; Harvard Univ. Med. Schl., 1951; Biol. and Med. Literature Searcher, (Indep.), Brooklyn, N. Y., 1952-55; N. Y. Univ. Grad. Schl. Arts and Sci., (Zool.), 1954-58; Org. and Dir., Gustafson Biorsch. Lab., 1959—. Mem.: N. Y. Zoological Soc.; A.A.A.S.; Cactus and Succul. Soc. of Am.; Phi Beta Kappa; Phi Sigma; Alpha Kappa Kappa. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Electric Organ Physiology. Neural Impulse Transmission.

GUSTAFSON, Sarah R. R. (Ph.D.), Dir., Med. Lit., Hoffmann-LaRoche Inc., Nutley, New Jersey. Home Add.: 336 Colfax Ave., Clifton, N. J. PHYSIOLOGIST, MEDICAL WRITER AND EDITOR. b. Rumania, Apr. 20, 1902. s. Benjamin and Hilda (Gdansky) Regal. Edn.: B.A., Hunter Coll., 1926; M.S., N. Y. Univ., 1928; Ph.D., Columbia Univ., 1935. m. Elton T. Gustafson, 1953. c.: Olin; Eric. Exp.: Instr., Hunter Coll., 1926-30; Instr. and Asst. Prof., Brooklyn Coll., 1930-52; Dir., Med. Lit., Hoffmann-LaRoche, Inc., Nutley, N. J., 1958—. Mem.: N. Y. Acad. of Sci.; Am. Med. Writ. Assn.; Author's League; Soc. for Scient. Study of Sex; Amer. Assn. Scient. Writ.; Metropolitan Chapt. of Assn. for History of Sci.; Sigma Xi; R.E.S.A. Author: Physiology of Work and Play, 1950; Water for People, 1952; Men and Women Behind the Atom, 1958; Shots Without Guns, 1960; Trailblazer of American Science, 1961; Masters of the Scalpel, 1962. Contbr. to: Sexology Mag. Areas of Rsch.: Sci. Writing; History of Sci.

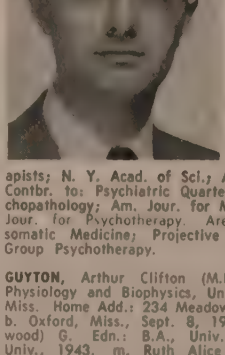
GUTERMUTH, Clinton Raymond (Mr.), Vice-Pres., Wildlife Mgmt. Inst., 709 Wire Bldg., Wash. 5, D. C. CONSERVATIONIST; NATURALIST; MANAGEMENT OF NATURAL RESOURCES. b. Ft. Wayne, Ind., Aug. 16, 1900. s. Henry Christian and Alice Virtue (Zion) G. Edn.: Post Grad., Am. Inst. of Banking, 1927-28. m. Ila Bessie Horm, Mar. 4, 1922. Exp.: Asst. Cashier, St. Joseph Valley Bank, Elkhart, Ind., 1922-34; Dir. of Edn., Ind. Dept. of Conservation, Indianapolis, Ind., 1934-40; Dir. of Fish and Game, ibid., 1940-42; Ind. Rent Dir., Office of Price Admin., Indianapolis, Ind., 1942-45; Secy., N. Am. Wildlife Found., Wash., D. C., 1945-46; Vice-Pres., Wildlife Mgmt. Inst., Wash., D. C., 1946—. Hon. Pos.: Trustee and Secy., N. Am. Wildlife Found.; Former Chmn., Natural Resources Coun. of Am.; Trustee and Hon. Mem. of the Wildlife Soc.; Exec. Com. of the Citizens Com. on Nat. Resources, and the Am. Com. for Internatl. Wildlife Protection; Trustee, Stronghold (Sugar Loaf Mountain), Inc. Mem.: Am. Fisheries Soc.; Am. Forestry Assn.; Am. Polar Soc.; Am. Soc. of Range Management; Arctic Inst. of North America; Boone and Crockett Club; Cosmos Club; National Audubon Soc.; New York Zool. Soc.; Soil Conservation Soc.; Wilderness Soc.; Mason; Fellow, Am. Assn. Adv. Sci. Gen. Int.: Rec'd the "Leopold Medal" of the Wildlife Soc., 1957; "Distinguished Service Award," 1958, from Natl. Assn. of Soil Conservation Districts, for outstanding work in natural resources conservation in the public interest. Special Int.: Dir. Rsch. Programs of the Institute and the Delta Waterfowl Rsch. Station in Manitoba, Secy., World Wildlife Found.

GUTHRIE, Paul Daniel (Mr.), Instr. of Math., Highland Park Community Coll., Highland Park, Mich. Home Add.: 64 Midland Ave., Highland Park 3, Mich. MATHEMATICS. b. Swanton, Ohio, Sept. 18, 1931. s. Paul B. and Florence E. (Habel) G. Edn.: B.S., Bowling Green St. Univ., 1953; B.S. in Edn., ibid., 1953; M.A., ibid., 1955. Exp.: Instr., Highland Park Community Coll., Highland Park, Mich., 1958—. Mem.: A.A.A.S.; A.A.U.P.; Central Assn. of Sci. and Math. Tchrs.; Natl. Council of Tchrs. of Math.; Am. Acad. of Polit. and Soc. Sci.; Omicron Delta Kappa; Kappa Mu Epsilon; Beta Beta Beta; Phi Alpha Theta; Pi Sigma Alpha; Kappa Delta Pi; Tau Kappa Epsilon; Book and Motor. Serv. Rec.: U. S. Navy, 1955-57. Listed in: Am. Coll. Student Ldrs., 1953.

GUTSCHE, Graham Denton (Ph.D.), Assoc. Prof., Sci. Dept., U. S. Naval Acad., Annapolis, Md. Home Add.: 38 Williams Dr., Annapolis, Md. NUCLEAR PHYSICS (EXPERIMENTAL). b. Oak Park, Ill., June 29, 1925. s. Frank Carl and Vera (Mutchler) G. Edn.: B.S., Univ. of Colo., 1950; M.S., Univ. of Minn., 1952; Ph.D., Catholic Univ. of Am., 1960. m. Mary Leslie, June 16, 1948. c.: Catherine; Heidi; Wendy. Exp.: Instr., Northwestern Coll., 1950-52; Asst. Prof., U. S. Naval Acad., 1952-57; Rsch. Assoc., Catholic Univ. of Am., Summers, 1955, 1956, 1957; Assoc. Prof., U. S. Naval Acad., 1957—; N.S.F. Sci Faculty Fellow, N.R.L., Wash., D. C., 1958-59; Lectr., Univ. of Md., 1959—; Physicist, Trident Assocs., Annapolis, Md., 1961—. Mem.: Am. Physical Soc.; A.A.P.T.; Am. Astronomical Soc.; Sigma Xi; Tau Beta Pi; Sigma Tau; Sigma Pi Sigma; Pi Mu Epsilon; Sigma Chi. Contbr. to: Physical Rev. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Reactions Induced by Mass-3 Particles; Proton Capture Gamma Rays; Raman Spectroscopy of Polysubstituted Benzenes.

GUTTMAN, Newman (Ph.D.), Mem., Technical Staff, Bell Telephone Labs., Murray Hill, N. J. Home Add.: 107 New St., E. Orange, N. J. EXPERIMENTAL PSYCHOLOGY. b. Minneapolis, Minn., Apr. 4, 1927. s. William and Jennie (Schnitzer) G. Edn.: B.A., Univ. of Minn., 1949; A.M., Univ. of Ill., 1951; Ph.D., ibid., 1954. m. Helene Nathan, Mar. 4, 1962. Exp.: Rsch. Assoc., Univ. of Ill., 1954-55; Rsch. Asst., Mass. Inst. Technol., 1955-56; Mem., Technical Staff, Bell Telephone Labs., Murray Hill, N. J., 1956—. Mem.: Acoustical Soc. of Am.; Am. Speech and Hearing Assn.; Psychonomic Soc.; Linguistic Circle of N. Y. Contbr. to: Jour. of Acoustical Soc. of Am.; Jour. of Speech and Hearing Disorders; Jour. of Speech and Hearing Rsch. Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Phonetics; Psychoacoustics; Speech Perception; Speech and Hearing Disorders.

GUTTMANN, Oskar (M.D.), Psychiatrist and Analytic Psychotherapist, 239 Central Park West, N. Y. 24, N. Y. PSYCHIATRY AND INDIVIDUAL AND GROUP PSYCHOANALYTIC PSYCHOTHERAPY. b. Austria, Oct. 28, 1911. s. Salomon and Klara (Knopf) G. Edn.: M.D., Med. Schl., Univ. of Florence, Italy, 1936. m. Marie Haber, 1933. Exp.: Res. Psychiatrist, Binghamton St. Hosp., Binghamton, N. Y., 1950-52; Sr. Psychiatrist, Central Islip State Hosp., Central Islip, N. Y., 1952-53; Fellow on a Scholarship, Post Grad. Ctr. for Psychoth., N. Y., N. Y., 1953-56; Staff Mem., Lectr., Intake Psychiatrist, Assoc. Supvr., Instr., N. Y. Med. Coll., Metropolitan Hosp., N. Y., N. Y., 1956—. Mem.: A.M.A.; Med. Soc. of Co. and St. of N. Y.; A.A.A.S.; Am. Assn. for Adv. of Psychotherapy; Am. Acad. of Psychotherapists; N. Y. Acad. of Sci.; Am. Assn. of Group Psychotherapy. Contbr. to: Psychiatric Quarterly; Jour. for Clin. and Exp. Psychopathology; Am. Jour. for Mental and Nervous Disorders; Am. Jour. for Psychotherapy. Areas of Rsch.: Psychiatry, Psychosomatic Medicine; Projective Psychology, Analytic Indiv. and Group Psychotherapy.



GUYTON, Arthur Clifton (M.D.), Chmn. and Prof., Dept. of Physiology and Biophysics, Univ. of Miss. Med. Center, Jackson, Miss. Home Add.: 234 Meadow Rd., Jackson, Miss. PHYSIOLOGY. b. Oxford, Miss., Sept. 8, 1919. s. Billy S. and Kate (Smallwood) G. Edn.: B.A., Univ. of Miss., 1939; M.D., Harvard Univ., 1943. m. Ruth Alice Weigle, June, 1943. c.: David; Robert; John; Steven; Catherine; Jean; Douglas; James; Thomas. Exp.: Instr., Hood Coll., Frederick, Md., 1946; Acting. Assoc.

Prof. Physiol., Univ. of Tenn., Memphis, Tenn., 1947; Assoc. Prof. Pharmacol., Univ. of Miss., Oxford, Miss., 1947-48; Chmn. and Prof. of Physiol., ibid., Schl. of Med., Jackson, Miss., 1948—. Hon. Pos.: Physiology Test Comm. on Natl. Bd. of Med. Examiners; Chmn., ibid., 1961-64; Physiology Training Comm.; Study Sect., N.I.H. Cardiovascular, 1954-58. Mem.: Am. Physiology Soc.; Biophysical Soc.; Sou. Soc. for Clin. Rsch.; Am. Fed. of Clin. Rsch.; Miss. Heart Assn.; Miss. Acad. of Sci.; A.A.A.S.; Am. Coll. of Cardiology; Sigma Xi; Jackson Yacht Club. Author: Textbook of Medical Physiology, 2nd Ed., 1961; Functions of the Human Body, 1959. Contbr. to: Am. Jour. Physiol.; Am. Jour. Cardiology; Jour. Applied Physiol.; Circulation Rsch.; Jour. Med. Edn.; Physiol. Rev.; Ann. Rev. Physiol. Serv. Rec.: U.S.N., 1944-46. Gen. Int.: Selected by U. S. Jr. C. of C. as one of the Ten Outstanding Young Men of Am., 1951; U. S. Presidential Citation for Development of Aids for Handicapped Persons, 1956; A.A.A.S. Gould Award for Cardiovascular Rsch., 1959. Listed in: W.W. in Am. Edn.; W.W. in Am.; Am. Mem of Sci.; W.W. in the South; Who Knows—and What. Areas of Rsch.: Instrumentation and Electronic Development work in Medical Rsch. Equipment. Cardiovascular, Physiology and Biophysics.

GWIN, James Martin (Ph.D.), Mgr., Poultry Marketing Div., Ralston Purina Co., 835 S. 8th St., St. Louis 2, Mo. Home Add.: 72 Frederick Lane, St. Louis 22, Mo. PRESERVATION AND DISTRIBUTION OF PERISHABLE AGRICULTURAL PRODUCTS. b. Blair Co., Pa., Oct. 2, 1906. s. George Richard and Anna (Turnbaugh) G. Edn.: B.S., Univ. of Conn., 1931; M.A., Am. Univ., 1941; Ph.D., Cornell Univ., 1949. m. Helen Woodworth, Oct. 13, 1934. c.: Gailyn; Geniel; Graydon. Exp.: Egg Inspector, Conn. St. Dept. of Agri., Hartford, Conn., 1931-34; In Chg. of East. Egg Dept., Armour and Co., N. Y., N. Y., 1934-37; Prof. of Poultry Husbandry and Dir. of Extension, Univ. of Md., 1937-55; Gen. Mgr., Poultry and Egg Natl. Bd., Chicago, Ill., 1955-57; Mgr., Poultry Marketing Div., Ralston Purina Co., St. Louis, Mo., 1957—. Hon. Pos.: Pres., Am. Poultry Hist. Soc., 1959-62; Dir., Poultry Sci. Assn., 1949-52. Mem.: World's Poultry Sci. Assn.; Poultry Sci.; Am. Marketing Assn.; A.A.A.S.; Theta Sigma Chi; Sigma Nu; Rotary Club. Author: Successful Broiler Growing; Marketing Poultry Products, co-author. Contbr. to: Past Assoc. Editor, Poultry Science. Serv. Rec.: U. S. Army, Lt. Col., 1941-46. Areas of Rsch.: Specialist in Marketing Poultry and Other Perishable Food Products.

GUYTON, William Franklin (Mr.), Consulting Ground-Water Hydrologist, 212 First Federal Savings Bldg., Austin 1, Tex. Home Add.: 3609 Stoneridge Rd., Austin, Tex. GROUND WATER HYDROLOGY. b. Oxford, Miss., Oct. 15, 1917. s. Billy Sylvester and Kate (Smallwood) G. Edn.: B.A., Univ. of Miss., 1938; B.S., ibid., 1938; C.E., ibid., 1945. m. Mary Lou Camp., Apr. 26, 1935. c.: William Louis; Harry Franklin; Thomas Wolcott; Mary Katherine; Sally Camp. Exp.: Hydraulic Engr., Ground Water Br., U. S. Geological Survey, Tex., Miss., La., Ky., Pac. Is., D. C., 1939-50; Owner, Wm. F. Guyton and Assocs., Consulting Ground-Water Hydrologists, Austin, Tex., 1951—. Hon. Pos.: Past Pres., Austin Br., Chmn., Ground Water Hydrol. Comm., Past Chmn., Hydrol. Committee, A.S.C.E.; Past Chmn., Industrial Water Comm., A.I.M.E.; Past Chmn., Water Edn. Comm., T.S.P.E. Mem.: Am. Soc. of Civil Engrs.; Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; Am. Geophysical Union; Am. Water Works Assn.; Natl. Water Well Assn.; Tex. Soc. of Prof. Engrs.; Sigma Chi; Chi Epsilon. Contbr. to: A.G.U. Trans.; Econ. Geology; Natl. Water Well Jour.; Southwest Water Works Jour. Areas of Rsch.: Ground-Water Hydrology.

GYFTOPOULOS, Elias Panayiotis (D.Sc.), Assoc. Prof., Nuclear Engr., Mass. Inst. of Tech., Cambridge, Mass. Home Add.: 18 Hastings Road, Lexington, Mass. NUCLEAR REACTOR DYNAMICS AND PLASMA PHYSICS. b. Athens, Greece, July 4, 1927. s. Panayiotis Elias and Despina Panayiotis (Louvaris) G. Edn.: Sc.D., Mass. Inst. of Tech., 1957. Exp.: Instr. to Assoc. Prof., Mass. Inst. of Tech., 1954—. Hon. Pos.: Chmn., Program Comm., Am. Nuclear Soc. Mem.: Am. Nucl. Soc.; Am. Physical Soc.; A.A.A.S.; Sigma Xi; Tau Beta Pi. Contbr. to: Jour. Nuclear Sci. and Engrng.; Jour. Applied Physics; Trans. Am. Inst. of Elect. Engrs.; Trans. Am. Nuclear Soc. Serv. Rec.: Greek Royal Navy, 1948-51. Areas of Rsch.: Nuclear Reactor Dynamics; Plasma Physics; Direct Energy Conversion.

HAAR, Franklin Blaine (Ph.D.), Prof. Health Edn., Univ. of Ore., Eugene, Ore. Home Add.: 1080 Cal Young Rd., Eugene, Ore. HEALTH EDUCATION AND BIOLOGICAL SCIENCES. b. Lancaster, Pa., Apr. 15, 1906. s. Miller E. and Ella E. (Weise) H. Edn.: B.S., Springfield Coll., Mass., 1928; M.A., Univ. of Pittsburgh, 1933; Ph.D., ibid., 1946. m. Lillian Proctor, June 16, 1928. c.: Franklin Robert. Exp.: Dir. of Health Edn., Pittsburgh Pub. Schls., 1928-42; Assoc. Prof. of Health and P.E., Univ. of Fla., 1946-49; Dir. and Prof. of Health Edn. and Pub. Health, Univ. of Ore., 1946—, Hon. Pos.: Chmn., Northwest Dist. of the Am. Assn. for Health and Phys. Edn. in Health Edn.; Chmn., Coll. Health Edn., Am. Assn. for Health and Phys. Edn.; Chmn., Pub. Health Edn., Ore. Pub. Health Assn. Mem.: Phi Epsilon Kappa; Phi Delta Kappa; Boy Scouts; Fellow, Am. Public Health Assn.; Fellow, Am. Schl. Health Assn.; Fellow, Am. Assn. for the Adv. of Sci. Author: Principles of Community Health, 1961. Contbr. to: Rsch. Quarterly; Jour. of Health and Phys. Edn.; Marriage and the Family; Ore. Public Health Bull. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Health Education; Public Health; Family Life Education; Audio-Visual Education.

HAAS, Dorothy (Miss), Tchr. of Multiple Handicapped Children, Glenwood Schl., Evansville, Ind. Home Add.: 1100 E. Gum St., Evansville, Ind. EDUCATION OF MULTIPLE HANDICAPPED. b. Warrick County, Ind., Sept. 16, 1917. d. Frank Albert and Freida (Polk) H. Edn.: B.S. and M.S., Ind. St. Tchrs. Coll. Exp.: Primary Tchr., Baldwin Hgts. Schl., Princeton, Ind., 1936-37; Primary and Art Tchr., Scott Schl., 1937-46; Primary Tchr., Delaware Schl., Evansville, Ind., 1946-51; Tchr., Multiple Handicapped Children, Glenwood Schl., 1951-60. Hon. Pos.: Dir., St. Council Exceptional Children; Chmn., Special Edn. Sect. of Ind. St. Tchr. Assn. Mem.: Natl. Edn. Assn.; A.A.A.S.; Classroom Tchr. Assn.; Evansville Tchr. Assn.; Council for Exceptional Children; Childhood Edn. Assoc.; P.T.A.; Delta Kappa Gamma; Kappa Delta Pi; A.S.C.D.; N.E.A. Contbr. to: Teaching Tools; Cerebral Palsy Review. Areas of Rsch.: Education of Multiple Handicapped.

HABER, Julia Moesel (Ph.D.) (Ret.), Assoc. Prof. of Bot., The Pa. St. Univ., University Park, Pa. Home Add.: 355 W. Ridge Ave., State College, Pa. BOTANY; ANATOMY; MORPHOLOGY. b. Buffalo, N. Y., May 6, 1888. d. John and Margaret (Burkhard) M. Edn.: B.A., Cornell Univ., 1916; M.A., ibid., 1918; Ph.D., ibid., 1924. m. Vernon Raymond Haber of Union City, Ind., Dec. 27, 1919 (dec.). s. John and Margaret Haber. Exp.: Tchr., Buffalo, N. Y., 1907-13; Instr., Cornell Univ., 1913-17; Assoc. Prof., Elmira Coll., 1917-20; Prof., Meredith Coll., 1920-22; Instr., Cornell Univ., 1922-24; Instr., Pa. St. Univ., 1925-36; Asst. Prof., ibid., 1947-52; Assoc. Prof. ibid., 1952-54; Pvt. Rsch., 1955—. Mem.: Phi Epsilon Phi; Fel., A.A.A.S.; Fel., Sigma Xi; Bot. Soc. of Am.; Phi Kappa Phi; Pi Gamma Mu; Iota Sigma Pi; Sigma Delta Epsilon. Author: Co-author of Several Books. Contbr. to: Bull. of Expt. Sta. of Pa. St. Univ.; Annals of Botany; Copeia; Phytomorphology. Ph.D. Dissertation: The Anatomy and the Morphology of the Flower of Euphorbia. Hobbies: Music; Gardening. Listed in: A.M.S.; W. W. in Am.; W. W. in the East. Special Int.: Morphology and Anatomy of the Euphorbiaecae and Proteaceae.

HAAG, Jessie Helen (Ed.D.), Assoc. Prof. of Physical and Health Edn., Univ. of Tex., Austin, Tex. Home Add.: 4519 Apache Pass, Austin, Tex. SCHOOL HEALTH EDUCATION. b. Reading, Pa., Apr. 7, 1917. d. Charles Milton and Helen Annie (Sell) H. Edn.: B.S., Temple Univ., 1939; M.Ed., ibid., 1943; Ed.D., ibid., 1950. Exp.: Tchr. of Health Edn., Health Coordinator, Landsdale Pub. Schls., Landsdale, Pa., 1939-46; Dir. of Health Edn., Lebanon Valley Coll., 1946-47; Health Educator, St. Tchrs. Coll., W. Chester, Pa., 1947-50; Asst. Prof., Physical and Health Edn., Univ. of Tex., 1950-56; Assoc. Prof., ibid., 1956—. Hon. Pos.: Rsch. Comm., Schl. Health Sect., Am. Pub. Health Assn. Mem.; Fellow, Am. Assn. Adv. Sci.; Fellow, Am. Schl. Health Assn.; Fellow, Am. Pub. Health Assn.; Fellow, Am. Assn. for Health, Physical Edn. and Recreation; Royal Soc. of Health, London; Internatl. Union for Health Edn. of the Public, Geneva; Am. Assn. of Univ. Prof.; Am. Assn. of Univ. Women; Tex. St. Tchrs. Assn.; Tex. Assn. for Hlth., Phys. Edn. and Recreation; Am. Coll. of Sports Med. Author: Checklist: Appraising the Elementary and Secondary School Health Program, 1951, '55; School Health Program, 1958. Co-Author: Physiology, 1959. Contbr. to: Rsch. Quar.; Jour. of Schl. Health; Excerpta Medica; Schl. Exec.; Edntl. Admin. and Supvn.; Jour. Am. Assn. for Health, Physical Education and Recreation; Am. Jour. of Public Health; Health Education Jour. Gen. Int.: Received Award, Union Internationale Pour L'Education Sanitaire De La Population, Rome, Italy, 1956. Areas of Rsch.: School Health Education; Health Instruction in Secondary Schools; Statutes and State Regulations Pertaining to Health Education in Public Schools; Organization and Administration of the School Health Program; Role of the Health Coordinator in Public Schools; Health Knowledge of Prospective Teachers, Etc.

HABERMAN, Jack (Mr.), Lectr. in Physiol. and Pathol., Chiropractic Inst. of N. Y., N. Y. 16, N. Y. Home Add.: 46 Spruce St., Newark, N. J. PSYCHOBIOLOGY AND PSYCHOSOMATICS AND COMPARATIVE MANIPULATIVE THERAPY. b. Newark, N. J., June 30, 1926. s. Morris and Rachael (Baum) H. Edn.: B.A., Upsala Coll., 1949; D.C., Chiropractic Inst. of N. Y., 1953; M.S., Long Island Univ., 1960. Exp.: Tchr. of Sci. Edn., Newark, N. J. Schl. System, 1953-56; Lectr. in Pathol. and Physiol., Chiropractic Inst. of N. Y., 1956—. Mem.: Am. Assn. of Univ. Profs.; A.A.A.S.; The Essex County Chiropractic Soc.; N. Y. Acad. of Scis.; Lambda Phi Beta; Chiropractic Inst. of N. Y. Contbr. to: Jour. of Natl. Chiropractic Assn. Gen. Int.: Post Grad. Work in Clin. Psychol., City Coll. of N. Y., 1961 Post Grad. Work in Pharmacol., Rutgers Univ., 1961-62; Certificate of Merit in Physiol. Psychol. as Related to Chiropractic Concept Issued by Natl. Coun. on Psychotherapy of Natl. Chiropractic Assn. Areas of Rsch.: Psychobiology of the Laying on of Hands; Postural Factors in Emotion; Side Effects of Pharmacological Agents; Research Methods in the Healing Arts; In Private Practice, Chiropractic Physician.

HACHEN, Harry Handelman (Mr.), Vice-Pres., Sales, The Trubek Lab., Inc., East Rutherford, N. J. Home Add.: 280 Prospect Ave., Apt. 5-M., Hackensack, N. J. CHEMICAL COMPANY EXECUTIVE. b. Chicago, Ill., Dec. 25, 1903. s. Samuel D. and Mollie (Handelman) H. Edn.: A.B., Univ. of Cincinnati, 1931; Ch.E., ibid., 1932. m. Carolyn Kory, Apr. 4, 1927. c.: David S.; Harry H., Jr.; Katherine F. Kohn. Exp.: Prod. Supt., Fries and Fries Co., Cincinnati, Ohio, 1925-29; Plant Supt., Kay Fries Chemicals, Inc., West Haverstraw, N. Y., 1929-30; Plant Mgr., H. L. Simons, Inc., and G. Fries, Inc., Long Island City, N. Y., 1930-48; Plant Mgr., The Trubek Lab., E. Rutherford, N. J., 1948-49; Mgr., ibid., 1949-57; Vice-Pres., Sales, ibid., 1957—. Mem.: Commercial Chem. Develop. Assn.; Synthetic Organic Chem. Manufacturers Assn.; Am. Chem. Soc.; Chemist's Club; Salesmen's Assn. of Am. Chem. Indus.; N. Y. Bd. of Trade; Am. Assn. for the Adv. of Sci.; Div. of Chem. Marketing and Economics of A.C.S.; India Chamber of Comm. of Am.; Soc. of the Chem. Indus.

HACH, Alice M. (Miss), Co-ordinator of Math., 1220 Wells, Ann Arbor, Mich. Home Add.: 708 Pauline Blvd., Ann Arbor, Mich. SCIENCE EDUCATION AND MATHEMATICS. b. Gladbrook, Iowa, June 30, 1908. d. Joseph and Delia (Caloud) H. Edn.: Univ. of Iowa; Univ. of Mich. Exp.: Tchr. Math., Stuart, Ia., 1928-31; Tchr. Math., Ft. Dodge, Ia., 1931-42; Tchr. Math., Racine, Wis., 1942-44; Tchr. Math., Ann Arbor, Mich., 1944-54; Tchr., Univ. H. S., Ann Arbor, Mich., 1949-50; Consultant in Math., Racine, Wis., 1954-60; Co-ordinator of Math., Ann Arbor Pub. Schls., Ann Arbor, Mich., 1960—; Consultant in Math. for World Book Co. for St. of Ore., 1953; Dir. Summer Workshop Arith., Eastern Ore. Coll. Edn., Monmouth, 1952-53; Dir., Summer Workship Arith., Ore. Coll. Edn., 1954; Staff Mem. for Math. Instrs., Rutgers Univ., Summer, 1955; Staff Mem. for Math Instr., La. Univ., 1957. Hon. Pos.: J.H.S. Vice-Pres. of Natl. Coun. of Tchrs. of Math.; Pres. and Vice-Pres., Iowa St. Math. Assn.; Mem. of Bd. of Dirs. for Central Assn. of Sci. and Math. Tchrs.; Chmn. of Resolutions Com. for Central Assn. of Sci. and Math.

Tchrs. Mem.: Iowa St. Math. Curr. Com.; Chmn., Math. Sect., Mich. Schoolmasters' Club; Mem., Bd. of Dirs., Mich. Coun. of Tchrs. of Math.; Chmn., Jr. H. S. Math. Dept., Ft. Dodge, Iowa; Received Certificate from Quiz Kids for being one of the most popular teachers in the nation; Staff Mem., Natl. Sci. Fdtn. Arith. Instrs., Univ. of Mich., 1959; Staff Mem., Math. Instr., Williams Coll., 1956; Pres., Pi Lambda Theta, Beta Chapt.; Editor, Elem. Math. Schl. Sci. and Math. Mem.: Pi Lambda Theta; Delta Kappa Gamma. Author: Growth in Arithmetic, 1961. Contbr. to: Jr. Scholastic Mag.; Math. Tchr.; Yearbook Natl. Coun. Tchrs. Math.; N.E.A. Jour. Listed in: W. W. of Am. Women; W. W. of Women in Edn.

HACKNEY, Jack Dean (M.D.), Asst. Prof. of Med., Loma Linda Univ., 1200 N. State, Los Angeles 33, Calif. Home Add.: 1776 Sharon Pl., San Marino, Calif. INTERNAL MEDICINE, PULMONARY PHYSIOLOGY. b. Marion, Ill., Oct. 11, 1924. s. William F. and Betty (Monical) H. Edn.: M.D., St. Louis Univ., 1948. m. Dorothy Anne Stublefield, 1946. c.: Richard William; Robert James. Exp.: Res. Med., V.A. Hosp., Jefferson Barracks, Mo., 1949-51; U.S. Army Med. Corps, Brook Army Hosp., Korea, 1951-53; Res. Med., White Memorial Hosp., Los Angles, Calif., 1953-54; Instr., Med., Loma Linda Univ., 1954-56; Asst. Clin. Prof. Med., Loma Linda Univ., 1956-57; Asst. Prof. Med., ibid., 1957—; Dir. Pulmonary Lab., L. A. Co. Hosp., ibid., 1954—. Mem.: Certified Am. Bd. of Internal Med.; Fellow, Am. Coll. of Physns.; Am. Fed. for Clin. Rsch.; L. A. County, Calif. and Am. Med. Assn.; L. A. and Calif. Trudeau Soc.; Alpha Omega Alpha. Contbr. to: Postgrad. Med.; Jour. Lab. and Clin. Med.; Jour. Appl. Physiol.; Circulation; Annals of Internal Med.; Am. Jour. Med.; The Physiologist; Fed. Proceedings; Proceedings of the Fourth and Fifth Air Pollution Med. Rsch. Conf. Areas of Rsch.: Pulmonary Physiology, Internal Med.

HADDOCK, Frederick Theodore, Jr. (Mr.), Prof. of Astronomy and of Electrical Engrng., Dir., Radio Astronomy Observ., Univ. of Mich., Ann Arbor, Mich. Home Add.: 800 Avon, Ann Arbor, Mich. RADIO ASTRONOMY. b. Independence, Mo., May 31, 1919. s. Frederick T. and Helen (Sea) H. Edn.: S.B., Mass. Inst. of Tech., 1941; M.S., Univ. of Md., 1950. m. Margaret Pratt, June, 1941. c.: Thomas Frederick; Richard Marshall. Exp.: Conductd Rsch. in Microwave Components and Antennas, U. S. Naval Rsch. Lab., Wash., D. C., 1941-46; Conducted Rsch. in Radio Astronomy as Head of Sec., ibid., 1946-56; Prof. of Astronomy, Coll. of Literature, Sci. and the Arts; Prof. of Electrical Engrng., Coll. of Engrng., 1956—; Dir., Radio Astronomy Observ., 1961—. Hon. Pos.: Vice-Pres. of Am. Astronomical Soc., 1961-63; Natl. Sci. Found. Adv. Panel on Astronomy, 1957-60; Ad hoc Comm. on Astronomy and Radio Astronomy of the N.A.S.-N.R.C. Space Sci. Bd., 1959; Ad hoc Comm. on Tech. and Instrumentation for Navy 600 ft. Radio Telescope for Chief of Navy Rsch., 1960—; Sr. Consultant to Natl. Radio Astronomy Observatory, 1960-61; Internatl. Scientific Radio Union, Member-at-large of U. S. Natl. Comm. Mem.: Fellow, Royal Astronomical Soc.; Internatl. Astronomical Union; Am. Astronomical Soc.; Am. Geophys. Union; Astronomical Soc. of the Pacific; Am. Inst. of Physics; Fel., Inst. of Radio Engrs.; A.A.A.S.; Sigma Xi; Eta Kappa Nu. Contbr. to: Phys. Rev.; Astron. Jour.; Sky and Telescope; Astrophy. Jour.; Jour. Geophys. Rsch.; Nature; I.A.U. Symposium on Radio Astronomy; Proc. Inst. of Radio Engrng.; Am. Rocket Soc. Jour.; Annales d'Astrophysique. Serv. Rec.: U.S.N.R., 1945. Gen. Int.: Letter of Commendation from the Sec. of Navy for Design and Devel. of a Submarine Periscope Antenna During W. W. II; Participation in Devel. of Radio Astronomy at Centimeter Wavelengths, Including the Detection of Individual Thermally Emitting Galactic Radio Sources; Tech. Planning and Supervision of Installation of Radio Astronomy Facilities at Univ. of Mich. Areas of Rsch.: Radio Astronomy of the Sun, Planets, and Cosmic Radio Sources, especially at Centimeter Wavelengths and from Space Vehicles; Large Antennas and Low-Noise Receivers.

HAENSELER, Conrad Martin (Ph.D.), Prof. and Rsch. Specialist Emeritus, Rutgers Univ., New Brunswick, N. J. Home Add.: 175 Baldwin St., New Brunswick, N. J. PLANT PATHOLOGY. b. Chattanooga, Tenn., Dec. 26, 1888. s. Conrad and Adelgunda (Hipp) H. Edn.: B.S.A., Univ. of Tenn., 1914; M.S.A., ibid., 1916; Ph.D., Rutgers Univ., 1921. m. Ann Virginia Martin, Sept. 2, 1924. c.: Ann Marie. Exp.: Instr. Bot., Rutgers Univ., 1921-22; Asst. Prof. Plant Pathol., ibid., 1922-30; Assoc. Prof., ibid., 1930-47; Prof. and Rsch. Specialist, ibid., 1947-59; Prof. and Rsch. Specialist (Emer.), 1959—. Mem.: A.A.A.S.; Am. Phytopath. Soc.; Myc. Soc. Am.; Am. Genetic Assn.; N. Y. Acad. Sci.; Sigma Xi; Alpha Zeta; Phi Kappa Phi. Contbr. to: Phytopathology. War Record: U. S. Army, 1917-19. Areas of Rsch.: General Field of Plant Pathology and Mycology.

HAERTIG, Elmer Walter (M.D.), 4614 Kilauea Ave., Honolulu 16, Hawaii. PSYCHIATRY. b. Jan. 17, 1910. Edn.: M.D., Univ. of Chicago, 1939. Exp.: Private Practice, Seattle, 1946-54; Acting Med. Dir., Foundation for Preventive Psychiatry, 1953-57; Dir., Div. of Mental Health, Territorial Dept. of Health, Honolulu, 1955-57; Private Practice, Honolulu, 1957—. Areas of Rsch.: Psychopathology; Psychosomatic Medicine; Psychotherapeutic Techniques; Preventive and Community Psychiatry. Serv. Rec.: U. S. Army Air Force, Major, 1942-46.

HAGAN, George Richard (Mr.), Programmer, IBM Corp., Yorktown Heights, N. Y. Home Add.: Wood St., R.F.D. #4, Mahopac, N. Y. MATHEMATICS. b. Brooklyn, N. Y., Dec. 13, 1933. s. Arnold and Helen (Newbrand) H. Edn.: A.B., St. John's Univ., 1955; M.S., N. Y. Univ. Inst. of Math., 1960. m. Joan Marie, Aug. 23, 1958. c.: Patrick J.; Michael G. Exp.: Instr., St. Dominic H. S., Oyster Bay, N. Y., 1955-56; Instr., St. John's Univ., 1956-61; Chmn., Math. Sect., Natl. Sci. Found. Summer Prog., 1961; Programmer, IBM Advanced Systems Development Div., Yorktown Heights, N. Y., 1961—. Mem.: Math. Assn. of Am.; Computers and Automation; Catholic Roundtable of Sci.; Working Group for Better Edn.; W. W. in Computer Field. Areas of Rsch.: Rsch. on the Development of Advanced Data Systems; Specialized Knowledge Math., Logic, and Computer (System) Theory.

HAGAN, Sister Mary Martinette (Ph.D.), Chem. Prof., Mundelein Coll.; 6363 Sheridan Rd., Chicago 26, Ill. COORDINATION COMPOUNDS, INORGANIC CHEMISTRY. b. Wichita, Kans., June 22, 1910. d. Dr. Martin and Kathryn (Kelly) H. Edn.: B.A., Clarke Coll., 1933; M.S., St. Louis Univ., 1937; Ph.D., Univ. of Ill., 1949. Exp.: Head, Chem. Dept., Mundelein Coll., 1934-59; Visiting Chem. Prof. and Head, Chem. Dept., Marillac Coll., 1959-62; Chem. Prof., Mundelein Coll., 1962—. Mem.: A.C.S.; A.A.U.W; Natl. Sci. Tchrs. Assn.; Ill. St. Acad. of Sci.; Albertus Magnus Guild; Sigma Xi; Sigma Delta Epsilon; Iota Sigma Pi. Author: Clathrate Inclusion Compounds, 1962. Contbr. to: Jour. A.C.S.; Spectrochimica Acta; Jour. of Chem. Edn.; Sci. Tchr.; Sci. Counselor; Schl. Sci. and Math.; Chemist Analyst. Gen. Int.: N.I.H. Postdoctoral Rsch. Assoc., Univ. of Notre Dame; N.S.F. Sci. Faculty Fellows, Univ. Coll., London, England, Fla. State Univ., Seattle Univ. Areas of Rsch.: Stered Chem. and Infrared Studies on Coordination Compounds.

HAGANS, James Albert (M.D.), Assoc. Prof. Preventive Medicine and Public Health (Biostatistics) and Assoc. Prof. of Med., Univ. of Publ. Schl. of Med., 800 N.E. 13th St., Okla. City 4, Okla. Home Add.: 1701 N.E. 52nd St., Okla. City, Okla. MEDICAL BIOSTATISTICS, THERAPEUTIC AND CLINICAL RESEARCH, INTERNAL MEDICINE. b. Cincinnati, Ohio, Nov. 9, 1922. s. Marcellus J. and Esther J. (Ronsheim) H. Edn.: A.B., Marietta Coll., 1944; M.D., Univ. of Cincinnati, 1946; M.S., Univ. of Okla., 1958; Ph.D., ibid., 1960. Exp.: Instr. in Medicine, Univ. of Cincinnati, 1951-52; Instr. in Medicine, Emory Univ., 1954-55; Assoc. Prof. of Med., Univ. of Okla., 1962—; Assoc. Prof., Prev. Medicine and Pub. Health, 1960—; Dir., Biostatistical Unit and Med. Rsch. Computer Cntr., 1961—. Mem.: Phi Beta Kappa; Alpha Omega Alpha; The Soc. of Sigma Xi; Alpha Kappa Kappa; Biometric Soc., E.N.A.R.; The Am. Statistical Assn.; The Inst. of Math. Statistics; Am. Coll. of Physns.; World Med. Assn. Contbr. to: The Jour. of Lab and Clin. Med.; The Am. Heart Jour.; The Am. Jour. of Digest. Dis.; The Am. Jour. of Med. Sci.; The Am. Jour. of Med.; The Military Surgeon; The Jour. of the Indian Medical Profession; The Jour. of the Okla. State Med. Assn. Serv. Rec.: U.S.A., 1941-46, 1947-49, 1952-54. Areas of Rsch. and Special Interests: Medical and Experimental Biostatistics; Therapeutic Research and Clinical Investigation; Hypertensive and Cardiovascular Diseases.

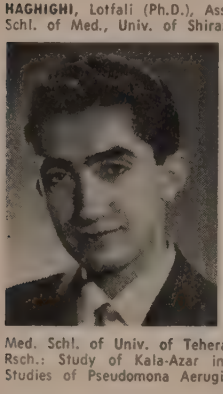
HAGEMAN, Richard H., Prof. of Crop Physiol., Dept. of Agron., Univ. of Ill., Urbana, Ill. Home Add.: 613 W. Washington, Urbana, Ill. PLANT PHYSIOLOGY; ENZYMES FROM CROP PLANTS; PLANT NUTRITION; MICRONUTRIENTS; ROOT RESPIRATION. b. Powell, Wyo. s. F. R. and Creda (Wright) H. Edn.: B.S., Kans. State Coll., 1938; M.S., Okla. A. and M., 1940. m. Elizabeth Catlett, Aug. 14, 1941. c.: James H.; Janet A.; Peggy D. Exp.: Rsch. Asst., Agri. Expt. Station, Stillwater, Okla., 1938-40; Asst. Rsch. Chemist, Agri. Expt. Station, Lexington, Ky., 1940-41; Asst. Rsch. Chemist, ibid., 1946-47; P-2 Chemist to GS-9 Plant Physiologist, Federal Expt. Station, Maya-

guez, Puerto Rico, 1947-50; Pregraduate A.E.C. Fellow, Univ. of Calif., Berkeley, Calif., 1950-54; Prof., Dept. of Agron., Univ. of Ill., 1954—. Mem.: Plant Physiol.; Am. Chem. Soc.; Phi Lambda Upsilon; Sigma Xi; Phi Sigma; Military Order of the World Wars. Contbr. to: Plant Physiol.; Proc. Amer. Soc. Hort. Sci.; Amer. Soc. Agron.; Soil Sci.; Analytical Chem.; Jour. Agri. Rsch.; etc. War Record: Capt., Chem. Corps, 1941-45. Special Int.: Physiological basis for hybrid vigor in maize; Nitrogen Metabolism; Mineral Nutrition—Micro Nutrients; Root Respiration; Insecticidal Crops-Derris (Rotonone); Vanillia Curing; Radio Tracers.

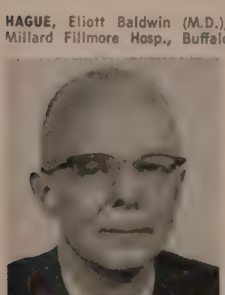
HAGER, George Philip (Ph.D.), Dean, Coll. of Pharm., Univ. of Minn., Mpls. 14, Minn. Home Add.: 1532 Branston St., St. Paul 8, Minn. PHARMACEUTICAL (MEDICINAL) CHEMISTRY. b. Baltimore, Md., March 16, 1916. s. George P. and Marie Theresa (Zilch) H. Edn.: B.S., Univ. of Md., Schl. of Pharm., 1938; M.S., ibid., 1940; Ph.D., ibid., 1942. m. Margaret Kathryn League, 1938. c.: Philip; Priscilla; Deborrah; Andrew. Exp.: Rsch. Organic Chemist, Eli Lilly and Co., Indpls., Ind., 1942-45; Asst. Prof. of Chem., Univ. of Md., Baltimore, Md., 1945-48; Prof. of Pharm. Chem., ibid., 1948-55; Sr. Scientist, Smith, Kline and French Labs., Phila., Pa., 1955-57; Dean, Coll. of Pharm., Univ. of Minn., 1957—. Hon. Pos.: Chmn., Scientific Sec., Am. Pharml. Assn., 1956; Chmn., Comm. on Mod. Methods of Handling Chem. Information, N.A.S.-N.R.C. Div. of Chem. and Chem. Technol. Mem.: Am. Pharml. Assn.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Rho Chi; Phi Delta Chi; Rotary Internatl. Author: Co-Author, Quantitative Pharmaceutical Chemistry, 1957. Contbr. to: Jour. Am. Pharml. Assn.; Jour. Am. Chem. Soc. Areas of Rsch.: Pharmaceutical and Medicinal Chemistry; Documentation of Structure and Biological Activity Data for Correlation Purposes.

HAGGARD, J. D. (Ed.D.), Prof. of Maths., Kans. St. Coll., Pittsburg, Kans. Home Add.: 213 E. Williams, Pittsburg, Kans. MATHEMATICS. b. Wellston, Okla., Nov. 5, 1917. s. L. J. and Pearl (Godard) H. Edn.: B.S., Northeastern Okla. Sta. Coll., 1942; M.S., Mo. Univ., 1948; Ed.D., ibid., 1951. m. Bettye Brashears, Dec. 22, 1942. c.: James C.; Barbara J.; Jerald D. Exp.: Asst. Prof., Delta Sta. Tchrs., Cleveland, Miss., 1948-49; Asst. Prof., Univ. of Chicago, 1952-53; Prof., Kans. Sta. Coll., 1951—. Mem.: Kappa Mu Epsilon; Kiwanis. Contbr. to: Am. Mathl. Monthly; Edni. Leader; Midwest Quart.; Pentagon. Gen. Int.: Carnegie Scholarship to Chicago. Univ., 1952-53; Danforth Scholarship to Northwestern Univ., 1954-55. Areas of Rsch.: Foundations of Mathematics and Mathmatics Education.

HAGHIGHI, Lotfali (Ph.D.), Assoc. Prof. of Bacteriol. and Serol., Schl. of Med., Univ. of Shiraz, Shiraz, Iran. Home Add.: 1529 Granville Ave., Los Angeles 25, Calif. BACTERIOLOGY AND SEROLOGY. b. Shiraz, Iran, Jan. 4, 1929. s. Muhammad-Reza and Rubabe (Salamee) H. Edn.: Ph.D., Univ. of Teheran, 1955; C.E.S., Univ. of Paris, 1953; C.E.S., ibid., 1954. Exp.: Chf. Lab., Saadi Hosp., Shiraz, Iran, 1956-57; Chf. Lab., Clin. Pathol., ibid., 1957-58; Assoc. Prof. Schl. of Med., Univ. Shiraz, Iran, 1958-60; Rsch. Scholar and Tchr., Medical Schl., Univ. of Calif., Los Angeles, Calif., 1960-62. Mem.: Am. Soc. Microbiol.; A.A.A.S.; Sigma Xi; Author: The Toxicologic Studies of Mecury Compounds, 1955; The Modern Serologic Methods for Diagnosis of Infectious Diseases, in press. Contbr. to: Review of Med. Schl. of Univ. of Teheran and Univ. of Shiraz. Areas of Rsch.: Study of Kala-Azar in the Southern Iran; Immunologic Studies of Pseudomona Aeruginosa Infections.



HAGUE, Eliott Baldwin (M.D.), Chmn., Dept. of Ophthalmology, Millard Fillmore Hosp., Buffalo, N. Y. Home Add.: 1109 Delaware Ave., Buffalo 9, N. Y. OPHTHALMOLOGY, BIOPHYSICS. b. Rochester, N. Y., Nov. 28, 1902. s. Eliott M. and Harriet (Baldwin) H. Edn.: M.D., Univ. of Pa., 1932. m. Dorothy Gnann, June 29, 1947. c.: Allison; Thomas; Jill; Karen; Martje; Kimsa. Exp.: Chmn., Dept. of Opthal., Millard Fillmore Hosp., 1961—. Mem.: N. Y. Acad. of Sci.; Am. Acad. of Ophthalmology; Alpha Delta Phi; Phi Rho Sigma. Contbr. to: Archives of Ophthalmology; Am. Jour. of Ophthalmology; Diseases of the Eye, Ear, Nose and Throat; Bull. of the Millard Fillmore Hosp. Areas of Rsch.: Dark Adaptation, Photoperiodicity, Beta-ray Treatment of the Eye; Selective Permeability. Collected Outstanding Private Collection of Early Printed Material Dealing with Ophthalmic Sci.



HAIGH, Berte Rolph (Mr.), Geologist in Chg., Tex. Univ. Lands, P. O. Box 553, Midland, Tex. Home Add.: 603 W. Cowden Ave., Midland, Tex. PETROLEUM GEOLOGY. b. Los Angeles, Calif., Jan. 15, 1890. s. John Rolph and Addie E. (Sailor) H. Edn.: B.S., M.E., Tex. Coll. of Mines, (Tex. Western Coll.), 1925. m. Caroline Sauer, June 30, 1942. Exp.: Mine Engr., Va. Mines, Hillsboro, N. Mex., 1925-26; Field Geolt., Dixie Oil Co., Inc., Pan Am. Pet. Corp., San Angelo, Tex., 1926-28; Asst. Prof. Geol. and Engrng., Tex. Coll. of Mines, (Tex. Western Coll.), El Paso, Tex., 1928-34; Geolt., Tex. Univ. Lands, Midland, Tex., 1934-54; Geolt. in Chg. of Tex. Univ. Lands, ibid., 1954—. Hon. Pos.: Pres., W. Tex. Geol. Soc., 1939; Chmn., Field Trip Comm., W. T. G. S., 1946 and 1954. Mem.: Am. Assn. of Petrol. Geolts.; Soc. of Pet. Engrs. of A.I.M.M.E.; Geol. Soc. of Am.; Am. Geophys. Union; W. Tex. Geol. Soc. (Hon. Life); Sigma Gamma Epsilon; Kiwanis Club of Midland, Tex. Serv. Rec.: U. S. Natl. Guard, 1912-17; U.S. CAC, AEF, 1917-19. Areas of Rsch.: Petroleum Geology.

HAHN, Hans (Ph.D.), Hd. and Prof., Dept. of Psychol., Transylvania Coll., Lexington 7, Ky. PSYCHOLOGY. b. Germany, Mar. 12, 1900. s. Sigmund and Nini (Schwarzbauer) H. Edn.: Ph.D., Univ. of Heidelberg, Germany, 1923. Exp.: Chf. Asst., Jugendkundliches, Psychol. Inst., Nuernberg, Germany, 1922-24; Private Prac., Germany, 1922-33; Spec. Rsch. Asst., Inst. Hautes Etudes, Belgium, 1933; Prof. and Dir., Inst. of Exptl. Psychol., State Univ. of Trujillo, Peru, 1938-39; Prof. of Appl. Psychol., and Anthrop., Hd. Dept., Inst. of Geogr., Univ. Nacional Superior, San Marcos, Lima, Peru, 1939-50; Hd. and Prof., Dept. of Psychol., Transylvania Coll., Lexington, Ky., 1950—. Mem.: Fellow, Acad. of Psychosomatic Med.; Fellow, Internatl. Coun. of Psycholts.; Am. Psychol. Assn.; Ky. Psychol. Assn.; S. E. Psychol. Assn.; Ky. Acad. of Sci.; Natl. Edn. Assn.; Ky. Edn. Assn.; Am. Assn. Univ. Profs.

HAINES, Benjamin Morley (Mr.), Xerophyte Gardener, Ben M. Haines Xerophyte Garden, Topeka, Kans. Home Add.: 1902 Lane, Topeka, Kans. XEROPHYTES. b. Topeka, Kans., May 17, 1931. s. Brook L. and Rowena Lucile (Morley) H. Edn.: Univ. of Washburn, 1949-51. Exp.: Xerophyte Gardener, Topeka Park Dept., Topeka, Kans., 1959-62; Xerophyte Gardener, Ben M. Haines Xerophyte Garden, Topeka, Kans., 1962—. Hon. Pos.: Prog. Chmn., Affiliate Correspondent and Dir. of Topeka Xerophyte Club. Mem.: Cactus and Succulent Soc. of Am., Inc.; Am. Rock Garden Soc.; Mathl. Assn. of Am.; Topeka Xerophyte Club. Gen. Int.: Started the Topeka Xerophyte Garden at Gage Park, Topeka, Kans. Areas of Rsch.: Am. Experimenting with the growing of cactus and succulents on special uncovered beds at Topeka. Collecting and Growing rare and Unusual Xerophytes from the World; Building the Ben M. Haines Xerophyte Garden for Public Display of These Plants. In Contact with Gardens and Persons Throughout the World.

HAINES, William Joseph (Ph.D.), Vice-Pres. and Dir., Ortho Rsch. Fdtn., Vice-Pres. and Dir. of Rsch. Ortho Pharmaceutical Corp., Raritan, N. J. BIOCHEMISTRY; ENDOCRINOLOGY. b. Crawfordsville, Ind., Sept. 26, 1919. s. Burt and Lala R. (Luster) H. Edn.: A.B., Wabash Coll., 1940; Ph.D., Univ. of Ill., 1943. m. Wilma M. Hester, June 6, 1943. c.: Paula Sue; Eric Joseph. Exp.: Rockefeller Fellow, Univ. of Ill., 1940-43; Univ. Fellow, ibid., 1943; Rsch. Chemist, The Upjohn Labs., 1943-50; Hd. of Dept. of Endocrinology Rsch., ibid., 1950-54; Tech. Dir., Armour Labs., 1954-58. Mem.: A.C.S.; A.A.A.S., (Fellow), N. Y. Acad. Sci.; Alpha Chi Sigma; Phi Beta Kappa; Sigma Xi; Phi Lambda Upsilon; Phi Kappa Phi; Mason; Elks; Endocrine Soc.; Am. Soc. of Biological Chemist; Soc. of Chem. Indus.; Soc. Expmtl. Biol. and Med.; Pacific Coast Fertility Soc.; Pharm. Mfgrs. Assn. (Vice-Chmn., Rsch. and Delop. Sect.); Assn. of Rsch. Dirs.; Chemists Club of N. Y. City; Bd. of Dirs., Vice-Pres., Somerset Hills Y.M.C.A.; Pennbrook Country

Club; Raritan Valley Country Club; Skytop Club; Kiwanis. Special Int.: Bio-Chem. of Amino Acids; Biochem. of Penicillins; Biochem. of Adrenal Cortex Hormones; Interested in Nutrition, Endocrinology and Enzymology; Use of Micro-organisms for the Partial Synthesis of Adrenal Cortex Hormones such as Cortisone and Hydrocortisone.

HAIRSTONE, Marcus A. (Ph.D.), Rsch. Assoc., Isaac Albert Rsch. Inst., 86 E. 49th, Brooklyn, N. Y. Home Add.: 191 Willoughby St., Brooklyn 1, N. Y. ELECTRON MICROSCOPY OF CELLS. b. Pittsburgh, Pa., Oct. 16, 1926. s. Mack M. and Georgia (Jones) H. Edn.: B.S., Livingstone Coll., 1949; M.S., Duquesne Univ., 1950; Ph.D., Univ. of Pittsburgh, 1956. Exp.: Instructor, Lincoln Univ., Oceanographer, U. S. Hydrographic Office, 1951-56; Tchng. Asst., Univ. of Pittsburgh, 1953-56; Rsch. Assoc., Univ. of Nebr., Coll. of Dentistry, 1956-58; Lectr., Hunter Coll., 1959; Asst. Prof., Long Island Univ., 1959-62; Rsch. Assoc., Isaac Albert Rsch. Inst., Brooklyn, N. Y., 1962—. Hon. Pos.: Co-ordinator, Dental Rsch. and Labs., Univ. of Nebr., 1956-58. Mem.: A.A.A.S.; Sigma Xi; Phi Sigma; Pa. Acad. Sci.; Am. Soc. Limnology and Oceanography; Pittsburgh Optical and Electron Microscopists Soc. Contbr. to: Stain Technol.; Cytologia; Anatomical Record; Oral Surgery; Oral Med.; Oral Pathol.; Proc. Pa. Acad. Sci. Serv. Rec.: U. S. Army, 1945-46. Areas of Rsch.: 1. Electron Microscopy of Cells. 2. Intracellular conversion of neutral fat.

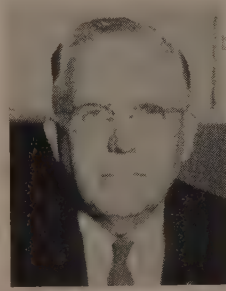
HAJNA, Anthony A(lphonse), (Litt.D.), Bacteriologist, Ind. State Board of Health, Indianapolis, Ind. Home Add.: 3202 N. New Jersey Street, Indianapolis, Ind. PUBLIC HEALTH BACTERIOLOGY OF ENTERIC INFECTIONS. b. Chicopee, Mass., March 21, 1907. s. John J. and Julia (Misiewicz) H. Edn.: B.S., Gallaudet Coll., 1930; Sc.M. in Hygiene, Johns Hopkins Univ., 1932; Litt.D. (honoris causa) Gallaudet Coll., 1961. m. Regina Cywinski, Aug. 1, 1932. Exp.: Bacteriologist, Md. State Dept. of Health, 1932-49; Bacteriologist, Ind. State Bd. of Health, 1949-50; Chief Bacteriologist, Vt. State Bd. of Health, 1950-52; Bacteriologist in Chg., Enteric Bacteriol. Unit, Ind. State Bd. of Health, 1952—. Mem.: A.A.A.S.; N. Y. Acad. of Sci. Contbr. to: Jour. of Bacteriol.; Applied Microbiol.; J.A.W.W.A.; A.P.H.A. Jour.; Public Health Reports. Gen. Int.: Development of Methods for the Isolation and Identification of Enterobacteriaceae from Water, Food, Stools, Urines and Blood. Areas of Rsch.: Physiology and Biochemistry of Enterobacteriaceae.

HALBOUTY, Michel T. (Mr.), Consult. Geol., Petrol. Engr., Independent Producer and Operator, Michel T. Halbouty Bldg., 5111 Westheimer Rd., Houston 27, Tex. GEOLOGY. b. Beaumont, Tex., June, 1909. s. Tom C. and Sodia (Monneley) H. Edn.: B.S., Tex. A. and M., 1930; M.S., ibid., 1931. m. Fay Renfro, June, 1945. c.: Linda Fay. Exp.: Jr. Geol., Petrol. Engr., Yount-Lee Oil Co., Beaumont, Tex., 1931-33; Chief Geol., Petrol. Engr., ibid., 1933-35; Chf. Geol., Petrol. Engineer, Vice-Pres., Gen. Mgr., Glenn H. McCarthy Interests, Houston, Tex., 1935-37; Consulting Geol., Petrol. Engr., ibid., 1937-42; Independent Operator and Producer, Owner, Consulting Geologists and Petrol. Engrs., 1945—. Mem.: Am. Assn. of Petrol. Geol.; Amer. Inst. of Mining and Metallurgical Engr.; A.A.A.S.; Independent Petrol. Assn. of Am.; Soc. of Econ. Paleontologists and Mineralogists of Am.; Tex. Acad. of Sci. Publications; Author (and occasionally co-author) of some fifty works, articles and theses on the subject of geology in its relation to petroleum production, which appeared either as separate works, or in professional journals, including Jour. of Sedimentary Petrology, Am. Assn. Petrol. Geologist Bull., Petrol. Engr., The Oil Weekly, World Petrol., Am. Inst. of Mechanical Engrs., Petrol. Dev. and Technol. Transactions, The Oil and Gas Jour., The Tex. Acad. Sci. Bull., The Oil Forum, etc. Books: Petrographic and Physical Characteristics of Sands for Seven Gulf Coast-Producing Horizons, 1937; co-author: Spindletop, 1952. War Record: U. S. Army, 1942-45.

HAKKI, Basil Wahid (Ph.D.), Mem. of the Nuclear Physics Sub-Committee, The Science Council, Damascus, Syrian Arab Republic. Home Add.: Sahet Al-Madfa, Abou Roumaneh, Damascus, Syrian Arab Republic. MICROWAVE ELECTRONICS. b. Damascus, Syria, Nov. 10, 1935. s. Dr. Wahid and Mrs. Judy (Fawzeyah) H. Edn.: B.E.E., American Univ. of Beirut, 1957; M.S., Univ. of Ill., 1958; Ph.D., ibid., 1960. Exp.: Rsch. Asst., Univ. of Ill., Urbana, Ill., 1958-60; Asst. Prof., Univ. of Ill., 1960-61; Mem. of Nucl. Phys. Comm., Science Council, Syrian Arab Repub., 1961—. Mem.: Am. Phys. Soc.; Inst. of Radio Engrs.; Sigma Xi; Pi Mu Epsilon. Contbr. to: Proc. I.R.E.; Trans. I.R.E.; Trans. I.R.E., P.G.E.D. Areas of Rsch.: Microwave Electronics, in particular generation of coherent electromagnetic radiation in the submillimeter region.

HALEY, Thomas John (Ph.D.), Chf., Div. of Pharmacology and Toxicology, Dept. of Biophysics and Nuclear Medicine, Lab. of Nuclear Medicine and Radiation Biology, Univ. of Calif. Schl. of Med., Los Angeles 24, Calif. Home Add.: 3401 Woodcliff, Sherman Oaks, Calif. PHARMACOLOGY AND TOXICOLOGY AND RADIOBIOLOGY. b. Crosby, Minn., Nov. 4, 1913. s. Thomas E. and Ida May (Young) H. Edn.: B.S., Univ. of Sou. Calif.; M.S., ibid., 1942; Ph.D., Univ. of Fla., 1945. m. Edna R. Baker, 1944. c.: Kathleen; Barbara Anne. Exp.: E. S. Miller Lab., Inc., Med. Dir., Los Angeles, Calif., 1945-47; Fellow in Pharmacol. and Toxicol., Univ. of Sou. Calif., 1946-48; Chf. Div. of Pharmacol. and Toxicol., Atomic Energy Project, Univ. of Calif., 1947-58; Assoc. Clinical Prof. (Ind. Med.) Univ. of Calif., Los Angeles, 1953-59. Mem.: Am. Chem. Soc.; Am. Pharmaceutical Assn.; Radiation Rsch. Soc.; Reticulo-Endothelial Soc., Fellow, Walter Reed Soc.; N. Y. Acad. of Sci.; Am. Heart Assn.; Am. Indust. Hyg. Assn.; Am. Soc. for Pharmacol. and Exptl. Therapeutics; Fellow A.A.A.S.; Soc. of Toxicology; Am. Acad. of Forensic Sciences; Western Pharmacol. Soc. Author: Proceedings Teachers Seminar on Pharmacology, 1957. Contbr. to: Jour. Amer. Pharmaceutical Assn.; Science Edn.; Science; Proc. Soc. Exptl. Biol. Med.; Jour. Pharmacol.; Exptl. Therap.; Radiation Rsch.; Brit. Jour. Pharmacol.; Ind. Med. Sur.; Acta Pharmacol. Toxicol. Areas of Rsch.: Pharmacology; Toxicology; Radiobiology and Neuropharmacology.

HALL, C(arl) Mitchel (Mr.), Chief, Engrng. Div., Hdqtrs., Air Force Systems Command, U.S.A.F., Andrews Air Force Base, Wash. 25, D. C. Home Add.: 3401 Bangor St., S.E., Washington 20, D. C. CIVIL ENGINEERING. b. Paintsville, Ky., March 27, 1899. s. J. Melvin and Ellen (Davis) H. Edn.: B.S., Milwaukee Schl. of Engrng., 1921; Post Graduate Work, Univ. of Mich., 1956; Univ. of Md., 1959. m. (1st) Hester Rice (dec.), June 17, 1920. c.: Dr. Maurice M.; Paul R. (2nd w.) Marcella Mason, Feb. 22, 1957. Exp.: Draftsman, Designer, Proj. Engr., Ky. Highway Dept., 1921-28; Designer, Assoc. Engr., Highway Dept., Mo., 1929-41; Gen. Supvr., Engr., U.S.A.F., 1947-52; Chief, Engr. Div., Hdqtrs., Air Force Systems Command, U.S.A.F., Andrews AFB, Wash. 25, D. C., 1952—. Hon. Pos.: Mem. YMCA Bd., Frankfort, Ky., 1921-28; Chmn., Hough Park Bd., Jefferson City, Mo., 1932-41; Pres., Officer's Club, Sedalia, Mo. Army Air Field, 1944-46. Mem.: Mo. Soc. of Prof. Engrs.; Natl. Soc. of Prof. Engrs.; Am. Assn. Adv. of Sci.; Tau Theta Kappa; Am. Legion. Author: History of Johnson County and Eastern Kentucky, Two Vols., 1928. Contbr. to: Roads and Streets Mag.; Better Roads Mag.; The Mo. Engr. Mag. Serv. Rec.: U. S. Army, 1918-19, 1942-46. Gen. Int.: Mem., USAF Panel on locations of Airfields, Missile Launching Sites, Construction, etc. Areas of Rsch.: Special Weapons, Advanced; Nuclear Reactors and Radiations; Space Research and Technology (Involves special knowledge of facilities required for R.&D. in these fields).

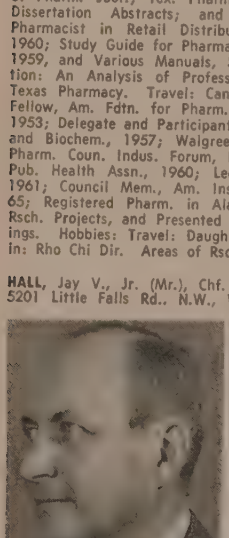


HALL, E. Raymond, (Ph.D.), Dir., Museum of Natural History, Univ. of Kans., Lawrence, Kans. Home Add.: 1637 W. 9th St., Lawrence, Kans. VERTEBRATE ZOOLOGY; MAMMALOGY. b. Imes, Kans., May 11, 1902. s. Wilber Downs and Susan Effie (Donovan) H. Edn.: A.B., Univ. of Kans., 1924; M.A., Univ. of Calif., Berkeley, 1925; Ph.D., ibid., 1928. m. Mary Francis Harkey. c.: William Joel; Hubert Handel; Benjamin Downs.

Exp.: Curator of Mammals, Museum Vert. Zool., Univ. of Calif., Berkeley, 1927-44; Asst. Prof. and Assoc. Prof. Vert. Zool., ibid., 1930-44; Prof. of Zool., Univ. of Kans., Lawrence, 1944—; Dir., Museum of Nat. History, ibid., 1944—; Dir., Sta. Biol. Survey of Kans., and Dir., Museum of Natl. Hist., ibid., 1946—. Hon. Pos.: Chmn., Dept. Zool., Univ. of Kans., 1944-61; Summerfield Dist. Prof., 1959—. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Soc. Mammalogists and Past Pres.; Am. Ornithol. Union; Am. Soc. Vert. Paleo.; Am. Soc. Syst. Zools.; N. Am. Wildlife Soc.; Cooper Ornith. Club; Deutsch Gesellschaft fur Saugetir.; Sigma Xi; Phi Sigma. Author: Mammals of Nevada, 1946; American Weasles, 1951; The Mammals of North America, 1959. Contbr. to: Am. Jour. Mammal.; Can. Field Nat.; Sci.; Auk; Condor; Proc. Calif. Acad. Sci.; Proc. Biol. Soc. Wash.; Univ. Calif. Publs. in Zool.; Univ. of Kans. Publs.; Mus. Natl. Hist.; Trans. Kans. Acad. Sci.; Ann. and Mag. Nat. Hist.; Jour. Wash. Acad. Sci. Gen. Int.: Author; Teacher; Administrator; Promoting Preservation of Natural Areas. Areas of Rsch.: Mammalogy.

HALL, Esther Jane Wood, Assoc. Prof. Pharm. Admin., The Univ. of Tex. Coll. of Pharm., Austin, Tex. Home Add.: 6004 Bullard Dr., Austin, Tex. PHARMACY. b. Gadsden, Ala., Sept. 18, 1911. d. Henry William and Emma Virginia (Crowe) Wood. Edn.: B.S., Howard Coll., 1939; M.S., Univ. Tex., 1953; Ph.D., Univ. Tex., 1957. m. Julian Kennis Hall, Jacksonville, Fla., 1949. s. Mr. and Mrs. Joseph Neal Hall. c.: Virginia Ann. Exp.: Pharmacist Fairview Pharm., Birmingham, Ala., 1929-39; Production Control Mgr., Stat., The Warren-Teed Prod. Co., Columbus, O., 1939-44; Label Consultant, Dir., and Asst. Production Control Mgr., The S.E. Massengill Co., Bristol, Tenn., 1944-46; Asst. Prof. of Pharm., Howard Coll., 1946-47; Asst. Prof. Pharm. Admin., The Univ. Tex. Coll. of Pharm., 1947-61; Assoc. Prof., 1961—. Hon. Pos.: Chmn., Sect. of Tchrs. of Pharm. Admin., A.A.C.P.; Curriculum Committee, A.A.C.P., 1960-64; Chmn., Comm. on Edn., A.C.A.; Mem. Hosp. Comm., A.C.A.; Chmn., Manpower Study in Tex. Pharm.; Grand Council Ed. and Publicity Chmn., Kappa Epsilon; Secy., Hist. Sect., Am. Pharm. Assn., 1961-64. Mem.: Tex. Pharm. Assn.; Fellow, Am. Assn. Adv. of Sci.; Faculty Fellow, Am. Coll. of Apothecaries; Rho Chi; Sigma Iota Epsilon; Am. Pharm. Assn.; Conf. Tchrs. of Am. Assn. Coll. of Pharm.; Phi Mu; Kappa Epsilon; Austin Pharm. Assn.; Univ. Club. Contbr. to: Am. Prof. Pharm.; Am. Jour. of Pharm. Edn.; Prac. Ed., Am. Pharm. Assn. Jour.; Pa. Med. Jour.; Am. Jour. Hosp. Pharm.; S. Pharm. Jour.; Tex. Pharm.; Am. Druggist; Drug Standards; Dissertation Abstracts; and many others. Co-Author: The Pharmacist in Retail Distribution, 1953, 1955, Third Edition, 1960; Study Guide for Pharmaceutical Jurisprudence, 1951, 1956, 1959, and Various Manuals, Study Guides, etc. Ph.D. Dissertation: An Analysis of Professional Pharmaceutical Personnel in Texas Pharmacy. Travel: Can.; Cuba; Mex. Gen. Int.: Faculty Fellow, Am. Fdtn. for Pharm. Edn.; Selected Walgreen Seminar, 1953; Delegate and Participant, Pan-American Congress on Pharm. and Biochem., 1957; Walgreen Seminar Refresher, 1960; Natl. Pharm. Coun. Indus. Forum, Princeton Univ., 1959; Rsch., Am. Pub. Health Assn., 1960; Lederle Laboratories, Faculty Award, 1961; Council Mem., Am. Inst. of the Hist. of Pharm., 1962-65; Registered Pharm. in Ala. and Tex.; Conducted Numerous Rsch. Projects, and Presented Many Papers before Various Meetings. Hobbies: Travel: Daughter; Stamp Collecting; Hist. Listed in: Rho Chi Dir. Areas of Rsch.: Pharmacy Administration.

HALL, Jay V., Jr. (Mr.), Chf. Engrng. Div., Beach Erosion Bd., 5201 Little Falls Rd., N.W., Washington 16, D.C. Home Add.: 6929 Old Stage Road, Rockville, Maryland. COASTAL ENGINEERING AND ASSOCIATED PHENOMENA. b. Washington, D. C., June 17, 1906. s. Jay V. and Emma (Voorhees) H. Edn.: B.S., Univ. of Md., 1929; C.E., ibid., 1933. m. Lillian Crawford, Sept., 1929. c.: Phyllis Anne; Hilda Voorhees; Katherine Crawford. Exp.: Rsch. Assoc., Am. Face Brick Assn., Natl. Bur. of Stds., Wash., D. C., 1929-31; Chf. Engr. Div., U. S. Army Corps of Engrs., Washington, D. C., 1931—; Rsch. Assoc., Am. Face Brick Assn., Natl. Bur. of Stds., 1929-31; Jr. Engr., U. S. Beach Erosion Bd., Corps of Engrs., Dept. of Army, 1931-34; Asst. Engr., ibid., 1934-37; Asst. Engr., ibid., 1937-39; Assoc. Engr., ibid., 1939-43; Engr., ibid., 1943-46; Sr. Engr., ibid., 1946-51; Sr. Engr., ibid., 1951—. Hon. Pos.: Chmn., Comm. on Publications, Waterways and Harbors Div., Am. Soc. of Civil Engrs. Mem.: Am. Soc. of Civil Engrs., D. C.; Soc. of Profl. Engrs.; Soc. of Am. Military Engrs.; Hope Lodge #20. Contbr. to: Bull. of Beach Erosion Bd.; Proc. of Third Conf. on Coastal Engrng.; Am. Soc. for Testing Materials; Bur. of Standards Jour. of Rsch. Gen. Int.: Through Rsch. and Knowledge prepared world-wide landing beach reports for amphibious landings during W. W. II. Areas of Rsch.: Engaged in Rsch. relative to ocean wave motion, sand movement and Structural stability as applied to coastal engineering works.



HALL, Freeman Franklin, Jr., (Mr.), Sr. Mem. Tech. Staff, ITT Federal Labs., 15151 Bledsoe St., San Fernando, Calif. Home Add.: 11328 Andasol Ave., Granada Hills, Calif. OPTICAL PHYSICS. b. Kansas City, Mo., Sept. 29, 1928. s. Freeman F. and Ruth A. (Morton) H. Edn.: B.A., Occidental Coll., 1950; M.S., Univ. of Calif., 1957. m. Worth Chapman, Dec., 1952. c.: Rebecca Lynn; Russell Freeman; Bernice Rene; Bradley Alan. Exp.: Rsch. Asst., Univ. of N. Mex., Albuquerque, N. Mex., 1950-51; Scientist, Lockheed Missiles Systems Div., Van Nuys, Calif., 1954-57; Sr. Mem. Tech. Staff, ITT Federal Labs., San Fernando, Calif., 1957—. Mem.: Optical Soc. of Am.; Am. Phys. Soc.; Am. Meteorological Soc.; Am. Geophys. Union; Phi Beta Kappa; Sigma Pi Sigma. Contbr. to: Jour. Optical Soc. of Am.; Applied Optics; Proc. IRIS; Proc. IRE. Serv. Rec.: U.S.M.C., 1951-53. Areas of Rsch.: Radiometry, Atmospheric Optics, Image Converters, Thin Film Optics, Optical Recording and Display Devices.

HALL, Thomas Christopher (M.D.), Senior Consult., Oncology Div., Med. Service, Lemuel Shattuck Hosp., Boston 30, Mass. Home Add.: 275 Charles St., Boston, Mass. INTERNAL MEDICINE-ONCOLOGY. b. New York City, N. Y., Nov. 26, 1921. s. John Clarence and Theresa (McDonald) H. Edn.: M.D., Harvard Med. Schl., 1949. m. Mary Montague, June 23, 1945. c.: Christopher; Thomas; Amity; Seth; Bronwen; Nathan. Exp.: Intern in Med., Peter Bent Brigham Hosp., Boston, Mass., 1949-50; Rsch. Fellow in Med., Harvard Med. Schl., 1950-53; Clin. and Rsch. Fellow, Mass. Gen. Hosp., Boston, Mass., 1951-53; Asst. in Med., Harvard Med. Schl., 1953; Asst. Resident in Med., Mass. Gen. Hosp., Boston, Mass., 1954; Tchng. Fellow in Med., Harvard Med. Schl., 1954; Asst. in Med., Mass. Gen. Hosp., Boston, Mass., 1955; Visiting Internist, Pondville Hosp., 1955; Asst. in Med., Harvard Med. Schl., 1955-57; Dir., Oncology Div., Lemuel Shattuck Hosp., Boston, Mass., 1957-62; Instr. in Med., Harvard Med. Schl., 1957—; Consultant in Oncology, Free Hosp. for Women, Brookline, Mass., 1959—; Brandeis Univ., 1959; Sr. Rsch. Assoc. 1959-61; Adj. Assoc. Prof. Biochem., 1961—. Mem.: Children's Cancer Rsch. Foundation, 1961—; Am. Assn. for the Adv. of Sci.; Am. Coll. Physicians (Assn); Mass. Med. Soc.; Am. Assn. Cancer Rsch.; Am. Fed. for Clin. Rsch.; Radiation Rsch. Soc.; Am. Bd. Internal Med.; Histochemical Soc.; Soc. Study Growth and Develop.; Alpha Omega Alpha; Sigma Xi; Contbr. to: Jour. Exp. Med.; Jour. Natl. Cancer Inst.; Jour. Clin. Edn. and Metab.; Jour. Histochem. and Cytochem.; Ann. Int. Med ; Am. Jour. Physical Anthropology; Acta Endoc. Scand.; N.E. J. Med. Cancer Rsch. Areas of Rsch.: Intermediary Metabolism of Nucleic Acids. Mode of Action of Antimetabolites.

HALVER, John Emil (Ph.D.), Dir., Western Fish Nutrn. Lab., Cook, Wash. Home Add.: Underwood, Wash. NUTRITION AND BIOCHEMISTRY WITH SPECIAL EMPHASIS ON COMPARATIVE FUNDAMENTAL NUTRITION BIOCHEMISTRY AND METABOLISM OF FISHES. b. Woodinville, Wash., Apr. 21, 1922. s. John E. and Helen (Hansen) H. Edn.: B.S., Wash. Sta. Univ., 1944; M.S., ibid., 1948; Ph.D., Univ. of Wash., 1953. m. Jane Loren, July 21, 1944. c.: Deborah Kay; Peter Loren; Janet Ann; Nancy Lee; John Emil, IV. Exp.: Plant Chemist, Associated Frozen Foods, Inc., Kent, Wash., 1946-47; Asst. Chemist, Purdue Univ., Lafayette, Ind., 1948-49; Dir., Western Fish Nutrn. Lab., 1950—. Hon. Pos.: Interior Delegate, Fifth Internatl. Congress on Nutrn.; Dele. F.A.O. Congress, Fish in Ntrn. Mem.: Am. Inst. of Nutrn.; Am. Inst. of Fishery Rsch. Biolts.; Sr. Mem., Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Pacific Fishery Technologst.; Pi Mu Epsilon; Sigma Xi; Delta Sigma Zeta; Delta Chi; Alpha Chi Sigma; Phi Lambda Upsilon; Past Pres., Local Chapter Rotary Internatl. Contbr. to: Analyt. Chem.; Jour. of Am. Chem. Soc.; Jour. of Biochem.; Jour. of Nutrn.; Trans. Am. Fishery Soc.; Sci.; Archives of Biochem. Serv. Rec.: U. S. Army Reserve, 1941-45. Gen. Int.: Conceived, Organized and Devel. Western Fish Nutrn. Lab.; Devel. Standard Test Diets and Exptl. Techniques for Vit. and Amino Acid Studies with Fish; Perfected Exptl. Fish Surgery. Areas of Rsch.: Fundamental Nutrition Requirements of Fish and Specific Role of

Each Required Nutrient in Metabolism; Comparative Nutrition, Biochemistry, Metabolism and Physiology of Fishes.

HALPERIN, Joseph (Ph.D.), Chemist, Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 101 Oneida Lane, Oak Ridge, Tenn. RADIO AND NUCLEAR CHEMISTRY. b. Gomel, Russia, April 1, 1923. s. Aaron and Sara (Markovitz) H. Edn.: B.S., Univ. of Chicago, 1943; Ph.D., ibid., 1951. m. Sita Hamilton, April 13, 1951. c.: Susan; Linda; Daniel; Rebecca. Exp.: Research Asst., Clinton Labs., Oak Ridge, Tenn., 1943-46; Chemist, Oak Ridge Natl. Lab., 1951—. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Am. Nuclear Soc.; Am. Assn. for the Adv. of Sci.; R.E.S.A.; Gamma Alpha. Contbr. to: Jour. of Am. Chem. Soc.; Nuclear Sci. and Engrng.; Jour. of Nuclear and Inorg. Chem.; Ind. and Eng. Chem. Serv. Rec.: U. S. Army, 1945-46. Areas of Rsch.: Nuclear and Radiochemistry; Physical and Inorganic Chemistry.

HALVERSON, Frederick (Ph.D.), Sect. Mgr., Phys. Res. Unit, Am. Cyanamid Co., Stamford, Conn. SPECTROSCOPY. b. W. Prairie, Wis., Sept. 8, 1917. s. Allen and Bertha (Johnson) H. Edn.: B.A., Luther Coll., 1939; Ph.D., The Johns Hopkins Univ., 1943. m. Edith M. Lynn, Apr. 2, 1946. Exp.: Pfeiffer Fellow, Johns Hopkins Univ., Baltimore, Md., 1939-43; Instr., ibid., 1943-46; Infrared Spectroscopist, Am. Cyanamid Co., Stamford, Conn., 1946-51; Theoretical Chemist, ibid., 1951-53; Group Leader, Phys. Chem., ibid., 1953-54; Sect. Mgr., Basic Rsch. Dept., ibid., 1954-57; Visiting Scientist at Cambridge Univ., 1957-58; Sect. Mgr., Phys. Res. Unit, Amer. Cyanamid Co., Stamford, Conn., 1958—. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Am. Inst. of Physics; Sigma Xi; Phi Beta Kappa; Phi Lambda Upsilon; Faraday Soc. Contbr. to: Jour. of Chem. Physics; Rev. of Mod. Physics. Special Int.: Infrared and Raman Spectroscopy; Molecular Dynamics; Electronic Spectra; Isotope Effect in Molecular Spectra.

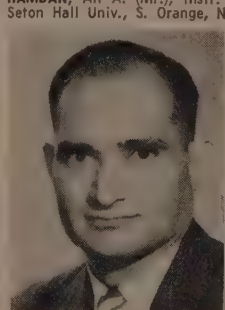
HALVORSEN, Kenneth George, (Ph.D.), Mgr. of Engrng., Beckman Instruments, Inc., Scientific and Process Instruments Div., 2500 Harbor Blvd., Fullerton, Calif. Home Add.: 700 Paseo Pl., Fullerton, Calif. PHYSICS. b. Chicago, Ill., Sept. 9, 1922. s. Hilmer G. and Merle E. (Ford) H. Edn.: B.S., E.E., Northwestern Tech. Inst., 1944; M.S., Phys., Northwestern Univ., 1949; Ph.D., ibid., 1951. m. Eleanor L. Reeg, July 14, 1945. c.: Candice; Diedre; Mark; Shari. Exp.: Sr., Phys., Frigidaire Gen. Motors, Dayton, Ohio, 1950-52; Engrng. Spec., North Am. Aviat., Downey, Calif., 1952-55; Mgr. of Engrng., Beckman Instruments, Inc., 1955—. Mem.: Am. Assn. for the Adv. of Sci.; Sigma Xi; I.S.A.; Tau Beta Pi; Pi Mu Epsilon; Eta Kappa Nu; Navy League. Contbr. to: Petroleum Refiner. Serv. Rec.: U. S. Signal Corps, 1944-46; U. S. Army Reserve, 1942-44. Areas of Rsch.: Solid State Physics; Hall Measurements in Semi-Conductor Thin Films.

HAMBLEN, John Wesley (Ph.D.), Dir., Data Processing and Computing Center, Prof. of Math., Southern Ill. Univ., Carbondale, Ill. Home Add.: 1403 W. Freeman, Carbondale, Ill. MATHEMATICS — COMPUTER SCIENCES — STATISTICS. b. Story, Ind., Sept. 25, 1924. s. James Wm. and Mary Etta (Morrison) H. Edn.: A.B., Ind. Univ., 1947; M.S., Purdue Univ., 1952; Ph.D., ibid., 1955. m. Brenda F. Harrod, March 1, 1947. c.: James Ovid. Exp.: H. S. Tchr., Kingsbury H. S., Kingsbury, Ind., 1946-48; H. S. Tchr., Bluffton H. S., Bluffton, Ind., 1948-51; Asst. Prof. Math., Okla. State Univ., 1955-57; Dir., Computing Ctr., Okla. State Univ., 1956-58; Assoc. Prof. Math., Okla. State Univ., 1957-58; Dir., Computing Cntr., Assoc. Prof. Stat., Univ. of Ky., 1958-61; Lectr., IBM Corp., Stillwater, Okla., summer, 1957; Consultant, DX Sunray Oil Co., Tulsa, Okla., 1957-58; U.S.A.F. Contract, Dir., Ky. Rsch. Found., Lexington, Ky., 1960; Consultant, I.B.M. Typewriter Div., ibid., 1960-61; Dir., Data Processing and Computing Center, Prof. of Math., Southern Ill. Univ., 1961—. Hon. Pos.: Chmn., Ky. Chapt. of A.C.M., 1960-61. Mem.: Am. Math. Soc.; Am. Statistical Assn.; Am. Soc. of Quality Control; Assn. for Computing Machinery; Soc. for Indus. and Applied Math.; Am. Assn. for the Adv. of Sci.; Inst. of Math. Statistics; Sigma Xi; Alpha Chi Sigma; Pi Mu Epsilon; Theta Chi; Rotary Club. Contbr. to: Annals of Math. Stat.; A.C.M. Communications; Computer Rev.; Math. Monthly. Areas of Rsch.: Distributions of Roots of Alsebroic Equations with Variable Coefficients, Applications of Digital Computers to Scientific Problems.

HAM, Joe Strother (Ph.D.), Assoc. Prof., Dept. of Physics, A. and M. Coll. of Texas, College Station, Texas. Home Add.: 308 Laurel St., Bryan, Tex. PHYSICS. b. Okmulgee, Okla., Mar. 12, 1928. s. Joe S. and Eva (Ludwick) H. Edn.: Ph.B., Univ. of Chicago, 1948; M.S., Univ. of Chicago, 1951; Ph.D., ibid., 1954. m. Florence Seeger of Falls City, Nebr., Feb. 23, 1952. d. Mr. and Mrs. Walter F. Seeger. c.: Alice Rachel; Susan Elaine. Exp.: Rsch. Chemist, Jackson Labs., DuPont, Wilmington, Del., 1953-56; Asst. Prof., A. and M. Coll. of Tex., 1956-58; Assoc. Prof., 1958—; Visit. Fellow, Mellon Inst., Pittsburgh, Pa., 1959; Res. Physicist, Scientific Lab., Ford Motor Co., Dearborn, Mich., 1961-62. Mem.: A.P.S.; Sigma Xi; A.A.A.S.; Tex. Acad. Sci.; Sigma Pi Sigma. Contbr. to: Jour. Chem. Phys.; Jour. Appl. Phys.; Jour. Polymer Sci.; Jour. Am. Chem. Soc. Ph.D. Dissertation: The Spectrum of Iodine Solutions. Areas of Rsch.: Molecular Spectroscopy; Polymer Physics; Semiconductor Phenomena. Hobbies: Piano; Reading; Hi-Fi. Listed in: A.M.S.

HAMBURGER, Robert N. (M.D.), Special Fellow (NIH), Biol. Dept., Univ. of Calif. at San Diego, La Jolla, Calif. Home Add.: 9485 Ja Jolla Shores Dr., La Jolla, Calif. RESEARCH PHYSICIAN IN IMMUNO-GENETICS AND TISSUE CULTURE. b. N.Y.C., N. Y., Jan. 26, 1923. s. Samuel B. and Harriet (Newfield) H. Edn.: B.A., Univ. of N. C., 1947; M.D., Yale Univ. Med. Schl., 1951. m. Sonia Gross, Nov., 1943. c.: Hilary; Debre; Lisa. Exp.: Asst. Clin. Prof., Yale Univ., Pediatric Dept., New Haven, Conn., 1953-60; Hd., Pediat. Serv., Milford Hosp., Milford, Conn., 1958-60; Special Fellow (NIH), Biol. Dept., Univ. of Calif. at San Diego, La Jolla, Calif., 1960—. Mem.: Am. Acad. of Pediatrics; Am. Soc. of Human Genetics. Contbr. to: Yale Jour. of Biol. and Med.; Conn. Med. Jour.; Am. Jour. Diseases of Children. Serv. Rec.: U.S.A.A.F., 1942-45. Areas of Rsch.: Pediatrics; Genetics; Immunology.

HAMDAN, Ali A. (Mr.), Instr. in Physical Sci. and Rsch. Fellow, Seton Hall Univ., S. Orange, N. J. and Assoc. Chemist, Antibiotics with the Schering Corp. of Bloomfield, N. J. Home Add.: 255 Ward Pl., S. Orange, N. J. ORGANIC CHEMISTRY. b. Jerusalem, July 15, 1928. s. A. and N. (Sbeih) H. Edn.: A.B., Seton Hall Univ., 1956; M.S., ibid., 1959. m. Dorothea Nevola, June 7, 1959. c.: Lawrence Anise. Exp.: Lab. Asst., Seton Hall Univ., 1954-56; Rsch. Asst., ibid., 1956-58; Instr. and Rsch. Fellow, ibid., 1958—; Assoc. Chemist, Schering Corp., Bloomfield, N. J., 1962—. Mem.: Am. Chem. Soc.; Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Friends of the Middle East. Contbr. to: Jour. of Organic Chem.; Jour. of the Natl. Cancer Inst. Gen. Int.: Awarded the Golden Medal of the Dept. of Chem., Seton Hall Univ., 1956. Areas of Rsch.: Cancer Rsch., 1956-59; Basic Rsch. in Organo-Metallic Complexes, 1959—.



HAMILTON, DeWitt Clinton, Jr. (Ph.D.), Lectr. in Chg. of Engrng. Sci., Oak Ridge Schl. of Reactor Technology, Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 1 Mockingbird Dr., Knoxville 19, Tenn. MOLECULAR TRANSPORT PHENOMENA. b. Eufaula, Okla., Dec. 4, 1918. s. DeWitt Clinton and Jessie (Patterson) H. Edn.: B.S., Univ. of Okla., 1941; M.S., Univ. of Calif., 1946; Ph.D., Purdue Univ., 1949. m. Elizabeth (Moore) H., Jan. 17, 1942. Exp.: Rsch. and Dev. Engr., Wright Field, Dayton, Ohio, 1946-47; Instr., Purdue Univ., Lafayette, Ind., 1947-49; Asst. Prof., Purdue Univ., ibid., 1949-51; Rsch. Engr., Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1951-56; Lectr. in chg. of Engrng Sci., Oak Ridge Schl. of Reactor Technology, Oak Ridge Natl. Lab., 1956—. Mem.: A.A.A.S.; Am. Nuclear Soc.; Rsch. Soc. of Am.; Am. Soc. for Engr. Edn.; Am. Soc. of Mech. Engr.

Hon. Frat.: Sigma Pi Sigma; Sigma Xi; Sigma Tau; Pi Tau Sigma. Contbr. to: Trans. of the Am. Soc. of Mech. Engrs.; Natl. Advisory Comm. of Aeronautics and the Atomic Energy Comm. Serv. Rec.: U.S.A.A.F. Areas of Rsch.: Molecular Transport Phenomena; Nuclear Reactors.

HAMER, Jan (D.Sc.), Asst. Prof., Dept. of Chem., Tulane Univ., New Orleans 18, La. Home Add.: 1452 Webster St., New Orleans 18, La. ORGANIC CHEMISTRY. b. Gombong, Indonesia, May 2, 1927. s. Hamer Gerard Pieter and Wijke (De Boer) H. Edn.: Candidaat, Univ. of Leyden, Netherlands, 1948; Doctorandus, ibid., 1955; D.Sc., ibid., 1956. m. Millicent May, 1956. c.: Elizabeth May. Exp.: Rsch. Assoc., Tulane Univ., New Orleans, La., 1956-57; Asst. Prof., Dillard Univ., New Orleans, La., 1957-58; Assoc. Prof., ibid., 1958—; Asst. Prof., Tulane Univ., New Orleans, La., 1960—. Hon. Pos.: V.-Pres., A.A.U.P. Chapt. Mem.: A.C.S.; A.A.A.S.; Royal Netherlands Chem. Soc.; Sigma Xi; Alpha Chi Sigma. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem.; Rec. Trav. Chimique. Areas of Rsch.: Diels-Alder Reactions with Heteroatoms; Organometallic Chemistry of Group I and II.

HAMILTON, Gordon Ross (Mr.), Dir., Navy Sofar Sta., APO 856, N. Y., N. Y. Home Add.: Hard a Lee Pitts Bay Rd., Pembroke, Bermuda. PHYSICAL OCEANOGRAPHY-UNDERSEA WARFARE GEOPHYSICS. b. Orleans, Vt., Apr. 20, 1923. s. Rev. Rollo A. and May (Ross) H. Edn.: A.B., Phys., Princeton Univ., 1943. m. Victoria McKibben, Sept. 11, 1948. c.: Elizabeth; Gregg. Exp.: Dir. and Chf. Scient., Navy Sofar/Col Univ., Geophys. Field Sta., St. Davids, Bermuda, 1949—. Mem.: Seismol. Soc. of Am.; Am. Geophys. Union; Soc. Exploration Geophysts.; Acoust. Soc. of Am.; Rotary Club; St. George Bermuda. Contbr. to: U. S. Navy, Jour. of Underwater Acoustics. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: Long Range Ocean Sound Transmission.

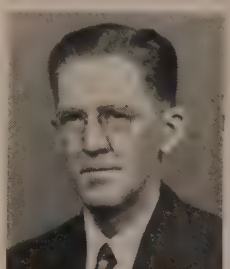
HAMMON, Stratton Owen (Mr.), Sr. Partner, Vibration Damage Specialists, Louisville, Ky. Home Add.: 30 River Hill Rd., Louisville 7, Ky. TECTONOCOLOGY. b. Louisville, Ky., March 6, 1904. s. John and Emma C. F. (Miller) H. Edn.: Att. Univ. of Louisville, 1926; Beaux Arts Inst. of Design, 1924; Univ. of Va., 1943; Engr. Schl., Corps of Engrs, 1943. m. Mrs. S. P. Jones, III, 1933. c.: Neal O.; Dr. Keath E.; Mrs. Helen S. Jones III. Exp.: Designer, M. J. Murphy, Architect, Louisville, Ky., 1920-29; Sr. Partner, Hammon and Hammon, Archt. and Engr., Louisville, Ky., 1929—; Sr. Partner, Vibration Damage Specialists, ibid., 1946—. Hon. Pos.: Secy., Sta. Bd. of Archits. Ky. Chevalier de la Legion d'Honneur. Mem.: Am. Geophys. Union; Seismol. Soc. of Am.; Am. Inst. of Archits.; Sons of the Am. Revolution; Natl. Assn. of Fire Investigators. Author: Aluminum in Modern Architecture, 1955; Blastings Claims, 1957. Contbr. to: Am. Bar Assn. Jour.; Bull. Seismol. Soc. of Am.; Insurance Law Jour.; Quart. of the Fed. of Insur. Counsel. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Effects of Explosions and Other Vibrations upon Structures (Experiments Conducted for the Atomic Energy Commission).

HAMMOND, George S(imms) (Ph.D.), Prof. of Organic Chem., Calif. Inst. of Tech., Pasadena, Calif. Home Add.: 1521 E. Mountain St., Pasadena, Calif. ORGANIC CHEMISTRY. b. Auburn, Me., May 22, 1921. s. O. K. and Marjorie (Thomas) H. Edn.: B.S., Bates Coll., 1943; M.S., Harvard Univ., 1947; Ph.D., ibid., 1947. m. Marian Reese, June, 1945. c.: Kenric; Janet; Steven; Barbara; Jeremy. Exp.: Rsch. Assoc., Univ. Calif., Los Angeles, Calif., 1947-48; Asst. Prof. to Assoc. Prof. to Full Prof., Iowa St. Univ., Ames, Ia., 1948-58; Prof., Calif. Tech. Inst., Pasadena, Calif., 1958—. Hon. Pos.: Editorial Bd. of Jour. of Organic Chem.; Am. Chem. Soc. Comm. on Profl. Training. Mem.: Am. Chem. Soc.; Chem. Soc. of London; Sigma Xi; Phi Beta Kappa. Co-Author: Quantitative Organic Analysis, 1957; Organic Chemistry, 1959. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem. Gen. Int.: Received Am. Chem. Soc. Award in Petroleum Chemistry, 1961. Areas of Rsch.: Physical Organic Chemistry.

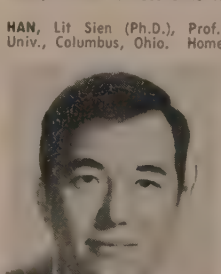
HAMMOND, Charles Robert (Mr.), Instr., Astron., Univ. of Hartford, Hartford, Conn. ASTRONOMY (BINARY STARS, SOLAR ASTRONOMY, METEORITICS), SEISMOLOGY, GLASS TECHNOLOGY. b. Table Grove, Ill., Nov. 7, 1915. s. Thomas Arthur and Julia Bernice (Parmenter) H. Edn.: A.B., Univ. of Calif. at Los Angeles, 1938. m. Jean Jones, Nov. 16, 1946. c.: Robert Arthur; Philip Warner. Exp.: Co-director, La Crescenta Observatory, La Crescenta, Calif., 1938-40; Asst. Librarian, Lockheed Aircraft Corp., Burbank, Calif., 1940-42; Chf. Librn., Vega Aircraft Corp., Burbank, Calif., 1940-42; Chf. of Libr. Div. and Librn. of Naval Ordnance Lab., Wash., D. C. Mem. of Navy Indexing Panel, 1944-46; Tech. Analyst and Librn., Emhart Mfg. Co., Hartford, Conn., 1946-56; Mgr. Tech. Publn., 1956—; Instr. Astron., Univ. of Hartford, 1952—. Hon. Pos.: Pres., Cent. Conn. Amateur Astronomers. Mem.: Royal Astronomical Soc. of Can.; Meteoritical Soc.; Middletown Scientific Soc.; Eastern Sect. of the Seismological Soc. of Am.; Cent. Conn. Amateur Astronomers; Sr. Mem., Soc. of Tech. Writers and Editors. Author: Annealing of Glass; Glass Molds; Surface Treatment of Glass. Contbr. to: Power Plant Engr.; Popular Astron.; Bull. of Eastern Sect. of Seismological Soc. of Am. War Rec.: Naval Ordnance Lab. during war years. Gen. Int.: Constructed Seismographs; Astrophysical Cameras. Special Int.: Meteorites (Tektites); Meteor Photography; Seismology; Glass-Technology; Plastics; Infrared Photography; High-Vacuum Technol.; Solar Photography; Chemical Elements.

HAMMOND, William Archie (Ph.D.), Pres., W. A. Hammond Drierite Co., 120 Dayton Ave., Xenia, Ohio. Home Add.: Hyde Rd., Greene Co., Ohio. CHEMISTRY AND CHEMICAL ENGINEERING. b. Winchester, Ky., Jan. 22, 1889. s. William and Temperance (Frazier) H. Edn.: A.B., Miami Univ., 1914; M.A., Ohio St. Univ., 1917; Ph.D., ibid., 1929. m. Olive Dingle, July 8, 1919. c.: John Philip; Robert Dingle. Exp.: Chem. and Phys. Tchr., Bellevue H. S., Bellevue, Ohio, 1914-17; Chf. Chemist, U. S. Gypsum Co., 1920-25; Chem. and Phys. Tchr., Columbus Publ. H. S., Columbus, Ohio, 1926-29; Assoc. Prof., Antioch Coll., 1930-37; Pres., W. A. Hammond Drierite Co., Xenia, Ohio, 1934—. Hon. Pos.: Pres., Richard Montgomery Chapt., S.A.R.; St. Historian, Ohio Soc., S.A.R.; Pres., P.K.T. Found.; Past-Pres., Rotary Club; Past Commander, Am. Legion; Chmn., Greene Co. Bd. of Health; Exec. Comm., Alumni Assn., Miami Univ. Mem.: Huguenot Soc. of Ky.; Sons and Daughters of the Pilgrims; Barons of Magna Charta; Filson Club; Order of Ky. Colonels; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Men of Sci.; Natl. Roster of Sci. Personnel; Natl. Small Businessmen's Assn.; C. of C.; Sigma Xi; Phi Beta Kappa; Phi Kappa Tau. Author: Three Decades on a Perennial Problem, 1953; Drierite and Its Applications, 1958. Contbr. to: Indus. and Engrng. Chem.; Jour. of Chem. Edn.; Encyclopedia of Chem. Tech.; Encyclopedia Britannica. Serv. Rec.: U. S. Army, 1917-18. Gen. Int.: Awarded Bishop Medal by Miami Univ., 1956; Towers Club, Miami Univ., 1956. Areas of Rsch.: Chemistry and Technology of Calcium Sulfate, Gypsum, and Alabaster; The Drying of Solids, Liquids, and Gases.

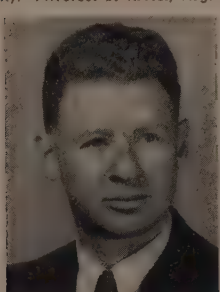
HAMNER, Arthur Lee (Mr.), Entomologist, Miss. Agril. Exptl. Sta., State Coll., Miss. Home Add.: 202 N. Montgomery, Starkville, Miss. ENTOMOLOGY. b. Gordo, Ala., Nov. 9, 1901. s. John Wm. and Joanna (Kirk) H. Edn.: B.S., Ala. Poly. Inst., 1923; M.S., Ohio St. Univ., 1924. m. Edna R. Brownlee, July 23, 1929. c.: Mary Caroline; John Franklin. Exp.: Asst. Entomol., Miss. Plant Bd., St. Coll., Miss., 1924-25; Miss. Agril. Exptl. Sta., ibid., 1925-28; Assoc. Entomol., ibid., 1928-58; Entomol., ibid., 1958—. Hon. Pos.: Vice-Chmn., Cotton States Br., Entomol. Soc. Am., 1953. Mem.: A.A.A.S.; Entomol. Soc. of Am.; Miss. Acad. of Sci.; Masonic Lodge; Exchange Club. Areas of Rsch.: Fruiting Habits of Cotton Plant in Relation to Insect Control; Effect of Environmental Factors on Effectiveness of Insecticides; Control of Economic Insects.



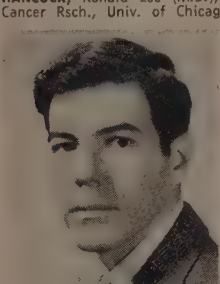
HAN, Lit Sien (Ph.D.), Prof. of Mechanical Engrng., Ohio St. Univ., Columbus, Ohio. Home Add.: 2695 Bristol Rd., Columbus, Ohio. MECHANICAL ENGINEERING. b. Shanghai, China, May 5, 1923. s. Zen-Phu and Yu-Chin (Hsia) H. Edn.: B.S., Chiao-Tung Univ., China, 1945; M.Sc., Ohio St. Univ., 1948; Ph.D., ibid., 1954. m. Dr. Tsung-Men Shen, Sept. 6, 1953. c.: Barbara; Derek. Exp.: Asst. Engr., Kunming Electric Works, Kunming, China, 1945-46; Jr. Engr., Nanking-Shanghai Railroads, Shanghai, China, 1946-47; Rsch. Asst., Ohio St., Univ., 1947-50; Rsch. Assoc., ibid., 1950-54; Instr., Asst. Prof., Assoc. Prof., ibid., 1954-61; Prof., ibid., 1961—; Visit. Prof., Max Planck Inst., Germany, 1962-63; Consultant, Midland-Ross Corp., Columbus, Ohio, 1956—; Consultant, Battelle Mem. Inst., Columbus, Ohio, 1962—. Mem.: Am. Soc. of Mech. Engrs.; Soc. of Automotive Engrs.; Sigma Xi; Tau Beta Pi; Pi Tau Sigma. Contbr. to: Jour. of Heat Transfer; Jour. of Applied Mechanics; Trans. of Am. Soc. of Naval Engrs. Areas of Rsch.: Fluid Mechanics; Heat Transfer; Thermodynamics; Structural Mechanics.



HANAU, Richard (Ph.D.), Prof. of Physics, Univ. of Ky., Lexington, Ky. PHYSICS. b. N.Y.C., Aug. 1, 1917. s. Leo and Stella (Bloch) H. Edn.: S.B., Mass. Inst. of Tech., 1939; M.S., Univ. of Mich., 1940; Ph.D., ibid., 1947. m. Laia Pearlmutter, Jan. 2, 1941. c.: Loren Michael. Exp.: Tchng. Asst. and Fellow, Physics Dept., Univ. of Mich., 1941-44; Rsch. Assoc., Engrng. Rsch. Dept., ibid., 1944-46; Assoc. Prof., Phys. Dept., Univ. of Ky., Lexington, Ky., 1947-60; Prof., ibid., 1960—; Visit. Prof., Phys., Univ. Puerto Rico, Mayaguez, P. R., 1953-54; Assoc. Prof., Phys., Univ. of Conn., Storrs, Conn., Sums., 1954-55; Prof. Phys., Univ. of Indonesia, Bandung, Indonesia, 1956-58; Rsch. Asst., Optics, Univ. of Rochester, 1958-59; Summers, 1959-62. Mem.: Am. Physical Soc.; Optical Soc. Am.; A.A.P.T.; Sigma Xi; Sigma Pi Sigma. Contbr. to: Physical Rev.; Jour. Optical Soc. of Am.; Am. Jour. Physics; Physics Today. Special Int.: Spectrographic Analysis; Geometrical Optics.



HANCOCK, Ronald Lee (M.D.), Fellow of the Ben May Lab. for Cancer Rsch., Univ. of Chicago, Chicago, Ill. Home Add.: 1318 Hyde Park Blvd., Chicago, Ill. BIOCHEMISTRY OF THE NUCLEUS. b. St. Joseph, Mo., Nov. 24, 1931. s. Chester Dana and Iva Evelyn (Bogle) H. Edn.: A.A., Kans. City, Mo., Jr. Coll., 1951; A.B., Kan. City Univ., 1952; M.D., Univ. of Kan., 1959. m. Marit Vangen, 1955. Exp.: Student Fellow, R. B. Jackson Meml. Lab., Bar Harbor, Me., 1953; Med. Student Fellow of Natl. Found. Infantile Paralysis, Univ. of Kan., 1956; U. S. Pub. Health Serv., Post-Doctoral Fellow, Dept. of Biochemistry, Univ. of Chicago, 1959-62. Mem.: Am. Assn. for Adv. of Sci. Contbr. to: Univ. of Kan. Sci. Bull.; Nature (London); Biophysica et Biochimica Acta; Experientia. and Naturwiessenschaften. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Nuclear Ribonucleic Acid Synthesis and Nucleolar Organizers.

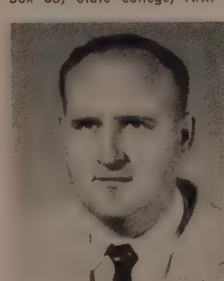


HAND, John Edgar (Mr.), Sr. Scientist, Edgerton, Germeshausen, and Grier, Inc., Box 98, Goleta, Calif. Home Add.: 444 Amherst, Goleta, Calif. EARTH SCIENCE, TERRESTRIAL RADIOACTIVITY. b. Monongahela, Pa., Nov. 14, 1920. s. Ira J. and Luella (Messenger) H. Edn.: B.S., N. Mex. Inst. of Mining and Tech., 1951; M.S., ibid., 1958. m. Gwendolyn Ivie, 1950. Exp.: Staff Mem., Los Alamos Scientific Lab., Los Alamos, N. Mex., 1951-55; Sr. Nucl. Engr., Convair, A. Div. of Gen. Dynamics, Fort Worth, Tex., 1955-59; Sr. Scientist, Edgerton, Germeshausen, and Grier, Inc., 1959—. Mem.: Am. Geophys. Union; Am. Assn. Adv. Sci.; Am. Radio Relay League. Contbr. to: Rev. of Sci. Inst.; Jour. of Geophys. Rsch.; Govt. Publs. Serv. Rec.: U. S. Air Force, 1941-45. Gen. Inst.: Amateur Radio Operator, Areas of Rsch.: Mass Spectrometric Isotopic Analysis, Radon Soil Diffusion into Atmos and Atmos, Conc., Analysis of H_2o for Tritium Content, Radioactive Particulate Diffusion, Aerial Survey of Terrestrial Radioactivity, Potentials Developed During Freezing of Dilute Aqueous Solutions.

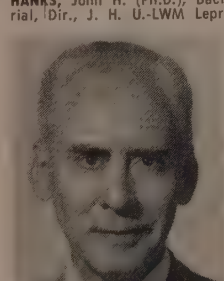
HANDLER, Philip (Ph.D.), Prof. of Biochem., Duke Univ., Durham, N. C. Home Add.: 2529 Perkins Rd., Durham, N. C. BIOCHEMISTRY. b. N.Y.C., N. Y., Aug. 13, 1917. s. Jacob and Lena (Heisen) H. Edn.: B.S., City Coll. of N. Y., 1936; M.S., Univ. of Ill., 1937; Ph.D., ibid., 1939. m. Lucille Marcus, Dec. 6, 1939. c.: Mark; Eric; Paul. Exp.: Instr. to Prof. and Chmn. of Dept. of Biochem., Duke Univ., Schl. of Med., 1939—. Hon. Pos.: Natl. Sci. Board, N.S.F.; Secy., Coun., Pres., Am. Soc. Biol. Chem.; Chmn., Prog. Com. and Mem., Exec. Comm., VI Internatl. Congress of Biochem.; Natl. Adv. Health Coun., U. S. Pub. Hlth. Serv.; Chmn. of Biochem. Study Sec. and of Comm. on Med. Student Rsch. Training, Natl. Inst. of Health; Div. Comm., Biol. Med. of Natl. Sci. Found. Mem.: Am. Soc. Biol. Chem.; Am. Chem. Soc.; Am. Assn. Nutrition; A.A.A.S.; N. Y. Acad. Sci.; Biochem. Soc.; Fed. Am. Soc. Exptl. Biology; Sigma Xi; Author: Principles of Biochemistry, 1958. Contbr. to: Jour. Biol. Chemistry; Science; Jour. Am. Chemical Soc.; Jour. A.M.A.; Jour. Med. Edn.; Bull. Soc. Chem. Biol.; Arch. Biochem. Biophys. Areas of Rsch.: Metabolism of Nitrogenous Compounds, Mechanism of Enzyme Action, Biological Oxidations, Pyridine Nucleotides, Biochemical Genetics.

HANDRUP, Bernarda M., (Sister), O.S.F., Chmn. of Phys. Dept., Alverno Coll., Milw., Wisc. Home Add.: 3401 S. 39th St., Milw. 15, Wisc. SPECTROSCOPY. b. Chicago, Ill., Feb. 27, 1927. Edn.: B.A., Alverno Coll., 1950; M.S., Univ. of Wisc., 1951; Ph.D., ibid., 1960. Exp.: Instr., Alverno Coll., 1954-59; Asst. Prof., ibid., 1959—. Mem.: Am. Phys. Soc.; Sigma Xi; Am. Assn. of Phys. Tchrs. Areas of Rsch.: Spectroscopy (Atomic).

HANEBRINK, Earl Lee (Mr.), Asst. Prof. of Biol., Ark. St. Coll., Box 65, State College, Ark. Home Add.: 207 Scott St., Jonesboro, Ark. LIMNOLOGY AND ECOLOGY (AQUATIC). b. Cape Girardeau, Mo., Mar. 24, 1924. s. Harry H. and Augusta (Fornkohl) H. Edn.: B.S., Southeast Mo. St. Coll., 1948; M.S., Univ. of Miss., 1955; Adv. work, Univ. of Wyo. and Gulf Coast Rsch. Lab. m. Vernelia McCrady, Dec., 1956. Exp.: Tchr., H. S. Sci., Parma, Mo., 1948-52; Tchr., H. S. Sci., Kennett, Mo., 1952-58; Tchr. of Zool., Ark. St. Coll., 1959-60; Asst. Prof. of Biol., ibid., 1960—. Hon. Pos.: Asst. in Museum, Zool. Div., Ark. St. Coll. Mem.: Am. Assn. Adv. of Sci.; Am. Genetic Assn.; Natl. Edn. Assn.; Ark. Edn. Assn; Tri Beta. Author: The Flora of Southeast Missouri, 1958. Contbr. to: Summary in Biological Abstracts. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Collector of plant specimens, fish collections, invertebrate collections, reptile collections, rocks and minerals. Areas of Rsch.: Limnology (Plankton of Sardis Reservoir) Miss.; Flora of Southeast Missouri (Ozarks); Plankton Studies in Arkansas.



HANKS, John H. (Ph.D.), Bacteriolt. of the Leonard Wood Memorial, Dir., J. H. U.-LWM Leprosy Rsch. Lab., Prof. of Pathobiol., Johns Hopkins Schl. of Hyg., 615 N. Wolfe St., Balt. 5, Md. PHYSIOLOGY AND CYTOLOGY OF THE MYCOBACTERIA; HUMAN AND RAT LEPROSY; TISSUE CULTURE; IMMUNOLOGY. b. Fowlerton, Ind., Sept. 16, 1906. s. John R. and Augusta Mae (Smith) H. Edn.: B.S., Allegheny Coll., 1928; Ph.D., Yale Univ., 1931. m. Julia May King, 1930. c.: John King; Juliette May; James Philip; Janet Susan. Exp.: Fellow, Natl. Rsch. Coun., Harvard Med. Schl., Boston, Mass., 1931-32; Asst. to Assoc. Prof., Bact., Geo. Wash. Univ., Schl. of Med., Wash., D. C., 1932-39; Bact., Leonard Wood Mem., Culion Philippines, 1939—; Assoc. Prof., Johns Hopkins Schl. of Hyg., 1959—; Prof. of Pathobiol., Dir., JHU-LWM Lab., ibid., 1959—. Hon. Pos.: Lectr. on Bact. and Immunol., Dept. of Bact., Harvard Med. Schl., Boston, 1946-59; Chmn., Com. on Pathol. and Bact., Internatl. Leprosy Assn. Mem.: Am. Soc. of Micro.; Am. Assn. of Immunolts.; Soc. Exptl. Biol. and Med.; Internatl. Leprosy Assn.; Am. Acad. of Microbiol.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Bact.; Jour. of Immunol.; Proc. Soc. Exptl. Biol. and Med.; Internatl. Jour. of Leprosy; Am. Rev. of Tuberculosis. Areas of Rsch.; Physiology and Cytology of the Mycobacteria; Human and Rat Leprosy; Tissue Culture; Immunology.



HANLE, John E. (Ph.D.), Dir. of Rsch., High Polymer Chem. Dept., Continental Can Co., Inc., 7622 So. Racine Ave., Chicago 20, Ill. Home Add.: 410-8th Pl., Hinsdale, Ill. HIGH POLYMER CHEMISTRY. b. E. Orange, N. J., Sept. 24, 1914. s. John W. and Eleanor (Heritage) H. Edn.: B.S., Newark Coll. of Engrng., 1936; M.Ch.E., Polytech. Inst. of Brooklyn, 1940; Ph.D., ibid., 1949. m. Claire Kane, Dec. 27, 1940. c.: John, Jr.; Paul Arthur; Susan Jane. Exp.: Chem. Engr., Murphy Varnish Co., Newark, N. J., 1934-43; Rsch. Engr., Murphy Finishes Div., Interchem. Corp., 1943-45; Dir. of Metal Decorat. Devel. Labs., ibid., 1945-57; Div. Mgr. Tech. Sales, Metal Decorat., ibid., 1957-60; Assoc. Dir. Rsch., Cent. Rsch. and Engrng., Continental Can Co., 1960-61; Dir. of Rsch., High Polymer Chem. Dept., ibid., 1961—. Mem.: Am. Chem. Soc.; Soc. of Plastics Engrs.; Am. Assn. for the Adv. of Sci., Fellow; Tau Beta Pi; Phi Lambda Upsilon; Alpha Sigma Phi. Contbr. to: Ind. Eng. Chem.; Jour. Am. Chem. Soc. Areas of Rsch.: Phenolic Resins; Protective and Decorating; Coatings and Inks for Metals and Plastics; Crystallinity of Cellulose.

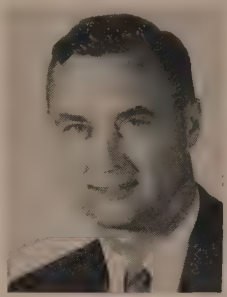
HANNA, Lester William (Mr.), Western Region Entomologist, Birds Eye Div., Gen. Foods Corp., Woodburn, Ore. Home Add.: Rt. 1, Box 210, Forest Grove, Ore. ENTOMOLOGY. b. Del Norte, Colo., Mar. 22, 1909. s. William Fredrick and Margaret Mary (Duncan) H. Edn.: B.S., Colo. St. Univ., 1932. m. Mabelrose Brubaker, Apr. 9, 1939. c.: William Lester; Margaret Mary; Mark Alvah; Roger Duncan; Helen Jean; Bruce Douglas; Dean Steven. Exp.: Forest Entomologist, U. S. Forest Serv., Bur. of Entomology and Plant Quarantine; Stanislaus Natl. Forest, Calif., 1936; Forest Entomologist, U. S. Forest Serv., Natl. Forests, Rocky Mt. Region, Denver, Colo., 1934-40; Biologist, Nutria Breeder, Boulder, Colo., 1943-44; Field Entomologist, Kuner-Empson Canning Co., 1943; Western Region Entomologist, Birds Eye Div., General Foods Corp., Woodburn, Ore., 1944—. Hon. Pos.: Hon. Mem., Internatl. Mark Twain Soc. Mem.: Entomological Soc. of Am.; Am. Assn. for the Adv. of Sci.; Am. Inst. of Biol. Scis.; Ore. Acad. of Sci.; Alpha Gamma Rho; Kappa Kappa Psi; Beta Beta Beta; Natl. Congress of Parents and Tchrs.; Camera Club. Author: Coypu Breeding and Fur Farming, 1942; Hanna's Handbook of Agricultural Chemicals, 1st Ed., 1952; Hanna's Handbook of Agricultural Chemicals, 2nd ed., 1958. Contbr. to: Jour. of Econ. Entomology; Science; Chem. Week; Agric. and Food Chem.; Am. Inst. of Biol. Scis.; Natl. Geographic. Serv. Rec.: Coast Artillery Corps, 1933-38. Areas of Rsch.: Antibiotics for the Control of Cancer and Arthritis. Have Discovered Two Antibiotics, Hannatурmycin and Brubactin; Formulated Full Line of Insecticides and Fungicides.

HANNER, John Calhoun (Mr.), Pres., Metrotek Electronics, Inc., Raleigh, N. C. Home Add.: 407 Transylvania Ave., Raleigh, N. C. ELECTRONICS: COMMUNCATION, AVIATION, INSTRUMENTATION, SOLID STATE AND GENERAL CONSUMER. b. Florence, S. C., Aug. 12, 1914. s. Joseph C. and Maud Suzanna (Wrenn) H. Edn.: N. C. St. Coll., 1936-40. m. Sarah Barbee, May 18, 1961. c.: John C., Jr.; Thomas Jerome. Exp.: Sales Mgr., Aeronautical Electronics, Inc., Raleigh, N. C., 1953-55; Owner, John C. Hanner Co., ibid., 1955—; Pres. and Founder, Metrotek Electronics, Inc., ibid., 1961—. Hon. Pos.: Chmn., Carolina Aviation Comm. Mem.: Inst. of Radio Engrs.; Am. Assn. for the Adv. of Sci.; Armed Forces Comm. and Electronic Assn.; Am. Rocket Soc.; Natl. Acad. of Sci.; Natl. Pilots Assn.; Antique Airplane Assn.; C. of C.; Am. Business Club; Kiwanis Club. Serv. Rec.: U. S. Army Air Force, 1941-45. Areas of Rsch.: Aeronautical Radio Communications and Aeronautical Radio Navigation Methods and Theories.

HANNUM, Clair Arthaud (Ph.D.), Prof. of Biol., Dept. of Biol., Univ. of Wichita, Wichita 8, Kan. PARASITOLOGY. b. Gibson, Iowa, Oct. 19, 1900. s. John Wright and Bertha (Arthaud) H. Edn.: B.S., Univ. of Wash., 1923; M.S., ibid., 1924; Ph.D., ibid., 1942. Exp.: Tchng. Fellow, Univ. of Wash., Seattle, Wash., 1923-25; Assoc. in Zool., ibid., 1925-26; Instr. in Zool., Univ. of Hawaii, Honolulu, Hawaii, 1926-28; Instr. in Zool., Univ. of Ariz., Tucson, Ariz., 1928-34; Asst. Prof. of Zool., ibid., 1934-40; Lectr. in Zool., Univ. of Wash., Seattle, Wash., 1941; Acting Prof. of Bacteriol., Seattle Coll., Seattle, Wash., 1941; Staff, Boeing Air Co., ibid., 1942; Assoc. Prof. of Zool., Univ. of Wichita, Wichita, Kan., 1946-56; Prof., ibid., 1956—. Mem.: Am. Micro. Soc.; Am. Soc. of Parasitol.; A.A.U.P.; A.A.A.S.; Soc. of Zoologists; Am. Soc. of Professional Biologists; Soc. of System Zoology; N. Y. Acad. of Sci.; Kan. Acad. of Sci.; Theta Chi; Sigma Xi; Delta Epsilon; Pi Mu Chi; Aesculapius. Author: Lab. Text in Elem. Zool., 1939; Comp. Chordate Anatomy, 1940; Lab. Manual for Animal Histol., 1939. Contbr. to: Biol. Abstracts; Trans., Am. Micro. Soc.; Yale Jour. of Biol. and Med.; Pub. Puget Sound Biol. Sta.; Pub. Univ. of Washington, Theses Ser.; Univ. of Ariz. Bull.; Biol. Scl. Bull. Special Int.: Bacteriol., Histol. and Helminthol.

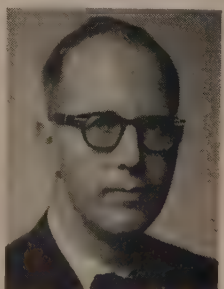
HANSARD, Sam L. (Ph.D.), Prof. and Dir., Radioisotope Lab., La. St. Univ., Baton Rouge, La. Home Add.: 475 Maxine Dr., Baton Rouge, La. NUTRITION AND RADIOBIOLOGY. b. Knoxville, Tenn., June 5, 1914. s. Clarence Clayton (dec.) and Martha (Carden, dec.) H. Edn.: B.S., Univ. of Tenn., 1937; M.S., Ohio St. Univ., 1941; Ph.D., Univ. of Fla., 1952. m. Erma Brobeck, 1941. c.: Sam L., II; Martha Louise; Peggy Lynn. Exp.: Asst. to Assoc. Prof., Univ. of Tenn., Knoxville, Tenn., 1946-49; Prof. and Sr. Scientist, ibid., 1949-57; Prof. and RIL Dir., La. St. Univ., 1957—. Hon. Pos.: Chmn. Rsch. Comm. and Nutrn. Comm., Am. Soc. Animal Sci., 1957, '58. Mem.: Phi Kappa Phi; Alpha Zeta; Am. Soc. of Animal Sci.; Am. Inst. of Nutrn.; Soc. of Exptl. Biol. and Med.; Omicron Delta Kappa; Phi Sigma; Inst. of Biol. Scis.; Am. Assn. for the Adv. of Sci., Fellow; Sigma Xi; Gamma Sigma Delta. Contbr. to: Jour. of Animal Sci.; Jour. of Nutrn.; Am. Jour. Physiol.; Exptl. Biol. and Med. Serv. Rec.: U. S. Army, 1941-46. Gen. Int.: Pioneered Methods and Procedures for Use of Atomic Energy in Agric. Rsch.; Techniques for Measuring Endogenouse Mineral Losses and Mineral Availability. Areas of Rsch.: Mineral Requirements of Farm and Laboratory Animals; Interrelationships; Environmental Adaptations and Animal Response Measurements; Farm Animal Anemias, Including Anaplasmosis.

HANSEN, Carl Frederick (Mr.), Hd., Aerophysics Group, General Motors Defense Rsch. Labs., 6767 Hollister, Goleta, Calif. Home Add.: 200 Morada Lane, Santa Barbara, Calif. CHEMICAL PHYSICS. b. Owatonna, Minn., June 11, 1921. s. Clifford F. and Lumetta G. (Swanson) H. Edn.: B.A., Carleton Coll., 1943; M.S., Stanford Univ., 1948. m. Alice A. Underleak, July, 1945. c.: David R.; Richard F.; George H. Exp.: Asst. Prof. Physics, San Jose St. Coll., San Jose, Calif., 1959-61; Chf., Physics Branch, Ames Rsch. Ctr., Moffett Field, Calif., 1949-61; Hd., Aerophysics Grp., Gen. Motors Lab., Goleta, Calif., 1961—. Hon. Pos.: Vice-Pres., Northern Calif. Sec., Am. Rocket Soc. Mem.: Am. Rocket Soc.; Am. Physics Soc.; Am. Geophys. Union; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Phys. of Fluids; A.R.S. Jour.; Jour. of Aeronautical Sci.; N.A.C.A. Tech. Reports; AGARD Conf. on High Temp. Gas Properties. Serv. Rec.: U.S.A.F., 1943-46. Areas of Rsch.: Thermodynamic and Transport Properties of Gases, Reaction Rates, Atomic and Molecular Radiation, Physics of Solar Atmosphere.



HANSEN, Elmer (Ph.D.), Horticulturist, Ore. St. Coll., Corvallis, Ore. Home Add.: 135 N. 33rd St., Corvallis, Ore. HORTICULTURE. b. Milton-Freewater, Ore., Oct. 22, 1903. s. John F. and Johanna (Peterson) H. Edn.: B.S., Ore. St. Coll., 1934; M.S., ibid., 1935; Ph.D., Univ. of Chicago, 1936. m. Edith L. Benedict, Sept. 3, 1937. c.: Kristine; John R. Exp.: Asst. Horticulturist, Ore. St. Coll., 1935-46; Assoc. Hortic., ibid., 1946-48; Hortic., ibid., 1948—. Mem.: A.A.A.S., Fellow; Am. Soc. Hort. Sci.; Am. Soc. Plant Physiol.; Am. Assn. Univ. Prof.; Sigma Xi; Phi Kappa Phi; Alpha Zeta; Gamma Phi Epsilon; Benton Co. C. of C. Author: Production by Pears of Metabolic Gases Other Than Carbon Dioxide, 1935; Effect of Ethylene and Certain Metabolic Gases Upon Respiration and Ripening Before and After Cold Storage, 1937; Chemical Determination of Ethylene in the Emanations from Apples and Pears, 1939; Quantitative Study of Ethylene Production in Relation to Respiration of Pears, 1942; Relation of Ethylene Production to Respiration and Ripening of Premature Pears, 1943. Contbr. to: Sci.; Proc. Am. Soc. Hort. Sci.; Plant Physiol.; Botanical Gazette; Food Rsch.; Indus. Eng. Chem. Gen. Int.: Discovered Production of Ethylene by Pear Fruits; Contributed to Knowledge of Ethylene Metabolism and Effects on Fruits. Areas of Rsch.: Fruit Handling, Storage and Physiol.

HANSEN, Ralph Holm (Ph.D.), Mem., Tech. Staff, Bell Telephone Labs., Murray Hill, N. J. Home Add.: 9 Edgewood Terrace, Millburn, N. J. POLYMER CHEMISTRY, ORGANIC CHEMISTRY. b. Brooklyn, N. Y., Jan. 23, 1923. s. Holm and Ruth M. (Drogness) H. Edn.: B.A., Cornell Univ., 1944; M.S., N. Y. Univ., 1949; Ph.D., ibid., 1952. m. Vera A. Herzog, Oct. 27, 1945. c.: Ralph E.; Bradley H.; Wesley C.; Randall S. Exp.: Chemist, Heyden Chem. Corp., Garfield, N. J., 1944-47; Tchng. Fel., and Grad. Asst., N. Y. Univ., Wash. Sq., N.Y.C., N. Y., 1948-52; Mem. of Tech. Staff, Bell Telephone Labs., Murray Hill, N. J., 1952—. Mem.: Fel. Am. Inst. of Chemists; Mem., Am. Chem. Soc.; N. Y. Acad. of Sci.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon; Pi Kappa Alpha. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Applied Polymer Sci.; Jour. of Soc. of Plastics Engrs. Areas of Rsch.: Oxidation of Polymers as Related to Structure and Morphology; Extensive Studies of Polymer Additives Such as Antioxidants, Blowing Agents, Pigments, UV Protectants, Copper Inhibitors, Plasticizers, and Stabilizers; Polymers as Insulating Materials; Expanded Polypropylene.

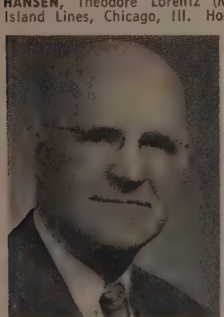


HANSEN, Louis Stephen (D.D.S.), Capt., D. C., U. S. Navy, Chief, Dent. and Oral Pathol. Div., Armed Forces Inst. of Pathol., Wash. 25, D. C. Home Add.: 9209 Bardon Rd., Bethesda 14, Md. ORAL PATHOLOGY. b. San Diego, Calif., May 10, 1918. s. Louis S. and Hazel (Bruschi) H. Edn.: B.S., Univ. of Sou. Calif., 1941; D.D.S., ibid., 1941; M.S., Georgetown Univ., 1955. m. Ignota Lorene Miller, Feb. 14, 1942. c.: Lorene S.; Stephen C.; Cheryl L. Exp.: Instr., U. S. Naval Dent. Schl., Bethesda, Md., 1953-55; Chief of Dent. Serv., U. S. Naval Hosp. in U.S.S. Haven, Long Beach, Calif., 1955-57; Rsch. Patholt., U. S. Naval Dent. Schl., Bethesda, Md., 1957-60; Chief, Dent. and Oral Pathol., Armed Forces Inst. of Pathol., Wash., D. C., 1960—; Registrar and Patholt., The Registry of Dent. and Oral Pathol., A. F. I. P., ibid., 1960—. Mem.: Diplomate, Am. Bd. of Oral Pathol.; Fellow, Am. Coll. of Dents.; Fellow, Internatl. Coll. of Dents.; Fellow,

Am. Acad. of Oral Pathol.; Fellow, Am. Assn. for the Adv. of Sci.; Internatl. Assn. for Dent. Rsch.; Am. Dent. Assn.; Sou. Calif. Dent. Assn.; Valley Dent. Soc.; L. A. Co. Dent. Soc.; Delta Sigma Delta; Omicron Kappa Upsilon; Sigma Xi; Blue Key; Toastmasters Internatl. Contbr. Author: Oral Pathology. Contbr. to: Jour. of the Am. Dent. Assn.; Jour. of Dent. Rsch.; Jour. of Oral Surg.; Anesthesia; Hosp. Dent. Serv. Serv. Rec.: U. S. Navy, 1941—. Areas of Rsch.: Biologic Effects of Ionizing Radiation; Ultrasonics and Ultra High Speed Instrumentation upon the Teeth and Supporting Structures; Pathology of the Salivary Glands; Keratotic Lesions of the Oral Mucosa.

HANSEN, Robert Suttle (Ph.D.), Prof. of Chem., Iowa St. Univ., Ames, Ia. PHYSICAL CHEMISTRY (SURFACE CHEMISTRY). b. Salt Lake City, Utah, June 17, 1918. s. Charles Andrew and Bessie (Suttle) H. Edn.: B.S., Univ. of Mich., 1940; M.S., ibid., 1941; Ph.D., ibid., 1948. m. Gilda Cappannari, Apr. 8, 1939. c.: Edward Charles. Exp.: Asst. Prof. of Chem., Iowa St. Univ., 1948-51; Assoc. Prof. of Chem., ibid., 1951-55; Prof. of Chem., ibid., 1955—; Assoc. Chem., Ames Lab., Atomic Energy Commn. (joint appointment with Chem. Dept., Iowa St. Univ.), 1948-55; Sr. Chemist, 1955—; Natl. Sci. Found. Senior Postdoctoral Fellow, Univs. of Sou. Calif. and Utrecht, 1959-60. Hon. Pos.: Secy.-Treas., Colloid Div., Am. Chem. Soc., 1952-53. Mem.: Am. Chem. Soc.; A.A.A.S.; A.A.-U.P.; Phi Beta Kappa; Sigma Xi; Phi Lambda Upsilon; Phi Kappa Phi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Physical Chem. War Record: Res. Officer, active duty, 1942-46. Gen. Int.: Demonstrated Multimolecular Adsorption from Solution; Developed Adsorption Separation of Hafnium from Zirconium; Developed Quasi-Thermodynamic Theory of Adsorption from Solution; Theories of Effects of Adsorption of Electrical Properties of Interfaces and of Kinetic Mechanism of Adsorption. Special Int.: Adsorption; Corrosion; Solution Thermo-dynamics; Surface Electrochemistry.

HANSEN, Theodore Lorentz (M.D.), Retired Chf. Surgeon, Rock Island Lines, Chicago, Ill. Home Add.: 7335 E. Placita Sinaloa, Tucson, Ariz. SURGERY. b. Alden, Minn., Aug. 29, 1890. s. Peter and Ida (Nelsen) H. Edn.: B.S., Univ. of Minn., 1912; M.D., Northwestern Univ., 1916; Zeugnus, Univ. of Vienna, 1932; Zeugnus, Polyclinic, Vienna, 1932. m. Velma Hoovel, July 1, 1920 (dec.). 2nd m. Muriel Y. Emery, May 26, 1961. Exp.: Asst. Chf. Surgeon, Chicago Rock Island and Pa. R.R., Chicago, Ill., 1919-36; Chf. Surg., ibid., 1936-56. Hon. Pos.: Chmn., Med. and Surg. Sect., Assn. of Am. Railroads. Mem.: A.A.A.S.; Internatl. Coll. of Surgeons; Am. Coll. of Surgeons; Am. Bd. of Surgery; Western Surgical Soc.; Am. Assn. for the Surgery of Trauma; Am. Assn. of Railroad Surgeons; Am. Industrial Surgeons; Chicago Surgical Soc.; A.M.A.; Chicago Athletic Club; South Shore Country Club. Contbr. to: Industrial Med.; Surgery Gynecol. and Obstet.; Surgery. Serv. Rec.: U. S. Med. Corps, 1918-19. Gen. Int.: Sr. Surgeon, St. Luke's Hosp., Chicago, Ill. Listed in: W. W. in Am.; W. W. in Industrial Surgery. Areas of Rsch.: Fractures; General Surgery, especially the stomach and thyroid.



HANSEN, Waldemar Conrad (Ph.D.), Consulting Chemist, 155 Maple St., Valparaiso, Ind. Home Add.: 155 Maple St., Valparaiso, Ind. CHEMISTRY. b. Sturgis, S. Dak., Feb. 9, 1896. s. Hans and Anine (Iversen) H. Edn.: B.S., Mont. St. Coll., 1917; Ph.D., Columbia Univ., 1922. m. Muriel Anna Bruggmann, May 21, 1924. c.: Donald Waldemar; Edward Andrew. Exp.: Plant Chemist, Three Forks Portland Cement Co., Trident, Mont., 1917; Tchng. Asst., Univ. of Iowa, 1919-20; Tchng. Asst., Columbia Univ., 1920-22; Instr., Mont. St. Coll., 1922-23; Rsch. Chemist, Midwest Refining Co., Wyo., 1923-24; Portland Cement Assn. Fellowship, Bur. of Standards, Wash., D. C., 1924-29; Rsch. Chemist, Am. Cyanamid Co., Linden, N. J., 1929-34; Plant Mgr., Am. Cyanamid and Chem. Corp., Woodbridge, N. J., 1934-38; Rsch. Chemist, Portland Cement Assn., Chicago, Ill., 1938-45; Mgr. Rsch. Labs., Universal Atlas Cement Co., Gary, Ind., 1945-55; Dir. of Rsch., ibid., 1955-61; Consulting Chemist, Valparaiso, Ind., 1961—. Hon. Pos.: Chmn., N.A.S.-N.R.A. Advisory Panel to Bldg. Rsch. Div., Natl. Bur. of Standards; Chmn., Longtime Study Comm., Portland Cement Assn.; Delegate, Third Internatl. Symposium Chem. of Cement, London, 1952; Delegate and Mem. Prog. Comm., Fourth Internatl. Symposium on the Chem. of Cement, Wash., D. C., 1960. Mem.: A.A.A.S.; Am. Inst. Chemists; Am. Chem. Soc.; Am. Concrete Inst.; Am. Soc. for Testing Materials; Acad. of Political Sci.; Am. Ceramics Soc.; Sigma Alpha Epsilon; Sigma Xi; Gamma Alpha; Phi Lambda Upsilon; Mathesis Club. Contbr. to: Jour. Am. Chem. Soc.; Jour. Am. Concrete Inst.; Jour. Am. Ceramics Soc.; A.S.T.M. Procs. and Bull.; Am. Jour. of Sci.; Le Ciment; Zement; Rock Products. Serv. Rec.: U. S. Army, 1917-19. Areas of Rsch.: Constitution of Portland Cement; Structure of Hardened Portland Cement Pastes and Behavior of Building Materials in Service

HANSON, Clarence Herman (Ph.D.), Ldr., Alfalfa Investigations, A.R.S., U. S. Dept. of Agri., Plant Industry Sta., Beltsville, Md. Home Add.: 10726 Kinloch Rd., Silver Spring, Md. GENETICS AND PLANT BREEDING OF FORAGE CROPS. b. DeKalb, Ill., June 20, 1913. s. Charles A. and Anna Evelyn (Johnson) H. Edn.: B.S., Univ. of Minn., 1940; M.A., Univ. of Mo., 1942; Ph.D., N. C. St. Coll., 1951. m. Gertrude Elizabeth Schmidt, 1941. c.: Elizabeth; James Clarence. Exp.: Agron., U. S. Dept. of Agri., Univ. of Mo., 1941-42; Agron., U.S.D.A., N. C. St. Coll., 1946-58; Ldr., Alfalfa Investigations, U.S.D.A., Beltsville, Md., 1958—. Mem.: Am. Soc. of Agron.; Botanical Soc. of Am.; Am. Genetic Assn.; Sigma Xi; Alpha Zeta; Gamma Sigma Delta; Gamma Alpha. Contbr. to: Agron. Jour.; Am. Jour. Botany; Jour. of Heredity; Crop Science. War Rec.: U. S. Navy, 1942-45. Achievements of Gen. Int.: Developed the Variety Known as Rowan Lespedeza. Areas of Rsch.: Genetics and Breeding of Alfalfa and Lespedeza.

HANSON, Eugene Harold (Ph.D.), Mgr., Adv. Analysis Dept., United Electro Dynamics, Inc., 200 Allendale Rd., Pasadena, Calif. Home Add.: 1181 So. Los Robles Ave., Pasadena 5, Calif. MATHEMATICS (REAL VARIABLES). b. Stockport, Ohio, Jan. 13, 1903. s. S. Clifford and Hattie (Johnson) H. Edn.: B.S., Denison Univ., 1925; M.A., Ohio St. Univ., 1933; Ph.D., ibid., 1935. m. Fern Miller, June 21, 1926. c. Richard Eugene. Exp.: Dir., Dept. of Maths. and Prof. of Maths., No. Tex. St. Univ., Denton, Tex., 1935-58; Engrng. Spec., Chance Vought Aircrafts, Inc., Dallas, Tex., 1957-59; Chf. Techn. Staff, Land-Air, Inc., Pacific Missile Range, Pt. Mugu, Calif., 1959-61; Mgr., Adv. Analysis Dept., United Electro Dynamics, 1961—. Hon. Pos.: Mem., Bd. of Govs., Mathl. Assn. of Am.; Chmn., Tex. Sect., Math. Assn. of Am. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Soc. for Indust. and Appl. Maths.; Operations Rsch. Soc. of Am.; Am. Rocket Soc.; Inst. of Aerospace Scis.; Sigma Alpha Epsilon; Sigma Xi; U. S. Naval Inst.; Res. Officers Assn.; Pi Mu Epsilon; Kappa Mu Epsilon; Am. Assn. for the Adv. of Sci.; Kiwanis Club. Contbr. to: Bull. Am. Math. Soc. Serv. Rec.: U. S. Naval Reserve, 1942—. Areas of Rsch.: Set Theory, Functions of a Real Variable; Combinatorial Analysis; Orbit Theory.

HANSON, Harold Palmer (Ph.D.), Prof. of Physics, Univ. of Tex., Austin, Tex. Home Add.: 2903 Clarice Ct., Austin, Tex. PHYSICS. b. Virginia, Minn., Dec. 27, 1921. s. M. Bernhard and Elvida Elaine (Paulsen) H. Edn.: B.S., Superior St. Coll., 1942; M.S., Univ. of Wis., 1944; Ph.D., ibid., 1948. m. Mary Jean Stevenson, June 22, 1944. c.: Steven Bernard; Barbara Jean. Exp.: Instr. to Assoc. Prof., Univ. Fla., 1948-53; Assoc. Prof. to Prof. of Physics, Univ. of Tex., 1954—; Visiting Prof., Lincoln Labs., Cambridge, Mass., s.s., 1953; Visiting Prof., Univ. of Wis., s.s., 1957; Chmn., Dept. of Physics, Univ. of Tex., 1962. Mem.: Am. Phys. Soc.; Sigma Pi Sigma; Sigma Xi. Contbr. to: The Phys. Rev.; Jour. of Chem. Physics; The Rev. of Scientific Instruments. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: Fulbright Rsch. Scholar to Norway, 1960-61. Areas of Rsch.: X-Ray Spectroscopy, Electron Diffraction, Solid State, Atomic Structure Factors.

HANSON, James Edward (Ph.D.), Principal Staff Mem., Applied Physics Lab. of the Johns Hopkins Univ., 8621 Georgia Ave., Silver Spring, Md. Home Add.: 17 Dellwood Ave., Ellicott City, Md. MATHEMATICAL ANALYSIS; DYNAMICS OF GUIDED MISSILE SYSTEMS. b. Syracuse, N. Y., Dec. 11, 1927. s. Harold Edward and Virginia (Gordon) H. Edn.: A.B., Cornell Univ., 1949; A.M., Harvard Univ., 1951; Ph.D., The George Wash. Univ., 1960. m. Helena Knouse, Oct. 17, 1953. c.: Mark Edward; John Michael; Christine Mary. Exp.: Tchng. Fellow in Math., Cornell Univ., 1947-49; Tchng. Fellow in Math., Harvard Univ., 1949-51; Tchng. Probability Theory, Johns Hopkins Univ., 1960-61; Principal Staff Mem., Applied Physics Lab. of the Johns Hopkins Univ., 1951—. Mem.: Am. Math. Soc.; A.A.A.S.; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi. Areas of Rsch.: Mathematical Prob-

ability; Signal and Noise Theory; Guided Missile Dynamics; Summability; Real and Complex Variables; Optimum Filtering (A La Wiener).

HANSON, Kenneth Marvin (S.D.), Rsch. Asst., Ind. Univ., Indianapolis, Ind. Home Add.: 1100 W. Mich., Indianapolis 7, Ind. CARDIOVASCULAR PHYSIOLOGY. b. Brookings, S. Dak., Feb. 21, 1927. s. O. W. and Sue S. (Stickley) H. Edn.: B.S., Sioux Falls Coll., 1951; S.D., Augustana Coll., 1948. Exp.: Rsch. in Physiology and Pharmacology, Univ. of Minn., 1954-57; Rsch. Asst., Ind. Univ., 1957—. Mem.: A.A.A.S.; RESA; ACS. Contbr. to: Am. Jour. of Physiology; Federation Proc.; Jour. of Nervous and Mental Diseases; Jour. of Applied Physiology; Proc. of the Soc. for Exp. Biol. and Med.; The Physiologist; Jour. of the Natl. Cancer Inst.; Cancer Rsch.; Experientia.

HANSON, L(ester) E(ugene) (Ph.D.), Prof., Hd., Dept. of Animal Husbandry, Inst. of Agri., Univ. of Minn., St. Paul 1, Minn. Home Add.: 1413 Idaho Ave., W., St. Paul 13, Minn. SWINE NUTRITION AND MANAGEMENT. b. Willmar, Minn., Mar. 31, 1912. s. Edwin William and Esther Dorothea (Lundquist) H. Edn.: B.S., Univ. of Minn., 1936; M.S., Cornell Univ., 1937; Ph.D., ibid., 1940. m. Gladys Diessner, Aug. 21, 1937. c.: Bruce Eugene; Ronald Lee; Karen. Exp.: Asst., Animal Husbandry, Cornell Univ., 1936-37; Fellow, Am.-Scandinavian Foundation, Study in Denmark, 1937-38; Asst. Animal Husbandry, Cornell Univ., 1938-40; Instr. to Prof., Dept. of Animal Husbandry, Univ. of Neb., 1940-50; Prof., Dept. Animal Husbandry, Univ. of Minn., 1950—; Hd., Dept., ibid., 1956—. Mem.: A.A.A.S.; Am. Soc. of Animal Sci.; A.A.U.P.; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Alpha Zeta; Phi Zeta. Contbr. to: Journal of Animal Sci., and others. Areas of Rsch.: Nutrition of the pig from birth to 8 weeks—ration formulation, nitrogen and mineral balance and effect of early treatment on subsequent growth and devel.; Antibiotics, arsonic acids and other antibacterial agts. for pigs of various ages; Nutrition of breeding females, energy requirements and protein requirements.

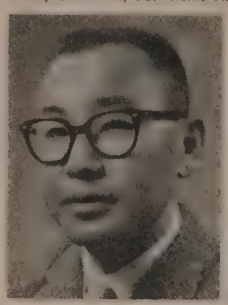
HANSON, Marvin Wayne (Mr.), Asst. Prof., Centenary Coll., Shreveport, La. Home Add.: 468 Albert, Shreveport, La. CHEMISTRY. b. Longstreet, La., May 5, 1928. s. James Marvin and Nellie (Conneli) H. Edn.: B.S., Centenary Coll., 1951; M.S., Univ. of Houston, 1953. m. Frances Dawson, Sept. 5, 1951. c.: Jane Kimberly; Lisa Leigh. Exp.: Asst. Prof., McNeese Coll., 1954-55; Asst. Prof., Centenary Coll., 1959-61; N.S.F., Science Faculty Fellow, Univ. of Houston, 1961-62; Asst. Prof., Centenary Coll., 1962—. Mem.: Am. Inst. of Chem.; Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; La. Acad. of Sci.; Sigma Tau Gamma; Omicron Delta Kappa; Optimist Internatl. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Anal. Chem; Jour. La. Acad. of Sci.; Jour. Chem. Edn. Serv. Rec.: U. S. Army, 1955-57. Areas of Rsch.: Anal. Chemistry, Physical Organic.

HANWAY, Donald Grant (Ph.D.), Chmn. and Prof., Agron. Dept., Univ. Neb., Lincoln, Neb. Home Add.: 1213 N. 46th St., Lincoln, 3, Neb. PLANT BREEDING. b. Broadwater, Neb., Aug. 6, 1918. s. Frank P. and Emma Terissa (Twist) H. Edn.: B.S., Univ. of Neb., 1942; M.S., ibid., 1948; Ph.D., Iowa St. Coll., 1954. m. Blanche E. Larson, 1942. c.: Donald, Jr.; Wayne Edward; Janice Kay. Exp.: Morrill Co. Rural Schl. Tchr., 1936-40; Asst. in Agron., Univ. of Neb., 1948-49; Asst. Prof., ibid., 1949-55; Assoc. Prof., ibid., 1955-62; Prof. and Chmn., ibid., 1962—. Mem.: Am. Soc. of Agron.; Sigma Xi; A.A.A.S.; Alpha Zeta; Phi Beta Kappa; Phi Kappa Phi; Gamma Sigma Delta. Contbr. to: Agron. Jour. War Record: U. S. Air Force, 1943-46. Areas of Rsch.: Soybean Improvement and Production Practices.

HARA, H. James (M.D.), Ear, Nose and Throat Surg., Clin. Prof. of Otolaryngol., Loma Linda Univ., 1720 Brooklyn, Los Angeles 33, Calif. Home Add.: 432 S. Boyle Ave., Los Angeles 33, Calif. OTOLARYNGOLOGY. b. Okayama, Japan, Oct. 24, 1888. s. Heizaburo and Koma (Tabuchi) H. Edn.: M.D., Loma Linda Univ., 1918; M.S., Univ. of Pa., 1928; D.Sc., ibid., 1934; Ph.D., Univ. of Hokkaido, 1935. m. Dr. Margaret Elisabeth Farr, June 27, 1921. Exp.: Instr. in Med., Loma Linda Univ., 1918-26; Asst. Prof., Otolaryngol., ibid., 1929-34; Clin. Prof., ibid., 1934—; Dir. of Grad. Tchng. in Otolaryngol., ibid., 1947—. Hon. Pos.: Consult., Otolaryngol., Glendale Sanitrm. and Hosp., Sr. Otolaryngol., Los Angeles Co. Gen. Hosp., and White Meml. Hosp., Los Angeles. Mem.: Am. Coll. of Surgeons; Am. Laryngology, Rhinology and Otology Soc.; Am. Otorhinologic Soc. for Plastic Surgery Assn.; Alpha Omega Alpha; Sigma Xi; Japan-Am. Soc. of Sou. Calif.; Rotary. Assoc. Ed.: Medical Arts and Scis. Contbr. to: Laryngoscope; Annals of Otology, Rhinology and Laryngology; Arch. of Otolaryngology; Life and Health. Gen. Int.: Rsch. Prize Winner, Calif. Med. Assn., 1930; Alumnus of the Year, Schl. of Med., Loma Linda Univ., 1956; Americanism Medal, D.A.R., 1958. Areas of Rsch.: Allergy in Otolaryngology.

HARAGAN, Donald Robert (Mr.), Rsch. Meteorologist, Univ. of Tex., Austin, Tex. Home Add.: 2600 Enfield Rd., Austin, Tex. METEOROLOGY OF THE UPPER ATMOSPHERE. b. Houston, Tex., Apr. 15, 1936. s. Donald William and Mary (Thompson) H. Edn.: B.S., Univ. of Tex., 1959; M.S., A. & M. Coll. of Tex., 1960. Exp.: Rsch. Asst., Univ. of Tex., 1958-59; Grad. Asst., A. & M. Coll. of Tex., 1959-60; Rsch. Meteorologist, Univ. of Tex., 1960—. Mem.: Am. Meteorological Soc.; Am. Geophysical Union; Phi Kappa Phi. Areas of Rsch.: Upper Atmosphere; Planetary Atmospheres; Solar-Terrestrial Relationships.

HARAMAKI, Chiko (Ph.D.), Asst. Prof., Ornamental Hort., Pa. Sta. Univ., Univ. Pk., Pa. Home Add.: 472 E. College Ave., Sta. Coll., Pa. ORNAMENTAL HORTICULTURE.



Hayward, Calif., Oct. 3, 1925. s. Saburo and Mite (Sato) H. Edn.: B.S., Ore. Sta. Univ., 1952; M.S., Univ. of Ill., 1953; Ph.D., Ohio Sta. Univ., 1957. Exp.: Fellow, Roses, Inc., Ohio Sta. Univ., 1953-56; Fellow, Ohio Florists Assn., ibid., 1956-57; Asst. Prof., Pa. Sta. Univ., 1957—. Mem.: A.S.H.S.; A.A.A.S.; Internatl. Soc. for Hort. Sci.; Weed Soc. of Am.; Internatl. Plant Propagators Soc.; Am. Assn. of Univ. Profs.; Sigma Xi; Phi Epsilon Phi; Pi Alpha Xi; Gamma Sigma Delta; Alpha Zeta. Contbr. to: Procs. of the Northeastern Weed Control Confs.; Sci. for the Farmer; Bull. of the Pa. Flower Growers. Serv. Rec.: U. S. Army Air Force, 1946-49. Areas of Rsch.: Herbicide Tolerance, Asexual Propagation, Culture, and Variety Tests of Ornamental Plants; Weed Control.

HARBECK, Richard Merle (Mr.), Specialist for Sci., U. S. Office of Edn., Wash. 25, D. C. Home Add.: 102 Yeonas Dr., S.E., Vienna, Va. SCIENCE EDUCATION.

b. Olean, N. Y., June 19, 1923. s. Merle J. and Edna K. (Watson) H. Edn.: B.S., Heidelberg Coll., 1949; M.S., Bowling Green St. Univ., 1952; Adv. Wk., Univ. of Mich. m. Betty L. Rittenhouse, June 17, 1945. c.: Susan Jane; Katherine Mary Frances. Exp.: Sci. Tchr., Jefferson H. S., Delphos, Ohio, 1949-52; H. S. Prin., Ada H. S., Ada, Ohio, 1952-54; Sci. Tchr., Pub. Schls., Flint, Mich., 1954-58; Sci. Consultant, Mott Found., ibid., 1956-58; Supv. of Sci. and Math., U. S. Army Dept. Schls., Europe, 1958-59; Spec. for Sci., U. S. Office of Edn., Wash., D. C., 1959—. Hon. Pos.: Dir., Flint Sci. Fair, 1957; Dir. of Local Arrangements, Natl. Sci. Fair, 1958. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Assn. for Rsch. in Sci. Tchng.; Kappa Delta Pi. Author: High School Pupil Programs, co-author, 1962. Contbr. to: Schl. Life; Selected Sci. Services; Sci. Tchrs. World; Sci. World. Serv. Rec.: U. S. Army Air Force, 1943-45. Areas of Rsch.: Status of Science Tchng., High Schl. Pupil Programs. Specialized Knowledge in Such Areas as Science Projects, Science Process Tchng.; Science Program Evaluation and Improvement.

HARBINSON, John Alexander (M.D.), Asst. Prof., Pediatrics, Univ. of Tenn., Memphis, Tenn. Home Add.: 1507 S. King St., Suite 305, Honolulu 14, Hawaii. PEDIATRIC CARDIOLOGY. b. N. Ireland, July 23, 1926. s. Robert and Eliza Jane (McRoberts) H. Edn.: M.D., Univ. of Toronto Med. Schl., 1952. Exp.: Grad. Intern in Med., Toronto Hosp., 1952-53; Rotating Intern, St. Michaels Hosp., Toronto, 1954-55; Resident Chest Disease, Leahi Hosp., Honolulu, 1955-57; Resident Pediatrics, Children's Hosp., Honolulu, 1957-59; Instr. Rsch. Assoc., Pediatric Dept., Univ. of Wash., 1959—; Asst. Prof., Pediatrics, Univ. of Tenn., 1961—. Mem.: A.A.U.P.; A.A.A.S.; Hawaii Acad. of Sci. Contbr. to: Am. Jour. Diseases of the Chest; Hawaii Med. Jour. Pediatrics. Areas of Rsch.: Collagen Diseases.

HARDY, Martha Crumpton (Ph.D.), Coordinator, Training Center, Ill. Visually Handicapped Inst., 1900 So. Marshall Blvd., Chicago, Ill. Home Add.: 1706 Greenleaf Ave., Chicago 26, Ill. PSYCHOLOGY; REHABILITATION. b. Coles Creek, Miss., Jan. 15, 1891. d. Augustus Reese and Jennie (Martin) H. (both dec.). Edn.: Ph.B., Univ. of Chicago, 1917; M.A., ibid., 1918; Ph.D., ibid., 1928. Exp.: Prof., Edn., Psychology, Baylor Coll., 1918-19; Schl. Psychologist, Chicago, Ill., Public Schls., 1919-20; Instr., Asst. Prof., Edn. Psychol., Univ. of Tex., 1920-22; Staff Psychologist, Eliz. McCormick Meml. Fund, Chicago, Ill., 1923-40; Asst. Dir., ibid., 1940-55; Coordinator, Trng. Center for Adult Blind, Ill. Dept. of Pub. Welfare, Chicago, 1956—. Mem.: Am. Psychol. Assn., Fellow; Soc. for Rsch. in Child Devel., Fellow; A.A.A.S., Fellow; Internatl. Coun. of Psychol., Fellow; Am. Assn. of Workers for the Blind; Sigma Xi; Kappa Delta; Pi Lambda Theta; Kappa Delta Pi. Co-Author: Healthy Growth, 1936. Contbr. to: Child Dev.; Jour. Phys. Anthrop.; Jour. Human Biol.; Jour. Am. Med. Assn.; Jour. Pediatrics; Jour. Abnormal and Social Psychol.; Edn. Rsch.; and others. Areas of Rsch.: Child Dev.; Influence of Health on Behavior and Personality Adjustments; Econ. Status in Relation to Physical Fitness; Motivation for Remedial Care and Preventive Measure; Impact of Blindness on Adjustments and Life Attitudes; Sensory Deprivation and Learning.

HARDEN, K. Albert (M.D.), Prof. in Med., Dept. of Med., and Vice-Dean, Howard Univ. Med. Schl., Wash., D. C. Home Add.: 4629 Blagden Terrace, N. W., Wash., D. C. INTERNAL MEDICINE, CHEST DISEASE. b. Bessemer, Ala., Aug. 20, 1905. s. Albert and Lily (Taylor) H. Edn.: B.A., Univ. of Mich., 1927; M.D., ibid., 1931. m. Julia Woodhous, Dec. 27, 1933. c.: Katharine. Exp.: Instr. in Med., Howard Univ. Med. Schl., 1941-45; Asst. Prof. of Med., ibid., 1945-48; Assoc. Prof. of Med., ibid., 1948-59; Prof. of Med., ibid., 1959—; Vice-Dean, Howard Univ. Coll. of Med., 1960—. Mem.: Am. Assn. Adv. of Sci.; Am. Coll. of Physicians; Am. Trudeau Soc.; Dist. Fed. for Clin. Rsch.; Natl. Med. Assn.; Sigma Xi; Omega Psi Phi; N.A.A.C.P.; Urban League. Contbr. to: Natl. Acad. of Scis. Areas of Rsch.: Pulmonary Function and Chest Diseases.

HARE, Michael Meredith (Mr.), Independent Scholar. Home Add.: Hadley Dr., Smithtown, L. I., N. Y. NATURAL PHILOSOPHY. b. N. Y., N. Y., Jan. 17, 1909. s. Montgomery and Constance (Parsons) H. Edn.: B.A., Columbia Univ., 1935. m. Jane Perry Jopling, July 11, 1931. c.: Michael S.; Peter H.; Sara P. Exp.: Asst. Partner, Corbett and Mac Murray, N.Y.C., 1937-40; Partner, Hare and Elder, N.Y.C., 1940-50; Partner, Hare and Hatch, N.Y.C. and Caracas, Venezuela, 1950-55. Mem.: A.A.A.S. Author: Macrocosm and Microcosm, 1961. Contbr. to: Coll. and Univ. Business; Architectural Record; Architectural Forum. Serv. Rec.: U.S.M.C.R., 1942-45. Areas of Rsch.: Interdependance of Classical and Semi-Classical Force Laws.

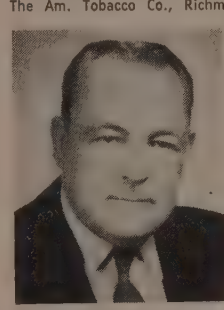
HARGETT, Emil Retz (Mr.), Assoc. Prof. of Civil Engrng., S. D. Sta. Coll., Brookings, S. D. Home Add.: 1708 Olwien St., Brookings, S. D. HIGHWAY ENGINEERING—WITH PRIMARY INTEREST IN THE AREA OF PAVEMENT DESIGN. b. Russellville, Ala., Nov. 8, 1918. s. Marshall C., Sr. and Maude (Cheatham) H. Edn.: B.S., C.E., Auburn Univ., 1946; M.S., C.E., Univ. of Colo., 1954. m. Louise Cherry, June 5, 1950. c.: Fred; Beth; Arman. Exp.: Instr. to Asst. Prof., Auburn Univ., Auburn, Ala., 1947-55; Asst. Prof., Univ. of Fla., Gainesville, Fla., 1955-59; Assoc. Prof., S. D. Sta. Coll., 1959—. Hon. Pos.: Vice Chmn., Northern Plains Dist. of the Am. Soc. for Testing and Materials. Mem.: Am. Soc. for Civil Engrs.; Am. Soc. for Testing and Materials; Chi Epsilon; Sigma Tau. Author: "Basic Material Properties for the Design of Bituminous Concrete Surfaces," 1962. Contbrng. Author: Determination of Maximum Grain Size Removed by the Elutriation Test and Classed as Clay. Contbr. to: Procs. of Hwy. Rsch. Bd. Serv. Rec.: U. S. Army Air Corps, 1943-46. Areas of Rsch.: Bituminous and Prestressed Concrete Pavements.

HARGREAVES, George Henry (Mr.), Chf. Water Resources Advisor, Northeast Office, U. S. Aid to Brazil, APO, 676, N. Y., N. Y. Home Add.: P. O. Box 200, Calpella, Calif. CIVIL ENGINEERING AND WATER RESOURCES INVESTIGATIONS. b. Chico, Calif., Apr. 2, 1916. s. Carey and Luella May (Raymond) H. Edn.: B.S., Agr. Soils, Univ. of Calif., Berkeley, 1939; B.S., C.E., Univ. of Wyoming, 1943. m. 1st. Elizabeth Gardner, Aug. 9, 1941, (dec.). m. 2nd: Sara Romero, Jan. 6, 1951. c.: Ronald G.; Margaret A.; Mark R.; Sonia M.; George L. Exp.: Soil Surveyor, Univ. of Calif., Berkeley, Calif., 1940; Assoc. Rural Rehab. Supvr., Farm Security Admin., Calif., 1940-41; Soils Technolt., Bureau Reclaim., Wyo., 1941-42; Grad. Asst., Univ. of Wyo., Laramie, Wyo., 1942-43; Engr., Bureau Reclaim., Sacramento, Calif., 1946-48; Civil Engr., U. S. Army Corps of Engrs., Greece, 1948-49; Reclaim. Engr., ECA, Greece, 1949-50; Irrigation Engr., Inst. of Inter Am. Affairs, Peru and Haiti, 1950-51; Irrig. Engr., FOA, Haiti, 1951-54; Irrig. Engr., ICA, Haiti, 1954-56; Irrig. and Drainage Engr., ICA, Philippines, 1956-57; Water Resources Adv., ICA, Philippines, 1957-60; Agr. Engr. Irrg., ICA and AID, Brazil, 1960-62; Chf. Water Resources Adv. Northeast, U. S. AID, Brazil, 1962—. Mem.: Fellow, Am. Soc. of Civil Engrs., Mem.; Am. Soc. of Agric. Engrs.; Am. Geophysical Union; Alpha Zeta; Sigma Xi. Contbr. to: Procs. and Trans. of Am. Soc. of Civil Engrs.; Trans. Internatl. Soc. of Sugar Cane Technolts.; Philippine Agric. Engr. Jour.; Proc. of the Philippine Sugar Technolts.; Philippine Geograph. Jour. and Jour. of the Soil Sci. Soc. of the Philippines. Serv. Rec.: U. S. Naval Reserve, 1943-46, Ens. to Lt.(jg), Con. and PTO. Member of U. S. Delegation to 3rd ECAFE, United Nations Regional Technical Conference on Water Resources Development. Areas of Rsch.: Irrigation, Irrigation Requirements, Water Resources Planning and Investigations.

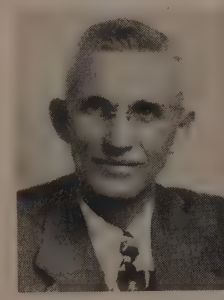
HARKIN, Duncan C(laire) (Ph.D.), Mathematician, U. S. Army Engrng. Rsch. and Development Gimrada, Ft. Belvoir, Va. Home Add.: 3000 Crest Ave., Cheverly, Md. MATHEMATICS. b. Cameron, W. Va., Sept. 20, 1899. s. Daniel C. and Flora (Duncan) H. Edn.: A.B., W. Va. Univ., 1921; A.M., ibid., 1923; Ph.D., Univ. of Chicago, 1927. m. Alice Mildren, Sept. 1, 1925. c.: Phyllis H. Willis; Duncan Alfred; Anita Rose Peterson. Exp.: Instr., Math., W. Va. Univ., Morgantown, 1923-25; Univ. of Fla., Gainesville, 1925-26; Lectr. in Math., Univ. of Manitoba, Winnipeg, Can., 1926-27; Assoc. Prof., Ala. Poly. Inst., Auburn, 1927-37; Prof., 1937-38; Mem. Staff, Brooklyn Coll. of College City, N. Y., 1938-46; Hd. Mathematician, Analysis Group, Re Div., Bur. Ord., Dept. of Navy, 1941-46; Hd. Mathematics Consultant Group, Naval Re Lab., 1946-49; Visit. Fulbright Prof., Math. Inst., Univ. of Oslo, Norway, 1950; Consultant, U. S. Govt., 1951-58; Prof., U. S. Naval Acad., Annapolis, 1958-59; Chmn., Dept. of Math. and Statistics, Am. Univ., 1960-62; Mathematician, U. S. Army, Ft. Belvoir, Va., 1962—. Hon. Pos.: Chmn., Potomac River Naval Command, U. S. Civil Serv. Comm., Wash., D. C.; Fellow, Am. Assn. for the Adv. of Sci. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Soc. Mathematique de France; Phi Beta Kappa. Author: Fundamental Mathematics, 1941. Contbr. to: Norsk Matematisk Tidsskrift; L'Enseignement Mathematique; Babel; Am. Jour. of Math. Areas of Rsch.: Theory of Numbers; Modern Algebra; Elliptic Functions; Hist. of Math. Comparative Linguistics.

HARLLEE, Fredric Nesbit (Mr.), Physicist, Natl. Bur. of Standards, Wash., D. C. Home Add.: 4610 Kans. Ave., N.W., Wash., D. C. MASS SPECTROMETRY. b. Darlington, S. C., Jan. 15, 1938. s. Robert N. and Essie (Fort) H. Edn.: B.A., Talladega Coll., 1959; M.S., Howard Univ., 1962. Exp.: Physicist, Mathematician, Army Ballistics Missile Agency, Redstone Arsenal, Ala., 1958-59; Physicist, Rsch. Asst., Howard Univ., 1959-60; Physicist, Natl. Bur. of Standards, Wash., D. C., 1960—. Mem.: Am. Assn. of Physics Tchrs.; Am. Assn. for the Adv. of Sci.; Beta Kappa Chi; Omega Phi Psi. Contbr. to: Science; Physical Rev.; The Jour. of Physics; Internatl. Sci. and Tech. Areas of Rsch.: Electron and Ion Optics of Mass Spectrographs and Velocity Focusing Devices.

HARLAN, William Robert (Ph.D.), Managing Dir., Rsch. and Dev., The Am. Tobacco Co., Richmond, Va. Home Add.: 329 Greenway Lane, Richmond 26, Va. PLANT BIOCHEMISTRY. b. McCoysville, Pa., Aug. 16, 1904. s. Stephen R. and Anne (Considine) H. Edn.: B.S., N. Mex. St. Univ., 1925; Ph.D., Iowa State Univ., 1929. m. Helen W. Weaver, Aug. 3, 1929. c.: William R., Jr.; James C.; Anne B. Exp.: Rsch. Fellowship, Tobacco Products and Chem. Corp., Ames, Ia., 1926-28; Rsch. Chemist, Stein Hall and Co., Charlotte, N. C., 1929-30; Rsch. Chemist, The Am. Tobacco Co., Richmond, Va., 1930-33; Asst. Dir. of Rsch., ibid., 1933-59; Managing Dir., ibid., 1959—. Hon. Pos.: Chmn., Va. Sect., The Am. Chem. Soc. Mem.: Am. Chem. Soc.; A.A.A.S.; Va. Acad. of Sci.; Soc. of Chem. Indus.; Phi Lambda Upsilon. Contbr. to: Jour. of Am. Chem. Soc.; Indusl. and Engrng. Chem.; Encyc. of Chem. Technol. Areas of Rsch.: Composition of Tobacco and Tobacco Smoke Technique of Mfg. of Tobacco Products.

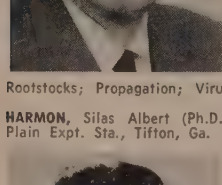


HARMON, Irvin Woodbury (Ph.D.), Consultant, Philip R. Park, Inc., Berth 42 Outer Harbor, San Pedro, Calif. Home Add.: 1242 W. 14th St., San Pedro, Calif. NUTRITIONAL PHYSIOLOGY. b. Laie, Hawaii, June 18, 1893. s. Melvin Myron and Alice (Woodbury) H. Edn.: B.S., Utah State Agril. Coll., 1916; M.S., Univ. of Calif., Berkeley, 1931; Ph.D., ibid., 1934. m. Winnie Midgley, Aug. 29, 1917. c.: Kent Midgley; Dora Ann; Alice Rae; Erwinna Mary. Exp.: Instr., Lovell, Wyo. H. S., 1921-29; Rsch. Asst., Univ. of Calif., Berkeley, 1931-34; Dir. of Rsch., Taylor Milling Corp. and Runnymede Farm, Los Angeles, Calif., 1934-45; Dir., Pacific Div. Product Control, Ralston-Purina Co., St. Louis, Mo., 1946; Rsch. Nutritionist, Philip R. Park Rsch. Found. and Philip R. Park, Inc., San Pedro, Calif., 1947-60; Consultant, Philip R. Park, Inc., 1960—. Mem.: Am. Assn. Adv. Sci.; Calif. Acad. Scis. Contbr. to: Am. Jour. Physiology; Poultry Sci. Serv. Rec.: U. S. Army, 1918-19. Areas of Rsch.: Hemoglobin Regulation in Chicken; Physiological Effects of Dietary Excesses; Nutrition and Reproduction in Rats, Poultry, Cattle and Swine; Optimums in Nutrition; Nutritional Optimums for Resisting Stress and Strain; Promotional Effects of Acetates and Sea Kelp on Reproduction and Stamina.



HARMON, Frank Nelson (Mr.), Horticulturist, U.S.D.A., 2021 S. Peach, Fresno 2, Calif. Home Add.: 1742 South Cedar, Fresno 2, Calif. VITICULTURE. b. Hawaiian Islands, Nov. 3, 1895. s. Melvin M. and Alice C. (Woodbury) H. Edn.: B.S., Utah St. University, 1921; M.A., ibid., 1927. m. Lillie Esplin, Aug. 31, 1921. c.: Frank Wendell; Lillian Elinor; Duane McMurrin. Exp.: Principal, Laketown, Utah Schls., 1922-23; Principal, Valley Schl., Orderville, Utah, 1923-25; Horticulturist, U.S.D.A., Riverside, Shafter & Fresno, Calif., 1926—. Mem.: Am. Soc. for Horticul. Sci.; Calif. Acad. of Sci.; A.A.A.S.; Phi Kappa Phi. Contbr. to: Jour. of Heredity; Am. Soc. of Horticultural Sci. Proc.; Plant Disease Reporter; Phytopathol.; U.S.D.A. Bulletins. Serv. Rec.: U. S. Army, W. W. I. Areas of Rsch.: Grape Breeding; Rootstocks; Propagation; Virus Diseases.

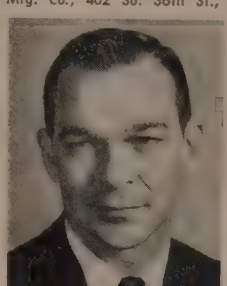
HARMON, Silas Albert (Ph.D.), Hd., Horticulture Dept., Coastal Plain Expt. Sta., Tifton, Ga. Home Add.: Rainwater Rd., Tifton, Ga. BREEDING AND CULTURE OF HORTICULTURE CROPS VEGETABLES. b. Bethesda, Ark., Dec. 4, 1915. s. William A. and Leona (Leonard) H. Edn.: B.S., Berry Coll., 1942; M.S., Univ. of Ga., 1951; Ph.D., La. State Univ., 1960. m. Josephine Williams, Sept., 1941. c.: Joe Thomas. Exp.: Asst. Unit Supvr., U.S.D.A., F.S.A., Roberta, Ga., 1942; Asst. Horticulturist, Ga. Coastal Plain Expt. Sta., Tifton, Ga., 1942-56; Rsch. Asst., La. State Univ., 1956-58; Horticulturist, Georgia Coastal Plain Expt. Sta., Tifton, Ga., 1956—. Mem.: Am. Soc. for Hort. Sci.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Alpha Zeta. Contbr. to: Proceedings Am. Soc. for Horticultural Sci. Areas of Rsch.: Sweet Potato Breeding, Vegetable Culture, Pecan Culture.



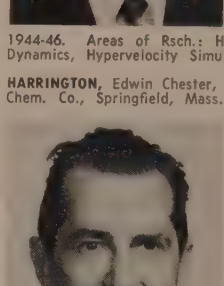
HARP, John Wallace, (Mr.), Chief Chemist, 701 N. Main St., Memphis 1, Tenn. Home Add.: 1528 South 9th St., Minneapolis 4, Minn. RESEARCH AND DEVELOPMENT IN AEROSOL TECHNOLOGY AND TECHNIQUES. CLASSICAL AND INSTRUMENTATION ANALYSIS ON VARIOUS INSECTICIDES. b. Minneapolis, Minn., Feb. 21, 1931. s. Walter A. and Margaret Ruth (Quist) H. Edn.: B.S., St. Cloud State Coll., Minn., 1959. Exp.: Lab. Tech., McLaughlin, Gormley & King, Minneapolis, Minn., 1957-58; Chf. Chemist, American Snuff Co., Memphis, Tenn., 1960—. Hon. Pos.: Vice-Pres., Aerosol Technol. Soc. of the South; Analytical Pyrethoid Com., Chem. Specialties Manufacturing Assn. Mem.: Am. Chem. Soc., Div. of Biol. Chem.; Entomol. Soc. of Am.; Am. Assn. Adv. of Sci.; Drug and Chem. Soc. of Memphis; Memphis Athletic Club; Am. Legion. Serv. Rec.: U. S. Navy, 1951-54. Areas of Rsch.: Aerosol technology and research, combined with quality control of production facilities, incoming and outgoing Products. Classical and instrumental methods of analysis on various insecticides and other organic compounds.

HARPER, Solomon, Inventor, c/o National Christian Centennial Mission, 303 West 125th St., N. Y. 35, N. Y. Home Add.: 13 E. 127th St., N. Y. C. 27, N. Y. ELECTRICAL ENGINEERING; DESIGN; CONTROLS; BOTANICAL RESEARCH, ATOMIC RADIATION MILD FALL OUT RESISTANT DEVICES. b. Poplar Grove, Ark., Oct. 8, 1895. s. Dennis and Laura (Moore) H. Edn.: Attended, Columbia and Syracuse Univs.; City College of New York; Pratt Inst. of Engrng. m. Mary Hudgins, May, 1940, dec., 1960. Exp.: Jr. Industrial Engr., Maint. Dept., Columbia Univ., summer, 1923; Machine Designer, Bd. of Dirs., Natl. Train Control and Signal Co., Inc., N. Y. State, 1915-16; Chief Elect. Engr., Inspector, Preferred Metal Products Co., Paterson, N. J., 1925-27; Engr. and Pres., Natl. Safety Instrument Co., Syracuse, N. Y., 1927-29; Newspaper Reporter, N. Y. Weekly News, 1930-35; Sr. Engrng. Investigator, U. S. and N. Y. Employment Serv. Rsch. Project on Qualifications, 1935-36; Rsch. Editor, U. S. Dept. of Agric. Worldwide Projects on Materials, Columbia Univ., 1939-42; Inventor, 1911-62. Hon. Pos.: Chmn., N. Y. Com., Natl. Pub. Relation Com. for Cooperation; Chief Chmn., Natl. Tech. Assn.; Dir., Vocational Guidance Bur. N. Y. Age Weekly, 1943-45. Mem.: Am. Assn. Adv. Sci. Serv. Rec.: U. S. Army, W. W. I. Gen. Int.: Sponsored First Negro Engineers sent to Africa, 1936. Areas of Rsch.: Inventions of National Defense, Aeroplane Bomb Devices, Forts, Ships, 1911—; Submarine raising cable placement, 1928.

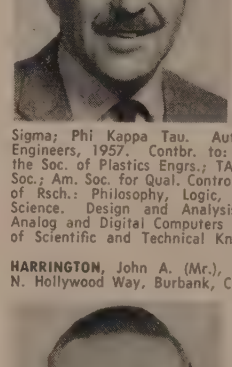
HARRACH, William Galen (Ph.D.), Engrng. Specialist, AiResearch Mfg. Co., 402 So. 36th St., Phoenix, Ariz. Home Add.: 4402 No. 36th St., Apt. #41, Phoenix, Ariz. MECHANICAL ENGINEERING. b. Holyoke, Colo., May 6, 1927. s. Edward H. and Gertrude Rita (Frank) H. Edn.: B.S., Colo. State Univ., 1951; M.S., Lehigh Univ., 1954; Ph.D., ibid., 1960. m. Patricia Lee Herrick, June 23, 1948. Exp.: Instr., Lehigh Univ., 1952-59, du Pont Fellow in Mech. Engrng., Lehigh Univ., 1954-56; Rsch. Engr. and Lecturer in Mech. Engrng., Denver Rsch. Inst. of the Univ. of Denver, 1959-62; Engrng. Specialist, AiResearch Mfg. Co. of Ariz., Phoenix, Ariz., 1962—. Hon. Pos.: Chmn., Natl. Symposium on Hypervelocity Techniques, 1960. Mem.: A.A.A.S.; Sigma Xi; A.O.A.; Pi Tau Sigma; Tau Kappa Epsilon. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Heat Transfer, Thermodynamics, Gas Dynamics, Hypervelocity Simulation.



HARRINGTON, Edwin Chester, Jr. (Mr.), Rsch. Scientist, Monsanto Chem. Co., Springfield, Mass. Home Add.: 428 Mountain Rd., Wilbraham, Mass. APPLIED MATHEMATICS, EXPERIMENTAL STATISTICS. b. Worcester, Mass., Aug. 16, 1910. s. Edwin C. and Edith Mary (Burton) H. Edn.: B.Chem., Cornell Univ., 1933; M.Chem., ibid., 1934. m. Herol G. Muller, Aug. 18, 1935. c.: Lynn, Mrs. L. B. Carew; Leigh; Beren G. Exp.: Chief Chemist, Monsanto Chem. Co., Springfield, Mass., 1939-47; Asst. to Dir. Rsch., ibid., 1947-49; Scientist, ibid., 1958—. Hon. Pos.: Natl. Exec. Dir., Am. Soc. for Quality Control, 1953. Mem.: A.A.A.S.; Am. Chem. Soc.; Inst. of Math. Statistics; Am. Statistical Assn.; Biometrics Soc.; Am. Soc. for Quality Control; Philosophy of Sci. Assn.; Al Djebar; Phi Delta Sigma; Phi Kappa Tau. Author: Quality Control for Plastics Engineers, 1957. Contbr. to: Chem. Engrng. Progress; Jour. of the Soc. of Plastics Engrs.; TAPPI Jour.; Proceedings; Am. Chem. Soc.; Am. Soc. for Qual. Control.; Am. Soc. for Test. Matrls. Areas of Rsch.: Philosophy, Logic, and Methodology of Experimental Science. Design and Analysis of Experiment. Application of Analog and Digital Computers as Instruments in the Development of Scientific and Technical Knowledge.

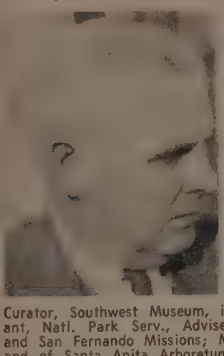


HARRINGTON, John A. (Mr.), Vice-Pres., Metrolonics, Inc., 2201 N. Hollywood Way, Burbank, Calif. Home Add.: 1116 Drake Rd., Arcadia, Calif. METROLOGY. b. 1889, Aug. 20, Richmond, Va. s. A. C. Harrington and Louise Young (Shepard) H. Edn.: M.E., M.I.T., 1909. Exp.: Chief Engr., The Do All Co., Des Plains, Ill., 1939-59. Vice-Pres., Metrolonics, Inc., Burbank, Calif., 1960—. Hon. Pos.: Chmn., A.S.T.M.E.; Natl. Chmn., I.S.A. Mem.: A.S.-Q.C.; A.A.A.S.; I.S.A.; A.A.S.E.; A.S.M.E.; A.O.A. Author: Precision Measurement, 1952. Contbr. to: Tool Engrs.; Quality Control. Areas of Rsch.: Metrology.

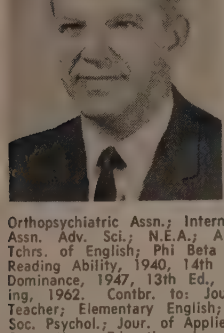


HARRINGTON, John V. (Sc.D.), Hd., Radio Phys. Div., Mass. Instit. of Tech., Lincoln Lab., P. O. Box 73, Lexington 73, Mass. Home Add.: 10 Loring Rd., Lexington, Mass. RADIO PHYSICS AND ELECTRONICS. b. N. Y., N. Y., May 9, 1919. s. John J., (dec.) and Dorothy (Neisel) H. Edn.: B.E.E., Cooper Union, 1940; M.E.E., Polytech. Instit. of Brklyn., 1948; Sc.D., M.I.T., 1958. m. Frances Cullinane, Jan. 23, 1943. c.: John F.; Nancy; Jeffrey; Richard; Brian H. Exp.: Asst. Engr., Am. Gas and Elec. Co., N. Y., 1946; Chief, Data Transmission Br., A. F. Cambridge Rsch. Ctr., Bedford, Mass., 1946-53; Leader, Data Transm. Grp., M.I.T. Lincoln Lab., 1953-57; Assoc. Hd., Commns. and Components Div., ibid., 1957-58; Hd., Radio Phys. Div., ibid., 1958—. Mem.: A.R.S.; I.R.E.; Am. Phys. Soc.; Am. Assn. for the Adv. of Sci.; Tau Beta Pi; Sigma Xi. Contbr. to: I.R.E. Trans.; Proc. I.R.E.; Jour. App. Phys.; Proc. Sympos. on Information Networks. Serv. Rec.: U. S. Navy, 1942-46. Gen. Int.: Received the Air Force Medal for Exceptional Civilian Serv., 1948-52. Areas of Rsch.: Statistical Detection Theory; Digital Data Transmission; Magnetic Domain Theory; Radio Physics and Propagation.

HARRINGTON, Mark Raymond (Dr.), Curator, Southwest Museum, Los Angeles 42, Calif. Home Add.: 11039 Memory Park Ave., San Fernando, Calif. AMERICAN INDIAN ARCHEOLOGY AND ETHNOGRAPHY. b. Ann Arbor, Mich., July 6, 1882. s. Mark W. and Rose (Smith) H. Edn.: B.S., Columbia Univ., 1907; A.M., ibid., 1908. Hon. Deg.: D. Human., Occidental Coll., 1956. m. Marie Walsh, April 23, 1949. c.: Johns H. Exp.: Asst. in Arch., Am. Museum Natl. Hist., N. Y., 1899-1903; Field Instr., Peabody Mus., Harvard Univ. summers, 1903-06; Ethnologist, Mus. Am. Indian, Heye Fdn., N. Y., 1908-11; Asst. Curator, Am. Sec., Univ. Museum, Philadelphia, Pa., 1911-14; Archeologist and Ethnologist, Mus. Am. Indian, N. Y., 1915-17, 1919-28; Dir. of Rsch., Southwest Museum, Los Angeles, Calif., 1928-29; Curator, Southwest Museum, ibid., 1929—. Hon. Pos.: Consultant, Natl. Park Serv., Adviser on Restoration of La Purisima and San Fernando Missions; Mem., Hist. Comm. of La Purisima and of Santa Anita Arboretum. Mem.: A.A.A.S.; Soc. for Am. Archeology; Am. Assn. of Museums; S.W. Anthropological Assn. Author: Cuba Before Columbus; Religion and Ceremonies of the Lenape; Gypsum Cave, Neveda; The Ozark Bluff Dwellers; A Pinto Site at Little Lake, California; Dickon Among the Lenape Indians (fiction). Contbr. to: Sci. Am.; Am. Anthropologist; Outlook; Sat. Eve. Post. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.; Archeological Work in New York State, Fla., Tenn., Ark., Mo., Okla., Nev. and Calif. Have Also Done Ethnographic Work with 41 Tribes of Indians.



HARRIS, Albert J. (Ph.D.), Prof. of Edn., Dir. of Edni. Clinic, Queens Coll., New York City, N. Y. Home Add.: 345 E. Grand St., Mt. Vernon, N. Y. PSYCHOLOGY. b. Chelsea, Mass., Aug. 13, 1908. s. Saul and Ray (Hurwitz) H. Edn.: A.B., Harvard, 1928; M.A., ibid., 1930; Ph.D., ibid., 1930. m. Edith Fread, 1930. c.: Rona Carol; Charlotte Louise. Exp.: Inst. in Psychol., Purdue Univ., 1930-31; Instr. in Psychol., Simmons Coll., Boston, 1931-34; Asst. Psychologist, Worcester St. Hosp., Mass., 1934-35; Instr., Asst. Prof. of Edn., City Coll. of N. Y., 1935-49; Assoc. Prof., Queens Coll., 1949-51; Prof. of Edn., ibid., 1951—. Hon. Pos.: Pres., Internatl. Reading Assn., 1957-58; Pres., Div. 16 of Am. Psychol. Assn., 1961-62. Mem.: Fellow, Am. Psychol. Assn.; Fellow, Am. Orthopsychiatric Assn.; Internatl. Reading Assn.; A.P.G.A.; Am. Assn. Adv. Sci.; N.E.A.; A.E.R.A.; N.S.S.E.; Natl. Coun. of Tchrs. of English; Phi Beta Kappa. Author: How to Increase Reading Ability, 1940, 14th Ed., 1956; Harris Tests of Lateral Dominance, 1947, 13th Ed., 1961; Effective Teaching of Reading, 1962. Contbr. to: Journal of Psychology; The Reading Teacher; Elementary English; Psychological Review; Journal of Soc. Psychol.; Jour. of Applied Psychol.; Am. Jour. of Psychol.; Occupations; Education; Jour. of Developmental Reading. Areas of Rsch.: Clinical Psychology; Child Guidance; Learning Disabilities, Lateral Dominance, Teaching of Reading.



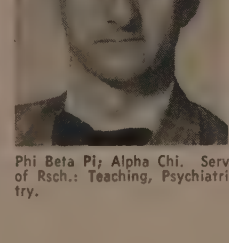
HARRIS, Albert Sidney (Ph.D.), Prof. and Head. of Dept. of Physiol., Louisiana State Univ. Schl. of Med., New Orleans 12, La. Home Add.: 1525 Seville Dr., New Orleans 22, La. PHYSIOLOGY. b. Banks, Ala., Feb. 23, 1903. s. Thomas Lee and Amanda (McLendon) H. Edn.: B.S., Univ. of Ala., 1930; Ph.D., Wash. Univ., St. Louis, Mo., 1934. m. Nancy Black, Dec. 27, 1940. Exp.: Lectr. in Physics of Sound, Central Inst. for Deaf, St. Louis, Mo., 1931-33; Instr. and Asst. Prof. of Physiol., Univ. of Ala. Schl. of Med., 1934-37; Rsch. Assoc. in Physiol. in Otol., Wash. Univ., St. Louis, 1937-39; Sr. Instr., Asst. Prof., Assoc. Prof., Physiol., Western Reserve Univ., 1939-47; Aviation Med., Univ. of Sou. Calif., 1943; Assoc. Prof. of Physiol., Baylor Univ. Coll. of Med., 1947-51; Prof. and Hd. of Physiol., La. State Univ. Schl. of Med., 1951—; Visiting Prof. of Physiol., Univ. of Indonesia (Sabbatical Leave from L.S.U. Schl. of Med.), 1957-59; Visiting Prof. Physiol., Univ. of Costa Rica, 1961. Mem.: Am. Physiological Soc. and Its Circulation Sect.; Am. Heart Assn.; Coun. on Basic Sci.; La. Heart Assn.; Inter-American Cardiological Cong.; Soc. for Exptl. Biol. and Med.; A.A.A.S.; N. Y. Acad. of Sci.; Sigma Xi; Phi Beta Pi; Oak Park Civic Assn. Contbr. to: Am. Jour. of Physiol.; Am. Heart Jour.; Exptl. Med. and Surg.; Circulation; Circulation Rsch.; Jour. of Applied Physiol.; Annual Rev. of Physiol. Gen. Int.: Participant in Development of Medical Edn. in Indonesia, 1957-58; Internatl. Coop. Admin., Univ. of Calif., Indonesia Project. Areas of Rsch.: Mechanisms and Controls of Cardiac Rhythms and Arrhythmias; Ventricular Fibrillation; Specific Reflex Afferent Fibers.

HARRIS, Alfred Ferester (Mr.), Biochemist, Isaac Albert Rsch. Inst., Jewish Chronic Disease Hosp., Brooklyn, N. Y. Home Add.: 278 1st Ave., N. Y. C. 9, N. Y. BIOCHEMISTRY. b. N. Y. C., Dec. 1, 1921. s. David B. and Pearl F. (Ferester) H. Edn.: A.B., Columbia, 1942; M.A., N. Y. Univ., 1948; M.S., Brooklyn Polytechnic Inst., 1952; M.S., N. Y. Univ., 1956. Exp.: Asst. Rsch. Chemist, Merck & Co., Inc., Rahway, N. J., 1948-50; Grad. Student, Polytechnic Inst., 1950-52; Grad. Student, N. Y. Univ., 1952-55; Asst. Chemist, Mt. Sinai Hosp., N. Y., 1955-57; Biochemist, Rsch. Inst., Jewish Chronic Disease Hosp., 1958—. Mem.: Am. Chem. Soc.; A.A.A.S. Contbr. to: Proc. Soc. Exptl. Biol. Med.; Arch. Biochem. Biophys.; Clin. Chem.; Clinica Chimica Acta; Jour. Neurochem. Serv. Rec.: U. S. Army Air Force. Areas of Rsch.: Improvement in Methods of Vitamin Analysis; Biochemistry of Calcification; Chemistry of the Metachromatic Reaction; Neuro-Chemistry; Application of Descriptive Statistics to Biochemical Problems; Development of Methods for Clinical Chemistry.

HARRIS, Benjamin Louis (Ph.D.), Director of Development, Chem. Rsch. and Devel. Labs., Army Chem. Center, Md. Home Add.: Pondsprings, Box 370, Rt. 1, Glenarm, Md. CHEMICAL ENGINEERING. b. Savannah, Ga., Aug. 1, 1917. s. Raymond B. and Edith D. (Dontner) H. Edn.: B.E., Johns Hopkins Univ., 1938; Ph.D., ibid., 1941. m. Janet Diekmann, Oct. 4, 1942. c.: Benjamin Stacy; Stefanie; Deborah; Penelope; Rebecca. Exp.: Asst. Prof. of Chem. Engrng., Johns Hopkins Univ., 1946-53; Consultant, Chemical Engr., ibid., 1946-53; President, Engineering Research Company, Baltimore, Md., 1949-54 Various Positions in Civil Serv., Army Cml. Center, 1953-55; Tech. Advisor to Scientific Dir., C.W.L., Army Chem. Center, Md., 1955-60; Deputy Dir. of Devel., Chem. Rsch. and Devel. Labs., Army Chemical Center, 1960-62; Director of Development Services, ibid., 1962—. Hon. Pos.: Vice-Chmn., Baltimore National Meeting, Am. Inst. Chem. Engrs., 1957; Chmn., ibid., 1962. Mem.: Phi Lambda Upsilon; Sigma Xi; Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Armed Forces Chem. Assn.; A.A.A.S.; Am. Ordnance Assn.; Gamma Alpha; Alpha Phi Omega; Lions Internatl. Contbr. to: Ind. and Engrng. Chem.; Chem. Engrng. Progress; Official Digest of Federation of Paint and Varnish Prod. Clubs. Serv. Rec.: U. S. Army, 1941-46. Gen. Int.: Active in Boy Scouting for 32 Years; Holder of Silver Beaver Award for Distinguished Serv. to Boyhood. Areas of Rsch.: Adsorption, Permeability of Films, Chemical Properties, Weapons Systems Analysis, Mass. Transport Operations.

HARRIS, Earl Joseph (Mr.), Sr. Analytical Chemist, N. Y. State Conservation Dept., Rome Pollution Lab., State Fish Hatchery, Rome, N. Y. Home Add.: 702 Croton St., Rome, N. Y. WATER POLLUTION. b. Salamanca, N. Y., April 27, 1917. s. Roy W. and Alberta K. (Smith) H. Edn.: B.S., Univ. of Ill., 1939. m. Helen L. Gauger, April 23, 1942. c.: Albert C.; Earl R.; Sheila Kay. Exp.: Chemist, Gen. Motors Corp., Buffalo, N. Y., 1941-46; Chemist, Lucidol Corp., Buffalo, 1946-48; Sr. Analytical Chemist, N. Y. State Conservation Dept., 1948—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Inst. of Chem., Fellow. Contbr. to: N. Y. State Fish and Game Jour. Areas of Rsch.: Bioassay of Pollutants; Detection and Measurement of Pollutants.

HARRIS, Forrest Dee (M.D.), Clinical Dir., Austin Sta. Hosp., Austin, Tex. Home Add.: 7805 Northwest Dr., Austin, Tex. NEUROPSYCHIATRY. b. Shawnee, Okla., Oct. 27, 1927. s. Carl Phillip and Ruth Edith (Britain) H. Edn.: B.A., Tex. Christian Univ., 1952; M.D., Univ. of Tex., 1956. m. Margaret Ann Anderson, 1955. c.: Kevin; Melanie; Daryl. Exp.: Intern, Pierce Co. Hosp., Tacoma, Wash., 1956-57; Asst. Health Officer, Austin-Travis Co. Pub. Health Unit, Austin, Tex., 1957-58; Resident, Austin Sta. Hosp., Austin, Tex., 1958-61; Clinical Dir., ibid., 1961—. Hon Pos.: Dir., Austin-Travis Co Mental Health Assn.; Consultant, Austin Child and Family Serv. Mem.: A.A.A.S.; A.M.A.; Tex. Med. Assn.; Austin-Travis Co. Med. Assn.; Tex. N. P. Assn.; A.P.A.; Am. Soc. Pub. Adm.; Phi Beta Pi; Alpha Chi. Serv. Rec.: U. S. Army, 1947-50. Areas of Rsch.: Teaching, Psychiatric Residents; Administrative Psychiatry.



HARRIS, Frederick Noble (D.D.S.), Prosthodontist, 386 E. Walnut, Pasadena, Calif. Home Add.: 410 Ave. 64, Pasadena, Calif. PROSTHETIC DENTISTRY. b. Cando, N. D., Jan. 2, 1909. s. Frederick Charles and Grace B. (Walker) H. Edn.: B.S., Univ. of So. Calif., 1931; D.D.S., ibid., 1931. Hon. Degrs.; F.A.C.D., Diplomate of Am. Bd. of Prosthodontics. m. Jacqueline L'Esperance, Apr., 1936. c.: Noelle Lucinda; Frederick Charles. Exp.: Prosthodontist, Calif., 1931—. Hon. Pos.: Chmn., Complete Prosthodonics for Am. Dental Assn. Mem.: A.A.A.S.; Am. Prosthodonic Soc., Past Pres.; Delta Sigma Delta; Overland Club of Pasadena, Calif. Contbr. to: Jour. of A.D.A.; Jour. Prosthetic Dentistry. Serv. Rec.: U. S. Naval Reserve, Areas of Rsch.: Plastic Rsch. and Porcelain Research in Phonetics; Research in Group Dynamics.

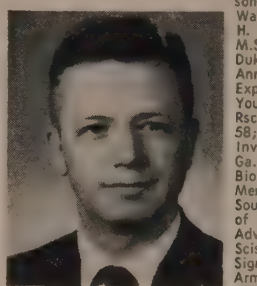
HARRIS, Gordon McLeod (Ph.D.), Chmn., Dept. of Chem., Univ. of Buffalo, Buffalo 14, N. Y. Home Add.: 70 Endicott Dr., Eggertsville 26, N. Y. PHYSICAL-INORGANIC CHEMISTRY. b. Chungking, China, July 23, 1913. s. George Gordon and Agnes (McLeod) H. Edn.: B.S., Univ. of Saskatchewan, 1939; M.S., ibid., 1940; A.M., Harvard Univ., 1942; Ph.D., ibid., 1943. m. Justyn Lee Montgomery, June 10, 1943. c.: David McLeod; Deborah Joan; Matthew Gordon. Exp.: Asst. Prof., Univ. of Saskatchewan, Saskatoon, Saskatchewan, 1945-48; Sr. Lecturer, Univ. of Melbourne, 1948-52; Res. Assoc., Univ. of Wis., 1952-53; Assoc. Prof., Univ. of Buffalo, 1953-55; Prof., ibid., 1955—; Chmn., Chemistry Dept., ibid., 1956—. Mem.: Am. Chemistry Soc.; Chem. Soc., London; A.A.A.S.; Sigma Xi. Contbr. to: Jour. Chem. Phys.; Jour. Phys. Chem.; Trans. Far. Soc.; Rev. of Pure and Applied Chem.; Jour. Am. Chem. Soc.; Inorg. Chem. Serv. Rec.: Royal Can. Air Force, 1943-44. Areas of Rsch.: Applications of Isotopes in Chemical Kinetics; Kinetics and Mechanism of Reactions of Inorganic Compounds; Chemistry of Coordination Compounds.

HARRIS, Irving Michael (D.D.S.), Periodontist, 210 Main St., Hackensack, N. J. Home Add.: 26 Eton Tr., Norwood, N. J. ORAL MEDICINE AND PERIODONTICS, TEACHER AND LECTURER. b. Jersey City, N. J., Nov. 27, 1913. s. Louis and Rebecca (Stein) H. Edn.: D.D.S., Med. Coll. of Va., 1937. m. Doris Idella Keeney, May 9, 1942. c.: Danni Louis. Exp.: Interne, U. S. Pub. Health Serv., U. S. Marine Hosp., Galveston, Tex.; U.S.P.H.S. Hosp., Ft. Worth, Tex., 1938-40; Instr., Dept. of Periodontic and Oral Med., N. Y. Univ., 1952-57; Chf. Periodontic Dept., Jewish Meml. Hosp., N.Y., 1953-55; Clin. Assoc. Prof., Dept. of Periodontic, Seton Hall Univ., 1959—. Hon. Pos.: Trustee, Bergen County Dental Soc.; Chmn., Com. of Scientific Sessions, Post-Grad., Const. and Bylaw, B.C.D.S. Mem.: Am. Acad. Periodontology; A.A.D.M.; Am. Soc. of Periodontics; N. E. Soc. of Periodontics; A.A.A.S.; Diplomate, Am. Board of Periodontology; Royal Soc. Health (England); Alpha Omega. Contbr. to: Clinician to Am. Dental Soc.; County Dental Societies. Serv. Rec.: U. S. Army, 1942-44. Gen. Int.: Musician and Photography. Areas of Rsch.: Field of Periodontology.

HARRIS, John Donald (Ph.D.), Hd., Auditory Br., U. S. Naval Med. Rsch. Lab. and Dir. of Rsch., The C. W. Shilling Auditory Rsch. Ctr., 348 Long Hill Rd., Arston, Conn. Home Add.: 216 Prospect Hill, Rt. 1, Mystic, Conn. PSYCHOLOGICAL AND PHYSIOLOGICAL ACOUSTICS. b. Brownsburg, Pa., May 12, 1914. s. Walter W. and Pearl (Graves) H. Edn.: B.A., Maryville Coll., 1935; M.A., Vanderbilt Univ., 1936; Ph.D., Univ. of Rochester, 1942. m. Barbara Nelson, July 12, 1947. c.: John Curtis; Ralph Dexter; Lisa Helene; Todd Nelson; Heather Anne. Exp.: Instr. in English, State of Del., Sr. H. S., 1936-39; Univ. Fellow in Psychol., Univ. of Colo., 1939-40; Instr. in Psychol., Univ. of Rochester, 1940-43; Hd. Auditory Rsch. Br., Med. Rsch. Lab., Submarine Base, New London, Conn., 1943—. Hon. Pos.: Am. Standards Assoc. Coms. on Bio-Acoustics, Hearing Aids, and Audiometers; Navy Mem. of Armed Forces-Natl. Rsch. Coun. Com. on Hearing and Bio-Acoustics; Dir. of Rsch., The C. W. Schilling Auditory Rsch. Center, Inc. Editor: The Journal of Auditory Research. Mem.: Fellow, Am. Psychol. Assn.; Fellow, Acoustical Soc. of Am.; Fellow, A.A.A.S.; Mem., Am. Speech and Hearing Assn.; Mem., Eastern Psychol. Assn. Author: Some Relations Between Vision and Audition, 1950. Contbr. to: Jour. Acoustical Soc. Amer.; Arch. Otolaryngol.; Amer. Jour. Psychol.; Jour. Exptl. Psychol.; etc. War Record: U.S.N.R., Lt. (jg), 1943-45. Special Int.: Conditioning Learning; Audiology; Psychoacoustics; Physiol. Psychol.; Personnel Selection.

HARRIS, John Everett (Ph.D.), Sr. Rsch. Chem., Monsanto Research Corp., Everett 49, Mass. Home Add.: 36 Dietz Rd., Hyde Park 36, Mass. RESEARCH ORGANIC CHEMIST. b. New Haven, Conn., May 31, 1930. s. William H. and Elsie (Kelly) H. Edn.: B.S., Yale Univ., 1953; Ph.D., Brown Univ., 1958. m. Emily L. Brown, Sept. 10, 1955. c.: John E., Jr.; Jocelyn Elise. Exp.: Rsch. Asst., Yale Univ. Med. Schl., Dept. of Pharm., New Haven, Conn., 1957-59; Sr. Rsch. Chem., Monsanto Rsch. Corp., Everett 49, Mass., 1959—. Mem.: Sigma Xi; A.A.A.S.; A.C.S.; Chem. Soc. of London; Alpha Phi Alpha. Contbr. to: Jour. of Organic Chem. Areas of Rsch.: Cancer Chemotherapy; Carbene Chem.; Chem. of Carbon and Elements of Group V, and Synthetic Hydrocarbon Chem.

HARRIS, Joseph Belknap (Ph.D.), Chmn., Dept. of Biol., Coker Coll., Hartsville, S. C. BOTANY, PLANT PHYSIOLOGY. b. Thomson, Ga., Sept. 11, 1926. s. Waldo Putnam and Mary (Fluker) H. Edn.: A.B., Emory Univ., 1949; M.S., Univ. of Ga., 1954; Ph.D., Duke Univ., 1959. m. Dorothy Ann Leinbach, Sept. 10, 1952. Exp.: Instr. in Biol. and Chem., Young Harris Coll., Ga., 1952-54; Rsch. Asst., Duke Univ., 1954-58; Plant Physiologist, Tobacco Investigations, U.S.D.A., Tifton, Ga., 1958-61; Chmn., Dept. of Biol., Coker Coll., S. C., 1961—. Mem.: S. C. Acad. of Sci.; Assn. Southeastern Biologists; Am. Soc. of Plant Physiologists; Am. Assn. Adv. of Sci.; Am. Inst. of Biol. Scis.; Phi Sigma; Phi Kappa Phi; Sigma Xi. Serv. Rec.: U. S. Army, 1945-46. Contbr. to: Tobacco Science. Areas. of Rsch.: Chloroplast development, growth substances and effects.



HARRIS, Joseph McAllister (Mr.), Chemist, Water Pollution Control Comm., Annapolis, Md. Home Add.: 1209 W. St., Annapolis, Md. MICROBIOLOGY OF FOSSIL FUELS. b. Pontiac, Ill., July 27, 1929. s. Fred G. and Catherine M. (McAllister) H. Edn.: B.A., Blackburn Coll., 1952; A.A., ibid., 1949. m. Margot L'Hommedieu, 1952. c.: Tim P.; Paula M.; Bruce M.; Anne E. Exp.: Rsch. Asst., Ill. Sta. Geo. Survey, Univ. of Ill., Urbana, Ill., 1954-61; Chemist, Water Pollution Control Comm., Annapolis, Md., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci. Contbr. to: Bull. Ill. Acad. of Sci. Areas of Rsch.: Coal Chemistry; Geomicrobiology; Oxygen Containing Groups.

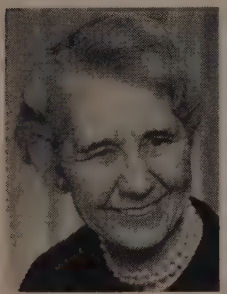
HARRIS, Marquis LaFayette (Ph.D.), Bishop of the Meth. Church, 250 Auburn Ave., Atlanta, Ga. Home Add.: 115 Moury Ave., S.E., Atlanta 13, Ga. SCIENCE (CHEMISTRY, PHYSICS, PHILOSOPHY AND MATHEMATICS). b. Mar. 8, 1907, Armstrong, Macon Co., Ala. s. Wm. Eugene and Estella (Glenn) H. Edn.: B.S., Clark Coll., 1928; B.D., Gammon Theol. Semin., 1929; S.T.M., Boston Univ., 1930; Ph.D., Ohio State Univ., 1933; Hon. Deg.: D.D., Gammon, 1941; LL.D., Clark, 1959; L.H.D., Southwestern, 1960; Fellow, Natl. Coll. of Can., 1940. m. Geneva Nelson on Sept. 6, 1931. Exp.: Instr., Clark Coll., 1927-29; Instr., Claflin Coll., 1930-31; Minister, Pa. Ave. Meth. Ch., Columbus, Ohio, 1931-33; Dean and Prof. of Sociol., Samuel Houston Coll., 1933-36; Pres. and Prof. of Philos., Philander Smith Coll., 1936-60; Bishop of the Meth. Ch., Atlanta, Ga., 1961—; Lectr., Studies in Biblical Theol., ibid., 1955-56. Hon. Pos.: Gen. and Jurisdictional Conf., Meth. Ch., 1940, 44, 48, 52, 56, 60 and Delegate-at-Large, 1956; Delegate Ecumenical Meth. Coun., Oxford, Eng., 1951 and Oslo, Norway, 1961; Delegate, World Coun. of Churches, Evanston, Ill., 1954; Mem., Bd. of Trs., Meth. Ch.; Gen. Bd. of Edn., Meth. Ch.; Gen. Conf. Comm. on Church Union, Meth. Ch. Mem.: Am. Philos. Assn.; A.S.P.P.; Southwestern Philos. Conf.; Alpha Kappa Mu; Beta Kappa Xi; Alpha Phi Alpha; Mason; Elk. Author: Some Conceptions of God, 1933; Voice in the Wilderness, 1941; Life Can Be Meaningful, 1951, Christopher Publishing House, Boston. Ph.D. Dissertation: Some Conceptions of God in the Gifford Lectures, 1927-29. Listed in: Who's Who in Amer.; Who's Who in Western Hemisphere; D.A.S.; Biog. Encys. of the World; Who's Who in Am. Clergy. Areas of Rsch.: Mathematics, Philosophy and Theoretical Physics.

HARRIS, Orville Ralph (Ph.D.), Prof., Schl. of Engrng., Univ. of Va., Charlottesville, Va. Home Add.: 2017 Spottswood Road, Charlottesville, Va. ELECTRO-MECHANICAL ENGINEERING PHYSICS. b. Sedalia, Mo., Oct. 19, 1909. s. Thomas L. and Lucinda J. (Thomas) H. Edn.: B.S.M.E., Wash. Univ., 1933; E.E., ibid., 1950; M.E.E., Univ. of Va., 1952; Ph.D. (physics), ibid., 1954. m. Doris Shockley, Dec. 17, 1933. c.: Linda Carol; Thomas Arthur. Exp.: Asst. and Chf. Engr., Commonwealth Utilities Corp., Springfield, Mo., 1933-40; Sr. Instr., AAF Tech. Trng. Schl., Chanute Field, Ill., 1940-42; Aeronautical Rsch. Scientist, Natl. Advisory Com. for Aeronautics, Langley Field, Va., 1946-51; Pres., Jefferson Rsch. Labs., 1955—; Prof., Schl. of Engrng., Univ. of Va., 1954—; Dir., Engrng. Expt. Sta., Univ. of Va., 1956-60. Mem.: Amer. Physical Soc.; Inst. of Radio Engrs.; Am. Soc. of Prof. Engrs.; Sigma Xi. Contbr. to: Trans., Inst. of Radio Engrs. War Record: U. S. Army, 1940-46. Gen. Int.: Practical Application of Physical, Electrical and Mechanical Phenomena. Areas of Rsch.: Solid-State Physics, Physical Electronics, Molecular Beam Detectors; Servo-control systems, magnetic supported gyros, Electrets, Medical Electronics.

HARRIS, Ralph Rogers (Ph.D.), Asst. Animal Nutritionist, Dept. of Animal Sci., Auburn Univ., Auburn, Ala. Home Add.: P. O. Box 504, Auburn, Ala. ANIMAL NUTRITION-RUMINANTS. b. Winfield, Ala., March 9, 1929. s. David Ralph and Mary Louise (Kelly) H. Edn.: B.S., Auburn Univ., 1951; M.S., ibid., 1952;

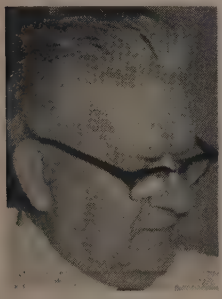
Ph.D., Tex. A. and M. Coll., 1959. m. Eleanor Armbrester, July 6, 1951. c.: Mary Ellen; Ralph R., Jr.; Joel Charles. Exp.: Asst. Animal Husb., Auburn Univ., 1955-56; Rsch. Fellow, Tex. A. and M. Coll., Coll. Station, Tex., 1956-58; Dairy Specialist, ibid., 1959-60; Asst. Prof., Auburn Univ., 1960—. Mem.: Am. Soc. of Animal Science; Am. Dairy Science Assn.; Sigma Xi; Sigma Delta; Alpha Zeta. Contbr. to: Jour. of Animal Sci.; Jour. of Dairy Sci. Serv. Rec.: U. S. Air Force, 1953-54. Areas of Rsch.: Production of Feeds and Forages and Their Utilization by Ruminants.

HARRIS, Ruby Dean (Ed.D.), Specialist in Family Relations and Leadership Trng., 227 Univ. Hall, Univ. of Calif., Berkeley 4, Calif. Home Add.: 1015 Pk. Hills Rd., Berkeley 8, Calif. DEVELOPMENTAL PSYCHOLOGY AND GUIDANCE (COUNSELING). b. Stephens, Mo., May 12, 1904. d. Walter C. and Pearl (Smith) H. Edn.: B.S., Univ. of Mo., 1928; M.A., Tchrs. Coll., Columbia Univ., 1930; Ed.D., Leland Stanford Jr. Univ., 1949. Exp.: Tchr., Pub. Schools, Fulton, Mo., 1922-24; Dean, H. Schl. Tchr., William Woods Coll., Fulton, Mo., 1928-30; Dir., Phys. Edn., William Woods Coll., ibid., 1930-34; Tchng. Counselor, H. Schl., Roosevelt, Fresno, Calif., 1937-43; Asst. Supt., Ventura Schl. for Girls, Ventura, Calif., 1943-47; Instr., Stanford Univ., Stanford, Calif., summer, 1949; Devel. Psycholt., Univ. of Calif., 1949—. Hon. Pos.: Chmn. Soc. Studies, Curricul. Comm., Fresno, Calif.; Advry. Com. Inst. of Child Welf., Univ. of Calif., No. Calif. Guid. Assn. Bd.; Family Relations Coun. No. Calif. Bd. Delegate, White House Conf. for Children and Youth, 1950-60. Mem.: Am. Psychol. Assn.; Am. Personnel and Guid. Assn.; Chi Kappa Rho; Pi Lambda Theta; Phi Theta Kappa; Pi Alpha Gamma; Bus. and Prof. Women's Club; A.A.U.W. Contbr. to: Jour. of Secondary Edn.; Ext. Serv. Rec.; Family Life Coord.; Report to the Gov. Calif. Youth Authority; Recreation in Calif. Study. Areas of Rsch.: Child Growth and Development; Counseling, Recreation; Standardized Testing.



HARRIS, Vincent Crockett (Ph.D.), Prof. of Math., San Diego State Coll., San Diego, Calif. Home Add.: 5054 55th St., San Diego 15, Calif. MATHEMATICS. b. Minneapolis, Minn., Jan. 26, 1913. s. Jesse Brownell and Virginia (Crockett) H. Edn.: B.A., Northwestern Univ., 1933; M.A., ibid., 1935; Ph.D., ibid., 1950. m. Blanche Peterson, Jan. 3, 1945. c.: Jacqueline Jones; Diane. Exp.: Instr., Northwestern Univ., 1946-50; Asst. Prof. to Prof., San Diego State Coll., 1950—; Lecturer, Ariz. State Univ., summer 1961. Mem.: Am. Assn. Adv. Sci.; Math. Assn. Am.; Soc. Ind. and Appl. Math.; Sigma Chi; Phi Beta Kappa. Author: Slide Rule Lessons, 1962. Contbr. to: Am. Math. Monthly; Math. Mag.; Boletin Matematico; Pi Mu Epsilon Jour. Serv. Rec.: U.S.N.R., 1942-46. Areas of Rsch.: Theory of Numbers, Special Functions.

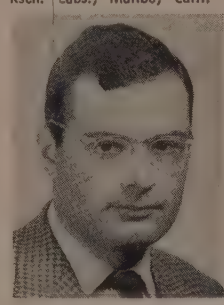
HARRISON, Arthur Pennoyer, Chemist, Army Map Serv., U. S. Corps of Engrs., Wash. 25, D. C. Home Add.: 8001 Piney Branch Rd., Silver Spring, Md. CHEMISTRY. b. Aug. 30, 1892, Hyattsville, Md. s. Ezra B. and Nellie (Young) H. Edn.: A.B., George Wash., Univ., 1928; M.S., ibid., 1931. m. Gertrude C. Dehler, Sept. 15, 1921. c.: Arthur P., Jr.; Raymond W. Exp.: Lab. Aid and Stat. Asst., B.P.I., U. S. Dept. of Agric., Wash., D. C., 1912-17 and 1919-23; Rsch. Chemist and Bacteriologist, Fleischmann Labs., N. Y. City, 1923-27; Chief Chemist, Langdon Factory, Standard Brands, Inc., Langdon, D. C., 1927-56; Chemist, Army Map Serv., Wash., D. C., 1957—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Natl. Geographic Soc.; T. P. Horticultural Club; Takoma Park Hist. Soc.; S.P.H. Citizens Assn. Contbr. to: Jour. Ind. Eng. Chem.; Jour. Biol. Chem.; Sci.; Jour. Optical Soc. of Am.; Jour. Chem. and Engrng. Data; Tappi. Serv. Rec.: U. S. Army, 1918-19. Gen. Int.: Domestic and Foreign Patents Relating to Yeast Fermentation and Processing Equipment. Areas of Rsch.: Agricultural Chemistry and Bacteriology, Fermentation Chemistry, and Photolithography.



HARRISON, Dorothy Lucile (Ph.D.), Hd., Dept. Foods and Nutrition and In Charge Home Economics Rsch., Kans. State Univ., Manhattan, Kans. Home Add.: 1646 Laramie, Manhattan, Kans. FOODS AND NUTRITION. b. Mitchell, S. Dak., Aug. 10, 1915. d. Ross H. and Eva Leora (Disbrow) H. Edn.: B.S., Dakota Wesleyan Univ., 1938; M.S., Iowa State Univ., 1943; Ph.D., ibid., 1947. Exp.: Home Econ. Tchr., Jr. H. S., Mitchell, S. D., 1938-42; Instr. Foods and Nutrition and Rsch., Assoc., Iowa State Univ., 1943-47; Asst. Prof., Foods and Nutrition, Kans. State Univ., 1947-49; Assoc. Prof., Foods and Nutrition, ibid., 1949-52; Prof., Foods and Nutrition, ibid., 1952—; In Chg. Home Econs. Rsch., ibid., 1953—; Hd. Dept. of Foods and Nutrition, ibid., 1955—. Mem.: Sigma Xi; Sigma Delta Epsilon; Iota Sigma Pi; Gamma Sigma Delta; Am. Home Econs. Assn.; A.A.A.S.; Phi Kappa Phi; Omicron Nu. Contbr. to: Food Rsch.; Food Tech.; Jour. Agri. and Food Chem.; Poultry Sci.; Jour. Nutrition; Jour. Am. Dietetic Assn.; Jour. Home Econs. Gen. Int.: Exchange Lectr. for Kans. State Chapter of the Soc. of Sigma Xi, 1959-60. Areas of Rsch.: Histological, Chemical and Organoleptic Studies On Meat and Poultry. Factors Affecting the Quality of Frozen Fruits and Vegetables.

HARRISON, George Russell, Dean, Schl. of Sci., M.I.T., Cambridge 39, Mass. Home Add.: Barnes Hill Rd., Concord, Mass. PHYSICS (SPECTROSCOPY). b. San Diego, Calif., July 14, 1898. s. Ernest and Magda (Lincke-Tiesel) H. Edn.: A.B., Stanford Univ., 1919; A.M., ibid., 1920; Ph.D., ibid., 1922. Hon. Deg.: Sc.D., Northeastern Univ., 1943; D.Sc., St. Lawrence Univ., 1952; LL.D., Middlebury Coll., 1955; D.Engr., Drexel Inst., 1955. m. 1st: Florence Kent (dec.), Dec. 25, 1922. c.: Mary Lou; Nancy Kent; David Kent. m. 2nd: Elizabeth C. Headley, Mar. 9, 1957. Exp.: Natl. Rsch. Fellow, Harvard Univ., 1923-25; Assoc. Physicist, Natl. Bur. of Standards, 1921; Instr. to Assoc. Prof., Physics, Stanford Univ., 1919-30; Prof., Physics and Dir., Rsch. Lab. of Exptl. Physics, M.I.T., 1930-42; Dean, Schl. of Sci., M.I.T., 1942—. Hon. Pos.: Past Pres., Optical Soc. of Am.; Past Chmn., Am. Inst. of Physics; Past Vice-Pres., Am. Acad. Arts and Sci.; Past Vice-Pres., A.A.A.S. Mem.: Am. Philosophical Soc.; Am. Physical Soc.; Am. Assn. Physics Tchrs.; Sigma Xi; Sigma Pi Sigma. Author: Mass. Inst. Wavelength Tables, 1939; Atoms in Action, 1939; How Things Work, 1941; What Man May Be, 1956. Contbr. to: Jour. of Optical Soc. of Amer.; Physical Rev.; Physics Today. War Record: W. W. I; W. W. II. Areas of Rsch.: Optics and spectroscopy; Spectroscopic Instrument Design. Gen. Int.: Recipient, Pres. Medal for Merit; Medal of Freedom, Frederic Ives Medal, Rumford Medal, Eliot Cresson Medal, Am. Spectrographic Soc. Award, Pittsburgh Spectroscopic Award.

HARRISON, John Christopher (Ph.D.), Mem. Techn. Staff, Hughes Rsch. Labs., Malibu, Calif. Home Add.: 4117 Murietta Ave., Sherman Oaks, Calif. GEOPHYSICS. b. Stockton on Tees, England, May 20, 1929. s. Charles Frederick Reed and Anne Lucy (Middlton) H. Edn.: B.A., Cambridge Univ., England, 1950; M.A., ibid., 1953; Ph.D., ibid., 1953. m. Elaine C. P. Miliar, Aug., 1960. c.: Kirsteen Elizabeth. Exp.: Jr. Rsch. Geophysicist, Univ. of Calif., L. A. Calif., 1953-55; Instr. Lieut., Royal Navy Volunteer Reserve, Portsmouth, England, 1955-57; Asst. and Assoc. Rsch. Geophyst., Univ. of Calif., Los Angeles, Calif., 1957-61; Mem. Techn. Staff, Hughes Rsch. Labs., 1961—. Hon. Pos.: Prog. Chmn., Geodesy Sect. of Am. Geophys. Union, Western Meetings, 1961-62. Mem.: Royal Astronomical Soc.; Am. Geophys. Union. Contbrng. Author: Methods and Techniques in Geophyiscs, 1960. Contbr. to: Bull. Geodesique; Geophys. Jour.; Jour. of Geophys. Rsch.: Geophys.; Proc. Royal Soc. Serv. Rec.: British Navy, 1955-57. Areas of Rsch.: Measurement of Gravity.



HARRISON, John Robert (Ph.D.), Rsch. Prof., Dept. of Zool. and Physiol., Miami Univ., Oxford, Ohio. Home Add.: 6097 Joseph Dr., MR 50, Oxford, Ohio. ZOOLOGY-EMBRYOLOGY. b. Wash., D. C. Oct. 11, 1923. s. William H. and Edna (Rothery) H. Edn.: B.A., The Am. Univ., 1948; M.A., The Johns Hopkins Univ., 1949; Ph.D., The Univ. of Minn., 1951. m. Muriel Adams, Sept. 26, 1946. c.: William A.; Ellen E. Exp.: Asst. Prof., Dept. of Zool., Miami Univ., 1951-54; Assoc. Prof., ibid., 1954-58; Prof. and Chmn., ibid., 1958-61; Rsch. Prof., ibid., 1961—. Hon. Pos.: Am. Soc. Zool. Edn. Comm., 1959-62; Rad. Biol. Trng. Prog., 1961-62, Bowman Gray Schl. of Med. Mem.: Sigma Xi; Am. Soc. Zoolts.; Soc. for Study of Devel. and Growth; N. Y. Acad. of Scis.; Ohio Acad. of Sci.; Phi Sigma Kappa; Phi Eta Sigma; Omicron Delta Kappa; Torch Internatl. Contbr. to: Biol. Bull.; Physiol. Zool.; Jour. Expt. Zool. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Development of Embryonic Chick Eye in Vitro; Morphogenesis and Nutritional Requirements of Early Chick Embryo; Effect of Temperature on Chick Development.

HARSHBARGER, John William (Ph.D.), Prof. and Hd., Dept. of Geol., Univ. of Ariz., Tucson, Ariz. Home Add.: 1525 E. Kleindale, Tucson, Ariz. GROUND WATER GEOLOGY AND HYDROLOGY. b. Lewistown, Pa., May 13, 1914. s. Winfield S. and Bertha P. (Rearick) H. Edn.: B.S., Tex. Coll. of Mines, 1942; M.S., Univ. of Ariz., 1948; Ph.D., ibid., 1949. Hon. Deg.: Geological Engr., Univ. of Ariz., 1957. m. Margaret Des Saulles, 1942. c.: Donna; Raymond; Mary. Exp.: Asst. Prof., Univ. of Ariz., 1949-50; Proj. Geologist, U. S. Geological Survey, Holbrook, Ariz., 1950-55; Dist. Geologist, ibid., Tucson, Ariz., 1955-59; Prof. of Geol., Univ. of Ariz., 1959—. Hon. Pos.: Pres., Ariz. Geol. Soc., 1957-58. Mem.: Soc. Mem. A.I.M.E.; G.S.A.; A.A.P.G.; A.W.W.A.; Ariz. Geol. Soc.; A.G.U.; A.A.A.S.; A.G.I.; Sigma Gamma Epsilon; Sigma Xi; C. of C. Author: The Navajo Country, co-author, 1953; Stratigraphy of the Uppermost Triassic and the Jurassic Rocks of the Navajo Country, co-author, 1957; Geohydrology of Arid Lands, Arizona, 1960; Arizona, Its People and Resources, 1961.

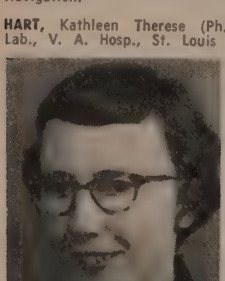
Contbr. to: U. S. Geol. Survey Circular; Water-Supply Paper; Univ. of Ariz. Bull.; New Mex. Geol. Soc.-Ninth Field Conf. Guidebook; Inter. Assoc. Sci. Hydrology. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Stratigraphy of Triassic and Jurassic Rocks in the Colorado Plateau. Lithologic Composition and History of Deposition of Alluvial Deposits in Southern Arizona. Fluid Dynamics of Ground Water Systems As Controlled by Geol. Factors. Geohydrology of Arid Basins in S.W. U. S.

HARRISON, Robert Carlos (Mr.), (dec.), Sci. Lectr. (Traveling Sci. Tchr.), Sci. and Math. Tchng. Center, Mich. State Univ., East Lansing, Mich. Home Add.: 350 South Milton St., Smithville, Ohio. SCIENCE EDUCATION. b. Wellston, Ohio, Nov. 10, 1923. s. Charles C. and Mary L. (Spearry) H. Edn.: B.S., Rio Grande Coll., 1953; M.Ed., Ohio Univ., 1959. m. June W. Ervin, June 22, 1942. c.: Marilyn A.; R. Anthony. Exp.: Production Foreman, Cambria Clay Products Co., Oak Hill, Ohio, 1942-55; Sci. Coordinator, Jackson City H. S., Jackson, Ohio, 1953-59; Tchr., Rio Grande Coll., 1958-59; Lectr., Mich. State Univ., 1960-61; Sci. Lectr. (Traveling Sci. Tchr.) Mich. State Univ., 1960-61; H. S. Prin. at Smithville, Ohio, 1961. Hon. Pos.: Pres., J.C.T.A., 1953; O.E.A.-Mem. of Commn. on Improvement of Edn. in Ohio, 1955-58; A.V.D.O.-Exec. Com. Mem. Mem.: A.A.A.S.; N.E.A.; Ohio Edn. Assn.; Jackson City Tchrs. Assn.; Ohio Acad. of Sci.; Audio-Visual Dirs. of Ohio; Mason. Serv. Rec.: U. S. Army Air Force, 1943-45. Gen. Int.: Am. Coll. Student Leaders, 1952, Award (Honorable Mention); Outstanding Sci. Tchrs. Award, Presented by the Ohio Acad. of Sci., 1959. Areas of Rsch.: Science Education.

HART, Helen (Ph.D.), Prof. of Plant Pathol., Univ. of Minn., Plant Pathol. Dept., Inst. of Agri., St. Paul 1, Minn. PLANT PATHOLOGY. b. Janesville, Wis., Sept. 2, 1900. d. Richard Johnson and Alice (Echlin) H. Edn.: B.A., Univ. of Minn., 1922; M.A., ibid., 1924; Ph.D., ibid., 1929. Exp.: Agent, Office of Cereal Crops and Diseases, U. S. Dept. of Agri., 1923-33; Instr. in Plant Pathol., Univ. of Minn., 1924-39; Univ. Asst., Institut fur Pflanzenbau und Pflanzenzuchtung, Universitat Halle-Salle, Halle-Salle, Germany, 1937-38; Asst. Prof., Univ. of Minn., 1939-44; Assoc. Prof., ibid., 1944-47; Prof., ibid., 1947—. Hon. Pos.: Editor-in-Chf. of Phytopathol., 1943-52; Vice-Pres., 1954, Pres., 1956, Amer. Phytopathological Soc. Mem.: Fellow, A.A.-A.S.; A.A.U.P.; Amer. Phytopathol. Soc.; Amer. Soc. Plant Physiologists; Minn. Acad. Scis.; Sigma Xi; Gamma Sigma Delta; Sigma Delta Epsilon; Delta Gamma. Contbr. to: Phytopathol.; Plant Physiol. Special Int.: Plant Disease Resistance.

HART, John B. (Mr.), Chmn., Physics Dept., Xavier Univ., Cincinnati 7, Ohio. PHYSICS. b. Hamilton, Ohio, Aug. 24, 1924. s. John W. and Elizabeth (Birdsall) H. Edn.: B.S., Xavier Univ., 1948; M.S., ibid., 1950. m. Agnes M. Roegner, June 17, 1948. c.: Mary Agnes. Exp.: Instr., Xavier Univ., 1950-56; Asst. Prof., ibid., 1956-62; Assoc. Prof., ibid., 1962—; Chmn. Physics Dept., ibid., 1958—. Mem.: Sigma Xi; Am. Assn. of Physics Tchrs.; Ohio Acad. of Sci. Author: Atomic Physics Lectures, 1957; Obscure Points in General Physics, 1960. Contbr. to: Am. Jour. of Physics; Math. Magazine. Serv. Rec.: U. S. Navy, 1943-46, Reserve, 1946—. Gen. Int.: Lectr. in Navigation at U. S. Naval Officer Cand. Schools in Summers of 1950, 51, 52, 53, 56, 57. Areas of Rsch.: Theoretical Mechanics; Vibration Theory; Celestial Navigation.

HART, Kathleen Therese (Ph.D.), Prin. Scientist, Radioisotope Lab., V. A. Hosp., St. Louis 6, Mo. Home Add.: 4905 Forest Park, St. Louis 8, Mo. BIOCHEMISTRY. b. Cleveland, Ohio, July 18, 1922. s. Michael J. and Catherine (McManus) H. Edn.: B.S., Ursuline Coll., 1944; Ph.D., St. Louis Univ., 1953. Exp.: Instr. of Chem., Beaumont H. S., Cleveland, Ohio, 1944-47; Grad. Fellow in Biochem., St. Louis Univ., 1949-53; Instr. of Biological Chem., Univ. of Mich., 1953-56; Prin. Scientist, V.A. Hosp., St. Louis, Mo., 1956—. Mem.: Am. Chem. Soc.; A.A.A.S.; N. Y. Acad. Sci.; Am. Fed. for Clinical Rsch.; Am. Thyroid Assn.; Sigma Xi. Contbr. to: Endocrinology; Proc. Soc. Exptl. Biol. Med.; Clin. Res.; Fed. Proc.; Jour. Lab. Clin. Med.; Jour. Pharm. Exp. Therap. Areas of Rsch.: Metabolism of Iodine in the Thyroid, Thyrotropic Hormone.



HART, William L. (Ph.D.), Prof. Math., 119 Folwell Hall, Univ. of Minnesota, Minneapolis, Minn. MATHEMATICS. b. Oct. 12, 1892, Chicago, Ill. s. Morris Philip and Anna (Hoffman) H. Edn.: S.B., Univ. of Chicago, 1913; Ph.D., Math., ibid., 1916. m. Elizabeth Hughes of Lamont, Mo., Mar. 22, 1924 (died, 1944); c.: Helen Hughes. m. Helen Johnston of Chicago, Ill., June 22, 1946; c.: Marie Evalyn. Exp.: Benjamin Pierce Instr. Math. Harvard Univ., 1916-17; Asst. Prof., Assoc. Prof., and Prof. of Math., Univ. of Minn., 1919—. Mem.: A.M.S.; M.A.A.; A.A.A.S.; Natl. Coun. of Tchrs. of Math.; Phi Beta Kappa; Sigma Xi. Author: Coll. Algebra, 1926; Math. of Investment, 1924; Plane and Spherical Trigonometry, 1933; Brief Coll. Algebra 1934; Introduction to the Mathematics of Bus., 1936; Introduction to Coll. Algebra, 1937; Plane Trigonometry, Solid Geometry, and Spherical Trigonometry (with W. W. Hart), 1942; First Year Coll. Math. (with W. A. Wilson and J. I. Tracy), 1943; Intermediate Algebra for Colls., 1948; Analytic Geometry, 1950; Coll. Trigonometry, 1951; Trigonometry, 1954; Calculus, 1955; Analytic Geometry and Calculus, 1957; Coll. Algebra and Trigonometry, 1959; Modern Plane Trigonometry, 1961. Contbr. to: Trans. A.M.S.; Bull. Amer. Mathematics Soc.; Annals of Math.; Amer. Jour. of Math.; Proc. Natl. Acad. of Sci.; Math. Tchr.; Schl. Sci. and Math.; Pac. Jr. of Math. Ph.D. Dissertation: Differential Equations and Implicit Functions in Infinitely Many Variables. War Record: 2nd Lt. to Maj., C.A.C., U. S. Army, 1917-19; Academic Dir., Pre-meteorological Trng. Programs, Army Air Forces, Jan.-Apr., 1943, Civilian. Listed in: A.M.S.; Who's Who in Amer.; Leaders in Edn.

HART, William Forris (Ph.D.), Larkin Prof. of Chem. and Head Dept., Lafayette Coll., Easton, Pa. Home Add.: 732 Burke St., Easton, Pa. ORGANIC CHEMISTRY. b. Hopewell, N. J., Jan. 8, 1906. s. Warren F. and Annie E. (Chick) H. Edn.: B.A., Lafayette Coll., 1927; M.A., Princeton Univ., 1928; Ph.D., N. Y. Univ., 1936. m. Helen Lentz, 1930 (dec.). 2nd m. Hilda Schug, 1946. c.: Caryl Elaine. Exp.: Rsch. Chemist, Reed and Carnrick, Jersey City, N. J., 1929-35; Rsch. Chemist, Endo Products, Inc., New York City, N. Y., 1935-37; Instr. to Asst. Prof. to Assoc. Prof. to Prof., Lafayette Coll., Easton, Pa., 1937—. Hon. Pos.: Past Chmn., Lehigh Valley Sec., Am. Chem. Soc. Mem.: Am. Chem. Soc.; A.A.U.P.; Phi Beta Kappa; Sigma Xi; Alpha Chi Sigma; Kappa Phi Kappa; Kappa Sigma. Contbr. to: Jour. Am. Chem. Soc.; Jour. Organic Chem.; Jour. Chem. Edn. Areas of Rsch.: Heterocycles, Cationic Surface Active Agents, Aromatic Sulfones.

HARTNETT, James Patrick (Ph.D.), Prof. and Chmn., Dept. of Mechan. Engrng., Univ. of Del., Newark, Del. Home Add.: 14 W. Del. Ave., Newark, Del. MECHANICAL ENGINEERING. b. Lynn, Mass., March 19, 1924. s. James Patrick and Anna E. (Ryan) H. Edn.: B.S., Ill. Instit. of Tech., 1947; M.S., Mass. Instit. of Tech., 1948; Ph.D., Univ. of Calif., 1954. m. Shirley G. Carlson, July 14, 1945. c.: James; David; Paul; Carla; Dennis. Exp.: Prof., Univ. of Minn., Mips., Minn., 1954-61; Prof. and Chmn., Dept. of Mech. Engrng., Univ. of Del., 1961—. Hon. Pos.: Guggenheim Fellow, Visiting Prof. Univ. of Tokyo, 1960-61; Fulbright Lectr. and Consultant Univ. of Alexandria, Egypt, 1961. Mem.: Am. Soc. of Mechan. Engrs.; Am. Rocket Soc.; Instit. of Aero/Space Scis.; Japan Soc. of Mechan. Engrs.; Am. Soc. of Engrng. Edn.; Am. Assn. of Univ. Profs.; Sigma Xi; Tau Beta Pi; Pi Tau Sigma. Author: Editor, Recent Advances in Heat and Mass Transfer, 1961; Am. Editor, Internatl. Jour. of Heat and Mass Transfer. Contbr. to: Trans. of A.S.M.E.; Jour. of Aero/Space Sci.; Internatl. Jour. of Heat and Mass Transfer; Jour. of Applied Mechanics; Jour. of Am. Rocket Soc. Serv. Rec.: U. S. Navy, 1942-45. Areas of Rsch.: Heat Transfer; Fluid Mechanics; Thermodynamics.

HARTNETT, William Joseph (Mr.), Pres., Weather Corp. of America, 611 Olive St., St. Louis 1, Mo. Home Add.: 4529 Pershing, St. Louis 8, Mo. GEOPHYSICS. b. St. Louis, Mo., Aug. 16, 1922. s. William J. and Catherine (Boll) H. Edn.: B.S., St. Louis Univ., 1944. m. Kathleen Hannefin, June, 1944. c.: Joseph Francis; Kathleen Mary; William; Michael; John; Mary Eileen; Stephen Christopher. Exp.: Pres., Weather Corporation of Am., St. Louis, Mo., 1946—. Hon. Pos.: Past Pres., City House Barat Hall Assn.; Past Pres., National Assn. of Ind. Met. Mem.: Am. Geophysical Union; Am. Meteorology Soc.; A.A.A.S. Contbr. to: Popular Magazines; Bull., Am. Met. Soc. Serv. Rec.: U.S.N.R., 1944-50. Areas of Rsch.: Business Applications of Geophysical Knowledge and Research.

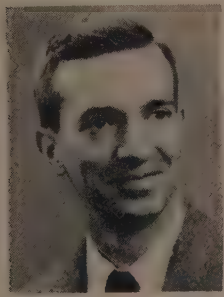
HARTON, Erskine Elliott, Jr., Chem. Engr., Ogden Air Material Area, Hill AFB, Utah. Home Add.: 5049 South 2350 W., Roy, Utah. FUELS TECHNOLOGY. b. Beaver, Pa., Aug. 24, 1919. s. Erskine E. and Mary (Isador Van Arsdale) H. Edn.: B.S., Geneva Coll., 1941; M.S., Univ. of Wyoming, 1953. m. Nancy Jane Frew, Sept. 28, 1942. c.: James Erskine; Juliette Louise. Exp.: Jr. Rsch. Chemist, Pure Oil Co., Northfield, Ill., 1942-44; Sr. Rsch. Chemist, Pure Oil Co., 1946-48; Chemist, U. S. Bur. Mines Petrol. and Oil Shale Expt. Sta., Laramie, Wyo., 1948-51; Chem. Engr., ibid., 1952-55; Tech. Consultant, U. S. Yttrium, Inc., Laramie,

Wyo., 1955; Assoc. Chemist, Midwest Rsch. Inst., 1955-60; Chem. Engr., Ogden Air Material Area, Hill AFB, Utah, 1960—. Mem.: A.A.A.S.; Midwest Rsch. Inst. Br. R.E.S.A.; Am. Chem. Soc.; Am. Rocket Soc.; Am. Ordnance Assn.; Nati. Geographic Soc.; Gamma Sigma Epsilon. Serv. Rec.: U.S.N. Areas of Rsch.: Fuels Technology, Petro-Chemicals, Rare Earths, Para-Claisen Rearrangement; Physical Properties, Air Pollution and Environmental Control.

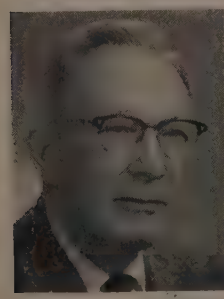
HARVEY, Douglas G., Project Engr., Martin Marietta Corp.

HARVEY, Jacquelin Edward, Jr. (Mr.), Pres., Harvey-Reynolds, Inc., P. O. Box 245, Cambridge, Md. Home Add.: Fishing Creek, Hooper's Island, Md. HIGH PRESSURE HYDROGENATION OF ORGANIC SUBSTANCES; DEHYDRATION OF OILS TO INDUCE SOLVENCY; BY-PRODUCTING OF COAL AND PETRO-CHEMICALS; SYNTHESIS OF OILS WITH A TOXICITY TO WOOD DESTROYING FUNGI; PHOTOSYNTHESIS WITH SPECIAL REFERENCE TO THE CULTURE OF ALGAE; EXOTIC SOURCES OF ENERGY. b. Memphis, Tenn., Dec. 23, 1897. s. Jacquelin E. and Helen P. (von Moad) H. Edn.: M.S., Univ. of Mo., 1919; B.S., ibid., 1917. m. Mary Gordon, Nov. 3, 1945. Exp.: Operating Staffs, Am. Smelting & Refining Co., Mex., 1920-29; Supt., Universal Exploration Co., Jefferson City, Tenn., subsidiary of U. S. Steel Corp., 1929-31; Dir. of Rsch., J. E. Harvey & Co., Rsch. Engrs., Atlanta, Ga., 1931-48; Pres. and Dir. of Rsch., Harvey-Reynolds, Inc., Rsch. Engrs., Cambridge, Md., 1948—; Technical Dir., Harvey Engrng. Assocs., Successors to J. E. Harvey & Co., Cambridge, Md., 1948—. Publisher of "The Scientific Reporter," 1959—. Hon. Pos.: Consult. to the Joint Target Group, W. W. II; Consult. to the Defense Production Admin., Korean War. Mem.: Am. Inst. of Indusl. Engrs.; Am. Chem. Soc.; Am. Soc. for Metals; Assn. for Applied Solar Energy; Am. Geophysical Union; Natl. Assn. of Corrosion Engrs.; Am. Rocket Soc.; A.A.A.S.; Am. Ord. Assn.; Operations Rsch. Soc. of Am.; Instn. of the Rubber Industry (London); C. of C. Author: A Proposal for Shale Oil Development, 1950; A Potential Source of Low-Cost Thermal-Electric Power, 1951. Gen. Int.: Holder of 76 U. S. Patents in the Field of High Pressure Hydrogenation and Dehydrogenation of Organic Substances. Areas of Rsch.: Fossil Fuels as Energy Sources; Projection of Energy Needs and the Probable Sources; Coal and Petroleum as Competitive Sources of Chemicals; Petroleum as a Source of Raw Materials for the Plastics Industry; Solar Energy; Heat Sinks for Solar Energy; Indusl. Application of Photosynthesis.

HARVEY, Ronald Gilbert (Ph.D.), Instr., Ben May Lab., Univ. of Chicago, Chicago, Ill. Home Add.: 5742 S. Nashville Ave., Chicago 38, Ill. ORGANIC CHEMISTRY (ORGANOPHOSPHORUS COMPOUNDS, CARCINOGENS). b. Ottawa, Can., Sept. 9, 1927. s. Gilbert Paul and Adeline (LeClair) H. Edn.: A.B., Univ. of Calif., 1952; M.S., Univ. of Chicago, 1955; Ph.D., ibid., 1960. m. Helene Szpara, June 18, 1952. c.: Ronald. Exp.: Project Ldr., Sinclair Rsch. Labs., Harvey, Ill., 1956-57; Rsch. Assoc., Ben May Lab., Univ. of Chicago, Chicago, Ill., 1960-61; Instr., ibid., 1961—. Mem.: Am. Chem. Soc.; Sigma Xi; Am. Assn. for Adv. of Sci. Contbr. to: Jour. Am. Chem. Soc. Serv. Rec.: U. S. Army, 1952-53. Areas of Rsch.: Organophosphorus Compounds (Mechanisms of Reactions, Novel Reactions); Aromatic Carcinogens.



HARVEY, James Vernon (Ph.D.), Assoc. Prof., Los Angeles St. Coll., Los Angeles, Calif. Home Add.: 1429 S. Palm Ave., San Gabriel, Calif. BOTANY, MYCOLOGY, PLANT PATHOLOGY, ECOLOGY. b. Hazlehurst, Miss., Feb. 6, 1901. s. Rev. William James and Mary Frances (Simmons) H. Edn.: A.B., Miss. Coll., 1923; M.A., Univ. of N. C., 1925; Ph.D., Univ. of Wis., 1929. m. Lucile Carter, Dec. 22, 1934. c.: Anne Louise; Margaret Jane. Exp.: Instr., Okla. Baptist Univ., 1925-27; Instr., Eastern Ky. St. Coll., 1927-28; Instr., San Bernardino Valley Coll., 1928-44; Chmn., Div. of Scis., ibid., 1942-44; Plant Pathologist; U.S.D.A., Univ. of Calif., 1944-45; Rsch. Assoc., Johnson Foundation, Univ. of Pa., 1945; Mycologist, Chf. of Testing Branch (Development of Mildew Test Methods); U. S. Army Q.M. Corps, Jeffersonville, Ind. and Philadelphia, Pa., 1945-50; Mycologist, U.S.P.H.S., Howard A. Taft Sanitary Engrng. Ctr., Cincinnati, Ohio, 1951; Plant Pathologist, Chf. of Crops Div., Dugway Proving Ground, Dugway, Utah, 1952-55; Assoc. Prof., Los Angeles St. Coll., 1955—. Mem.: A.A.A.S., Fellow; Mycological Soc. of Am.; Am. Phytopathological Soc.; Am. Soc. for Industrial Microbiologists; A.A.U.P.; Sou. Calif. Branch, Am. Soc. for Microbiologists; Sigma Xi; Phi Sigma; Gamma Alpha. Author: An Introduction to California Natural History, 1961. Contbr. to: Jour. of Elisha Mitchell Scientific Soc.; Trans. of Wis. Acad. of Letters, Arts and Scis.; Plant Disease Reporter; Sewage and Industrial Wastes. Areas of Rsch.: Aquatic and Semi-aquatic Fungi; Fungi as Causative Agents in Mildew of Textiles and other Service Materials; Dispersal of Fungi Spores; Ecol. of Soil Microorganisms; Field Biol.



HARVEY, William Royal (Ph.D.), Assoc. Prof., Univ. of Mass., Amherst, Mass. Home Add.: 73 Massasoit St., Northhampton, Mass. DEVELOPMENTAL BIOLOGY. b. Marshfield, Vt., May 25, 1927. s. Robert Leslie and Mary Edith (Shorey) H. Edn.: A.B., Tufts Univ., 1950; B.Ed., Edinburgh Univ., 1951; A.M., Harvard Univ., 1954; Ph.D., ibid., 1957. m. Susan Lee MacCulloch, Aug. 30, 1958. Exp.: Instr., Harvard Univ., 1957-60; U.S.P.H. Spec. Rsch. Fellow, Univ. of Copenhagen, 1960-61; Asst. Prof., Univ. of Mass., 1961-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Soc. of Zoologists; A.A.A.S.; Soc. for Cell Biol.; Sigma Xi; Phi Beta Kappa. Contbr. to: Biol. Bull.; Jour. of Insect Physiol.; Annual Rev. of Entomology; Anatomical Record. Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Mechanism of Action of Growth Regulating Hormones; Oxidative Metabolism of Insects.

HARWARD, Moyle (Ph.D.), Assoc. Prof. of Soils, Soils Dept., Ore. St. Coll., Corvallis, Ore. Home Add.: 1321 No. 30th, Corvallis, Ore. SOIL CHEMISTRY. b. Aurora, Utah, May 1, 1922. s. Orson A. and Iva (Peterson) H. Edn.: B.S., Brigham Young Univ., 1948; M.S., Univ. of Mass., 1950; Ph.D., N. C. St. Coll., 1952. m. Ada Taylor, 1943. c.: Lee Ann; Roselyn; Susan; Karen; Margaret; Debra. Exp.: Asst. Prof. of Soils, N. C. St. Coll., 1952-55; Asst. Prof. of Soils, Ore. St. Coll., 1955-57; Assoc. Prof. of Soils, ibid., 1957—. Mem.: Am. Soc. of Agron.; Soil Sci. Soc. of Am.; Soc. of Sigma Xi; Phi Kappa Phi. Contbr. to: Soil Sci. Soc. of Am. Proc.; Soil Sci.; Jour. of AOAC; Jour. of Am. Chem. Soc.; Am. Soc. Horticultural Sci. Proc.; Plant and Soil. War Record: Med. Admin. Corps, 1942-45. Areas of Rsch.: Nature and Properties of Acid Soils; Ion Exchange Reactions in Soils; Relation of Chemical Properties of Soils to Plant Growth and Nutrition; Clay Mineralogy; Relation of Clay Mineral Structures to Chemical Properties of Soil.

HARWOOD, Edward Crosby (Mr.), Dir. and Trustee, Am. Inst. for Econ. Rsch., Great Barrington, Mass. ECONOMICS. b. Cliftondale, Mass., Oct. 28, 1900. s. Edward T. and Mary Howe (Pinney) H. Edn.: B.S., U. S. Military Acad., 1920; C.E., Rensselaer Poly. Inst., 1922; M.C.E., 1930; M.B.A., 1931. m. Harriet Haynes, Sept. 3, 1921. c.: Marjorie H.; Edward L.; Richard F. 2nd m. Helen L. Fowle, Oct. 29, 1938. c.: William F.; Eve C.; Frederick C.; Katherine S. Exp.: Assoc. Prof. of Milit. Sci., Mass. Inst. of Tech., 1930-34; Exec. U. S. Dist. Engr., Boston, in Chg. of Cape Cod Canal Improvement Program, 1934-36; in Chg. Flood Control Surveys of New England, 1936; Assoc. Prof. of Milit. Sci., Mass. Inst. of Tech., 1940-42; Dir. and Trustee, Am. Inst. for Econ. Rsch., Great Barrington, Mass., 1934—; Trustee, Henry George Schl. of Soc. Sci.; Dir., Econ. Edn. League, Albany, N. Y.; Mem. of Economists Natl. Comm. on Monetary Policy; Mem., Behavioral Rsch. Coun. Hon. Pos.: Mem., A.A.A.S.; Sigma Xi. Author: Cause and Control of the Business Cycle, 1932; Current Economic Delusions, 1938; What Will Inflation and Devaluation Mean to You?, 1934; Life Insurance and Annuities from the Buyer's Point of View, 1935; Reconstruction of Economics, 1955; Useful Economics, 1956; Twentieth-Century Common Sense and the American Crisis of the 1960's, 1960. War Record: Commissioned 2nd Lt., U. S. Army, 1920, adv. through ranks to Col., 1943, retired 1937; Returned to Active Duty, U. S. Army, 1940; Exec. Engr. Serv., E.T.O., 1942-43; Chf. of Mobilization Div., War Dept., 1943; Corps of Engrs., XI Corps, 1943-44; Chf. of Staff, Army Serv. Command, S. W. Pacific Theater, 1944; Retired as Col., 1946; Decorated Legion of Merit, Bronze Star Medal. Special Int.: Economics—Money and Credit.

HARWELL, John Earl (Ed.D.), Assoc. Prof., Sci. Edn., E. Tex. Bapt. Coll., Marshall, Tex. Home Add.: 1104 N. Grove, Marshall, Texas. BIOLOGY AND SCIENCE EDUCATION. b. Bogalusa, La., Aug. 5, 1920. s. John L. and Sarah J. (Knight) H. Edn.: B.S., E. Tex. Bapt. Coll., 1949; M.S., E. Tex. St. Coll., 1950; Ed.D., Univ. of Miss., 1961. m. Helon M. Baldwin, Aug. 22, 1953. Exp.: Instr., Wayland Coll., 1949-50; Instr., E. Tex. Bapt. Coll., 1950-51; Instr., Tucson Pub. Schls., Ariz., 1951-52; Professional Serv. Repr., Charles Pfizer (Pharmaceuticals), Brooklyn, 1952-53; Instr., Amphitheater Schl. Dist., Tucson, Ariz., 1953-54; Instr., E. Tex. Bapt. Coll., 1954-56; Instr., New Orleans Pub. Schls., 1956-61; Asst. Prof. of Edn., Univ. of Miss. (Sp. Sem.), 1961; Asst. Prof., St. Tchrs. Coll., Kirksville, Mo., 1961-62; Assoc. Prof., Gen. Sci., E. Tex. Bapt. Coll., 1962—. Hon. Pos.: Chmn., New Orleans Sci. Coun.; Pres., La. Sci. Tchrs. Assn. Mem.: Assn. for Supvn. and Curriculum Devel.; A.A.-A.S.; La. Acad. of Sci.; Natl. Sci. Tchrs. Assn.; Phi Delta Kappa; Kappa Delta Pi; Natl. Soc. for Study of Edn. Serv. Rec.: U.S.M.C., 1942-46. Areas of Rsch.: Responsibilities of the Sci. Super. as Indicated by the Sci. Tchrs. Thesis; Odanata of Hunt Co., Tex., and Surrounding Areas.

HASEK, Robert Hall (Ph.D.), Rsch. Assoc., Tenn. Eastman Co., Kingsport, Tenn. Home Add.: 1553 Crescent Dr., Kingsport, Tenn. ORGANIC CHEMISTRY. b. State Coll., Pa., June 25, 1918. s. Carl W. and Florence (Hall) H. Edn.: B.S., Pa. St. Univ., 1939; Ph.D., Univ. of Ill., 1943. m. Jean Babcock, 1942. c.: John Reed. Exp.: Asst., Univ. of Ill., 1939-43; Rsch. Chemist, Tenn. Eastman Co., 1943-47; Sr. Rsch. Chemist, ibid., 1947-55; Rsch. Assoc., ibid., 1955—. Mem.: Am. Chem. Soc.; A.A.A.S.; Alpha Chi Sigma; Phi Lambda Upsilon; Sigma Xi; Phi Eta Sigma; Phi Kappa Phi; Pi Mu Epsilon; Phi Gamma Delta; Kiwanis. Contbr. to: Jour. Am. Chem. Soc.; Ind. Engr. Chem.; Jour. Org. Chem. Areas of Rsch.: Oxo Reaction, Aliphatic Aldehydes, Ketenes, Catalytic Hydrogenation.

HASKELL, Edward Froehlich (Mr.), Chmn., Coun. for Unified Rsch. and Edn., 390 Riverside Dr., N. Y. 25, N. Y. THEORETICAL UNIFICATION OF SCIENCE. b. Plovdiv, Bulgaria, Aug. 24, 1906. s. Edward B. and Elisabeth (Froehlich) H. Edn.: A.B., Oberlin Coll., 1929; Grad. Study: Columbia, Harvard, Univ. of Chicago. Exp.: Lang. and Area Instr. (Bulgarian), A.S.T.P., 1943-44; Lectr., Social Sci., Plant, Animal, Human, Univ. of Denver, 1944; Lectr., Sociol. and Anthropol., Brooklyn Coll., 1946-47; Lectr., Systematic Social Sci. Theory, Grad. Div., ibid., 1947—. Mem.: A.A.A.S.; N. Y. Acad. Sci.; Acad. Polit. Sci.; Soc. for Appl. Anthropol.; Coun. of Cooperating Grps.; Manhattanville Comm. Center. Author: Lance—A Novel about Multi-Cultural Men, 1941; Plain Truth and Redirection of the Cold War. Contbr. to: Ecology; Scientific Monthly; Main Currents in Modern Thought. Serv. Rec.: Instr., Army Specialized Trng. Program, 1943-44. Gen. Int.: Geometric Coding of Polit. Philosophies; a Simple Coordinate System for Coding the World's 3,000 Systems of Values. Areas of Rsch.: Organization of Science in Accordance with Leibnitz' Proposals: (1) Compilation of Structural Uniformities in Diverse Empirical Sciences; (2) Modification of the Cartesian Coordinate System; (3) Codification of Uniformities in Terms of Resultant Periodic Coordinate System.

HASSELSTROM, (K.) Torsten (H. A.) (Dr.Sc.), Hd., Org. Chem. Lab., PRD, Army Qm. Rsch. and Engrng. Command, Natick, Mass. Home Add.: 33 Delmar Ave., Framingham, Mass. TERPENES AND OTHER ALICYCLICS; SYNTHESIS AND IDENTIFICATION OF PHYSIOLOGICALLY ACTIVE COMPOUNDS; ORGANOMETALLICS. b. Helsingfors, Finland, Mar. 2, 1895. s. Karl Albert and Elisabeth (Wehmeyer) H. Edn.: B.A., Univ. of Helsingfors, Finland, 1914; M.A., Tech. Inst. of Finland, 1920; Dr.Sc., Teknologie Doktor, ibid., 1925. m. Cecilia H. Sandberg, 1921. Exp.: Asst. Geolt., Scand. Expdtn., S. Siberia, N. Mongolia, 1917; Asst. to Prof., Technol. Inst. of Finland, Helsinki, 1921-29; Rsch. Fellow, Columbia Univ., Dept. Chem., N. Y., 1929-36; Rsch. Dir., G. and A. Labs., Savannah, Ga., 1936-44; Dept. Hd., U. S. Indust. Chems., Newark, N. J., 1945-47; Chief, Org. Chem. Lab. Unit, PRD Army Qm. Rsch. and Devel., Phila., Pa., 1948-54; Hd., ibid., Natick, Mass., 1954—. Hon. Pos.: Chmn., Annual Org. Chem. Conf., 1957; Alternate Mem., Army Scient. Adv. Grp., 1957-59. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Army Qm. Rsch. and Engrng. Command; TAPPI; N. Y. Acad. Sci.; A.I.C.; Inst. Food Technolts.; Finnish Chem. Soc.; Sigma Xi; Phi Lambda Upsilon; The Chemists Club, N.Y.C. Author: Ueber die Einwirkung von Phosphorpentachlorid auf die eigentlichen Campherarten, 1923. Contbr. to: Jour. Am. Chem. Soc.; Sci.; TAPPI; Jour. Biol. Chem.; Jour. Org. Chem.; Jour. Agric. and Food Chem.; Textile Rsch. Jour.; Paper Trade Jour.; Food Rsch.; Food Engrng.; Food Technology; Annalen der Chemie; Annales Acad. Sci. Serv. Rec.: Finnish White Guard, 1918. Gen. Int.: Cert. of Scient. Achievement, N. Y. Acad. of Scis., 1951; Rsch. Dirs. Award for 1961, Army Qm. Rsch. and Engrng. Command, Natick, Mass.; First Prize for Essay on Co-Ord. of Rsch., Inter-Scand. Compet., 1938. Areas of Rsch.: Terpenes and Other Alicyclics; Synthesis and Identification of Physiologically Active Compounds; Food Flavors, Organometallics; Economics; Directing and Administration of Research.

HASSLER, William Woods (Ph.D.), Hd., Chem. Dept., Beaver Coll., Jenkintown, Pa. Home Add.: 304 Quigley Ave., Willow Grove 6, Pa. CHEMISTRY. b. Clearfield, Pa., Sept. 6, 1917. s. John W. and Clara (Woods) H. Edn.: B.S., Juniata Coll., 1939; M.S., Univ. of Pa., 1941; Ph.D., ibid., 1951. m. Mary Jackson, 1941. c.: Virginia; Martha; Thomas. Exp.: Asst. Instr., Univ. of Pa., Phila., Pa., 1939-42; Rsch. Chemist, Rohn and Haas Co., Phila., Pa., 1942-46; Asst. Prof., Chem., Drexel Inst., 1946-51; Prof., Chem. and Hd. Dept., Beaver Coll., 1951—. Chmn., Chem. Dept., ibid., 1951—. Mem.: Am. Chem. Soc.; Alpha Chi Sigma; Sigma Xi; Lincoln Civil War Soc. of Phila. Author: Applied Chemistry, 1950; Applied Chemistry Laboratory Manual, 1950. Contbr. to: Jour. Am. Water Works Assn. Areas of Rsch.: Technical Writing, Inorganic Analytical Chemistry.

HASSNER, Alfred (Ph.D.), Asst. Prof., Univ. of Colo., Boulder, Colo. Home Add.: Forest Ave., Boulder, Colo. ORGANIC CHEMISTRY. b. Czernowitz, Romania, Nov 11, 1930. s. Sigmund and Mina (Koffler) H. Edn.: B.S., Univ. of Technol., Vienna, (Univ. of Neb.), 1952; M.S., Univ. of Neb., 1954; Ph.D., ibid., 1956. m. Cyd P. Schaechter, Mar. 29, 1957. c.: Lillian Rae; Susanne Yvette. Exp.: Chemist, DuPont Co., Wilmington, Del., s.s., 1954; Rsch. Fellow, Harvard Univ., 1956-57; Asst. Prof., Dept. of Chem., Univ. of Colo., 1957—. Mem.: Am. Chem. Soc.; Chem. Soc. London; Germ. Chem. Soc.; Sigma Xi; Assn. of Harvard Chem.; Colo.-Wyo. Acad. of Sci.; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem.; Tetrahedron Letters. Areas of Rsch.: Stereochemistry of Carbonyl Compounds, Synthesis and Reactions of Steroids and of Heterocycles, Natural Products.

HASTIE, Henry Bull (Mr.), Prof. of Chem., Benedict Coll., Columbia, S. C. Home Add.: 5 Grand St., Oneonta, N. Y. ORGANIC CHEMISTRY. b. Oneonta, N. Y., Sept. 11, 1921. s. William B. and Ella (Bull) H. Edn.: A.B., Cornell Univ., 1943. Exp.: Rsch. Chemist, Norwich Pharmacal Co., 1943-51; Chem. Lab. Asst., Hartwick Coll., Oneonta, N. Y., 1952-54; Act. Instr. in Chem., Univ. of Wis., 1959-60; Prof. of Chem., Benedict Coll., 1960—. Mem.: Am. Chem. Soc.; A.A.A.S. Contbr. to: Chem. Abstracts. Areas of Rsch.: Furan Nitration Mechanism, Structure of Furan Nitration Intermediate, Preparation of 5-Nitro-2-Furfurylidene Acetone Semicarbazone.

HATZIOLOS, Basil Constantine (D.V.M.), Assoc. Prof. of Animal Path., Univ. of Md., Vet. Sci. and LSSSL, Coll. Park, Md. Home Add.: 3957 Fessenden St., N.W., Wash. 16, D. C. HISTOPATHOLOGY (ANIMAL DISEASES). b. Messolonghi, Greece, Aug. 2, 1902. s. Constantine and Elizabeth (Skoulikis) H. Edn.: Dipl. Med. Vet., Ecole Vet., Alfort, France, 1924; Dipl. Path. Trop. Diseases, Inst. Exot., Alfort, Fr., 1929; D.V.M., Univ. of Paris, 1929; D.V.M., Univ. of Berlin, 1934. m. Anne Patsourakos, Dec. 2, 1947. c.: Elizabeth; Marea. Exp.: Asst. and Hd. (Regional) and Asst. Gen. Inspection, Vets. Serv., Greek Ministry of Agri., 1925-34; Asst. to Dir., Vet. Serv., Athens, Greece Ministry Agri., 1934-37; Branch Chf. (Equine Production), ibid., 1937-47; Rsch. Asst., Dept. Dairy Sci., Univ. of Md., 1947-52; Assoc. Prof., Animal Path., LSSSL, ibid., 1952—. Mem.: D. C. Vet. Med. Assn.; Md. St. Vet. Med. Assn.; Am. Vet. Med. Assn.; Hellenic Vet. Med. Soc.; Fellow, A.A.A.S.; A.A.U.P. Author: L'Ecthyme Contagieux du Mouton, 1929; Die Wirtschaftliche Bedeutung der Schafzucht in Griechenland, 1934; The Problem of the Animal Industry in Greece, 1941. Contbr. to: Comptes rendues des Sceances de la Ste de Biologie (Fr.); Rev. Gen. de Med. Vet.; Rev. de Zootechnie; Zeitschriff f. Zuchtung & Zuchtungbiol.; Bull. of Hellenic Vet. Med. Assn.; Hellenic Vet. Med.; ERGASIA;

AGROTIKON MELLON; Am. Jour. Dairy Sci.; Science; N. Am. Vet.; Jour. A.V.M.A.; Am. Jour. Vet. Rsch.; Med. Vet. Serv. Rec.: Greek Army, 1940-41. Gen. Int.: Introduced Artificial Insemination in Farm Animals in Greece, 1936; Major Contributor Toward Eradication of Infectious Diseases of Reproduction in Animals, Greece; Introduced New Concept in Etiology and Treatment of Bovine Ketosis, U.S.A.; Initial Findings Concerning Neurotropism of Equine Inf. Abort. Virus. Areas of Rsch.: Immunology; Semen Preservation; Metabolic Dis.; Exptl. Pathol. and Virus Diseases.

HAUGHEY, Francis James (Mr.), Lectr. and Univ. Hlth./Physt., Rutgers Univ., New Brunswick, N. J. Home Add.: R. D. 1, Box A107 Old Bridge, N. J. HEALTH PHYSICS. b. Brooklyn, N. Y., Apr. 6, 1930. s. Francis V. and Helen (Rogers) H. Edn.: B.S., Hofstra Coll., 1959; M.S., Rutgers Univ., 1962; Certified Health Physicist—Am. Board of Health Physics. m. Claire Fox, June 15, 1951. c.: Claire Joan; Francis James; Dennis Robert; Barbara Helen; Timothy Edward. Exp.: Health Physt., Brookhaven Natl. Lab., N. Y., 1955-58; Hlth. Physt. and Lectr., Rutgers Univ., 1958—. Mem.: Sigma Xi; Hlth. Phys. Soc.; Am. Meteorl. Soc.; Am. Geophys. Union; Sigma Pi Sigma. Contbr. to: Brookhaven Natl. Lab. Reports; Hlth. Phys. Serv. Rec.: U. S. Air Force, 1951-55. Areas of Rsch.: Transport and Dispersion of Air Borne Radioactive Materials; Radiation Dosimetry.

HAUPIN, Warren Emerson (Mr.), Sr. Scientist, Alcoa Rsch. Labs., New Kensington, Pa. Home Add.: 2820 Seventh St. Rd., New Kensington, Pa. ELECTROCHEMISTRY, PROCESS METALLURGY. b. Youngsville, Pa., Apr. 4, 1920. s. Orie Burt and Edna (Donaldson) H. Edn.: B.S., Pa. St. Univ., 1942. m. Edna Oyler, 1948. c.: Barbara; Ronald; Laura; Carol. Exp.: Rsch. Engr., Alcoa Rsch. Labs., New Kensington, Pa., 1943-59; Electrochem. Sec. Hd., ibid., 1959-61; Sr. Scientist, ibid., 1961—. Hon. Pos.: Chmn., Pittsburgh Sect., Electrochem. Soc. Mem.: A.I.M.E.; A.A.A.S.; The Electrochem. Soc.; Sigma Tau; Etta Kappa Nu; R.E.S.A. Contbr. to: Jour. Electrochem. Soc.; Trans. of A.I.-M.E.; Am. Ceramics Soc. Areas of Rsch.: Aluminum Smelting, Brazing and Welding; Theoretical Electrochem.; Heat Flow; Magnetohydrodynamics.

HAUPT, Lewis McDowell, Jr. (Mr.), Prof., Elect. Engrng., A. and M. Coll. of Tex., Coll. Sta., Tex. Home Add.: Rt. 4, Box 35, Bryan, Tex. ELECTRIC POWER GENERATION AND TRANSMISSION. b. Kyle, Tex., 1906. s. Lewis McDowell and Lucy G. (Harris) H. Edn.: B.S., A. and M. Coll. of Tex., 1927; M.S., ibid., 1935. m. Stella E. Geren, Aug. 5, 1931. c.: Arrenia (H.) Ellis; Luella (H.) Trotter; Florence (H.) King; Lewis McDowell, III. Exp.: Engr., Westinghouse Elect. Co., Pgh., Pa., 1927-28; Engr., W. Tex. Utilities, Abilene, Tex., 1928-30; Prof., A. and M. Coll. of Tex., 1930—; Prof., Tex. A. and M. Rsch. Fdtn., Coll. Sta., Tex., 1947 -. Mem.: Am. Inst. of Elec. Engrng.; T.S.P.E.; N.S.-P.E.; Am. Soc. of Elec. Engrs.; Sigma Xi; Eta Kappa Nu; Tau Beta Pi. Contbr. to: Elec. World; Elec. Engr.; Procs. of A.S.-C.E.; Trans. of Conf. for Protective Relay Engrs. Areas of Rsch.: Electric Power Systems and Apparatus.

HAUSCHKA, Theodore Spaeth (Ph.D.), Dir. of Cancer Rsch. (Biology), Roswell Park Meml. Inst., Buffalo 3, N. Y. CYTOGENETICS AND IMMUNOGENETICS OF CANCER; MOUSE GENETICS; PHYSIOLOGY OF GROWTH. b. Reichenau, Austria, July 31, 1908. s. Hugo and Carola (Spaeth) H. Edn.: A.B., Princeton Univ., 1930; M.S., Univ. of Pa., 1941; Ph.D., ibid., 1943. m. Elsa Voorhees, Mar. 29, 1938. c.: Shephen Denison; Peter Voorhees; Margaret Spaeth. Exp.: Tchr. of Biol., Chestnut Hill Acad., Phila., Pa., 1935-39; Harrison Fellow in Zool., Univ. of Pa., 1940-42; Instr. in Zool., ibid., 1942-43; Army Specialist Trng. Program, 1943-44; Rsch. Biologist, Lankenau Hosp. Rsch. Inst., 1943—; Assoc. Dir. of the Institutes' Marine Exptl. Sta., Truro, Mass., 1945-47; Sr. Mem., Inst. for Cancer Rsch. and Lankenau Hosp Rsch. Inst., 1949-54; Dir. of Cancer Rsch. (Biology), Roswell Park Meml. Inst., 1954—. Mem.: Am. Soc. Zoologists; Am. Genetic Assn.; Am. Soc. of Parasitologists; Soc. for the Study of Growth and Devel.; Am. Assn. for Cancer Rsch. (Pres., 1959-60); A.A.A.S., Fellow; N. Y. Acad. Sci., Fellow; Sigma Xi; Royal Soc. of Med.; Soc. Exptl. Biol. and Med. Contributor of Rsch. Pubins. to Scientific Jours. and Symposia. Spec. Int.: Growth, Cytogenetics of Cancer; Genetics of Histo-Compatibility; Tumor Immunity; Mouse Genetics in Relations to Cancer Problems; Tissue Genetics of Neoplastic Cell Populations; Human Cytogenetics.

HAUSE, Norman L(aurance) (Ph.D.), Lab. Dir., Electrochems. Dept., E. I. duPont de Nemours and Co., Inc., Wilmington 98, Del. Home Add.: 202 N. Spring Valley Rd., Wilmington 7, Del. RESEARCH CHEMISTRY. b. Ft. Lupton, Colo., July 26, 1922. s. Laurance Edward and Daisy Theresa Schieck (Lowe) H. Edn.: B.A., Univ. of Colo., 1947; Ph.D., ibid., 1950. m. Marjorie Beryl Clinton, Mar. 10, 1946. c.: Penny Elaine; Robin Kay; Pamela Lynn. Exp.: Rsch. Chemist, E. I. duPont de Nemours and Co., Inc., 1950-56; Rsch. Chem., ibid., 1956; Rsch. Supvr., ibid., 1956-60; Lab. Dir., ibid., 1960—. Mem.: Am. Chem. Soc.; Scientific Rsch. Soc. of Am.; Am. Assn. for the Adv. of Sci.; Phi Lambda Upsilon; Phi Beta Kappa; Westminster Club, Inc. Contbr. to: Jour. Am. Chem. Soc.; Arch. Biochem. Biophys.; Food and Agr. Chem.; Am. Jour. Clin. Nutrn.; Nature. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Reaction Kinetics; Furfural Chemistry; Amino Acids and Proteins; Polymer Chemistry; Nutrition.

HAUSMAN, Eugene Arnold (Ph.D.), Sec. Hd., Engelhard Ind. Inc., Newark, N. J. Home Add.: 44 Nomahegan Court, Cranford, N. J. PHYSICAL, INORGANIC CHEMISTRY. b. N. Y., N. Y., Mar. 22, 1923. s. Aaron and Stella (Rotholz) H. Edn.: B.A., Brooklyn Coll., 1943; M.S., St. Univ. of Iowa, 1947; Ph.D., N. Y. Univ., 1952. m. Marian C. Schapiro, July 17, 1955. c.: Gary; Amy. Exp.: Chemist, Argonne Natl. Lab., Chicago, Ill., 1944-46; Res. Fellow, N. Y. Univ., 1949-51; Sect. Head, Engelhard Ind., Inc., Newark, N. J., 1952-62. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Alpha Chi Sigma. Contbr. to: Treatise on Analytical Chem.; Jour. of the Am. Chem. Soc. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: The Separation, Purification and Analysis of the Platinum Metals.

HAVEN, Seth Edson (Ph.D.), Assoc. Prof. Psychol., Dept. of Psychol., Wayne St. Univ., Detroit 2, Mich. Home Add.: 163 Solon Rd., Chagrin Falls, Ohio. PSYCHOLOGY. b. Mar. 5, 1905, Austinville, Pa. s. Austin S. and Myrtle (Shaylor) H. Edn.: Diploma, St. Tchrs. Coll., Mansfield, Pa., 1926; B.S. in Edn., Ohio Univ., 1927; M.A., Ohio St. Univ., Columbus, Ohio, 1928; Scholarship, Columbia Univ., N.Y.C., 1929; Ph.D., Ohio St. Univ., Columbus, Ohio, 1933. m. Iona M. Jenks of Chagrin Falls, Ohio, June 12, 1947. Exp.: Asst. in Psychol., Ohio Univ., Athens, Ohio, 1927-28; Instr. Psychol., Univ. of Ky., Lexington, Ky., 1928-29; Asst. Psychol., Ohio St. Univ., 1929-30; Instr. Psychol., ibid., 1930-33; Asst. Prof. Psychol., Denison Univ., Granville, Ohio, 1933-34; Asst. Prof. Psychol., Ohio Wesleyan Univ., Delaware, Ohio, 1934-35; Asst. Prof. Psychol., Ohio St. Univ., Columbus, Ohio, 1935-36; Instr. Psychol., Wayne St. Univ., Detroit, Mich., 1936-38; Asst. Prof. Psychol., ibid., 1938-43; Assoc. Prof. Psychol., ibid., 1943 . Mem.: A.A.A.S., Fellow; A.A.A.P., Fellow; Am. Stat. Assn.; Am. Psychol. Assn., Fellow; Mid-Western Psychol. Assn.; So. Soc. for Philos. and Psychol.; Mich. Acad. of Sci.; A.A.U.P.; Sigma Xi; Phi Delta Kappa; Kappa Delta Pi; Alpha Psi Delta; F. and A. M.; Square and Compass. Author: Psychology and the Motorist (with H. A. Toops), 1938. Contbr. to: Jour. of Appl. Psychol.; Jour. of Ednl. Psychol.; Jour. of Juvenile Rsch. Ph.D. Dissertation: Some Psychological Aspects of Hotel Personnel. Travel: U. S.; Canada. Hobbies: Farming; Collection of Motivation Specifics. Listed in: A.M.S.; W. W. in Midwest. Special Int.: Psychol. Rsch. in Hotel Industry, Pub. Schls., Highway Traffic Behavior; Personnel Rsch. in Industry.

HAVENHILL, Robert Samuel (Mr.), Dir. of Product and Serv. Labs., St. Joseph Lead Co., Monaca, Pa. Home Add.: 1286 Corporation St., Beaver, Pa. RUBBER CHEMISTRY AND TECHNOLOGY. b. Lawrence, Kan., Mar. 9, 1903. s. Lawrence D. and Myra (Buck) H. Edn.: B.S.Ch.E., Univ. of Kan., 1925. m. Monte Rey Breakey, June 10, 1925. c.: Myra Winifred; John Robert. Exp.: Analytical Chem., F. B. Goodrich Co., Akron, Ohio, 1925-26; Rubber Rsch. Chem., ibid., 1926-28; Raw Materials Develop. Rsch., ibid., 1928-30; Dir. of Rubber Lab., St. Joseph Lead Co., 1930-60; Dir. of Product and Serv. Labs., ibid., 1960—. Hon. Pos.: A.S.T.M. Sub-Comm. Chmn., Low Temp. Comm.; U. S. Delegate and Convener, Internatl. Standards Orgn., Comm. TC/45 on Rubber (Low Temp.), Oxford, England, 1951, Dusseldorf, Germany, 1955, Zurich, Switzerland, 1957, U.S.A., 1959. Mem.: Am. Chem. Soc.; Am. Soc. for Testing Materials; A.A.A.S.; Alpha Chi Sigma; Tau Beta Pi; Sigma Xi. Co-Author: Sect. on "Electrostatic Properties of Rubber and GR-S" in High-Polymer Physics,

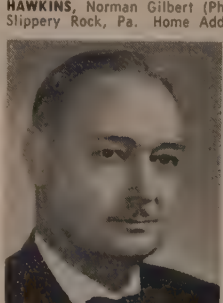
1948. Contbr. to: Indusl. and Engrng. Chem.; India Rubber World; Rubber Age; Jour. Applied Physics; Rubber Chem. and Tech.; Trans. of Instn. of Rubber Industry; Physics. Gen. Int.: Holder of Patents on zinc pigments, rubber adhesives, industrial electronic controls and electrostatic measuring equipment; designer of rubber testing equipment; Author or co-author of technical papers on zinc oxide and its use in natural and synthetic rubber compounds; reinforcement anisotrophy hysterisis, ozone resistance and electrostatic properties of natural and synthetic elastomers.

HAVIGHURST, Robert James (Ph.D.), Prof. of Edn., Univ. of Chicago, Chicago 37, Ill. Home Add.: 5816 S. Blackstone Ave., Chicago 37, Ill. SOCIAL PSYCHOLOGY AND EDUCATION. b. DePere, Wis., June 5, 1900. s. Freeman A. and Winifred A. (Weter) H. Edn.: A.B., Ohio Wesleyan Univ., 1921; Ph.D., Ohio St. Univ., 1924. m. Edythe D. McNeely, 1930. c.: Helen S.; Ruth L.; Dorothy C.; James P.; Walter M. Exp.: Asst. Prof. of Chem., Miami Univ., Oxford, Ohio, 1927-28; Asst. Prof., Physics, Univ. of Wis., Madison, Wis., 1928-32; Assoc. Prof. of Sci. Edn., Ohio St. Univ., Columbus, Ohio, 1932-34; Assoc. Dir. and Dir. for Gen. Edn., Gen. Edn. Bd., Rockefeller Found., N. Y., 1934-41; Prof. of Edn., Univ. of Chicago, Chicago, Ill., 1941—. Hon. Pos.: Pres., Gerontological Soc., 1958; Chmn., Div. 20 of Am. Psychol. Assn., 1960; Assoc. Editor, Jour. of Gerontol., 1958-61; Bd. of Dirs., Natl. Soc. for Study of Edn., 1957-63. Mem.: Am. Psychol. Assn.; Am. Sociol. Assn.; Gerontol. Soc.; Soc. for Rsch. in Child Devel.; Am. Edn. Rsch. Assn.; Natl. Soc. of Study Edn.; Phi Beta Kappa; Phi Delta Kappa; Sigma Xi; Phi Delta Theta; City Club of Chicago; Citizens Schools Comm. Author: Adolescent Character and Personality, 1949; Human Development and Education, 1953; Older People, 1954; Society and Education, 1957; Educating Gifted Children, 1957; American Higher Education in the 1960's, 1960; The Psychology of Moral Character, 1961; Growing Up in River City, 1962. Contbr. to: Genetic Psychol. Mono.; Jour. of Abnormal and Social Psychol.; Jour. of Ednl. Psychol.; Am. Sociol. Rev.; Am. Jour. of Sociol.; Jour. of Gerontol.; Schl. Rev.; Tchrs. Coll. Record. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Atomic Distribution in Crystals; X-Ray Diffraction; Social Psychology of Children and Adolescents; Gerontology; Comparative Education.

HAWES, Mary Kropp (Mrs.), Mgr. Applications Rsch., Radio Corp. of Am., Cherry Hill, N. J. Home Add.: 439 St. Johns Dr., Cherry Hill, N. J. MATHEMATICS AND PHYSICS, ELECTRONIC COMPUTERS. b. Chattanooga, Tenn., Jan. 25, 1910. d. Henry A. Kropp and Mary (Colburn) K. Edn.: B.S., Univ. of Chattanooga, 1931; M.S., Univ. of Okla., 1933. m. Norman E. (dec.), Mar. 21, 1936. c.: Mary Elizabeth; Norman Emery; Kendra Eleanor. Exp.: Sup. Commercial Applications, Remington Rand Univac, Phila., Pa., 1951-56; Mgr., Data Processing Applications, Natl. Analysts, Inc., ibid., 1956-57; Sup. Prod. Requirements, Burroughs Electrodata Div., Pasadena, Calif., 1957-59; Mgr. Applications Rsch., Radio Corp. of Am., Cherry Hill, N. J., 1959—. Hon. Pos.: Secy., A.S.A. X 3.6 Data Processing Standards Comm.; Chmn., Data Div., COBOL Com., Codasyl Cyst. Devel. Com.; Secy.; Del. Valley Chapt. of TIMS. Mem.: A.A.A.S.; I.R.E.; A.C.M.; A.M.A.; A.D.I.; A.I.M.; Natural Museum of Hist.; Sigma Pi Sigma; Sigma Xi; Pi Mu Epsilon; Alpha. Contbr. to: Systems and Procedures; Assn. of Computing Machines; Natl. Machines and Accountants Assn. Areas of Rsch.: The Use of Electronic Computing Systems for Problems of Business and Industry. Special Attention to Problem Definition and Description; the Development of Programming Languages, especially those which are understandable by both management and tech. personnel.

HAWKINS, George Andrew (Ph.D.), Dean of Engrng. and Math. Scis., Purdue Univ., Lafayette, Ind. Home Add.: 701 Crestview Pl., W. Lafayette, Ind. THERMODYNAMICS AND HEAT TRANSFER. b. Denver, Colo., Dec. 11, 1907. s. George Herbert and Pauline K. (Erbshauser) H. Edn.: B.S., M.E., Purdue Univ., 1930; M.S., M.E., ibid., 1932; Ph.D., ibid., 1935. m. Alma Mae Williams, Aug. 15, 1931. c.: James Edward. Exp.: Asst., Purdue Univ., 1930-32; Instr., ibid., 1932-36; Asst. Prof., ibid., 1936-38; Prof., ibid., 1943—; Rsch. Asst., Engr. Expt. Stan., ibid., 1932-36; Rsch. Assoc., ibid., 1936-44; Westinghouse Rsch. Prof., Heat Transfer, ibid., 1944-53; Rsch. Dir., Small Arms Div., U. S. Army Ordn Expt. Stan., 1941-51; Asst. Dean, Grad. Schl., ibid., 1947-50; Acting Dean, ibid., 1948-49; Visit. Prof. Engr., Univ. of Calif., 1949-50; Assoc. Dir., ibid., 1950-53; Dir., Purdue Univ., 1953-61; Dean of Engrng., ibid., 1953-61; Dean of Engrng. and Math. Scis., ibid., 1961—. Hon. Pos.: Honorary Military Organization, Scabbard and Blade. Mem.: Dir. at Large, 1954-58, A.S.M.E.; A.S.E.E.; A.I.C.H.E.; Am. Phys. Soc.; The Mathl. Assn. of Am; Sigma Xi; Tau Beta Pi; Pi Tau Sigma; Kappa Sigma; Sigma Pi Sigma; Phi Eta Sigma. Author: Elements of Heat Transfer, Co-Author, 1957; Thermodynamics, 1950; Engineering Thermodynamics, 1960. Serv. Rec.: U. S. Army, 1942-51. Gen. Int.: Pi Tau Sigma Gold Medal, N. Y., 1940; War Dept. Cert. of Appreciation, 1945. Areas of Rsch.: Thermodynamics and Heat Transfer.

HAWKINS, Norman Gilbert (Ph.D.), Prof., Slippery Rock St. Coll., Slippery Rock, Pa. Home Add.: 418 Franklin St., Slippery Rock, Pa. SOCIOLOGY. b. Pierre, S. D., Nov. 8, 1918. s. Owen S. and Adelaide (Purdee) H. Edn.: B.A., Univ. of Wash., 1949; B.Edn., Pacific Lutheran Coll., 1950; M.A., Univ. of Wash., 1953; Ph.D., ibid., 1956. m. Alwine D. Griesemer, Sept. 2, 1947. c.: Monica Louise; Christopher James; Isobel Rose. Exp.: Rsch. Asst., Univ. of Wash., Seattle, Wash., 1952-55; Consulting Sociologist, Firland Sanitorium, ibid., 1955-56; Rsch. Instr., Univ. of Wash., ibid., 1956-57; Consultant, Mendota Rsch. Group, Mlps., Minn., 1956-57; Asst. Prof., Univ. of Tex., Galveston, Tex., 1957-60; Assoc. Prof., Pa. St. Univ., Univ. Park, Pa., 1960-61; Prof., Slippery Rock St. Coll., 1961—; Mgt. Consultant, Schering Corp., Bloomfield, N. J., 1961—; Technical Rsch. Consultant, The Pharmaceutical Found., Austin, Tex., 1962—. Hon. Pos.: Trustee, Law-Sci. Found. of Am., 1961-63. Mem.: Fellow, A.A.A.S.; Fellow, A.P.H.A.; A.A.U.P.; Am. Sociol. Assn.; Natl. Coun. on Alcoholism; Southwestern Social Sci. Assn.; Soc. for the Study of Social Problems; Sigma Xi; Phi Sigma; Alpha Kappa Delta. Author: Curriculum Research, Process in Nursing Education, 1957; Medical Sociology, 1958. Contbr. to: Jour. A.M.A.; Am. Jour. Psychiatry; Am. Jour. Hosp. Pharm.; Pa. Med. Jour.; Jour. Lancet; Tex. St. Jour. Med.; Jour. Am. Geriatrics Soc. Gen. Int.: Howarth Scholarship, 1947 and 1948; Woolston Rsch. Award, 1949; U.S.P.H.S. Fellowship, 1954. Areas of Rsch.: Public Health; Social Psychology; Research Methods.



HAWTHORNE, Mary Elizabeth (Ph.D.), Prof. of Biol., Boston Univ., 855 Commonwealth Ave., Boston 15, Mass. Home Add.: Field Hill Rd., Clayville, R. I. CYTOGENETICS. b. New London, Conn., Nov. 9, 1916. d. Frederick A. and Bridget E. (Sullivan) H. Edn.: B.S., Univ. of R. I., 1937; M.S., Penn St. Univ., 1940; Ph.D., Mich. St. Univ., 1951. Exp.: Instr. in Botany and Zoology, Pa. St. Univ., 1940-42; Instr. in Botany and Zoology, ibid., 1942-44, 1946-48; Grad. Tchng. Asst., Univ. of Minn., 1948-49; Tchng. Asst., Mich. St. Coll., 1949-51; Instr. in Botany, R. I. Univ., 1951-52; Asst. Prof. of Botany, Pa. St. Univ., 1952-55; Assoc. Prof. of Biol., Boston Univ., 1955-62; Prof., ibid., 1962—. Hon. Pos.: Mem. Mass. St. Sci. Fair Comm.; Dir., Pa. Jr. Acad. of Sci., 1943-44. Mem.: A.A.A.S.; Botanical Soc. of Am.; Genetics Soc. of Am.; Genetics Soc. of Can.; Sigma Xi; Phi Kappa Phi; Sigma Delta Epsilon; Tau Kappa Alpha; Phi Epsilon Phi; Phi Sigma; Delta Kappa Gamma. Author: Laboratory Manual for General Biology, 1960. Contbr. to: Cytologia; Jour. of Heredity. Serv. Rec.: U. S. Navy, Res., 1944—. Areas of Rsch.: Effects of Chemicals on Mitosis; Their Action and Interaction.

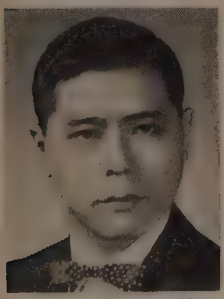
HAXO, Francis Theodore (Ph.D.), Assoc. Prof. of Biol. and Chmn., Div. of Marine Biol., Scripps Instn. of Oceanogr., Univ. of Calif., La Jolla, Calif. Home Add.: 6381 Castejon Dr., La Jolla, Calif. PLANT PHYSIOLOGY AND MARINE BIOLOGY. b. Grand Forks, N. D., Mar. 9, 1921. s. Henry E., Sr. and Florence (Shull) H. Edn.: B.A., Univ. of N. D., 1941; Ph.D., Stanford Univ., 1947. m. Judith McLaughlin, Apr. 15, 1961. c.: John Frederick; Barbara. Exp.: Rsch. Tchng. Asst., Stanford Univ., 1941-44; Abraham Rosenberg Fellow, ibid., 1944-45; Rsch. Asst., Calif. Inst. of Tech., 1946; Rsch. Assoc., Hopkins Marine Stan., Pacific Grove, Calif., 1946-47; Instr. and Asst. Prof. of Biol., Johns Hopkins Univ., 1947-52; Instr. of Marine Bot., Marine Biol. Lab., Woods Hole, Mass., 1949-53; Asst. to Assoc. Prof. of Biol., Univ. of Calif. at San Diego, La Jolla, Calif., 1952—. Mem.: Phi Beta Kappa; Sigma Xi; Am. Assn. Adv. Sci.; Bot. Soc. Am.; Am. Soc. Plant Physiolts.; Phycol. Soc. Am.; Western Soc. Natls.; Challenger Soc.; Soc. Gen. Physiolts.; San Diego Nat. History Soc. Areas of Rsch.: Research Interests, Photosynthesis; Nature and Function of Plant Pigments.

HAY, Peter Marsland (Ph.D.), Product Techn. Mgr., Celanese Polymer Co., Clark, N. J. Home Add.: 24 Bedford Rd., Summit, N. J. CHEMISTRY. b. Ft. Riley, Kans., Oct. 5, 1921. s. Edward N. and Doris (Drain) H. Edn.: B.S., Antioch Coll., 1944; Ph.D., Ohio Sta. Univ., 1951. m. Ellen Buchanan, March 1, 1952. c.: Elizabeth. Exp.: Chemist, Olin Mathieson, New Haven, Conn., 1952-56; Grp. Leader, ibid., 1956-59; Grp. Leader, Celanese Plastics Co., Newark, N. J., 1959-61; Prod. Tech. Mgr., ibid., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Sigma Xi; Soc. Plastics Engrs. Author: Jour. Am. Chem. Soc.; Jour. Polymer Sci.; Jour. Appl. Polymer Sci. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Polymer Chemistry and Applications.

HAYDAK, Mykola H. (Ph.D.), Assoc. Prof., Univ. of Minn., St. Paul 1, Minn. Home Add.: 1271 Farrington, St. Paul 17, Minn. APICULTURE AND BEE NUTRITION. b. Ukraine, May 12, 1898. s. Hryhor and Hanna (Filipovich) H. Edn.: Ph.D., Univ. of Wis., 1933. m. Pauline Rychley, Sept. 19, 1943. Exp.: Staff, Bee Culture Inst., Dol Czechoslovakia, 1928-1930; Asst. to Assoc.

Prof., Univ. of Minn., St. Paul 1, Minn., 1933—. Mem.: A.A.A.S.; Entomol. Soc. of Am.; Shevchenko Sci. Soc.; Ukrainian Free Acad. of Sci. Author: Beekeeping in Minn., 1955. Contbr. to: Jour. Econ. Entomol.; Annals Entomol. Soc. of Am.; Sci.; Bee World; Nature. Special Int.: Bee Nutrition and Biol.; Food Value of Honey; Pollen Substitute; Vitamin Content of Bee Foods; Ukrainian Question.

HAYASHI, Hajime (Ph.D.), Virus Lab., Henry Ford Hosp., Detroit 2, Mich. Home Add.: 233 Mitahora, Gifu City, Japan. VIROLOGY; SEROLOGY; AND BIOCHEMISTRY.



b. Gifu City, Japan. s. Sho and Masao (Hayashi) H. Edn.: Vet. Med. Diploma, Gifu Univ., Gifu, Japan, 1948; B.S., Mich. St. Univ., 1957; M.S., ibid., 1959; Ph.D., ibid., 1961. Exp.: Grad., Rsch. Asst., Mich. St. Univ., 1958-61; Virus Lab., Henry Ford Hosp., Detroit, Mich., 1961—. Mem.: Am. Assn. Adv. of Sci.; Am. Soc. for Microbiol.; Am. Pub. Health Assn.; Tissue Culture Assn.; N. Y. Acad. of Sci.; Sigma Xi; Japanese Soc. of Vet. Sci.; Japanese Assn. for Vetns. Contbr. to: Fed. Procs.; Bacteriological Procs.; Dissert. Abst. H. Ford Hosp. Med. Bull.; Am. Pub. Hlth. Assn. Reps. Areas of Rsch.: Diagnostic Clinical Virology; Sterilization of Biological Materials including Plasma-Virus Inactivated Vaccines; Tumor Inducing Viruses; Tissue Culture, Electron Microscopy and Immuno-diffusion.

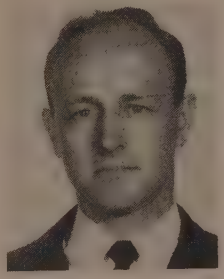
HAYDEN, Leonard Octavius (Mr.), Hd., Time Measurement and Opt. Calibration Sect., Space Surveillance Br., NRL, Wash. 25, D. C. Home Add.: Route 1, Box 158, Accokeek, Md. PHYSICS: ELECTRONICS; GEOPHYSICS; WAVE PROPAGATION. b. King George Co., Va., Jan. 3, 1920. s. William Handton and Elizabeth Millard (Howe) H. Edn.: B.A., Univ. of Va., 1950. m. Johanna Hedwig Helene Roestel, Aug. 3, 1957. c.: James Erich; Rose Marie. Exp.: Physicist, Naval Weapons Lab., Dahlgren, Va., 1950-51; Physicist, Naval Ordn. Lab., White Oak, Md., 1951-56; Physicist, Proj. Vanguard, NRL, Wash., D. C., 1957-58; Physicist, Hd., Time Measurement Unit, ibid., 1959-61; Physicist, Hd., Time Measurement and Opt., Calibration Sect., Space Surveillance Br., ibid., 1961—. Mem.: Inst. of Radio Engrs.; Am. Geophys. Union; Wash. Philos. Soc. Contbr. to: IRE Trans. on Space Electronics and Telemetry. Serv. Rec.: U. S. Army, 1941-45. Gen. Int.: Refinements in Optical Calibration of Radio Interferometry; Technique of Transparent Fluid Detection; Automatic Resolution of Angles in Interferometer System. Areas of Rsch.: Microwaves, Antennas and Propagation, Time Measurement, Astronomy, Satellite Photography, Electro-Magnetism, Very Low Frequency Techniques.

HAYES, Donald Michael (M.D.), Asst. Prof. of Med., Bowman Gray Schl. of Med., Winston-Salem, N. C. Home Add.: 2800 Ashwood, Winston-Salem, N. C. INTERNAL MEDICINE. b. Kings Mtn., N. C., Nov. 6, 1928. s. Ferd R. and Alice Thacker (Osteen) H. Edn.: B.S., Wake Forest Coll., 1951; M.D., Bowman Gray Schl. of Med., 1954. m. Kathryn Barrier, Dec. 29, 1951. c.: Michael Neil; Kevin Henry; Mark Patrick. Exp.: Intern, Salt Lake Co. Gen. Hosp., Salt Lake City, Utah, 1954-55; Fellow, in Psychiat., U. S. Pub. Health Serv., Louisville Gen. Hosp., Louisville, Ky., 1955-56; Asst. Res., N. C. Bapt. Hosp., 1956-58; Fellow, Med., ibid., Winston-Salem, N. C., 1958-60; Instr., Bowman Gray Schl. of Med., 1959-61; Asst. Dean in Chg. Adms., ibid., 1960-61; Asst. Prof., Med., ibid., 1961—. Mem.: Am. Med. Assn.; Med. Soc. St. of N. C.; Cabarrus Co. and Forsyth Co. Med. Socs.; Sigma Xi; Theta Chi; Phi Rho Sigma; Phi Beta Kappa; Gamma Sigma Epsilon; Alpha Epsilon Delta. Contbr. to: Blood; Cancer; Metabol.; Sou. Med. Jour.; Arch. Int. Med.; Ann. Int. Med.; Am. Pract. and Dig. Treatment; Am. Jour. Path.; Cancer Chemother. Rep.; N. C. Med. Jour. Serv. Rec.: U. S. Naval Reserve, 1950—. Areas of Rsch.: Hematology and Cancer Chemotherapy.

HAYES, Edward James (Mr.), Dir., Rsch. and Devel., Kelsey-Hayes Co., Detroit, Mich. Home Add.: 38601 Richland, Livonia, Mich. MISSILES; AUTOMOTIVE ENGINEERING.

b. Brooklyn, N. Y., Apr. 8, 1924. s. Patrick and Mary (Miller) H. Edn.: B.S., Mass. Inst. of Tech., 1950; M.S., Univ. of Md., 1955. m. Mary Quinlan, Feb. 5, 1950. c.: Mary Ellen; Edward James, Jr.; Brian Jonathan. Exp.: Department, Fairchild Instrument and Camera Co., Jamaica, N. Y., 1942-43; In Chg. of Electronics Devel. Lab., E. I. duPont de Nemours Co., Buffalo, N. Y., 1950-52; In Chg. of Applied Mechanics and Hydraulics, Applied Physics Lab., Johns Hopkins Univ., 1952-58; Dir., Rsch. and Devel., Kelsey-Hayes Co., 1958—. Hon. Pos.: Pres., Mass. Inst. Tech., Chapt. of Mech. Engrs. Soc.; Chmn., Program Comm., Am. Rocket Soc. Mem.: Dir., Detroit Sect., ARS; Am. Rocket Soc.; Am. Ordnance Assn., Life Mem.; Mass. Inst. of Technology Club of Detroit; Engrng. Soc. of Detroit; Econ. Club of Detroit; Natl. Rocket Soc.; Natl. Security Ind. Assn.; Sigma Xi; Am. Assn. for the Adv. of Sci. Service Rec.: U. S. Air Force, Capt., Apr. 1943-Aug. 1946. Areas of Rsch.: Rocketry; Thrust Vector Controls; Applied Mechanics; Mechanisms; Rsch. Mgmt.; Shelter Construction.

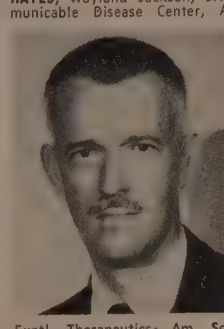
HAYES, George Roy, Jr. (Mr.), Entomologist, Communicable Disease Center, Phoenix Field Sta., 706 E. Adams St., Phoenix, Ariz. Home Add.: 6010 N. 21 Dr., Phoenix, Ariz. ENTOMOLOGY (TECHNICAL CONSULTATION ON VECTOR CONTROL AND TOXICOLOGY OF PESTICIDES).



b. Shreveport, La., July 5, 1920. s. Geo. Roy, Sr. and Florence (Row) H. Edn.: B.S., La. Poly. Inst., 1942; M.S., Univ. of Ark., 1951. m. Marie St. John, July 10, 1943. Exp.: Asst. St. Pub. Health Entomol., La., 1942-45; Base Malaria Control Officer, Vernam Field, Jamaica, B.W.I., 1946-47; St. Public Health Entomol., Ark., 1948-53; Consultant, Asst. Chf., and Chf., State Aids Sect., Com. Dis. Ctr., U. S. Pub. Health Serv., 1954-59; Entomologist, Toxicology Rsch., Com. Dis. Ctr., U. S. Pub. Health Serv., Phoenix, Ariz., 1959—. Mem.: Entomol. Soc. of Am.; Am. Mosquito Control Assn; Am. Inst. of Biol. Scis.; Lambda Chi Alpha; Phi Sigma; Kiwanis. Contbr. to: Mosquito News; Pub. Health Reports; Bull. Pan. Am. San. Bur.; Bull. World Health Organ.; Sci. News Letter. Serv. Rec.: Commissioned Officer, U. S. Pub. Health Serv., 1943—. Gen. Int.: Phi Sigma Award, Univ. of Ark., 1951. Listed in: Am. Men of Sci. Areas of Rsch.: Methodology of Mosquito Control; Toxicology of Pesticides.

HAYES, Roslyn Feil (Mrs.), Lectr., Dept. of Psychol., Hunter Coll., N.Y.C., N. Y. Home Add.: 1165 Park Ave., N.Y.C. 28, N. Y. PSYCHOLOGY. b. N. Y., N. Y., Sept. 16, 1915. d. Morris Feil and Helen (Squires) H. Edn.: A.B., Hunter Coll., 1954; A.M., Columbia Univ., 1956. m. Benjamin Hayes, Feb. 2, 1935. c.: Julia E.; Roger S. Exp.: Lectr., Hunter Coll., 1955—. Mem.: A.A.A.S.; Am. Psychol. Assn.; Eastern Psychol. Assn.; N. Y. St. Psychol. Assn.; Am. Eugenics Soc.; Phi Beta Kappa; Kappa Delta Pi; Pi Lambda Theta. Contbr. to: Jour. of Psychol.; Jour. of Genetic Psychol. Areas of Rsch.: Test Construction; Experimental Psychopathology; Educational Rsch.

HAYES, Wayland Jackson, Jr. (M.D.), Chief, Toxicol. Sect., Communicable Disease Center, Atlanta 22, Ga. TOXICOLOGY.



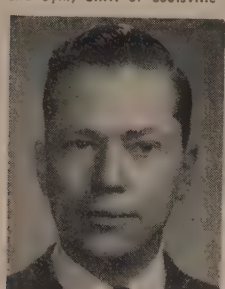
b. Charlottesville, Va., Apr. 29, 1917. s. Wayland J. and Mary Lula (Turner) H. Edn.: B.S., Univ. of Va., 1938; M.A., Univ. of Wis., 1940; Ph.D., ibid., 1942; M.D., Univ. of Va., 1946. m. Barnita Donkle, Feb. 1, 1942. c.: Marie Royce; Maryetta Evans; Lula Turner; Wayland Jackson, III; Roche del. Exp.: Chief, Vector, Transmission, Communicable Disease Ctr., U. S. Pub. Health Serv., Savannah, Ga., 1947-49; Chief, Toxicol. Sect., 1949—. Hon. Pos.: Mem., Expert Advisory Panel on Insecticides of the World Health Organization, 1950—; Mem., Interdept. Comm. on Pest Control, 1953—; Mem., Comm. on Threshold Limits. Mem.: Soc. of Toxicol.; Am. Soc. for Pharmacol. and Exptl. Therapeutics; Am. Soc. of Tropical Med. and Hygiene; Am. Assn. for the Adv. of Sci.; Sigma Xi; Alpha Omega Alpha; Phi Sigma. Contbr. to: Bull. World Health Organization; Jour. Am. Med. Assn.; Archives of Environmental Health. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Toxicology of Pesticides and Other Agricultural Chemicals.

HAYFIELD, George Harry (Mr.), Asst. Prof. of Geol., Lock Haven St. Coll., Lock Haven, Pa. GEOLOGY.

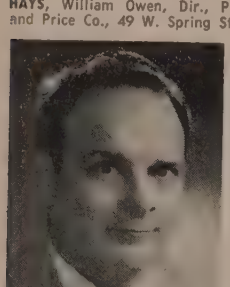
b. Bayonne, N. J., Feb. 22, 1927. s. George Hooper and Matilda Evelyn (Miller) H. Edn.: B.A., Rutgers Univ., 1951; M.S., Univ. of Tenn., 1961. m. Joan A. Bothwell, Apr. 5, 1953. c.: Jeffrey Robert; George Thomas; Kathryn Ann; Thomas Bothwell. Exp.: Instr., Sou. St. Coll., 1958-62; Instr., Marietta Coll., 1956-58; Grad. Asst., Univ. of Tenn., 1955-56; Geologist, U. S. Geological Survey, Wash., D. C., 1953-55; Asst. Prof., Lock Haven St. Coll., 1962—. Mem.: Am. Geophysical Union; Geochem. Soc.; Natl. Assn. of Geol. Tchrs.; A.A.-A.S.; Assn. for Higher Edn.; A.A.U.P.; Alpha Phi Omega; Sigma Gamma Epsilon; Jr., C. of C.; Am. Legion. Co-author: The Distribution of Uranium in the Alkalic Rocks of Sussex County, New Jersey, 1955. Serv.

Rec.: U. S. Army, 1944-46; U.S.A.F.R., 1956-59. Areas of Rsch.: Mississippian Stratigraphy of East Tenn.; Invertebrate Paleontol.

HAYNES, Douglas Martin (M.D.), Prof. and Chmn., Dept. of Obs. and Gyn., Univ. of Louisville Schl. of Med., 323 E. Chestnut St., Louisville 2, Ky. Home Add.: 5204 Tomahawk Rd., Louisville 7, Ky. OBSTETRICS AND GYNECOLOGY. b. N.Y.C., N. Y., Jan. 25, 1922. s. Daniel Hagood and Courtenay (Collins) H. Edn.: B.A., B.S., Sou. Meth. Univ., 1943; M.D., Southwestern Med. Coll., 1946. m. Elizabeth B. Johnson, June, 1961. Exp.: Asst. Prof. Obs. and Gyn., Southwestern Med. Schl., Univ. of Tex., Dallas, Tex., 1952-55; Assoc. Prof., Univ. of Louisville, Schl. of Med., Louisville, Ky., 1955-57; Prof. and Chmn., Obst. and Gyn., ibid., 1957—. Mem.: Am. Coll. of Obs. and Gyns.; Central Assn. of Obs. and Gyns.; Am. Coll. of Surgeons; Sou. Obsl. and Gyni. Soc.; Am. Med. Assn.; Sou. Med. Assn.; W. Va. Obsl. and Gyn. Soc.; Delta Chi; Phi Chi; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Am. Jour. Obs. and Gyn.; Jour. Am. Med. Assn.; Sou. Med. Jour.; Jour. Ky State Med. Assn.; Clin. Med.; Am. Jour. Path. Serv. Rec.: A.U.S., 1947-49. Areas of Rsch.: Experimental Placental Abruption; Uterine Blood Volume; Clinical Obstetrics and Gynecology.



HAYS, William Owen, Dir., Pharmaceutical Services, Orr Brown and Price Co., 49 W. Spring St., Columbus 16, Ohio. Home Add.: 2599 E. Main St., Columbus, Ohio. PHARMACY. b. Columbus, Ohio, May 12, 1913. s. Charles Bradford and Alice M. (Manly) H. Edn.: B.S., Ohio St. Univ., 1937. m. Marie Akin, Jan., 1941. c.: Donna Gail. Exp.: Pharmacist, Wentz Pharmacy, Columbus, Ohio, 1937-40; Chf. Pharm., U.S.V.A. Crile V.A. Hosp., Cleveland, Ohio, 1946-52; Pharm. Chf., Wendt Bristol. Stores, Columbus, Ohio, 1952-61; Pharm. Dir., Orr Brown and Price Co., Columbus, Ohio, 1961—. Hon. Pos.: Past Pres., Central Ohio Acad. of Pharm.; Coun. Mem., Ohio St. Pharmaceutical Assn.; Comm. Mem., Am. Pharml. Assn.; Am. Soc. Hosp. Pharm.; A.A.A.S. and Am. Coll. of Apothecaries. Mem.: A.A.A.S.; Am. Inst. Hist. Pharm.; Am. Coll. of Apothecaries; A.S.H.P. Serv. Rec.: A.U.S., 1940-45. Areas of Rsch.: Pharmaceutical Practice, Retail, Compounding, Marketing and Scientific.



HAZARD, John Newbold (Dr.), Prof. of Pub. Law, Columbia Univ., 431 W. 117th St., N. Y. 27, N. Y. Home Add.: 20 E. 94 St., N. Y. 28, N. Y. COMPARATIVE GOVERNMENT AND LAW. b. Syracuse, N. Y., Jan. 5, 1909. s. John Gibson and Ada Bosarte (DeKalb) H. Edn.: B.A., Yale Univ., 1930; LL.B., Harvard Univ., 1934; Cert., Moscow Juridical Inst., 1937; J.S.D., Univ. of Chicago, 1939. m. Susan Lawrence, Mar. 8, 1941. c.: John Gibson; William Lawrence; Nancy; Barbara Peace. Exp.: Fellow, Inst. of Current World Affairs, 1934-39; Law Assoc., Baldwin, Todd & Young, N. Y., 1939-41; Deputy Dir., USSR Div., Foreign Econ. Admin. and Predecessor Agencies, 1941-45; Adviser on State Trading, Dept. of State, 1945-46; Prof. of Pub. Law, Columbia Univ., 1946—. Hon. Pos.: Managing Editor, Am. Slavic and East European Rev., 1951-60; Mem., Exec. Council, Am. Soc. of Internatl. Law, 1946-49, 1951-54; Fellow of the Ctr. for Advanced Study in the Behavioral Scis., 1961-62; Adviser to U. S. Prosecutor in Preparation of Nuremberg Indictment, 1944; Mem. of Faculty, Internatl. Faculty of Comparative Law, Luxembourg, summers, 1959, 1960. Corr. Mem.: Internatl. Acad. of Comp. Law; Mem., Am. Polit. Sci. Assn.; A.A.A.S.; Alpha Delta Phi; Century Club (N. Y.); Univ. Club (Wash.); Authors' Club (London). Author: Soviet Housing Law, 1939; Soviet Legal Philosophy, editor, 1951; Law and Social Change in the USSR, 1953; The Soviet System of Government, 1957, rev., 1960; Settling Disputes in Soviet Soc., 1960. Co-Author: With Isaac Shapiro, The Soviet Legal System, 1962. Contbr. to: Am. Jour. of Internatl. Law; Am. Jour. Comp. Law; Rev. Internatl. de Droit Compare; Ost. Europa Recht; The Polit. Quar.; Am. Polit. Sci. Rev.; Harvard Law Rev.; Yale Law Jour.; Columbia Law Rev. Areas of Rsch.: Soviet Law and Soviet Government.

HAZARD, Willis Gilpin (Mr.), Dir. of Industrial Hygiene, Owens-Illinois Glass Co., Toledo, Ohio. Home Add.: 3609 Mapleway Dr., Toledo 14, Ohio. INDUSTRIAL HYGIENE, INDUSTRIAL HEALTH ENGINEERING. b. West Chester, Pa., April 27, 1907. s. Willis Hatfield and Mary D. (Creigh) H. Edn.: A.B., Harvard Coll., 1929; A.M., Harvard Univ., 1930. m. Elizabeth A. Ericson, Sept. 20, 1941. c.: Willis G., Jr.; Samuel Garth; David Creigh; Barbara Anne. Exp.: Instr., Harvard Schl. of Public Health, Boston, Mass., 1930-34; Dept. of Indus. Relations, Owens-Ill. Glass Co., Toledo, Ohio, 1934—. Hon. Pos.: Secy., Dir. and Pres., Am. Indus. Hyg. Assn.; Trustee, Indus. Hyg. Fdtn., Pittsburgh; Mem., Indus. Conf., Natl. Safety Coun. Mem.: Am. Indus. Hygiene Assn.; Am. Pub. Health Assn.; Acoustical Soc. of Am.; A.A.A.S.. Contbr. to: Am. Indus. Hygiene Assn. Jour.; Am. Jour. of Pub. Health; Natl. Safety News. Serv. Rec.: U. S. Field Artillery, 1929-34; U. S. Public Health Serv., 1942-46. Areas of Rsch.: Development of air sampling apparatus; Studies on heat in industrial plants and its effect on men; Industrial relations aspects of plant health programs; Effects of industrial noise, and its control.

HAZLETON, Lloyd W. (Ph.D.), Pres., Hazleton Labs., Inc., P. O. Box 30, Falls Church, Va. Home Add.: Rt. 1, Box 491, Vienna, Va. PHARMACOLOGY. b. Chelan Falls, Wash., Feb. 4, 1911. s. William H. and Mabel A. (Ten Eyck) H. Edn.: B.S., Univ. of Wash., 1933; M.S., ibid., 1937; Ph.D., ibid., 1939. m. Harriet Rosenzweig, June 25, 1939. c.: H. Elaine; William L.; Mary J. Exp.: Instr. in Pharmacol., Georgetown Univ. Med. Schl., 1939-40; Asst. Prof., Geo. Wash. Univ. Schl. of Pharm., 1940-45; Assoc. Prof., ibid., 1945-46; Professorial Lectr., Georgetown Univ. Med. Schl., 1948-53; Owner and Dir., Hazleton Lab., 1946-53; Pres., ibid., 1953—. Mem.: Fellow, N. Y. Acad. of Sci.; Fellow, Am. Assn. for Adv. of Sci.; Am. Soc. for Pharm. and Exptl. Theraps.; Soc. for Exptl. Biol. and Med., Natl. and D. C.; Wash. Acad. of Sci.; Soc. of Toxicol.; Am. Chem. Soc.; Natl. Pest Control Assn., Hon. Mem.; Am. Indus. Hygiene Assn.; Am. Pharm. Assn.; Sigma Xi; Chemist's Club. Gen. Int.: Winner, Am. Pharm. Assn. Ebert Prize, 1946. Contbr. to: Jour. Pharm. Exptl. Therap.; Jour. Am. Pharm. Assn., Sci. Ed.; Arch. of Environmental Health; Jour. Agri. and Food Chem.; Proc. Internatl. Union Pure and Applied Chem. Areas of Rsch.: Analgesic Drugs, Central Nervous System Drugs, Pesticides and Other Agricl. Chemicals, Food Additives, Color Additives and Cosmetics.

HAZLETT, O(live) C. (Ph.D.), Assoc. Prof. of Math., Emerita, Univ. of Ill., Urbana, Ill., Home Add.: Timeless Lodge, R.F.D. #2, Peterborough, N. H. ALGEBRA; NUMBER THEORY. b. Cincinnati, Ohio, Oct. 27, 1890. d. Robert and Olive Leonora (Binkley) H. Edn.: A.B., Radcliffe Coll., 1912; S.M., Univ. of Chicago, 1913; Ph.D., ibid., 1915. Exp.: Assoc. in Math., Bryn Mawr Coll., 1916-18; Asst. Prof. of Math., Mt. Holyoke Coll., 1918-24; Assoc. Prof. of Math., ibid., 1924-25; Asst. Prof., Univ. of Ill., 1925-29; Assoc. Prof., ibid., 1929—. Hon. Pos.: Coun., Am. Math. Soc.; Assoc. Ed., Transactions, Am. Math. Soc.; Judge for Math. MSS, Fellowships of Internatl. Assn. Univ. Women. Mem.: Am. Math. Soc.; Edinburgh Math. Soc.; Deutsche Mathematiker-Vereinigung; Circolo Matematico di Palermo; N. Y. Acad. of Sci. Fellow, A.A.A.S.; Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon; Sigma Delta Epsilon. Contbr. to: Bull. Am. Math. Soc.; Trans. Am. Math. Soc.; Annals of Math.; Am. Jour. of Math.; Proc. of Math. Congress, Toronto, Bologna; Encyclopaedia Britannica. Gen. Int.: Fellowships in Math., Univ. of Chicago, 1913-15; Boston Branch Fellowship of the Am. Assn. of Univ. Women, 1914-15; Alice Freeman Palmer Fellowship in Gift of Wellesley Coll., 1915-16; John Simon Guggenheim Fellowship, 1928-30; Club Alpino Italiano; Natl. Audubon Soc. Areas of Rsch.: Matrices, Linear Algebras, Quaternions; Modular Invariants and Covariants, Ideals.

HAZLET, Stewart E(merson) (Ph.D.), Prof. of Organic Chem., Wash. St. Univ., Pullman, Wash. Home Add.: 421 Crestview St., Pullman, Wash. ORGANIC CHEMISTRY. b. Freeport, Ill., Feb. 4, 1910. s. Luther A. and Verretta M. (Voorhees) H. Edn.: A.B., Univ. of Dubuque, 1931; M.S., St. Univ. of Iowa, 1933; Ph.D., ibid., 1935. m. Ann Louise Crow, Dec. 26, 1936. c.: Ruth Ann;

Stewart Kirk; William George. Exp.: Instr. in Math., Univ. of Dubuque, summer, 1931; Grad. Asst. in Chem., St. Univ. of Ia., 1931-35; Instr. in Chem., Geo. Wash. Univ., 1935-36; Instr. in Org. Chem., Univ. of Ill., sum., 1936; Instr., Asst. Prof., Assoc. Prof., Wash. St. Univ., 1936-47; Prof. of Chem. and Dean, The Grad. Schl., ibid., 1947-60; Prof. of Org. Chem., ibid., 1960—; Visiting Assoc. in Chem., Calif. Inst. Tech., 1960-61; Visiting Scholar, Univ. of Calif., Los Angeles, 1960-61; Guest, Chem. Dept., Mass. Inst. Technol., Summer, 1961; N.S.F. Fellow, 1960-61. Hon. Pos.: Past Chmn., Wash.-Idaho Sect., Am. Chem. Soc.; Past Vice-Pres., Wash. (State) Div., Am. Cancer Soc.; Mem., NAS-NRC Fellowship Panels; Past Chmn., Coun. on Grad. Work, AALGCSU; Past Chmn., Western Assn. of Grad. Schls. Mem.: Am. Chem. Soc.; A.A.A.S.; Iowa Acad. Sci., Fellow; N.W.S.A.; Alpha Chi Sigma; Sigma Xi; Phi Lambda Upsilon; Pi Kappa Delta. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem.; Chem. Anal.; Proc. Iowa Acad. of Sci.; Wash. St. Rev.; etc. Areas of Rsch.: Substitution Reactions of Aromatic Compounds; Crossed Cannizzaro Reactions; Vanillin and Its Derivatives.

HAZLETT, William Ira (Mr.), Med. Serv. Pharmacist, Geigy Pharmtls., Ardsley, N. Y. Home Add.: 18610 N.W. 8th Ct., Miami 69, Fla. MICROBIOLOGY; CHEMISTRY; PHARMACY. b. Girard, Ohio, June 5, 1922. s. William Ira, Sr. and Esther (Phillips) H. Edn.: B.S., The Univ. of Miami, 1945; B.S.P., The Univ. of Fla., 1950 M.S., ibid., 1950. m. Martha Copeland, June 16, 1951. c.: William I., III; Martha Ann; Hugh Thomas; Timothy Wayne. Exp.: Grad. Asst., Chem. Dept., The Univ. of Miami, Coral Gables, Fla., 1945-46; Instr. of Chem., The Univ. of Miami, Coral Gables, Fla., 1946-47; Grad. Asst., The Univ. of Fla., Gainesville, Fla., 1949-50; Med. Serv. Pharmacist, Parke, Davis and Co., Miami, Fla., 1950-51; Chief of Pharml. Rsch., Nutrilite Corp., Buena Park, Calif., 1952; Med. Serv. Pharmacist, Geigy Pharmls., 1953—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Pharm. Assn.; Soc. of Am. Bect.; Fla. Acad. of Scis.; Chem. Honor Soc., Univ. of Miami; Fla. Pharm. Assn.; Natl. Geographic Soc.; Delta Chi; Kappa Psi; Rho Chi; Phi Sigma; Phi Kappa Phi. Contbr. to: Fla. Acad. of Sci. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: Have Published Various Papers on Microbiol. in Assn. with Others. Areas of Rsch.: Pharmacy, Research and Development; Pharmacology; Autotrophic Bacteria.

HEAD, William Francis, Jr. (Ph.D.), Assoc. Rsch. Prof., Auburn Univ., Schl. of Pharmacy, Auburn, Ala. PHARMACEUTICAL CHEMISTRY. b. Fort Benning, Ga., Dec. 31, 1933. s. W. F. and Estelle (Taylor) H. Edn.: B.S., Auburn Univ., 1954; M.S., Univ. of Fla., 1955; Ph.D., ibid., 1957. m. Joan Craig, 1957. c.: David Michael; Thomas Stuart. Exp.: Sr. Analytical Chemist, Eli Lily and Co., Indianapolis, Ind., 1957-60; Assoc. Rsch. Prof., Auburn Univ., 1960—. Mem.: A.Ph.A.; A.A.A.S.; A.C.S.; Sigma Xi; Rho Chi; Phi Kappa Phi; Gamma Sigma Epsilon; Phi Delta Chi. Contbr. to: Analytica Chimica Acta; Jour. of Pharmaceutical Sci.; Jour. of Chem. Edn. Areas of Rsch.: Ultrasonics, Epoxide Polymers, Polaragraphy, Electrochem., Solid St. Flurescence, Immunochem., Fluorescent Antibodies, Viruses.

HEADLEE, William Hugh (Ph.D.), Prof. of Parasitic Diseases, Ind. Univ. Schl. of Med., Indianapolis, Ind. PARISITOLOGY. b. Morristown, Ind., 1907. s. Walter C. and Nellie (Adams) H. Edn.: A.B., Earlham Coll., 1929; Rockefeller Foundation Scholar, Univ. of Ill., 1932-33; M.S., 1933; Rockefeller Found. Fellow, Tulane Univ. of La., 1933-34. Ph.D., 1935; John and Mary Markie Found. Fellow, Army Med. Schl., 1943, Cert. of Proficiency in Trop. and Milit. Med., 1943; Markle Found. Fellow for Studies on Trop. Diseases in Cent. Amer., Under the Auspices of the Assn. of Amer. Med. Coll., 1944; Trng. in Pub. Health Activ. in Natl. Emer., U.S.P.H.S., 1957. m. Gabrielle Mills of Denver, Colo., Aug. 4, 1937. d. Clifford W. and Maude K. M. c.: Joan; Anne. Exp.: Lab. Instr. of Biol., Earlham Coll., 1927-29; Collector, Marine Biol. Lab., Woods Hole, Mass., Summer, 1928; Instr. of Biol., Amer. Univ. at Cairo, Egypt., 1929-31; Rsch. Asst., Internatl. Health Div., Rockefeller Found., Cairo, 1930-32; Asst. Prin., Friendsville Acad., Tenn., 1933-34; Instr. of Biol., Purdue Univ., 1935-42 (on leave, 1937-38); Biologists and Parasitologist, Natl. Ministry of Edn., Venezuelan Govt., 1937-38; Hd., Dept. of Biol., Natl. Pedagogic Inst., Caracas, Venezuela, 1937-38; Planned and Equipped Labs. of the Inst. of Trop. Med. and Surgery, Caracas, 1937-38; Trained (in field work in parasitology) Hygienists of the Rural Missions, Venezuelan Ministry of Edn., 1937-38; Survey of Helminth infections of Schl. Children of State of Cojedes, Venezuela 1937 Ranger Naturalist, Yellowstone Natl. Park, Summer, 1939; Asst. Prof. Zool., Purdue Univ., 1942-43; Asst. Prof. Parasitic Diseases, Ind. Univ. Schl. of Med., 1943-46, Assoc. Prof., 1946-53; Prof., 1953—; Parasitologists, Ind. Univ. Medical Center Hospitals, 1943—; Parasitologist, Department Dermato-Syphilogy, General Hospital, Indianapolis, 1947—; Senior Scientist, (Reserve), U.S. Pub. Health Serv., 1953; Med. Parasitol., Div. Health and Sanitation, U. S. Operations Mission to Thailand, 1953-55; Coordinator, I.U./A.I.D./Pakistan, Basic Med. Sci. Institute Project, 1957—; by Invitataion, Scientific Exhibits on "Parasitic and Trop. Dis." Before Meetings of Ind. Acad. Sci., Ind. St. Med. Assn., Am. Soc. Clin. Pathologists, Sou. Med. Assn., Am. Med. Assn., 1943-44. Mem.: Fourth Internatl. Cong. on Trop. Med. and Malaria, 1948; Delegate, Ninth Pacific Sci. Cong., 1957; Fellow, A.A.A.S.; Fellow, Royal Soc. Trop. Med. and Hyg., London; Fourth Internatl. Cong. on Trop. Med. and Malaria, 1948, Mem. Comm. (Sect. on Protozoal Dis.) to Consider the Organization of an "Internatl. Cent. for the Study of Human Intestinal Protozoa"; A.A.U.P.; Amer. Soc. Trop. Med. and Hyg.; Am. Soc. Parasitologists; Ind. Acad. Science, Mem. Executive Comm., 1944, Chmn., Sect. on Zool., 1944; Sigma Xi; Phi Sigma; Beta Mu; Rsch. Club of Ind. Univ., Chmn., 1947-49; Indianapolis Earlham Men's Club. Contbr. to: Am. Jour. Trop. Med.; Jour. of Parasitol.; Jour. Lab. and Clin. Med.; Jour. Ind. State Med. Assn.; Quart. Bull. Ind. Univ. Med. Center; Proc. Ind. Acad. Sci. Ph.D. Dissertation: The Epidemiology of Human Ascariasis in the Metropolitan Area of New Orleans, La. Other Prof. Act.: Epidemiology of Helminth Infections in Egyptian Villages; Diagnosis of Pinworm Infection; Incidence of Helminth Infections in Venezuela; Epidemiology of Human Parasite Infections in Ind.; Studies on Intestinal Parasitic Diseases in Thailand; Tchng. of Parasitic and Trop. Dis. in Schls. of Med. Travel: U. S.; Can.; Mex.; Guatemala; Honduras; Nicaragua; El Salvador; Costa Rica; Canal Zone; Panama; Colombia; Venezuela; Haiti; Jamaica; England; France; Germany; Switzerland; Italy; Austria; Hungary; Yugoslavia; Bulgaria; Turkey; Greece; Syria; Lebanon; Palestine; Egypt. Listed in: Amer. Men of Sci.; W. W. in Midwest; Who Knows—and What; Ind. Scients.

HEARE, Frances Earle (Mrs.), Counselor, Tchr., Panhandle Schls., Panhandle, Tex. Home Add.: P. O. Box 687, Panhandle, Tex. BIOLOGY, PSYCHOLOGY, SOCIOLOGY, ELECTRONICS, NURSING, X-RAY, ELECTROCARDIOGRAPHY, SPACE MEDICINE. b. Cabarrus County, N. C., Dec. 21, 1922. d. Judge Atticus and Lela Melvina (Chambers) Trammell. Edn.: B.S., West Tex. State, 1956; M.Ed., ibid., 1960. m. Leroy Clayton Heare, Sept. 17, 1949. c.: Rannie Young; Frances Constance. Exp.: Supvr., Roberts Medical Clinic, Panhandle, Tex., 1951-53; Tchr., Lancaster City Schls., Lancaster, Calif., 1956-57; Tchr., and Counselor, Special Edn., Charlotte City Schls., Charlotte, N. C., 1957-58; Tchr. and Counselor, Panhandle Schls., Panhandle, Tex., 1958-62. Mem.: Am. Assn. of Univ. Women; Am. Assn. for the Adv. of Sci.; Natl. Sci. Tchrs. Assn.; J. K. Wadley Blood Rsch. Inst. of Dallas, Tex.; Tex. State Tchrs. Assn.; Bus. and Professional Womens Organization; Girl Scout Organization. Areas of Rsch.: Designing Tests for Students in Special Education; Causes and Prevention in Juvenile Delinquency; Cardiac Malfunctions; The Epileptic and Epilepttoid; Alcoholism.

HEALD, Kenneth Conrad (LL.D.), Consultant, 605 Continental Life Bldg., Ft. Worth 2, Tex. Home Add.: 3941 Floyd Dr., Ft. Worth 16, Tex. GEOLOGY. b. Bennington, N. H., Mar. 14, 1888. s. Josiah and Mary Katherine (Pike) H. Edn.: B.S., Colo. Coll., 1912; Grad. Study Yale 1913-14. Hon. Deg.: D.Sc., Univ. of Pittsburgh, 1928; LL.D., Colo. Coll., 1955. m. Mary Marguerite Drach, Dec. 26, 1914. c.: Mary Katherine (dec.); Kenneth Conrad. Exp.: U. S. Geol. Survey, Field Work, summers, 1909-14; Full-time, ibid., 1914-19; Chf. Sect., Oil Geol., ibid., 1919-24; Assoc. Prof., Petro. Geol., Yale Univ., 1924-25; Staff Geologist, Gulf Oil Corp., 1925-53; Vice-Pres., ibid., 1945-53; Dir., ibid., 1950-53; Consult., Ft. Worth, Tex., 1953—. Hon. Pos.: Dir., Ashmun and Hilliard, Inc.; Trustee, Ft. Worth Lib., 1958-61; Dir., Earth Sci. Lib., Ft. Worth, 1959—; Dir., Dixilyn Drilling Co., 1957—; Pres., Continental Minerals, Inc., 1959—. Mem.: Fellow, A.A.A.S.; Hon. Mem., Am. Assn. Petro. Geol.; Am. Inst. Min. and Metall. Engrs.; Am. Petrol. Inst.; Am. Geol. Inst.; Ft. Worth Geol. Soc.; Geol. Soc. of Am., Fellow; Geological Assn. Can.; Geol. Soc. Wash., D. C.; Engrs. Soc. of Western Pa.; Soc. Econ. Geol.; Am. Seismol. Soc.; Independent

Petroleum Producers of Am.; Am. Geophysical Union; Cosmos Club, Wash., D. C.; C. of C.; and others. Contbr. to: U. S. Geol. Survey Bulls.; Geol. Structure of Pawhuska Quadrangle, Okla. Am. Assn. Petro. Geol. Bulls.; Geol. Soc. of Am. Bulls.; Special Publications of the Am. Inst. of Mining and Metall. Engrs.; Proc., Am. Petro. Inst. Serv. Rec.: U. S. Army Engrs. Corps, 1918. Gen. Int.: Cert. of Appreciation, A.P.I., 1952; Sydney Powers Medal, A.A.P.G., 1952; Mem.-at-Large, Natl. Rsch. Council, 1925-26; Rep., Natl. Rsch. Council, 1921-25. Areas of Rsch.: Mining; Petroleum Geology; Petroleum Engineering.

HEATH, Helen Augusta (Ph.D.), Rsch. Psychologist, P and PI, Michael Reese Hosp., 29th and Ellis, Chicago 16, Ill. Home Add.: 7202 Bennett Ave., Chicago 49, Ill. PSYCHOLOGY. b. Rochelle, Ill., Aug. 25, 1908. d. Addison Homer and Kathryn (Strack) H. Edn.: A.B., Monmouth Coll., 1931; Ph.D., Univ. of Chicago, 1950. Exp.: Instr., Univ. of Ill., 1950-51; Half-time Rsch. Assoc., Univ. of Chicago, 1952-55; Rsch. Psychologist, Michael Reese Hosp., Chicago, Ill., 1952—. Mem.: Am. Psychol. Assn.; Am. Statistitcal Assn.; Midwestern Psychological Assn.; Ill Psychol. Assn.; Psychometric Soc.; Sigma Xi. Contbr. to: Psychometrika; Archives of Neurology and Psychiatry; Jour. of Clinical Endocrinology and Metabolism; Archives of General Psychiatry; Jour. of Nervous and Mental Disease; Psychological Reports; Jour. of Consulting Psychol.; Annals of N. Y. Acad. of Sci. Areas of Rsch.: Psychol. and Statistics.

HEBERT, Leo Placide (Ph.D.), Rsch. Agronomist, U. S. Dept. Agric., Agric. Rsch. Serv., Box 470, Houma, La. Home Add.: 325 Morningside Dr., Houma, La. SUGARCANE BREEDING; FIELD PRACTICES STUDIES. b. Church Point, La., Oct. 4, 1913. s. Paul and Clarissa (Thibodeaux) H. Edn.: B.S., Univ. of Southwestern La., 1937; M.S., La. Sta. Univ., 1938; Ph.D., ibid., 1956. m. Ethel Trosclair, Apr. 9, 1939. c.: Leo P., Jr.; John Raymond. Exp.: Jr. Agron., U.S.D.A., SCS, Minden, La., 1938-40; Jr. Agron. to Sr. Rsch. Agron., ibid., Houma, La., 1940—. Mem.: Am. Soc. Agron.; Plant Sci. Soc.; Am. Assn. for the Adv. of Sci., Fellow; Inst. Soc. Sugarcane Technolts.; Am. Soc. Sugarcane Technolts.; Phi Kappa Phi. Contbr. to: Proc. Int. Soc. Sugar Cane Tech.; The Sugar Bull.; Sugar Azucar; The Sugar Jour.; Agron. Jour. Gen. Int.: Heritibility Studies in Sugarcane. Areas of Rsch.: Sugarcane Breeding; Testing, Cultural Practices, Weed Control.

HECKLER, George Earl (Ph.D.), Assoc. Prof., Chem., Idaho State Coll., Pocatello, Idaho. Home Add.: Route #1, So., Pocatello, Ida. PHYSICAL CHEMISTRY. b. Marietta, Ohio, Dec. 20, 1920. s. Charles D. and Georgia (Hendershot) H. Edn.: B.A., Marietta Coll., 1947; Ph.D., Univ. of Wis., 1952. m. Hilde Unterleitner, Aug., 1945. c.: Mary; William; Jane; John. Exp.: Rsch. Chem., DuPont, Clinton, Iowa, 1952-56; Asst. Prof., Chem., Ida. State Coll., 1956-59; Assoc. Prof. of Chem., ibid., 1959—; Chmn., Ida. Section, Am. Chem. Soc., 1961; Chmn., Dept. of Chem., 1961—. Hon. Pos.: Chmn.-Elect, Idaho Section, Am. Chem. Soc., 1960. Mem.: Am. Chem. Soc.; A.A.A.S.; Ida. Acad. of Sci.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Colloid Sci.; Jour. de Chimie Physique; Talanta; Jour. of Phys. Chem. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Physical Chem. of High Polymeric Systems; Photochem. in Water Solution.

HECHT, Milton (Ph.D.), Tchr., Biological Scis., Abraham Lincoln H. S., Brooklyn, N. Y. Home Add.: 1477 E. 21st St., Brooklyn 10, N. Y. PROGNOSIS OF SUCCESS IN BIOLOGY AND SCIENCE (PSYCHOLOGY). b. Brooklyn, N. Y., Jan. 16, 1908. s. Harris and Sarah (Kass) H. Edn.: B.S., City Coll. of N. Y., 1929; M.S., ibid., 1934; Ph.D., ibid., 1941. m. Edna Winiker, April 7, 1944. c.: Alan; Susan. Exp.: Lab. Asst., John Adams H. S., 1930-35; Tchr. of Biol. Scis., Abraham Lincoln H. S., 1935-44; Asst. Principal, New Lots Evening H. S., 1944-46; Chmn., Dept. of Biol., Abraham Lincoln H. S., 1949-50; Tchr., of Biol. and Sci., ibid., 1947—. Hon. Pos.: Vice-Pres., Gen. Sci. Assn. of N. Y., 1954; Treas., N. Y. Assn. of Tchrs. of Biol. Scis., 1953, 1959, 1960. Mem.: Natl. Assn. for Rsch. in Sci. Tchng.; Am. Assn. Adv. Sci.; Natl. Assn. of Biol. Tchrs.; Natl. Sci. Tchrs. Assn.; Brooklyn Inst. of Arts and Sci.; Brooklyn Museum; Am. Museum of Natural Hist.; Physics Club, Univ. of N. Y.; Gen. Science Assn. of N. Y.; N. Y. Assn. of Tchrs. of Biol. Scis.; H. S. Tchrs. Assn.; etc. Author: Prognostic Measures of Achievement in Ninth Year Science, 1941. Contbr. to: Sci. Tchr.; Tchng. Biologist. Areas of Rsch.: Psychology-Prognosis; Physiology-Tension in Aviators; Science Education-Testing.

HEDGE, Lafayette Boyd (Ph.D.), Chf., Rocket and Recoilless Weapons Section, R. & D. Division, U. S. Army Dept., Washington 25, D. C. and Rsch. Engr. Consultant, 6219 Mass. Ave., N.W., Washington 16, D. C. ELECTRONICS, MATHEMATICS AND ROCKETS AND RECOILLESS RIFLES. b. Citronelle, Ala., Dec. 15, 1909. s. Lafayette Boyd and Conyers (Pritchett) H. Edn.: A.B., Univ. of Calif., 1933; M.A., ibid., 1936; Ph.D., Brown Univ., 1942. m. Blythe Ione Ringquest, Jan. 5, 1934. Exp.: Projectionist, Paramount Pictures, Inc., Hollywood, Calif., 1933-36; Instr., Math., Brown Univ., 1936-38; Instr., ibid., 1939-40; Instr., Middlebury Coll., 1938-39; Asst. Prof. Math., The Citadel, Charleston, S. C., 1940-41; Ordnance Engr., Chief, Rocket and Recoilless Weapons Sect. (Retired), Wash., D. C., 1947-61; Rsch. Engr. Consult., Wash., D. C., 1961—. Sr. Mem.: Inst. of Radio Engrs. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Mathematical Soc.; Am. Inst. of Physics; Acoustical Soc. of Am.; Audio Engineering Soc.; Soc. of Motion Picture and Television Engineers; Soc. of Photographic Scientists and Engineers; Am. Assn. of Univ. Profs.; Sigma Xi; Theta Chi. Contbr. to: Audio; Radio-Electronics; Electronics Industries; Wireless World; Ordnance; Camera; Bull. of the Am. Math. Soc.; Popular Sci.; Radio Constructeur and Depanneur. Serv. Rec.: U. S. Army, 1941-47. Areas of Rsch.: Electronics, Photography, Mathematics, Rockets, Recoilless Weapons.

HEDRICK, Theodore Isaac (Ph.D.), Prof., Mich. St. Univ., E. Lansing, Mich. Home Add.: 939 Marigold, E. Lansing, Mich. DAIRY PRODUCTS. b. Polston, Mont., Sept. 11, 1912. s. Isaac S. and Helen G. (Davis) H. Edn.: B.S., Mont. St. Coll., 1935; M.S., ibid., 1937; Ph.D., Ia. St. Coll., 1941. m. Marjorie Threlkeld, July 20, 1945. c.: Robert T.; Barbara Lee. Exp.: Dir. of Labs., N. Star Dairies, St. Paul, Minn., 1946-49; Co-or. Labs., U.S.D.A., A.M.S., Dairy Div., Chicago, Ill., 1949-55; Prof., Mich. St. Univ., 1956—. Mem.: Am. Dairy Serv. Assn.; Am. Assn. for the Adv. of Sci.; Inst. of Food Tech.; Alpha Gamma Rho; Sigma Xi; Phi Kappa Phi; Alpha Zeta; Gamma Sigma Delta. Contbr. to: Jour. of Dairy Sci.; Quart. Bull. of Mich. Agric. Exptl. Sta.; Dairy Engrng. Serv. Rec.: U. S. Army, 1943-45. Gen. Int.: U.S.-D.A. Award for Meritorious Serv. Areas of Rsch.: Dairy Product Technology; New Product Development and Food Plant Management.

HEFLINGER, Lee Opert (Ph.D.), Sr. Scientist, Clauser Tech. Corp., Torrance, Calif. Home Add.: 5001 Paseo De Pablo, Torrance, Calif. PLASMA PHYSICS. b. Pasadena, Calif., May 23, 1927. s. Edward A. and Lilly (Eliason) H. Edn.: A.B., San Jose St. Coll., 1950; M.A., Univ. of Calif., 1952; Ph.D., ibid., 1956. m. Doris Binley, 1949. c.: Donald Glen; Kenneth Alan. Exp.: Rsch. Asst., Univ. of Calif., 1953-56; Mem. Tech. Staff, Ramo-Wolldridge, Los Angeles, Calif., 1956-58; Mem. Sr. Staff, Space Tech. Lab., ibid., 1958-60; Sr. Scientist, Clauser Tech. Corp., Torrance, Calif., 1960 -. Mem.: Am. Physical Soc.; Am. Math. Soc.; Sigma Xi. Contbr. to: Physics of Fluids; Jour. of the Franklin Inst.; Nederl. Akad. Wetensch. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Plasma Physics, Machine Computation, Asymptotic Expansions.

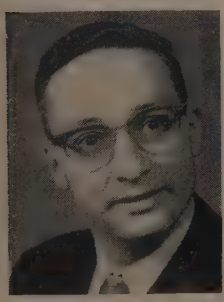
HEIDBREDER, Edna Frances (Ph.D.), Prof. (Emerit.) Psychology, Wellesley Coll., Wellesley, Mass. Home Add.: 34 Cottage St., Wellesley 81, Mass. PSYCHOLOGY. b. May 1, 1890, Quincy, Ill. d. William Henry and Mathilda Emelie (Meyer) H. Edn.: A.B., Knox Coll., 1911; A.M., Univ. of Wis., 1918; Ph.D., Columbia Univ., 1924. Exp.: Instr. in Psychol., Univ. of Minn., 1924-26; Asst. Prof. of Psychol., ibid., 1926-28; Assoc. Prof., ibid., 1928-34; Prof., Chmn. Dept., Wellesley Coll., 1934-55; Prof., Emer., 1955—; Prof., Univ. of Calif., Berkeley, summer, 1950; Mem. of

Seminar Staff, Radcliffe Coll., 1955—; Pres., Eastern Psychol. Assn., 1943-44; Bd. of Dirs., Eastern Psychol. Assn.; Assoc. Ed., Jour. of Abnormal and Soc. Psychol.; Assoc. Ed., Psychological Monographs; Assoc. Ed., Personality. Mem.: Phi Beta Kappa; Sigma Xi; Am. Psychol. Assn. Coun. of Dirs., 1940, 1942-45; Pres., Sect. of Gen. Psychol., 1949-50; Vice-Pres., A.A.A.S., 1947, Chmn., Sect. 1, 1947, Secy., Sect. 1, 1942-45; N.R.C. Author: The Minn. Mech. Ability Tests; Seven Psychols. Contbr. to: Jour. of Exptl. Psychol.; Psychol. Rev.; Psychol. Bull.; Jour. of Abnormal and Soc. Psychol.; Jour. of Applied Psychol.; Jour. of Gen. Psychol. Ph.D. Dissertation: An Experimental Study of Thinking, Archives of Psychol. Travel: Europe. Listed in: A.M.S.; Women of Distinction in Am.; W. W. in New England; W. W. in Ill.; W. W. in Am. Special Int.: Personality Tests; Concept Formation; Schl. and Systems of Psychol.

HEIDEL, Charles Sumner (Mr.), Deputy Sta. Engr., Sam W. Mitchell Bldg., Helena, Mont. Home Add.: 809 Monroe Ave., Helena, Mont. HYDROLOGY—INTERSTATE AND INTERNATIONAL WATER PROBLEMS. b. valley City, N. D., Nov. 14, 1887. s. Charles Edward and Hattie Clara (Weiser) H. Edn.: Engr. of Mines, Univ. of Minn., 1910; C.E., Univ. of Mont., 1926. m. Stella Marie Griggs, Nov. 19, 1913. c.: Sumner Griggs. Exp.: Hydrographer, Mont. Sta. Engrs. Office, Helena, Mont., 1910-20; Sta. Engr., Sta. of Mont., Helena, Mont., 1920-27; Hyd. Engr., U. S. Geol. Survey, Helena, Mont., 1927-49; Staff Engr., ibid., 1950-57; Deputy Sta. Engr., Sta. Engrs. Office, 1958—. Mem.: Fellow, Life Mem. and Past Pres. of Mont. Sect., Am. Soc. of C.E.; Past Pres. and Hon. Mem. of Mont. Soc. of Engrs.; Natl. Soc. of Profl. Engrs.; Am. Geophys. Union; Hon. Mem., Assn. of West. State Engrs.; Alpha Tau Omega; Helena Rotary Club, Past Pres. Serv. Rec.: U. S. Army, 1924-34. Gen. Int.: Dist. Serv. Award, U. S. Dept. of Interior Dist. Serv. Award, Mont. Sect., Am. Soc. of Civil Engrs.; Reg. Prof. Engr. and Land Surveyor. Areas of Rsch.: Hydrology and Interstate and International Water Problems.

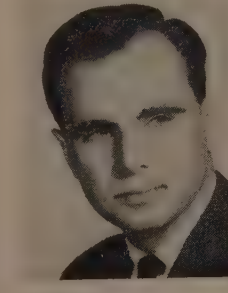
HEIDINGSFIELD, Myron Samuel (Ph.D.), Assoc. Dean, Schl. of Commerce and Finance, Villanova Univ., Villanova, Pa. Home Add.: 6500 Wissahickon Ave., Phila. 19, Pa. MARKETING RESEARCH. b. N. Y., N. Y., Feb. 3, 1914. s. Benjamin and Elsie (Byk) H. Edn.: B.S., Coll. City of N. Y., 1936; M.A., N. Y. Univ., 1939; Ph.D., ibid., 1943. m. Jane Cummins, Feb. 17, 1946. c.: Michael John. Exp.: Lectr. in Stat., Columbia and N. Y. U., 1940-42; Asst. Prof. of Econs. and Bus. Admin., Coll. of William and Mary, Williamsburg, Va., 1942-43; Asst. Prof. of Mktg., Schl. of Bus. and Pub. Admin., Temple Univ., Phila., Pa., 1944-47; Assoc. Prof., ibid., 1947-49; Chmn., Prof., ibid., 1949-58; Assoc. Dean, Prof. of Mktg., Schl. of Commerce and Finance, Villanova Univ., 1960—. Hon. Pos.: Chmn., Comm. on Tchng. Mkt. Rsch., 1948-50, Chmn., Comm. on Basic Rsch., 1950-54, Chmn., Sub-Comm., Mkt. Rsch. Techniques, 1958—, Am. Mktg. Assn.; Exec. Vice Pres. of the Mkt. Rsch. Firm of A. B. Blankenship and Assocs., Inc., 1948-51; Mgr. Mkt. Rsch., RCA Sales Corp., 1958-60; ibid., Cons., 1961-62; Chf. Stan., Mgt. Control Div., Armed Serv. Forces, 1943-44; Rsch. Cons., Fed. Wks. Agency, 1940-42; Rsch. Stat., A.S.A., 1939-40; Asst. Rsch. Dir., Life Ext. Inst., 1938-39. Mem.: Fellow, Am. Assn. Adv. Sci.; Beta Gamma Sigma; Am. Assn. of Univ. Profs.; Am. Stat. Assn.; Am. Econ. Assn.; Chamber of Commerce. Author: Market and Marketing Analysis, Co-Author, 1947; Marketing: An Introduction, 1957, 1953, 1959, Co-Author; Marketing and Business Research, 1962. Contbr. to: Jour. of the Am. Mktg. Assn.; Jour. of the Am. Stat. Assn.; Temple Univ. Bus. Bull. Serv. Rec.: U. S. Army, 1943-44. Areas of Rsch.: The Application of Behavioral Sciences to Marketing; Techniques of Research Design and Experiment; Application of Statistical Methodology to Long-Range and Short-Range Forecasting.

HEIM, Werner George (Ph.D.), Asst. Prof. of Biol., Dept. of Biol., Wayne St. Univ., Detroit 2, Mich. Home Add.: 326 W. Breckenridge, Ferndale 20, Mich. BIOLOGY; ZOOLOGY; PHYSIOLOGICAL EMBRYOLOGY AND INSTRUMENTATION. b. Mulheim-Ruhr, Germany, Apr. 7, 1929. s. Fred and Recha (Hirsch) H. Edn.: B.A., Univ. of Calif. at Los Angeles, 1950; M.A., ibid., 1952; Ph.D., ibid., 1954. m. Julia I. Blumenthal, 1961. Exp.: Jr. Rsch. Zoologist, Univ. of Calif. at Los Angeles, 1954-56; Instr., Brown Univ., 1956-57; Asst. Prof., Wayne St. Univ., 1957—. Mem.: Sigma Xi; Soc. for the Study of Development and Growth; Am. Soc. of Zoologists; Mich. Acad. of Arts, Letters and Sci.; N. Y. Acad. of Sci.; A.A.A.S.; Phi Sigma. Author: Laboratory Directions for Biology 100, co-author, 1960; Laboratory Manual for Introductory Biology, co-author, 1961. Contbr. to: Nature; Jour. Enbryol. and Exp. Morphol.; Science; Am. Jour. Physiol.; Jour. Natl. Cancer Inst.; Jour. Biol. Chem. Plant Physiol.; Anat. Record. Areas of Rsch.: Physiological Relations Between Parent and Offspring in Mammals and Birds; Physiology of Catalase.



HEINDSMANN, Theodore Edward (Mr.), Physics Dept. Mgr., Advanced Space Systems, The Boeing Co., Seattle Wash.; Consultant, Undersea Warfare and Marine Technology. Home Add.: 9360 Fauntleroy Way, S.W., Seattle 16, Wash. UNDERWATER ACOUSTICS AND PHYSICS; MILITARY SYSTEM ANALYSIS—ELECTRONIC. b. N. Y., N. Y., Aug. 2, 1925. s. Theodore E., Sr. (dec.) and Alma V. (Ferrier) H. Edn.: B.E.E., Rensselaer, 1944; M.S., Univ. of Calif., Berkeley, 1950. m. Virginia Lee Green, Apr. 17, 1949. c.: Sandra Christine; Kenneth Theodore. Exp.: Electronic Engr., Navy Underwater Sound Lab., New London, Conn., 1945-47; Rsch. Engr., Univ. of Calif., Berkeley, 1947-49; Supervisory Electronic Scientist, Navy Underwater Sound Lab., New London, 1949-55; Tech. Staff Rsch. Specialist, Boeing Airplane Co., 1955—. Hon. Pos.: Vice-Chmn., I.R.E. Conn. Valley Chapter Med. Electronics, 1954-55; Secy.-Treas., N.W. Regional Chapter Acoustical Soc., 1959—. Sr. Mem.: Inst. of Radio Engrs.; Profl. Groups on Ultrasonics, Med. Electronics, Audio, and Engr. Mgmt.; Acoustical Soc. of Am.; A.A.A.S.; Sigma Xi; Rens. Astrophysical Soc.; Beta Pi Mu; Sigma Epsilon Pi; Y.M.C.A., New London, Seattle. Author: Underwater Physics, 1962. Contbr. to: Jour. of Acoustical Soc. of Am.; Jour. of Underwater Acoustics; Transactions on Med. Electronics. Serv. Rec.: Officer, U. S. Naval Reserve, 1942-56. Gen. Int.: Registered Profl. Engr., Conn., Wash. Areas of Rsch.: Propagation of Energy Through Ocean and Atmosphere; Ambient Background Noise; Bio-Medical Signal Analysis and Interpretation; Long Term Trends in Scientific and Engrng. Employment; Milit. and Naval Warfare Operation Analysis; Generation of Artificial Fogs and Environments.

HEINEMANN, Ruth Ilene (Miss), Chf. Med. Technologist, Mount Sinai Hosp., Minneapolis, Minn. Home Add.: 3436 47th Ave. S., Minneapolis, Minn. MEDICAL TECHNOLOGY. b. Madison, Minn., Sept. 11, 1925. d. Frederick Edgar and C. Louise (Trier) H. Edn.: B.S., Univ. of Minn., 1947. Exp.: Med. Technologist, Kern Co. Hosp., Bakersfield, Calif., 1947-48; Med. Technologist, V.A. Hosp., San Francisco, Calif., 1948-49; Stud. Technologist Supvr., Clinical Chemistry, Univ. Hosp., Univ. of Minn., 1949-56; Med. Lab. Consultant, Minn. Dept. of Health, Mpls., Minn., 1956-60; Chief Med. Technologist, Mt. Sinai Hosp., 1960—. Hon. Pos.: Pres.-Elect, Pres., Past Pres., Am. Soc. of Med. Technologists, 1958-61; Bd. Mem., Registry of Med. Technologists of the A.S.-C.P.; Mem. of Natl. Comm. for Careers in Med. Technology; Chmn. Civil Service-Armed Serv. Joint Comm. of A.S.M.T., A.S.-C.P., C.A.P., 1957-61; Vice-Chmn., A.S.M.T. Edn. and Rsch. Fund, Inc., 1961-62. Mem.: Am. Assn. Adv. Sci.; Am. Soc. of Med. Technologists; Zeta Tau Alpha; P.E.O. Contbr. to: Am. Jour. of Med. Technol. Gen. Int.: Survey of Hosp. Lab. in Minn. Areas of Rsch.: Med. Technol.



HEINERT, Dietrich (Ph.D.), Asst. Prof., Dept. of Chem., Ill. Inst. of Tech., Chicago 16, Ill. ORGANIC CHEMISTRY, SPECTROSCOPY, NUCLEAR MAGNETIC RESONANCE. b. Leipzig, Germany, Oct. 3, 1932. Edn.: Vordiplom, Technische Universitaet Berlin, 1955; Ph.D., Clark Univ., 1959. Exp.: Rsch. Assoc., Clark Univ., 1959-60; Asst. Prof., ibid., 1960-61; Asst. Prof., Ill. Inst. of Tech., 1961—. Mem.: Am. Chem. Soc.; Gesellschaft Deutscher Chemiker; Am. Assn. for the Adv. of Sci. Contbr. to: Jour. of the Am. Chem. Soc.; Tetrahedron. Areas of Rsch.: Organic Synthesis. Elucidation of Molecular Structures by Spectroscopic Methods and Synthesis of Model Compounds.

HEINLEIN, Christian Paul (Ph.D.), Visiting Rsch. Scholar, Woman's Coll., Univ. of N. C., Greensboro, N. C. Home Add.: 504 Forest St., Greensboro, N. C. EXPERIMENTAL PSYCHOLOGY (PSYCHOPHYSICAL MEASUREMENTS), PHILOSOPHY OF SCIENCE, LABORATORY DESIGN AND INSTRUMENTATION. b. Baltimore, Md., Apr. 6, 1899. s. Christian Frederick and Mathilda (Bohm) H. Edn.: A.B., Johns Hopkins Univ., 1923; Ph.D., ibid., 1927. m. Julia

Elizabeth Heil, Oct. 20, 1927. Exp.: Rsch. Fellow, Natl. Rsch. Coun., 1927-28; Exptl. Psychol., Lehigh Univ., 1928-29; Assoc. Prof., and Prof. Exptl. Psychol., Fla. St. Univ., 1929-48; Rsch. Assoc. in Psychol., Univ. of Calif., 1941-42; Prof. and Hd. of Dept., Wittenberg Coll., 1948-49; Biochem. Technician, Johns Hopkins Univ. Schl. of Med., 1952-53; Pvt. Practice and Rsch., 1953-55; Visit. Lectr., Woman's Coll., Univ. of N. C., 1956-57; Visit. Rsch. Scholar, ibid., 1957—. Hon. Pos.: Resident Dr., Rsch. Sta., Cornell, Univ., 1942; Fellow in Philos., Schl. of Higher Studies, Johns Hopkins Univ., 1949-52; Charter Mem. and Past Pres., Fla. Acad. Sci., Tallahassee Div. Mem.: Fellow, South Soc. Philos. and Psychol. (Past Coun. Mem., Secy.-Treas., and Pres.); Fellow, Am. Phychol. Assn.; N. C. Psychol. Assn.; WC Faculty Science Club (Lectr. on "The Role of Feeling and Imagination in Scientific Discovery"); A.A.A.S.; Am. Soc. Aesth.; Affiliate, Md. Med. Faculty; Sigma Xi; Pi Gamma Mu; Psi Chi. Contbr. to: Science; Jour. Exptl. Psychol.; Jour. of Psychol.; Jour. Gen. Psychol.; Jour. Genet. Psychol.; Psychol. Rev.; Jour. Comp. Psychol.; Am. Jour. Psychol.; Psychol. Bull.; Proc. Fla. Acad. Sci.; Proc. Internatl. Congress of Psychol.; Twentieth Century Psychol. Areas of Rsch.: Psychometrics; Time Perception; Design of Laboratory Instruments and Controls; General Semantics.

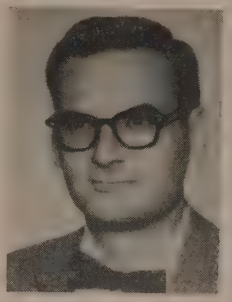
HEINRICH, Edwin P. (Ph.D.), Headmaster, St. Johns Country Day Schl., Orange Park, Fla. Home Add.: Orange Park, Fla. PHYSICS. b. Berlin, Germany, Aug. 8, 1905. s. Carl and Rosie (Priester) H. Edn.: Ph.D., Univ. of Berlin, 1932; M.A., Univ. of Md., 1942. m. Dorthea Becker, Aug. 27, 1940. c.: Sue-Aldine C.; Edwin P., Jr. Exp.: Adj. Prof., Am. Univ., 1945-53; Prin., Sidwell Friends Schl., Wash., D. C., 1945-53; Headmaster, St. Johns Country Day Schl., Orange Park, Fla., 1953 .. Hon. Pos.: Dir., Fla. Coun. of Independent Schls. Mem.: Am. Assn. Physics Tchrs.; Am. Assn. Adv. of Sci.; N. Y. Acad. of Sci.; Phi Delta Kappa; Pi Sigma Pi. Author: Schwingen and Schweben, 1931; Tachistofilms, 1953. Contbr. to: Jour. of Physics. Gen. Int.: Invented Actinoscope, 1952; Natl. Sci. Tchrs. Award, 1953. Areas of Rsch.: Ionizing Radiation.

HEINZE, Peter Herman (Ph.D.), Agricl. Adminr., Plant Indust. Sta., Beltsville, Md. Home Add.: 11411 Cedar Lane, Beltsville, Md. PLANT PHYSIOLOGY AND BIOCHEMISTRY. b. Kahoka, Mo., Jan. 23, 1910. s. Ortin Herman and Caroline P. (Theiss) H. Edn.: B.S., Edn., N.E. Mo. St. Tchrs. Coll., 1935; M.A., Univ. of Mo., 1938; Ph.D., Univ. of Md., 1940. m. Mary Agnes Summers, June 7, 1940. c.: R. Gerald; Donald S.; Marvin H. Exp.: Pub. Schl. Tchr., Elem., Clark Co., Mo., 1927-33; Plant Physiolt., U. S. Dept. of Agri., Beltsville, Md., 1940-42; Plant Physiolt., U. S. Dept. of Agri., Charleston, S. C., 1942-47; Biochemist, Pineapple Rsch. Inst., Honolulu, Hawaii, 1947-48; Sr. Plant Physiolt., U. S. Dept. of Agri., Beltsville, Md., 1948-58; Agric. Adminr., ibid., 1958—. Mem.: Am. Chem. Soc.; Am. Soc. of Plant Physiolts.; Am. Soc. for Horticult. Sci.; Am. Assn. for the Adv. of Sci., Fellow; Wash. Acad. of Scis. Contbr. to: Plant Physiol.; Am. Jour. of Bot.; Procs. of Am. Soc. for Hortl. Sci. Areas of Rsch.: Post Harvest Physiology of Fruits and Vegetables.

HEISEY, Lowell Vernon (Ph.D.), Prof. of Chem., Bridgewater Coll., Bridgewater, Va. Home Add.: 22 Coll. Woods Dr., Bridgewater, Va. ORGANIC CHEMISTRY. b. Shansi, China, Oct. 1, 1919. s. Walter J. and Sue (Rinehart) H. Edn.: A.B., Manchester Coll., 1941; M.A., Purdue Univ., 1944; Ph.D., ibid., 1947. m. Hazel Snavely, 1945. c.: Galen S.; Maylee A.; Loren R. Exp.: Assoc. Prof., McPherson Coll., McPherson, Kan., 1947-50; Assoc. Prof., Bridgewater Coll., 1950-55; Prof., ibid., 1955—. Hon. Pos.: Treas., 1960 and Secy., 1962, Va. Sect., Am. Chem. Soc. Mem.: Am. Chem. Soc.; Sigma Xi; Am. Assn. for the Adv. of Sci.; Kan. Acad. Sci.; Va. Acad. Sci.; Natl. Edn. Assn.; Sci. Tchrs. Assn.; Ruritan. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Org. Chem. Areas of Rsch.: Synthetic Organic Chemistry; Plant Hormones.

HEISKANEN, Weikko Aleksanteri (Ph.D.), Prof.; Dir., Inst. Geodesy, Photogrammetry, Cartography, Ohio St. Univ. Home Add.: 1324 Friar Lane, Columbus 21, Ohio. GEODESY; ASTRONOMY; ISOSTASY; INNER STRUCTURE OF EARTH; SIZE AND SHAPE OF THE EARTH. b. Kangaslampi, Finland, July 23, 1895. s. Heikki and Riikka (Jurvanen) H. Edn.: B.A., State Univ., Helsinki, 1917; M.A., ibid., 1919; Ph.D., ibid., 1924. Hon. Degree: Ph.D., Bonn Univ., Germany, 1956; Ph.D., Finnish Inst. of Tech., 1958; Ph.D., Uppsala Univ., Sweden, 1960. m. Kaarina Maria Levanto, May 8, 1922. c.: Eeva Kaarino. Exp.: Prof., Geodesy, Finland's Inst. of Tech., 1928-49; Chmn., Surveying Dept., ibid., 1935-49; Dir., Finnish Geodetic Inst., 1949-51 (retired); Dir., Internatl. Isostatic Inst., (now in absentia), 1936; Prof., Geodesy, Ohio St. Univ., 1950—; Dir., Inst. of Geodesy, Photogrammetry, Cartography, ibid., 1953. Hon. Pos.: Gen. Reporter on Isostasy, Internatl. Assn. of Geodesy, 1930—; Vice-Pres., Internatl. Union of Geodesy and Geophysics, 1957-60. Hon. Mem.: Dutch Geographical Soc.; Assn. for Adv. of Finnish Culture; Finnish Astronomical Soc.; Ohio Epsilon Chapter.; Phi Beta Kappa. Mem.: Finnish, German, Norwegian, Italian (Accademia Naccionale dei Lincei) Acad. Scis.; Geol. Soc. London; Fellow, Am. Acad. Arts and Scis. Co-Author: The Earth and Its Gravity Field, 1958. Contbr. to: Bull. Geodesique; Transactions Am. Geophysical Union; Surveying and Mapping; Jour. of Geophysical Rsch.; Astronomische Nachrichten; Geofisica Pura et Applicata; Gerlands Beitrage; Geologische Rundschfau. Gen. Int.: Grand Prix of the Govern. of Finland, 1948-51; Grand Award of Antti Wihuri Found., 1953; William Bowie Medal of the Am. Geophysical Union, 1956; Cross of the Order of Finland's White Rose (Commander) 1938; Cross, Order of St. Stephen (Commander) Hungary, 1938; Cross, Order of the German Eagle (Commander), 1943; Cross of the Order of Finland's Lion (First Class Commander), 1957. Areas of Rsch.: Secular Acceleration of the Moon; City Surveying; Triangulation; Isostasy: Thickness of the Earth's Crust; Gravimetric Geodesy; Size and Shape of the Earth.

HELFANT, Kenneth (Ph.D.), Consulting Psychologist, Pvt. Practice, 50 S. Middle Neck Rd., Great Neck, N. Y. Home Add.: 36 Mirrieles Circle, Great Neck, N. Y. PSYCHOLOGY; PSYCHOANALYSIS. b. N.Y.C., N. Y., Jan. 9, 1922. s. Arthur and Jean (Ripplinger) H. Edn.: B.S., Mass. Inst. of Tech., 1947; M.A., Tchrs. Coll., Columbia Univ., 1948; Ph.D., ibid., 1951. m. Carolyn McCalister, Feb. 18, 1956. c.: Douglas; Cynthia. Exp.: Schl. Psychol., Manhasset Pub. Schls., Manhasset, N. Y., 1954-57; Chief Psychol., No. Shore Child Guidance Center, ibid., 1956-60; Chief Psychol., Halcyon Rest Hospital, Rye, N. Y., 1960—. Hon. Pos.: Pres., Queens-Nassau Psychologist in Psychotherapeutic Practice. Mem.: Am. Psychol. Assn.; A.A.A.S.; N. Y. St. Psychol. Assn.; Am. Group Psychotherapy Assn.; Sigma Xi; Phi Delta Kappa; Kappa Delta Pi; Rotary Club. Author: Education for Self Understanding, 1951. Contbr. to: Edn. Leadership; Psychol. Monographs; Jour. of Social and Abnormal Psychol. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Psychoanalysis; Psychology of Adolescence; Preventive Mental Hygiene.



HELDT, Thomas Johannes (M.D.), Sr. Consultant, Neuropsychiatry, Henry Ford Hosp., Detroit 2, Mich. Home Add.: 17 Poplar Park, Pleasant Ridge, Mich. NEUROLOGY; PSYCHIATRY. b. Buckeye, Iowa, Aug. 8, 1883. s. John M. and Emma (Steffen) H. Edn.: A.B., Univ. of Mo., 1910; A.M., ibid., 1912; M.D., Johns Hopkins Schl. of Med., 1916. m. Jennie Fell, Sept. 11, 1909. c.: Thomas F.; Nellie R. (dec.); Robert E.; Richard F. Exp.: Tchr., Rural Schls., Northwest Iowa, 1904-05; Student Asst. and Instr. in Anat., Univ. of Mo., 1910-14; Technician, Histology, Greene's Western Salmon Expedition, 1911; Rsch. Asst., Psychiatry, and Med. Interne, Psychiatric Inst., Manhattan St. Hosp., Ward's Island, N. Y., 1916-17; Attending Physician, Cornell Med. Coll., Dept. Psychopath., N. Y., 1916-17; Clin. Dir., U. S. Public Health Serv. Hosp. #37, Waukesha, Wis., 1919-22; Psychiatrist in Chg., Child Guid. Clinic #1, St. Louis, Mo., and Norfolk, Va., 1922-23; Repr., Rsch. Comm., Neuropsychiatry, Internatl. Hosp. Assn. to Geneva, Switzerland and Vienna, Austria, 1931; Physician in Chg., Div. Neuropsychiatry, Henry Ford Hosp., Detroit, Mich., 1923-52; Lectr., Post-grad. Trng., Pontiac St. Hosp., Pontiac, Mich., 1947-60; Sr. Consultant, Neurol. and Psychiat., Henry Ford Hosp., 1952—; Asst. Examiner and Assoc. Examiner annually to Am. Bd. Psychiat. and Neurol., 1937-55. Hon. Pos.: Chmn., Comm. Rsch. Neuropsychiat., Internatl. Hosp., Assn., 1931-37; Pres., Mich. Soc. Neurol. and Psychiat., 1925 and 1946; Pres., Central Neuropsychiatric Assn., 1950; Chmn., Comm. on Ethics, Am. Psychiatric Assn., 1946-52; Mem. Comm. on Ethics, Am. Acad. Neurol., 1951-53; Repr., Mich. St. Med. Soc. to Governor's Study Commn. on Deviated Criminal Sex Offender, 1949-55; Lectr., Post Grad. Seminars, Okla. City and Galveston, Tex., 1950 and 1951; Mem., State Bd. Alcoholism; 1951—; Mem., Exec. Coun., Detroit Comm. on Alcoholism, 1947-61; Mem., Health Coun., Metro. Detroit, 1953-56; Mem., Examining Comm. Civil Serv. Commn., Wayne Co., 1950-56; Mem., Organizing Comm. Conf. on Psychiatry in the War, Ann Arbor, Mich., 1942; Mem., Ment. Health Comm., Mich. St. Med. Soc., 1945—; Mem., Ment. Health Comm., Wayne Co. Med. Soc., 1945-60; Mem., Comm. for Preservation Med Standards in Psychiat., 1949-51. Mem.: Modern Founders Am. Psychiatric Assn.; Detroit, Wayne Co. Med. and Pub. Health Div. Civil Defense; World Med. Assn.; Am. Med. Assn.; Am. Psychiatric Assn.; Central Neuropsychiatric Assn.; Am. Orthopsychiatric Assn.; Mich. Soc. Neurol. and Psychiat.; Mich. St. Med. Soc.; Am. Neurological Assn.; Am. Acad. Neurol.; Am. Assn. Anatomists; Assn. Rsch. Nervous and Ment. Disease; Am. League against Epilepsy; Natl. Assn. Ment. Health; Natl. Coun. Alcoholism; N. Y. Acad. Sci.; Mich. Soc. Ment. Health; Wayne Co. Med. Soc.; Sigma Xi; Founders Soc., Detroit Museum Art; Mo. Univ. Alumni; Oberlin Coll. Alumni; Johns Hopkins Schl. of Medicine Alumni; Am. Forestry Assn.; Canadian Forestry Assn.; Am. Nature Assn.; Am. Veterans Comm.; Kiwanis Club; Automobile Club of Mich.;

Oakland County Civilian T.B. League; Child Trng. Assn.; Oakland County Sportsmen's Club; Detroit Citizens League; Detroit Round Table; Detroit Area Council, Boy Scouts of Am. Contributing Author: Proceedings of the Fiftieth Annual Session of the American Association for the Study of the Feebleminded, 1926; Medical History of Michigan, 1930; First Aid Manual, 1942; Psychiatry and the War, 1943; Life Stress and Bodily Disease, 1950. Contbr. to: Am. Jour. Psychiatry; Jour. Mich. St. Med. Soc.; Diseases Nervous System; Jour. Am. Med. Assn.; Jour. Comp. Neurol.; Am. Jour. Med. Sci.; Nosokomeion; Am. Clin. Med.; N. Y. State Jour. Med.; Archives Internal Med.; Clin. Med. and Surg. Serv. Rec.: U. S. Army Med. Corps, 1917-19; Examiner, Detroit Induction Center, 1940-45. Gen. Int.: Rollins Scholarship in Med., Univ. Mo., 1910; Established First Div. Neuropsychiatry in a Gen. Hosp., Conducted Entirely Without Physical Restraints of Any Kind, Without Isolation for All Types Psychiatric Patients, and Without Segregation of Men and Women, 1923-52; Fostered Integration of Psychiatry with Gen. Med. and Psychiatry with Religion. Areas of Rsch.: Comparative Neurol.; Neurocytology; Neurol.; Psychiatry.

HELLER, John Herbert (M.D.), Exec. Dir., New England Inst. for Med. Rsch., Ridgefield, Conn. Home Add.: 34 Glen Hill, Wilton, Conn. MOLECULAR BIOLOGY, BIOPHYSICS. b. N. Y., N. Y., Nov. 28, 1921. s. Herbert Charles and Helen Victoria (Breschel) H. Edn.: B.A., Yale Univ., 1942; M.D., Western Reserve Schl. of Med., 1945. m. Mary Helen Strong, 1946. c.: Linda; Christopher; Kathleen; Susan; Sandra. Exp.: Instr. in Pathology, Yale Univ., New Haven, Conn., 1947-49; Asst. Physician, Grace-New Haven Comm., New Haven, Conn., 1948-49; James Hudson Brown Rsch. Fellow, Yale Univ., 1948-49; Rsch. Fellow, Am. Heart Assn., Dept. of Internal Med., ibid., 1949-51; Assoc. Physician, Grace-New Haven Community Hosp., ibid., 1949-54; Univ. Radiophysics Health Officer, ibid., 1950-54; Asst. Prof., Internal Med., ibid., 1951-52; Established Investigator, Am. Heart Assn., ibid., 1951-54; Proj. Dir., U. S. Atomic Energy Comm., ibid., 1951-55; Asst. Prof. of Internal Med. and Physiology, ibid., 1952-53; Chmn., Sec. of Med. Physics, ibid., 1952-54; Exec. Dir., New England Inst. for Med. Rsch., Ridgefield, Conn., 1954—. Mem.: Inst. of Radio Engineers; Am. Inst. of Electrical Engineers; Am. Rocket Soc.; Biophysical Soc.; Am. Physiol. Soc.; Am. Chem. Soc.; N. Y. Acad. of Sci.; Am. Soc. for Clin. Investigation; Am. Med. Assn.; Am. Assn. for the Adv. of Sci.; Soc. for Nuclear Med.; Am. Geriatrics Soc.; Am. Astronautical Soc.; Am. Geophy. Union; Sigma Xi. Author: Reticuloendothelial Structure and Function, 1960; Of Mice, Men and Molecules, 1960. Contbr. to: Proc. Soc. Exper. Med. and Biol.; Endocrinol.; Nature; Science; Surgery Gyn. and Ob.; Jour. Immunol.; RES Bull. Serv. Rec.: U.S.N.R., 1942-50. Areas of Rsch.: Reticuloendothelial System, Non-Thermal Effects of Radio Frequency, Elasmobranch Physiology, Intravascular Colloids, Biophysical Molecular Interactions, Biogeophysics.

HELMBOLDT, Charles Frederick (Dr.), Prof. and Hd., Dept. of Animal Diseases, Univ. of Conn., Storrs, Conn. Home Add.: Storrs Heights, Storrs, Conn. VETERINARY PATHOLOGY. b. Norwich, Conn., Dec. 6, 1914. s. George F. and Clara (Kaempffe) H. Edn.: B.S., Conn. St. Coll., 1935; D.V.M., Mich. St. Coll., 1938; M.S., Univ. of Conn., 1949; Ph.D., ibid., 1951. m. Marie Gremel, Feb. 4, 1939. c.: Derek G.; Lisa M. Exp.: Jr. Vet., U.S.D.A., B.A.I., W. Va. and Rhode Island, 1938-40; Priv. Practice, Vet. Med., Unionville, Mich., 1940-42; Asst. Prof. to Prof., Dept. of Animal Dis., Univ. of Conn., 1946—. Hon. Pos.: Edn. Chmn., Am. Coll. of Vet. Pathologists, 1961; Pres., local chpt., Sigma Xi, 1961-62. Mem.: Am. Coll. of Vet. Pathologists; Sigma Xi; Am. Vet. Med. Assn.; Internatl. Acad. of Pathol.; Am. Assn. Avian Pathologists; Gamma Sigma Delta. Contbr. to: Am. Jour. of Vet. Rsch.; Jour. Am. Vet. Med. Assn.; Avian Diseases; Storrs Agric. Expt. Sta. Bull. Serv. Rec.: U. S. Army Vet. Corp., 1942-46. Areas of Rsch.: Avian histopathology; Mammalian histopathology in relation to Vitamin A deficiency; Diseases of mink.

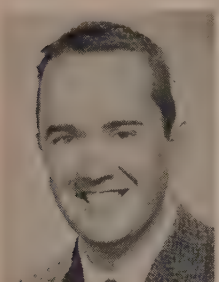
HELMS, Rufus Marshall (Ed.D.), Prof. of Phys., E. Car. Coll., Greenville, N. C. Home Add.: 1215 E. Rock Spg. Rd., Greenville, N. C. PHYSICS, ELECTRONICS. b. Salisbury, N. C., July 9, 1907. s. Marshall Luther and Carry May (Roseman) H. Edn.: A.B., Duke Univ., 1928; M.S., Columbia Univ., 1940; Ed.D., N. Y. Univ., 1957. m. Mary Caughey, Aug. 19, 1951. Exp.: Chmn., Sci. Dept., Goldsboro H. Schl., Goldsboro, N. C., 1928-43; Assoc. Prof., Phys., W. Va. Wesleyan Coll., Buckhannon, W. Va., 1946; Instr., Phys., N. C. St. Coll., 1946-48; Assoc. to Prof., Phys., E. Car. Coll., 1948—. Hon. Pos.: Organizer, Secy. and Chmn., Phys. Sect., N. C. Acad. of Sci.; Visit. Scientist in Phys. to Secondary Schls. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Assn. for Rsch. in Sci. Tchng.; N. C. Acad. of Sci.; Am. Assn. of Phys. Tchrs. Contbr. to: N. C. Engr.; Am. Jour. of Phys.; Sci. Edn. Serv. Rec.: U. S. Air Force, 1943-46. Areas of Rsch.: Ferro Magnetic Resonance; Radiation Detection; General Lab Equipment and Techniques in Physics; Dimensional Analysis.

HELPERN, Milton (M.D.), Chf., Med. Examiner, City of N. Y., 520 First Ave., N. Y. 16, N. Y. Home Add.: 55 E. End Ave., N. Y. 28, N. Y. FORENSIC PATHOLOGY. b. N. Y. City, Apr. 17, 1902. s. Moses and Bertha (Toplon) H. Edn.: B.S., Coll. of the City of N. Y., 1922; M.D., Cornell Univ. Med. Coll., 1926. m. Ruth Vyner, July 10, 1927 (dec. Jan. 12, 1953); m. 2nd., Beatrice Liebovitz Nightingale, Jan. 1, 1955. c.: Nancy Moldover; Susan Nettler; Alice Feinberg; William Nightingale; Stuart Nightingale. Exp.: Asst. Prof., Forensic Med., N. Y. Univ., 1935-49; Asst. Prof. of Clin. Med. and Lectr. in Pathol. and Legal Med., Cornell Univ. Med. Coll., N. Y., 1940—; Asst. Prof., 1933-49; Assoc. Prof., 1949-54; Prof. and Chmn., Dept. of Forensic Med., N. Y. Univ. Postgrad. Schl. of Med., 1954—; Chf. Med. Examiner, City of New York, 1954—. Hon. Pos.: President, 1962-63, Med. Soc. of the Co. of N. Y.; Chmn., Joint Comm. of the Med. Soc. of the Sta. of N. Y. and the N. Y. Sta. Bar Assn.; United States Natl. Comm. on Vital Stats., Chmn. of Subcomm. on Cert. of Deaths in Med. Legal Cases; Vice Pres., 1960-63, Internatl. Soc. of Traffic Med.; Pres., Second Internatl. Meeting on Forensic Pathol. and Med., 1960; Vice Pres., Fifth Congress of Internatl. Acad. of Legal Med., 1961; Vice Pres., 1961-64,, Internatl. Acad. of Legal Med.; Pres., 1948-49, N. Y. Pathol. Soc.; Am. Med. Assn.; Pres., 1962-63, Am. Acad. of Forensic Scis.; Pres., 1961-63, Am. Acad. of Compensation Med. Mem.: Alpha Omega Alpha; Phi Beta Kappa; Soc. of Forensic Med. of Rome, Italy, Hon. Mem., 1960; Soc. of Legal and Criminal Med. of Sao Paulo, Brazil, Hon. Mem.; Spanish Assn. of Forensic Med., Hon. Mem. Contbr. to: Articles on General Pathology, Forensic Pathology & Med. Co-author: Legal Medicine, Pathology and Toxicology, Appleton-Century-Crofts, 2 Edit., 1954. Serv. Rec.: Spec. Consult., U. S. Army, 1943-45; Consult. FAA, AFIP. Gen. Int.: Townsend Harris Medal, Alumni Assn. of Coll. of City of N. Y.; Gold Medal and Citation, Law Sci. Inst. and Fdtn., Univ. of Tex. Law Schl., 1958. Areas of Rsch.: Forensic Pathology and Legal Medicine.

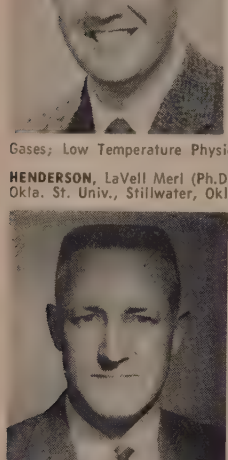
HEMPSTEAD, Jean Charles (Lt. Col.), Faculty Exec. Officer, U. S. Air Force Acad., Colo. MATHEMATICS. b. Aug. 6, 1904, Woden, Ia. s. Carl Watson and Mertie (Lemmon) H. Edn.: B.S., Civil Engrs., Iowa St. Univ., 1926; M.A., Univ. of Pa., 1930; C.E., Iowa St. Univ., 1942. m. Edna Walton of Belle Plaine, Iowa, Sept. 8, 1928. d. James O. and Carrie Walton. Exp.: Instr. in Math., Drexel Inst., Phila., Pa., 1927-30; Instr. in Math., Temple Univ., Night Schl., 1928-30; Instr. in Gen. Engr., Iowa St. Univ., 1930-31; Asst. Prof. Gen. Engrng., ibid., 1932-36; Assoc. Prof., ibid., 1936-48; Valuation Engr., Dept. of Int., Bonneville Dam Project, Portland, Ore., Summer, 1950; Prof. of General Engrng., Iowa St. Univ., 1948-51; Instr., Marine Engrng., U. S. Naval Acad., 1952-55. Mem.: A.S.E.E.; Pi Mu Epsilon; Tau Beta Pi; Phi Kappa Phi; Scabbard and Blade; A.A.U.P.; Theta Xi; Kiwanis; Math. Assn. of Am. War Record: Res. Officer, 1926-36, 1946-51; Active Duty in U.S.A.A.F., Maj., 1942-46 and since June, 1951-55; U.S.A.F., Lt. Col., 1955. Co-Author: "Engineering Valuation and Depreciation"; Marston Winfrey and Hempstead, 2nd Edn., McGraw-Hill Book Co., N. Y., 1953. Travel: U. S. Hobbies: Travel; Reading; Men's Chorus Music. Listed in: W. W. in Engrng.; W. W. in Am. Edn.; W. W. in Colo.

HENDERSON, Allison Burney (M.D.), Owner-Dir., Dexter Lab., 9041 Dexter Blvd., Detroit, Mich. Home Add.: 652 Arden Park, Detroit 2, Mich. INTERNAL MEDICINE. b. Orlando, Fla., Oct. 23, 1911. s. Gustavus C. and Martha G. (Livingstone) H. Edn.: B.S., Morehouse Coll., 1933; M.D., Meharry Med. Coll., 1937. m. Bertha George, Nov. 10, 1936. Exp.: Clin. Instr., Wayne Univ. Medical Schl., 1953; Medical Director, Detroit Metropolitan Mutual Assurance Co., Detroit, Mich., 1956—; Owner-Director, Dexter Lab., ibid., 1955—. Mem.: Am. Coll. of Physicians; Am. Fed. for Clin. Rsch.; N. Y. Acad. of Sci.; Natl. Assn. for Adv. of Sci.; Am. Diabetic Assn.; Am. Geriatrics Soc.; Am. Bd. of Internal Med.; Am. Heart Assn.; Am. Coll. of Angiology; Am. Med. Assn.; Kappa Alpha Psi; N.A.A.C.P.; Natl. Med. Assn.; Am. Soc. Hematol.; Varsity Club; Internatl. Congress of Internal Med. Contbr. to: Am. Jour. of Med.; Am. Jour. of Med. Scis.; Jour. of Natl. Med. Assn.; A.M.A. Archives of Internal Med.; New England Jour. of Med.; Jour. of Lab. and Clin. Med. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Clinical; Medicine; Sickle-Cell Anemia, and Allieo.

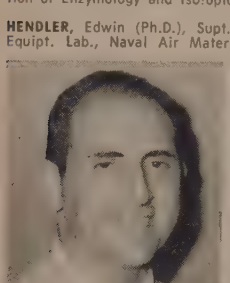
HENDERSON, Douglas James (Ph.D.), Asst. Prof. of Physics, Univ. of Idaho, Moscow, Idaho. Home Add.: 301 Palouse Court, #202, Moscow, Idaho. PHYSICS; STATISTICAL MECHANICS. b. Calgary, Alberta, Can., July 28, 1934. s. Donald Ross and Evelyn Louise (Scott) H. Edn.: B.A., Univ. of British Columbia, 1956; Ph.D., Univ. of Utah, 1961. m. Rose Marie Steen-Nielssen, Jan. 21, 1960. c.: Barbara. Exp.: Asst. Prof. of Physics, Univ. of Idaho, 1961—. Mem.: Can. Assn. of Physicists; Am. Phys. Soc.; Math. Assn. of Am.; Sigma Xi; Sigma Pi Sigma; Phi Kappa Phi. Contbrng. Author: Non-Stoichiometric Compounds, 1963. Contbr. to: Jour. of Physical Chem.; Jour. of Chem. Physics. Gen. Int.: Fellow, Corning Glass Foundation, 1959-61. Areas of Rsch.: Statistical Mechanics of Liquids and Dense Gases; Low Temperature Physics.



HENDERSON, LaVell Merl (Ph.D.), Prof. and Hd., Dept. of Biochem., Okla. St. Univ., Stillwater, Okla. Home Add.: 1011 West McElroy, Stillwater, Okla. BIOCHEMISTRY. b. Swan Lake, Idaho, Sept. 9, 1917. s. Merl and Marie (Gambles) H. Edn.: B.S., Utah State Univ., 1939; M.S., Univ. of Wis., 1941; Ph.D., ibid., 1947. m. Maurine Criddle, Aug. 16, 1939. c.: Janet Louise; Jeanne; Linda Marie. Exp.: Instr., Biochem., Univ. of Wis., 1947-48; Asst. Prof., Biochem., Univ. of Ill., 1948-57; Prof. and Hd., Dept. of Biochem., Okla. St. Univ., 1957 . . Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Soc. Biological Chemists; Am. Inst. of Nutrition; Am. Bd. of Nutrition; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Kiwanis. Co-Author: Experimental Biochemistry, 1958. Contbr. to: Jour. of Biological Chem.; Biochem. and Biophysical Rsch. Communications; Biochimica et Biophysica Acta; Jour. of Nutrition; Jour. of the Am. Chem. Soc.; Proceedings of the Soc. for Exptl. Biol. and Med. Serv. Rec.: U. S. Army, 1941-46; U. S. Army Reserve, 1946—. Areas of Rsch.: Metabolism of Tryptophan and Other Indole Compounds; Biosynthesis in Nicotinic Acid and Pyridine Derivatives; Hydroxylysine Metabolism; Amino Acid and Vitamin Metabolism Application of Enzymology and Isotopic Techniques to Metabolic Problems.



HENDLER, Edwin (Ph.D.), Supt., Life Scis. Rsch. Div., Air, Crew Equipt. Lab., Naval Air Material Center; Assoc., Physiol. Dept., Univ. of Pa. Schl. of Med., Philadelphia 12, Pa. Home Add.: 415 Brentwood Rd., Havertown, Pa. AVIATION AND SPACE PHYSIOLOGY; ENVIRONMENTAL STRESS PHYSIOLOGY; THERMAL PHYSIOLOGY. b. Phila., Pa., Aug. 29, 1922. s. David and Elene (Kalman) H. Edn.: B.S., Pa. St. Univ., 1943; M.S., Univ. of Pa., 1956; Ph.D., ibid., 1959. m. May Snyder, May 13, 1945. c.: Lynn Karen; Sandra Dee. Exp.: Physiologist, Air Crew Equip. Lab., Phila., 1946-50; Hd., Physiol. Sect., ibid., 1950-52; Hd., Acceleration Br., ibid., 1952-55; Supt., Life Scis. Rsch. Div., ibid., 1955—; Assoc. Physiol. Dept., Univ. of Pa., 1960 —. Hon. Pos.: Chmn., Session IX on Infrared Radiation 12th Annual Conf. on Elec. Techniques in Med. and Biol. Mem.: Biophysical Soc.; Aerospace Med. Assn.; Am. Assn. Adv. Sci.; Am. Physiol. Soc.; Scientific Rsch. Soc. of Am.; Phila. Physiol. Soc.; Naval Civilian Admrs. Assn.; Toastmasters Internatl.; etc. Contbr. to: Jour. Aerospace Med.; Jour. Applied Physiol.; Proc. Soc. Exptl. Biol. and Med.; Mech. Engrng.; Abstr. XX Internatl. Physiol. Cong.; IRE Trans. on Med. Electronics. Serv. Rec.: U.S.N.R., 1945-46. Areas of Rsch.: Physiological Responses to Environmental Stress; Infrared and Microwave Heating of Tissues; Temperature Sensations; Human Factors in Airborne and Space Flight.



HENDRIX, Gertrude (Miss), Rsch. Assoc. Prof., Tchr. Co-ord of the UICSM Maths. Proj., Univ. of Ill., Urbana, Ill. MATHEMATICS EDUCATION, WITH RESEARCH IN THEORY OF LEARNING, THEORY OF INSTRUCTION, NATURE OF LANGUAGE. b. Putnamville, Ind., May 24, 1905. d. J. William and Grace (O'Neal) H. Edn.: A.B., DePauw Univ., 1926; M.S., Edn., Univ. of Ill., 1930; M.A., Math., ibid., 1935. Exp.: Tchr., Math., Crossville Comm. H. S. Crossville, Ill., 1926-28; Prin., ibid., 1928; Instr. of Math., E. Ill. Univ. H. S. and Coll., Charleston, Ill., 1930-35; Asst. Prof., ibid., 1935—; on leave, 1956-62; Instr., Univ. of Ill. H. S., 1928-30; Rsch. Assoc., ibid., 1956-58; Rsch. Asst. Prof., Univ. of Ill., UICSM Math. Proj., 1958—. Hon. Pos.: Editor, Ill. Coun. of Tchrs. of Maths., News Letter, 1956-61; Chmn. of the Comm. on Strengthening the Tchng. of Maths., a Joint Comm. of the Ill. Sect. of the Matl. Assn. of Am. and the Ill. Coun. of Tchrs. of Math., 1961—. Mem.: Math. Assn. of Am.; Natl. Coun. of Tchrs. of Math.; Ill. Coun. of Tchrs. of Math.; Cent. Assn. of Sci. and Maths. Tchrs.; Am. Assn. for the Adv. of Sci.; Ill. Edn. Assn.; Phi Beta Kappa; Kappa Delta Pi; Pi Mu Epsilon; Kappa Mu Epsilon; Kappa Delta. Co-Author: Plane Geometry and Its Reasoning, 1937. Contbr. to: Am. Mathl. Monthly; Elem. Schl. Jour.; The Math. Tchr.; Schl. Sci. and Maths.; The Arithmetic Tchr. Gen. Int.: First Rsch. Identifying the Nonverbal Awareness Stage in Creative Abstract Human Learning; Programmer of First Series of Ednl. Films for Trng. Tchr. to Tch. by the Discovery Method. Areas of Rsch.: Nature of Nonverbal Awareness Traced from Primitive Animal Learning to Abstract Human Learning; Classification of Communication Systems to Distinguish Between Learning by Communication and Learning by Discovery.

HENDRICKS, Barnard Andrew (Mr.), Forest Ecologist, Self Employed, 5251 Vanderbilt Ave., Dallas, Tex. Home Add.: 5251 Vanderbilt Ave., Dallas, Tex. FOREST AND RANGE VEGETATION IN RELATION TO MAN'S USE AND TO THE CLIMATE AND SOILS. b. Cedar Hill, Tex., June 28, 1895. s. Samuel Harrison and Margaret Lou (Bryan) H. Edn.: B.S., Colo. Agri. Coll., 1925; M.S., Univ. of Ariz., 1934. m. Mary Anderson, Aug. 29, 1922. c.: Jack Anderson; William Andrew. Exp.: Asst. Forest Ranger, U. S. Forest Serv., Lincoln Natl. Forest, N. Mex., 1918-19; Dist., Forest Ranger, ibid., 1920-21; Jr. Range Examiner, ibid., N. Mex. and Ariz., 1925-27; Asst. Forest Supvr., ibid., Magdalena, N. Mex., 1927-29; Assoc. Range Examiner, ibid., S.W. For., Exp. Sta., Tucson, Ariz., 1929-38; Forest Ecologist, ibid., 1938-44; Forest Ecologist, Self-employed, Dallas, Tex., 1945—. Mem.: Tex. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Soc. of Am. Foresters; Sigma Xi; Alpha Zeta. Author: Soil Erosion and Stream Flow on Range and Forest Lands of the Upper Rio Grande Watershed in Relation to Land Resources and Human Welfare, co-author, 1937; Vine Mesquite for Erosion Control on Southwestern Ranges, 1936. Contbr. to: Jour. of Forestry; Chronica Botanica. Serv. Rec.: U. S. Army, 1917-18. Areas of Rsch.: Grazing Damage to Ponderosa Pine in Northern Ariz.; Soil Erosion on Rio Grande Watershed in New Mex.; Soil Erosion and Streamflow on Salt River Watershed in Ariz.

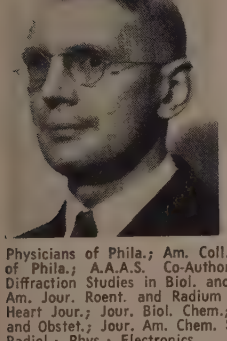
HENDRIX, William Elbert (Ph.D.), Ldr., Rural Econ. Development Investigation, Econ. Rsch. Serv., U.S.D.A., Wash., D. C. Home Add.: 1501 Pinecastle Rd., Falls Church, Va. ECONOMICS WITH APPLICATIONS TO AGRICULTURE. b. Cottage Grove, Tenn., Aug. 16, 1913. s. John Franklin and Mary Jane (Thurkill) H. Edn.: B.S., Univ. of Tenn., 1935; M.S., ibid., 1936; Ph.D., Univ. of Wis., 1953. m. Helen Buffat, 1939. c.: Rebecca. Exp.: Rsch. Assoc., Univ. of Tenn., 1936-38; Agri. Econ., Agri. Expt. Sta., Univ. of Ga., 1938-51; Rsch. Assoc., Univ. of Chicago, 1951-55; Agri. Economist, U.S.D.A., Wash., D. C., 1955—. Mem.: Am. Econ. Assn.; Am. Farm Econ. Assn.; Sou. Econ. Assn.; Underemployment of Rural Families, 1951. Contbr. to: Jour. of Farm Econ.; Farm Policy Forum. Am. Assn. for Adv. of Sci. Author: Areas of Rsch.: Research into Problems of Rural Poverty.

HENKE, Russell Warren (Mr.), Dir. of Fluid Power Inst., Prof., Milwaukee Schl. of Engrng., Milw., Wis. Home Add.: 1000 Grandview Dr., Elm Grove, Wis. FLUID POWER. b. Milwaukee, Wis., Apr. 28, 1924. s. Martin John and Alice (Jolin) H. Edn.: B.S., Univ. of Wis., 1949; M.S., ibid., 1953; M.E., ibid., 1960. m. Constance Larson, June 7, 1947. c.: Christopher James; Pamela May. Exp.: Glenway Maxon Office Engr., 1949-50; Project Engr., The Heil Co., Milw., Wis., 1950-52; Chf. R & D Engr., Badger Meter Mfg. Co., ibid., 1952-55; Dir. of Engrng., S-A Div. of Am.-Marietta Corp., ibid., 1955-57; Consulting Engr., Milw., Wis., 1957-60; Dir. of Rsch., Racine Hydraulics and Machy. Co., Racine, Wis., 1960-62. Mem.: A.S.M.E.; I.S.A.; N.S.P.E.; F.P.S.; Boy Scouts. Author: Meter Engineering and Application Handbook, 1955; "R & D Function in the Small Company," Gulf Publ. Co. Contbr. to: A.W.W.A. Jour.; Corrosion; Industrial and Engrng. Chem.; Southwest Water Works Jour.; Water and

Sewage Works; Purchasing News; Oil and Gas Jour.; Machine Design; Hydraulics and Pneumatics; Roads and Streets. Gen. Int.: Mars Outstanding Design Award, 1958; Steel Founders Soc. Design Contest, 2nd Natl. Award, 1957. Areas of Rsch.: Fluid Power; Servos; Corrosion; Instrumentation.

HENNIS, Henry Emil (Ph.D.), Proj. Ldr., The Dow Chem. Co., Midland, Mich. Home Add.: 1819 Bauss St., Midland, Mich. ORGANIC CHEMISTRY. b. Madelia, Minn., Oct. 23, 1925. s. John H. and Frieda C. (Boelter) H. Edn.: B.C., Univ. of Minn., 1950; Ph.D., Univ. of Mo., 1956. m. Marian E. Lovett, 1951. Exp.: Grad. Asst., Univ. of Mo., 1950-51, 1953-54; Asst. Instr., ibid., 1954-56; Chemist, The Dow Chem. Co., Midland, Mich., 1956-57; Proj. Ldr., ibid., 1957—. Mem.: Am. Chem. Soc.; Sci. Rsch. Soc. of Am.; Am. Assn. for the Adv. of Sci.; Alpha Chi Sigma; Gamma Alpha. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem.; Industrial and Engrng. Chem. Serv. Rec.: U. S. Navy, 1943-45; U. S. Air Force, 1951-53. Areas of Rsch.: Organic Chemical Syntheses.

HENNY, George Christian (M.D.), Prof. of Med. Phyiscs, Temple Univ. Med. Schl., 3400 N. Broad St., Phila. 40, Pa. Home Add.: 6714 Wissanickon Ave., Phila. 19, Pa. MEDICAL PHYSICS. b. Alameda, Calif., Feb. 22, 1899. s. David C. and Antoinette (Wetzel) H. Edn.: B.A., Reed Coll., 1920; M.S., Calif. Inst. of Technol., 1922; M.D., Univ. of Ore., 1930. m. Elizabeth Gore, Aug. 23, 1926. c.: Jeanette Warner; David Christian. Exp.: Transmission, Bell Tel. Labs., N. Y., N. Y., 1923-25; Fellow, Dept. of Radiol., Temple Univ. Dept. of Med. Physics, ibid., 1936—; Assoc. Prof. of Radiol., ibid., 1943-45; Prof. Med. Physics, ibid., 1945—. Hon. Pos.: Pres., Physics Club of Phila. Mem.: Sigma Xi; Alpha Omega Alpha; Sigma Pi Sigma; Radiol. Soc. of No. Am.; Am. Roent. Ray Soc.; Radiation Res. Soc.; Coll. of Radiol.; (Assoc.), Physics Club of Phila.; A.A.A.S. Co-Author: Spiegel-Adolf and Henny X-ray Diffraction Studies in Biol. and Med., 1947. Contbr. to: Radiol.; Am. Jour. Roent. and Radium Therapy; Am. Jour. Physiol.; Am. Heart Jour.; Jour. Biol. Chem.; Encyc. of Med. Surgery, Gynecol. and Obstet.; Jour. Am. Chem. Soc. Areas of Rsch.: Med. Physics; Radiol.; Phys.; Electronics.



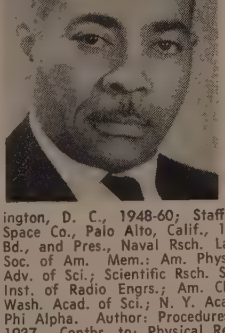
HENRIQUES, Frederick Cohane (Ph.D.), Pres., Tech. Operations Rsch., Burlington, Mass. Home Add.: 15 Moon Hill Rd., Lexington, Mass. CHEMICAL PHYSICS. b. San Francisco, Calif., Feb. 2, 1917. s. Frederick C. and Geraldine (Green) H. Edn.: B.S., Univ. of Calif., 1937; Ph.D., Univ. of Rochester, 1940. m. Eileen Cowell, Sept. 12, 1938. c.: Keith A.; Paul R. Exp.: Rsch. Assoc., Harvard Univ., 1940-46; Staff Mem., Univ. of Calif., Berkeley, 1946-47; Tech. Dir., Tracerlab., Waltham, Mass., 1947-51; Pres., Technical Operations, Inc., 1951-62; Chmn. of Bd., Tech. Opns., Inc.; Pres., Tech. Opns. Rsch., 1962—. Mem.: A.C.S.; Am. Phys. Soc.; Sigma Xi. Contbr. to: Jour. A.C.S.; Jour. Chem. Phys.; Am. Jour. Pathol.; Anal. Edn.; Ind. and Engrng. Chem.; Arch. Pathol.; Jour. Biol. Chem.; Nucleonics; Arch. Biochem.; Lab. Invest. Areas of Rsch.: Chem. Physics; Photo Chem.; Biochem.; Operations Rsch.

HENRY, David Weston (Ph.D.), Sr. Chemist, Merck, Sharp and Dohme Rsch. Labs., Rahway, N. J. Home Add.: 120 Randolph Rd., Apt. 58, Plainfield, N. J. ORGANIC CHEMISTRY. b. Los Angeles, Calif., Oct. 13, 1932. s. Edwin A. and Lois (Lacy) H. Edn.: B.S., Univ. of Minn., 1954; Ph.D., Univ. of Calif. at Los Angeles, 1958. m. Diane Joy Cowan, June, 1955. c.: Rebecca; Christine. Exp.: Postdoc. Fellow, Imperial Coll., London, England, 1959-60; Sr. Chemist, Merck and Co., 1960—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma. Contbr. to: Jour. of the Am. Chem. Soc.

HENRY, Hugh Fort (Ph.D.), Chmn., Dept. of Physics, DePauw Univ., Greencastle, Ind. Home Add.: 404 Linwood Dr., Greencastle, Ind. PHYSICS: SPECIAL INTERESTS, RADIATION PROTECTION, NUCLEAR SAFETY, REACTOR THEORY AND ELECTRICAL DISCHARGE PHENOMENA. b. Emory, Va., Apr. 25, 1916. s. Howell Meadors and Addie Amanda (Fort) H. Edn.: B.A., B.S., Emory and Henry Coll., 1936; M.S., Univ. of Va., 1938; Ph.D., ibid., 1940. m. Emmaline Rust, Aug., 1942. c.: Hugh Littell; Margaret Fort; Howell George; Harold William. Exp.: Hd. Phys. and Math., Coll. of Ozarks, Clarksville, Ark., 1940-41; Assoc. Prof. Phys., Univ. of Ga., Athens, Ga., 1941-49; Hd. Safety Fire, Rad. Control, ORGDP, Union Carbide Nuclear Co., Oak Ridge, Tenn., 1949-61; Chmn. Phys. Dept., DePauw Univ., Greencastle, Ind., 1961—. Hon. Pos.: Vice-Chmn., Am. Stds. Assn. Com. N-7, "Radiation Protection"; Chmn., A.S.A. Subcom. N-73; Mem., A.S.A. Subcom. N-7.2, N-6.8; U. S. Delegate, Int. Stds. Org. Com. TC-85 in 1958, '60. Mem.: Am. Phys. Soc.; Am. Assn. Phys. Tchrs.; Health Phys. Soc.; Am. Nuclear Soc.; A.A.A.S.; Sigma Xi; R.E.S.A.; Rotarian; Elks. Contbr. to: Nuclear Sci. and Engr.; Jour. of Appl. Phys.; United States Pub. in Atomic Energy in TID- and K.- Series. Gen. Int.: Silver Beaver Award, BSA. Areas of Rsch.: Radiation Protection, Particularly in Dosimetry, Prevention of Internal Exposure, Organization for Control, Longevity Studies; Nuclear Safety, Particularly in Interaction, Summary and Evaluation of Data, and Organization for Control; Electrical Discharge Phenomena, Particularly on and in Liquids.

HENRY, Robert Malcolm, Aerospace Engineer, National Aeronautics and Space Admin., Langley Field, Va. Home Add.: Dare, Va. METEOROLOGY. b. Tallahassee, Fla., Mar. 2, 1923. s. Arthur M. and Lula (Hart) H. Edn.: B.S., Fla. State Univ., 1954; M.S., ibid., 1955. m. Betty Kerr, Mar., 1943. c.: Patsy Ann; Melissa Sue; Scott Malcolm. Exp.: Rsch. Asst., Fla. State Univ., Tallahassee, Fla., 1953-57; Aerospace Engineer, Natl. Aeronautics and Space Admin., Langley Field, Va., 1957—. Hon. Pos.: Joint Sci. Adv. Group, Meteorological Rocket Network. Mem.: Am. Meteorological Soc.; Am. Geophysical Union.; A.A.A.S. Contbr. to: Jour. of Meteorology; Jour. of Geophysical Rsch.; Quarterly Jour. of Fla. Acad. of Sci.; Fla. State Univ. Tech. Reports; Inst. of Aerospace Scis. Reports; N.A.S.A. Technical Notes. Serv. Rec.: U. S. Army, 1942-45; U. S. Air Force, 1947-53. Areas of Rsch.: Meterology and Climatology Applied to Aerospace Design and Operations; Spectra of Turbulence, Wind Measurements, Evaluation of Artificial Precipitation Experiments.

HENRY, Warren E. (Ph.D.), Staff Scientist, Lockheed Missiles and Space Co., Dept. 58-16, Building 202, Palo Alto, Calif. Home Add.: 2442 Benjamin Dr., Mt. View, Calif. PHYSICAL CHEMISTRY AND PHYSICS. b. Evergreen, Ala., Feb. 18, 1909. s. Nelson E. and Mattie V. (McDaniel) H. Edn.: B.S., Tuskegee Inst., 1931; M.S., Atlanta Univ., 1937; Ph.D., Univ. of Chicago, 1941. m. Dr. Jeanne Pearlson, April 6, 1957. c.: Eva Ruth. Exp.: Prin., Escambia Co. Training Schl., Atmore, Ala., 1931-34; Tchr. of Chem., Phys. and Radio, Tuskegee Inst., 1936-38, 1941-43; Assoc. Prof., Spelman Coll., 1943-46; Staff Scientist, Mass. Inst. of Tech., Radiation Lab., 1943-46; Rsch. Assoc., Univ. of Chicago, 1946-47; Acting Hd., Dept. of Phys., Morehouse Coll., 1947-48; Physicist, U. S. Naval Rsch. Lab., Washington, D. C., 1948-60; Staff Scientist, Lockheed Missiles and Space Co., Palo Alto, Calif., 1960—. Hon. Pos.: Chmn., Awards Bd., and Pres., Naval Rsch. Lab., Branch of the Scientific Rsch. Soc. of Am. Mem.: Am. Phys. Soc.; Fellow, Am. Assn. for the Adv. of Sci.; Scientific Rsch. Soc. of Am.; Soc. of the Sigma Xi; Inst. of Radio Engrs.; Am. Chem. Soc.; Philos. Soc. of Wash.; Wash. Acad. of Sci.; N. Y. Acad. of Sci.; Sigma Pi Sigma; Alpha Phi Alpha. Author: Procedures in Qualitative Chemical Analysis, 1937. Contbr. to: Physical Rev.; Jour. of Applied Physics; Rev. of Mod. Physics; Jour. de Physique et le radium; Rev. of Sci. Instruments; Jour. of the Japanese Phys. Soc. Areas of Rsch.: Cryogenics, Magnetism, Solid State Physics, Materials, Encouragement of Sci.

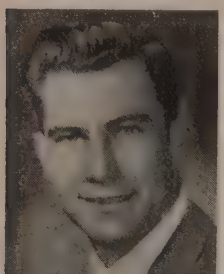


HENRY, Zachary Adolphus (Ph.D.), Asst. Prof., Agric. Engrng. Dept., Univ. of Tenn., Knoxville 16, Tenn. Home Add.: Route 1, Corryton, Tenn. AGRICULTURAL ENGINEERING. b. Stockbridge, Ga., Apr. 25, 1930. s. Walter Raleigh, Sr. and Annie Lou (Flake) H. Edn.: B.S.A.E., Univ. of Ga., 1951; M.S.A.E., Clemson Coll., 1959; Ph.D., N. C. Sta. Coll., 1962. m. Norma Rae Taylor, Dec. 19, 1953. c.: Zachary A., Jr.; Lydia Carol; Vera Lynn; Nathan Lee. Exp.: Constrn. Engr., E. I. du Pont de Nemours, Inc., Augusta, Ga., 1951-52; Irrigation Engr., Tri-Sta. Culvert and Mfng. Co., Decatur, Ga., 1955-57; Asst. Prof., Univ. of Tenn., 1961—. Hon. Pos.: Fellow of the Found. for Cotton Rsch. and Edn., 1957-58. Mem.: Am. Soc. of Agricl. Engrs.; Am. Soc. of Naval Engrs., Inc.; Am. Soc. for Engrng. Edn.; Am. Assn. for the Adv. of Sci.; Am. Assn. of Univ. Profs.; Gamma Sigma Delta; Sigma Xi. Serv. Rec.: U. S. Navy, 1952-55. Gen. Int.: Development of an Ultra-Sensitive Balance (less than 10^{-8} Grams) for Research. Areas of Rsch.: Experiments on Duct Losses

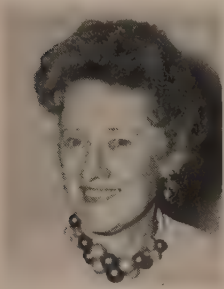
When Pneumatically Conveying Cotton, 1957-58 and Experiments on the Electrostatic Properties of the Cotton Fiber, 1958-62; Instrumentation for Agricultural Research.

HEPNER, Ray (M.D.), Prof., Peds., Univ. of Md. Hosp., Balt. 1, Md. Home Add.: 208 Midhurst Rd., Balt. 12, Md. THE NEWBORN INFANT, GROWTH, DEVELOPMENT, NUTRITION, PHYSIOLOGY. b. Fresno, Calif., Mar. 13, 1922. s. Walter R. and Frances (Keating) H. Edn.: B.S., Univ. of Chgo., 1943; M.D., ibid., 1944. m. Jean Harvey, Jan. 1, 1924. c.: Susan C.; James H.; Walter R., III; Richard H. Exp.: Res., Fellow, Instr. in Peds., Univ. of Chgo., Chgo., Ill., 1946-50; Asst. Prof. of Peds., Univ. of Tex., Galveston, Tex., 1950-52; Assoc. Prof., Peds., Univ. of Mo., Columbia, Mo., 1954-58; Prof., Peds., ibid., 1958-59; Prof., Peds., Univ. of Md., Hosp., 1959—. Hon. Pos.: Secy., Md. Chapt., Am. Acad. of Peds. Mem.: Soc. for Ped. Rsch.; Soc. for Exptl. Biol. and Med.; Am. Assn. Adv. Sci.; Midwest and So. Socs. for Ped. Rsch.; Am. Acad. Pediat.; A.M.A.; Sigma Xi. Contbrng Author: Section on the Newborn of DeLee's Obstetrics for Nurses; Sect. on Care of the Premature in Current Therapy, 1962. Contbr. to: Obstets. and Gynecol.; Peds.; Jour. of Peds.; So. Med. Jour.; Am. Med. Assn. Jour. of Dis. of Children; Jour. of the Am. Med. Assn. Serv. Rec.: U. S. Naval Reserve, 1944-46; U. S. Naval Reserve, 1952-54. Gen. Int.: Studies on the Relation of the Placenta and the Fetus, and Reflections of this Relationship on Neonatal Behavior and the First Year Growth. Areas of Rsch.: Neonatal and Fetal Physiology; Growth, Nutrition and Development in the First Year, Maternal Child Interactions, Fatty Acid Metabolism in Infant and Fetal Growth and Nutrition.

HEPWORTH, John Leonard (Mr.), Sect. Supvr., Thiokol Chem. Corp., Brigham City, Utah. Home Add.: 560 Holiday Dr., Brigham City, Utah. INORGANIC CHEMISTRY. b. Salt Lake City, Utah, Nov. 2, 1927. s. Peter L. and Flora V. (Burningham) H. Edn.: B.S., Univ. of Utah, 1952; M.S., Univ. of Idaho, 1957. m. Caryl Peterson, Mar. 19, 1951. c.: Dale; Diana; Vicki; Joseph; James. Exp.: Chemist, Gen. Elect. Co., HAPO, Richland, Wash., 1953-57; Sr. Rsch. Chemist, Am. Potash and Chem. Corp., Henderson, Nev., 1957-58; Sect. Supvr., Thiokol Chem. Corp., 1958—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Rocket Soc.; Delta Phi; Lions. Author: Effect of D-n-Butylphosphate on the Partition of Zirconium between 2, 2, 4, Trimethylpentane and Acqueous Solutions, 1957. Contbr. to: Ind. Eng. Chem. Serv. Rec.: U. S. Navy, 1946-47. Areas of Rsch.: Radiochemistry and Inorganic Chemistry Particularly in Partition of Fission Products between Organic and Aqueous Phases; Rheological Properties of Solid Rocket Propellants.



HERALD, Althea Conley (Mrs.), Dir., Teaneck Campus Library, Fairleigh Dickinson Univ., 1000 River Rd., Teaneck, N. J. Home Add.: 228 Woodland Rd., New Milford, N. J. LIBRARIAN COLLEGE OF DENTISTRY; LIBRARIAN COLLEGE OF ENGINEERING AND SCIENCE, INCLUDING DOCUMENTARY LIBRARY OF THE ATOMIC ENERGY COMMISSION. b. Rutherford, N. J., Mar. 29, 1904. d. David Van Beuren and Anna Freighly (Holman) Conley. Edn.: B.S. in Libr. Sci., Syracuse Univ., Schl. of Libr. Sci., 1926. m. Alvin L. Herald, 1928. Exp.: Reference Librn. and Cataloger of Development and Rsch. Libr., Am. Tel. and Tel. Co., 1926-28; Trustee, Rutherford Free Public Library, 1937-43; Head Librarian, Fairleigh Dickinson Jr. Coll., 1942-44; Hd. Librarian, Narberth Community Library, Narberth, Pa., 1950-54; Trustee, New Milford Free Public Library, 1954-62; Hd. Librarian, Fairleigh Dickinson Univ., Teaneck Campus, 1954—; Dir., Fairleigh Dickinson Univ. Library, Teaneck Campus, 1960—; Dental Librarian, ibid., 1956—; Instr. in Med. Rsch. and Bibliography Techniques, ibid., 1956—; Librarian, Documentary Library of the Atomic Energy Comm., 1960—; Hon. Pos.. Library Consult., on Four Bldgs. Including a Million Dollar Library started Nov., 1960; Designer, Library Floor Plans. Mem.. Am. Library Assn.; N.J.L.A.; Bergen and Passaic County L.A.; Med. Library Assn.; Bergen County Historical Soc.; Kappa Delta; D.A.R.; Natl. Button Soc.; Betsy Ross Soc.; Christ Episcopal Ch. Author: Processing Manual, 1961; A Pictorial Workbook of Catalog Cards, 1961. Gen. Int.: Professional visitation of Univ. Libraries of U. S. and Canada; Contributions as Library Consult.; Leader of Cataloging Work Shop; Lecturer to P.T.A. groups on the Relationship of the Public Library to the Schl. and Place of Trustee in the Public Service.



HERBER, Elmer Charles (Sc.D.), Prof. of Biol. and Chmn., Dept. Biol., Dickinson Coll., Carlisle, Pa. BIOLOGY. b. New Tripoli, Pa., Jan. 26, 1900. s. Alfred James and Amanda (Sieger) H. Edn.: A.B., Ursinus Coll., 1925; M.A., Univ. of Pa., 1929; Sc.D., Johns Hopkins Univ., 1941. m. Verna Weiss, June 15, 1929. c.: Charles Joseph. Exp.: Instr., Assoc. Prof., Prof. of Biol., Dickinson Coll., 1929—. Hon. Pos.: Pres., Pa. Acad. Sci.; Hon. Collaborator, Smithsonian Instn. Mem.: Am. Biol. Soc.; Pa. Acad. of Sci.; A.A.A.S.; Am. Soc. Parasitologists; Sigma Xi. Contbr. to: Jour. Parasitology; Proc. Pa. Acad. Sci.; Physiol. Zool. Special Int.: Physiol. of Parasites; Life Cycles of Parasites.

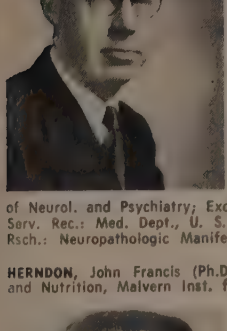
HERING, Alexander Chandlee (M.D.), Thoracic Surgeon, U. S. Naval Hosp., Chelsea 50, Mass. Home Add.: Qtrs. D, U. S. Naval Hosp., Chelsea 50, Mass. THORACIC AND CARDIOVASCULAR SURGERY; CLINICAL AND LABORATORY RESEARCH IN ADDITION TO PRACTICE. b. Baltimore, Md., July 18, 1917. s. Harold Brooks and Catherine (Chandlee) H. Edn.: B.S., Haverford Coll., 1940; M.D., Temple Univ., Med. Schl., 1943. m. Anne Osler, July 24, 1943. c.: Sheila Brooks; Bruce Chandlee Exp.: Res., Proctol., Temple Univ. Hosp., Phila., Pa., 1946-48; Res., Surgery, Peoples Hosp., Akron, Ohio, 1948-49; Res., Surgery, U. S. Naval Hosp., Bethesda, Md., 1949-51; Sr. Med. Officer, U. S. Naval Serv., Subic Bay, P. I., 1951-53; Staff Surgeon, U. S. Naval Hosp., Quantico, Va., 1953-55; Res., Thoracic Surgeon, ibid., St. Albans, N. J., 1955-57; Thoracic Surgeon, Dir. of Surg. Rsch. Lab., ibid., 1958-62; Thoracic Surgeon, ibid., Chelsea, Mass., 1960—. Hon. Pos.: Pres., Subic Bay Med. Soc., 1952; Chmn., Thoracic and Cardiovas. Conf., U. S. Naval Hosp., Chelsea, Mass. Mem.: Am. Med. Assn.; Am. Assn. for the Adv. of Sci.; Am. Thor. Soc.; F.A.C.C.P.; F.A.C.S.; Am. Fed. Clin. Rsch.; Cert. Am. Bd. Surg.; Am. Bd. Thor. Surg. Contbr. to: Armed Forces Med. Jour.; Surg. Gyn. and Obstet; Arch. Surg.; Jour. Thor. and Cardiovasc. Surg.; Surg. Clin. N. A.; Surg. Forum; Hosp. Topics; Vox Sanguinis; Yr. Book. Radio. Serv. Rec.: U. S. Navy, 1934—. Areas of Rsch.: Bronchopulmonary, Thoracic and Cardiovascular Diseases; Resident Training, General and Thoracic Surgery; Surgical Research Laboratory, Use of Heart-Lung Machines.

HERMAN, Samuel Sidney (D.D.S.), Prog. Coordinator and Hd., Foreign Grants and Awards, Office of Internatl. Rsch., Natl. Insts. of Hlth., Bethesda 14, Md. Home Add.: 4705 Chevy Chase Blvd., Chevy Chase 15, Md. PUBLIC HEALTH AND RESEARCH ADMINISTRATION. b. Boston, Mass., Oct. 29, 1917. s. Jacob and Annie (Leavitt) H. Edn.: A.B., Harvard Coll., 1940; D.D.S., Loyola Univ., Chgo., 1944; M.P.H., Yale Univ., 1948; Ph.D., ibid., 1950. m. Liselotte Vogt-Perl, May 27, 1954. c.: Hans Oliver; G. Nicholas. Exp.: Dent. Officer, Office of Indian Affairs, U. S. Dept. of Interior, Wash., D. C., 1946-47; Staff Officer, Div. of Pub. Hlth. Methods, U. S. Pub.. Hlth. Serv., 1950-52; Chf., Dent. Resources Planning Br., Div. of Dent. Resources, ibid., 1952-55; Asst. to Chf. Dent. Officer, ibid., 1955-56; Asst. Chf., Div. of Med. Servs. and Facilities, Office of Voc. Rehab., U. S. Dept. of Hlth., Edn. and Welf., 1956-57; Chf., ibid., 1957-59; Dir., Russian Scient. Transl. Prog. and Exec. Secy., Rad. Study Sect., Natl. Inst. of Hlth., 1959—. Mem.: Am. Assn. Adv. Sci; Am. Pub. Hlth. Assn., Fellow; Am. Dent. Assn.; Harvard Club of Boston; Harvard Club of Wash. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: History of Medicine, Internatl. Health, Public Health Administration, Research Organization and Administration, Rehabilitation Programs.

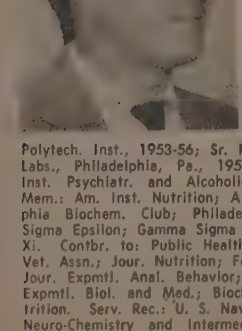
HERMANN, Howard T. (Mr.), Rsch. Assoc. in Electronic Systems, and Dept. of Biol., Mass. Inst. of Tech.; Instr., Lab., Harvard Med. Schl., Boston, Mass. Home Add.: 34 Prospect Park, Newtonville 60, Mass. NEUROPHYSIOLOGY AND PSYCHIATRY. b. Irvington, N. J., July 20, 1925. s. Simon J. and Rose (Goeller) H. Edn.: Cornell Univ.; Albany Med. Coll m. Deborah Katz, April 30, 1950. c.: Eric Rudolf; Peter Zadock; Andrew Stefan. Exp.: Rsch. Psychiatrist, Beth Israel Hosp., Boston, Mass., 1955-56; Asst. in Psychiatry, Mass. General Hosp., ibid., 1956 ; Neurophysiologic Rsch. Assoc., Dept of Biol. and Electronics Systems Lab., Mass. Inst. of Tech., 1960 ; Instr., Harvard Med Schl., Boston, Mass., 1956 -. Mem.: Internatl. Assn. of Biophysics; Boston Soc. for Rsch. in Psychiatry; Cert., Am. Bd. of Neurol. and Psychiat. (Psychiat.), Feb., 1955. Contbr. to: Nature; Kybernetics; Quart. Progress Reports; Rsch. Lab. of Electronics; Internatl. Congress of Biophysics. Serv. Rec.: U.S.A.R., 1952-55. Areas of Rsch.: Psychology of Pregnancy; Effect of Hormones on Behavior; Physiology of Photoreception; Systems Analysis of Reflex Behavior.

HERMANS, Jan J. (Ph.D.), Sr. Staff Scientist, Chemstrand Rsch. Ctr., Inc., Durham, N. C. Home Add.: 3510 Courtland Dr., Durham, N. C. PHYSICS AND CHEMISTRY OF POLYMERS AND FIBERS. b. Leiden, Netherlands, Nov. 1, 1909. s. Bernard J. and Maria E. (Sciaroni) H. Edn.: Ph.D., Leiden Univ., 1937. m. Auguste C. Bedet, 1931. c.: Jan. Exp.: Ramsay Mem. Fellow, Univ. Coll., London, England, 1938-39; Rsch. Asst., Phys. Dept., Agricl. Schl. of Technol., Wageningen, Netherlands, 1939-41; Rsch. Fellow, Peds. Hosp., Leiden Univ., Netherlands, 1941-42; Rsch. Chemist, Cellulose Rsch. Inst., Utrecht, Netherlands, 1942-46; Prof. of Phys. Chem., Univ. of Groningen, Netherlands, 1946-53; Prof. of Phys. Chem., Univ. of Leiden Netherlands, 1953-58; Dir. of Cellulose Rsch. Inst., Syracuse, N. Y., 1958-61; Sr. Staff Scientist, Chemstrand Rsch. Ctr., 1961—. Hon. Pos.: Rockefeller Fellow at Brklyn. Polytech. Inst., 1950-51; Visiting Prof. at Toronto Univ., Ont., Can., 1956-57. Mem.: Royal Acad. of Amsterdam; Faraday Soc.; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Scis.; Royal Dutch Chem. Soc.; Am. Chem. Soc. Author: Flow of Disperse Systems, 1953; Contbrng., Colloid Science, 1949; Contbrng., Deformation and Flow in Biological Systems, 1954. Contbr. to: Jour. Polym. Sci.; Jour. Chem. Phys.; Jour. Colloid Sci.; Jour. Phys. Chem.; Proc. Acad. Amsterdam; Trans. Faraday Soc.; Recueil Trav. Chim.; Physica; Kolloid Z.; Plastica; Jour. Appl. Polym. Sci.; Chem. Weekly. Areas of Rsch.: Diffusion of Electrolytes and Other Properties of Electrolyte Solutions, Electrokinetic Phenomena, Colloids, Spreading of Proteins, Physical Chemistry of Polymer Solutions, Thermodynamics of Solutions and Gels, Rubber Elasticity, Cellulosics.

HERMS, Frederick William (D.D.S.), Dentist, Box 4802, San Francisco, Calif. b. Brooklyn, N. Y., May 7, 1886. s. Frederick William and Martha (Boll) H. Edn.: D.D.S., Coll. of Physicians and Surgeons, San Francisco, Calif., 1906. m. Daphne Richards, Nov., 1940. c.: Frederick William. Exp.: Resident Dental Surgeon, Sou. Calif. State Hosp., 1914-17; Dental Examiner, Veterans Bureau, 1923-24; Chief of Dental Serv., Napa State Hosp., Calif., 1941-56; Engaged in Rsch., Calif., 1956—. Mem.: Am. Assn. Adv. of Sci.; Calif. Acad. of Scis.; Am. Acad. of Oral Med.; John Beard Rsch. Inst.; S. F. Microscopical Soc.; Calif. State Dental Assn.; Fellow, Am. Geog. Soc. Contbr. to: Jour. of Orthodontics of Oral Surgery; Am. Jour. of Orthodontics; Dental Digest; Jour. of the Calif. Dental Assn.; Digest of Neurol. and Psychiatry; Excerpta Medica, Amsterdam, Holland. Serv. Rec.: Med. Dept., U. S. Army, 1917-22, Major. Areas of Rsch.: Neuropathologic Manifestations in Oral Tissues.



HERNDON, John Francis (Ph.D.), Dir., Rsch. Labs., Biochemistry and Nutrition, Malvern Inst. for Psychiat. and Alcoholic Studies, Malvern, Pa. Home Add.: 302 Anderson Ave., West Chester, Pa. BIOCHEMIST; NUTRITIONIST. b. Macon, Ga., June 23, 1927. s. John Albert and Mary (McKay) H. Edn.: B.A., Mercer Univ., Macon, Ga., 1948; M.S., Ala. Polytechnic Inst., 1953; Ph.D., ibid., 1956. m. Marjorie Benson, July 10, 1948. c.: Therese; Mary; Elizabeth; Cynthia; Katherine; Marjorie M.; John Francis, Jr.; Veronica. Exp.: Biological Rsch. Aide, Communicable Dis. Ctr., U.S.P.H.S., Atlanta, Ga., 1948-51; Grad. Rsch. Asst., Dept., Poultry Husb., Ala. Polytech. Inst., Auburn, 1951-53; Dir., Fly and Mosquito Abatement Program, Auburn, Ala., summers, 1952-53; Rsch. Asst., Dept. Animal Nutrition, Ala. Polytech. Inst., 1953-56; Sr. Rsch. Sci., Smith Kline and French Labs., Philadelphia, Pa., 1956-59; Dir., Rsch. Labs., Malvern Inst. Psychiatr. and Alcoholic Studies, Malvern, Pa., 1959—. Mem.: Am. Inst. Nutrition; A.A.A.S.; Am. Chem. Soc.; Philadelphia Biochem. Club; Philadelphia Physiological Soc.; Gamma Sigma Epsilon; Gamma Sigma Delta; Phi Kappa Phi; Soc. Sigma Xi. Contbr. to: Public Health Reports; C.D.C. Bull.; Jour. Am. Vet. Assn.; Jour. Nutrition; Fed. Proc.; Mosquito News; Nature; Jour. Expmtl. Anal. Behavior; Am. Jour. Physiology; Proc. Soc. Expmtl. Biol. and Med.; Biochem. Pharm.; Am. Jour. Clin. Nutrition. Serv. Rec.: U. S. Navy, World War II. Areas of Rsch.: Neuro-Chemistry and Intermediary Metabolism.



HERPEL, Frederick Karl (M.D.), Radiologist, 1717 N. Flagler Dr., W. Palm Beach, Fla. Home Add.: 125 Claremont Lane, Palm Beach Shores, Fla. RADIOLOGY (MEDICAL PRACTICE). b. Reynoldsville, Pa., Feb. 2, 1893. s. Henry and Henrietta (Mendel) H. Edn.: A.B., Allegheny Coll., 1912; M.D., Johns Hopkins Univ., 1916. m.: Elizabeth Ketchin, Oct. 9, 1920. c.: Henry Ketchin; Gretchen H. Franklin. Exp.: Radiologist, Sacred Heart Hosp., Spokane, Wash., 1923-26; Radiologist, Good Samaritan Hosp., W. Palm Beach, Fla., 1926-48; Radiologist, St. Mary's Hosp., W. Palm Beach, 1940—; Radiologist, Bethesda Mem. Hosp., Boynton Beach, Fla., 1959—. Hon. Pos.: Past Pres., Fla. Med. Assn.; Past Pres., Fla. Radiological Soc. Mem.: Fellow, Am. Coll. of Physicians; Fellow, Am. Coll. of Radiology; Am. Roentgen Ray Soc.; Radiological Soc. of N. Am.; Assn. of Milit. Surgeons; Alpha Chi Rho; Phi Chi; Rotary; Diplomate, Am. Bd. of Radiology. Contbr. to: Jour. Fla. Med. Assn.; Am. Jour. Roentgenology; Radium Therapy and Nuclear Med.; Radiology; Military Surgeon. Serv. Rec.: U. S. Army, 1917-22, 1942-45. Area of Rsch.: Radiology.

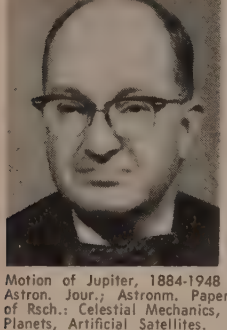
HERRICK, Curtis James (Prof.), Assoc. Prof., Chmn., Dept. of Psychol., Hartwick Coll., Oneonta, N. Y. Home Add.: 9 Taft Ave., Oneonta, N. Y. EXPERIMENTAL PSYCHOLOGY. b. Phila., Pa., June 8, 1926. s. A. Curtis and Alta (Shollenberger) H. Edn.: A.B., Franklin and Marshall Coll., 1945; M.A., Univ. of Pa., 1950. m. Lois Shetler, June 16, 1951. c.: Craig Jeffrey; Kevin Shetler. Exp.: Chmn., Dept. of Psych., Bloomfield Coll. and Theol. Seminary, Bloomfield, N. J., 1950-53; Instr., Bates Coll., Lewiston, Me., 1953-55; Asst. Prof., R. I. Coll. of Edn., Providence, R. I., 1955-60; Assoc. Prof., Hartwick College, 1960—; Chmn., Dept. of Psychol., ibid., 1961—. Hon. Pos.: Pres., R. I. Guid. and Personnel Assn.; Secy. Treas., R. I. Psychol. Assn.; Chmn., R. I. Comm. on Tchr. Edn. and Profl. Stands.; Pres., Otsego Psychol. Assn.; Pres., Oneonta Community Chest. Mem.: Am. Assn. for the Adv. of Sci.; Am. Psychol. Assn.; Eastern Psychol. Assn.; Pa. Psychol. Assn.; Am. Pers. and Guid. Assn., Life Mem.; Am. Edn. Rsch. Assn.; Assn. Higher Edn.; Am. Assn. Univ. Profs.; Phi Delta Kappa, Life Mem.; Psi Chi; Iota Alpha Delta; Kiwanis; Masons; Shrine. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Cert. Psycholt., Bd. of Exmrs. of Psycholts. of Me.; Cert. Psycholt., Pa., R. I., Psychol. Assns. Areas of Rsch.: Physiological Psychology; Bioelectronic Recording, specifically, the Determination of Behavioral Correlates of Muscle Action Potentials in the Areas of Human Thought, Imagery and Perception.

HERRMANN, Cal C. (Mr.), Rsch. Chemist, Chromizing Corp., 12536 Chadron Ave., Hawthorne, Calif. Home Add.: 1023 Prospect Ave., Hermosa Beach, Calif. CHEMISTRY. b. E. Chicago, Ind., Oct. 9, 1930. s. Cedric C. and Rebecca (Firebaugh) H. Edn.: A.B., Univ. of Chicago, 1951; S.M., ibid., 1956. m. Jean Lani Kwon, June 17, 1961. c.: Alice Kamakaokalani. Exp.: Rsch. Chemist, Am. Med. Assn., Chicago, Ill., 1956-57; Rsch. Chemist, Univ. of Chicago, 1957-60; Rsch. Chemist, Truesdail Labs., Los Angeles, Calif., 1960-61; Rsch. Chemist, Chromizing Corp., Hawthorne, Calif., 1961—. Mem.: Ill. State Acad. of Sci.; A.A.A.S.; Am. Phys. Soc.; Fed. of Am. Scientists. Areas of Rsch.: Instrumentation; Refractory Compounds; Structural Chemistry.

HERRMANN, Ernest Carl, Jr. (Ph.D.), Hd., Virus Lab. of Microbiol. Sect., Mayo Clinic, Rochester, Minn. Home Add.: 2007 33rd Street, N.W., Rochester, Minn. VIROLOGY. b. Elkhart, Ind., Jan. 1, 1925. s. Ernest Carl and Catherine J. (Brostrum) H. Edn.: B.S., Univ. of Md., 1950; M.S., ibid., 1951; Ph.D., ibid., 1953. m. Doris Ruth Ripple, Dec. 22, 1951. Exp.: Rsch. Assoc., Inst. of Microbiol., Rutgers Univ., 1953-54; Hd., Virus Lab., E. R. Squibb & Sons, N. Brunswick, N. J., 1954-55; Hd., Virus and Tissue Culture Lab. and Sr. Virologist, Schering Corp., Bloomfield, N. J., 1955-61; Consultant in Virology, Mayo Clinic, Rochester, Minn., 1961—. Mem.: Am. Soc. of Microbiol.; A.A.A.S.; Soc. Exp. Biol. and Med.; N. Y. Acad. Scis.; Tissue Culture Assn.; Sigma Xi. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Jour. Bacteriology; Am. Jour. Physiol.; Advances in Med. Virology; Jour. Immunology. Serv. Rec.: U. S. Seabees, 1943-46. Areas of Rsch.: Antiviral Agents, Chemoprophylaxis and

Chemotherapy of Viral Diseases; Antibiotics; Antiviral Antibiotics—Detection and Assay Techniques; Tissue Culture Techniques as Applied to Virus Studies; Viral Interference, Virus Neurotoxins and Pneumotoxins; Antiviral Polysaccharides, Studies of Common Cold Viruses; Diagnostic Virology.

HERTZ, Hans G. (Ph.D.), Astronomer, AST-AeroSpace Technolg., N.A.S.A., Goddard Space Flight Ctr., Greenbelt, Md. Home Add.: 2112 Fla. Ave., N. W., Wash. 8, D. C. CELESTIAL MECHANICS. b. Gottingen, Germany, Aug. 8, 1915. s. Paul and Helene (Markiel) H. Edn.: Hamburg Univ., 1937; Ph.D., Yale Univ., 1941. Exp.: Asst. Rsch. Fellow, to Rsch. Asst. (Instr.), Yale Univ., New Haven, Conn., 1940-43; Jr. Astron. to Assoc. Astron., U. S. Naval Observ., Wash., D. C., 1943-58; Astronomer, U. S. Army Map Serv., ibid., 1958-60; Astronomy, N.A.S.A., Goddard Space Flight Ctr., 1960—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Astron. Soc.; Am. Math. Soc.; Math. Assn. of Am.; Assn. for Comp. Mach.; Am. Geophys.; Internatl. Astro-Union; Sigma Xi; Wash. Philos. Soc. Author: The Motion of Jupiter, 1884-1948 and Mass of Saturn. Contbr. to: Astron. Jour.; Astronm. Papers of the Am. Ephemeris. Areas of Rsch.: Celestial Mechanics, Orbit Theory, Perturbations, Minor Planets, Artificial Satellites.



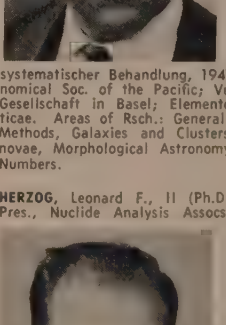
HERTZBERG, Martin (Ph.D.), Physical Chemist, Republic Aviat. Corp., Farmingdale, N. Y. Home Add.: 79 Silber Ave., Bethpage, N. Y. PHYSICAL CHEMISTRY; REACTION KINETICS; ATOMIC AND MOLECULAR PHYSICS; COMPOSITION OF UPPER ATMOSPHERE: SPECTROSCOPY. b. N. Y. N. Y., Jan. 23, 1930. s. Morris and Edith (Waldman) Wiener. Edn.: B.A., N. Y. Univ., 1949; Ph.D., Stanford Univ., 1959. m. Ruth Schein, May 6, 1951. c.: Lawrence Edward; Eric Paul; Alan David; Russell Andrew; Coralyn Jill. Exp.: Rsch. Scient., Lockheed Missiles and Space Co., Palo Alto, Calif., 1956-61; Lectr., Sci. and Maths., C. W. Post Coll. of L. I. Univ., Brookville, N. Y., 1962—; Phys. Chemist, Repub. Aviat. Corp., 1961—. Hon. Pos.: Advry. Comm., Stanford Rsch. Inst. Symp. on Chem. Reactions in the Lower and Upper Atmosphere, San Francisco, Calif., 1961. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Am. Geophys. Union; Phi Beta Kappa; Phi Lambda Upsilon. Contbr. to: Jour. of Chem. Phys.; Jour. of Atmospheric and Terrestrial Phys.; Jour. of Geophys. Rsch. Serv. Rec.: U. S. Navy, 1953-56. Areas of Rsch.: Physical Chem.; Chemical Kinetics; Atmospheric Composition; Spectrometry; Optical Masers.

HERVEY, George Washington (Sc.D.), Consulting Statistician, 2347 S. Meade St., Arlington 2, Va. STATISTICAL ANALYSIS WITH ESPECIAL REFERENCE TO THE USE OF BLOOD AND BLOOD DERIVATIVES. b. Corona, Queens Co., N. Y., Dec. 27, 1892. s. William Calvin and Hannah Jane (Smith) H. Edn.: B.S., Rutgers Univ., 1915; A.M., Univ.of Mo., 1920; Sc.D., Harvard Univ., 1927. m. Helen Merrill Roy. Oct. 23, 1926. c.: Helen Jane H. Hobson; George Merrill. Exp.: Chf. Statistician, U. S. Personnel Classification Bd., Wash., D. C., 1926-28; Sr. Statistician, U.S.D.A., 1928-35; Principal Statistician, ibid., 1935-41; Liaison Officer, Army Specialist Corps, 1942; Chf. Operational Analyst, Off. of the Surg. Gen., U. S. Army, 1946-47; Natl. Dir. of Statistics, Blood Program, Am. Red Cross, Wash., D. C., 1947-58; Consulting Statistician, Joint Blood Coun., 1958-60. Mem.: A.A.A.S.; Am. Stat. Assn.; Biometric Soc.; Lambda Chi Alpha; Sigma Xi; Masons; Army-Navy Country Club; Reserve Officers Assn. of the U. S. Contbr. to: Jour. Am. Med. Assn.; Am. Jour. Med. Sci.; Am. Jour. Pub. Health. Serv. Rec.: U. S. Army, W. W. I. Gen. Int.: Rec'd. Army Commendation Ribbon for Manpower Surveys of Milit. Installations, 1945; Rec'd. Certificate of Appreciation by Secy. of War for Special Surveys of Army General Hospitals (in civilian capacity), 1946; one of Original Founding Staff of Am. Red Cross Blood Program, 1947. Areas of Rsch.: Statistics, Biology (Blood and Blood Derivatives).

HERZBERG, Fred (D.D.S.), Staff Spec., Dept. of Anatomy, Univ. of Calif. Med. Schl., Los Angeles, Calif. Home Add.: 5818 Jumilla Ave., Woodland Hills, Calif. CLINICAL DENTISTRY. b. Chicago, Ill., Jan. 7, 1910. s. Dr. B. L. and Ida (Weintraub) H. Edn.: B.S., Northwestern Univ., 1932; D.D.S., ibid., 1932; M.S., Univ. of Ill., 1939. m. Anne Leggett, Sept. 19, 1931. c.: Andrea; Charlotte; Helene. Exp.: Instr., Histology, Univ. of Ill., 1937-41; Assoc., Oral Anatomy and Comparative Dental Anatomy, In Charge, Univ. of Ill. Dental Schl., 1940-41; Dir., Dental Museum, Univ. of Ill. Dental Schl., 1940-41; Private Practice, Dentist, Van Nuys, Calif., 1962; Staff Spec., Univ. of Calif., 1962—. Hon. Pos.: Fellow, Gerontological Soc.; Carnegie Fellow, 1938-41. Mem.: A.A.A.S.; Gerontological Soc.; Sigma Xi; Omicron Kappa Upsilon. Contbr. to: Jour. of Dental Rsch.; Jour. Am. Dental Assn.; Anatomical Record; Jour. Dental Edn.; Jour. of Gerontology; Am. Jour. Orthodontia and Oral Surgery; Milit. Surgeon. Serv. Rec.: U. S. Army, 1941-47. Areas of Rsch.: Growth; Aging; Pain.

HERZBERGER, Max J. (Mr.), Sr. Rsch. Assoc., Eastman Kodak Co., Rochester, N. Y. Home Add.: 186 Augustine St., Rochester, N. Y. GEOMETRIC OPTICS. b. Berlin, March 7, 1899. s. Leopold and Sonja (Berent) H. Edn.: Ph.D., Berlin 1923, Friedrich Wilhelms Univ. Hon. Deg.: Ph.D., Berlin, 1923. m. Edith Kaupmann, May 31, 1925. c.: Ruth; Hans; Ursula. Exp.: Hd. of Calculation Bureau, Ernst Leitz, Wetzlar, Germany, 1925-28; Sci. Asst. to the Dir., Carl Zeiss, Jena, Germany, 1928-34; Sr. Rsch. Assoc. in charge of Optical Rsch., Eastman Kodak Co., Rochester, N. Y., 1935-62. Hon. Pos.: Mem., Bavarian Acad. of Sci.; Fellow of Optical Soc. and A.A.A.S.; Recipient of Cressy Morrison Prize, 1942; Recipient of Ives Medal of the Optical Soc. of Am., 1962. Mem.: Optical Soc.; Math. Soc.; Math. Assn. of Am.; Sigma Xi; Deutsche Optische Gesellschaft. Author: Strahlenoptik, 1931; Modern Geometrical Optics, 1958. Contbr. to: Jour. of the Optical Soc. of Am.; Optica Acta; Optik; Trans. of the Am. Math. Soc.; Jour. of the Franklin Inst.; Proc., Natl. Acad. of Sci.; German Optical and Math. Jour. Serv. Rec.: German Armed Forces, 1917-19. Areas of Rsch.: Geometric Optics, Developments of the Ideas of Hamilton and Grassman, Applications to the Fields of Math. and Physics.

HERZOG, Emil Rudolf (Ph.D.), Sr. Rsch. Asst., Astrophysics, Calif. Inst. of Technology, Pasadena, Calif. Home Add.: 426 Heather Heights, Monrovia, Calif. ASTRONOMY, MATHEMATICS, PHYSICS. b. Basel, Switzerland, Mar. 18, 1917. s. Emil and Bertha (Goetschin) H. Edn.: Dr. Phil. II (Ph.D.), Univ. of Basel, 1947. m. Gertrud Steiner, Nov. 21, 1946. c.: Adrian D. Exp.: Tchr., Inst. Athenaeum, Basel, Switzerland, 1946-49; Tchr., ibid., 1951-56; Sr. Rsch. Asst. Calif. Inst. of Tech., Pasadena, Calif., 1949-51, 1956—. Mem.: Am. Astronomical Soc.; A.A.A.S.; Astronomical Soc. of the Pacific; Calif. Acad. of Sci.; Naturforschende Gesellschaft in Basel; Swiss Math. Soc.; Sigma Xi. Author: Catalogue of Galaxies and of Clusters of Galaxies, 1961; Die Methoden der Astronomisch-Geographischen Ortsbestimmung in systematischer Behandlung, 1947. Contbr. to: Pub. of the Astronomical Soc. of the Pacific; Verhandlungen der Naturforschenden Gesellschaft in Basel; Elemente der Mathematik; Acta Arithmeticae. Areas of Rsch.: General Astronomy, Astronomical Geodetic Methods, Galaxies and Clusters of Galaxies, Novae and Supernovae, Morphological Astronomy, Celestial Mechanics; Theory of Numbers.



HERZOG, Leonard F., II (Ph.D.), Chmn. of Bd., Nuclide Corp., Pres., Nuclide Analysis Assocs., Box 752, State College, Pa.; Assoc. Prof., Geochem., Dept. of Geophys. and Geochem., Pa. State Univ., Univ. Park, Pa. Home Add.: 257 S. Osmond St., State College, Pa. NUCLEAR GEOPHYSICS AND COSMOCHEMISTRY. b. Syracuse, N. Y., June 17, 1926. s. Leonard F., (dec.) and Alma E. (Jillson) H. Edn.: B.S., Calif. Inst. of Technology, 1948; C.C.E., Ore. State Coll., 1945; Ph.D., Mass. Inst. of Technology, 1952. m. Elisabeth Moffitt, June 18, 1955. c.: Leonard, III; Heather. Exp.: Director, Nuclear Geophysics Lab., M.I.T., 1952-56; Pres., Nuclide Analysis Assocs., State Coll., Pa., 1954—; Asst. Prof., Pa. St. Univ., 1956-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: Chmn. A.S.T.M. E-14 Subcom. VII Analysis of Solids by Mass Spectroscopy; U.S.A.E.C. Advisory Comm. on Uranium Isotope Ratio Measurements. Mem.: Am. Soc. for Metals; Physical Soc.; Geol. Soc. of Am.; Am. Geophysical Union; Semiconductor Analytical Grp.; Meteoritical Soc.; Geochem. Soc.; Ephebian Soc. of Los Angeles; Tau Beta Pi; Sigma Xi; Alpha Chi Sigma. Contbr. to: Rev. Sci. Instrum; Analytical Chem.; Geochemica et Cosmochemica Acta; Annals, N. Y. Acad. of Sci.; Geophysics; Trans. A.G.U.; Bull. Geol. Soc. of Am.; Sci.; Bull., Am. Assn. Petrol. Geol.; Am. Jour. of Sci. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Nuclear Geophysics; Mass Spectroscopy; Solid State Technology; Geological Age Determination; Cosmochemistry.

HESS, Sidney Marvin (Ph.D.), Sr. Rsch. Scientist, Squibb Inst. for Med. Rsch., New Brunswick, N. J. Home Add.: 98 Jefferson Rd., Princeton, N. J. PHARMACOLOGIST AND BIOCHEMIST; BIOCHEMICAL PHARMACOLOGY. b. New Brunswick, N. J., Aug. 24, 1916. s. Abraham and Fanny (Lipshitz) H. Edn.: B.S., Ill. Univ., 1940; M.S. Georgetown Univ., 1950; Ph.D., ibid., 1952. m. Doris Rush, 1941. c.: Arthur; Marjorie. Exp.: Pharm. and Biochemist, Food and Drug Admin., Wash., D. C., 1948-54; Pharmacolst., Natl. Insts. of Hlth., Bethesda, Md., 1954-61; Sr. Rsch. Scit., E. R. Squibb and Sons, 1961—. Hon. Pos.: Chmn., Biochem., Pharmacol. Discussion Grp. Mem.: Soc. Exptl. Biol. and Med.; Am. Assn. for the Adv. of Sci.; Amer. Soc. for Pharm. and Exptl. Therapts.; Am. Chem. Soc. Contbr. to: Jour. Pharmacol. and Exptl. Theraps.; Experientia; Arcs. Internationales Pharmacodynamie; Biochem. Pharmacol. Serv. Rec.: U. S. Air Force, 1942-46. Areas of Rsch.: Biochemistry, Pharmacology and Drug Metabolism.

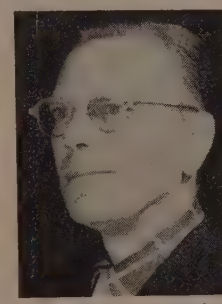
HESSE, Stanley H(all) (Mr.), Pres., Marstan Chem. Lab., Bethlehem, Pa. Home Add.: 2245 Edgewood Ave., Bethlehem, Pa. ORGANIC SYNTHESES OF THIOPHENES, PYRIDINES. SYNTHESIS OF GERMICIDES AND DETERGENTS. b. Yonkers, N. Y., July 22, 1917. s. Ernest and Mabel (Hall) H. Edn.: B.A., Columbia Univ., 1939; B.S., Univ. of Minn., 1941; M.S., Lehigh Univ., 1962. m. Marion Reichard, Jan. 1, 1944. c.: Bruce Stanley; Glenn Ernest; Gail Linda. Exp.: Sci. Instr., Hartwick Coll., 1941-42; Prof. Chem., Northland Coll., 1942-44; Grad. Asst., Univ. of Rochester, 1944-45; Chemist, Pyridium Corp., Yonkers, N. Y., 1945-46; Instr. Chem., Lafayette Coll., 1946-47; Rsch. Chem., General Aniline and Film, Easton, Pa., 1947-58; Sr. Rsch. Chem., Koppers Co., Pittsburgh, Pa., 1958; Pres., Marstan Chem. Lab., Bethlehem, Pa., 1958—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Malocological Union; Sigma Nu; P.T.A. Contbr. to: 5 patents in field. Areas of Rsch.: Organic Syntheses in Heterocycles, Synthesis of Germicides, Alpha Sulfo Fatty Esters, Phosphates, Azo Salts and Couplers; Pilot Plant Synthesis of Intermediates and Polymers.

HESSEL, Frederick A. (D.Sc.), Mgr. Commercial Rsch., Gen. Aniline and Film Corp., 111 W. 50th St., N. Y. C. Home Add.: 100 Clarewill Ave., Montclair, N. J. ORGANIC CHEMISTRY. b. Antwerp, Belgium, May 13, 1898. s. Louis and Adrienne (Spelten) H. Edn.: M.S., Meurice Inst. of Chem., 1922; Grad. Petrol. Inst., Univ. of Strassburg, France, 1923; D.Sc., ibid., 1924. m. Mary Hinrichs, Aug. 23, 1930. c.: Adrienne. Exp.: Statistician, Riter and Co., N. Y. Investment Bankers, 1936-39; Patent Negotiator, Ellis Foster Co., Montclair, N. J., 1939-53; Pres., Montclair Rsch. Corp., 1941-53; Mgr., Commercial Rsch., Gen. Aniline and Film Corp., 1953—. Hon. Pos.: Natl. Treas., Am. Inst. of Chem., 1943—. Mem.: Am. Inst. Chem.; Am. Chem. Soc.; Am. Rocket Soc.; Chemist's Club of N. Y.; Montclair Golf Club. Co-Author: Chemistry in Warfare, 1941; Strategic Materials in Hemisphere Defense, 1942. Serv. Rec.: U. S. Army, W. W. I. Areas of Rsch.: Organic Chemistry; Secondary Recovery of Petroleum.

HESSELTINE, H(enry) Close (M.D.), The Mary Campan Ryerson Prof. of Obs. and Gyn., Univ. of Chicago, 5841 Maryland Ave., Chicago 37, Ill. OBSTETRICS AND GYNECOLOGY (SPECIAL RESEARCH IN MICROBIOLOGY IN OBSTETRICS AND GYNECOLOGY). b. Near Promise City, Ia., May 10, 1901. s. Henry Elmer and Arminda Alice (Close) H. Edn.: B.S., Univ. of Ia., 1923; M.D., ibid., 1925; M.S., ibid., 1928. m. Grayce Chapman of N. English, Ia., Dec. 19, 1925. c.: Glen C., Marvin H. Exp.: Internship and Res., Univ. of Ia., 1925-30; Instr. in Obs. and Gyn., Univ. of Ia., 1927-30; Assoc., ibid., 1930-31; Instr. Obs. and Gyn., Univ. of Chicago, 1931-34; Asst. Prof., ibid., 1934-42; Assoc. Prof. in Obs. and Gyn., Univ. of Chicago, 1942-48; Prof. and Sec., Dept. of Obs. and Gyn., ibid., 1948-58; Mary Campau Ryerson Prof. Obst. and Gyn., 1958—. Hon. Pos.: Consult., Manpower Conserv. Com., 1951-52; Trust., Ill. Med. Serv. Plan; Blue Shield, 1947—, V.-Pres., 1960-61, 1961-62, 1962-63; Chmn., Coun. (Bd. of Trus.), Ill. St. Med. Soc., 1956-58; Natl. Speaker, Bur. A.M.A., 1960—. Mem.: Joint Com., A.M.A.-A.H.A. Medico-legal Edn. Comm., 1957-61; Exec. Com. Clinic Conf.; Chic. Med. Soc., 1955-59; A.A.A.S.; Am. Gyn. Soc.; Am. Venereal Dis. Soc.; A.A.Ob. & G.; Soc. Gyn. Invest.; Pres., Chicago Gyn. Soc.; Chicago Med. Soc.; Diplomate, Am. Bd. of Obstet. and Gyn.; Fellow, A.M.A., Vice-Chmn., Sect. Obst. and Gyn., 1959-60, Chmn., ibid., 1960-61; Fellow, Soc. Exptl. Biol. and Med.; Ill. St. Med. Soc.; Am. Soc. Microbiol.; Soc. of Ill. Bacteriol.; Sigma Xi; A.O.A. Alum.; Editor, Bull. of Maternal Welfare, 1953-57; Central Travel Club; Univ. of Iowa Alum. Club of Chicago; Quadrangle. Contbr. to: Obs. and Gyn., Vol. I and II, 1940, by Adair: Current Therapy, 1951, '55; Textbook of Surg., by Christopher; Am. Jour. of Obs. and Gyn.; Jour. of Am. Med. Assn. Travel: Can.; Mex.; Cent. Am. Listed in: Who's Who in Med.; A.M.S.; Who's Who in Chicago and Ill.; Dir. of Med. Specialists; Who's Who in Am.

HETHERINGTON, Duncan Charteris (M.D.), Prof. Anat., Duke Hosp., Durham, N. C. TISSUE CULTURE AND MICROSCOPIC ANATOMY. b. Aug. 8, 1895, Denver, Colo. s. Thompson Duncan and Anne (Welch) H. Edn.: A.B., Colo. Coll., 1919; M.A., Univ. of Ill., 1920; Ph.D., ibid., 1922; M.D., Johns Hopkins Med. Schl., 1926. Exp.: Instr., Histol. and Neuroanat., Med. Schl., Vanderbilt, 1926-30; Assoc. Prof., Anat., Schl. Med., Duke Univ., 1930-45; Prof., 1945—. Hon. Pos.: Mem. of Comm. on Admissions, Duke Univ. Schl. Med.; Fellow of A.A.A.S.; Charter Mem. of Amer. Soc. of Parasitol.; Am. Assn. of Anatomists; Mem., Biol. Stain Comm.; Exec. Mem. of Tissue Culture Comm., Secy.-Treas. of Tissue Culture Assn.; Mem.: Soc. Exptl. Biol. and Med.; Soc. for Cell Biol.; Nu Sigma Nu; Sigma Xi; Phi Beta Kappa; Alpha Omega Alpha. Author: Ill. Biological Monographs, 1927; Scientific Articles on Tissue Culture and Histological Tech. Ph.D. Dissertation: Some Comparative Features of Nematodes and Their Significance. Travel: British Isles; France. Hobby: Books. Listed in: A.M.S.; Am. Young Men; Who's Important in Med.; Who's Who in Am. Med.; Who's Who Among Physicians and Surgeons; Who's Who in N. C.

HETRICK, Lawrence Andrew, (Ph.D.), Prof. of Entomol., Univ. of Fla., Gainesville, Fla. Home Add.: 1624 N.W. 12th St., Gainesville, Fla. ENTOMOLOGY. b. Harrisburg, Pa., Feb. 9, 1910. s. Lawrence A. and Nelle (Matthew) H. Edn.: B.A., Am. Univ., 1931; M.S., La. State Univ., 1932; Ph.D., Ohio State Univ., 1951. m. Willie Post, 1935. c.: Lawrence A., III; Carl Post; William Matthew; Anne Rebecca. Exp.: Asst. Entomologist, Va. Agrir. Expt. Sta., Blacksburg, Va., 1938-46; Rsch. Asst., Ohio State Univ., 1946-47; Prof., Univ. of Fla., 1947—. Hon. Pos.: Chmn., Sou. Forest Insect Workers; Secy., Fla. Entomological Soc. Mem.: Entomological Soc. of Am.; Entomological Soc. of Washington, D. C.; Assn. of Southeastern Biologists; Phi Kappa Phi; Sigma Xi; Phi Sigma; Xi Sigma Pi. Contbr. to: Jour. of Econ. Entomol.; Fla. Entomologist; Forest Sci.; Proc. of Entomological Soc. of Wash. Areas of Rsch.: Forest Entomol.



HEUSER, Gustave Frederick (Ph.D.), Prof. Emeritus Poultry Husbandry, Cornell Univ., Ithaca, N. Y. POULTRY HUSBANDRY. s. Gustave Frederick and Louise (Tenjost) H. Edn.: B.S., Cornell Univ., 1915; M.S.A., ibid., 1916; Ph.D., ibid., 1918. m. Mabel Catherine Bohall of Lowville, New York, 1918. d. Mr. and Mrs. Elton Bohall. m. Mildred Lind Livingston of Livingston, Wis., 1940. d. Mr. and Mrs. Robert N. Livingston. c.: Gustave F., Jr.; Elton Bohall; Richard Allen; Arthur Robert; Robert Livingston. Exp.: Instr., N. Y. St. Coll. of Agri., 1916-18; Asst. Prof., ibid., 1918-22; Prof., ibid., 1922-57; Emeritus Prof., ibid., 1957—. Mem.: Sigma Xi; A.A.A.S.; A.A.U.P.; Poultry Science Assn.; Ed., Poultry Sci., 1936-41; World's Poultry Sci. Assn., Secretary-Treasurer, 1923-58; Ed., World's Poultry Sci. Jour., 1945-57; Officer, du "Merite Agricole" Govt. of France, 1951; Acacia; Hobasco Lodge 716, F. and A.M., Master, 1934; Chmn., Local Boy Scout Troup. Author: Feeding Poultry, 1946, 2nd Ed., 1955 (John Wiley and Sons, N. Y.); Poultry Management, Heuser, Hall and Bruckner, 1952, (J. B. Lippincott Co., Chicago). Contbr. to: Poultry Sci.; Jour. of Nutrition; Editor, Poultry Sci.; World's Poultry Sci. Jour. Ph.D. Dissertation: Growth and Development of the Domestic Fowl with Special Reference to the Male. Travel: Europe; Canada; U. S.; Mexico; Alaska. Recreations and Hobbies: Photography. Special Int.: Animal and Poultry Nutrition.

HEYDE, Martha Bennett, (Ph.D.), Rsch. Assoc., Tchrs. Coll., Columbia Univ., N. Y., N. Y. Home Add.: 140 Cabrini Blvd., N. Y. 33, N. Y. COUNSELING PSYCHOLOGY. b. New Bern, N. C., Jan. 31, 1920. d. George Spotswood Bennett and Kate (McIntosh) B. Edn.: A.B., Barnard Coll., Columbia Univ., 1941; M.A., Tchrs. Coll., Columbia Univ., 1949; Ph.D., ibid., 1959. m. Ernest Richard Heyde, 1946. Exp.: Instr., Tchrs. Coll., Columbia Univ., 1953-60; Asst. Rsch., ibid., 1957-60; Assoc. Rsch., ibid., 1960—. Hon. Pos.: Mem., Women's Interest Comm., Natl. Vocl. Guid. Assn. Mem.: Sigma Xi; Pi Lambda Theta; Kappa Delta Pi. Contbrng. Author: The Vocational Maturity of Ninth Grade Boys, 1960. Areas of Rsch.: Vocational Development.

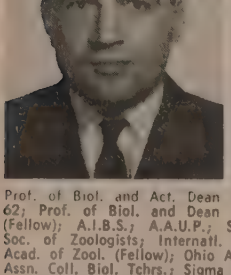
HEYL, George Richard (Ph.D.), Assoc. Prof. of Geol., State Univ. of N. Y. Coll. at New Paltz, N. Y. Home Add.: New Paltz, N. Y.

ECONOMIC GEOLOGY AND PETROLOGY. b. Allentown, Pa., May 30, 1909. s. Allen V. and Emma L. (Kleppinger) H. Edn.: B.Sc., Pa. State Univ., 1932; M.A., Princeton Univ., 1934; Ph.D., ibid., 1935. m. Thelma C. Tate, 1937. c.: Emma Jean T.; Richard A. A. Exp.: Geologist, Geological Survey of Newfoundland, 1935-37; Instr. in Geol., Rutgers Univ., 1935-37; Geologist, Standard Oil Co., of Calif., 1937-40; Asst. State Geologist of Ark., 1940-41; Consulting Geologist, Little Rock, Ark., 1941-42; Geologist, U. S. Geological Survey, 1942-48; Rsch. Geologist and Chief Surface Geologist, Creole Petroleum Corp., Caracas, Ven., 1948-55; Mgr. of Expoloration, Frome-Broken Hill Co., Melbourne, Australia, 1955-59; Assoc. Prof. of Geol., State Univ. of N. Y., Coll. of Edn., 1959—. Mem.: Fellow, Geological Soc. of Am., Fellow, Mineralogical Soc. of Am.; Fellow, A.A.A.S.; Fellow, Am. Geographical Soc.; Mem., Soc. of Econ. Geologists; Mem., The Geochem. Soc.; Am. Assn. of Petroleum Geologists; Soc. de Ciencia Natural, Caracas; Australian Inst. of Mining and Metallurgy; Sigma Xi; Alpha Chi Sigma; Sigma Gamma Epsilon; Phi Eta Sigma; Phi Kappa Phi; Commonwealth Club of Calif. Co-author: Copper in California, 1948. Contbr. to: Bull. of the Geological Soc. of Am.; Calif. Jour. of Mines and Geology; Proc. of the Geological Soc. of Am.; Government Publications. Gen. Int.: Expert Geologist for U. S. War Dept.; Travelled Widely Through the Hinterland of Northern South Am., and Also Through the Deserts of Central Australia, Observing the Aborigines and Their Customs. Areas of Rsch.: Genetic Relations of Ore Deposits; Stratigraphy and Tectonics of Central and Eastern Australia; Geothermal Gradients and Geologic Structure; Evaluation of Mineral Deposits.

HICKS, Arthur Meredith (Mr.), Assoc. Prof. of Chem., La Grange Coll., La Grange, Ga. Home Add.: 302 Pk. Ave., La Grange, Ga.

ORGANIC CHEMISTRY. b. Atlanta, Ga., Nov. 29, 1917. s. Dr. Claude B. and Florence Viola (Meredith) H. Edn.: A.B., Emory Univ., 1940; M.S., ibid., 1941; Grad. Work, Rutgers Univ. and Auburn Univ., Ala. m. Catherine Werner, Feb. 27, 1943. c.: Claude Bernard; Frank Sharp; Joseph Eugene; Sue Meredith. Exp.: Chemist, Johnson and Johnson, New Brunswick, N. J., 1943-45; Chemist, Graton and Knight Co., Worcester, Mass., 1945-50; Assoc. Prof. of Chem., La Grange Coll., 1950—. Mem.: The Am. Chem. Soc.; Phi Lambda Upsilon; Delta Phi Alpha; Pi Alpha. Areas of Rsch: Symmetrically Disubstituted Guanidines; Organophosphorus Compounds.

HICHAR, Joseph K. (Ph.D.), Schl., Parsons Coll., Fairfield, Iowa. Home Add.: 702 W. Filmore St., Fairfield, Iowa. BIOLOGY, PHYSIOLOGY, NEUROPHYSIOLOGY, ZOOLOGY. b. Allentown, Pa., Aug. 5, 1928. s. Nicholas and Paraska (Fenyo) H. Edn.: B.S., Univ. of Pittsburgh, 1950; M.S., Pa. State Univ., 1952; Ph.D., Harvard Univ., 1958. m. Barbara J. Gill, Dec. 25, 1955. c.: Joseph Kenneth, II; Mark Nicholas Gill. Exp.: Asst. Prof. Biol., Moravian Coll. for Women, Bethlehem, Pa., 1952-53; Asst. Prof., Assoc. Prof. Sci., State Univ. of N. Y., 1953-55; Teaching Fellow, Rsch. Assoc., Harvard Univ., 1955-58; Asst. Prof. Zoology, Ohio Wesleyan Univ., 1958-60; Assoc. Prof., Biol., Parsons Coll., Fairfield, Iowa, 1960; Prof. of Biol. and Dean of the Grad. Schl., ibid., 1960-61; Prof. of Biol. and Act. Dean of Coll. of Arts and Scis., 1961-62; Prof. of Biol. and Dean of Sci., 1962—. Mem.: A.A.A.S. (Fellow); A.I.B.S.; A.A.U.P.; Sigma Xi; Biophysical Soc.; Am. Soc. of Zoologists; Internatl. Federation for Med. Electronics; Acad. of Zool. (Fellow); Ohio Acad. Sci.; Ia. Acad. Sci.; Midwest Assn. Coll. Biol. Tchrs.; Sigma Phi Epsilon; Nu Sigma Sigma; Chi Beta Phi; Beta Beta Beta. Contbr. to: Medical Electronics; Jour. Cellular and Comparative Physiol.; Anatomical Record; Midland Am. Naturalist; Sci. Edn.; Nature. Serv. Rec.: U. S. Army, Reserves, 1950—. Gen. Int.: Held U. S. Pub. Health Training Grant and Rsch. Grant; also Natl. Sci. Fnd. Grant. to Present Paper at Internatl. Meeting in Paris; Awarded Grant (Natl. Rsch. Council—Natl. Acad. Sci.) to present paper in Stockholm and attend Internatl Congress Biochem. in Moscow, 1961. Areas of Rsch.: Neurophysiology and Neuropharmacology-Central Nervous System Electrical Activity, Influence of Drugs on Nervous Activity, Chemical Analysis of Nervous Tissue.



HICKS, Billy Ferrell (Mr.), Tchr., Sci. and Math., Magnolia Jr. H. S., Magnolia, Ark. Home Add.: P. O. Box 311, Magnolia, Ark.

GENERAL SCIENCE AND BIOLOGY. b. El Dorado, Ark., Aug. 12, 1930. s. Ferrell Farris and Oliva Marvell (Lookadoo) H. Edn.: B.A., Ouachita Bap. Coll., 1956; B.S., Henderson State Tchrs. Coll., 1960. m. Anna Bee Gillaspie, Jan. 25, 1952. Exp.: Asst. Engr., Ark. Hwy. Dept., Arkadelphia, Ark., 1955; Scout Coach and Tchr., Laura Connor H. S., Augusta, Ark., 1956-57; Minister, Mission First Baptist Church, Augusta, Ark., 1956-57; Tchr., Newport H. S., Newport, Ark., 1957-59; Tchr., Magnolia Jr. H. S., Magnolia, Ark., 1959; Tchr., Sci. and Math., ibid., 1962—. Hon. Pos.: Pres., Jackson County Tchrs. Assn.; Mem. of Excute Comm., Columbia Co. Tchrs. Assn. Mem.: Am. Assn. for the Adv. of Sci.; Columbia County Tchrs. Assn.; N.E.A.; A.A.A.S. Contbr. to: A.E.A.; N.E.A.; A.A.A.S.; World of Sci. Serv. Rec.: U. S. Army, 1952-60. Areas of Rsch.: How Science has affected the Field of Edn.; Rsch. for Ways and Means to Create a Greater Interest in Sci. and Math. for Jr. High and High Schl. Ages.

HICKS, R(ussell) Lowell (Ph.D.), Prof. of Chem., Lincoln Chiropractic Coll., Indianapolis, Ind. Home Add.: 1130 E. Jefferson St., Franklin, Ind.

CHEMISTRY. b. Johnson Co., Ill., July 27, 1913. s. Hugh Hill and Sallie Elizabeth (Fergus) H. Edn.: B.Ed., So. Ill. Univ., 1934; M.S., Univ. of Ill., 1936; Ph.D., ibid., 1939. m. Mabel Ackerman, Apr. 5, 1942. c.: Sharon Lou; Linda Sue. Exp.: Prof., Head, Sci. Div., Franklin Coll., 1944-55; Assoc. Prof., Mo. Schl. of Mines and Metallurgy 1955-56; Sci. Instr., Bd. of Schl. Comm., Indianapolis, Ind., 1956-62; Prof., Chem., Lincoln Chirop. Coll., 1962—. Mem.: Sigma Xi; Phi Lambda Upsilon; Am. Chem. Soc.; Am. Assn. Adv. Sci.; Ind. St. Tchrs. Assn.; Indianapolis Edn. Assn.; Alpha Chi Sigma. Areas of Rsch.: Dyes and Dye Intermediates, Organic Sulfur in Manufactured Gas.

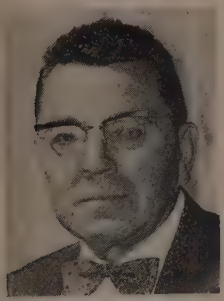
HIEDEMANN, Egon A(lfred) (Ph.D.), Rsch. Prof. of Physics, Mich. State Univ., East Lansing, Mich. ULTRASONICS. b. February 1, 1900, Cologne, Ger. s. Hans and Mathilde (Hilgers) H. Edn.: Ph.D., Univ. Goettingen, 1921. m. Ruth Weichert of Allenstein, Ger., Feb. 29, 1944. d. Otto and Margarete Weichert. c.: Robert; Annette. Exp.: Asst., Phys. Dpt., Univ. of Cologne, 1922-31; Priv. Doz., ibid., 1931-38; Assoc. Prof., ibid., 1938-41; Prof., Hd. of Dept., Strasburg Univ., 1941-45; Prof., Head of Dpt., Karlsruhe Inst. Tech., 1946; Dean, ibid., 1946; Lectr., U.S.D.A., Wash., D. C., 1950; Hd., Dept. Physics and Astron., Mich. State Univ., 1950-54. Mem.: Sigma Chi; Sigma Pi Sigma; Phi Kappa Phi; Fellow, Acoust. Soc. Amer. and Amer. Phys. Soc. Travel: Europe; U. S. Hobby: Philosophy. Listed in: W.W.W.; W.W.A.; A.M.S. Special Int.: Ultrasonics, Colloidal Physics, Molecular Physics.

HIENTON, Truman Edward, Chief, Farm Electrification Branch, Agr. Engrng. Rsch., Div. Agric. Rsch. Serv., U.S.D.A., Beltsville, Md. Home Add.: 6203 Carrollton Terrace, Hyattsville, Md.

AGRICULTURAL ENGINEERING. b. Cuyahoga County, May 31, 1898. s. Earle Jesse and Alice Jane (Giddens) H. Edn.: B.S., Ohio State Univ., 1921; B.S., Iowa State Coll., 1926; M.S., ibid., 1937. Hon. Degrees: A.E., Ohio State Univ., 1938; D.Sc., Purdue Univ., 1950. m. Hazel Haskell (dec.); Louise Joyner, March 19, 1939. c.: Mrs. W. G. Frantzreb; Mrs. W. F. Benjamin. Exp.: Asst. Extension Agric. Engr., Univ. of Nebr., 1921-23; Extension Agric. Engr., Purdue Univ., 1924; Agric. Engr., Purdue Univ. Agric. Experiment Sta., 1925-46; Chief, Farm Electrification Branch, Agr. Engrng. Rsch., Div. Agric. Rsch. Service, U. S. Dept. of Agriculture, 1946. Hon. Pos.: Chmn., Rural Electric Division, Amer. Soc. of Agric. Engrs., 1932-33; Scientific Manpower Commission, 1954-55. Mem.: A.I.E.E.; Wash., D. C. Soc. of Engrs.; Am. Soc. of Agric. Engr.; A.A.A.S.; Acacia; Alpha Zeta; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Kiwanis. Sr. Author: Electricity for Agricultural Engineers, 1954, 1958. Contbr. to: Jour. of Am. Soc. of Agric. Engr.; U. S.

Dept. Yearbook. Serv. Rec.: U.S.A. Areas of Rsch.: Application of Electric Energy to Farm Problems. In Charge of Such Research at Purdue University, 1925-41.

HIERGESELL, Val (Mr.), Pres., H-B Instrument Co., Philadelphia 40, Pa. Home Add.: 1067 Holly Tree Rd., Abington, Pa. THERMOMETRY. b. Stuetzerbach Thueringen, Germany, Jan. 9, 1898. s. Edward and Linna (Kessler) H. m. Bernice May Jacobs, June, 1938. c.: Edward David; Barbara May. Exp.: Pres., H-B Instrument Co., Phila., Pa., 1934—. Mem.: Royal Meteorological Soc. of London, England; Mason; Lions. Author: Precision Laboratory Thermometers. Contbr. to: Instrument Soc. of Am.; Am. Medical Assn.; Am. Soc. for Testing and Materials; Scientific Apparatus Makers of Am.; International Standards Organization. Areas of Rsch.: Precision Thermometry and Hydrometry.



HIESEY, William McKinley (Ph.D.), Plant Biologist, Carnegie Inst. of Wash. Dept. of Plant Biol., Stanford, Calif. Home Add.: 455 Marion Ave., Palo Alto, Calif. EXPERIMENTAL TAXONOMY; PLANT PHYSIOLOGY. b. Denver, Colo., Aug. 21, 1903. s. Alexander and Caroline (Imobersteg) Heusi. Edn.: B.S., Univ. of Calif., Berkeley, 1929; Ph.D., ibid., 1940. m. Louise S. Boogaert, Dec. 22, 1935. c.: Ralph William; Elaine Louise. Exp.: Asst., Carnegie Inst., Wash., 1926-33; Part-time Mem. of Staff, ibid., 1934-39; Staff Mem., Plant Biolog., ibid., 1940—. Mem.: Botan. Soc. of Amer.; Amer. Soc. of Plant Physiolog.; Amer. Soc. Naturalists; Amer. Soc. Plant Taxon.; Western Soc. Naturalists, (Pres., 1957); Calif. Bot. Soc. (Pres., 1956); Soc. for Study of Evolution; Soc. for Study of Growth; A.A.A.S.; Phi Beta Kappa; Alpha Zeta. Co-author: Exptl. Studies on the Nature of Species Vol. I, 1940; Vol. II, 1945; Vol. III, 1948; Vol. IV, 1958. Contbr. to: Am. Jour. Botany; Bot. Rev.; Evolution; Am. Naturalist. Gen. Int.: Mary Soper Pope Award, 1949. jointly with Dr. Jens Clausen and Dr. David D. Keck. Areas of Rsch.: Plant cytogenetics, experimental ecology, comparative physiology of ecological races and species of plants.

HIGBEE, Edna Randol (Ph.D.), Prin., Hd. of Biol. Home Add.: 2845 Broadway Ave., Pittsburgh 16, Pa. EXPERIMENTAL MORPHOLOGY, ZOOLOGY—BIOLOGY. b. Castle Shannon, Pa., May 16. d. Leander and Martha (Randol) H. Edn.: B.S., Univ. of Pitts., 1921; M.S., ibid., 1927; Ph.D., ibid., 1936. Exp.: Tchr., Publ. Schl., Confluence, Pa., 1923-24; Tchr., St. John Acad., Petersburg, W. Va., 1924-26; Asst. Biol., Univ. of Pitt., 1926-32; Lectr. and Secy. Biol., ibid., 1936-43; Prin., Hd. of Biol. and Dean of women, Univ. Schl., Pgh., Pa., 1944—. Hon. Pos.: Vice-Pres., N.A.B.T., 1955; Fellowship Chmn., Pitt. Br., A.A.V.W.; Pres., Greater Pittsburgh Biol. Club. Mem.: A.A.A.S.; N.A.B.T.; Am. Zool. Pa. Acad. of Sci.; Natl. Deans and Women Counsellors; Pa. Deans and Counsellors; Alpha Xi Delta; Delta Kappa Gamma; A.A.U.W.; Administrative Women.

HIGGINS, George Kendall (M.D.), Dir., Dept. of Med. Tech., N. Y. City Comm. Coll., Brooklyn, N. Y. Home Add.: 5 Seely Pl., Scarsdale, N. Y. PATHOLOGY. b. Minneapolis, Minn., May 11, 1904. s. Mathew B. and Anna (Kuchenbecker) H. Edn.: B.S., Univ. of Minn., 1925; M.D., ibid., 1928; M.S., ibid., 1940; Ph.D., ibid., 1943. m. Vivian Mayland, 1927. c.: George Kendall; Mary Ann. Exp.: Instr. in Path., Univ. of Minn., 1936; Asst. Prof. of Pathol., ibid., 1939-44; Dir. of Labs., Glen Lake Sanatorium, 1936-44; Prof. of Path., Hd. of Dept., N. Y. Med. Coll., 1944-49; Dir., Dept. of Med. Tech., N. Y. City Comm. Coll., 1949—; Path., Pack Med. Group, 1945—; Dir. Labs., N. Y. Eye and Ear Infirmary, 1950—. Mem.: Am. Assn. of Path. and Bacteriol.; Am. Assn. of Clinical Path.; N. Y. Acad. of Sci.; N. Y. Acad. of Med.; N. Y. State Soc. of Path.; Sigma Xi. Co-Author: Cancer Reference Work, 1957. Areas of Rsch.: Cancer Rsch.

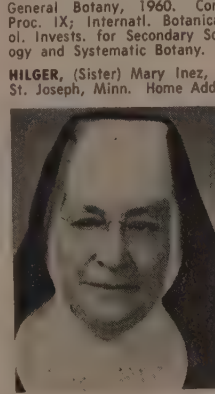
HIGGINS, Norton Allen (Ph.D.), Lab. Dir., Dacron Rsch. Lab., E. I. du Pont de Nemours and Co., Inc., P. O. Box 800, Kinston, N. C. Home Add.: 1900 St. George Pl., Kinston, N. C. ORGANIC CHEMISTRY, POLYMER CHEMISTRY. b. Cushing, Okla., Oct. 24, 1920. s. Thomas A. and Lena (Koetsch) H. Edn.: B.S., Okla. A. and M. Coll., 1942; Ph.D., Univ. of Ill., 1948. m. Betty Kahrs, 1945. c.: Georgia; Charles. Exp.: Chemist, duPont, Buffalo, N. Y., 1942-45; Special Asst., Office Rubber Reserve and Reconstr. Finance Corp., Urbana, Ill., 1945-48; Rsch. Chemist, Du Pont, Buffalo, N. Y., 1948-50; Rsch. Supvr., ibid., Wilmington, Del., 1950-54; Rsch. Mgr., ibid., 1954-55; Lab. Dir., ibid., 1955-60; Lab. Dir., ibid., Kinston, N. C., 1960—. Mem.: Am. Chem. Soc.; Phi Lambda Upsilon; Phi Kappa Phi; Sigma Xi; C. of C. Contbr. to: Jour. of Polymer Sci.; Jour. of Am. Chem. Soc. Areas of Rsch.: Synthetic Fibers; Condensation Polymers.

HIGLEY, Henry G(rant) (Mr.), Dir. of Rsch. and Chmn., Dept. of Chiropractic, Glendale, Calif. Home Add.: 201 Palatine Dr., Alhambra, Calif. MATHEMATICAL STATISTICS; BIOMETRICS. b. Lima, Peru, June 11, 1903. s. Henry G. and Rosario (Andrade) H. Edn.: B.A., Univ. of Guadalajaia, Mex., 1924; M.S., Los Angeles Coll. of Chiropractic, 1951; Univ. of Sou. Calif., 1953-57; M.S., Univ. of Nuero Leon, Mex., 1957. m. Mary Bavin, Aug., 1931. c.: Henry G. Exp.: Dir. of Rsch. and Chmn., Dept. of Physiol., Los Angeles Coll. of Chiropractic, 1948—; Dir., Dept. of Rsch. and Statistics, Natl. Chiropractic Assn., 1959—; Stat. Analyst, Ghormley and Assoc., 1952-56; Sta. Analyst, Vitamin-erals, Inc., 1956-57. Mem.: Am. Assn. for Adv. of Sci.; Am. Stat. Assn.; Biometric Soc.; Sou. Calif. Acad. of Sci.; Inst. of Mathl. Stats. Co-Author: General Chemistry, 1938. Author: Monograph, The Intervetebral Disc Syndrome, 1960. Areas of Rsch.: Mathematical Statistics; Test Validation; Experimental Design; Nonparametric Methods and Application to Biology; Design and Evaluation of Results of Clinical Studies of "The Intervertebral Disc Syndrome."

HILBISH, Theodore Frederick (M.D.), Chf., Diagnostic X-Ray Dept., The Clinical Ctr., N.I.H., Bethesda, Md. Home Add.: 2 West Dr., Bethesda 14, Md. RADIOLOGY. b. Bristol, Ind., Dec. 15, 1910. s. Frederick Jonathan and Mary Evelyn (Congdon) H. Edn.: Ph.C., Purdue Univ., 1932; B.S., Ind. Univ., 1935; M.D., ibid., 1937; M.P.H., Univ. of Mich., 1946. m. Jenny Margaret Lundin, July 1935. c.: Mrs. Sharon Lee H. Lynskey; Robert Thomas. Exp.: Commissioned Officer, U.S.P.H.S., Wash., D. C., 1938—; Chief of Radiol. Sect., Div. of Tuberculosis, ibid., 1947-49; Resident in Radiol., Johns Hopkins Univ. Hosp., 1949-52; Chf. Resident in Radiol. ibid., 1951-52; Instr. in Radiol., Johns Hopkins Univ., 1951-57; Chief, Diagnostic X-Ray Dept., Clinical Ctr., N. I. H., Bethesda, Md., 1952—; Asst. Prof. of Radiol., Johns Hopkins Univ., 1957—; Radiologist, Hosp., ibid., 1951—; Radiological Consultant, Walter Reed Hosp., Wash., D. C., 1960—; Radiological Consultant, Naval Med. Ctr., Bethesda, Md., 1961—. Mem.: Am. Coll. of Radiol., Fellow; A.M.A.; N. Am. Radiological Soc.; Am. Roentgen Ray Soc.; Radiol. Alumni Assn.; Johns Hop-A.M.A. Arch. of Int. Med.; Am. Jour. of Med.; Am. Jour. of Human Genetics; Annals of Int. Med. Areas of Rsch.: Cooperative clinical research conducted in fields of cancer, heart, arthritis, neurology, and infectious disease.

HILFERTY, Frank Joseph (Ph.D.), Prof. of Botany and Chmn. Dept. of Biological Scis., St. Coll. at Bridgewater, Mass. Home Add.: 52 South St., Bridgewater, Mass. SYSTEMATIC BOTANY AND BRYOLOGY. b. Medway, Mass., July 31, 1920. s. Thomas Henry and Mary Ann (Evans) H. Edn.: B.S., St. Coll. at Bridgewater, 1942; Ph.D., Cornell Univ., 1952. Exp.: Sci. Instr., Millis H. S., Millis, Mass., 1942-46; Asst. Prof. of Biol., St. Tchrs. Coll., Farmington, Me., 1946-52; Assoc. Prof. of Biol., St. Coll., Salem, Mass., 1952-54; Prof. of Botany and Chmn. Dept. of Biological Scis., St. Coll. at Bridgewater, 1954—. Mem.: Bot. Soc. Am.; Am. Soc. Plant Taxonomists; Am. Bryological Soc.; British Bryological Soc.; A.I.B.S.; Internatl. Assn. for Plant Taxonomy; Sigma Xi; A.A.U.P. Co-Author: General Biology Laboratory Manual, Part I—General Botany, 1960. Contbr. to: Rhodora; The Bryologist; Proc. IX; Internatl. Botanical Congress; Am. Biology Tchr.; Biol. Invests. for Secondary Schl. Students. Areas of Rsch.: Bryology and Systematic Botany.

HILGER, (Sister) Mary Inez, Special Lectr., Coll. of St. Benedict, St. Joseph, Minn. Home Add.: St. Benedict's Convent, St. Joseph, Minn. CULTURAL ANTHROPOLOGY. b. Roscoe, Minn., Oct. 16, 1891. d. F. W. and Elizabeth (Terres) H. Edn.: B.A., Univ. of Minn., 1923; M.A., Catholic Univ. of Am., 1925; Ph.D., ibid., 1939. Exp.: Tchr. of 8th Grade, Cathedral Grade Schl., St. Cloud, Minn., 1911-14; Tchr. and Supvr. of Studies, Cathedral H. S., 1914-20; Tchr. and Supvr. of Studies, St. Mary's Acad., Altoona, Wis., 1920-24; Hd. of Dept. of Sociol., Coll. of St. Benedict, 1925-32; Dean of Coll., ibid., 1925-29 Instr. in Sociol., Psychol., and Psychiatry in Schls. of Nursing Affiliated with St. Cloud Hosp., Minn., 1939-57, St. Alexius Hosp., Bismarck, N. D., Mercy Hosp., Charlotte, N. C.; Lectr. in Sociol. and Psychol., Staff of Supvs., St. Cloud Hosp., 1940; Lectr. in Psychol., Tchrs. of Catholic Schls.,

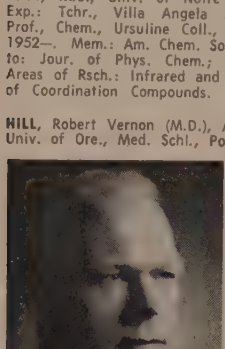


Charlotte, N. C., 1944; Lectr. in Psychiatry, Prof. and Instrs., Belmont Abbey Jr. Coll., N. C., 1944; Instr. in Applied Psychol., Schl. of Anesthesia, St. Cloud Hosp., 1954; Lectr. in the Psychol., Sociol., and Anthropol. of Child Life, Instituto Social Leon XIII, Affiliate of the Univ. of Madrid, Spain, 1955; Instr. in Anthropol. of the Americas over Channel 2, Station KTCA-TV, Minn. Pvt. Coll. Hour, 1957-58; Instr. in Social Anthropol. in Grad. Schl. Studies Program, St. Joseph Coll., summer, West Hartford, Conn., 1960; Lectr. on the Visiting Lectures Program of Am. Anthropol. Assn., 1960-61. Hon. Pos.: Hon. Rsch. Assoc. of the Smithsonian Inst.; Mem. of Exec. Coun. of the Am. Catholic Sociol. Soc. Mem.: Am. Anthropol. Assn.; Catholic Anthropol. Conf.; A.A.A.S.; Catholic Anthropol. Assn.; Instituto Indigenista Interamericano; Minn. Acad. of Sci.; Am. Benedictine Acad.; Fellow, A.A.A.S.; Fellow, Am. Anthropol. Assn.; Hon. Mem., Delta Epsilon Sigma. Author: Chippewa Child Life and Its Cultural Background, 1951; Arapaho Child Life and Its Cultural Background, 1952; Araucanian Child Life and Its Cultural Background, 1957; Field Guide to the Ethnological Study of Child Life, 1960. Contbr. to: Primitive Man; Minn. Conservationist; Records of the Am. Hist. Soc.; N. Dak. History. Gen. Int.: Anna Hope Hudson Scholarship, Catholic Univ. of Am.; Recipient of Award Granted by Am. Cath. Sociol. Soc. in 1958, "In Recognition of Outstanding Rsch. in the Field of Sociol."; Cath. Univ. Alumni Assn. Award in Sci. and Rsch., 1961; Ethnol. Field Work Among 17 N. Am. Indian Tribes and Among the Araucanians of Chile and Argentina. Areas of Rsch.: Ethnological Studies of Child Life Among Am. Indians.

HILL, Charles Chase (Mr.), Rsch. Asst., (Ret.), Natl. Rsch. Coun., Wash., D. C. Home Add.: R.D. 2, Dover, Pa. ENTOMOLOGY. b. Melrose, Mass., July 13, 1890. s. Charles B. and Harriet (Mendum) H. Edn.: B.Sc., Univ. of Mass., 1914. m. Gertrude Sloane, Sept. 6, 1914. c.: Mrs. Karolyn H. Jones. Exp.: Entomolt., U. S. Dept. of Agric., Tenn., 1914-17; Chg. of Ent. Rsch. Sta., Carlisle, Pa., 1925-42; ibid., Rsch. Ctr., Beltsville, Md, 1942-52; Rsch. Asst., Natl. Rsch. Coun., (Ret.), 1952-57. Hon. Pos.: Mem., Emeritus Entomol. Soc. of Am. Mem.: Am. Assn. for the Adv. of Sci.; Ent. Soc. of Am. Contbr. to: Procs. Ent. Soc. of Wash.; Jour. of Agric. Rsch.; U.S.D.A. Bull.; Pa. Dept. of Agric. Bull.; Agron. Jour.; Jour. of Econ. Ent.; U.S.D.A. Circular. Gen. Int.: Study of the Parasites which Attack the Hessian Fly; Publication of a Method of Estimating Damage to Winter Wheat by the Hessian Fly. Areas of Rsch.: Cereal and Forage Crop Insect Investigation; Habits and Morphology of Hymenopterous Parasites which Prey on the Insect Pests of Wheat and Barley; Cultivation of Insect Resistance in Wheat and Barley.

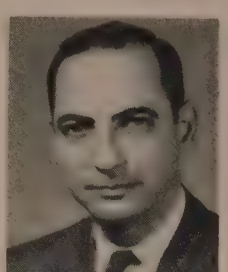
HILL, Mary Ann Gertrude (Sister), O.S.U. (Ph.D.), Hd., Dept. of Chem., Ursuline Coll. for Women, Cleveland, Ohio. CHEMISTRY. b. Cleveland, Ohio, Mar. 15, 1922. d. William and Gertrude (Kuehner) H. Edn.: B.S., Ursuline Coll. for Women, 1944; M.S., Univ. of Notre Dame, 1952; Ph.D., ibid., 1957. Exp.: Tchr., Villa Angela Acad., Cleveland, Ohio, 1944-46; Prof., Chem., Ursuline Coll., 1946-52; Hd., Chem. Dept., ibid., 1952—. Mem.: Am. Chem. Soc.; Albertus Magnus Guild. Contbr. to: Jour. of Phys. Chem.; Proc. of the Ind. Acad. of Sci. Areas of Rsch.: Infrared and Ultraviolet Absorption Spectroscopy of Coordination Compounds.

HILL, Robert Vernon (M.D.), Asst. Clin. Prof. of Ophthalmology, Univ. of Ore., Med. Schl., Portland, Ore. Home Add.: 722 Lone Oak Rd., Longview, Wash. MEDICINE, OPHTHALMOLOGY. b. Portland, Ore., Feb. 26, 1915. s. Carl C. and Leona (Matthews) H. Edn.: B.S., Ore. St. Univ., 1936; M.D., Univ. of Ore., 1939. m. Margaret Dannals, Sept. 14, 1941. c.: Dennis; Robert; Judith; Matthew. Exp.: Rsch. Assoc. and Asst. Clin. Prof., Univ. of Ore., 1948—. Mem.: A.A.A.S.; Soc. of Indus. and Applied Math.; Am. Assn. for Rsch. in Ophthalmology; Am. Bd. of Ophthalmology; A.M.A.; I.R.E.; Phi Sigma; Kappa Kappa Psi. Contbr. to: Am. Jour. of Ophthalmology; A.M.A.; Archives of Ophthalmology; Elect. Serv. Rec.: U. S. Navy, 1941-46. Areas of Rsch.: Math. Analyses of Binocular Vision, Development of Electronic Instruments for Rsch. and for Clinical Practice in Ophthalmology.



HILTIBRAN, Robert Comegys (Ph.D.), Assoc. Biochemist, Ill. St. Natural History Survey, Urbana, Ill. Home Add.: 608 E. Wash. St., Urbana, Ill. BIOCHEMISTRY. b. Urbana, Ohio, Sept. 24, 1920. s. Issac Lester and Sarah Elizabeth (Comegys) H. Edn.: B.S., Denison Univ., 1948; M.S., Univ. of Kan., 1951; Ph.D., ibid., 1954. m. Lois Marie Armstrong, Nov. 22, 1945. c.: Robert Glen; Cheryl Marie; Karen Kaye. Exp.: Rsch. Biochemist, Vet. Admin. Hosp., Hines, Ill., 1953-55; Postdoc. Fellowship, Dpt. of Agricl. Biochem., Columbus, Ohio, Ohio St. Univ., 1955-57; Assoc. Biochem., Aquatic Biol. Sect., Nat. History Survey, 1957—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Soc. of Plant Physiolts.; Am. Fisheries Soc.; Weed Soc. of Am.; Sigma Xi; The Wildlife Soc. Contbr. to: Jour. of the Am. Chem. Soc.; Weeds. Serv. Rec.: U.S.A.A.F., 1942-45. Areas of Rsch.: Biochemistry of Fish; Aquatic Weed Control.

HILLSON, Charles James (Ph.D.), Asst. Prof. of Botany, The Pa. St. Univ., Univ. Park, Pa. Home Add.: 320 E. Whitehall Rd., State College, Pa. PHYTOMORPHOLOGY. b. Monroeville, Ohio, Dec. 18, 1926. s. Charles Thomas and Clara (Egle) H. Edn.: B.S. in Arts, Bowling Green St. Univ., 1950; B.S. in Edn., ibid., 1950; M.S., Univ. of Miami, 1952; Ph.D., The Pa. St. Univ., 1957. m. Patricia Fulmer, August 2, 1958. c.: Carolyn Ann. Exp.: Instr., Botany, Pa. State Forestry Schl., 1954-56; Instr., Pa. St. Univ., 1956-57; Asst. Prof., Botany, ibid., 1957—. Mem.: Am. Botanical Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Phi Epsilon Phi; Beta Beta Beta; State College Elks. Author: Introductory Botany, 1959. Contbr. to: Am. Jour. of Botany; Ohio Conservation Bull.; Turtox News. Serv. Rec.: U.S.A.A.F., 1945-46. Areas of Rsch.: Floral Morphology of the Labiatae; Comparative Anatomy of Brown Algae.



HILTON, Wallace Atwood (Ed.D.), Prof. and Hd., Dept. of Physics, William Jewell Coll., Liberty, Mo. Home Add.: 322 Arthur, Liberty, Mo. ACOUSTICS. b. Ruby Clare and Mary Elizabeth (Atwood) H. Edn.: A.B., Wm. Jewell Coll., 1933; A.M., Mo., 1939; Ed.D., ibid., 1941; M.S., Univ. of Ark., 1948. m. Ruth Brooks of Warrensburg, Mo., Aug. 25, 1940. c.: John Wallace; Robert Brooks. Exp.: Student Asst. in Phys. and Math., Wm. Jewell Coll., 1932-33; ibid., summer, 1935; Instr., Sci. and Math., Stotesbury, Mo., H. S.; Supt. of Schls., ibid., 1936-38; Instr. in Phys. and Chemistry, Hickman H. S., Columbia, Mo., 1939-42; Grad. Asst. in Edn., Univ. of Mo., summers, 1939-41; Instr., ibid., Lab. Schl., summer, 1942; Asst. Prof. in Physics, Eastern Ill. St. Tchrs. Coll., August, 1942, but resigned to enter Armed Forces, Sept., 1942; Instr. in Meteor. and Navigation, A.A.F.T.C., 1942-46; Asst. in Physics, Univ. of Ark., 1946; Prof. of Phys., Wm. Jewell Coll., 1946—; Hd. Dept. of Physics, ibid., 1948—; N.S.F. Faculty Fellow, Univ. of Ark., 1960. Mem.: Chmn., Comm. Course of Study in Phys., Visiting Prof. of Physics, Univ. of Mo., Sum., 1962; Pres., Mo. Section of the Am. Assn. of Physics Tchrs., 1962-63; St. Dept. of Edn., Mo., 1940; Chmn., Comm., Emergency Phys., Mo. H. Schl., 1942; A.A.A.S.; A.P.S.; A.S.E.E.; A.S.A.; A.A.P.T.; R.E.S.A.; I.R.E. (Inst. Radio Engrs.); Phi Delta Kappa; Kappa Mu Epsilon; Sigma Pi Sigma; Phi Gamma Delta; Bapt. Contbr. to: Am. Jour. Phys.; Phi Gamma Delta; Schl. and Comm.; Am. Schl. Bd. Jour.; Schl. Exec.; Schl. Activities; Schl. Sci. and Math.; Sci. Leaflet; Jour. of Higher Edn.; Gamma News; etc. Ed.D. Dissertation: Some Functions of Edn. at the Jr. Coll. Level. War Record: Enlisted, A.U.S., Sept., 1942; Capt., Instr. with Air Corps; Served 42½ months. Hobbies: Photography; Telescope Making. Listed in: A.M.S.; W. W. in Am. Sci.; Who Knows—and What. Special Int.: Acoustical Impedence and Absorption Coefficients of Acoustical Tile.

HINES, Leonard Russell (Ph.D.), Assoc. Dir., Biological Rsch., Hoffmann-LaRoche, Inc., Nutley 10, N. J. Home Add.: 276 Cantrell Rd., Ridgewood, N. J. PHARMACOLOGY; TOXICOLOGY; CLINICAL TRAIL OF NEW DRUGS. b. Mechanicsville, Iowa, Feb 8, 1913. s. Forrest P. and Mary E. (Klima) H. Edn.: B.S., Cornell Coll., 1934. Ph.D., Univ. of Iowa, 1943. m. Bernadine Stocks, Sept. 21, 1940. c.: Carolyn Kaye; Susan Karen; Sara Lea. Exp.: Rsch. Biochem., Wilson and Co., Chicago, Ill., 1934-37; Rsch. Assoc. Biochem., Univ. of Chicago, 1937-40; Tchng. Asst. and Grad. Student, Univ. of Iowa, 1940-43; Hd., Dept. of Biochem., E. R. Squibb and Sons, New Brunswick, N. J., 1943-52; Chief of Chem. Pharmacol., Lederle Labs., Div. of Am. Cyanamid Co., Pearl River, N. Y., 1953-58; Mem., Dept. of Clinical Investigation, Hoffmann-LaRoche, Inc., 1958-59; Assoc. Dir. Biological Rsch., ibid., 1959—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Am. Chem. Soc.; Am. Federation for Clinical Rsch.; Sigma Xi; Phi Lambda Upsilon; Gamma Alpha; Alpha Chi Sigma. Contbr. to: Endocrinol.; Jour. Biological Chem.; Antibiotics and Chemotherapy; Antibiotics Annual; Current Therapeutic Rsch. Areas of Rsch.: Drug Metabolism, Clinical Investigation New Drugs, Medicinal Chemistry.

HINDLE, Brooke (Ph.D.), Prof. of Hist., Dept. of Hist., N. Y. Univ., N. Y. 3, N. Y. Home Add.: 62 N. Monroe St., Ridgewood, N. J. HISTORY OF SCIENCE. b. Drexel Hill, Pa., Sept. 28, 1918. s. Howard B. and Marion (Manchester) H. Edn.: A.B., Brown Univ., 1940; M.A., Univ. of Pa., 1942; Ph.D., ibid., 1949. m. Helen Morris, Jan. 22, 1943. c.: Margaret Joan; Donald Morris. Exp.: Rsch. Assoc., Inst. of Early Am. Hist., Williamsburg, Va., 1948-50; Lectr. in Hist., Northwestern Univ., summer, 1950; Prof. of Hist., N. Y. Univ., 1950—. Hon. Pos.: Mem. Bd. of Dir., George Sarton Meml. Found.; Prog. Chmn., Hist. of Sci. Soc. Mem.: Hist. of Sci. Soc.; Am. Studies Assn.; Am. Hist. Assn.; Miss. Valley Hist. Assn.; Phi Beta Kappa. Author: The Pursuit of Science in Revolutionary America, 1956. Contbr. to: Am. Hist. Rev.; Am. Quart.; Canadian Hist. Rev.; Isis; Miss. Valley Hist. Rev.; William and Mary Quart.; Archives Internatl. d'Histoire des Sciences; Pa. Mag. of Hist. and Biog.; N. Y. Hist. Soc. Quart. Serv. Rec.: U.S.N.R., 1942-45. Areas of Rsch.: Science in Early America.

HINNERS, Scott William (Ph.D.), Assoc. Prof., Animal Industries, Sou. Ill. Univ., Carbondale, Ill. Home Add.: 507 S. Dixon St., Carbondale, Ill. ANIMAL SCIENCE AND POULTRY NUTRITION. b. Metropolis, Ill., Jan. 2, 1913. s. W. J. and Elizabeth (Wadeking) H. Edn.: B.S., Univ. of Ill., 1934; M.S., Purdue Univ., 1941; Ph.D., Univ. of Ill., 1958. m. Mary Jane Harris, Mar. 20, 1937. c.: Jane Ann; Karen Sue; Scott William, Jr. Exp.: Instr., Equality H. S., Equality, Ill., 1934-36; Ext. Poultryman, Purdue Univ., 1936-42; Exec. Secy., Ind. Poultry Assn., Lafayette, Ind., 1942-44; Mgr., Fairview Poultry Farms, Metropolis, Ill., 1944-51; Instr., Sou. Ill. Univ., 1951-55; Rsch. Asst., Univ. of Ill., 1955-57; Asst. Prof., Sou. Ill. Univ., 1955-58; Assoc. Prof., ibid., 1958—. Hon. Pos.: Chmn., Ill. Egg Coun.; Secy., Natl. Collegiate Poultry Judging Coaches. Mem.: Alpha Zeta; Alpha Tau Alpha; Poultry Sci.; A.A.A.S.; Mason; Shrine. Contbr. to: Poultry Sci. Areas of Rsch.: Poultry Nutrition; Protein Evaluation; Quality Control.

HIRES, Clara S. (Miss), Owner, Mistaire Lab., 152 Glen Ave., Millburn, N. J. BOTANY, PLANT PHYSIOLOGY. b. Merion, Pa., Apr. 8, 1897. d. Charles E. and Clara K. (Sheppard) H. Edn.: B.A., Cornell Univ., 1928. Exp.: Sci. Tchr., Edgewood Schl., Greenwich, Conn., 1920-25; Sci. Tchr., Buxton Schl., Short Hills, N. J., 1929-32; Sci. Tchr., Shore Rd. Acad., Brooklyn, N. Y., 1932-34; Owner, Mistaire Labs., Millburn, N. J., 1929—. Hon. Pos.: Regional Exec. Comm., Am. Fern Soc.; Chmn. Publ., Natl. SDE. Mem.: A.A.A.S.; Bot. Soc. of Am.: General, Plant Physiol. and Paleobotanical, Am. Plant Physiol.; Am. Fern Soc.; Ecological Soc. of Am.; Torrey Bot. Club; N. Y. Acad. Sci.; N. J. Acad. Sci.; N. Y. Microscopical Soc.; Am. Orchid Soc.; Sigma Delta Epsilon; League Women Voters. Contbr. to: Bull. of the Torrey Bot. Club; Am. Fern Jour. Areas of Rsch.: Better Sterile Culture Technics, Automatic Greenhouse Equipment, Seed and Spore Germination; Effects of Light; 3-D Spore and Microscopic Illusions.

HIRSCHMAN, Max Abraham, Chief, Personnel and Logistics Br., Plans Div., U. S. Army Strategy and Tactics Analysis Group, 4815 Rugby Ave., Bethesda 14, Md. Home Add.: 501 Moorman Ave., Colonial Hgts., Va. MILITARY OPERATIONS RESEARCH: MATHEMATICS AND ECONOMETRICS. b. Hudson, N. Y., Nov. 9, 1916. s. Paul Carmen and Yetta (Kranz) H. Edn.: B.S., Coll. of the City of N. Y., 1938; M.S., ibid., 1940; LL.B., LL.M., The Geo. Wash. Univ. Law Schl., 1947, '48. m. Jean M. Goldman, Sept. 15, 1949. c.: Edward Howard; Gale Ann; Phyllis Elaine; Alfred Laurence. Exp.: Tech. Advisor in Statistics, War Production Board, Comptroller Div., Wash., D. C., 1942-45; Econ., Office of Price Admin., ibid., 1945-47; Chf. Legal Advisor, Naval Govt. of Guam, Indiciary Dept., Guam, M.I., 1948-51; Atty., Office of Price Stabilization, Wash., D. C., 1951-53; Dir. of Rsch. and Statistics U. S. Unemployment Compensation Bd., ibid., 1953-54. Hd. Analyst, U. S. Air Force, Directorate of Procurement and Production, Wright-Patterson A.F.B., Dayton, Ohio, 1954-56; Mathematician, Rand Corp. and Systems Develop. Corp. Santa Monica, Calif., 1956-58; Rsch. Dir., U. S. Army Logistics Mgt. Ctr., Logistics Rsch. and Doctrine Dept., Fort Lee, Va., 1958-60; Chf., Personnel and Logistics Br., U. S. Army Strategy and Tactics Analysis Grp., Bethesda 14, Md., 1961—. Hon. Pos.: Treas. Guam Bar Assn. Mem.: Operations Rsch. Soc. of Am.; Logistics Soc. of Fort Lee; Econ. Soc.; Assn. of the U. S. Army; Am. Econ. Soc.; Am. Statistical Assn.; Quartermaster Assn.; Nu Beta Epsilon. Author: Analysis of Extended Self-Sufficiency of Typical Army Units, co-author, 1960; Communication Techniques for Use with Automation Equipment, 1958; Marginal Utility Analysis, 1949; A History of Hardwood Lumber Price Regulations Under the Office of Price Administration, Co-Author, 1945. Contbr. to: Army, Army Information Digest. Gen. Int.: N. Y. St. Scholarship; Cornell Univ. Scholarship; City Coll. Club Law Fellowship; Judge of the Moot Court. Areas of Rsch.: Logistician-Mathematical Modeling of Military Logistics Problems; Mathematical Modeling of Stock Market Fluctuations.

HIRSCHBERG, Nell (Ph.D.), Bacteriologist, N. C. St. Bd. of Health, Raleigh, N. C. Home Add.: 1500 Park Dr., Raleigh, N. C. PUBLIC HEALTH AND MEDICAL MICROBIOLOGY. b. Cincinnati, Ohio, Sept. 30, 1907. d. Sylvan and Alma (Yondorf) H. Edn.: A.B., Smith Coll., 1928; M.A., Univ. of Colo., 1933; Ph.D., Univ. of Ill., 1937. Exp.: Bact., Michael Reese Hosp., Chicago, Ill., 1928-37; Bact., Cook Co. Hosp., ibid., 1937-39; Bact., Kellogg Rsch. Group, ibid., 1939-42; Assoc. Bact., U. S. Pub. Hlth. Serv., Raleigh, N. C., 1942-45; Assoc. in Bact., Univ. of Ill., Coll. of Med., 1933-42; Visiting Lectr., Univ. of Colo., summer, 1961; Visiting Lectr., Schl. of Pub. Hlth., Univ. of Calif., winter, 1962; Bact., N. C. St. Bd. of Health, Raleigh, N. C., 1962—. Mem.: Am. Pub. Health Assn.; Am. Soc. for Microbiol.; A.A.A.S.; N. C. Pub. Health Assn.; Soc. N. C. Bact.; Phi Beta Kappa; Sigma Xi. Contbr. to: Am. Jour. Dig. Dis.; Am. Rev. Tubere; Pub. Health Lab.; Jour. Infect.; Jour. Lab. and Clin. Med. Areas of Rsch.: Brucellosis, Gonococcus, TB, Leptospirosis, G. I. Bacteriology, Toxiplasmosis.

HIRST, Donald Vincent (M.D.), Obstetrician and Gynecologist, Univ. Neb. Schl. Med. and Hosp., and Full Time Pvt. Practice, Iowa. Home Add.: 315 Park Ave., Council Bluffs, Ia. CYTOLOGY BY INTERFERENCE MICROSCOPY; STEROIDS. b. Phila., Pa., Mar. 8, 1914. s. Jesse Watson and Sadie (Harbaugh) H. Edn.: A.B., Trinity Coll., Duke Univ., 1937; M.D., Duke Univ. Schl. Med., 1941. m. Kathryn Binder, June 28, 1942. c.: Donald, Jr.; David; Carol Ann; Richard. Exp.: Internship, Endocrinology, Schl. Med., Duke Univ., 1942; Residency, Gynecology, Free Hosp. for Women, Harvard Med. Schl., 1946-47; Full Time Private Practice, Obstetrics and Gynecology, and Instr., Obs. and Gyne., Univ. Neb. Schl. Med. and Hosp., 1951—. Mem.: Am. Med. Assn.; A.A.A.S.; Am. Chem. Soc.; Omaha Obstetrics and Gynecological Soc.; Am. Soc. Cytology. Contbr. to: Am. Jour. Obs. and Gyne.; Jour. Endocrinology. Serv. Rec.: Med. Officer and Flight Surgeon, 1942-46. Gen. Int.: Pvt. Pilot with over 400 Hours; Six Years Serv., Civil Air Patrol Present Wing Surgeon, Iowa Wing, Civil Air Patrol; Elder, United Presby. Ch.; Mem., Bd. Dirs. and Speakers Bur., Am. Cancer Soc. Areas of Rsch.: Interference Microscopy; Identification of Fresh Unfixed and Unstained Cancer Cells; Characteristics of Fresh, Unfixed, and Unstained Cervical Cytology; Urinary Steroids; Infrared Spectroscopic Analysis of Steroids; Chromatography.

HISER, Homer Wendell (Mr.), Rsch. Assoc. Prof., Head, Radar Meteorological Rsch., Univ. of Miami, Coral Gables, Fla. Home Add.: 4705 University Dr., Coral Gables 46, Fla. ATMOSPHERIC PHYSICS, RADAR METEOROLOGY, AND MICROWAVE PROPAGATION. b. Ava, Ill., Nov. 21, 1924. s. Clinton O. and Augusta (Bishop) H. Edn.: A.B., Wash. Univ., Mo., 1948; B.S., Univ. of Ill., 1951; M.S., ibid., 1954. m. Wanda Jean Leach, June 5, 1953. Exp.: Rsch. Assoc., Ill. State Water Survey, Univ. of Ill., 1950-55; Rsch. Assoc. Prof., Radar Meterol. Rsch., Univ. of Miami, 1955—. Hon. Pos.: Mem., Com. on Radar Meterol. of Am. Meterol. Soc., 1956—. Mem.: Am. Meterol. Soc.; Am. Geophys. Union; Inst. of Radio Engrs., Sr. Mem. Co-Author: Radar Meteorology, 1959. Contbr. to: Proc., 2nd Weather Radar Conf.; Bull., Am. Meteor. Soc.; Proc. 5th Weather Radar Conf.; Trans. Am. Geophys. Union; Proc. 6th Weather Radar Conf.; Proc. 7th Weather Radar Conf.; Jour. of Meteor.; Proc. 8th Weather Radar Conf.; Proc. 9th Weather Radar Conf. Serv. Rec.: U. S. Air Force Weather Serv., 1943-46. Areas of Rsch.: Atmospheric Physics, Radar Meteorology and, Microwave Propagation.

HISCOCK, Ira Vaughan (Sc.D.), Prof., Chmn. Pub. Health, Yale Univ., New Haven, Conn. Home Add.: 215 Highland St., New Haven, Conn. PUBLIC HEALTH. b. Farmington, Me., May 7 1892.

s. John Eugene and Susan Angie (Corbett) H. Edn.: B.A., Wesleyan Univ., 1914; M.A., ibid., 1916; Sc.D., ibid., 1939; M.P.H. Yale Univ., 1921; M.A., ibid., 1931. m. Margaret McConway Scoville, Feb. 26 1921. c.: William McConway; Margaret Brooks Hiscock Weatherly. Exp.: Conn. St. Dept. of Health, 1914-17; Dept. of Health, Columbia, S. C., 1919-20; Dept. of Pub. Health, Yale Univ., 1920—; Prof. and Chmn. of Pub. Health, Ret'd, June 30 1960; Carnegie Visit. Prof., Pub. Health, Univ. of Hawaii, Jan. 1, 1960; Mem., Conn. Pub. Health Coun., 1951—; Commr., New Haven Bd. of Health, 1928—. Hon. Pos.: Past Pres., Am. Pub. Health Assn.; Natl. Soc. Prev. Blindness; Assn. of Schls. of Pub. Health. Mem.: A.A.A.S.; Am. Epidemiological Soc.; Am. Heart Assn.; Sigma Xi; Am. Med. Assn.; Rotary; Cosmos; Army-Navy. Author: Community Health Organization, 1949; Ways to Community Health Edn., 1940; District Health Admin., 1939; Pub. Health in Hawaii 1935, 1961. War Record: U. S. Army, 1918-19, 1942-45; Legion of Merit; Colonel, Ret'd. Areas of Rsch.: Administrative and Epidemiological Rsch.; Evaluation Studies; Med. Edn.

HIVON, Katharine Josephine (Ph.D.), Chemist (Biochemistry), Human Nutrition Research Division, Agricultural Research Service, U.S.D.A., Beltsville, Md. Home Add.: 4210-B Guilford Dr., College Park, Md. BIOCHEMISTRY; LIPID CHEMISTRY. b. Chicago Ill., June 15, 1909. d. Edward B. (dec.) and Amy (Leslie) H. Edn.: B.S., Purdue Univ., 1931; M.S., ibid., 1947; Ph.D., ibid., 1950. Exp.: Asst. Dietitian, Gen. Hosp., Indianapolis, 1932-34; Staff Hd. and Acting Chf. Dietician, U. S. Pub. Health Serv., Ellis Island, N. Y., New Orleans, La., and Cleveland, Ohio, 1936-43; Chemist, Lever Bros. Co. Hammond, Ind., 1944-45; Grad. Rsch. Asst., Dept. of Biochem., Purdue Univ., 1945-50; Asst. Prof., Dept. of Home Econs., Univ. of Ill., 1950-53; Post-Doctorate Fellow, Dept. of Biochemistry, Purdue Univ., 1953-57; Chemist, Hum. Nutrn. Rsch. Div., A.R.S., U.S.D.A., Beltsville, Md., 1957—. Mem.: Am. Dietetics Assn.; Am. Chem. Soc.; Am. Soc. Plant Physiol.; Fellow, A.A.A.S.; Am. Oil Chems. Soc.; Inst. Food Tech.; Sigma Xi; Omicron Nu; Iota Sigma Pi; Sigma Delta Epsilon. Contbr. to: A.E.S. Bull.; Purdue Univ.; Soil Sci.; Plant Physiol.; Jour. Am. Oil Chem. Soc. Areas of Rsch.: Food Analysis and Preservation, Vitamins Mineral Metabolism and Enzyme Activity of Plants.

HOAG, Francis Scott (Mr.), Instrument Engr. B. F. Goodrich Rsch., Brecksville 41, Ohio. Home Add.: 2168 Boston Mills Rd., Brecksville, Ohio. INSTRUMENTATION. b. New Castle, Pa., Aug. 23, 1913. s. Walter Scott and Edna Pearl (Zimmerman) H. m. Marion Hoffman, June 7, 1941. c.: Lloyd Marriott Mountford (step-son). Exp.: Instrumentation, Gen. Elec. Co., Cleveland, Ohio, 1939-41; Instrument Supvr., Plum Brook Ord., Sandusky, Ohio, 1941-48; Instrument Engr., B. F. Goodrich Rsch., 1949—. Hon. Pos.: Trustee, Cleveland Elect. Coun., 1962-63; Internatl. Vice Pres., Edn. and Publs., I.S.A., 1962-63; Vice-Pres., Cleveland Section, I.S.A., 1955; Pres., ibid., 1956; Executive Chmn., I.S.A., Natl. Exp., 1957; Natl. Finance, I.S.A., 1958-60; Vice-Pres., Elec. Public Relations, Edn. and Publications, I.S.A., 1960; Trustee, Cleveland Electronics, Cleveland Tech. Soc.; Vice-Pres., Edn. and Publication, I.S.A., 1961-62. Mem.: A.A.A.S.; Am. Ordn. Assn. Serv. Rec.: U.S.N.R.

HOBLIT, Louis Douglas (Mr.), Dir. of Rsch. and Dev., The Dow Chem. Co., La. Div., Baton Rouge, La. Home Add.: 9360 W. Van Pl., Baton Rouge, La. ORGANIC CHEMISTRY, PROCESS DEVELOPMENT. b. Cleburne, Tex., Dec. 15, 1919. s. Ernest and Bessie Belle (Knipe) H. Edn.: B.A., Tex. Christian Univ., 1941. m. Virginia Rae Webb, Aug. 6, 1941. c.: Paul Clayton; David Louis; Peter Glen. Exp.: Chemist, Dow Chem. Co., Tex. Div., Freeport, Tex., 1941-42; Chemist, ibid., 1946-50; Proj. Ldr., ibid., 1951-53; Dir. of Rsch. and Dev., ibid., Baton Rouge, La., 1953—. Mem.: Am. Chem. Soc.; Am. Assn. of the Adv. of Sci.; Soc. of Plastic Engrng. Contbr. to: Chlorination. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Organic Chlorination; Process Development, Polymers.

HOBBS, Charles Seright (Ph.D.), Hd., Animal Husbandry-Veterinary Sci. Dept., Univ. of Tenn., Knoxville, Tenn. Home Add.: Rt. 2, Louisville, Tenn. ANIMAL HUSBANDRY, ANIMAL NUTRITION AND VET. PHYSIOLOGY. b. Inman, Kan., Feb. 2, 1909. s. Charles S. and Ella May (Olson) H. Edn.: B.S., Okla. St. Univ., 1938; M.S., Cornell Univ., 1939; Ph.D., ibid., 1941. m. Corinne K. Clay, Jan., 1931. c.: Charles, Jr.; Patricia C.; Frank Barron; William Clay; Robert Carlton. Exp.: Asst. Prof., Okla. St. Univ., Stillwater, Okla., 1941-43; Ext. Prof., Cornell Univ., Ithaca, N. Y., 1943-45; Hd. of An. Husb., S. Dak. St. Univ., Brookings, S. Dak., 1945-47; Hd., An. Husb. and Vet. Sci., Univ. of Tenn., Knoxville, Tenn., 1947—. Mem.: Am. Soc. of Animal Sci.; Phi Kappa Pi; Blue Key; Alpha Zeta; Sigma Xi; Beta Theta Phi. Author: The Livestock Book, 1955. Contbr. to: Am. Soc. of Animal Sci. Gen. Int.: Received Animal Husbandry Award, Okla. St. Univ., 1960.

HOBSON, Jesse Edward (Ph.D.), Dir. of Planning and Develop., Southwest Rsch. Inst., San Antonio, Tex.; Rsch. Consultant to the Pres., Sou. Meth. Univ., Dallas, Tex.; Consultant to the Grad. Rsch. Center of the Southwest, Dallas, Tex. Home Add.: 4242 Lomo Alto, Dallas 19, Tex. ELECTRICAL ENGINEERING, ELECTRIC POWER SYSTEMS, RESEARCH MANAGEMENT. b. Marshall, Ind., May 2, 1911. s. Clayton A. and Alice (Newlin) H. Edn.: B.S., Purdue Univ., 1932; M.S., ibid., 1933; Ph.D., Calif. Inst. of Tech., 1935. Hon. Deg.: D.Eng., Purdue Univ., 1957. m. Louise Smith, June 30, 1950. c.: Carolyn Jean. Exp.: Asst. Prof. of Math., Earlham Coll., 1935-36; Central Station Engr., Westinghouse Elec. Corp., Pittsburgh, Pa., 1937-41; Dir., Dept. of Elec. Engrng., Ill. Inst. of Tech., 1941-44; Dir., Armour Rsch. Found., Chicago, Ill., 1944-48; Dir., Stanford Rsch. Inst., 1948-56; Vice-Pres., Dir. of Rsch., United Fruit Co., Boston, Mass., 1957-61; Dir. of Planning and Develop., Southwest Rsch. Inst., San Antonio, Tex., Consult. to the Pres., Sou. Meth. Univ., Dallas, Tex.; Consult. to the Grad. Rsch. Center of the Southwest, Dallas, Tex., 1961—. Hon. Pos.: Natl. Pres., Eta Kappa Nu, 1954-55; Chmn., Bd. of Intl. Devel. Servs., Inc.; Mem., Bd. of Dirs., Intl. Res. Fund, Los Angeles, Calif.; Pres., First Natl. Elect. Conference, 1944. Mem.: Am. Inst. of Electrical Engineers; Inst. of Radio Engineers; Western Soc. of Engineers; Am. Rocket Soc.; Am. Assn. for the Adv. of Edn.; Inst. of Food Tech.; Tex. Acad. of Sci.; Sigma Xi; Tau Beta Pi; Sigma Delta Chi; Eta Kappa Nu. Contbr. to: Elect. Engrng.; Electronics; Elec. Light and Power; Elect. World. Gen. Int.: Natl. Award, Outstanding Young Elect. Engr. of the U. S., 1940. Areas of Rsch.: Power Systems Engrng., Rsch. Management, Elec. Utility Engrng.

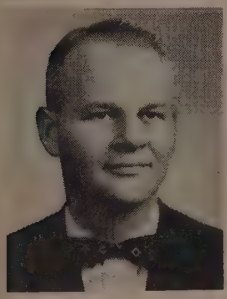
HOCH-LIGETI, Cornelia (M.D.), Asst. Chief, Lab. Serv., V.A. Ctr., Martinsburg, W. Va.; Asst. Prof., Pathology, Geo. Wash. Univ., Wash., D. C. Home Add.: 128 Main St., Shepherdstown, W. Va. PATHOLOGY, EXPERIMENTAL PATHOLOGY, CANCER RESEARCH. b. Ungvar, Hungary, 1908. d. Emanuel and Josephine (Roth) Ligeti. Edn.: M.D., Vienna, 1931. m. Dr. Hans Hoch, Apr., 1938. c.: Paul Lawrence. Exp.: Asst. Prof. Pathol., Univ. of Va., 1952-60; Asst. Chf., Lab. Serv., Vet. Admin., Martinsburg, W. Va., 1960—. Mem.: Path. Soc. of Gr. Britain and Ireland; Am. Assn. of Path. Bact.; Soc. Exper. Biol. and Med.; Internatl. Acad. Path.; Soc. Exper. Path.; Am. Assn. Cancer Rsch.; N. Y. Acad. of Sci.; Am. Assn. for Adv. of Sci.; Am. Med. Assn.; Sigma Xi. Contbr. to: Am. Jour. Path.; Jour. Exp. Path.; Proc. Soc. Exper. Biol. and Med.; Cancer Resch.; Jour. Natl. Cancer Inst.; Nature; Science. Areas of Rsch.: Cancer Rsch.; Experimental Pathology.

HOCHWALT, Carroll Alonzo (D.Sc.), Vice-Pres., Monsanto Chem. Co., 800 N. Lindbergh, St. Louis 66, Mo. Home Add.: No. 7 Upper Ladue Rd., St. Louis 24, Mo. CHEMICAL ENGINEERING. b. Dayton, Ohio, Apr. 29, 1899. s. Albert F. and Adele (Butz) H. Edn.: B.Ch.E., Univ. of Dayton, 1920; D.Sc., ibid., 1935. m. Pauline Burkhardt, Sept. 27, 1922. c.: Carroll A.; Richard A.; Paula M. (Mrs. Robert E. Morie). Exp.: Rsch. Chem., Gen. Motors Corp., Dayton, Ohio, 1920-24; Prod. Mgr., Ethyl Gasoline Corp., ibid., 1924-25; Vice-Pres., Thomas and Hochwalt Labs., ibid., 1926-36; Assoc. Central Rsch. Dir., Central Rsch. Dept., Monsanto Chem. Co., ibid., 1936-45; Dir., Central Rsch. Dept., ibid., 1945-48; Vice-Pres., Monsanto Chem. Co., St. Louis, Mo., 1947—; Dir. and Mem. of Exec. Comm., ibid., 1949—. Hon. Pos.: Chmn., Pres. Coun. of St. Louis Univ., 1960; Dir., Monsanto Rsch. Corp.; Trustee, Univ. of Dayton; Trustee, Charles F. Kettering Found.; Dir., Boatmen's Natl. Bank of St. Louis; Dir., Chemstrand Corp.; Dir. Sicedison, S.P.A., Milan, Italy Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Inst. of Chem. Engrs.; Soc. of Chem. Indus.; Electrochemical Soc., Inc.; Am. Inst. of Chem.; Sigma Xi. Contbr. to: Jour. of Am. Chem.

Soc.; Chem. and Engrng. News; Indus. and Engrng. Chm.; ASTM Jour. Areas of Rsch.: Organic Chemistry, including Polymers, Hydrocarbons, Organometallics, Fuels, Lubricants, Paper, Paints and Varnishes.

HOCHWALD, Werner (Ph.D.), Tileston Prof. of Polit. Economy, Wash. Univ., St. Louis 30, Mo. Home Add.: 6910 Cornell Ave., Univ. City 30, Mo. ECONOMICS. b. Berlin, Germany, Jan. 21, 1910. s. Moritz and Elsa (Stahl) H. Edn.: LL.B., Univ. of Berlin, 1932; Ph.D., Wash. Univ., 1944. m. Hilde Landenberger (dec.), Jan. 28, 1938. c.: Miriam Ruth; Eve Fay. Exp.: Instr., Army Specialized Trng. Program, 1942-44; Prof. of Econs., Wash. Univ., 1950—; Chmn., Dept. of Econs., ibid., 1955—; Consult., Federal Res. Bank of St. Louis, 1947-58; Project Dir., Natl. Planning Assn., 1955-60. Hon. Pos.: Pres., Wash. Univ. Chapt., Phi Beta Kappa. Mem.: Am. Econ. Assn.; Am. Stat. Assn.; Econometric Soc.; Econ. Hist. Assn.; Sou. Econ. Assn.; Natl. Conf. on Rsch. in Income and Wealth. Author: Twentieth Century Economic Thought, 1950; Studies in Income and Wealth, 1957; Local Impact of Foreign Trade, 1960; Design of Regional Accounts, 1961. Contbr. to: Am. Econ. Rev.; So. Econ. Jour.; Jour. Am. Stat. Assn.; Current Econ. Comment.; etc.

HOCKADAY, William James (M.D.), Asst. Prof. of Psychiatry and Assoc. in Surgery, Univ. of Louisville Schl. of Med., Louisville 2, Ky. Home Add.: Hazelwood Rd., Anchorage, Ky. PSYCHIATRY, NEUROPHYSIOLOGY. b. Lexington, Ky., Aug. 13, 1924. s. William James and Margaret (Morton) H. Edn.: A.B., Univ. of Louisville, 1946; M.D., ibid., 1948; Diplomate, Am. Bd. of Psychiatry and Neurology, 1957. m. Betty Lou Ditzel, Dec. 20, 1947. c.: James Daniel; Clare Etta. Exp.: Intern, Baylor Univ. Hosp., 1948-49; First and Second Yr. Res. in Med., Louisville Gen. Hosp., Ky., 1949-51; Res. in Psychiatry, Norton Meml. Infirmary, Louisville, Ky., 1951-53; Asst. Res. and Res. Physician in Psychiatry, N. Y. Hosp., Westchester Div., White Plains, N. Y., 1955-56; Rsch. Fellow in Anatomy, Univ. of Calif., Los Angeles, 1957-58; Consult. in Psychiatry, Central St. Hosp., Lakeland, Ky., 1952-53; Rsch. Consultant, ibid., 1960—; Clin. Instr. in Psychiatry, Univ. of Louisville Schl. of Med., 1952-53; Instr., ibid., 1956-58; Asst. Prof., Assoc. in Surgery, ibid., 1958—; Staff Exec., Louisville Gen. Hosp., 1958—; Dir. of Admissions, Univ. of Louisville Schl. of Med., 1959-60; Daland Fellow of Am. Philos. Soc., 1960—. Mem.: Am. Assn. Adv. Sci.; Assn. Am. Med. Colls.; Am. Assn. Univ. Prof.; Am. Psychiat. Assn.; Sou. E.E.G. Soc.; Jefferson Co. Med. Soc.; Ky. St. Med. Soc. Contbr. to: E.E.G. Clin. Neurophysiol.; Am. Jour. Psychiat.; Jour. Ky. M. A. Serv. Rec.: U.S.N.R., 1943-45; U. S. Army, 1953-55. Areas of Rsch.: Correlative Teaching; Psychiatric Aspects of General Surgery; Pancreatitis; Human Brain Metabolism; Neurophysiological Correlates of Animal Behavior.



HOCKING, William Ernest (Ph.D.), Alford Prof. Emer., Harvard Univ., Cambridge, Mass. Home Add.: Madison, N. H. PHILOSOPHY, WITH ESPECIAL REFERENCE TO METAPHYSICS, POLITICAL PHILOSOPHY AND LAW. b. Cleveland, Ohio, Aug. 10, 1873. s. William Francis and Julia Carpenter (Pratt) H. Edn.: Iowa St. Coll., Ames, Engrng., 1894-95; A.B., Harvard Univ., 1901; A.M., ibid., 1902; Ph.D., ibid., 1904. m. Agnes Boyle O'Reilly, June 28, 1905. c.: Richard B. O'Reilly; Hester; Joan. Exp.: Instr. in Philos., Harvard Univ., 1905-06; Instr. in History and Philosophy of Religion, Andover Theol. Sem., Mass., 1904-06; Instr., Asst. Prof. of Philos., Univ. of Calif., Berkeley, 1906-08; Asst. Prof., Prof. of Philos., Yale Univ., 1908-14; Prof. of Philos., Harvard Univ., 1914-20; Alford Prof., ibid., 1920-43; Prof. Emer., ibid., 1943—. Mem.: A.A.A.S.; Am. Philos. Assn.; Am. Philos. Soc.; Metaphysical Soc. of Am.; Hist. of Sci. Soc.; Am. Oriental Assn.; New Hampshire Hist. Soc.; Am. Polit. Sci. Assn.; Am. Soc. for Polit. and Legal Philos.; E. Asiatic Soc.; Aristotelian Soc. (Br.); La Societe Hollandaise d. Sciences; Indian Soc. for Internatl. Law; Century, N. Y.; Harvard, N. Y.; Faculty, Cambridge, Mass. Author: Meaning of God in Human Experience, 1912; Human Nature and Its Remaking, 1918; Man and the State, 1926; Philos. of Law and Rights, 1926; Spirit of World Politics, 1932; Individualism, 1937; Living Religions and a World Faith, 1940; Science and the Idea of God, 1944; Freedom of the Press, 1947; The Coming World Civilization, 1956; Immortality, 1957; Strength of Men and Nations, 1959. Contbr. to: Am. Jour. Sociol.; Harvard Jour. Asiatic Studies; Jour. of Philos.; Mind; Science; Rev. of Metaphysics; Moslem World; Isis; Deutsche Beitrage; Jour. Phenomenological Method; and others. Areas of Rsch.: Philosophical Aspects of Complementarity and Nuclear Physics; Problems of Biological Growth and Evolutionary Directives; Theory of Education; Sociology of Law in Relation to Legal Principle; Conditions for a Working Internatl. Law.

HODES, Horace Louis (M.D.), Dir., Dept. of Pediatrics, Mt. Sinai Hosp., New York 29, N. Y. Home Add.: 41 Sutton Crest, Manhasset, L. I., N. Y. MICROBIOLOGY. b. Philadelphia, Pa., Dec. 21, 1907. s. Morris and Anna H. Edn.: A.B., Univ. of Pa., 1927; M.D., ibid., 1931. m. Anne Reber, June 10, 1931. c.: David; Mrs. Ruth H. Rabin. Exp.: Dir., Harriet Lane Home, Baltimore, Md., 1935-36; Med. Dir., Sydenham Hosp., Baltimore, Md., 1938-48; Dir., ibid., 1948-49; Dir., Mt. Sinai Hosp., N. Y. C., 1949—. Hon. Pos.: Pres., Soc. for Pediatric Rsch. Mem.: Am. Pediatric Soc.; Soc. for Pediatric Rsch.; Am. Acad. of Pediatrics; Soc. for Exptl. Biol. and Med.; N. Y. Acad. of Sci.; N. Y. Acad. of Med. Author: Advances in Pediatrics, Vol. I, Vol. VIII, 1942, 1956; Textbook of Pediatrics, 1953; A Manual of the Common Contagious Diseases, 1956. Contbrng. Author: Holt's Diseases of Infancy and Childhood, 1940. Contbr. to: Virol.; Pediatrics; Am. Jour. of Diseases of Children; Arch. of Pediatrics; Sci.; Jour. Exptl. Med.; Jour. Pediatrics; Proc. Soc. Exptl. Biol. and Med.; Jour. Biol. Chem.; Advances in Pediatrics. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: Mead-Johnson Award, 1946. Areas of Rsch.: Microbiology and Pediatrics.

HODES, Marion Edward (M.D.), Assoc. Prof. of Med. and Biochem., Ind. Univ. Med. Ctr., Indianapolis, Ind. Home Add.: 3319 N. Pk. Ave., Indianapolis 5, Ind. ONCOLOGY. b. N.Y.C., Aug. 6, 1925. s. Louis and Esterre Viola (Burman) H. Edn.: M.D., Univ. of Buffalo, 1947; Ph.D., Columbia Univ., 1955. m. Halina Z. (Markowicz) H., Nov. 23, 1949. c.: Marquis Z.; Zachary I.; Jonathan E. Exp.: Hd. Dept., Physiol. Chem., U. S. Naval Med. Schl., Bethesda, Md., 1951-52; Asst. in Med., Columbia Univ., N. Y., 1955-56; Assoc. in Med., ibid., 1956; Asst. Prof. of Med., Ind. Univ., 1956-60; Asst. Prof. of Med. and Biochem., ibid., 1960-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: Leukemia Soc. Scholar, 1961—. Mem.: Am. Chem. Soc.; Am. Assnl of Clin. Chem.; Am. Assn. Adv. Sci.; Am. Fed. for Clin. Rsch.; Am. Assn. for Cancer Rsch.; N. Y. Acad. of Sci.; Am. Soc. for Cell Biol. Author: Analysis, Gastrointestinal Contents and Endocrinology, 1952. Contbr. to: Biochim. Biophysica Acta; Nature; Exp. Cell Rsch.; Cancer Rsch.; Cancer Chemotherapy Reports. Serv. Rec.: U. S. N. Res., 1950-52. Areas of Rsch.: Tumor Cell Membranes; Viral Oncogenesis; Tumor Nucleic Acids; Cancer Chemotherapy.

HODGE, James Robert (M.D.), Physician, 326 So. Main St., Akron 8, Ohio. Home Add.: 295 Pembroke Rd., Akron 13, Ohio. PSYCHIATRY. b. Martins Ferry, Ohio, Jan. 28, 1927. s. Robert Gabriel and Ethel (Ashton) H. Edn.: B.S., Franklin and Marshall Coll., 1946; M.D., Jefferson Med. Coll., 1950. m. Marilyn Dinklocker, June 10, 1950. c.: Sharon Lee; Scott Jeffrey. Exp.: Clin. Instr., Western Reserve Univ. Schl. of Med., Cleveland, Ohio, 1955-59; Consultant in Psychiat., Highland View Hosp., Family Serv. Soc., Akron, Ohio, 1955—; Lectr. in Psychol., Univ. of Akron, ibid., 1961—; Pvt. Pract., Psychiat., Akron, Ohio, 1956—. Hon. Pos.: Chmn., Pub. Edn. Comm., Summit Co. Med. Soc. Mem.: Am. Med. Assn.; Am. Psychiat. Assn.; Hypnosis Socs.; Acad. of Religion and Mental Health; Assn. for the Adv. of Sci.; Assn. for the Adv. of Psychotherapy; Sigma Pi; Alpha Kappa Kappa; Akron Squire Club; Fairlawn Comm. Church. Contbr. to: Jour. of Med. Edn.; Am. Jour. of Psychiat.; Internatl. Jour. of Clin. and Exptl. Hypnosis; Archives of Phys. Med. and Rehab.; Bull. of Summit Co. Med. Soc. Serv. Rec.: U. S. Navy, 1944-45; U. S. Naval Res., 1952-54. Areas of Rsch.: Psychotherapy; Hypnosis; Psychiatry and Religion.

HODGES, Sidney E. (Ph.D.), Hd. Phys. Dept., Stephen F. Austin State Coll., Nacogdoches, Tex. Home Add.: 307 Brookshire Dr., Nacogdoches, Tex. PHYSICS-MOLECULAR SPECTRA. b. Booneville, Miss., Feb. 11, 1924. s. J. L. and Mildred (Murphy) H. Edn.: B.S., E.E., Sou. Methodist Univ., 1949; M.S. E. Tex. State Coll., 1950; Ph.D., Tex. A. & M., 1958. m. Francoise Novailletos, 1947. c.: Philippe; Annette. Exp.: Instr., E. Tex. State Coll., Commerce, Tex., 1951-54; Asst. Prof., ibid., 1956-58; Dept. Hd., Stephen F. Austin State Coll., 1958—. Mem.: Am. Assn. Phys. Tchrs.; Sigma Pi Sigma. Contbr. to: Jour. Mol. Spectra; Am. Jour. Phys. Serv. Rec.: U. S. Air Force, 1942-45. Areas of Rsch.: Molecular Spectra; Ultrasonic Scattering.

HODNETT, Ernest Matello (Ph.D.), Prof. of Chem., Okla. St. Univ., Stillwater, Okla. Home Add.: 1807 W. Fifth Ave., Stillwater, Okla. PHYSICAL ORGANIC CHEMISTRY. b. Hartford, Ala., Feb. 6, 1914. s. Edgar Hope and Minnie Mae (Rains) H. Edn.: B.S., Univ. of Fla., 1936; M.S., ibid., 1939; Ph.D., Purdue Univ., 1945. m. Mary Elizabeth Myrick, 1961. c.: Mary Kathleen. Exp.: Food Chemist, St. of Fla., 1940-43; Rsch. Fellow, Purdue Univ., 1943-45; Asst. Prof., Prof., Okla. St. Univ., 1945-; Assoc. Chemist, Argonne Natl. Lab., 1952-53; Rsch. Participant, Oak Ridge Natl. Lab., 1954. Mem.: Sigma Xi; A.A.A.S.; Okla. Acad. of Sci.; Phi Lambda Upsilon; Phi Kappa Phi. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem.; Jour. of Polymer Sci. Areas of Rsch.: Mechanisms of Organic Reactions; Effects of Isotopes on the Rates of Chemical Reactions; Use of Radioisotopes in Chemistry, Particularly Carbon-14 and Tritium.

HODGSON, Paul Edmund (M.D.), Prof. of Surg., Univ. of Neb., Coll. of Med., Omaha 5, Neb. Home Add.: 4505 Valley, Omaha 6, Nebr. GENERAL SURGERY. b. Milwaukee, Wis., Dec. 14, 1921. s. Howard Edmund, (dec.) and Ethel Marie (Niemi) H. Edn.: Beloit Coll., 1942; M.D., Univ. of Mich., Med. Schl., 1945. m. Barbara Jean Osborne, Apr. 22, 1945. c.: Ann B.; Paul C. Exp.: Asst. Prof., Surg., Univ. of Mich., Med. Schl., Ann Arbor, Mich., 1954-56; Assoc. Prof., ibid., 1956-62; Chf., Surg., Vet. Admin. Hosp., Ann Arbor, Mich., 1956-60; Prof. of Surg., Univ. of Neb., Coll. of Med., 1962—. Mem.: Am. Coll. of Surgeons; F. A. Coller Surg. Soc.; Cent. Surg. Assn.; Soc. of Univ. Surgeons; Am. Assn. for the Adv. of Sci.; Sigma Xi; Am. Fed. of Clin. Rsch.; N. Y. Acad. of Sci.; Alpha Omega Alpha; Phi Kappa Phi; Beta Theta Pi; Nu Sigma Nu. Contbr. to: Surg. Annals of Surg.; Surg., Gynecol. and Obstets. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: General Surgery; Thombo-embolism; Peripheral Vascular Disease, Metabolic Response to Operation

HODSON, Adrian Zachariah (Ph.D.), Chf., Nutrition Sect., Rsch. Ctr., Pet Milk Co., Greenville, Ill. Home Add.: 406 Eastern, Greenville, Ill. NUTRITION. b. Gothenburg, Neb., Jan. 8, 1910. s. Thomas A. and Mildred A. (Tallman) H. Edn.: B.S., Ia. St. Coll., 1933; Ph.D., Cornell Univ., 1937. m. Kathryn Traer, Sept. 13, 1938. c.: Kay Ethel; Thomas Zachariah. Exp.: Asst., Cornell Univ., Ithaca, N. Y., 1933-37; Investr., ibid., 1937-40; Investr., U. S. Fish and Wildlife Serv., ibid., 1941; Nutritionist, Pet Milk Co., 1942—. Mem.: Sigma Xi; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Genetic Soc.; N. Y. Acad. of Sci.; Ill. Acad. of Sci; Inst. of Food Technol.; Gamma Alpha. Contbr. to: Jour. of Biol. Chem.; Jour. Nutr.; Food Technol.; Jour. Dairy Sci.; Food Rsch.; Cornell Vetn.; Vet. Med.; Arch. Biochem.; Jour. Am. Diet. Assn.; Ind. and Engr. Chem.; Jour. Agr. and Food Chem.; Nutritio et Dieta. Serv. Rec.: Collaborator, U. S. Army, 1942-46. Areas of Rsch.: Nutrition of Fur Animals; Nutritive Value of Milk, Vitamin Assay Methods.

HOEFELMEYER, A(lbert) Bernard (Ph.D.), Sr. Nucl. Engr., Gen. Dynamics Corp., Fort Worth, Tex. Home Add.: P.O. Box 12264, Fort Worth 16, Tex. PHYSICAL-ORGANIC CHEMISTRY. b. San Antonio, Tex., Mar. 27, 1928. s. Albert H. and Anna (McMontgal) H. Edn.: B.S., St. Mary's Univ., San Antonio, 1949; M.A., The Univ. of Tex., 1950; Ph.D., The A. and M. Coll. of Tex., 1954. Exp.: Rsch. Chemist, Celanese Corp., Clarkwood, Tex., 1953-55; Assoc. Prof., Tex. A. and I. Coll., 1955-57; Sr. Nucl. Engr., Gen. Dynamics Corp., 1957—. Hon. Pos.: Adj. Prof. in Chem., Evening Coll., Tex. Christian Univ., 1959—. Mem.: Am. Assn. Adv. Sci.; Am. Chem. Soc.; Am. Nucl. Soc.; Rad. Rsch. Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Radiation Chemistry, Chemical Kinetics, Physical Organic Chemistry; Petrochemistry.

HOFF, Arthur Gerhard (Ph.D.), Dir. of Adult Edn., Monrovia-Duarte, Calif. Home Add.: 745 West "H" St., Ontario, Calif.

SCIENCE EDUCATION, SECONDARY SCHOOL. b. Pope Co., Minn., Apr. 5, 1902. s. Edward L. and Vilborg (Aanudson) H. Edn.: B.Sc., St. Coll., Superior, Wis., 1928; M.A., St. Univ. of Iowa, 1930; Ph.D., Univ. of Minn., 1938. m. Elizabeth A. White, Dec. 25, 1934. Exp.: Sec. Sci. and Math. Tchr., Unified Schl. Dist., La Crosse, Wis., 1928-30; Prin., Jr. and Elem. Schls., ibid., 1930-32; Supvr. Tchr. Edn., Sci. and Math., St. Coll. and Pub. Schls., La Crosse, Wis., 1932-41; Hd., Dept. of Chem., St. Coll., ibid., 1941-45; Prof. of Edn., Univ. of Redlands, 1946-48; 1957-59; Supt. of Schls., Unified Dist., Palm Springs, Calif., 1948-55; Asst. Supt., Chaffey Jr. Coll. and H. S. Dist., Ontario, Calif., 1955-57; Dir. of Adult Edn., Monrovia-Duarte, Calif., 1959—. Mem.: Phi Delta Kappa; Kappa Rho Epsilon; Am. Assn. Adv. of Sci.; Masons; Rotary Internatl. Author: Secondary School Science Teaching, 1950. Contbr. to: Schl. Sci. and Math.; Phi Delta Kappan; Educational Admin. and Suprvn.; Am. Schl. Bd. Jour.; Jour. of Edn'l. Rsch.; Edn'l. Screen; Am. Tchr.; The Nations Schls.; Schl. Exec.; Wis. Jour. of Edn. Areas of Rsch.: Science Education, Teacher Retirement.

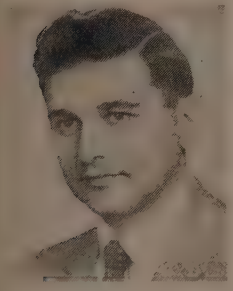
HOFFER, Abraham (Ph.D.), Asst. Prof., Dept. of Physics, Loyola Univ., 6525 N. Sheridan Rd., Chicago 26, Ill. Home Add.: 1000 Loyola Ave., Chicago 26, Ill. PHYSICAL MINERALOGY AND STRUCTURAL PETROLOGY. b. Budapest, Hungary, Mar. 12, 1928. s. Robert and Anna (Gottlieb) H. Edn.: B.Sc., Univ. of Toronto, 1956; M.Sc., ibid., 1957; Ph.D., Univ. of Chicago, 1959. Exp.: Rsch. Assoc., Dept. of Phys., Pa. State Univ., 1960-62; Asst. Prof., Dept. of Physics, Loyola Univ., 1962—. Mem.: Am. Assn for the Adv. of Sci.; N. Y. Acad. of Scis.; Am. Geophys. Union; Mineral. Soc. of Am.; Arctic Inst. of N. Am.; Sigma Xi. Contbrng. Author: Crystal Habit, 1962. Contbr. to: Jour. of Geophys. Rsch.; Jour. of the Am. Ceramic Soc.; Geol. Soc. of Am. Bull.; Acta Crystallogr.; Zeitschrift fur Kristallographie. Areas of Rsch.: Phase Transformations in Solids at Very High Pressures; Growth of Large Monocrystals.

HOFFMAN, Adeline Mildred (Ph.D.), Prof. of Textiles and Clothing, Univ. of Ia., Ia. City, Ia. Home Add.: 10 Woolf Ave. Ct., Ia. City, Ia. TEXTILES AND CLOTHING (SOCIO-ECONOMIC AND PSYCHOLOGICAL ASPECTS). b. Richmond Hill, N. Y., May 13, 1908. d. Francis and Helena (Schimmer) H. Edn.: B.S., Univ. of Mo., 1930; M.A., Columbia Univ., 1935; Ph.D., Pa. State Univ., 1956. Exp.: Instr., Home Econs., H. S., Belair, Md., 1930-35; Instr., Home Econs., H. S., Freehold, N. J., 1935-36; County Home Demonstration Agent, Univ. of Md. Ext. Serv., Westminster, Md., 1936-43; Sr. Nutr., N. Y. State Emergency Food Comn., N. Y. City, 1943-45; Ext. Clothing Spect., Univ. of Del., Ext. Serv., Newark, Del., 1945-49; Asst. Prof., Univ. of Conn., 1949-53; Clothing Spect., U. S. Dept. of Hlth., Edn. and Welfare, Wash., D. C., 1956-57; Dept. Chmn. and Prof., Textiles and Clothing, Schl. of Home Econ., Sou. Ill. Univ., 1957-61; Prof., Univ. of Ia., Ia. City, Ia., 1962—. Hon. Pos.: Treas., Pi Lambda Theta; Pres., Del. St. Home Econs. Assn.; Treas., Md. St. Home Econs Assn.; V.-Pres., Del. St. Delta Kappa Gamma; Char. Pres., Soroptimist Club of Westminster, Md. Mem.: Am. Home Econs. Assn.; Am. Diet. Assn.; Am. Assn. of Textile Chemists and Colorists; Am. Soc. for Testing Materials; The Fashion Grp., Inc.; Am. Assn. Univ. Profs.; Am. Assn. Univ. Women; Am. Craftsmen's Edn'l. Coun.; Delta Kappa Gamma; Phi Upsilon Omicron; Phi Kappa Phi; Omicron Nu; Pi Lambda Theta. Contbrng. Author: National Manual, Emergency Clothing and Emergency Financial Assistance, 1957. Contbr. to: Jour. of Home Econs.; Delta Kappa Gamma Bull.; Phi Upsilon Omicron Candle; Sou. Ill. Bus. Bull.; Ext. Serv. Rev.; Agric. Leaders Dig.; Sou. Planter; Am. Soroptimist; Adding Life to Years. Areas of Rsch.: Socio-Economic and Psychological Aspects of Clothing and Textiles, Clothing in Relation to Gerontology (in Cooperation with the Institute of Gerontology Univ. of Ia.), Clothing Needs of Civilians in the Event of Enemy Attack.

HOFFMAN, Elmer (M.D.), 914 N. Charles St., Baltimore, Md. Home Add.: 6505 Baythorne Rd., Baltimore, Md. SURGERY. b. Baltimore, Md., Sept. 5, 1921. s. Harry and Ida (Pressman) H. Edn.: A.B., Johns Hopkins Univ., 1941; M.D., ibid., Schl. of Med., 1944. m. Sherry Koplon, Nov. 15, 1953. c.: Jo Anne; Robert Allan; Richard Allan. Exp.: Interne, Gen. Surg., Sinai Hosp., Baltimore, Inc., 1944-45; Asst. Res., Gen. Surg., ibid., 1945-46; Asst. Res., Path., ibid., 1948; Asst. Res., Gen. Surg., ibid., 1948-51; Res., Gen. Surg., ibid., 1951-52; Chf. of Surgical Serv., A.A.F. Regional Hosp., Wright Field, Ohio, 1946-48; Asst. Surg., Sinai Hosp. of Baltimore, Inc., 1952-54; Adjunct Attending Surg., ibid., 1954-56; Assoc. Attending Surg., ibid., 1957—; Instr., Surg., Schl. of Nursing, ibid., 1953—; O.P.D. Surgeon, Johns Hopkins Hosp., 1952; Surg., ibid., 1955—; Asst., Surgery, Johns Hopkins Univ. Schl. of Med., 1955-58; Instr., Surg., ibid., 1958—; Asst. Attending Surg., Franklin Sq. Hosp., 1955-58. Hon. Pos.: Abstractor, Abstract Ed. Staff, Excerpta Medica, Surg. Sect.; Examiner, Am. Cancer Soc., 1952—; Editor-in-Chf., Sinai Hosp. Jour., 1958—. Mem.: Johns Hopkins Med. and Surg. Assn.; Am. Med. Assn.; Sou. Med. Assn.; Am. Cancer Soc.; N. Y. Acad. of Scis.; Md. Soc. for Med. Rsch.; Phi Beta Kappa; Dipl., Am. Bd. of Surg.; Fellow, Am. Coll. Surgs.; Fellow, Southeastern Surg. Congress; Am. Soc. Clin. Hypnosis; Soc. for Exptl. and Clin. Hypnosis; A.A.A.S.; Am. Med. Writers' Assn.; and others. Contbr. to: Am. Jour. Surg.; Arch. of Surg.; Ann. of Surg.; J.A.M.A.; Internatl. Abstracts of Surg.; Yearbook of Surg.; Sinai Hosp. Jour.; Audio Digest; Am. Practitioner and Digest of Treatment; The Am. Surg.; Rev. of Surg., Obst. and Gynecol.; New England Jour. of Med.; Gastroenterology; Jour. Am. Geriatrics Soc.; and others. Serv. Rec.: U.S.A.A.F., 1946-48.

HOFFMAN, John Erwin, (Mr.), Asst. Instr., Psychiat., Dept. of Psychiat., Loma Linda Univ., Los Angeles Campus, L. A. 33, Calif. Home Add.: 8633 E. De Adelena, Rosemead, Calif. PSYCHOLOGY, AREA RESEARCH AND GROUP COUNSELING. b. Fresno, Calif., Aug. 24, 1921. s. George D. and Florence L. (Wentworth) H. Edn.: B.A., Columbia Union Coll., 1944; M.A., Marshall Univ., 1956; M.Ed., Univ. of So. Calif., 1962. m. Heilda L. Haynes, Aug. 2, 1942. c.: Judith E. Exp.: Pastor, Counselor, Seventh-Day Advent, Columbia Union Conf., 1944-57; Asst. Instr., Psychol., Los Angeles, Calif., 1957—; Staff Psychol., Miller Med. Ctr., Pomona, Calif., 1960—; Psychometrist, White Mem. Clinic, Los Angeles, Calif., 1960—. Hon. Pos.: Mem. of the Exec. Comm. of the West Va. Conf. of S.D.A., Mem. Panel of Psychological Examiners for Los Angeles County, Dept. of Ed. Vocations Rehabilitation Service, 1960—. Mem.: Am. Speech and Hearing Assn.; The Am. Psychol. Assn.; The Calif. Psychol. Assn.; Am. Assn. for the Adv. of Sci.; Psi Chi. Areas of Rsch.: Individual and Group Therapy.

HOFFMAN, Julius (M.D.), Med. Doctor, 318 E. State St., Columbus 15, Ohio. Home Add.: 250 E. South St., Worthington, O. NEUROLOGY, PSYCHIATRY AND ELECTRO-ENCEPHALOGRAPHY. b. N.Y.C., N. Y., Feb. 4, 1921. s. Samuel and Ida (Kaplan) (dec.) H. Edn.: B.A., Wash. Sq. Coll. of N. Y., 1941; M.D., N. Y. Univ. Coll. of Med., 1944; M.A., Ohio State Univ., 1958. m. Ray Naomi Lockoff, June 6, 1943. c.: Paul; Deborah; Robert. Exp.: Intern, Kings Co. Hosp., Brooklyn, 1944-45; Res. in Neurol., ibid., 1945-46; 1948-49; Res. in Psychiat., Winter V.A. Hosp., Topeka, Kans., 1949-51; Resident: Pediatrics: Children's Hosp., Cols., Ohio, 1961—; Fellow in Psychiat., Menninger Fdtn. Schl. of Psychiat., Topeka, 1949-51; Fellow in Electroencephalography, Kings Co. Hosp., Brooklyn, 1951; Fellow, Pediatric Neurology, Natl. Inst. Nerv. Dis. of Blind, 1961—; Sr. Psychiatric Physician, Fairfield State Hosp., Newtown, Conn., 1951; Staff Psychiatrist, Columbus Receiving Hosp., Ohio, 1951-53; Consult. in Psychiatry and Neurology: Children's Hosp., Columbus, Ohio, 1953—; St. Anthony Hosp., Columbus, Ohio, 1953—; Grant Hosp., Columbus, 1953—; Mt. Carmel Hosp., Columbus, 1953—; Columbus State Schl., 1953—; Vets. Admin., 1953—; O.A.S.I., 1958—; U.S.A.F., 1959—; Columbus Receiving Hosp. for Children, 1959—; Asst. Prof., Dept. of Psychiat., Coll. of Med., Ohio State Univ., 1951-53; Asst. Prof., Grad. Schl., ibid., 1953—; Lectr., Asst. Prof., Schl. of Social Admin., ibid., 1951-61; Assoc. Prof., Schl. of Scial Work, O.S.U., 1961—; Inst., Pediatrics, Coll. of Med.; O.S.U., 1961. Hon. Pos.: Mem., Governor's Citizen's Adv. Bd., Columbus Psychiatric Inst. and Hosp.; Mem., Editorial Bd., Columbus Acad. of Med. Bull. Med. Services Comm., Community Health Comm. Mem.: Fellow, Am. Acad. of Neurol.; Fellow, Am. Psychiatric Assn.; Fellow, A.A.A.S.; Fellow, Soc. for Group Psychotherapy and Psychodrama; Fellow, Am. Assn. on Ment. Deficiency; Assn. Nervous and Mental Disease; Ohio Psychiatric Assn.; Ohio State Med. Assn.; Assn. Adv. Psychotherapy; N. Y. Acad. Scis.; Am. Med. Assn.; Central Neuropsychiatric Assn.; Am. Electroencephalography Assn.; Phi Beta Kappa; Sigma Xi; Beta Lambda Sigma; Mu Chi Sigma; Caducean; Boy Scouts of Am.; etc. Contbr. to: Med. Bull. of U. S. Army; Surgeon's Circular Letter; Jour. Nervous and Mental Disease; Electroencephalography and Clin. Neurophysiol. Jour.; Am. Jour. Ophthal.; Am. Jour. Ment. Deficiency; Acta Psychiatrica et Neur.; Ohio State Med. Jour. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Clin. Neurol. and Neurophysiol. (Electrophoresis and Chromatography); Psychodynamics and Psychotherapy.



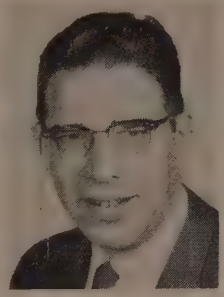
HOFFMAN, Murray Mitchell (D.D.S.), Oral-Maxillo-Facial Surgeon, 2010 W. Irving Pk. Rd., Chicago, Ill. Home Add.: 8555 Keeler Ave., Skokie, Ill. GROWTH AND DEVELOPMENT AND PHYSIO-PHARMACOLOGY. b. New York City, Jan. 20, 1910. s. Richard and Belle (Belanca) H. Edn.: B.S., Univ. of Ill., 1935; D.D.S., ibid., 1937; M.S., ibid., 1939. m. Rhea Kaplan, July 29, 1935. c.: Howard (dec.); Daniel. Exp.: Rsch. Asst., Univ. of Ill., 1935-37; Instr., Histo-Pathology, Univ. of Ill., 1937-41; Maxillo-Facial Surgeon, U.S.A., 1941-46; Private Practice, Maxillo-Facial Surgery, 2010 W. Irving Pk. Rd., Chicago 18, Ill., 1946—. Hon. Pos.: Pres., Uptown Dent. Forum, Chicago, 1951; Editor, North Central Lions Bulletin, Chicago, 1957—. Mem.: Am. Soc. Oral Surgeons; Sigma Xi; Internatl. Assoc. Dental Research; Federation Am. Scientists; Am. Medical Writers Assn.; New York Acad. of Sci.; Ill. Acad. of Sci.; Omicron Kappa Upsilon; Chicago Inst. Med.; Lions Internatl. Contbr. to: Am. Dent. Jour.; Am. Jour. of Anatomy; Jour. of Orthodontia; Am. Med. Jour.; Am. Jour. Pathol.; N. Y. State Dent. Jour.; Ill. St. Dent. Jour.; Fortnightly Rev. of Chicago Dent. Soc. Serv. Rec.: U.S.A. Gen. Int.: Sigma Xi award for best undergrad. rsch., 1937. Areas of Rsch.: Growth and Development; Pharmacology; Calcium Metabolism; Histo-physio-pathology; Allergy; Poliomyelitis; Vitamins; Inflammation.

HOFFMAN, Sumner Harvey (M.D.), Physician, 193 Garden St., Needham 92, Mass. PEDIATRICIAN. b. Boston, Mass., May 5, 1922. s. Irving and Julia (Fisher) H. Edn.: B.S., Tufts Univ., 1943; M.D., ibid., 1946. m. Beatrice Milton, June 1, 1947. c.: Elise; Ilene; Suzanne. Exp.: Clin. Instr., Tufts Med. Schl., Boston, Mass., 1950—; Clin. Dir., Ped. Rsch., Assocs. of Mass., Needham, Mass., 1961—. Mem.: Phi Beta Kappa; Alpha Omega Alpha; Fellow, Am. Acad. of Peds.; Licentiate Am. Bd. of Peds.; Dipl., Natl. Bd. of Med. Examrs.; Phi Epsilon Pi; Phi Delta Epsilon; Exchange Club of Needham. Contbr. to: New England Jour. of Med. Serv. Rec.: U. S. Army, 1953-55.

HOFFMEISTER, F. S. (D.D.S.), Chief, Dept. of Reconstructive Surgery and Head and Neck Service (B), Roswell Park Memorial Inst., Buffalo, N. Y. SURGERY. b. 14 Prague, Czechoslovakia. s.: Ferdinand and Kamila (Steklova) H. Edn.: M.D., Charles Univ., Prague, 1939; D.D.S., ibid., 1942; D.M.D., Tufts Dental Schl., Boston, Mass., 1950. Exp.: Instr., Anat., Charles Univ., Prague, 1933-36; Intern Surg., 1939-40; Resident, 1942-45; Guy's Dental Schl., London, 1946-47; Orthod., Tufts Dental Schl., Boston, 1947-49; Asst. Res. Plastic Serv., Hosp. of St. Barnabas, Newark, N. J., 1951-52; Asst. Res. Surg., Fell Surg. and Cancer Trainee, Natl. Cancer Inst., Johns Hopkins, 1952-53; Chief Resident and Trainee in Cancer, ibid., 1953-54; Instr. Plastic Surg., ibid., 1954-56; Assoc. Chief, Head and Neck Serv., Roswell Pk. Memorial Inst., Buffalo, 1954-56; Chief Dept. Reconstructive Surg., Head and Neck Serv., ibid., 1956—; Assoc. in Surg., ibid., Univ. Buffalo, 1957—; Asst. Prof. Surg., ibid., 1958—. Mem.: The Johns Hopkins Med. and Surg. Assn.; Med. and Chirugical Faculty of Md.; Am. Assn. for Cancer Rsch.; Am. Pub. Health Assn.; Soc. for Plastic and Reconstructive Surg.; N. Y. St. Pub. Health Soc.; Royal Soc. of Med., London; A.A.A.S.; Soc. of Head and Neck Surgery; Coun. on Rsch. in Plastic Surg.; Canadian Soc. of Plastic Surg.; Am. Assn. Plastic Surg.; Am. Coll. of Surgs. Areas of Rsch.: Cleft Palate; Burns; Circulation Vessel Grafts; Cancer Chemotherapy.

HOFMANN, David John (Mr.), Rsch. Asst., Univ. of Minn., Minneapolis, Minn. Home Add.: 2501 Lowry Ave., N.E., Minneapolis, Minn. PHYSICS. b. Albany, Minn., Jan. 3, 1937. s. Gregory D. and Rose (Voss) H. Edn.: B.S., Univ. of Minn., 1961; M.S., ibid., 1962. m. Barbara Wimmer, June 20, 1959. c.: Gretchen. Exp.: Engrng. Asst., Univ. of Minn., 1958-61; Rsch. Asst., ibid., 1961—. Mem.: Am. Geophysical Union. Contbr. to: Proc. of 3rd Annual Cospar Meeting; Jour. of Geophysical Rsch. Serv. Rec.: U. S. Navy, 1954-58. Areas of Rsch.: Cosmic Rays; Geomagnetic Phenomena.

HOFRICHTER, Charles Henry (Ph.D.), Dir. of Appl. Rsch., Orgs. Div. OMCC, Olin Mathieson Chem. Corp., 275 Winchester Ave., New Haven 4, Conn. Home Add.: Walnut Hill Rd., Madison, Conn. POLYMERS, AGRICULTURAL CHEMICALS, CELLOPHANE, SILICOORTHOESTERS. b. Cleveland, Ohio, Sept. 3, 1914. s. Charles H., Sr. and Jessie Elizabeth (Strubel) H. Edn.: A.B., Hiram Coll., 1937; Ph.D., Univ. of Buffalo, 1940; Post Doc., Northwestern Univ., 1941. m. Harriet E. Luth, Sept. 3, 1938. c.: Barbara Jean; Harry James; Judith Ann; Virginia Jane. Exp.: Rsch. Chem., Durez, 1941-42; Rsch. Chemist, E. I. DuPont, Buffalo, N. Y., 1942-51; Chief Film Rsch., Olin Mathieson Chem. Corp., New Haven, Conn., 1951-54; Mgr. Pest Rsch., ibid., 1954-58; Asst. to the Vice-Pres. for Rsch., ibid., 1958-62; Dir. of Appl. Rsch., Orgs. Division, ibid., 1962—. Hon. Pos.: Moderator, New Haven East Consociation of Congregational Churches. Mem.: R.E.S.A.; N. Y. Academy of Sci.; Am. Chem. Soc.; A.A.A.S.; N. Y. Chem. Club; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Paper Trade Jour.; Jour. Organic Chem. Areas of Rsch.: Polymers, Cellophane, Pesticide Chemicals, Adhesion, Silicoorthoesters.



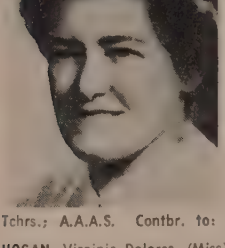
HOFSTADTER, Robert (Ph.D.), Prof. of Phys., Stanford Univ., Palo Alto, Calif. Home Add.: 639 Mirada Ave., Stanford, Calif. NUCLEAR PHYSICS, HIGH ENERGY PHYSICS. b. Manhattan, N. Y., Feb. 5, 1915. s. Louis and Henrietta (Koenigsberg) H. Edn.: B.S., City Coll. of N. Y., 1935; M.A., Princeton Univ., 1938; Ph.D., ibid., 1938. m. Nancy Givan, 1942. c.: Douglas; Laura; Mary. Exp.: Instr., Phys., Univ. of Pa., Univ. Pk., Pa., 1940-41; Instr., Phys., City Coll., N. Y., 1941-42; Assoc. Physicist and Physicist, Natl. Bur. of Stands., Wash., D. C., 1942-43; Asst. Chf. Physicist, Norden Labs. Corp., N. Y., 1943-46; Asst. Prof., Phys., Princeton Univ., 1946-50; Assoc. Prof., Phys., Stanford Univ., 1950-54; Prof., Phys., ibid., 1954—. Hon. Pos.: Assoc. Editor: The Phys. Rev., 1951-53; Rev. of Scient. Instruments, 1954-56; A Rev. of Mod. Phys., 1958—; Co-Editor, Investigations in Phys., 1951—. Mem.: Am. Phys. Soc., Fellow; Phys. Soc. of London, Fellow; Italian Phys. Soc.; Am. Assn. for the Adv. of Sci., Fellow; Sigma Xi; Phi Beta Kappa. Author: High-Energy Electron Scattering Tables, 1960, Co-author. Contbr. to: Phys. Rev., Phys. Rev. Letters, Revs. Mod. Phys., Rev. Sci. Instr., Nuovo Cimento, Annual Rev. Nuclear Sci. Gen. Int.: Kenyon Prize in Maths. and Phys.; Coffin Fellowship, G. E. Co.; Proctor Fellowship; Harrison Fellowship; Natl. Acad. of Scis.; Calif. Scientist of the Year, 1959; Nobel Prize in Physics, 1961. Areas of Rsch.: Nucleon Structure, High Energy Nuclear Physics, Detection of Gamma Rays and Charged Particles.

HOFSTATTER, Lewis Albert (Mr.), Mgr., Nicad Div. of Gould-Natl. Batteries, Inc., 7 Dey St., New York, N. Y. Home Add.: 649 S. Beverwyck Rd., Parsippany, N. J. PHYSICS: SPECIFICALLY, ULTRASONICS, SPECTROSCOPY, STATISTICAL RELIABILITY, NON-DESTRUCTIVE TESTING. b. Hartford, Conn., Nov. 6, 1928. s. Allen and Gertrude (Arensen) H. Edn.: A.B., Univ. of Ohio, 1951. m. Joan Ahlin, Dec. 17, 1951. c.: Ruth; David; Karl; Stephen; Emily. Exp.: Spectrographic Mgr., Henry Southern Eng. Co., Hartford, Conn., 1952-59; Reliability Mgr., Chatham Electronics Div., Tung-Sol Elec., Inc., Livingston, N. J., 1959-60; Mgr., Nicad Div., Gould-Natl. Batteries, Inc., New York, N. Y., 1960—. Hon. Pos.: Spectrographic Let., Natl. Bit. Soc. Mem.: Am. Phys. Soc.; Astrophysical Soc.; Am. Assn. Adv. of Sci.; Fed. Am. Sci.; Phi Eta Sigma; Natl. Hon. Club; Rotary; C. of C.; Civil Defense. Contbr. to: A.S.T.M.; A.S.Q.C.; Proc. Comm. Elec. Soc. Areas of Rsch.: Phys. Electronics—R. and D. Leading Directly to Development of World's First Commercially Available Amplitrons. Special Consultation in Statistical Quality Control and Preventive Reliability. High Altitude Researches. Spectrographic Procedures Development.

HOGAN, Robert Steadham (M.D.), Physician, 2608 10th Ave., So., Birmingham, Ala. Home Add.: 2926 Canterbury Rd., Birmingham, Ala. INTERNAL MEDICINE-RHEUMATIC DISEASES. b. Birmingham, Ala., Nov. 3, 1922. s. Marion Elias and Kathleen (Stead-

ham) H. Edn.: B.S., Univ. of Ala., 1947; M.D., Med. Coll. of Ala., 1951. m. Katherine Hardin, June 4, 1950. c.: Robert, Jr.; Nelle Lindsay; Richard; James. Exp.: Clin. Med. Asst. Prof., Med. Coll. of Ala., Birmingham, Ala., 1956—; Physician, Birmingham, Ala., 1956—. Hon. Pos.: Pres., Local Chapter, Am. Arthritis and Rheumatism Found. Mem.: Diplomate, Am. Bd. of Internal Med.; Fellow, Am. Coll. of Physns.; Am. Med. Assn.; Am. Heart Assn.; Am. Rheumatism Assn.; Kappa Alpha; Phi Chi; Omicron Delta Kappa; Alpha Omega Alpha; Birmingham Chamber of Commerce; Birmingham Country Club. Serv. Rec.: U. S. Army Air Force, 1942-45. Areas of Rsch.: Rheumatic Diseases.

HOFSTETTER, Lena A. (Malentacchi) (Mrs.), Asst. Prof., Chem., Staten Island Community Coll., 50 Bay St., Staten Island, N. Y.



Home Add.: 31 Silver Lake Rd., Staten Island 1, N. Y. CHEMISTRY. b. Hartford, Conn., July 13, 1916. d. Adelindo and Julia L. (Brignole) Malentacchi. Edn.: B.S., St. Joseph Coll., 1938; M.S., Univ. of Conn., 1940. m. Charles F. Hofstetter, Jan. 23, 1954. Exp.: Rsch. Chem., Pratt & Whitney Div., United Aircraft, Conn., 1941-43; Rsch. Chem., Chemotherapeutic Div., U. S. Pub. Health Serv., Staten Island, N. Y., 1943-45; Asst. Instr., Univ. of Conn., 1945-46; Assoc. Prof. of Chem., St. Joseph Coll., 1946-54; Hd. of Clin. Lab., Staten Island Hosp., 1954-56; Asst. Prof. of Chem., Staten Island Community Coll., 1956—. Mem.: Am. Chem. Soc.; New England Assn. of Chem. Tchrs.; A.A.A.S. Contbr. to: Sci.; Jour. Am. Chem. Soc.

HOGAN, Virginia Dolores, (Miss), Rsch. Chemist, Picatinny Arsenal, Dover, N. J. Home Add.: 901 Ogden Ave., N. Y. 52, N. Y. PHYSICAL-INORGANIC CHEMISTRY. b. N. Y., N. Y., Jan. 20, 1929. d. John J. and Edna (Thielmann) H. Edn.: B.S., St. John's Univ., 1949; M.S., Fordham Univ., 1952; Grad. Asst.,Fordham Univ., N. Y., 1949-51; Jr. Chemist, Brookhaven Natl. Lab., Upton, N. Y., 1951-53; Chemist, Columbia Univ., N. Y., N. Y., 1954-55; Rsch. Chemist, Picatinny Arsenal, 1955—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Ordn. Assn.; Highbridge Community Coun. Contbr. to: Analyt. Chem.; Rad. Rsch.; Jour. of Phys. Chem.; Combustion and Flame; Jour. of Chem. and Engrng. Data. Areas of Rsch.: Differential Thermal Analysis and Thermogravimetry; Radiation Chemistry of Inorganic Materials.

HOHNSTINE, Jack Taylor (Mr.), Vice-Pres., Product Rsch. and Develop., 685 Third Ave., N. Y. 17, N. Y. Home Add.: 38 Exeter Rd., Short Hills, N. J. CHEMICAL SPECIALTIES. b. Pleasant Ridge, Ohio, June 9, 1913. s. Charles A. and Anna May (Taylor) H. Edn.: Ohio State Univ., 1934; Univ. of Cincinnati, 1936. m. Cajetan D'Agostino, Sept. 11, 1936. c.: Diane; Jack C.; James; Donald; David. Exp.: Wm. S. Merrell, Co., Chemist, Cincinnati, 1934-35; Rsch. Chemist and Prod. Mgr., A. S. Boyle Co., Jersey City, N. J., 1935-46; Mgr. of Mfg., Boyle-Midway, Inc., N. Y., N. Y., 1946-48; Asst. to Pres., Tech. Dir., ibid., Cranford, N. J., 1948-55; Vice-Pres., Product Rsch. and Develop., Boyle-Midway Div. of Am. Home Products Corp., 1955—. Hon. Pos.: Past Chmn., Sub I of ASTM D-21. Mem.: A.A.A.S.; A.C.S.; A.O.A.; A.S.T.M.; C.S.M.A.; Millburn Boosters Club; Millburn Little League and Junior League Baseball Club; Crossroads-Deerfield Civic Assn. Areas of Rsch.: Waxes, Polishes, Cleaners, Insecticides, Herbicides, Ferttilizers, Deodorants, Sanitizers, Lubricants, Fillers, Aerosol Products.

HOLBERT, Pauline E. (Miss), Asst. Prof., Electron Microscopy, Rutgers—The State Univ., New Brunswick, N. J. Home Add.: 80 Highland Ave., Glen Ridge, N. J. ELECTRON MICROSCOPY. b. Elmira, N. Y., Sept. 12, 1905. d. Tracey Brooks and Florence Martha (Paul) H. Edn.: B.S., Elmira Coll., 1927. Exp.: Med. Technolt., Greystone Park Hosp., Greystone Park, N. J., 1927-29; Med. Technolt., Newark Presby. Hosp., Newark, N. J., 1929-31; Med. Technolt., Private Physn., Newark, N. J., 1931-43; Jr. Engr., Fed. Tel. and Radio Corp., Newark, N. J., 1943-45; Microscopist, Celanese Corp. of Am., Summit, N. J., 1945-55; Univ. Asst. Prof., Rutgers—The State Univ., 1955—; Owner, The Holbert Elect. Mic. Lab., Glen Ridge, N. J., 1961—. Mem.: N. Y. Soc. of Electron Microscopists; Phila. Elect. Mic. Soc.; N. Y. Mic. Soc., Fellow, Life Mem., Past Pres.; Fellow, Royal Mic. Soc.; Elect. Mic. Soc. of Am.; Theobald Smith Soc., Treas.; Am. Soc. for Microb.; Am. Assn. Adv. Sci.; N. Y. Acad. of Sci.; Sigma Xi. Contbr. to: Jour. of Bact.; Jour. of Biophys. and Biochem. Cyt. Areas of Rsch.: Electron Microscopy and Light Microscopy Biological and Non-Biological.

HOLCOMB, Dysart Edgar (Ph.D.), Dir. of Rsch. and Dev., El Paso Nat. Gas Prod. Co., El Paso, Tex. b. Wellington, Tex., May 1, 1917. s. Henry Alvin (dec.) and Jennie (Dysart) H. Edn.: B.S. in Ch.E., Tex. Tech. Coll., 1937; M.S., Univ. of Mich., 1938; Ph.D., ibid., 1941. m. Margaret Appleman of Midland, Mich., Aug. 6, 1938. d. William (dec.) and Sarah Appleman. c.: Dysart, Jr.; Margaret Ann; Mary Carolyn; John Steven. Exp.: Chem. Engr., Univ. Oil Products Co., 1941-46; Assoc. Prof. of Chem. Engrng., Purdue Univ., 1946-49; Sr. Projects Technolst., Sinclair Refining Co., 1949-50; Dean of Engrng., Tex. Tech. Coll., 1950-55; Pres., Tex. Western Coll., 1955-58; Dir. Res., El Paso Nat. Gas Prod. Co., 1958—. Hon. Pos.: Secy., Students Chapters Com. of Amer. Inst. of Chem. Engrs., 1953-54; Distillation Symposium Chmn., Amer. Inst. of Chem. Engrs., Cleveland Meeting, 1954, Houston Meeting, 1955; Designated as Distinguished Alumnus by Coll. of Engrng., Univ. of Mich., 1953; Dir., Tex. Techn. Coll. Fdtn., 1953—; Mem., Exec. Bd., Yucca Coun., Boy Scouts of Amer., 1957—; Dir., El Paso Branch, Federal Reserve Bank of Dallas, 1959—; Pres., Bd. of Managers, El Paso County Hosp. Dist., 1959—. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Tau Beta Pi; Sigma Xi; Phi Kappa Phi; Phi Lambda Upsilon; Omega Chi Epsilon; Country Club; Internatl. Club. Ph.D. Dissertation: The Calculation of Natural Gasoline Distillation Columns and Absorbers. Hobbies: Golf; Lapidary; Woodworking. Religion: Protestant. Polit. Party: Independent. Listed in: W.W.A.; Who's Who in the Southwest; Who's Who in Engrng.; Amer. Men of Sci.

HOLCOMBE, Richard Maynard (Mr.), Deputy Dir., Oceanographic Analysis Div., U. S. Navy Hydrographic Office, Suitland, Md. Home Add.: 6016 Hawthorne St., Cheverly, Md. METEOROLOGY AND OCEANOGRAPHY. b. Cambridge, Mass., Feb. 2, 1920. s. Arthur Norman and Caroline (Crossett) H. Edn.: B.S., Harvard Coll., 1943. m. Bethany Todd, June, 1943. c.: Norman; James; Louise. Exp.: Meteorologist, Pan Am. World Airways, San Francisco, Calif., 1946-50; Meteorologist, United Airlines, San Francisco, Calif., 1950; Meteorolt. and Oceanographer, U. S. Navy Hydrographic Office, 1950—. Hon. Pos.: Pres., U. S. Navy, Hydrographic Office Br. of R.E.S.A., 1961-62. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; Scient. Rsch. Soc. of Am. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Marine Climatology and Oceanography.

HOLDEN, Philip Lawson (Mr.), Engr., Tex. Instruments, Inc., Dallas, Tex. Home Add.: 705 Pinehurst Dr., Richardson, Tex. RELIABILITY ENGINEERING. b. Wichita Falls, Tex., May 8, 1934. s. Robert Cameron and Frances (Estes) H. Edn.: B.S., Midwestern Univ., 1959. m. Carol Loeser, 1961. Exp.: Lab. Dir., Midwestern Univ., Wichita Falls, Tex., 1956-59; Engr., Thiokol Chem. Corp., Logan, Utah, 1951-60; Engr., Tex. Instruments, 1960—. Mem.: Am. Soc. for Quality Control; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci. Author: How to Figure Profits, 1961. Contbr. to: Electro-Technology. Serv. Rec.: U. S. Army, 1953-56. Gen. Int.: Techn. Consultant to Advanced Associates. Areas of Rsch.: Extra High Reliability Missile Components and Subsystems; Stability of Solid State Surfaces, Technical Economics.

HOLLAND, Monte Gene, (M.D.), Assoc. Prof., Tulane Schl. of Med., 1430 Tulane Ave., New Orleans, La. Home Add.: 2821 Haring Rd., Metairie, La. OPHTHALMOLOGY. b. Little Rock, Ark., Nov. 20, 1928. s. Monte Gene, Sr., and Eva Mae (Tenent) H. Edn.: B.S., La. State Univ., 1949; M.D., ibid., 1953. m. Mary Ellen Rolph, Feb. 12, 1954. c.: Darcie Ann. Exp.: Clin. Assoc., Natl. Insts. of Hlth., Bethesda, Md., 1955-57; Spec. N.I.H. Trainee in Ophthalm., Tulane Univ., 1957-58; Instr., ibid., 1957-58; Asst. Prof., ibid., 1958-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: Markle Schlr. in Med. Sci., 1961. Mem.: Assn. for Rsch. in Ophthalmol.; Inst. of Radio Engrs.; Prof. Grp. on Inform. Theory and Prof. Grp. on Bio. Med. Elects.; Optical Soc. of Am.; Biophys. Soc.; Alpha Omega Alpha; Sigma Xi; Theta Xi; Nu Sigma Nu; Young Men's Bus. Club of New Orleans. Contbr. to: Am. Jour. of Ophthalm. Archives of Ophthal.; Trans. of the Am. Acad. of Ophthal. and Otolaryngol. Areas of Rsch.: Bio-Physics; Biomedical Electronics; Mathematical Bio-Physics; Physiology of the Eye.

HOLLAND, William Cannon (M.D.), Prof., Chmn., Dept. of Pharmacol., Univ. of Miss. Med. Ctr., Jackson, Miss. Home Add.: 147 Highland Cr., Jackson, Miss. PHARMACOLOGY. b. Barton, Ala., Sept. 26, 1921. s. William Cannon and Willie (Abbey) H. Edn.: B.A., Vanderbilt Univ., 1944; M.D., ibid., 1948. m. Jane Elizabeth Medearis, 1946. c.: William C.; Sue; Betty; Robert. Exp.: Instr., Vanderbilt Univ., 1950-51; Prof., ibid., 1958-59; Prof., Chmn., Dept. of Pharmacol., Univ. of Miss. Med. Ctr., 1959—. Mem.: A.A.A.S.; Sigma Xi; Soc. Soc. of Clin. Rsch.; Am. Soc. of Pharmacol. Author: Chemistry of Heart Failure, 1960. Contbr. to: Am. Jour. Physiol.; Jour. of Pharmacol.; Nature. Areas of Rsch.: Cardiovascular Pharmacology, Enzymology, Molecular Pharmacology.

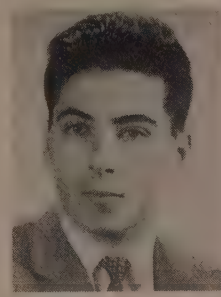
HOLLANDER, Philip Ben, (Ph.D.), Sr. Engr., Radio Corp. of Am., Princeton, N. J. and Assoc. in Pharmacol., Woman's Med. Coll., Phila., Pa. Home Add.: 1006 Haral Pl., Haddonfield, N. J. BIOPHYSICAL PRINCIPLES OF PHARMACOLOGY; PHYSIOLOGY. b. Chicago, Ill., May 4, 1924. s. Max and Rose (Sadowska) H. Edn.: B.A., Univ. of Calif. at L. A., 1948; M.Sc., Univ. of So. Calif., 1955; Ph.D., ibid., 1960. m. Pauline Springer, Aug. 13, 1949. c.: Marc Joel; Carole Ruth; Daniel Charles. Exp.: Rsch. Assoc., Univ. of So. Calif., L.A., Calif., 1951-59; L. A. Co. Hear. Assn. Fellow, ibid., 1959-60; U.S.P.H. Post. Doc. Fellow, ibid., 1960-61; Eng., A.A., R.C.A., Camden, N. J., 1961—; Assoc. in Pharmacol., Woman's Med. Coll., Phila., Pa., 1961—. Mem.: Am. Assn. for the Adv. of Sci.; N.Y.A.C.; Western Pharmacol. Soc.; I.R.E.; P.G.B.M.E.; Sigma Xi; Phila. Physiol. Soc. Contbr. to: Western Pharmacol. Soc.; Fed. Procs.; A.I.E.E. Symposium. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: Developed Biophysical Instruments to Measure both Membrane Potentials of Single Cells and Tissue Contractile Force. Areas of Rsch.: Biophysics; Pharmacology; Physiology.

HOLLINGER, Nell F. (Ph.D.), Assoc. Prof., Schl. of Publ. Health, Univ. of Calif., Berkeley 4, Calif. Home Add.: 6036 Wood Dr., Oakland 11, Calif. CLINICAL CHEMISTRY: MICRO-BIOLOGY. b. Lordsburg, N. Mex., Apr. 18, 1905. d. Charles F. and Mary Malone) H. Edn.: A.B., Univ. of Calif., 1926; B.S., ibid., 1933; Ph.D., Stanford Univ., 1944. Exp.: Owner and Partner, San Jose Clinical Lab., San Jose, Calif., 1933-48; Asst. Prof., Schl. of Publ. Health, Univ. of Calif., 1948-53; Assoc. Prof., ibid., 1953—. Mem.: Sigma Xi; Delta Omega; Iota Sigma Pi; Soroptimist. Author: Practical Clinical Chemistry, 1952, Revised, 1960. Contbr. to: Postgrad. Med.; Pediatrics; Clin. Chem.; Am. Jour. Pub. Health. Areas of Rsch.: Streptococcol Transport, Recovery, Virulence.

HOLLINGWORTH, Leland George (Mr)., Dir. of Sci., Brookline Pub. Schl., (Ret.), Brookline, Mass. Home Add.: 21 Lake Shore Rd., Natick, Mass. CHEMISTRY. b. Staffordville, Conn., June 30, 1899. s. Carleton Howard and Alena Belle (Corbin) H. Edn.: A.B., Harvard Univ., 1920; Ed.M., ibid., 1926. m. Ethel Mae Southard, June 14, 1924. c.: Helen Elizabeth; Natalie R.; Nancy Lee (Mrs. Thomas K. McRae). Exp.: Hd. Sci. Dept., E. Greenwich Acad., R. I., 1921-22; Instr. Ecole Normale de Garcons, Certificat de L'Universite de Caen, Caen, France, 1923-24; Tchr. Chem., Brookline H. S., 1924-37; Dir. of Sci., Brookline Pub. Schl., (Ret), 1937—; Dir. of Math., Brookline Pub. Schl., 1941-47. Hon. Pos.: Mem. Schl. Comm., Natick, Mass., 1945—; Chmn., Natick Schl. Comm., 1956—. Mem.: Phi Delta Kappa; Am. Acad. of Arts and Sci.; Am. Inst. of Internatl. Edn.; Accreditation Comm. for Armed Forces; N. E. Assn. of Physics and Chem. Tchrs.; Natl. Assn. Sci. Tchrs.; N.E. Schl. Devel. Coun.; Mass. Schoolmasters Club; Meridian Lodge, A.F. & A.M.; Natl. Assn. of Schl. Comm. Co-Author: Science for Better Living, 1950; You and Your World, 1953; You and Your Inheritance, 1953; You and Sci., 1955; You and Your World, 1956; You and Your Inheritance, 1956; You and Your Resources, 1960; You and Science, 1960; You and Your World, 1960. Contbr. to: Contributed to Scientific Journals. Areas of Rsch.: Lectr. on Atomic Energy and The New Cosmology.

HOLLY, Francis Eugene (Mr.), Rsch. Physicist, U.S.A.F., Kirtland AFB, New Mex. Home Add.: 1101 Dakota S.E., Albuquerque, N. Mex. SPACE PHYSICS. b. Farmington, N. Mex., May 8, 1935. s. Charles Fredrick and Jessie Elizabeth (Schmid) H. Edn.: B.S., N. Mex. State Univ., 1957; M.S., Vanderbilt Univ., 1960. m. Mary Duranda Kious, Sept. 6, 1953. c.: Merry; Laurie; Marshall; Leslie. Exp.: Physicist, E. I. duPont de Nemours, Inc., Aiken, S. C., 1957; A.E.C. Fellow, Vanderbilt Univ., Nashville, Tenn., 1957-58; Instr. Phys. and Math., Coll. of St. Josephs, Albuquerque, N. Mex., 1961—; Physicist, U.S.-A.F., Kirtland AFB, N. Mex., 1958—. Mem.: Am. Geophys. Union; Lambda Chi Alpha; Phi Mu Tau. Contbrng. Author: Ballistic Missiles and Space Technology, 1961. Contbr. to: Jour. Geophys. Rsch.; Jour. Am. Rocket Soc.; Rev. Sci. Insts. Serv. Rec.: U. S. Air Force, 1958-62. Gen. Int.: A.E.C. Special Fellow, 1957; A. F. Commendation Medal, 1961. Areas of Rsch.: Characteristics of Space Radiation, Biological Hazards of Space Radiation.

HOLLY, Sandor (Mr.), Rsch. Staff Mem., Arthur D. Little, Inc., 15 Acorn Park, Cambridge, Mass. Home Add.: 68 Kirkland St., Cambridge, Mass. ELECTROMAGNETIC THEORY, MICROWAVES SOLID STATE PHYSICS, CRYOGENICS. b. Budapest, Hungary, May 10, 1933. s. Dr. Sandor and Maria (Acsay) H. Edn.: B.S., E. L. Univ. of Sciences, Budapest, Hungary, 1955; M.S., Mass. Inst. of Tech., 1960; Grad. Study, Harvard Univ., 1961. Exp.: Rsch. Asst., Rsch. Lab. of Electronics, Mass. Inst. of Technol., 1958-59; Rsch. Staff Mem., Physicist, Internatl. Bus. Machines, Inc., Rsch. Center, Yorktown Heights, N. Y., 1959-61; Rsch. Staff Mem., Physicist, Arthur D. Little, Inc., Cambridge, Mass., 1962—. Mem.: I.R.E.; Am. Phys. Soc.; Am. Inst. of Physics; Am. Geophys. Union; Optical Soc. of Am.; Eta Kappa Nu. Contbr. to: Q.P.R. of Rsch. Lab. of Electronics. Areas of Rsch.: Microwave Tubes: T.W.T., Multicavity Klystons, efficiency, low worse of Microwave Spectroscopy, EPR, Cycloton, Spin resonance studies of semiconductors, compounds; Lasers; Superconductivity; tunneling; its characteristics at microwave frequencies, and applications.



HOLMAN, Delavan Van Horn (M.D.), Med. Dir., C. V. Starr and Co., 102 Maiden Lane, New York City 5, N. Y. Home Add.: 114 East 95th St., New York 28, N. Y. INTERNAL MEDICINE, CARDIOLOGY. b. Rockwell, Iowa, May 13, 1905. s. Henry Delavan and Elvan (Brown) H. Edn.: B.A., Univ. of Iowa, 1928; M.D., ibid., 1930. m. Katherine Peckett, Jan. 21, 1937. c.: Derek Van Horn; Katherine. Exp.: Fellow, Rockefeller Inst. Hosp., New York, N. Y., 1934-37; Instr., Pharmacol., McGill Univ., Montreal, 1933-34; Instr., Med., N. Y. Univ., 1937-46; Instr., Med., Cornell Univ., 1946-48; Asst. Clin. Prof. Ind. Med., N. Y. Univ., Bellvue Med. Center, 1948—; Dir., Cardiac Work Classif. Unit, Univ. Hosp., N.Y.C., 1951—; Chief Internist, Standard Oil Co., New York, N. Y., 1946-53; Med. Dir., C. V. Starr and Co., ibid., 1953—. Mem.: Am. Coll. of Physicians; N. Y. Acad. of Med.; Am. Assn. for the Adv. of Sci.; Royal Soc. of Med., London; Alpha Omega Alpha; Sigma Xi; Phi Gamma Delta; Nu Sigma Nu; Omicron Delta Kappa. Author: The Heart in Industry, 1961. Contbr. to: The Am. Heart Jour.; Jour. of Pharmacol. and Exp. Therapeutics; Bull. of the N. Y. Acad. of Med.; N. Y. State Jour. of Med.; Med. Bull., Standard Oil Co.; Am. Assn. of Indus. Nurses Jour. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Circulation and Heart Disease.

HOLMAN, Harold Foster (Mr.), Hd. Sci. Dept., Girard Coll., Phila. 21, Pa. Home Add.: 1615 Brookhaven Rd., Wynnewood, Pa. PHYSICS. b. Colo. Springs, Colo., Dec. 8, 1901. s. John H. and Catherine (Bowersock) H. Edn.: A.B., Maryville Coll., 1929. Hon. Degs.: M.A., Wash. Coll., 1936. m. Lou Repass, Aug. 3, 1936. c.: Emmett Lou. Exp.: Coach, Math. Tchr., Wash. Coll., Wash. Coll., Tenn., 1929-36; Tchr. of Math. and Sci., Brown Prep Schl., Phila., Pa., 1940-51; Hd. Sci. Dept., Girard Coll., 1936—. Mem.: Am. Assn. for the Adv. of Sci.; The Benjamin Franklin Inst.; Natl. Edn. Assn.; Physics Club of Phila.; Phila. Sci. Tchrs. Assn.; Natl. Sci. Tchrs. Assn.; Wynnewood Valley Civic Assn.

HOLMAN, Steele (Mr.), Pres., Steele Holman and Associates, Box 488, Sausalito, Calif. Home Add.: 1470 Washington 9, San Francisco, Calif. PUBLIC ADMINISTRATION. b. Ottawa, Ill., Dec. 31, 1909. s. Harland Davidson Holman and Esther Jane (Lowe) Holman Sutherland. Edn.: A.B., Univ. of Calif., Berkeley, 1936. m. Kathleen Kniveton, Aug. 30, 1941. c.: Rodwin William Steele; Holman, IV; Tamara; Sona. Exp.: Pres., Steele Holman and Assoc., Sausalito, Calif., 1945—. Hon. Pos.: Hon. Mem., Assn. of Mgmt. and Indus. Engrs. of the Philippines; Pres., Holman Fdn.; Vice Pres., Treas., Kniveton Foundation. Mem.: World Trade Club of San Francisco, Calif.; Am. Geophysics Union; Am. Institute of Industrial Engrs.; Western Governmental Research Assn.; World Affairs Coun. Gen. Int.: Candidate for Governsorship of American Samoa, 1961. Areas of Rsch: Administration of small business and/or government;

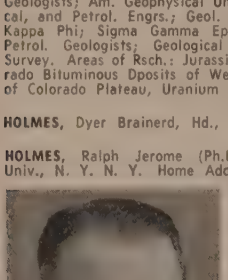
Sociological implications of structural changes within organization. Developer of Properties, San Francisco Bay Area.

HOLMAN, William Frank (Ph.D.), Prof., (emer.), Univ. of Minn., Mpls., Minn. Home Add.: 2130 No. Pacific, Santa Ana, Calif. MATHEMATICS AND MECHANICS. b. Friend, Nebr., March 6, 1883. s. Nathan C. and Eva Deli (Taylor) H. Edn.: B.S., Univ. of Nebr., 1904; M.A., ibid., 1906; Ph.D., Goettingen Germany, 1908. m. Grace Perusse, Dec. 22, 1914. c.: John; Jane. Exp.: Instr., Worcester Polytech., Worcester, Mass., 1908-09; Instr., Univ. of Minn., Mpls., Minn., 1909; Prof., ibid., (emer.), 1909-51. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Sigma Xi; Phi Gamma Delta; Theta Tau; Alpha Rho Chi; Acacia; Engrs. Club of Mpls., Pres., 1926. Areas of Rsch.: Reinforced Concrete Design; Administration of Physical Plant.

HOLMES, Clifford Newton (Ph.D.), Asst. Mgr., Mining and Milling Dept., Phillips Petroleum Co. Home Add.: 1431 Valley Rd., Bartlesville, Okla. GEOLOGY STRATIGRAPHY, TECTONICS, MINERAL DEPOSITS. b. Escanaba, Mich., Jan. 1, 1922. s. Joseph T. and Gerda (Olson) H. Edn.: B.S., Univ. of Mich., 1943; M.S., Yale Univ., 1948; Ph.D., Univ. of Utah, 1960. m. Ruth Bradley, Aug. 4, 1945. c.: Alexander; Cameron; Sven; Ivar; Kurt; Edith. Exp.: Geologist, U. S. Geological Surv., Kans., Calif., Utah, La., Wash., Colo., 1943-50; Sr. Geologist, Phillips Petrol. Co., Salt Lake City, 1951-52; Asst. Dir. Exploration Projects, Phillips Petrol. Co., 1952-53; Dir. Strategic Minerals, ibid., 1954-58; Asst. Mgr., Mining and Milling Dept., 1959—. Mem.: A.A.A.S.; Geological Soc. of Am.; Am. Assn. of Petrol. Geologists; Am. Geophysical Union; Am. Inst. Mining, Metallurgical, and Petrol. Engrs.; Geol. Soc. Wash., D. C.; Sigma Xi; Phi Kappa Phi; Sigma Gamma Epsilon. Contbr. to: Am. Assn. of Petrol. Geologists; Geological Soc. of Am.; U. S. Geological Survey. Areas of Rsch.: Jurassic History and Stratigraphy of Colorado Bituminous Dposits of Western U. S.; Mesozoic Stratigraphy of Colorado Plateau, Uranium Geology of the U. S.

HOLMES, Dyer Brainerd, Hd., U. S. Man-on-the-Moon Program.

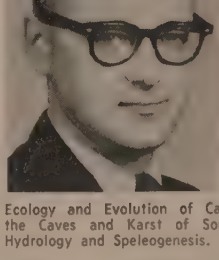
HOLMES, Ralph Jerome (Ph.D.), Prof. of Geology, Columbia Univ., N. Y. N. Y. Home Add.: 1575 Ctr. Ave., Ft. Lee, N. J. GEOLOGY. b. N. Y., N. Y., Oct. 31, 1906. s. Charles Jerome and Blanche (Holley) H. Edn.: B.S., Columbia Univ., 1933; Ph.D., ibid., 1946. m. Jane Hegeman, June 12, 1954. Exp.: Lecturer, Geol., Columbia Univ., N. Y., 1936-43; Instr., Geol., ibid., 1943-47; Asst. Prof., Geol., ibid., 1947-57; Assoc. Prof., ibid., 1957-62; Prof., ibid., 1962—. Hon. Pos.: Hon. Mem., Rochester Acad. of Scis. Mem.: Fellow, Geol. Soc. of Am.; Fellow, Miner. Soc. of Am.; Soc. Econ. Geol.; Am. Assn. for the Adv. of Sci.; A.I.M.E.; Miner. Soc. Gr. Br.; Am. Cryst. Assn.; Geochem. Soc.; Soc. Miner. Fr.; Can. Miner. Assn.; Sigma Xi. Author: The Mineral Deposits of Somalia, 1954, 1957. Contbr. to: Am. Mineral; Bull. Geol. Soc. Am.; Econ. Geol.; Gems and Gemol.; Jour. Geomorphol.; Sci. Gen. Int.: Extensive Investigations of Geology and Mineral Deposits of Underdeveloped Countries for the U. S. Mutual Security Agency in Somalia in 1953 and for the United Nations in Iran, 1956-58. Areas of Rsch.: Mineralogy, Ore Deposits, Crystallography; Economic Geology, Gemology.



HOLMQUIST, Albert M., Emer. Prof. of Biol., St. Olaf Coll., Northfield, Minn. Home Add.: 1807 Gold Ave., S.E., Albuquerque, N. Mex. ZOOLOGY, MORE SPECIFICALLY ANIMAL ECOLOGY. b. Faribault, Minn., Oct. 7, 1891. s. A. W. and Mary (Groven) H. Edn.: A.B., St. Olaf Coll., 1914; M.S., Univ. of Chicago, 1917; Ph.D., ibid., 1925. m. Elsie Laramore Klovstad, July 8, 1929. c.: Mary Louise. Exp.: Principal of H. S., Mohall, N. D., 1914-16; Instr., Biol. Dept., St. Olaf Coll., Northfield, Minn., 1917-18; Tchr. of Gen. Sci. and Biol., H. S., Marinette, Wis., 1919-20; Asst. Prof., Dept. of Biol., St. Olaf Coll., 1920-23; Asst., Dept. of Zool., Univ. of Chicago, 1923-25; Rsch. Fellow, Natl. Rsch. Coun., Univ. of Chicago, 1925-26; Assoc. Prof., Dept. of Biol., St. Olaf Coll., 1926-28; Prof., Dept. of Biol., ibid., 1928-60; Summer Schl. Tchng. of Zool., Northwestern Univ., 1932, Univ. of Minn., 1936, Univ. of S. Dak., 1946, 1953; Chmn. of the Biol. Dept., St. Olaf Coll., 1947-48, 1949-53; Summer Schl. Tchng. of Zool., Nebr. State Tchrs. Coll., Peru, Nebr., 1958, 1959; Emer. Prof. of Biol., St. Olaf Coll., 1960—. Mem.: A.A.A.S. (Fellow); Am. Soc. of Zool.; Ecol. Soc. of Am.; Minn. Acad. of Sci.; Gamma Alpha; Sigma Xi; Phi Beta Kappa. Contbr. to: Ecology; Ann. Entomol. Soc. of Am.; Physiol. Zool.; Minn. Jour. of Sci.; Am. Biol. Tchr. Serv. Rec.: Med. Corps, U. S. Army, 1918-19. Areas of Rsch.: Over-Wintering of Arthropods.

HOLOUBEK, Joseph Edward (M.D.), Physician, 1513 Line Ave., Shreveport, La. Home Add.: 172 Atlantic St., Shreveport, La. INTERNAL MEDICINE. b. Clarkson, Neb., Sept. 9, 1915. s. Joseph and Mary (Kucera) H. Edn.: B.Sc., Univ. of Neb., 1937; M.D., Univ. of Neb., Coll. of Med., 1938. m. Dr. Alice Baker, 1939. c.: Mary Josephine; Brian Baker; Robert Joseph; Martha Alice. Exp.: Intern, Univ. Hosp., Omaha, Nebr., 1938-39; Asst. in Med., Dept. of Med., L. S. Univ. Schl. of Med., New Orleans, La., 1931-41; Chf. Med. Serv., T. E. Schumpert Mem. Hosp., Shreveport, La., 1957-61; Assoc. Prof. of Med., Dept. of Post Grad. Med., L.S.U., Shreveport, La., 1954—; Physn., Shreveport, La., 1961—. Hon. Pos.: Pres., Natl. Fed. of Catholic Physns. Guilds, 1961—; Mem., Exec. Comm. of St. Joseph's Collegium; Delegate to IX Internatl. Congress of Catholic Physns., Munich, 1960. Mem.: Am. Assn. for the Adv. of Sci.; Fellow, Am. Coll. of Cardiol.; Sr. Mem., Am. Fed. of Clin. Rsch.; Fellow, Am. Coll. of Physns.; Dip., Am. Bd. of Internatl. Med., 1944; Fed. of Catholic Physns.; La. Hea.t Assn.; Am. Heart Assn.; So. Med. Assn.; Am. Med. Soc.; La. Med. Soc.; Shreveport Med. Soc.; Alpha Omega Alpha. Contbr. to: Internal Med.; Cardiol. Areas of Rsch.: Cardiology.

HOLSINGER, John R. (Mr.), Instr. of Biol. and Earth Sci., Fairfax County Schls., Fairfax, Va. Home Add.: 626 S. Washington St., Falls Church, Va. ZOOLOGY AND SPELEOLOGY. b. Harrisonburg, Va., Apr. 6, 1934. s. J. Welty and Beulah (Mae) H. Edn.: B.S., Va. Poly. Inst., 1955. Exp.: Instr., Fairfax County Schls., Fairfax, Va., 1958—. Hon. Pos.: Chmn., 1963 annual Convention of the Natl. Speleol. Soc.; Chmn., Natl. Speleological Soc., Va. Reg.; Dir., Biol. Survey of Va. Caves. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Speleol. Soc.; Pi Delta Epsilon. Contbr. to: D. C. Speleograph; Natl. Speleo. Soc. News; Cave Notes; Bull. of the Natl. Speleolog. Soc. Serv. Rec.: U. S. Army, 1955-58. Gen. Int.: Phi Sigma Undergrad. Rsch. Award, V.P.I., 1955. Areas of Rsch.: Studies on the Distribution, Ecology and Evolution of Cavernicolous Organisms. Studies on the Caves and Karst of Southwestern Va. with Emphasis on Hydrology and Speleogenesis.



HOLTON, Gerald (James) (Ph.D.), Prof. of Physics, Jefferson Physical Lab., Harvard Univ., Cambridge 38, Mass. Home Add.: 14 Trotting Horse Dr., Lexington 73, Mass. PHYSICS. b. Berlin, May 23, 1922. s. Dr. Emmuel J. and Regina (Rossman) H. Edn.: B.A., Wesleyan Univ., 1941; M.A., ibid., 1942; M.A., Harvard Univ., 1946; Ph.D., ibid., 1948. m. Nisha Rossfort, Sept. 12, 1947. c.: Thomas; Stephan. Exp.: Rsch. Asst. and Instr., Wesleyan Univ., Middletown, Conn., 1940-42; Instr., Brown Univ., 1942-43; Rsch. Assoc. and Tchng. Asst., Rsch. on Sound Control, O.S.R.D.-O.N.R. and Officers' Radar Course, Harvard, 1943-45; Various Faculty Ranks, now Prof. of Physics, ibid., 1945—; Chmn., Comm. on History and Philos. of Physics, Am. Inst. of Physics; Natl. Sci. Fdtn. Faculty Fellow, 1960-61. Mem.: Natl. Comm. on Coll. Physics; Fellow, Am. Acad. of Arts and Sci.; Am. Physical Soc.; Acoustical Soc. of Am.; Am. Assn. of Physics Tchrs.; History of Sci. Soc.; Philos. of Sci. Assn.; Sigma Xi. Editor-in-Chf.: "Daedalus." Author: Introduction to Concects and Theories of Physical Science, 1952; Foundation of Modern Physical Science, 1958; Science and the Modern Mind, 1958. Contbr. to: Physical Rev.; Jour. of Applied Physics; Am. Jour. of Physics; Sci.; Am. Scientist. Areas of Rsch.: Properties of Materials at High Pressures; Ultrasonics, History and Philos. of Mod. Science.

HOLWAY, Richard Thomas (Ph.D.), Exec. Secy., Armed Forces Pest Control Bd., Walter Reed Army Med. Ctr., Forest Glen, Washington 12, D. C. Home Add.: 215 Marthas Rd., Alexandria, Va. ENTOMOLOGY. b. Boston, Mass., Feb. 8, 1911. s. William H. and Edith (Rich) H. Edn.: A.B., Dartmouth Coll., 1932; M.S., Univ. of Mass., 1933; Ph.D., Ibid., 1937. m. Loris Chilwell, Mar. 8, 1945. c.: Carolyn; Jennifer G.; Ann R.; Amy J. Exp.: Entomologist, Muirhead and Holway, Inc., Duxbury, Mass., 1937-42; Ens.-Capt., Med. Serv. Corps, U. S. Navy, Washington, D. C., 1942—. Mem.: A.A.A.S.; Sigma Xi; Entomological Soc. of Am.; Entomological Soc. of Wash.; Hawaiian Entomological Soc.; Am. Mosquito Control Assn. Contbr. to: Annals. Entomological Soc. of Am. Serv. Rec.: See Positions. Areas of Rsch.: Diseases Vector Control.

HOLTUM, Alfred Gerard, Jr. (Mr.), Chief Govt. Rsch., Development Group, Andrew Corp., P. O. Box 807, Chicago 42, Ill. Home Add.: 18301 Baker Ave., Country Club Hills, Ill. ANTENNAS, R.F. TRANSMISSION, AND MEASUREMENT TECHNIQUES. b. Freeport, Ill., Aug. 26, 1918. s. Alfred Holtum, Sr., and Gunda M. (Hovden) H. Edn.: B.A., N. Y. Univ., 1949; M.S., Rutgers Univ., 1952. m. Betty Larson, 1941. c.: 6. Exp.: Chief Comm. Div., U. S. Army Electron. Proving Ground, Ft. Huachuca, Ariz., 1954-57; Chf. Engr., Andrew Calif. Corp., Claremont, Calif., 1957-61; Chief, Govt. R and D Group, ibid., Chicago, Ill., 1961—. Hon. Pos.: Chmn., Orange Belt Prof. Grps., Antennas and Propagation. Sr. Mem.: Inst. of Radio Engrs.; Sigma Xi; Eta Kappa Nu. Contbr. to: Electronic Design; Electronics; Proc. I.R.E. Serv. Rec.: U.S.N.R., 1944-45. Areas of Rsch.: Antennas, Wave Propagation, Transmission Lines.

HONIG, John Gerhart (Ph.D.), Operations Rsch., Weapon Systems Evaluation Group, Dept. of Def., Washington, D. C. Home Add.: 209 Miles Dr., Washington 21, D. C. OPERATIONS RESEARCH AND PHYSICAL CHEMISTRY. b. Vienna, Austria, Oct. 30, 1923. s. Walter and Gertrude (Weiss) H. Edn.: A.B., Drew Univ., 1947; M.S., Univ. of Mich., 1948; Ph.D., Georgetown Univ., 1956. m. Erhie Appenzeller, Sept. 18, 1949. c.: Gary Walter; Judy Gail. Exp.: Chem. Rsch., Natl. Inst. of Cleaning and Dyeing, Silver Spring, Md., 1948-51; Colloid Rsch., Naval Rsch. Lab., Washington, D. C., 1951-56; Operations Analyst, Operations Evaluation Group MIT, ibid., 1956-59; Operations Analyst, Weapons Systems Evaluation Grp., IDA, ibid., 1959—. Mem.: Am. Chem. Soc.; Operations Rsch. Soc. of Am.; Am. Assn. for the Adv. of Sci.; Soc. of Rheology. Contbr. to: Jour. of Physical and Colloid Sci.; Chem. Jour. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Colloidal Dispersions; Cleaning Processes; Military Operations Rsch., particularly in Undersea Warfare.

HOOD, Huston Edwin (Mr.), Owner, Consulting Engr., Valley Radio Supply, 1134 33rd St., Bakersfield, Calif. Home Add.: 2264 Meyer Pl., Costa Mesa, Calif. ELECTRONICS. b. Sanger, Calif., Dec. 7, 1897. s. Huston Porter and Harietta May (Milay) H. Edn.: E.E., I.C.S., 1917. m. Mable Clayton, Mar. 23, 1940. c.: Mary Lou. Exp.: Founder and Owner, Valley Radio Supply, Bakersfield, Calif., 1934—; Telegrapher, Train Dispatcher, Wire Chief Sou. Pacific Co., 1917-50. Mem.: A.A.A.S.; A.I.E.E.; I.R.E.; Calif. Acad. Scis.; Tenn. Acad. Sci.; Fel., Am. Geog. Soc.; Professional Group on Med. and Biology; Nuclear Sci.; Inst. of Radio Engrs.; Engrs. Club; Radio Pioneers.

HOOVER, Kenneth B. (Ph.D.), Prof. of Biol. and Chmn., Div. of Natural Scis., Messiah Coll., Grantham, Pa. Home Add.: Grantham, Pa. BIOLOGY, ECOLOGY. b. Abilene, Kans., Sept. 6, 1911. s. Avery T. and Anna M. (Bert) H. Edn.: A.B., John Fletcher Coll., 1934; M.S., Kans. State Univ., 1941; Ph.D., Pa. State Univ., 1952. m. Esther Bechtel, Aug. 7, 1937. c.: Marjorie L.; Janet F. Exp.: Instr., Jabbok Bible Schl., Thomas, Okla., 1936-41; Pastor, Bethel Church, Detroit, Kans., 1941-42; Prof. of Biol., Messiah Coll., 1942—; Visiting Prof. of Biol., Franklin and Marshall Coll., 1955-56. Hon. Pos.: Secy.-Treas., Pa. Acad. of Sci. Mem.: Fellow, A.A.A.S.; Ecological Soc. of Am.; Natl. Assn. of Biol. Tchrs.; Pa. Acad. of Sci.; Sigma Xi. Contbr. to: Proc. Pa. Acad.; The Pa. Cooperative Wildlife Rsch. Unit. Areas of Rsch.: Taxonomy and Ecology of the Hawthorns of Pa.

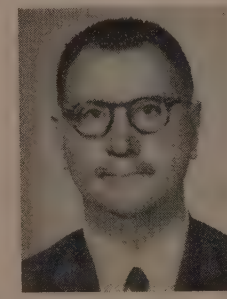
HOOVER, Thomas Burdett (Ph.D.), Chemist, Natl. Bureau of Standards, Wash. 25, D. C. Home Add.: 13103 Magellan Ave., Rockville, Md. PHYSICAL CHEMISTRY. b. Wellsville, Pa., Jan. 17, 1920. s. Walter W. and Ada (Burdett) H. Edn.: B.S., Pa. State Univ., 1942; M.S., ibid., 1946; Ph.D., ibid., 1960. m. Mamie Heald. Feb. 24, 1945. c.: Carol A.; Morris E. Exp.: Chemist, Natl. Bur. of Standards, Wash., D. C., 1960—; Sr. Chemist, Applied Sci. Lab., Inc., 1953-60; Chemist, Union Carbide Nuclear, Oak Ridge, Tenn., 1948-53; Grad. Student, Pa. State Univ., 1944-48; Instr., ibid., 1942-44. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon; Pi Mu Epsilon. Contbr. to: Analytical Chemistry; Jour. Am. Chem. Soc. Areas of Rsch.: Conductance of Non-Aqueous Solutions; Heat Capacity Above Room Temperature.

HOPE, Harold Joseph (Mr.), Assoc. Rsch. Scientist, Inst. For Exploratory Rsch., USASRDL, Ft. Monmouth, N. J. Home Add.: 919 Greenwood Dr., Spring Lake Heights, N. J. GEOPHYSICS. b. Brooklyn, N. Y., Jan. 8, 1937. s. Harold A. and Mary (Milner) H. Edn.: B.S., St. John's Univ., N. Y., 1958. m. Joyce Mortensen, Sept. 12, 1959. Exp.: Assoc. Rsch. Scientist, Inst. For Exploratory Rsch., USASRDL, Ft. Monmouth, N. J., 1958—. Mem.: Am. Geophys. Union. Contbr. to: Jour. of Geophys. Rsch. Areas of Rsch.: Short period variations (.01-1cps) of the geomagnetic field (Micropulsations).

HOPKINS, George Hallman (Mr.), Rsch. Dir., The West Co., Inc., Phoenixville, Pa. Home Add.: Jug Hollow Rd., Valley Forge, Pa. ANALYSIS OF POLYMERS, SPECTROPHOTOMETRY, POLAROGRAPHY, CHROMATOGRAPHY, PHOTOMICROGRAPHY, SPOT TESTS. b. Phoenixville, Pa., Dec. 2, 1919. s. Harry M. and Helen (Hallman) H. Edn.: B.S., Ursinus Coll., 1941. m. Emily Wagner, May 27, 1944. c.: Elise; Larry; Judith; Robert; Jean. Exp.: Analytical Chemist, Ethyl Corp., Deepwater, N. J., 1941-46; Tech. Dir., Taylor Fibre Co., Norristown, Pa., 1946-54; Rsch. Dir., The West Co., Inc., Phoenixville, Pa., 1954—. Mem.: A.C.S.; A.A.A.S.; Soc. Plastic Engrs.; Soc. Applied Spectrocopy; Phila. Rubber Group. Contbr. to: Bull. Parenteral Drug Assn.; Jour. Am. Pharm. Assn.; Jour. of Pharml. Scis. Areas of Rsch.: Analysis and Synthesis of Polymers, Analytical Methods.

HOPKINS, Milton (Ph.D.), Ed.-in-Chf., Schl. Dept., Holt, Rinehart and Winston, Inc., 383 Madison Ave., N. Y. 17, N. Y. BIOLOGY AND THE TEACHING OF SCIENCE. b. Glen Cove, N. Y., Sept. 12, 1906. s. Milton and Sue (West) H. Edn.: A.B., Amherst Coll., 1930; A.M., Harvard Univ., 1933; Ph.D., ibid., 1936. m. Elizabeth Hewlett, Aug. 12, 1944. c.: Rebecca Hart. Exp.: Instr. in Biol., Amherst Coll., 1933; Asst. in Rsch., Gray Herbarium of Harvard Univ., 1934-36; Asst. Prof. of Bot., Univ. of Okla., 1936-39; Assoc. Prof. of Bot., ibid., 1939-44; Prof. of Bot. and Chmn. of Dept., ibid., 1944-45; Sci. Editor, Henry Holt and Co., N. Y., N. Y., 1946-52; Editor-in-Chief, Schl. Dept., ibid., 1952—. Mem.: Fellow, A.A.A.S.; Bot. Soc. Am.; Torrey Bot. Club; Am. Soc. Plant Taxonomists; N. Eng. Bot. Club; Natl. Sci. Tchrs. Assn.; Natl. Assn. Rsch. in Sci. Tchng.; Assoc. Supvrn. and Curriculum Dev.; Cen. Assn. Sci. and Math. Tchrs.; Phi Gamma Delta; Soc. of Sigma Xi; Phi Sigma. Contbr. to: Rhodora; Proc. Okla. Acad. Sci.; Jour. of N. Y. Bot. Garden. Areas of Rsch.: Tchng. of Biol., Gen. Sci.

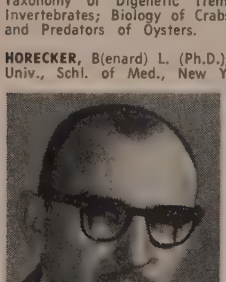
HOPMAN, Bernard Cornelis (M.D., Ph.D.), Gynecologist, Huntington Bd. Fr. 38259, Miami, Florida. Home Add.: 741 Falcon Ave., Miami Springs, Fla. GYNECOLOGY AND OBSTETRICS. b. Amsterdam, Holland, Apr. 25, 1896. s. J. H. G. Hopman and A. W. Zuyderhoudt. H. Edn.: M.D., Univ. of Amsterdam, 1922; Ph.D., ibid., 1951. m. C. M. de Jong, Jan. 30, 1942. Exp.: Rsch. Assoc., Cancer Inst., Miami, Fla., 1951-54; Assoc. Cytology, Jackson Mem. Hosp., Miami, Fla., 1954-60; Lectr., Obstetrics and Gynecol., Schl. of Med., Miami, 1960-62; Asst. Prof., Obstetrics and Gynecology, Schl. of Med., Miami, 1962—. Mem.: Am. Assn. for the Adv. of Sci.; Inter-Soc. Cytology Coun.; N. Y. Acad. of Sci.; Fla. Med. Assn.; Dade County Med. Assn. Author: About the Significance of Cytology in Obstetrics and Gynecology, 1951; Clinical Cytology and Cytologic Research Textbook, 1960. Contbr. to: Acta Cytologica. Am. Jour. of Obst. & Gynecology; Obstetrics and Gynecology; Mikroskopie; Yearbook of Pathology; Yearbook of Obstetrics and Gynecology. Areas of Rsch.: Cancer Rsch.; Cytochemistry; Cytology; Endocrinology; Cytologic Diagnosis of Pregnancy; Cytologic Diagnosis of Fetal Membranes; Chemical Therapy of Cervical Cancer.



HOPKINS, Sewell Hepburn (Ph.D.), Prof. of Biol., A. and M. Coll. of Tex., College Station, Tex. Home Add.: 709 Garden Acres, Bryan, Tex. MARINE BIOLOGY, INVERTEBRATE ZOOLOGY,

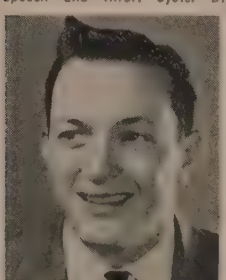
AND PARASITOLOGY; PARASITES OF INVERTEBRATES AND FISHES. b. Nuttall, Va., Mar. 24, 1906. s. Nicholas Snowden and Selina Lloyd (Hepburn) H. Edn.: B.S., William and Mary, 1927; M.A., Univ. of Ill., 1929; Ph.D., ibid., 1933. m. Pauline Cole, 1929. c.: Thomas Johns; Nicholas Arthur. Exp.: Asst., Univ. of Ill., Urbana, Ill., 1929-33; Instr., Danville Jr. Coll., Danville, Ill., 1933-35; Jr. Parasitolt., U. S. Dept. of Agric., Beltsville, Md., 1933-34; Instr., Asst. Prof., Assoc. Prof., Prof., A. and M. Coll. of Tex., 1935—; Biologist, Va. Fisheries Lab., Yorktown, Va., summers, 1941, 1944, 1945-46; Prof., A. and M. Coll. of Tex., 1946—. Mem.: Am. Soc. of Zool.; Am. Micros. Soc.; Am. Soc. Parasitol.; Natl. Shellfisheries Assn.; Am. Assn. for the Adv. of Sci.; Soc. Limnol. and Oceanog.; Ecol. Soc.; Soc. Syst. Zool.; Tex. Acad.; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi. Contbr. to: Trans. of Am. Microscopical Soc.; Jour. of Parasitol.; Parasitol.; Bull. of Marine Sci. of Gulf and Caribbean; Biol. Bull.; Procs. of the Natl. Shellfisheries Assn.; Sci.; Limnol. and Oceanog. Areas of Rsch.: Morphology, Life Histories, and Taxonomy of Digenetic Trematodes; Parasites of Fishes and Invertebrates; Biology of Crabs and of Oysters; Pests, Parasites, and Predators of Oysters.

HORECKER, B(enard) L. (Ph.D.), Prof. of Microbiology, New York Univ., Schl. of Med., New York 16, N. Y. Home Add.: 124 Vernon Dr., Scarsdale, New York. MICROBIOLOGY. b. Chicago, Ill., Oct. 31, 1914. s. Paul and Bessie (Bornstein) H. Edn.: B.S., Univ. of Chicago, 1936; Ph.D., ibid., 1939. m. Frances Goldstein, July 12, 1936. c.: Doris Eleanor Buchanan; Marilyn Martha; Linda Jean. Exp.: Rsch. Assoc., Univ. of Chicago, Dept. of Chem., 1939-40; Examiner, U. S. Civil Serv. Commssion, Washington, D. C., 1940-41; Biochemist, USPHS, NIH, Industrial Hygiene Rsch. Lab., Bethesda, Md., 1941-47; Biochemists, Natl. Inst. of Arthritis and Metabolic Diseases, Bethesda, Md., 1947-53; Chief, Sec. on Enzymes and Cellular Biochem., ibid., 1953-57; Chief, Lab. of Biochemistry and Metabolism, ibid., 1956-59; Prof. and Chmn. of the Dept. of Microbiol., N. Y. Univ., 1959—. Mem.: Am. Acad. of Arts and Scis.; Natl. Acad. of Sci.; A.A.A.S.; Am. Chem. Soc.; Am. Soc. of Biol. Chem.; Am. Soc. for Microbiol.; Biochem. Soc. of Great Britain; Soc. for General Microbiol.; Swiss Biochem. Soc.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Biol. Chem.; Science; Jour. of the Am. Chem. Soc.; Biochem. et Biophys. Acta; Jour. Cell. and Comp. Physiol.; Proceedings of the Natl. Acad. of Sci. Gen. Int.: Paul Lewis Lab. Award in Enzyme Chem., 1952; Hillebrand Prize, Am. Chem. Soc., 1954; Fed. Security Superior Accomplishment Award, 1952; Rockefeller Publ. Serv. Award, 1957. Areas of Rsch.: Enzymology, Carbohydrate Metabolism, Bacterial Physiology.



HORINE, Norman Wayne (Mr.), Sci. Tchr. and Supvr., Gasconade Co. Dist. No. R-2, Owensville, Mo. Home Add.: 302 E. Monroe, Owensville, Mo. TEACHING OF GENERAL SCIENCE, BIOLOGY, AND PHYSICS. b. Richwoods, Mo., July 7, 1934. s. John W. and Norma (Fox) H. Edn.: B.S., Agric., Univ. of Mo., 1956; M. Edn., ibid., 1958. m. Carolyn Hartford, June 9, 1956. c.: Juanita Louise; Cheryl Elaine. Exp.: Tchr., Rural Schl. Dist. 21, Campbelton, Mo., 1956-57; H. S. Sci. Tchr., Montgomery Co. Dist. No. R-2, Montgomery City, Mo., 1958-59; H. S. Sci. Tchr., Gasconade Co. Dist. No. R-2, 1959—. Mem.: Am. Assn. for the Adv. of Sci.; N.A.B.T.; N.S.T.A.; Natl. Edn. Assn.; Phi Delta Kappa; Alpha Tau Alpha. Serv. Rec.: U. S. Army Reserves, 1956—. Areas of Rsch.: Demonstration Methods in the Teaching of Science.

HORNICK, Richard Joseph (Ph.D.), Sr. Rsch. Engr., N. Am. Aviat., Speech and Infor. Systs. Div., Downey, Calif. Home Add.: 12843 Barlin, Downey, Calif. EXPERIMENTAL PSYCHOLOGY; HUMAN FACTORS RESEARCH. b. West Allis, Wis., Jan. 3, 1935. s. Clarence J. and Mary (Gulczynski) H. Edn.: B.S., Marquette Univ., 1956; M.S., Purdue Univ., 1958; Ph.D., ibid., 1960. m. Donna Sonnenberg, June 29, 1957. c.: Michael; Martin. Exp.: Psychol. Lab. Asst., Marquette Univ., 1955-56; Instr., Grad. Asst., Purdue Univ., 1957-60; Rsch. Scientist, Human Resources Rsch. Office, Ft. Knox, Ky., 1959; Chf. Rsch. Psychologist, Bostrom Rsch. Labs., 1960-62; Sr. Rsch. Engr., N. Am. Aviat., Speech and Infor. Systs. Div., 1962—. Hon. Pos.: Past Pres., Marquette Student Psychol. Assn. Mem.: Am. Psychol. Assn.; Midwestern Psychol. Assn.; Human Factors Soc.; Pres., Midwest Human Factors Soc.; Sigma Xi; Alpha Phi Omega; A.A.A.S. Contbr. to: Proc. Ind. Acad. Sci.; HumRRO Bulls.; Agric. Engrng.; Engrng. Psychol. Ergonomics; Human Factors Jour. Areas of Rsch.: Human Factors; Whole-Body Vibration, Its Effect on Human Performance and Physiological Response; Human Learning Theory; Serial and Rote Learning Phenomena; Hypnosis; Perception of Auditory Stimuli.



HORNER, Sally Melvin (Ph.D.), Rsch. Assoc., Dept. of Chem., Univ. of N. C., Chapel Hill, N. C. Home Add.: Route 2, Chapel Hill, N. C. INORGANIC CHEMISTRY. b. Fayetteville, N. C., Nov. 17, 1932. d. John Stephen Melvin and Lila Williams (Chesnutt) M. Edn.: B.S., Univ. of N. C., 1957; Ph.D., ibid., 1961. m. William W. Horner, June 9, 1950. c.: Stephanie McKay. Exp.: Rsch. Assoc., Univ. of N. C., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Sigma Xi; Delta Phi Alpha. Contbr. to: Inorg. Chem.; Inorg. Syntheses. Gen. Int.: Mem. of the Order of the Valkyries, Univ. of N. C. Highest Women's Hon. Soc.; Natl. Sci. Found. Predoc. Fellow, 1957-60. Areas of Rsch.: Co-Ordination Compounds of Transition Metals.

HORNING, Charles Horace (Ph.D.), Supvr. R and D Reichhold Chem., Inc., 120 S. Linden Ave., S. San Francisco, Calif. Home Add.: 2712 Burlingview Drive, Burlingame, Calif. ORGANIC CHEMISTRY. b. Missoula, Mont., Aug. 8, 1914. s. Fred A. and Eva M. (Pelkey) H. Edn.: B.A., Univ. of Mont., 1935; Ph.D., Stanford Univ., 1939. m. Harriet O. Farnham, June, 1935. c.: Charles F.; Evelyn E.; George P.; Leroy C.; Mary O. Exp.: Chemist, W. P. Fuller and Co., San Francisco, 1938-41; Supvr., Horning Lbr. Co., Superior, Mont., 1946-54; Supvr., Reichhold Chem., Inc., San Francisco, Calif., 1955-62. Mem.: A.A.A.S.; A.C.S.; A.O.C.S.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Canadian Paint and Varnish. Service Record: U. S. A. F., 1941-46. Areas of Rsch.: Polymers, Polyester Resins, Vinyl Addition Resins, Urethanes, Alkyd Resins.

HORNIG, Donald F. (Ph.D.), Chmn., Dept. of Chem., Princeton Univ., Princeton, N. J. Home Add.: Lake Rd., R.D. 1, Princeton, N. J. PHYSICAL CHEMISTRY. b. Milwaukee, Wis., Mar. 17, 1920. s. C. Arthur and Emma (Knuth) Edn.: S.B., Harvard Univ., 1940; Ph.D., ibid., 1943. m. Lilli Schwenk, July 17, 1943. c.: Joanna G.; Ellen C.; Christopher W.; Leslie E. Exp.: Asst. Prof., Brown Univ., Providence, R. I., 1946-49; Assoc. Prof., ibid., 1949-51; Dir., Metcalf Rsch. Lab., ibid., 1950-57; Prof. of Chem., ibid., 1951-57; Assoc. Dean of Grad. Schl., ibid., 1952-53; Acting Dean of Grad. Schl., ibid., 1953-54; Prof., Princeton Univ., 1957—; Chmn., Dept. of Chem., ibid., 1958—; Donner Prof., ibid., 1960—. Hon. Pos.: Mem., President's Sci. Advry. Comm., 1960—; Edit. Advry. Comms., Annual Rev. of Phys. Chem.; Jour. Molecular Phys., Spectrochimica Acta; Assoc. Editor, Jour. of Chem. Phys., 1950-53; Chmn., Exec. Comm., Div. of Chem. Phys., Am. Phys. Soc. Mem.: Natl. Acad. of Sci.; Fellow, Am. Acad. of Arts and Scis.; Fellow, Am. Phys. Soc.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Opt. Soc. of Am. Contbrng. Author: Infrared Spectra of Crystals, 1962. Contbr. to: Jour. Chem. Phys; Jour. Phys. Chem.; Jour. Am. Chem. Soc.; Rev. Sci. Inst.; Jour. Opt. Soc. of Am.; Discussions of the Faraday Soc., London. Areas of Rsch.: Molecular Structure and Spectroscopy, Spectroscopy of Crystals; High Temperatures and Fast Reactions in Shock Waves; Theoretical Chemistry.

HOROWTIZ, C. Morris (Mr.), Instr., Dept. of Econ., Brooklyn Coll., Brooklyn 10, N. Y. Home Add.: 1577 East 18th St., Brooklyn 30, N. Y. DEMOGRAPHY, STATISTICS, ECONOMICS. b. Brooklyn, N. Y., Jan. 28, 1918. s. Max (Dec.) and Fannie (Brieman) H. Edn.: B.A., Brooklyn Coll., 1944; M.A., New Schl. for Social Research, 1955. m. Helen Appelbaum, Aug. 2, 1945. c.: Avery Mark; Jay Sheldon; Yafa Shayne. Exp.: Cons. Stat., Am. Assn. for Jewish Edn., New York City, 1947-54; Consulting Statistician and Hd. Dept. of Rsch., Jewish Edn. Com. of N. Y., 1954-60; Guest Lectr., Econ. and Soc., Long Island Univ., 1958-59; Director, Demographic Study, Comm., N. Y. C., 1958-59; Consulting Demographer and Statistican, Private Practice, New York City, since 1955; Instr., Statistics, Econ., Brooklyn Coll., 1964—. Mem.: Am. Econ. Assn.; Am. Statistical Assn.; Am. Sociol. Assn.; Population Assn. of Am.; Am. Assn. for Adv. of Sci.; Metropolitan Econ. Assn.; Am. Assn for Univ. Prof.; Am. Acad. for Polit. and Social Sci. Author: Estimated Jewish Population of the New York Area, 1900-1975, 1959; Selected Topics in Statistical Analysis, 1960; Dir. of Jewish Schools, in Greater New York, 1960; Jewish Dynamics, 1952-56. Contbr. to: Jour. Am. Statistical Assn.; Am. Econ. Rev.; The Am. Statistician; Social Rsch.; Jewesh Jour. of Sociology in London; Jewish Edn. Mag. Areas of Rsch.: Demography, Natl. Income Statistics, Cost of Living Index, Labor Problems and Social Security.

HORNIK, Gerald Joseph (Mr.), Tchr. of Math., Newton South H. S., Newton Centre 59, Mass. Home Add.: 87 Gordon St., Brighton 35, Mass. MATHEMATICS. b. Camden, N. J., Apr. 14, 1939. s. George and Rebecca (Becker) H. Edn.: S.B., Mass. Inst. of Tech., 1961; A.M., Harvard Univ., 1961. m.: Betsy Ann Zidle, June 22, 1962. Exp.: Intern, Brookline H. S., Brookline, Mass., 1960-61; Tchr., Newton South H. S., Newton Centre, Mass., 1961—; Lectr., Boston Univ., 1962—; Tchr., Rsch. Asst., Harvard Univ., 1962—. Hon. Pos.: Chmn., Comm. for Course in Computers and Numerical Methods. Mem.: Natl. Edn. Assn.; Mass. Tchrs. Assn.; Natl. Coun. of Tchrs. of Math.; Assn. of Tchrs. of Math. in New England; Assn. of Adv. Placement Math. Tchrs.; Am. Assn. for Adv. of Sci.; Assn. for Computing Machines; Newton Tchrs. Assn. Areas of Rsch.: Applied Math. and Computer Programming; Member of Mathematics Project, Committee on Programmed Instruction; Research on Teaching Machines.

HORRALL, Burtis Elliott (Ph.D.), Prof., Dept. of Chem. and Chem. Engrng., Tri-St. Coll., Angola, Ind. Home Add.: 891 Lake Dr., Ray, Ind. DAIRY CHEMISTRY AND DAIRY BACTERIOLOGY. b. Decker, Ind., Aug. 13, 1896. s. John R. and Helen (Elliott) H. Edn.: B.S.A., Purdue Univ., 1921; M.S., Kans. State Univ., 1928; Ph.D., Univ. of Wis., 1933. m. Bernice Moody, 1922. c.: Mrs. Louise E. Rogulic; Ross M. Exp.: Asst. Supt. and Supt., Blue Valley Creamery Co., Chicago, Ill., St. Louis, Mo., Bemidji, Minn., 1922-27; Asst. Prof., Assoc. in Expt. Sta., Purdue Univ., 1929-47; Qual. Cont. Mgr., Central Div., Kraft Foods Co., Chicago, Ill., 1947-56; Proj. Rsch., Johnson and Johnson, Chicago, Ill., 1956-58; Prof., Dept. of Chem. and Cemical Engrng., Tri-St. Coll., 1958—. Mem.: A.C.S.; Phi Sigma Kappa; Sigma Xi; Phi Kappa Phi; Phi Sigma; Gamma Sigma Delta; Knight Templar; Rotary. Contbr. to: Jour. of Dairy Sci.; of Milk Technol.; Purdue Agric. Expt. Sta. Bulls. Serv. Rec.: U. S. Army, W.W. I. Areas of Rsch.: Lecithin in Dairy Products; Detection of Mastitis; Cheese Starters; Phospholipids in Dairy Products; Quality of Milk for Aged Cheddar Cheese; Body and Texture of Ice Cream; Growth of Pseudomonas Putrefaciens on Diacetyl and Flavor of Butter.

HORSEY, Eleanor Fisher (Miss), Asst. for Tech. Admin., Components Lab., Diamond Ordnance Fuze Labs., Washington 25, D. C. Home Add.: Apt. 101, 5410 56th Place, Riverdale, Md. CHEMISTRY. b. Greensboro, Md., Aug. 7, 1914. d. T. Clayton and Nellie Wilson (Fisher) H. Edn.: A.B., Cornell Univ., 1936; M.S., ibid., 1938. Exp.: Chemist, The Borden Co., Bainbridge, New York, 1937-42; Chemist, Hercules Powder Co., Inc., Wilmington, Dela., 1942-48; Asst. to the Mgr. of Rsch., Plastics Div., Glenn L. Martin Co., Baltimore, Md., 1948-50; Chemist, Mathieson Chem. Corp., Baltimore, Md., 1950-51; Chemist, General Serv. Admin., Washington, D. C., 1951-52; Chemist, Natl. Bureau of Standards, ibid., 1952-53; Asst. for Tech. Admin., Lab. 900, Diamond Ordnance Fuze Lab., ibid., 1953—. Mem.: Am. Chem. Soc.; N. Y. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Kappa Delta Sor. Contbr. to: I.R.E. Transactions on Component Parts; Elec. Mfgs.; T.A.P.P.I.; co-editor, Microminiaturization of Elec. Assemblies. Areas of Rsch.: Resins, Plastics, Adhesives, Papermaking, Materials for Electronic Assemblies.

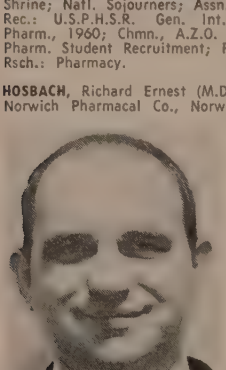
HORSFALL, Frank Lappin, Jr. (M.D.), Pres. and Dir., Sloan-Kettering Inst. for Cancer Rsch., N. Y. 21, N. Y. VIROLOGY, MICROBIOLOGY, EXPERIMENTAL PATHOLOGY. b. Seattle, Wash., Dec. 14, 1906. s. Frank Lappin and Jessie (Ludden) H. Edn.: B.A., Univ. of Wash., 1927; M.D., C.M., McGill Univ., 1932. Hon. Deg.: F.D., Uppsala Univ., 1961. m. Norma E. Campagnari, July 1, 1937. c.: Frank Lappin, III; Susan L.; Mary E. Exp.: House Officer in Pathol., Peter Bent Brigham Hosp., Boston, Mass., 1932-33; Res. Physn., Royal Victoria Hosp., Montreal, Can., 1933-34; Res. Surgeon, Montreal Gen. Hosp., 1934; Asst., The Rockefeller Inst., Asst. Res. Physn., Hosp., ibid., N. Y., 1934-36; Asst., Res. Physn., ibid., 1936-37; Staff Mem., International Health Div., The Rockefeller Fdn., N. Y., 1937-41; Mem., The Rockefeller Inst., N. Y., 1941-57; Physn., Hosp., ibid., 1941-55; Vice-Pres. for Clin. Studies, Physn.-in-Chf., ibid., 1955-60; Prof., Rockefeller Inst., 1957-60; Pres. and Dir., Sloan-Kettering Inst. for Cancer Rsch., N. Y. C., 1960—; Prof. of Med., Cornell Univ. Med. Coll., 1960—; Dir., Prof. of Microbiol., Sloan-Kettering Div., Grad. Schl. of Med. Scis., ibid., 1960—. Hon. Pos.: Mem., Scientific Advisory Comm., Inst. of Microbiol., Rutgers Univ.; Chmn., Rsch. Coun., Mem., Bd. of Dirs., Publ. Health Rsch. Inst. of City of N. Y., Inc.; Mem., Expert Advisory Panel on Virus Diseases, World Hlth. Organization, Geneva, Switzerland; Mem., Comm. on Rsch., Vaccine Advisory Comm., The Natl. Fdn.; Mem., Bd. of Scientific Dirs., Roscoe B. Jackson Mem. Lab., Bar Harbor, Me.; Mem., The Hlth. Rsch. Coun. of City of N. Y.; Trustee, The Med. Libr. Ctr. of N. Y.; Mem.-at-Large, Defense Sci. Bd., Dept. of Defense, Wash., D. C. Mem.: Am. Assn. for Cancer Rsch.; A.A.A.S.; Am. Soc. for Microbiol.; Alpha Omega Alpha; Am. Assn. of Immunol.; Am. Assn. of Pathol. and Bacteriol.; Am. Med. Assn.; Am. Philos. Soc.; Am. Publ. Hlth. Assn.; Am. Soc. for Clin. Invest.; Assn. of Am. Physns.; Harvey Soc.; Interurban Clin. Club; James Ewing Soc.; Fellow, Montreal Medico-Chirurgical Soc.; Natl. Acad. of Scis.; N. Y. Acad. of Med.; N. Y. Bacteriol. Soc.; N. Y. Clin. Soc.; Practs. Soc. for Exptl. Biol. and Med.; Sigma Xi. Contbr. to: Virol.; Proc. of Soc. for Exptl. Biol. and Med.; Jour. of Immunol.; Jour. of Exptl. Med.; Viral and Rickettisal Infections of Man; Sci. Serv. Rec.: U. S. Naval Reserve, 1942-46. Gen. Int.: Banting Rsch. Fellowship, McGill Univ. Med. Schl., 1930-32; Holmes Gold Medal, ibid., 1932; Eli Lilly Award in Bacteriol. and Immunol., 1937; Casgrain and Charbonneau Award in Med., McGill Univ., 1942; John F. Lewis Prize, Am. Philos. Soc., 1959. Areas of Rsch.: Acute Infections of the Respiratory Tract; Pneumococcal Pneumonia; Viral Diseases of Man; Influenza; Primary Atypical Pneumonia; Latent Viruses; Mechanism of Animal Virus Reproduction; Chemical Inhibition of Virus Reproduction.

HORTY, John Francis (Mr.), Assoc. Prof. of Law, Schl. of Law, Assoc. Prof. and Dir. of the Health Law Center, Grad. Schl. of Publ. Health, Univ. of Pittsburgh, Pittsburgh, Pa. Home Add.: 215 Lytton Ave., Pittsburgh 13, Pa. INFORMATION RETRIEVAL. b. Johnstown, Pa., Oct. 21, 1928. s. J. Frank and Nancy (Dibert) H. Edn.: A.B., Amherst Coll., 1950; LL.B., Harvard Law Schl., 1953. m. Camille Walsh, Nov., 1958. c.: John Francis III; Jon Michael. Exp.: Partner, Law Firm of Shahade, Horty and Shahade, Johnstown, Pa., 1956—; Dir., Hospital Law Rsch. Study, Univ. of Pittsburgh, 1956-58; Dir., Health Law Center, ibid., 1958—. Hon. Pos.: Mem. Comm. on Statutory Law, Am. Bar Found.; Chmn., Subcomm. on Publ. Health Law, Am. Publ. Health Assn.; Mem., Jurimetrics Comm., Am. Assn. Law Schls.; Chmn., Electronic Data Retrieval Committee, Am. Bar Assn. Mem.: Am. Bar Assn.; Am. Assn. for the Adv. of Sci.; Am. Publ. Health Assn.; Scribes; Phi Delta Theta; Pi Sigma Alpha. Author: Hospital Law Manual, 1959; Student's Guide to Hospital Law, 1960. Contbr. to: Am. Jour. of Computing Machinery; M.U.L.L.; Mod. Hospital; Hospitals. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Public Health, Legal Rsch. Methods, Information Retrieval and Hospital Law.

HORVATH, Steven Michael (Ph.D.), Prof. of Phys. Edn., Univ. of Calif., Santa Barbara, Calif. Home Add.: 106 Loyola Dr., Santa Barbara, Calif. CARDIOVASCULAR AND RESPIRATORY PHYSIOLOGY; ADAPTION OF MAN TO AGING AND ENVIRONMENTAL STRESSES. b. Cleveland, Ohio, Sept. 15, 1911. s. Steven and Maria (Pinka) H. Edn.: B.A., Miami Univ., Oxford, Ohio, 1934; M.S., ibid., 1935; Ph.D., Harvard Univ., 1942. m. Elizabeth Cassel Dill, Sept. 2, 1940. c.: Aletha Mary; Steven Michael, Jr.; Peter Joseph. Exp.: Grad. Asst., Miami Univ., Oxford, Ohio, 1931-35; Rsch. Asst., Woods Hole Biol. Lab., Oxford, Ohio, 1935-36; Tchng. Asst., Dept. of Physiol., Ohio State Univ., Columbus, Ohio, 1935-36; Instr., Dept. of Physiol., Miami Univ., Oxford, Ohio, 1937-38; Rsch. Asst., Fatigue Lab., Harvard Univ., Cambridge, Mass., 1939-42; Tutor in Biochem. Scis., ibid., 1940-42; Asst. Prof., Dept. of Phys. Med., Univ. of Penn., Phila., Pa., 1946-47; Assoc. Prof., ibid., 1948-49; Assoc. Prof. to Prof., Dept. of Physiol., State Univ. of Ia., Iowa City, Iowa, 1949-58; Visit. Prof., Univ. of Copenhagen, Denmark, 1958-59; Visiting Prof., Physiol., Jefferson Med. Coll., Phila., Pa., 1959—; Prof. of Phys. Edn., Univ. of Calif., Santa Barbara, 1961—; Dir., Environmental Stress Lab., ibid., 1961—. Hon. Pos.: Chmn., Subcomm. on Thermal Factors in Environment, N.R.C.; Chmn., Comm. on Biophys. of Clothing, N.R.C.; Chmn., Comm. in Aging, Natl. Soc. Welfare Assembly; Adv. Bd., Surgeon Gens. Office. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Coll. Cardiol.; Fellow, Am. Coll. Sports Med.; Am. Physiol. Soc.; Gerontol. Soc.; Instit. Radio Engrs.; Fellow, N. Y. Acad. of Scis.; Pan Am. Med. Assn.; Phila. Physiol. Soc.; Soc. Exptl. Biol. and Med.; Am. Polar Soc.; Phi Beta Kappa. Editor: Cold Injury, 1960; Muscle as a Tissue, 1962 Contbr. to: Am. Jour. Physiol.; Jour. Appl. Physiol.; Jour. Physiol.; Proc. Soc. Exptl. Biol. and Med.; Arch. Surg.; Jour. Clin. Invest.; Am. Heart Jour.; Am. Jour. Cardiol.; Arch. Internal. Med.; Jour. Gerontol. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Planned and Developed Iowa Institute of Gerontology. Areas of Rsch.: Cardiovascuar and Respiratory Physiology; Adaptation of Man to Aging and Environmental Stresses.

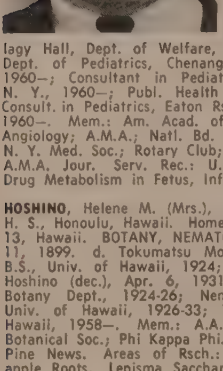
HORVITZ, Bernard H. (Mr.), Sales Mgr., Brooklyn Dist., Eli Lilly and Co., N. Y. C. Home Add.: 1000 Grand Concourse, N. Y. 51, N. Y. PHARMACY AND PHARMACEUTICAL EDUCATION. b. Phila., Pa., May 20, 1914. s. Harry and Sadie (Green) H. Edn.: B.Sc., Phila. Coll. of Pharmacy and Sci., 1936. m. Byrdie Goldstein, June 6, 1936. c.: Janie Harriet. Exp.: Owned Retail Pharmacy, Rutledge Pharm., N. Y., 1936-44; Instr., Biochem. and Asst. to Pres., Essex Coll. of Med. and Surg., Newark, N. J., 1944-46; Med. Serv. Repr., Eli Lilly and Co., 1946-60; Sales Mgr., Brooklyn Dist., 1960—. Hon. Pos.: Dir., Guid. and Recruitment A.Z.O. Pharm. Frat. Scholarship Program; Pres., A.Z.O., N. Y. Bd. of Trustees; N. Y. Chmn. A.Z.O. Drive for Pharm. Schl. Hebrew Univ. Mem.: A.A.A.S.; Scottish Rite Mason, 32°; Mecca Temple, Shrine; Natl. Sojourners; Assn. of Milit. Surgs. of U.S.A. Serv. Rec.: U.S.P.H.S.R. Gen. Int.: A.Z.O. Man of the Year in Pharm., 1960; Chmn., A.Z.O. Bood Bank; Author of Papers on Pharm. Student Recruitment; Former Ed., AZOan. Ed. Areas of Rsch.: Pharmacy.

HOSBACH, Richard Ernest (M.D.), Pediatrician, Eaton Rsch. Lab., Norwich Pharmacal Co., Norwich, N. Y. Home Add.: 60 West Main, Norwich, N. Y. MEDICINE, PEDIATRICS. b. Hartford, Conn., Mar. 11, 1927. s. Joseph A. and Hedvig (Mohl) H. Edn.: B.S., Trinity Coll., 1950; M.D., N. Y. Med. Coll. of N. Y., 1955. m. Marguerette Noonan, 1951. c.: Marguerette N.; Heidi A. Exp.: Rotating Intern., St. Francis Hosp., Poughkeepsie, N. Y., 1955-56; Res., Pediat., Fowler and Fifth Ave., Hosp., N. Y., N. Y., 1956-58; Fellow, Pediatric Neurology, ibid., 1958-59; Instr., Pediatrics, N. Y. Med. Coll., ibid., 1959—; Asst. Clin. Attending Pediatrician, Metropolitan Hosp., New York, N. Y., 1959-60; Pediatric Neurol., Fetal and Maternal Study, Natl. Inst. of Health, N. Y. Med. Coll., 1959-60; Attending Pediatric., Callagy Hall, Dept. of Welfare, New York, N. Y., 1958-59; Dir., Dept. of Pediatrics, Chenango Mem. Hosp., Norwich, N. Y., 1960—; Consultant in Pediatrics, Community Hosp., Hamilton, N. Y., 1960—; Publ. Health Officer, Norwich, N. Y., 1960—; Consult. in Pediatrics, Eaton Rsch. Lab., Norwich Pharm. Co., ibid., 1960—. Mem.: Am. Acad. of Pediatrics; Fellow, Intl. Coll. of Angiology; A.M.A.; Natl. Bd. of Med. Exam.; Am. Bd. of Ped.; N. Y. Med. Soc.; Rotary Club; Elks Club. Contbr. to: Pediatrics; A.M.A. Jour. Serv. Rec.: U.S.N.R., 1945-46. Areas of Rsch.: Drug Metabolism in Fetus, Infants, Children, Pediatric Neurology.

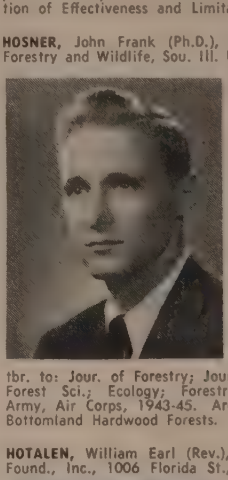


HOSHINO, Helene M. (Mrs.), Tchr., Botany and Biol., Roosevelt H. S., Honolulu, Hawaii. Home Add.: 2920 Laola Place, Honolulu 13, Hawaii. BOTANY, NEMATOLOGY. b. Honolulu, Hawaii, Nov. 11, 1899. d. Tokumatsu Morita and Yone (Kondo) M. Edn.: B.S., Univ. of Hawaii, 1924; M.S., ibid., 1928. m. Mitsuharu Hoshino (dec.), Apr. 6, 1931. Exp.: Instr., Univ. of Hawaii, Botany Dept., 1924-26; Nematologist, Pineapple Rsch. Inst., Univ. of Hawaii, 1926-33; Tchr., Roosevelt H. S., Honolulu, Hawaii, 1958—. Mem.: A.A.A.S.; Natl. Sci. Tchrs.; Hawaiian Botanical Soc.; Phi Kappa Phi. Contbr. to: Jour. of Parasitology; Pine News. Areas of Rsch.: Nematology in Relation to Pineapple Roots. Lepisma Saccharina (Silver Fish).

HOSMER, Clark Lewis (Ph.D.), Assoc. Prof., Schl. of Bus., Fla. State Univ., Tallahassee, Fla. Home Add.: Dunseith, N. D. EDUCATION, MANAGEMENT, PERSONNEL PSYCHOLOGY, PROGRAMED LEARNING. b. Dunseith, N. D., Apr. 25, 1914. s. William E. and Edna (Small) H. Edn.: B.S., U. S. Milit. Acad., 1936; M.S., Calif. Inst. of Technol., 1940; Ph.D., Univ. of Minn., 1956; M.A., ibid., 1947. m. Elynor Hendrickson, June 13, 1936. c.: Bradley Clark; Philip Clark; Gaylyn J. Exp.: Faculty Advisor, Indust. Coll. of the Armed Forces, Wash., D. C., 1955-57; Manpower Officer, SHAPE, Paris, France, 1952-54; Commander, Human Resources Rsch. Ctr., 1950-51; Assoc. Prof., Schl. of Bus., Fla. State Univ., 1962—. Mem.: Am. Psychol. Assn.; Am. Assn. for Adv. of Sci.; Am. Acad. of Polit. and Social Sci.; Psi Chi; Internatl. Torch; Internatl. Toastmasters; Natl. Soc. for Programed Instrn. Author: Recruiting Volunteer Enlisted Men, 1956. Contbr. to: Jour. of Appl. Psychol.; Mgt. Sci.; Am. Psychol.; The Clearing House; The Torch; Indust. News Rev.; Automated Tchng. Bull.; Aerospace Safety. Serv. Rec.: U.S.A.F., 1936-62. Areas of Rsch.: Comparative Analysis of Resident and Correspondence Study; Evaluation of Effectiveness and Limitations of Programed Learning.



HOSNER, John Frank (Ph.D.), Prof. Forestry and Hd. Dept. of Forestry and Wildlife, Sou. Ill. Univ., Carbondale, Ill. Home Add.: Route 1, Carbondale, Ill. FORESTECOLOGY. b. Gillespie, Ill., Feb. 25, 1925. s. Joseph and Mary (Schust) H. Edn.: B.S., Mich. St. Univ., 1948; M.F., Duke Univ., 1950; Ph.D., State Univ. of N. Y., 1957. m. L. Irene Neal, 1951. c.: Angela; David. Exp.: Dist. Forester, State of Ill., 1948-50; Instr. Asst. Prof., Sou. Ill. Univ., 1950-58; Assoc. Prof., ibid., 1959-60; Visiting Prof. of Forestry, State Univ. of N. Y., 1958-59; Prof., Forestry and Hd. Dept., Forestry and Wildlife, Va. Polytech. Inst. 1961—. Mem.: Ecological Soc. of Am.; Soc. Am. Foresters; Fellow, A.A.A.S.; Toastmasters International.; Xi Sigma Pi; Sigma Xi. Author: Regional Silviculture of United States, Chapter VI. Contbr. to: Jour. of Forestry; Jour. of Soil and Water Conservation; Forest Sci.; Ecology; Forestry Chornicle. Serv. Rec.: U. S. Army, Air Corps, 1943-45. Areas of Rsch.: Ecology of Southern Bottomland Hardwood Forests.



HOTALEN, William Earl (Rev.), Exec. Dir., La. Moral and Civic Found., Inc., 1006 Florida St., P. O. Box 2951, Baton Rouge 1 La. Home Add.: 5088 Bardwell Dr., Baton Rouge, La. ALL THAT RELATES TO BEVERAGE ALCOHOL AND TO THE EFFECTS AND END RESULTS OF ITS CONSUMPTION. b. Knoxville, Tenn., Sept. 22, 1897. s. Williama H. and Myrtle Virginia (Glover) H. Edn.: A.B., Univ. of Chattanooga, 1917; M.A., Univ. of Tenn., 1918. m. 1st Elizabeth Frances Burke, Sept. 1, 1920 (dec., 1925); 2nd, Ruth Mildred Covell, Mar. 19, 1927. c.: William Burke Hotalen, M.D. Exp.: Exec. Secy., Ala. Temperance Alliance, Birmingham, Ala., 1937-46; Field Dir. and Founder, Natl. Temperance Movement, Chicago Il., 1946-49; Exec. Dir., La. Moral and Civic Foundation, Inc., Baton Rouge, La., 1949—. Hon. Pos.: Mem., Bd. of Dirs., Le Bureau Internatl. Contre L'Alcoolisme Lausanne, Suisse; Board of Lecturers, Internatl. Congresse Against Alcoholism; Advisory Council, POAU; Trustee, Internatl Reform Fed. Mem.: Am. Assn. for the Adv. of Sci.; Am. Acad of Polit. and Soc. Sci.; Natl. Safety Council; Am. Edn. Found. Scottish Rite of Freemasons; La. Conf. of The Methodist Ch. Am. Busi. Men's Rsch. Found.; C. of C.; Parent-Teachers. Assn. La. Civil Serv. League. Editor, LMCF Bulletin. Alumnus o Yale Schl. of Alcohol Studies. Serv. Rec.: U. S. Army, 1919 Areas of Rsch.: Statistical Recordings and Sciences Related t Alcohol and Beverage Alcohol—Related Physiological and Psychological Effects and their Social, Moral, Economic and Othe Effects. Of Special Concern, involving Rsch.: Work in Europe and America,—the Blastophtoric Effects of Alcohol.

HOTCHKISS, Henry (Mr.), Regional Geologist, Standard Oil Co (New Jersey), 30 Rockefeller Plaza, New York 20, N. Y. Home Add.: Nannauwiyack Farm, Vineyard Haven R.F.D., Mass. PETROLEUM GEOLOGIST. b. New Haven Conn., June 6, 1909. s. H. Stuar and Elizabeth Wyndham (Washington) H. Edn.: B.S., Yale Univ 1933, Grad. Schl. Yale Univ. 1933-35. m. Mary Bell Clark May 19, 1936. c.: Henry Washington; Anne Perrine Clark; Frederick Hatfield Clark. Exp.: Various Assignments in U.S.A., 1935-37 Field Geologist, Various Companies Middle East, 1937-41; Divisio Geologist, Persian Gulf, Dukhan Qatar, 1947-48; Div. Geologist, Iraq, Iraq Pet. Co. and Associ Coys., Kirkuk, Iraq, 1948-50; Asst Mgr., Qatar Petroleum Co., Arabian Gulf, 1950-53; Field Mgr ibid., 1953-55; Regional Geologis Standard Oil Co. (New Jersey), 30 Rockefeller Plaza, New York 20, N. Y., 1955—. Mem.: A.A.P.G.; Geol. Soc. London; Royal Central Asian Soc., London; Royal Geographic Soc., London; Am. Geog. Soc.; Am. Geophys. Union; A.A.A.S. Explorers Club, N. Y.; Fellow, Instit. of Petrol., London; Mas Soc. of Mayflower Descendants; Soc. of Colonial Wars, Con Contbr. to and Assoc. Editor of: Bull. Am. Assn. of Petroleu Geologists. Serv. Rec.: U.S.N.R., 1941-46. Areas of Rsch Specialized Knowledge of Petroleum Geology—Middle East an Far East Countries.

HOTTLE, George Austin (Ph.D.), Virologist, Natl. Insts. of Health, Bethesda, Md. Home Add.: 9632 Parkwood Dr., Bethesda 14, Md. VIRUS VACCINES AND VIRAL IMMUNOLOGY. b. Easton, Pa., June 20, 1910. s. Erwin S. and Carry (Heft) H. Edn.: B.S. in Ch.E., Lehigh Univ., 1932; M.S., ibid., 1937; Ph.D., Univ. of Pa., 1942. m. Caroline M. Keiper, Mar. 14, 1935. c.: John C. Exp.: Bacteriologist, Natl. Drug Co., Swiftwater, Pa., 1932-39; Bacteriolt., And Biochemist, Natl. Insts. of Health, 1946-49; Virolt., ibid., 1949—. Mem.: Am. Acad. of Microbiol.; Am. Assn. of Immunolts.; Soc. for Exptl. Biol. and Med.; Wash. Acad. of Scis.; Am. Assn. for the Adv. of Sci.; Tau Beta Pi; Pi Mu Epsilon. Contbr. to: Jour. of Immunol.; Procs. of the Soc. for Exptl. Biol. and Med.; Jour. of Biol. Chem. Serv. Rec.: U. S. Army, 1941-46. Areas of Rsch.: Control of Biological Products, Tissue Culture of Animal Viruses, Poliomyelitis Vaccine.

HOUGH, Floyd Woodworth (Mr.), Consulting Geodetic Engineer, Geonautics, Inc., Wash., D. C. Home Add.: 2412 N. Columbus St., Arlington 7, Va. GEODESY AND GEODETIC ENGINEERING. b. E. Durham, N. Y., June 20, 1898. s. Stewart M. and Dora L. (Woodworth) H. Edn.: C.E., Cornell Univ., 1919. m. Beatrice J. Stillman, 1926. c.: Marilyn E.; Marjorie D.; Floyd W., Jr. Exp.: Jr. Geod. Eng., U. S. Coast and Geodet. Survey, Wash., D. C., 1919-27; Asst. Engr. and Engr., Columbia Petrol. Co., 1933-41; Geodetic Engineer, Metropolitan Water Dist. of Sou. Calif. and L. A., Los Angeles, 1927-33; Engr., U. S. Engrs., Pittsburgh, Pa., 1936-40; Chf. Geodesy, U. S. Army Map Serv., Wash., D. C., 1946-57; Pres., Geonautics, Inc., 1957-62; Consult. Geodetic Engr., Geonautics, Inc., 1962—. Hon. Pos.: Pres., Sect. of Geodesy, Am. Geophys. Union. Mem.: Wash. Acad. of Scis.; Cosmos Club; Am. Soc. of Civil Engrs.; Am. Geophys. Union. Contbr. to: C. Engrng; The Milit. Engr.; Procs. of ASCE; Consult. Engr.; Trans. of A.G.U.; Surveying and Mapping. Serv. Rec.: U. S. Army, 1941-46. Gen. Int.: Geodesy Projects; Army's Exceptional Civilian Service Award and The Legion of Merit. Areas of Rsch.: Geodesy; Adjustment of European Triangulation; UTM Grid System.

HOUGH, Marshall Vernon (Mr.), Hd. of Sci. Dept., Saline H. S., Saline, La. Home Add.: Box 91, Saline, La. BIOLOGY. b. Minden, La., June 23, 1929. s. Walter Eugene and Jodie Lou (Adams) H. Edn.: B.S., Northwestern State Coll. of La., 1949; M.S., ibid., 1961. m. Cloteal Day, May 24, 1946. c.: Marilyn Ann; Marshall V.; Anita Pauline; Anthony Eugene. Exp.: Hd. of Sci. Dept., Saline H. S., Saline, La., 1949-62. Hon. Pos.: Pres., Bienville Parish Tchrs. Assn.; Pres., Bienville Sci. Tchrs. Assn.; Mem. of Regional Bd. of Dirs. of La. Acad. of Scis. Mem.: A.A.A.S.; Natl. Assn. of Biol. Tchrs.; Am. Inst. of Biol. Scics.; Natl. Sci. Tchrs. Assn.; La. Tchrs. Assn. Areas of Rsch.: Secondary Succession of the Sand Hills of Bienville Parish La.; A Check List and Floral Phenology of the Bush Alder Streams of Bienville Parish, La.

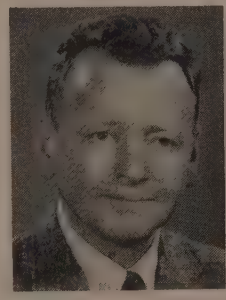
HOVORKA, John (Sc.D.), Physicist, M.I.T. Instrumentation Lab., Lectr., Aeronautics and Astronautics, Mass. Inst. of Tech., Cambridge 39, Mass. Home Add.: 58 Hancock St., Lexington 73, Mass. PHYSICS. b. N. Y., N. Y., Oct. 17, 1921. s. John and Caroline Beatrice (Ruzicka) H. Edn.: B.S., Queens Coll. of the City of N. Y., 1942; M.S., Univ. of Ill., 1943; Sc.D., Mass. Inst. of Tech., 1961. m. Marjorie Jane Grupp, 1950. c.: John, Jr.; George Best. Exp.: Physicist, M.I.T. Radiation Lab., Cambridge, Mass., 1944-46; Physicist, Gulf Rsch. and Development Co., Pittsburgh, Pa., 1946-48; Instr. in Physics, Univ. of Buffalo, 1948-50; Physicist, M.I.T. Instrumentation Lab., Cambridge, Mass., 1950—. Mem.: Am. Physical Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Author: Fire Control Principles, co-author, 1959; Inertial Guidance, co-author, 1960; Mechanics of Inertial Position and Heading Indication, co-author, 1961. Contbr. to: Ind. and Engrng. Chem.; Rev. Sci. Inst.; Rsch. and Eng.; Auto. Control; Aero. Eng. Rev.; Jour. Am. Rocket Soc.; Woods Hole Oceanographic Inst. Areas of Rsch.: Fire Control; Servomechanisms; Infrared Spectroscopy; Inertial Navigation.

HOUSER, Thomas J. (Mr.), Instr. of Chem., Univ. of Wis., Green Bay, Wis. Home Add.: 435A S. Madison St., Green Bay, Wis. PHYSICAL CHEMISTRY. b. Plymouth, Pa., Jan. 28, 1936. s. Thomas T. and Marie A. (Surnack) H. Edn.: B.S., King's Coll., 1957; Ohio Univ., summer, 1959; New York Univ., summer, 1960; Ill. Inst. of Technol., summer, 1961. m. Marilyn C. Rowe, Aug. 27, 1960. Exp.: Rsch. Asst., Los Alamos Scientific Lab., Los Alamos, N. M., 1957; Rsch. Chemist, Olin Mathieson Central Rsch. Lab., New Haven, Conn., 1958; Instr. of Chem., Univ. of Wis., Extension Ctr., Green Bay, Wis., 1958—. Mem.: A.A.A.S.; Am. Chem. Soc.; Math. Assn. of Am.; Natl. Sci. Tchrs. Assn.; Wis. Acad. of Scis.; Div. of Chem. Edn. of Am. Chem. Soc.; Aquinas Honor Soc. of King's Coll.; Pa. Catholic Round Table of Sci. Areas of Rsch.: Chemical Education, Statistics, Quantum Mechanics.

HOWARD, David Goodale (Mr.), Prof. Emer., U. S. Naval Acad., Annapolis, Md. Home Add.: 137 Monticello Av., Annapolis, Md. ELECTRICAL ENGINEERING. b. Townsend, Mass., May 10, 1890. s. Albert S. and Ellen C. (Goodale) H. Edn.: B.S., Worcester Polytechnic Inst., 1913; E.E., ibid., 1941. m. Marguerite Struthers, May 24, 1916. c.: David G.; Elizabeth E. Exp.: Westinghouse Elec. Corp., E. Pittsburgh, Pa., 1914-16; Instr., Carnegie Inst. of Tech., 1916-17; Instr., U. S. Naval Acad., 1919-55; Prof. Emer., ibid., 1955—. Mem.: Sigma Xi; Fellow, Am. Inst. of Electrical Engrs. War Record: Lt., U.S.N.R.F., 1917-19.

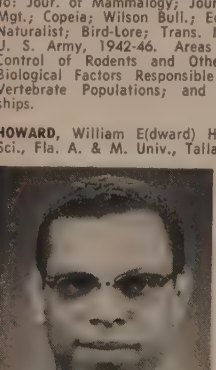
HOWARD, George Wilberforce (Dr.), Tech. Dir., U.S.A. Engr. Rsch. and Develop. Labs., Fort Belvoir, Va. Home Add.: 1107 Trinity Dr., Alexandria, Va. MILITARY ENGINEERING, R&D ADMINISTRATION. b. Vicksburg, Miss., July 19, 1911. s. Ewing Fox and Fannie (Reber) H. Edn.: B.S. in C.E., Miss. St. Coll., 1928-32; C.E., ibid., 1938; M.S., Geo. Wash. Univ., 1942; Dr. Techn., Tech. Univ., Graz, Austria, 1953. m. Martha Walling, June 5, 1938. c.: George W., Jr.; James E. Exp.: Assoc. Engr., Office, Chf. of Engrs., Wash., D. C., 1940-41; Chf., Floating Bridge Sect., The Engr. Bd., Ft. Belvoir, Va., 1941-42; Chf., Bridge Branch, The Engr. Bd., 1942-46; Chf., Test Sect., Yuma Test Branch, The Engr. Bd., Yuma, Ariz., 1946-49; Chf., Bridge and Marine Test Br., USAERDL, Ft. Belvoir, Va., 1949-50; Chf., Tech. Serv. Dept., USAERDL, ibid., 1950-56; Tech. Dir., U.S.A. Engr. R&D Labs., Ft. Belvoir, Va., 1956—. Hon. Pos.: Bd. Trustees, St. Stephens Schl. for Boys, 1960. Mem.: Am. Soc. of Civil Engrs.; Am. Soc. for Engrng. Edn.; A.A.A.S.; R.E.S.A.; Soc. of Am. Milit. Engrs.; Wash. Acad. of Sci.; Kappa Alpha; Tau Beta Pi. Author: Common Sense in Research and Development Management, 1956. Contbr. to: Trans. of the Am. Soc. of Civil Engrs.; Mechanical Engrng.; The Milit. Engr.; Soc. of the Plastics Indus.; Indusl. Labs.; Rsch. and Development. Serv. Rec.: Corps of Engrs. Areas of Rsch.: Transportation of Sand and Gravel in Pipelines; Fixed and Floating Milit. Bridges; Operations of Equipment in Desert Environment; Administration of Research and Development.

HOWARD, Robert Stearns (Ph.D.), Assoc. Prof. of Biol., Ursinus Coll., Collegeville, Pa. Home Add.: 3831 Twp. Line Rd., Collegeville, Pa. ANIMAL ECOLOGY; INTERTIDAL INSECTS; THE ORDER DERMAPTERA (EARWIGS); BRYOZOA. b. Akron, Ohio, June 24, 1921. s. Harry Claude and Fanchon (Seeds) H. Edn.: B.S., Univ. of Chicago, 1947; M.S., Univ. of Miami, Coral Gables, Fla., 1949; Ph.D., Northwestern Univ., 1952. Exp.: Asst. Instr., Univ. of Miami, Coral Gables, Fla., 1949; Instr., Univ. of Pa., Phila., Pa., 1952-53; Asst. Prof., Univ. of Del., Newark, Del., 1953-61; Assoc. Prof., Ursinus Coll., 1961—. Hon. Pos.: Pres., Soc. of Nat. History of Del., 1959-61. Mem.: Am. Assn. for the Adv. of Sci.; Am. Assn. of Univ. Profs.; Am. Inst. of Biol. Scis.; Am. Entomol. Soc.; Entomol. Soc. of Am.; History of Sci. Soc.; Am. Museum of Nat. History; Sigma Xi; Am. Soc. of Zoolts.; Soc. of Nat. History of Del.; Soc. of Systematic Zool.; Phi Kappa Sigma; Beta Beta Beta; Sigma Xi. Contbr. to: Ecol.; Biol. Bull.; Estuarine Bull.; Bull. of the Ecol. Soc. of Am. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Ecology and Distribution of Intertidal Insects; Ecology and Taxonomy of the Dermaptera (Earwigs); Ecology and Taxonomy of the Bryozoa.

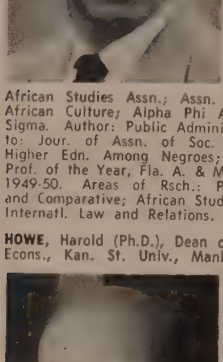


HOWARD, Walter E(gner) (Ph.D.), Assoc. Vertebrate Ecologist, Field Station Admin., Univ. of Calif., Davis, Calif. Home Add.: 24 Coll. Park, Davis, Calif. ECOLOGY AND CONTROL OF VERTEBRATES. b. Woodland, Calif., Apr. 9, 1917. s. Walter L. (dec.) and May Belle (Cooper) H. (dec.). Edn.: A.B., Univ. of Calif., 1939; M.S., Univ. of Mich., 1941; Ph.D., ibid., 1947. m. Elizabeth Ann Kendall, June 12, 1940. c.: Thomas Kendall; Kathryn Spencer; John Casey. Exp.: Temp Ranger, Natl. Park Serv., Yosemite, summers, 1939-40; Univ. Fellow, Univ. of Mich., 1940-42; 1946-47; Assoc. Vertebrate Ecologist, Univ. of Calif., 1947—. Mem.: A.A.A.S.; Ecological Soc. of Am.; Wildlife Soc.; Wildlife Disease Assn.; Am. Soc. of Mammalogists; Western Soc. of Naturalists; Am. Soc. of Range Mgmt.; Mammal Soc. of the British Isles; Phi Kappa Phi; Sigma Xi; Phi Sigma. Contbr. to: Jour. of Mammalogy; Jour. of Range Mgt.; Jour. of Wildlife Mgt.; Copeia; Wilson Bull.; Ecology; Herpetologica; Am. Midland Naturalist; Bird-Lore; Trans. N. Am. Wildlife Conf. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Ecology, Behavior, and Control of Rodents and Other Wild Vertebrates; Investigating Biological Factors Responsible for Changes in the Structure of Vertebrate Populations; and Analyzing Predator-Prey Relationships.

HOWARD, William E(dward) H(arding) (Ph.D.), Prof. of Political Sci., Fla. A. & M. Univ., Tallahassee, Fla. Home Add.: 543 Okaloosa St., Tallahassee, Fla. POLITICAL SCIENCE. b. Athens, Ga., Oct. 1, 1924. s. James Paul and Annie (Carithers) H. Edn.: B.S., W. Va. St. Coll., 1945; M.A., Univ. of Glasgow, Scotland, 1950; M.S.Sc., Inst. of Social Studies, The Hague, 1953; Ph.D., Free Univ. of Amsterdam, 1955; Consultant, Ministry of Edn. and Fine Arts, Govt. of Ethiopia, Addis Ababa, 1946-49, 1950-52; Prof. of Polit. Sci., Fla. A. & M. Univ., Tallahassee, Fla., 1956—. Hon. Pos.: Lectr., U. S. Information Serv. in the Netherlands, 1953-55. Mem.: Am. Polit. Sci. Assn.; Internatl. Polit. Sci. Assn.; A.A.-A.S.; Am. Soc. of Internatl. Law; Am. Soc. for Pub. Admin.; Am. Acad. of Polit. and Soc. Sci.; African Studies Assn.; Assn. of Soc. Sci. Tchrs.; Am. Soc. of African Culture; Alpha Phi Alpha; Pi Gamma Mu; Sigma Rho Sigma. Author: Public Administration in Ethiopia, 1956. Contbr. to: Jour. of Assn. of Soc. Sci. Tchrs.; Quarterly Review of Higher Edn. Among Negroes; Phylon. Gen. Int.: Distinguished Prof. of the Year, Fla. A. & M. Univ., 1958-59; Fulbright Scholar, 1949-50. Areas of Rsch.: Public Administration (International and Comparative; African Studies; Govt. and Politics of Ethiopia; Internatl. Law and Relations.

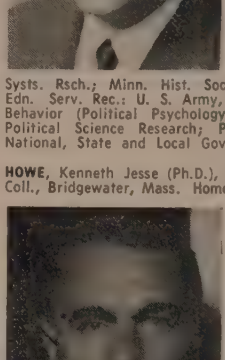


HOWE, Harold (Ph.D.), Dean of Grad. Schl. and Prof. of Agricl. Econs., Kan. St. Univ., Manhattan, Kan. AGRICULTURAL ECONOMICS. b. Feb. 24, 1901, Chapman, Kan. s. Michael Maurice and Margaret Ann (Kiley) H. Edn.: B.S. in Agri., Kan. St. Coll., 1922; M.S., Univ. of Md., 1923; Ph.D., Univ. of Wis., 1937; LL.D., St. Benedict's Coll., Atchison, Kan., 1950. m. Ruth M. Riordan of Solomon, Kan., June 23, 1930. d. Mr. and Mrs. J. T. Riordan. c.: Philip; Barbara. Exp.: Asst., Soils, Univ. of Md., 1922-23; Asst., Agri. Econ., Univ. of Wis., 1924-25; Successively Instructor, 1925-27; Asst. Prof., 1927-30; Assoc. Prof., 1930-34; Prof., Agri. Econ., Kan. St. Coll., 1934—; Agri. Economist, Kan. Agri. Expt. Sta., 1927—; Faculty Adviser of Fraternities, Kan. St. Univ., 1930-45; Dean of Grad. Schl., ibid., 1945—; Chmn., Faculty Coun. on Student Affairs, ibid., 1945-49; Consultant Natl. Resources Planning Bd., 1938-43; Kans. Representative, No. Central Regional Land Tenure Com., 1939-46 (Chmn., 1945); Mem. Bd. of Dir., Kan. Soc. for Crippled Children, 1945—; Chmn., Coun. on Grad. Work, Assn. of Land-Grant Colleges and Univs., 1950-51; City Comm., Manhattan, Kan., 1951-55; Mayor of Manhattan, Kan., 1953-54; On leave, as Chf., Grad. Fellowships Sect., U. S. Office of Edn., Wash., D. C., 1961-62. Mem.: Am. Farm Economic Assn.; Phi Kappa Phi; Alpha Zeta; Gamma Sigma Delta; Pi Kappa Delta; Phi Kappa Theta; Rotary; K. of C. Author: Bulletins and Papers on Pub. Finance and Land Economics Subjects. Ph.D. Dissertation: Assessment and Collection of Farm Real Estate Taxes in Kan. Listed in: W. W. in Am.; Rus.; A.M.S.; Am. Catholic W. W.; Ldrs. in Edn.; W. W. in the Midwest. Special Int.: Pub. Finance; Land Econ.



HOWE, Edward Adolph (Mr.), Dir. of Elections, St. of Minn., Room 29, St. Capitol Bldg., St. Paul, Minn. Home Add.: 1612 22nd Ave., N. E., Mpls., Minn. POLITICAL SCIENCE (POLITICAL PSYCHOLOGY). b. Mpls., Minn., Apr. 14, 1923. s. Adolph G. and Mary E. (Conners) H. Edn.: B.A., Univ. of Minn., 1949; M.A., ibid., 1957. Exp.: Tchng. Asst., Dept. of Polit. Sci., Univ. of Minn., 1958-59; Dir., Minn. Citizenship Clearing House, Dept. of Polit. Sci., Univ. of Minn., 1959-60; Dir. of Elections, St. of Minn., 1960—. Hon. Pos.: Rsch. Dir., Statewide Study of the County Organizations of the Two Major Political Parties in Minn.; Mem. Legislative Comm., Mpls. Citizens Comm. on Pub. Edn. Mem.: Am. Polit. Scis. Assn.; Am. Assn. for the Adv. of Sci.; Midwest Conf. of Polit. Scientists; Soc. for Gen. Systs. Rsch.; Minn. Hist. Soc.; Mpls. Citizens Comm. on Pub. Edn. Serv. Rec.: U. S. Army, 1942-44. Areas of Rsch.: Political Behavior (Political Psychology and Sociology); Methodology of Political Science Research; Political Theory; Political Parties; National, State and Local Government.

HOWE, Kenneth Jesse (Ph.D.), Prof. of Botany, Biol. Dept., State Coll., Bridgewater, Mass. Home Add.: 47 Vernon St., Bridgewater, Mass. PLANT PHYSIOLOGY. b. Rochester, N. Y., Nov. 13, 1923. s. Jesse Spencer and Anna Christine (Bittner) H. Edn.: B.A., Univ. of Rochester, 1950; M.S., ibid., 1951; Ph.D., Cornell Univ., 1956. m. Pauline May Patterson, Apr. 15, 1950. c.: Spencer Kenneth; Holly Ann; Wendy Alison; Rhonda Jean. Exp.: Instr., Cornell Univ., 1954-56; Interim Asst. Prof., Univ. of Fla., 1956-57; Instr., 1957, Asst. Prof., 1958, Assoc. Prof., 1960, Prof., 1961—, State Coll., Bridgewater, Mass. Mem.: Am. Soc. of Plant Physiologists; Botanical Soc. of Am.; Sigma Xi. Author: General Biology Laboratory Manual, 1960. Contbr. to: Turtox News; Proceedings of the Fla. St. Horticultural Soc. Serv. Rec.: U. S. Army, 1943-46; Army Reserve, 1946—. Areas of Rsch.: Anatomy and Physiology of the Mint Plant, (Mentha piperita) L., and the Production of the Essential Oil; Growth Regulator Investigations.



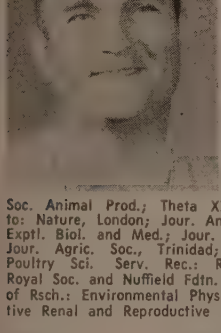
HOWE, Paul Edward (Ph.D.), Nutrition Consult., 3601 Conn. Ave., N.W., Wash. 8, D. C. Home Add.: 3601 Conn. Ave., N.W., Wash. 8, D. C. NUTRITION, BIOCHEMISTRY, APPLIED NUTRITION IN ARMY AND INSTITUTIONS. b. Chicago, Ill., July 29, 1885. s. Edward G. and Mary E. (Barnard) H. Edn.: B.S., Univ. Ill., 1906; A.M., ibid., 1907; Ph.D., Univ. Ill., 1910. m. Harriet Rinaker, 1913. c.: Clarissa; Elizabeth. Exp.: Asst. Prof., Biological Chem., Columbia Univ., 1912-17; Assoc., Rockefeller Inst., Dept. Animal Path., 1917-24; In Chg. Nutrition Investigations, Animal Husbandry, Bur. Animal Industry, U. S. Dept. Agri., 1924-36; Asst. Chief, Bur. Animal Industry and Chief Animal Nutrition Div., U. S. Dept. Agri., 1936-48; Nutrition Consult., Animal Husbandry Res., Agri. Rsch. Admin., ibid., 1948-55 (Retired). Hon. Pos.: Nutrition Consult., Bur. Prisons, U. S. Dept. Justice, 1929-48; Nutrition Consult., Dept. of Finance, St. of Calif., 1951; Nutrition Mission, Office Surgeon General, Germany, 1949-50; Lectr., Natl. Inst. of Nutrition, Italy, 1956-57; Nutrition Advisor, Natl. Defense Coun., 1940; Chmn., Animal Nutrition Comm., Natl. Rsch. Coun., 1927-41; Mem., Comm. on Food and Nutrition, ibid., 1941-43. Mem.: Am. Chem. Soc.; Am. Soc. Biological Chemists; Am. Physiol. Soc.; Am. Inst. of Nutrition, Fellow; Am. Assn. Adv. of Sci., Fellow; Am. Public Health Assn., Fellow; Harvey Soc.; Am. Soc. Animal Sci.; Poultry Sci. Assn.; Wash. Acad. of Sci.; Wash. Acad. of Med.; Phi Lambda Upsilon; Sigma Xi; Gamma Alpha. Author: Nutrition and Clinical Dietetics, 1921. Contbr. to: Jour. Am. Chem. Soc.; Jour. Biological Chem.; Jour. Am. Dietetic Assn.; Jour. Applied Physiology. Serv. Rec.: Sanitary Corps, 1917-19; ibid., 1940-48. Gen. Int.: Developed a Ration for the Dept. of Justice Based on Weights of Food by Food Groups and Means of Nutritional Accounting as Basis of Adequacy. Areas of Rsch.: Fasting Metabolism; Corrosion Brasses; Proteins of Blood, Muscle and Colostrum; Animal Nutrition and Meat; Developed a Program of Nutrition Accounting as an Administrative Procedure in Institutional Management.

HOWE, William Emerson White (Mr.), Electronics Engr., Navy Dept., Wash., D. C. Home Add.: 4940 Lowell St., N.W., Wash., D. C. MILITARY EQUIPMENT. b. Hartford, Conn., June 5, 1920. s. Edmund Grant and Eleanor Louise (White) H. Edn.: A.B., Yale Univ., 1941; Cert., Univ. of Ala., 1942; M.S., Georgetown Univ., 1957. m. Mary Louise Hixon, Nov. 27, 1942. c.: William Clay; Eleanor Cameron; Robert Collins. Exp.: Asst. Instr., Univ. of Ala., 1942; Electronic Engr., Naval Rsch. Lab., Wash., D. C., 1942-50; Electronic Engr. and Sr. Consultant, Navy Dept., ibid., 1950—. Mem.: Sr. Mem., Inst. of Radio Engrs.; Mem., Prof. Groups on Antennas and Propagation and

Milit. Electronics; Armed Forces Communications and Electronics Assn.; Am. Geophys. Assn.; Phi Gamma Delta; Citizen Assn. Contbr. to: Jour. of Optical Soc. of Am. Serv. Rec.: U. S. Navy, 1944-45; U. S. Naval Reserves, 1945—.

HOWELLS, Thomas H. (Ph.D.), Consulting Psycholt., 525 E. 3rd Ave., Escondido, Calif.. SOCIAL PSYCHOLOGY, PERSONALITY, PERCEPTION, HEREDITY FACTORS IN PSYCHOLOGICAL DEVELOPMENT. b. Keokuk, Ia., Oct. 28, 1891. s. Winslow W. and Mary (Lupton) H. Edn.: A.B., Univ. of Utah, 1915; M.A., Stanford Univ., 1923; Ph.D., State Univ. of Ia., 1927. m. Lucile Brighton, Aug. 26, 1915. Exp.: Hd. Sci. Dept., Latter Day Saints Coll., Salt Lake City, Utah, 1918-25; Asst. Prof. Psychol., Ia. State Coll., Ames, Ia., 1927-28; Prof. of Psychol., State Univ. of Colo., Boulder, Colo., 1928-55; Consult. Psycholt., Escondido, Calif., 1956—. Hon. Pos.: Chmn., Dept. of Psychol., Univ. of Colo., 1944-49; Pres., Rocky Mtn. Brn. of Am. Psychol. Assn., 1935-36; Pres., Colo. Chapter of Sigma Xi, 1944-45. Mem.: Am. Psychol. Assn., Fellow and Life Mem.; Fellow, Am. Assn. for the Adv. of Sci.; Soc. for Psychol. Study of Social Issues; Pi Gamma Mu; Psi Chi; Sigma Xi. Author: Comparative Study of Religious Radicals and Conservatives, 1928; Hunger for Wholiness, 1940. Contbr. to: Psychol. Rev.; Jour. Abnormal and Social Psychol.; Jour. of Exptl. Psychol.; Am. Jour. of Psychol.; Jour. of Gen. Psychol. Gen. Int.: Licensed as Cert. Psycholt. in State of Calif. Areas of Rsch.: Personality Research and Testing; Social Perception; Influence of Heredity on Social and Psychological Development; Psychological Correlates of Religious Attitudes.

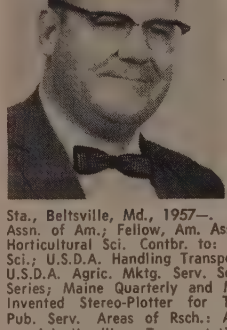
HOWES, James Raymond (Ph.D.), Physiologist, Dept. of Poultry Sci., Auburn Univ., Auburn, Ala. Home Add.: 155 Cox St., Auburn, Ala. ANIMAL PHYSIOLOGY AND NUTRITION. b. Norfolk, England, Mar. 17, 1924. s. James Richard and Victoria Anne (Branch) H. Edn.: N.D.A., Edinburgh, 1949; B.Sc., London, 1949; M.Sc., McGill, Montreal, 1951; Ph.D., Univ. of Fla., (cand.). m. Grace Mary Carol Murchison, May 22, 1951. c.: Richard Ian. Exp.: Tech. Asst., Dept. of Agric., Ottawa, Canada, 1950-51; Asst. Prof., I.C.T.A., Trinidad, Trinidad, W. I., 1951-54; Assoc. Prof., ibid., 1954-56; Asst. Prof., Auburn University, 1960—. Mem.: N. Y. Acad. of Sci.; Ala. Acad. of Sci.; Am. Soc. Animal Sci.; Am. Poultry Sci. Assn.; World's Poultry Sci. Assn.; Sigma Xi; Phi Sigma; Agric. Soc. Trinidad; Brit. Soc. Animal Prod.; Theta Xi; Agricola Club, London. Contbr. to: Nature, London; Jour. Animal Sci.; Poultry Sci.; Proc. Soc. Exptl. Biol. and Med.; Jour. Vet. Rsch.; J.A.V.M.A.; Feedstuffs; Jour. Agric. Soc., Trinidad; World Poultry Sci. Jour.; Brit. Poultry Sci. Serv. Rec.: Royal Navy, 1943-47. Gen. Int.: Royal Soc. and Nuffield Fdtn. Travelling Fellowship, 1954. Areas of Rsch.: Environmental Physiology; Avian Endocrinology; Digestive Renal and Reproductive Physiology.



HOYT, Samuel L. (Sc.D.), Metallurgical Consultant, 88 Purdue St., Berkeley 8, Calif. PHYSICAL METALLURGY. b. Minneapolis, Minn., May 29, 1888. s. Alfonzo O. and Huldah L. (Hunt) H. Edn.: E.M., Univ. of Minn., 1909; Ph.D., Columbia Univ., 1914; Grad. Studies, Charlottenburg Inst. Tech., Germany, 1911-13; Outstanding Achievement Award, Univ. of Minn., 1950; Sc.D. (hon.), S. Dak. Schl. of Mines and Tech., 1955. m. Edyth Armstrong, Nov., 1946. Exp.: Asst. and Assoc. Prof. of Metallography, Univ. of Minn., 1913-19; Rsch. Metallurgist, Gen. Elec. Co., Nela Pk. and Schenectady, 1919-30; Rsch. Metallurgist and Dir., Metallurgical Rsch., A. O. Smith Corp., Milwaukee, Wis., 1931-39; Tech. Adv., Battelle Meml. Inst., 1939-53; Metallurgical Consult., 1953-59; Staff Representative, Rsch. and Engr. Div., Dept. of Defense to NATO Countries, 1959-60. Mem.: Inst. of Metals; Am. Inst. Mining and Metallurgical Engrs.; Am. Soc. for Metals; Am. Welding Soc.; Brit. Iron and Steel Inst.; Comm. on Ship Steel, N.R.C.; Picatinny Arsenal Sci. Adv. Coun.; Am. Ord. Assn.; A.A.A.S.; Delta Tau Delta; Sigma Xi; ALSOS Mission, 1945; A.S.T.M. Committees. Author: Principles of Metallography, 1920; Metals and Common Alloys, 1921; Metal Data, 1952. Contbr. to: Trans. of member societies and Am. Soc. Mech. Engrng.; Metal Progress; Materials and Methods; Iron Age; Metals Handbook, etc.; Annual and Memorial Lectures. Special Int.: General Indus. Rsch. in the Metal Field, Welding Metallurgy; Phys. Metallurgy; Hard Carbides; Stainless and Heat-Resisting Alloys, Metal Applications and Metal Technology; Consult. to Battelle Meml. Inst. and indusl. firms in rsch. and tech.; Special Consult. on Ordnance and Missile Technology; Consult. on Metallurgical Rsch. and Development in NATO Countries.

HRIBAR, John Raymond (Mr.), Tchng. Asst., Calif. Inst. of Tech., 1201 Calif. St., Thomas Labs., Pasadena, Calif.; Staff Engr., Diodes, Inc., 7303 Canoga Ave., Canoga Park, Calif. Home Add.: 1201 E. Calif. St., Pasadena, Calif. MATERIALS SCIENCE. b. Geneva, Ohio, May 15, 1939. s. John and Mary Louise (DeMarco) H. Edn.: B.S., Calif. Inst. of Tech., 1961; M.S., ibid., 1962. Exp.: Engr. Staff, Diodes, Inc., Canoga Park, Calif., 1961—; Tchng. Asst., Calif. Inst. of Tech., 1962—. Mem.: A.A.A.S.; A.I. of Physics; Sigma Xi. Areas of Rsch.: Semiconductors and Semiconductor Materials.

HRUSCHKA, Howard Wilbur (Mr.), Plant Physiologist, Plant Indus. Sta., U.S.D.A., Beltsville, Md. Home Add.: 9710 Wichita Ave., Coll. Park, Md. HORTICULTURE, PLANT PHYSIOLOGY, HANDLING TRANSPORTATION AND STORAGE OF HORTICULTURAL CROPS. b. Brooklyn, N. Y., Sept. 17, 1915. s. Albert and Elsie (Mordick) H. Edn.: B.S.A., Cornell Univ., 1937. m. Eudora Edith Hendrickson, Aug. 18, 1940. c.: William Ray; Peter Daniel; Violet Amy. Exp.: Boys Worker, No. Side House, Ithaca, N. Y., 1937-38; U.S.D.A. Soil Conservationist, Bath, Cohocton, Canandaiga, N. Y., 1938-44; U.S.D.A. Plant Physiologist, N. Y. Market Lab., 1946-54; U.S.D.A. Plant Physiologist, Maine Potato Handling Rsch. Center, Presque Isle, Me., 1954-57; U.S.D.A. Plant Physiologist, Horticultural Crops Br., A.M.S.-U.S.D.A., Plant Indus. Sta., Beltsville, Md., 1957—. Mem.: N. Y. Acad. of Sci.; Potato Assn. of Am.; Fellow, Am. Assn. for Adv. of Sci.; Am. Soc. for Horticultural Sci. Contbr. to: Proc. of Am. Soc. for Horticultural Sci.; U.S.D.A. Handling Transportation and Storage Report Series; U.S.D.A. Agric. Mktg. Serv. Series; U.S.D.A. Mktg. Rsch. Report Series; Maine Quarterly and Maine Miscellaneous Report Series; Invented Stereo-Plotter for Three-Dimensional Graphs; Civilian Pub. Serv. Areas of Rsch.: Adapting Basic Physiology to Commercial Handling Transportation and Storage of Horticultural Crops; Protecting Crops from Freezing, Overheating, Bruising and Spoiling During Mktg. Period; Packaging of Fruits, Vegetables; Healing Pre-Cut Potato Seed Pieces During Transit.



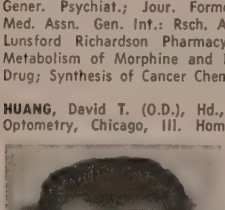
HSIE, Jen-Yah (Ph.D.), Hd., Dept. of Med. Microbiol., Coll. of Osteopathic Med. and Surg., Des Moines, Iowa and Visit. Prof., Microbiol. Univ. of Hawaii, Honolulu Hawaii. Home Add.: 3509 30th St., Des Moines 10, Ia. MEDICAL MICROBIOLOGY AND IMMUNOLOGY, ANTIBIOTICS, BACTERIOPHAGE, MICROBIAL GENETICS. b. China, May 24, 1917. s. Song-Bing and Sun-Yun (Huang) H. Edn.: M.S., Mich. St. Univ., 1947; Ph.D., Univ. of Md., 1949. m. Elizabeth C. Mabry, Aug. 8, 1950. c. James Robert. Exp.: Rsch. Bacteriol., Biol. Lab., Cold Spring Harbor, L. I., N. Y., 1949-51; Asst. Prof., Coll. of Osteopathic Med. and Surg., Des Moines, 1951-52; Assoc. Prof., ibid., 1953—; Hd., Dept. of Med., Microbiol., ibid., 1954—; Visit. Prof., Microbiol., Univ. of Hawaii, 1962-63. Hon. Pos.: Chmn., Rsch. Comm. and Infection Comm. of the Staff, Coll. of Osteop. Med. and Surg. Mem.: Fellow, Am. Public Health Assn.; Soc. Am. Bacteriol.; Fellow, Am. Pub. Health Assn.; Am. Soc. Trop. Med. and Hygiene; N. Y. Acad. Scis.; Fellow, Iowa Acad. Sci.; Fellow, A.A.A.S.; Genetics Soc. of Am.; Electron Microscope Soc. of Am.; Sigma Xi; etc. Contbr. to: Antibiotics Annual; Antibiotics and Chemotherapy; Jour. Bact.; Jour. Am. Osteop. Assn.; Am. Rev. Tuberculosis. Areas of Rsch.: Antibiotic Resistance, Microbiol. Genetics; Staphylococcus Phage.

HSU, Kenneth Jinghwa (Ph.D.), Rsch. Geologist, Shell Devel. Co., Box 481, Houston, Tex. Home Add.: 9315 McAvoy, Houston, 36, Tex. SEDIMENTATION, PETROLOGY, STRUCTURAL GEOLOGY. b. Nanking, China, July 1, 1929. s. Sin-Wu and Su-Cheng (Huang) H. Edn.: B.S., Natl. Cent. Univ., Nanking, China, 1948; M.A., Ohio State Univ., 1950; Ph.D., Univ. of Calif., L. A., 1954. m. Ruth E. Grunder, Apr., 1958. c.: Martin Johannes; Elisabeth Lee. Exp.: Rsch. Geolt., Shell Devel. Co., Houston, Tex., 1954—. Hon. Pos.: Assoc. Editor of Sedimentary Petrology. Mem.: Fellow, Geol. Soc. of Am.; Geol. Soc. of Switzerland; Am. Assn. of Petrol. Geolts.; Soc. of Econ. Mineralts. and Paleontolts.; Geochem. Soc.; Sigma Xi. Contbr. to: Am. Jour. of Sci.; Bulls. of the Geol. Soc. of Am.; Jour. of Sedimentary Petrol.; Trans. of the Gulf Coast Geol. Socs. Areas of Rsch.: Deep-Sea Sedimentation; Diagenesis of Carbonate Rocks; Matamorphiem of Precambrian Rocks.

HU, Ling-Wen (Ph.D.), Professor, Engrng. Mechanics, Pa. State Univ., Univ. Park, Pa. Home Add.: 728 Westerly Parkway, State Coll., Pa. MECHANICAL PROPERTIES OF METALS, PLASTICITY AND HIGH PRESSURE EXPERIMENTS. b. Nanking, China, Jan. 28, 1922. s. Hsiao Shih and S. I. (Yang) H. Edn.: B.S., Natl. Central Univ., 1943; M.S., Univ. of Wash., 1949; Ph.D., The Pa. State Univ., 1952. m. Ling Gut Wong, Nov. 26, 1953. c.: Shih-In; Da-Shih. Exp.: Designer, Natl. Central Machine Works, China 1943-45; Instr., Univ. of China, 1945-47; Research Asst., Pa. State Univ., 1949-52; Asst. Prof., Pa. State Univ., 1952-56; Assoc. Prof., ibid., 1956-62; Prof., ibid., 1962—. Mem.: Sigma Xi; Soc. for Experimental Stress Analysis. Contbr. to: Jour. of Applied Mechanics; Proceedings of Am. Soc. for Testing Materials; Proceeding of Soc. for Exptl. Stress Analysis; Jour. of Physics and Mechanics of Solids; Jour. of Franklin Inst. Areas of Rsch.: Plastic Flow of Metals; Effects of High Pressure on Mechanical Properties of Metals.

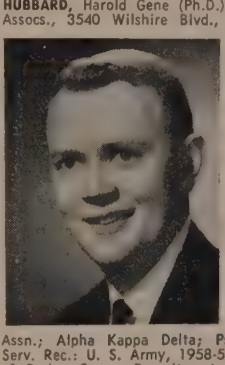
HUANG, Chien Li (M.D., Ph.D.), Chf. Rsch. Scientist, Med. Rsch. Dept., Spring Grove St. Hosp., Baltimore 28, Md. Home Add.: 1815 Palo Circle, Arbutus 27, Md. MEDICINAL CHEMISTRY, CHEMICAL PHARMACOLOGY. b. Formosa, Feb. 17, 1924. s. Chau Lin and Ren (Koh) H. Edn.: B.S., Tohoku Pharm. Coll., Sendai, Japan, 1943; M.D., Natl. Taiwan Univ., Taipei, Formosa, 1947; M.S., Butler Univ., 1957; Ph.D., Nagasaki Univ., Nagasaki, Japan, 1959; Ph.D., Univ. of Md., 1960. m. Ching-ngo Lai, Nov. 30, 1949. c.: Ann-Lie; Jon Son; Hen-Lie. Exp.: Physician, Internal Med., Taiwan Univ. Hosp., Taipei, Formosa, 1947-48; Instr., Pharm., Natl. Taiwan Univ., Taipei, Formosa, 1948-55; Lectr., Schl. of Nursing, Natl. Taiwan Univ., 1953-54; Lectr., Pharm., ibid., 1955-56; Lectr., Toxicology, Dept. of Justice Admin., Formosa, 1952; Pub. Health Comm. Officer, Formosan Pharm. Assn., Formosa, 1953; Examiner, Natl. Bd. of Examination, Formosa, 1954; Chief Chemist, Inland Alkaloid Co., Tipton, Ind., 1957; Chief Rsch. Scientist, Spring Grove St. Hosp., Baltimore, Md., 1959—. Mem.: Formosan Med. Assn.; Formosan Pharm. Assn.; Md. Biol. Soc.; Am. Assn. Adv. Sci.; N. Y. Acad. of Sci.; Rho Chi; Sigma Xi. Contbr. to: Jour. Org. Chem.; Am. Jour. Psychiat.; Archives Gener. Psychiat.; Jour. Formosan Med. Assn.; Jour. Nagasaki Med. Assn. Gen. Int.: Rsch. Award, Formosan Med. Assn., 1954; Lunsford Richardson Pharmacy Award, 1960. Areas of Rsch.: Metabolism of Morphine and Phenothiazines; Antiamebic Chinese Drug; Synthesis of Cancer Chemotherapeutic Drug, 4- Anzasteroids.

HUANG, David T. (O.D.), Hd., Contact Lens Dept., Ill. Coll. of Optometry, Chicago, Ill. Home Add.: 3241 S. Michigan Ave., Chicago 16, Ill. CONTACT LENS. b. Tsinkiang, Fukien, China, May 5, 1930. s. Y. C. and S. (Go) H. Edn.: O.D., Centro Escolar Univ., Manila, Philippines, 1954. m. Catalina Lee, June 6, 1960. c.: Cynthia Kay. Exp.: Reporter and Dept. Editor: Great China Press (1949-51), Chinese Commercial News (1951-56), Fukien Times (1956-57), Manila, Philippines; Hd. Contact Lens Dept., Ill. Coll. of Optometry, 1957—. Mem.: Am. Acad. of Optometry; Natl. Eye Rsch. Found.; Contact Lens Assn. for Optometry; London Contact Lens Soc.; Am. Assn. for Adv. of Sci.; Am. Assn. of Univ. Prof.; Optometric Extension Prog.; Omega Epsilon Phi. Contbr. to: Optometric Weekly; Am. Jour. of Optometry and Archives of Am. Acad. of Optometry; Contacto; Jour. of Am. Optometric Assn. Areas of Rsch.: Optometry and Contact Lens.



HUANG, Teh Cheng (Ph.D.), Dir. of Rsch. and Asst. Dir. of Lab., Timken and Mercy Hosps., Canton, Ohio. Home Add.: 121 Broad Ave., N.W., Canton, Ohio. CLINICAL CHEMIST AND NUTRITION. b. Shanghai, China, Dec. 18, 1918. s. N. Y. and F. (Wang) H. Edn.: D.V.M., Natl. Univ. of Kwangsi, China, 1942; M.S., Wash. State Univ., 1948; Ph.D., ibid., 1951. m. Yu-Ying Tsing, June 6, 1948. c.: Mary Chen; Linda Chen. Exp.: Technician, Natl. Rsch. Bur. of Animal Industry, China, 1943-47; Rsch. Assoc., Cornell Univ., 1951-57; Dir. of Rsch. and Asst. Dir. of Lab., Timken and Mercy Hosps., Canton, Ohio, 1957—. Hon. Pos.: Pres., Internatl. Fellowship, local, 2 Yrs. Mem.: A.V.M.A.; A.C.S.; A.A.A.S.; A.A. Clinical Chem.; N. Y. Acad. Sci.; Sigma Xi. Contbr. to: Publications in J. Am. Vet. Res.; Arch. Biochem. Biop.; J. Anal. Chem. Areas of Rsch.: Arteriosclerosis and Experimental Surgery.

HUBBARD, Harold Gene (Ph.D.), Staff Consultant, George Fry and Assocs., 3540 Wilshire Blvd., Los Angeles 5, Calif. and Assoc. Prof., Dept. of Sociol., Long Beach Sta. Coll., Long Beach, Calif. Home Add.: 4316 W. Fourth St., Los Angeles 5, Calif. SOCIAL PSYCHOLOGY. b. Monterey Park, Calif., June 20, 1932. s. William I. and Lottie (Foster) H. Edn.: B.A., Univ. of Calif., 1954; M.A., Southern Methodist Univ., 1955; Ph.D., Univ. of Southern Calif., 1960. Exp.: Psychometrician, Am. Inst. for Rsch., Dallas, Tex., 1954-55; Lectr., Univ. of Sou. Calif., 1959-60; Instr., Los Angeles St. Coll., 1958—; Staff Consultant, George Fry and Assocs., Los Angeles, Calif., 1955—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Psychol. Assn.; Am. Sociol. Assn.; Western Psychol. Assn.; Calif. St. Psychol. Assn.; Alpha Kappa Delta; Psi Chi; L. A. Co. Museum Assn. Serv. Rec.: U. S. Army, 1958-59; U. S. Army Res., 1959—. Areas of Rsch.: Career Recruitment and Development Process, Psychological Test Construction and Validation, Consumer Behavior and Consumer Motivation Rsch.; Attitude and Opinion Rsch.; Psychological Evaluation of Executives.



HUBBARD, William Neill, Jr. (M.D.), Dean, The Univ. of Mich. Med. Schl., 1335 Catherine St., Ann Arbor, Mich. Home Add.: 1380 Fair Lane Dr., Ann Arbor, Mich. INTERNAL MEDICINE. b. Fairmont, N. C., Oct. 15, 1919. s. William Neill, Sr. and Mary Emma (Fenegan) H. Edn.: A.B., Columbia Coll., 1942; M.D., N. Y. Univ., 1944. m. Elizabeth Terleski, Dec. 28, 1945. c.: William N., III; Michael James; Mary Emma; Elizabeth Ann; Susan Ellen. Exp.: Intern, Bellevue Hosp., N. Y. City, 1944-45; Asst. Res., ibid., 1945; Res., Schenectady Co. TB Hosp., Schenectady, N. Y., 1946-47; Intern, Bellevue Hosp., Dept. Pathol., 3rd Med. Div., N. Y. Univ., 1947-48; Asst. Res., ibid., 1948-49; Res., ibid., 1949-50; Asst. in Med., N. Y. Univ. Coll. of Med., 1949-50; Instr. in Med., ibid., 1950-53; John Wyckoff Fellow in Med., ibid., 1950-51; Asst. Dean, ibid., 1951-53; Assoc. Dean, ibid., 1953-59; Dean, Univ. of Mich., Med. Schl., 1959—; Assoc. Prof. of Internal Med., ibid., 1959—. Mem.: A.M.A.; A.A.A.S.; Harvey Soc.; N. Y. Acad. of Med.; Sigma Xi; Alpha Omega Alpha; Phi Kappa Phi; Alpha Kappa Kappa; Rotary Club; Fellow, Am. Coll. of Physicians. Contbr. to: Anns. of the N. Y. Acad. of Sci.; Jour. of Clin. Investn.; Jour. of the Am. Med. Assn.; New Physn.; Univ. of Mich. Med. Bull.; Scalpel of Alpha Epsilon Delta.

HUBBELL, David Smith (M.D.), Physician, 861 6th Ave., S. Home Add.: 1963 Brightwaters Blvd., St. Petersburg, Fla. SURGERY. b. Dallas, Tex., Aug. 29, 1922. s. Jay B. and Lucinda (Smith) H. Edn.: A.B., Duke Univ., 1943; M.D., ibid., 1946. m. Barbara Baynard, 1947. c.: Katherine; Lawrence; Daniel. Exp.: Interne, Duke Hosp., Durham, N. C., 1946-47; Dir. of Lab., Tripler General Hosp., Honolulu, 1947-49; Res. Surgeon and Fellow of Yale Univ., 1950-53; Instr. in Surgery, Yale Univ., 1953-54; Attend. Surgeon, Mound Park and St. Anthony's Hosp., St. Petersburg, Fla., 1954—; Consultant in Thoracic Surg., Veterans Hosp., Bay Pines, Fla., 1956—. Mem.: Am. Med. Assn.; Am. Thoracic Soc.; Sou. Thoracic Assn.; Fellow, Am. Coll. of Surgeons; Am. Coll. of Chest Physicians; Diplomate, Am. Bd. of Surg.; Diplomate of the Bd. of Thoracic Surgery. Contbr. to: Surgery, Gynecology and Obstetrics; Am. Jour. Pathology; Cancer;

Am. Jour. of Surgery; Jour. of Fla. Med. Assn.; Jour. of Am. Med. Assn. Serv. Rec.: Med. Corps. Areas of Rsch.: Thoracic and Vascular Surgery; Appendicitis in Older People; Lymphangitic Tumors of Lungs and Thymus.

HUBBELL, John Howard (Mr.), Physicist, Natl. Bur. of Standards, Wash., D. C. Home Add.: 11830 Rocking Horse Rd., Rockville, Md. RADIATION PHYSICS (PENETRATION AND DIFFUSION OF X AND GAMMA-RADIATION THROUGH MATERIALS). b. Ann Arbor, Mich., Apr. 9, 1925. s. Howard Adams and Mildred (Lipe) H. Edn.: B.S., Univ. of Mich., 1949; M.S., ibid., 1950. m. Jean Norford, June 11, 1955. c.: Anne Virginia; Shelton Eric. Exp.: Physicist, General, Natl. Bur. of Standards, Wash., 1950-51; Physicist, Radiation Theory Sect., Natl. Bur. of Standards, Wash., 1951—. Mem.: Am. Physical Soc.; Am. Assn. for the Adv. of Sci.; Rad. Rsch. Soc.; Philosophical Soc. of Washington; Potomac Appalachian Trail Club; Randolph Hills Civic Assn. Contbr. to: Physical Review; Jour. of Applied Physics; Review of Scientific Instr.; Natl. Bur. Standards Jour. of Rsch.; I.R.E. Trans.; Bull. Am. Phys. Soc.; Jour. of Optical Soc. of Am. Serv. Rec.: U.S.A. Areas of Rsch.: Radiation Penetration and Diffusion Through Materials; Geometrical Radiation Problems; X-and Gamma-Ray Attenuation Coefficients; Gamma-Ray Scintillation Spectroscopy; Bremsstrahlung Theory.

HUBER, Curtis Edward (Ph.D.), Asst. Prof., Concordia Sem., Springfield, Ill. Home Add.: 342 S. Douglas, Springfield, Ill. HISTORY OF SCIENCE (METHODOLOGY). b. Chicago, Ill., Jan. 23, 1928. s. Edward W. and Dorothea (Wollenberg) H. Edn.: B.A., Concordia Sem., St. Louis, Mo., 1950; B.D., ibid., 1953; M.A., Univ. of Wis., 1958; Ph.D., ibid., 1962. m. Norma Underwood, Mar. 20, 1950. c.: Wanda; Steven; Brenda; Sheila. Exp.: Pastor, Redeemer Lutheran Ch., Dickinson, N. Dak., 1953-55; Pastor, Faith Luth. Ch., South Bend, Ind., 1955-57; Asst. Pastor, Immanuel Luth. Ch., Madison, Wis., 1957-61; Asst. Prof., Concordia Sem., Springfield, Ill., 1961—. Mem.: Am. Assn. Adv. Sci.; Luth. Acad. for Scholarship; Am. Philosophical Assn. Contbr. to: The Springfielder. Areas of Rsch.: Epistemology; Linguistic Analysis of Scientific and Religious Languages; History of Science.

HUBER, Frank Edward, Jr. (Mr.), Sr. Analytical Chemist, Battelle Mem. Inst., Columbus, Ohio. Home Add.: 1760 W. 1st Ave., Columbus 12, Ohio. MICRO ANALYST. b. Cannelton, Ind., Mar. 29, 1920. s. Frank E., Sr. and Ida Mae (Livers) H. Edn.: B.S., Ind. Univ., 1942; M.A., ibid., 1947. m. Evelyn Maier, May 11, 1943. c.: James Michael; Teresa Lee; Jean Marie. Exp.: Chemist and Shift Ldr., E. I. DuPont, Memphis, Tenn., 1942-44; Chemist and Proj. Ldr., Battelle Mem. Inst., 1947—. Mem.: Am. Chem. Soc.; Analytica Div. of Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Analyt. Chem.; Chemist Analyst. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Have Developed Several New Micro Analytical Procedures. Areas of Rsch.: Analytical Chemistry in General and Micro Chemistry in Particular.

HUBER, Olive (Ph.D.), Prof. of Physiol., Hunter Coll., 695 Pk. Ave., N. Y. 21, N. Y. Home Add.: 209 E. 17 St., N. Y. 3, N. Y. PHYSIOLOGY. b. N. Y., Dec. 29, 1904. d. Francis and Viola (Bingham) H. Edn.: A.B., Hunter Coll., 1926; A.M., Columbia Univ., 1927; Ph.D., ibid., 1944. Exp.: Instr., Columbia Univ., N.Y.C., 1939-40; Instr. to Prof., Hunter Coll., 1927—. Hon. Pos.: Chmn., Dept. of Physiol., Health and Hyg., Hunter Coll. Mem.: Sigma Xi; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Scis.; Animal Care Panel; Inst. of Radio Engrs.; Natl. TB Assn.; History of Sci. Soc.; Am. Physiol. Soc.; Kappa Delta; Metropolitan Museum of Art; Museum of Nat. Hist.; N. Y. Zool. Soc. Contbr. to: Am. Jour. of Physiol. Gen. Int.: Research Grant from the Am. Physiol. Soc., 1958; Summer Inst. in Rad., Oak Ridge, 1954. Areas of Rsch.: Endocrinology; Muscular Physiology.

HUBER, Wilbur H. (Mr.), Analyt. Chemist, Semiconductor Div., Radio Corp. of Am., Fostoria Rd., Findlay, Ohio. Home Add.: 605 Lincolnshire Lane, Findlay, Ohio. ANALYTICAL CHEMISTRY AND EMISSION SPECTROGRAPHY. b. Dearborn Co., Ind., Jan. 10, 1919. s. Charles F. and Mary C. (Thielking) H. Edn.: A.B., Wabash Coll., 1941; M.S., Ind. Univ., 1948. m. Rosalie Lawson, Dec. 22, 1946. c.: Kathrin Rose; Carl Fredrick. Exp.: Control Chemist, E. I. DuPont de Nemours, Ind. Ordn. Wks., 1941-43; Analyt. Methods Chemist, ibid., Cleveland, Ohio, 1948-51; Mgr., Analyt. Lab., Tube Dept., Radio Corp. of Am., Marion, Ind., 1951-59; Analyt. Chemist, Radio Corp., Am., Findlay, Ohio, 1959—. Mem.: Am. Chem. Soc.; Soc. of Appl. Spectroscopy; Am. Assn. for the Adv. of Sci. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: Micro-Analysis of Electronic and Semi-Conductor Materials and the Effect of Minor and Trace Constituents upon Electrical Characteristics; Trace Analysis by D. C. Arc-Powder Techniques of Emission Spectroscopy.

HUFFMAN, Eugene Harvey, Chemist and Supvr., Lawrence Radiation Lab., Univ. of Calif., Berkeley, Calif. Home Add.: 70 Panoramic Way, Berkeley, Calif. ANALYTICAL AND INORGANIC CHEMISTRY. b. Lawrenceburg, Ind., Dec. 5, 1905. s. Harvey Russell and Atta (Smashey) H. Edn.: A.B., Univ. of Colo., 1927; M.S., Univ. of Wash., 1929; Ph.D., Univ. of Ill., 1937. m. Elizabeth Breecher, July 13, 1961. Exp.: Instr., Oregon State Coll., 1929-33; Instr., Univ. of Ky., 1936-37; Instr., Univ. of Wis., 1937-38; Asst. Prof., Coll. of Puget Sound, 1938-40; Instr. and Asst. Prof., Kans. State Coll., 1940-41; Chemist, U. S. Bureau of Mines, Berkeley, Calif., 1941-43; Chemist and Supvr., Radiation Lab., Univ. of Calif., 1943—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chemical Soc.; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Phi Lambda Upsilon; Alpha Chi Sigma. Editorial Board, Analytical Chem. of the Manhattan Project, 1950. Contbr. to: Jour. Am. Chem. Soc.; Inorg. and Nuclear Chem.; Analyt. Chem.; Jour. Physical Chem. Areas of Rsch.: Anion Exchange Separations; Chelation-Extraction Separations; Inorganic Complex Compounds; Analyt. Chem. of Uranium and Related Materials.

HUFFMAN, Max Niel (Ph.D.), Dir. of Rsch., Lasdon Fdn. Rsch. Inst. of Chemotherapy, 3300 N. Nevada, Colorado Springs, Colo. Home Add.: 903 N. 31st St., Colorado Spgs., Colo. CREATIVE MEDICINAL CHEMISTRY. b. Norwood, Mo., Apr. 1, 1911. s. Francis Marion and Jessie Louise (Shepard) H. Edn.: A.B., Univ. of Mo., 1937; Ph.D., St. Louis Univ., 1941. m. Edna Taborn, Dec. 8, 1939. c. John Chavis; Thomas Niel; William Francis. Exp.: Rsch. Prof. of Biochem., Southwestern Med. Coll., 1946-49; Prof. of Biochem., Southwestern Med. Schl., Univ. of Tex., 1949-50; Head, Sect. of Organic Chem., Okla. Med. Rsch. Fdn., Oklahoma City, Okla., 1950-57; Prof. of Rsch. Biochem., Univ. of Okla. Schl. of Med., 1950—; Distinguished Lectr., Colo. Coll., 1958—; Dir. of Rsch., Lasdon Fdn. Rsch. Inst. of Chemotherapy, Colorado Springs, Colo., 1957—. Mem.: Fellow, A.A.A.S.; Am. Chem. Soc.; Am. Soc. Biol. Chemists; Endocrine Soc.; Soc. Exptl. Biol. and Med.; Phi Beta Kappa; Sigma Xi; Alpha Sigma Nu; Delta Epsilon. Contbr. to: Jour. Biol. Chem.; Jour. Am. Chem. Soc.; Science; Endocrinology; Jour. Org. Chem.; Acta Med. Scand.; Trans. Am. Micros. Soc.; Cancer; Nature; Proc. Soc. Expt. Biol.; Biochim. Biophys. Acta; Biochem. Biophys. Rsch. Comm.; Jour. Pharm. Med. Chem.; Acta Physiol. Pharmacol. Neerlandica. Areas of Rsch.: Steroid chemistry; Endocrine Physiology; Host Resistance.

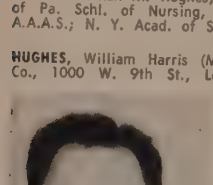
HUGHES, Charles Campbell (Ph.D.), Assoc. Dir., Cornell Program in Social Psychiat., Cornell Univ., Ithaca, N. Y. Home Add.: c/o 322 Rand Hall, Cornell Univ., Ithaca, N. Y. SOCIAL ANTHROPOLOGY. b. Salmon, Idaho, Jan. 26, 1929. s. Charles F. and Grace Jean (Campbell) H. Edn.: A.B., Magna cum Laude, Harvard Coll., 1951; M.A., Cornell Univ., 1953; Ph.D., ibid., 1957. m. Jane Ellen Murphy, 1951. Exp.: Tchng. and Rsch. Asst., Cornell Univ., 1951-55; Assoc. Dir., Cornell Prog. Social Psychiat., 1955—. Hon. Pos.: Fellow, Ctr. for Adv. Study in the Behavioral Scis., Stanford, Calif., 1961-62. Mem.: Am. Anthropol. Assn.; Am. Assn. for the Adv. of Sci.; Am. Ethnol. Soc.; Am. Sociol. Assn.; Arctic Inst. of N. Am.; Am. Acad. of Pol. and Social Sci.; Soc. for App. Anthropol.; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi. Author: An Eskimo Village in the Modern World, 1960; People of Cove and Woodlot: Communities from the Viewpoint of Social Psychiatry, 1960. Contbr. to: Am. Anthropolt.; Southw. Jour. of Anthropol.; Jour. of Social Issues; Anthropol. Papers of the Univ. of Alaska; Proc. of Am. Ethnol. Soc. Serv. Rec.: U. S. Army Reserve, 1951-57.

HUGHES, Richard John, Jr. (Mr.), Assoc. Prof. Geol., Univ. of Miss., P. O. Box 215, Univ., Miss. Home Add.: Philip Rd., Oxford, Miss. GENERAL GEOLOGY. b. Shreveport, La., June 21, 1915. s. Richard J. and Clara M. (Waring) H. Edn.: B.S., Univ. of Tex., 1938; M.A., ibid., 1948. m. Louise Womack, Jan. 13, 1944. Exp.: Instr., Geol., Centenary Coll., 1938-39; Inspector, Core Borings and Jr. Geol., Denison Dam Proj., U. S. Corps Engrs., Denison, Tex., 1939-40; Cartographic Engr., U. S. Coast and Geodetic Survey, Wash., D.C., 1940-43; Instr., Engrs. Schl., Ft. Belvoir, Va., 1943; Consult. Geol., Austin, Tex., 1946-48; Asst. Prof. Geol., Miss. St. Coll., 1948-50; Instr., Geol., Univ. of Okla., 1951-52; Asst. Prof., Geol., Univ. of Miss., 1952-54; Geologist, Miss. State Geol. Surv., 1954-56; Assoc. Prof., Geol., Univ. of Miss., 1956—. Hon. Pos.: Chmn., Earth Sci. Sect., Miss. Acad. Scis., 1960. Mem.: Fellow, Geol. Soc. of Am.; Am. Assn. Petroleum Geol.; Soc. of Econ. Paleontol. and

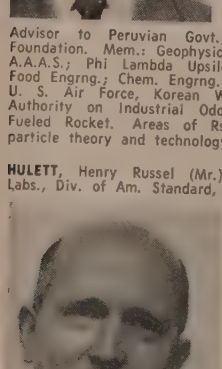
Mineral.; Am. Soc. of Photogrammetry; Lambda Chi Alpha; Sigma Gamma Epsilon. Author: Kemper County Geology, 1958. Contbr. to: Jour. Sedimentary Petrol.; Jour. Paleontol.; Econ. Geol.; Southeastern Geol.; Jour. Geological Edn.; Jour. Miss. Acad. of Scis. Serv. Rec.: U. S. Engrs., 1943-46. Areas of Rsch.: Sedimentation; Stratigraphy; Paleontol.

HUGHES, Elizabeth Barentin (D.O.), Physician, Gen. Practice, 2044 Pine St., Philadelphia, Pa. MEDICINE, BACTERIOLOGY. b. Philadelphia, Pa., Mar. 21, 1933. d. W. E. Barentin. Edn.: B.A., Temple Univ., 1953; D.O., Philadelphia Coll. of Osteopathy, 1961. m. Max M. Hughes, Mar. 26, 1951. Exp.: Instr., Univ. of Pa. Schl. of Nursing, Philadelphia, Pa., 1958-59. Mem.: A.A.A.S.; N. Y. Acad. of Scis.; Am. Osteopathic Assn.

HUGHES, William Harris (Mr.), Sr. Rsch. Scientist, Joy Mfgng. Co., 1000 W. 9th St., Los Angeles 15, Calif. Home Add.: 20725 Rockcroft Dr., Rt. #1, Malibu, Calif. CHEMICAL PHYSICS. b. Long Beach, Calif., Apr. 16, 1925. s. Charles Carrol and Laura (Harris) H. Gambrel. Edn.: A.A., U.C.L.A., 1958; B.A., ibid., 1950; M.S., ibid., 1957. m. Margareta Susan Dahlsten, Jan. 16, 1954. c.: Robert William; Cynthia Kathleen; Georgia Louise; Julita Joyce. Exp.: Physicist, U. S. Naval Ordnance Test Sta., China Lake, Calif., 1949-52; Cust. Serv. Representative, Douglas Aircraft Co., Santa Monica, Calif., 1952-56; Asst. in Physics, U.C.-L.A., 1956-58; Sr. Rsch. Scientist, Joy Mfg. Co., Los Angeles, Calif., 1958—. Hon. Pos.: Mem., Nutrition Coun.; Vice Pres., Los Angeles Odor Control Committee; Advisor to Peruvian Govt.; Chmn., Pacific Electro-magnetic Foundation. Mem.: Geophysical Union; Aero-med. Engrng. Assn.; A.A.A.S.; Phi Lambda Upsilon. Contbr. to: Jour. Coll. Sci.; Food Engrng.; Chem. Engrng. Serv. Rec.: U. S. Army, W.W. II; U. S. Air Force, Korean War. Gen. Int.: World's Foremost Authority on Industrial Odor Control; Inventor of the Dust Fueled Rocket. Areas of Rsch.: Industrial Odor Control, fine particle theory and technology; sferics; nutrition.

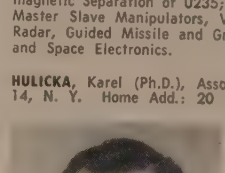


HULETT, Henry Russel (Mr.), Dir. of Rsch., Advanced Tech. Labs., Div. of Am. Standard, 369 Whisman Rd., Mountain View, Calif. Home Add.: 937 Westridge Dr., Portola Valley, Calif. APPLIED PHYSICS, ELECTRO-OPTICAL DEVICES. b. Nespelem, Wash., May 5, 1920. s. John Henry and Celia Elizabeth (Robertson) H. Edn.: B.S., Ore. State Coll., 1941; M.S., ibid., 1942. m. Iva Lee Prevett, Dec. 5, 1942. c.: Celia Grace; Karen Sue. Exp.: Elect. Engr., Hughes Aircraft, Culver City, Calif., 1946-51; Hd., Electronics, Pacific Mercury Rsch., Santa Barbara, Calif., 1951-52; Hd. Electronics, Detroit Controls Rsch., Redwood City, Calif., 1952-57; Guidance and Control Mgr., Lockheed Aircraft, Palo Alto, Calif., 1957-59; Dir., R. and D., Advanced Tech. Labs., Mountain View, Calif., 1959—. Mem.: I.R.E.; A.A.A.S.; Pi Mu Epsilon; Phi Lambda Upsilon. Contbr. to: Jour. of Ind. and Engrng. Chem. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Electro-optics, Guidance and Control of Spacecraft.



HULL, Harvard Leslie (Ph.D.), Pres., Hull Associates, Electronics and Nucleonics Consultants, 30 West Monroe St., Chicago 3, Ill. Home Add.: 5223 Caroline Ave., West. Springs, Ill. PHYSICS, ELECTRONICS, NUCLEONICS. b. Holstein, Nebr., Oct. 23, 1906. s. Joel Leslie and Caroline (Larsen) H. Edn.: A.B., Nebr. Wesleyan Univ., 1927; Ph.D., Columbia Univ., 1933. m. Alta Jones, June 9, 1928. c.: Gwen H. Framburg; Janet H. Clark. Exp.: Project Engr., Sperry Gyroscope Co., Brooklyn, N. Y., 1933-35; Rsch. Engr., ibid., 1935-40; Dir. of Remote Control Develop., ibid., 1940-43; Dir. of Process Improvement for Separation of U235, Tenn. Eastman Corp., Oak Ridge, Tenn., 1943-46; Assoc. Dir., Argonne Natl. Lab., Chicago, Ill., 1946-49; Dir., Remote Control Engrng. Div., ibid., 1949-53; V.-Pres., Rsch. and Develop., Capehart Farnsworth Co., A Div. of Internatl. Tel. and Tel. Corp., Fort Wayne, Ind., 1953-54; Pres., Farnsworth Electronics Co., ibid., 1954-56; Vice-Pres., Litton Industries, Beverly Hills, Calif., 1956-57; Pres., Hull Associates, 1957-62; Pres., Chicago Aerial Indust., Inc., 1962—. Hon. Pos.: Chmn Chicago Sect., Inst. of Aerospace Scis., 1952; Chmn., Natl. Tele metering Conference, 1956. Mem.: Am. Phys. Soc.; Inst. o Aerospace Sci.; Inst. of Radio Engrs.; Am. Rocket Soc.; Am Nuclear Soc.; Am. Assn. Adv. Sci.; Phi Kappa Phi; Sigma Xi Sigma Pi Sigma; R.E.S.A.; Theta Chi; Executives' Club of Chicago Contbr. to: Phys. Rev.; Nucleonics. Gen. Int.: Responsible fo Development and Introduction of Vacuum Tube Electronic Contro of Hydraulically Operated Servomechanisms for Anti-aircraft guns 1939; Organized Series of Post-War Hot Laboratory Design Con ferences for Argonne Natl. Lab. and Atomic Energy Commn. 1947; Directed Development of Master Slave Manipulators, Shield ing Viewing Windows and Stereo Television for Remote Contro at Argonne, 1949-53. Areas of Rsch.: Servomechanisms, Auto matic Controls, Remote Control of Searchlights and Guns; Electro magnetic Separation of U235; Hot Laboratory Equipment Including Master Slave Manipulators, Viewing Windows, Stereo Television Radar, Guided Missile and Ground Support Equipment; Telemetry and Space Electronics.

HULICKA, Karel (Ph.D.), Assoc. Prof., Univ. of Buffalo, Buffalo 14, N. Y. Home Add.: 20 Hawthorne Ave., Buffalo 23, N. Y. POLITICAL SCIENCE; ECONOMICS. b. Prague, Czechoslovakia, Jan. 3, 1913. s. Frantisek and Marie (Kralova) H. Edn.: Dipl. Ing., Univ. of Prague, 1946; Ph.D., Univ. of Calif., Berkeley, 1952 m. Dr. Irene Mackintosh, May 27, 1957. Exp.: Prof. of Commerce, Tech. Coll., Prague, 1939-47; Instr., Univ. of Calif., 1952-53; Visit. Lectr., Univ. of Minn., 1955-56; Asst. Prof. of Govt., Univ. of Okla., 1956-59; Asst. Prof. of History and Govt., Univ. of Buffalo, 1959—. Mem.: The Am. Polit. Sci. Assn. Co-author: Comparative European Governments, 1960. Contbr. to: The South African Jour. of Econs.; The Modern Rev.; The Midwest Quarterly; The Southwestern Social Science Quarterly; Soviet Studies; Land Economics; The Am. Slavic and East European Rev.; Soc. Studies; Psychological Record; Adult Leadership; Jour. of Tchr. Edn.; Ency. Americana. Areas of Rsch.: Government, Politics and Economy of the U.S.S.R. and Central Eastern Europe; International Relations; International Law; Political Theory.

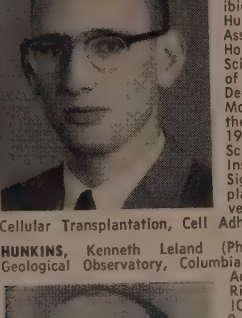


HULTGREN, Herbert Nils (M.D.), Assoc. Prof. of Med., Stanford Univ., Schl. of Med., 300 Pasteur Dr., Palo Alto, Calif. Home Add.: 827 San Francisco Court, Stanford, Calif. CARDIOLOGY. PHYSIOLOGY OF CIRCULATION AND RESPIRATION. b. Santa Rosa, Calif., Aug. 29, 1917. s. Adolf W. and Hilda (Hakanson) H. Edn.: A.B., Stanford Univ., 1939; M.D., ibid., 1943. m. Barbara Brooke, Aug. 7, 1948. c.: Peter; Bruce; John. Exp.: Interne, San Francisco, Hosp., Calif., 1942-43; Asst. Resident, Med., Stanford Hosp., San Francisco, Calif., 1943-44; Asst. Resident, Pathol., ibid., 1946-47; Rsch. Fellow, Thorndike Mem. Lab., Boston, Mass., 1947-48; Instr., Med., Stanford Med. Schl., Calif., 1948-51; Asst. Prof., Med., ibid., 1951-55; Assoc. Prof., Med., ibid., 1955—. Hon. Pos.: Pres., Western Soc. Clin. Rsch., 1958-59. Mem.: Am. Soc. Clin. Invest.; Western Soc. Clin. Rsch., Western Assn. of Physicians, Calif. Acad. of Med.; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Circulation; Am. Heart Jour.; Am. Jour. Med.; British Heart Jour.; Med.; Jour. Clin. Invest. Serv. Rec.: Army of U. S., 1944-46. Gen. Int.: Scholar in Med. Sci., Markle Fdtn., 1951-56. Areas of Rsch.: Cardiology; High Altitude Physiology; Heart Sounds; Congenital Heart Disease.

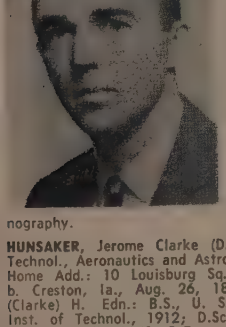
HUMBER, Wilbur James (Ph.D.), Partner, Humber, Mundie and McClary, 111 E. Wisconsin Ave., Milwaukee, Wis. Home Add.: 9614 N. Lake Dr., Milwaukee 17, Wis. INDUSTRIAL PSYCHOLOGY. b. Winnipeg, Can., June 21, 1911. s. Arthur W. and Annie S. (McConnell) H. Edn.: B.A., Macalester Coll., 1934; M.A., Univ. of Chicago, 1937; Ph.D., Univ. of Minn., 1942. m. Jean Adriansen, 1946. c.: Philip; Scott; Michael. Exp.: Asst. Prof., Lawrence Coll., 1942-44; Consulting Psychol., Rohrer, Hibler and Replogle, Chicago, Ill., 1944-52; Partner, Humber, Mundie and McClary, Milwaukee, Wis., 1952—. Hon. Pos.: Pres., Mental Health Soc. of Milwaukee; Past Pres., Wis. St. Psychol. Assn. Mem.: Am. Psychol. Assn., Fellow; A.A.A.S., Fellow; Am. Soc. of Clin. Hypnosis; Milwaukee Club; Wis. Club. Co-Author: The Development of Human Behavior, 1951. Contbr. to: Jour. of Clin. Psychol.; Jour. of Edn'l. Psychol.; Personnel Jour. Areas of Rsch.: Social Psychology, Industrial Organization and Mental Health, Management Development.

UMPHREY, Tryphena (M.D., Ph.D.), Prof. of Anatomy, Univ. of ttsburgh, 868B Scaife Hall, Pittsburgh 13, Pa. Home Add.: 1460 Barnsdale St., Pittsburgh 17, Pa. DEVELOPMENT OF THE HUMAN FETAL NERVOUS SYSTEM CORRELATED WITH THE SEQUENCE OF APPEARANCE OF FETAL MOVEMENTS. b. Bear Lake, Mich., May 25, 1902. d. Ellis and Helena Augusta (Lumley) H. Edn.: A.B., Eastern Mich. Univ., 1924; A.M., Univ. of Mich., 1927; M.D., ibid., 1931; Ph.D., ibid., 1936. Exp.: Instr., Univ. of Mich., 1932-38; Instr., Univ. of Pittsburgh, 1938-42; Asst. Prof., ibid., 1942-47; Assoc. Prof., ibid., 1947-50; Prof., ibid., 1950—. Mem.: A.A.A.S.; Am. Assn. Anatomists; Assn. Rsch. Nerv. Ment. Dis.; Am. Acad. Neurology; Allegheny Co. Med. Soc.; Am. Med. Assn.; Mich. cad. of Sci.; Internatl. Inst. of Embryology; Internatl. Brain sch. Assn., Neuroanatomy Panel; Pittsburgh Neuropsychiatric oc.; Pa. St. Med. Soc.; Kappa Delta Pi; Sigma Xi; Phi Kappa hi; Alpha Epsilon Iota. Author: Correlative Anatomy of the ervous System, co-author, 1962. Contbr. to: Jour. of Comarative Neurology; Trans. of Am. Neurological Assn.; Jour. of sychol.; Archives of Neurology and Psychiatry; Gazeta Medica ortuguesa; Medizinische Grundlagenforschung. Areas of Rsch.: omparative Anatomy of Olfactory Areas of Vertebrates; Develop ment and Differentiation of Human Nervous System; Correlation f Nervous System with Human Fetal Reflex Activity.

UMPHREYS, Tom Daniel (Ph.D.), Natl. Sci. Fdn. Postdoc. Fellow, ept. of Biol., Mass. Inst. of Technol., Cambridge 39, Mass. Home Add.: 29 Dana St., Cambridge 38, Mass. DEVELOPMENTAL BIOLOGY. b. Arlington, Tenn., June 22, 1936. s. Tom Daniel and Libbie (Kesl) H. Edn.: B.S., Univ. of Chicago, 1958; Ph.D., ibid., 1962. m. Susie Brunner Hunt, Sept. 7, 1958. Exp.: Res. Asst., Marine Biol. Lab., Woods Hole, 1958; Grad. Fellow, Nat. Sci. Fdn., Dept. of Zool., Univ. of Chicago, 1958-61; Tchng. Asst., Dept. of Zool., ibid., 1959-60; Morris Miller Wells Fellow of the General Biol. Supply House, 1961-62; Postdoc. Fellow, Natl. Sci. Fdn., Dept. of Biol., Mass. Inst. of Technol., 1962—. Mem.: Sigma Xi. Contbr. to: Transplantation Bull.; Biol. Bull.; Developmental Biol. Areas of Rsch.: Cellular Transplantation, Cell Adhesion, Embryonic Induction.



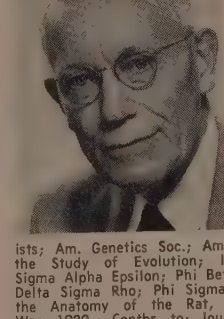
HUNKINS, Kenneth Leland (Ph.D.), Rsch. Scientist, Lamont Geological Observatory, Columbia Univ., Palisades, N. Y. Home Add.: 11 S. Summit St., Pearl River, N. Y. MARINE GEOPHYSICS. b. Lake Placid, N. Y., Mar. 3, 1928. s. Harlan Kenneth and Florence (Olsen) H. Edn.: B.S., Yale Univ., 1950; M.S., Stanford Univ., 1956; Ph.D., ibid., 1960. m. Julia Bontjes, May 28, 1960. Exp.: Jr. Geol., Socony-Mobil Oil Co., Caracas, Venezuela, 1955; Rsch. Scientist, Lamont Geol. Obs., Palisades, N. Y., 1957—. Mem.: Am. Geophys. Union; Seismol. Soc. of Am.; Acoustical Soc. of Am.; A.A.A.S.; Sigma Xi. Contbr. to: Jour. of Geophys. Rsch.; Limnol. and Oceanography. Serv. Rec.: U. S. Army, 1950-53. Areas of Rsch.: Marine Geophysics and Underwater Acoustics of the Arctic Ocean; Arctic Geology and Oceanography.



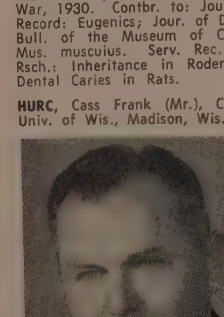
HUNSAKER, Jerome Clarke (D.Sc.), Prof. Emer., Mass. Inst. of Technol., Aeronautics and Astronautics Dept., Cambridge 39, Mass. Home Add.: 10 Louisburg Sq., Boston 8, Mass. AERONAUTICS. b. Creston, Ia., Aug. 26, 1886. s. Walter Jerome and Alma (Clarke) H. Edn.: B.S., U. S. Naval Acad., 1908; M.S., Mass. Inst. of Technol., 1912; D.Sc., ibid., 1916. Hon. Degs.: D.Sc., Williams Coll., 1943; D.Engrng., Northeastern Univ., 1946; D.Sc., Adelphia Coll., 1955. m. Alice Porter Avery, June 24, 1911. c.: Jerome C., Jr.; J. Peter (dec.); Mrs. Sara Swope; Mrs. Alice Bird. Exp. Instr. of Aeronautical Engrng., M.I.T., 1912-16; Staff, Navy Dept., Wash., D. C., 1916-23; Asst. Naval Attache, London, Paris, Berlin, Rome, The Hague, 1923-26; Asst. Vice Pres., Bell Tel. Labs., N. Y., 1926-28; Vice Pres., Goodyear-Zeppelin Corp., N. Y., 1928-33; Prof., Hd., Dept. of Mech. Engrng., M.I.T., 1933-47; Prof., Head, Dept. of Aeronautical Engrng., ibid., 1933-52; Prof. of Aeronautical Engrng. Emer., ibid., 1952—. Hon. Pos.: Regent, Smithsonian Inst.; Trustee, Boston Mus. of Sci.; Dir., McGraw-Hill Publishing Co.; Bd. of Overseers, Old Sturbridge Village; Dir., Tracerlab, Inc. Mem.: Am. Philos. Soc.; Natl. Acad. of Scis.; Soc. of Automotive Engrs.; Soc. of Naval Architects and Marine Engrs.; Delta Kappa Epsilon; Sigma Xi; Am. Acad. of Arts and Scis., Fellow; Am. Phys. Soc., Fellow; Imperial Coll. of Sci. and Technol., Gr. Brit., Hon. Fellow; Inst. of Aeronautical Scis., Hon. Fellow; Royal Aeronautical Soc. of Gr. Brit., Hon. Fellow; Am. Soc. of Mech. Engrs., Hon. Mem.; Inst. of Mech. Engrs., Gr. Brit., Hon. Mem. Contbr. to: Jour. of Royal Aeronautical Soc.; Jour. of Inst. of Aeronautical Scis. Serv. Rec.: U. S. Naval Reserve, 1926—. Gen. Int.: Navy Cross, 1919; Daniel Guggenheim Medal, 1933; Franklin Medal, 1942; Medal for Merit, 1946; Legion of Honor, 1949; Wright Trophy, 1951; Godfrey L. Cabot Trophy, 1953; Langley Medal, 1955; Water-Based Aviation Award, Inst. of Aeronautical Scis., 1957; N.A.C.A. Distinguished Serv. Medal, 1957; Gold Medal Royal Aeronautical Soc., 1957; U.S.N. Award for Distinguished Publ. Serv., 1958. Areas of Rsch.: Aeronautical Engineering.

HUNT, Darwin Paul (Ph.D.), Rsch. Psychologist, Behavioral Sciences Lab., Aerospace Med. Rsch. Lab., Wright Patterson Air Force Base, Ohio. Home Add.: 328 Miles Ave., Tipp City, Ohio. EXPERIMENTAL PSYCHOLOGY. b. Lima, Ohio, July 16, 1926. s. l. Paul and Helen R. (Drees) H. Edn.: B.A., Miami Univ., 1950; Ph.D., Ohio State Univ., 1960. m. Sallie Sue Brubaker, June, 1953. Exp.: Rsch. Asst., Ohio State Univ., 1958-59; Rsch. Psychologist, U. S. Air Force, Wright Patterson Air Force Base, Ohio, 1951—. Mem.: Am. Psychol. Assn.; Midwestern Psychol. Assn.; Am. Assn. for the Adv. of Sci.; Psi Chi; Pi Mu Epsilon; Alpha Delta Phi; Pi Kappa Alpha. Contbr. to: Jour. of Experimental Psychol.; Human Factors Jour. Serv. Rec.: U. S. Naval Air Corps, 1944-46. Areas of Rsch.: Learning Theory; Human Tracking Performance; Rsch. Methods and Statistics in the Behavioral Sci.; Application of Psychology to the Design of Man-Machine Systems.

HUNT, Harrison Randall (Ph.D.), Prof. Emeritus of Zoology, Mich. State Univ., East Lansing, Mich. Home Add.: Box 121, East Lansing, Mich. ANIMAL GENETICS. HEREDITARY FACTOR IN DENTAL CARIES IN RATS. b. Conneaut, Ohio, March 7, 1889. s. Henry H. and Agnes (Howard) H. Edn.: B.S., Allegheney Coll., 1912; A.M., Harvard Univ., 1913; Ph.D., ibid., 1916. m. Jane Fisher, Aug. 12, 1916. c.: Howard F.; Herve H.; Althea I.; Edward L.; Margaret A. Exp.: Instr., W. Va. Univ., 1916-18; Asst. Prof., ibid., 1918-19; Prof. of Biology, Univ. of Miss., 1919-23; Hd. of Dept. of Zoology, Mich. State Univ., 1923-54; Prof., Emeritus of Zoology, ibid., 1954—. Hon. Pos.: Pres., Mich. Acad. of Sci.; Pres., Inter-City Wrangler's Club, 1940. Mem.: A.A.A.S.; Mich. Acad.; Am. Soc. of Zoologist; Am. Soc. of Naturalists; Am. Genetics Soc.; Am. Soc. of Human Genetics; Soc. for the Study of Evolution; Internatl. Assn. for Dental Rsch.; Sigma Alpha Epsilon; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Delta Sigma Rho; Phi Sigma. Author: A Laboratory Manual of the Anatomy of the Rat, 1924; Some Biological Aspects of War, 1930. Contbr. to: Jour. of Heredity; Genetics; Anatomical Record: Eugenics; Jour. of Dental Rsch.; Archives of Oral Biol.; Bull. of the Museum of Comparative Zool. at Harvard Coll.; Mus. muscuius. Serv. Rec.: U. S. Infantry, 1918. Areas of Rsch.: Inheritance in Rodents; Eugenics; Hereditary Factor in Dental Caries in Rats.



HURC, Cass Frank (Mr.), Coordinator, Special Engrng. Classes, Univ. of Wis., Madison, Wis. Home Add.: 5 Waupaca Ct., Madison 5, Wis. AERONAUTICAL AND MECHANICAL ENGINEERING. b. Chicago, Ill., May 20, 1916. s. Miron Mihal and Maria Anna (Smolucha) H. Edn.: B.S., Aeronautical Univ. of Chicago, 1943; M.S., Univ. of Wis., 1961. m. Viola Charlotte West, Sept. 19, 1939. c.: Gail; Alida. Exp.: Head, Engrng. Drawing & Graphics Dept., Aeronautical Univ. of Chicago, Ill., 1946-51; Project Engr., Parker Pen Co., Rsch. Div., Janesville, Wis., 1951-54; Chief Dev. Engr., Fairbanks, Morse & Company, Engine Accessory Div., Beloit, Wis., 1954-57; Coord. Spec. Engrng. Classes, Univ. of Wis., 1957—. Hon. Pos.: Pres. and Mem., Exec. Com., Am. Soc. of Mech. Engrs., 1955-57; State Dir. and Secy., Wis. Soc. of Prof. Engrs., 1959—. Mem.: Am. Soc. of Mech. Engrs.; Am. Assn. Adv. of Sci.; Natl. Soc. of



Prof. Engrs.; Wis. Soc. of Prof. Engrs.; Engrs. Soc. of Milwaukee; Madison Tech. Club. Contbr. to: Am. Engr.; Wis. Prof. Engr.; Milwaukee Engrng. Serv. Rec.: U. S. Army Air Force, 1943-46. Gen. Int.: Registered Prof. Engr., Ill., 1947—; Wis., 1954—. Areas of Rsch.: In Connection with the University of Wisconsin, organized a state wide program of Engineering Refresher courses in preparation for Professional Engineering examinations.

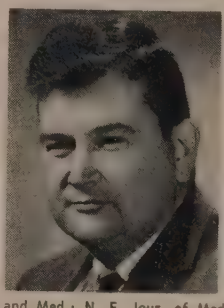
HUNT, Martha Wise (Mrs.), Tchr. of Sci. Dept., A. B. Davis H. S., Mt. Vernon, N. Y. Home Add.: 33 William St., Mt. Vernon, N. Y. CHEMISTRY. b. Eupora, Miss., Oct. 6, 1912. d. John Luther and Theosia (Patterson) Wise. Edn.: B.A., Miss. State Coll. for Women, 1934; M.A., Univ. of Chicago, 1956; M.A., Tchrs. Coll. of Columbia Univ., 1962. m. Rolfe Lanier Hunt, June 19, 1936. c.: Rolfe L., Jr.; Susie B. Exp.: Tchr. of Sci., Anding Central High Schl., Bentonia, Miss., 1934-35; Tchr. of Sci., Louise H. S., Louise, Miss., 1941-42; Tchr. of Sci., Magnolia H. S., Magnolia, Miss., 1942-43; Tchr. of Sci., Wash. Jr. H. S., Chicago Heights, Ill., 1953-56; Sci. Tchr., A. B. Davis H. S., Mt. Vernon, N. Y., 1956—. Mem.: A.A.A.S.; N.S.T.A.; Gamma Sigma Epsilon; Delta Kappa Gamma; Pi Lambda Theta; Westchester Woman's Club. Contbr. to: Ill. Edn.; N.E.A. Jour.; Internatl. Jour. of Religious Edn.; A.T.A. Mag.

HURD, Chester Orville (Mr.), Hd. of Sci. Dept., Chillicothe High Schl., Chillicothe, Ohio. Home Add.: Rte. 8, Box 564, Chillicothe, Ohio. PHYSICS AND PHYSICAL SCIENCES. b. Wayland, Ohio, May 10, 1911. s. John M. (dec.) and Ida (Walter) H. Edn.: B.A., Ohio Wesleyan, 1950. m. Eleanore Halle, 1934. c.: Ronald C. Exp.: Hd. Timekeeper, Newton Steel Co., Monroe, Mich., 1936-39; Store Mgr., Firestone, Delaware, Ohio, 1939-42; Physics Tchr., Ohio Wesleyan, 1942-45; Sci. and Adm., Delaware County, Ohio, 1946-50; Instr., Huntington Schls., Ohio, 1951-55; Hd. of Sci., Chillicothe H. S., 1956—. Hon. Pos.: Chmn., Sci., Chillicothe Schls.; Fellow, Shell Merit, Cornell, 1958; Ohio Acad. of Sci., Southern Dist. Mem.: Sigma Pi Sigma; Local State and Natl. Sci. Tchrs. Assn.; A.A.A.S.; Ohio Acad. of Sci.; Masonic Order; Sigma Pi Sigma; Lions Internatl. Contbr. to: Navigation. Gen. Int.: Instituted Sci. Fairs in the Chillicothe Area; Instituted a Sci. Speaker Prog. for H. S. Use; Selected One of Nine Top Sci. Tchrs. in St. by Acad. of Sci., 1960; Natl. Sci. Tchr. "Star Award." Areas of Rsch.: High School Science Curriculum.

HURLEY, Kenneth Ernest (Ph.D.), Staff Dir., General Therapeutics Dept., Rsch. and Dev. Div., Smith Kline and French Labs., Philadelphia 1, Pa. Home Add.: 327 Valley Rd., Merion Sta., Pa. BIOCHEMISTRY. b. Reading, Pa., Dec. 19, 1928. s. Russell G. and Emily (Slater) H. Edn.: B.S., Antioch Coll., 1951; M.S., Univ. of Tex., 1954; Ph.D., ibid., 1957. m. Frances Wrobel, May 31, 1952. c.: Katherine Elaine; Lynn Suzanne. Exp.: Sr. Scientist, Sci. Information Dept., Smith Kline and French Labs., Philadelphia, Pa., 1956-57; Group Leader, ibid., 1957-58; Section Head, ibid., 1958-60; Staff Dir., ibid., 1960—. Mem.: Am. Chem. Soc.; A.A.A.S.; N. Y. Acad. Sci.; Canadian Biochem. Soc.; Alpha Chi Sigma. Areas of Rsch.: Biochemical Pharmacology, Individuality and Embryology. Rsch. Administration. Sci. and Med. Information Processing.

HUSCHKE, Ralph Ernest (Mr.), Meteorologist, Planetary Sciences Dept., Rand Corp., Santa Monica, Calif. Home Add.: 4416 Silver Saddle Lane, Rolling Hills Estates, Calif. RESEARCH IN APPLIED METEOROLOGY, METEOROLOGICAL ADMINISTRATION, METEOROLOGICAL DOCUMENTATION. b. Utica, N. Y., Nov. 28, 1925. s. Henry Albert Ralph and Hedwig Ernestine (Borchers) H. Edn.: B.S., Mass. Inst. of Tech., 1946. m. Virginia Kincaid, Aug. 28, 1948. c.: Peter C. D.; Lisa E. Exp.: Meteorologist, U. S. Weather Bureau, Hartford, Conn. and Boston, Mass., 1948-52; Glossary Editor, Am. Meterological Soc., Boston, Mass., 1954-56; Chief Rsch. Prod., Branch, Geophysics Rsch. Directorate, Air Force Cambridge Rsch. Center, Bedford, Mass., 1956-59; Engineering Specialist, Norair Div., Northrop Corp., 1959-61; Meteorologist, Planetary Sciences Dept., Rand Corp., 1962—. Mem.: Am. Meteorological Soc.; Am. Geophysical Union; Inst of Aero. Scis.; A.A.A.S. Editor: Glossary of Meteorology, 1959. Contbr. to: A.R.D.C. R.&D. Quarterly Rev. Serv. Rec.: U. S. Naval Reserve, 1943—; Active Duty, 1943-47, 1952-54. Areas of Rsch.: Weather Systems, Environment Control, Meteorological Terminology, Education and Documentation.

HUSSMANN, Albrecht Wilhelm (Dr.), Prof. of Engrng., Rsch., Pa. Sta. Univ., Univ. Pk., Pa. Home Add.: 144 Spring Hill Lane, Sta. Coll., Pa. MECHANICAL ENGINEERING-IC-ENGINES, THERMODYNAMICS, COMBUSTION, FLUID DYNAMICS. b. Koepernitz, Germany, June 15, 1906. s. Eibe Wilhelm and Elly (Schuetz) H. Edn.: Dipl. Ing., Engrng. Univ., Berlin, 1931; Dr. Ing., ibid., 1938. m. Christa Stalmann, Sept. 6, 1958. c.: Eibe Klaus; Lotte Barbara. Exp.: Rsch. Engr., DVL, Berlin, Germany, 1932-38; Chf. Engr., BMW, Munich, Germany, 1938-42; Chief Engr., KHD, Oberursel, Germany, 1942-46; Spec. Lectr., N. C. Sta. Coll., Raleigh, N. C., 1947-51; Prof. of Engrng. Rsch., Pa. Sta. Univ., 1951—; Partner in Schweitzer and Hussmann, Engrng. Office. Mem.: S.A.E.; Sigma Xi. Author: Harmonic Analysis and Synthesis, 1938. Contbr. to: A.S.M.E. Trans.; S.A.E. Trans. Areas of Rsch.: Vibrations in Valve Gears and Crankshafts; Combustion in Diesel Engines and Gas Turbines; Design of Diesel Engines; Turbulence and Combustion.



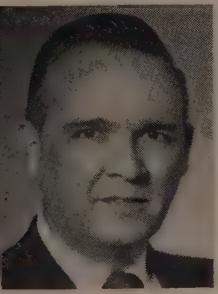
HUSTEAD, Robert F. (M.D.), Asst. Prof. of Surgery (Anesthesiol.), Kan. Univ. Med. Ctr., Kansas City 3, Kan. Home Add.: 9510 Belinder Rd., Leawood, Kan. ANESTHESIOLOGY. b. Pueblo, Colo., Feb. 18, 1928. s. Burch Frank and Elsie G. (Hall) H. Edn.: B.A., Yale Univ., 1950; M.D., Yale Univ. Schl. of Med., 1954. m. Betty Jo Cope, Aug. 31, 1952. c.: Russell M.; David R.; Joanne L.; Judy D. Exp.: Instr. in Anesthesiol., Johns Hopkins Univ. Schl. of Med., 1959-60; Asst. Prof. of Anesthesiol., ibid., 1960-61; Asst. Prof. of Surgery (Anesthesiol.), Kan. Univ. Schl. of Med., 1961—. Mem.: Am. Med. Assn.; Am. Soc. of Anesthesiologists; Am. Med. Soc.; Wyandotte Med. Soc.; Internatl. Anesthesia Rsch. Soc.; Phi Gamma Delta; Nu Sigma Nu. Contbr. to: Proc. of Soc. for Exptl. Biol. and Med.; N. E. Jour. of Med.; Jour. of Applied Physiol. Serv. Rec.: U. S. Army, 1957-59. Areas of Rsch.: Obstetrical Anesthesia and Infant Resuscitation; Pneumatic Breathing Equipment.

HUTCHINGS, Lois May, (Ph.D.), Fellow, Dept. of Surg., Western Reserve Univ., Cleveland 9, Ohio. Home Add.: 3384 Scranton Rd., Cleveland 9, Ohio. CELLULAR PHYSIOLOGY. b. Newark, N. J., March 11, 1906. d. J. Blake and Grace Douglas (Bennetto) B. Edn.: B.A., Mount Holyoke Coll., 1927; M.A., Columbia Univ., 1934; Ph.D., Cornell Univ., 1944. Exp.: Asst. Biol., Univ. of Del., Newark, Del., 1927-28; Tchr., Biol., Barringer H. Schl., Newark, N. J., 1928-30; Tchr., Barringer High Schl. and E. Orange High Schl., E. Orange, N. J., 1930-33; Tchr., Weequahic High Schl., Newark, N. J., 1933-46; Instr., N. Y. Univ., 1946-48; Instr., Drew Univ., Madison, N. J., 1948-49; Prof. Kans. Wesleyan Univ., Salina, Kans., 1949-52; Prof., Blackburn Coll., Carlinville, Ill., 1952-54; Asst. Prof., Augsburg Coll., Mpls., Minn., 1954-56; Fellow, Western Reserve Univ., 1958—. Mem.: Am. Assn. for the Adv. of Sci.; Pi Lambra Theta; Sigma Delta Epsilon; N.E.A.; O.E.A.; Festival Chorus. Contbr. to: Physiol. Zool.; Am. Biol. Tchr.; N. Y Sta. Rural Schl. Bull. Areas of Rsch.: Protozoology; Cellular Physiology.

HUTCHINS, Edwin Burnell (Ph.D.), Rsch. Assoc., Assn. of Am. Med. Colleges, Evanston, Ill. Home Add.: 114 Arlington Dr., Libertyville, Ill. PSYCHOLOGY. b. Chicago, Ill., Jan. 30, 1930. s. Evert O. and Elsie (Johnson) H. Edn.: B.A., Lake Forest Coll., 1951; M.A., Univ. of Mo., 1953; Ph.D., Univ. of Ill., 1958. m. Dorothy Lee Detwiler, Sept. 9, 1951. c.: Gilbert Gregory; Edwin Evert; Scott Burnell; Donald Thomas; Eric Forrest. Exp.: Tchng. Asst., Univ. of Mo., 1951-53; Rsch. Assoc., Psychol. Rsch. Assoc., Wash., D. C., 1953-54; Rsch. Asst. to Assoc., Univ. of Ill., 1954-57; Rsch. Psychol., U. S. Govt., Wash., D. C., 1958-59; Rsch. Assoc., Assn. of Am. Med. Coll., Evanston, Ill., 1959—. Mem.: Am. Psychol. Assn.; Am Sociol. Soc.; Am. Stat. Assn.; Psychometric Soc.; Am. Assn. Adv. Sci.; Sigma Xi; P.T.A. Contbr. to: Psychol. Monographs; Jour.

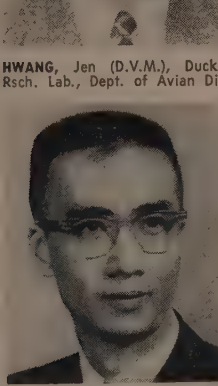
Abnormal and Social Psychol.; Sociometry; Jour. Med. Edn. Gen. nt.: Recipient, Am. Personnel and Guid. Assn. Rsch. Award. Areas of Rsch.: Leadership, Interpersonal Perception, Personnel Selection; Social and Measurement Psychology.

HUTCHINS, M. Colton, (M.D.), Physician, 773 Fisher Bldg., Detroit, Mich. Home Add.: 4364 Pine Tree Trail, Bloomfield Hills, Mich. INTERNAL MEDICINE. b. Boston, Mass., Sept. 19, 1922. s. M. Stephan and Ruth (McKechnie) H. Edn.: B.S., Tufts Univ., 1943; M.D., ibid., 1946. m. Ruth Grace Hutchins, Oct. 7, 1960. c.: Pamela Lynn; Gail Candace; Nancy Marcia; Marcia Elise. Exp.: Fellow, Med., Tulane Med. Schl., New Orleans, La., 1949-51; Instr. Med., Albany Med. Coll., Albany, N. Y., 1952-54; Asst. in Med., Cornell Med. Schl., N. Y., 1954-55; Asst. in Med., Wayne Univ., Med. Schl., Detroit, Mich., 1955—; Physician, Detroit, Mich., 1955—. Mem.: Am. Coll. of Physns., Assoc.; Phi Beta Kappa; Alpha Omega Alpha. Serv. Rec.: U. S. Army, 1947-49.



HUTTON, Kenneth Earl (Ph.D.), Asst. Prof. of Biological Scis., San Jose State Coll., San Jose, Calif. VERTEBRATE PHYSIOLOGY. b. Chicago, Ill., Apr. 17, 1928. s. David and Margaret C. (Cornish) H. Edn.: B.A., Kalamazoo Coll., 1951; M.S., Purdue Univ., 1952; Ph.D., ibid., 1955. Exp.: Instr., Tulane Univ., Zool. Dept., 1955-58; Asst. Prof., Dept. of Biological Scis., San Jose State Coll., 1958—. Am. Soc. of Zoologists; Am. Assn. Univ. Profs.; A.A.A.S.; Am. Inst. of Biol. Sci.; Sigma Xi; Audubon Soc. Contbr. to: Jour. Cell. and Comp. Physiol.; Physiological Zool.; Proc. Soc. Exptl. Biol. and Med. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Circulatory and Respiratory Physiology of Reptiles.

HWANG, Jen (D.V.M.), Duck Disease Specialist, Duck Disease Rsch. Lab., Dept. of Avian Diseases, N. Y. State Veterinary Coll. at Cornell Univ., Eastport, Long Island, N. Y. Home Add.: P. O. Box 455, Center Moriches, Long Island, N. Y. ANIMAL PATHOLOGY. b. Kienyoung, Fukien, China, Nov. 3, 1917. s. Bihchyuan and Chen (Wang) H. Edn.: D.V.M., Army Veterinary Coll., 1940; M.S., Auburn Univ., 1956; Ph.D., Univ. of Conn., 1960. m. Wen-shui Shih, Aug. 16, 1958. Exp.: Asst. Army Veterinary Coll., 1941-44; Instr. Army Veterinary Coll., 1944-49; Instr., Natl. Taiwan Univ., 1949-53; Assoc. Prof., Natl. Taiwan Univ., 1953-56; Duck Disease Specialist, Cornell Univ., 1960. Mem.: Am. Veterinary Med. Assn.; Am. Assn. of Avian Pathologists; U. S. Livestock Sanitary Assn.; A.A.A.S.; World Poultry Sci. Assn.; N. Y. Acad. of Sci.; Sigma Xi; World Veterinary Poultry Assn. Tissue Culture Assn.; Am. Pub. Health Assn. Contbr. to: Jour. of the Am. Veterinary Med. Assn.; Proceedings of the Soc. for Experimental Biol. and Medicine; Sci.; Avian Diseases. Areas of Rsch.: Avian pathology and virology.



HWANG, Kao (Ph.D.), Sect. Hd. in Pharmacology, Abbott Labs., N. Chicago, Ill. Home Add.: 1338 Chestnut St., Waukegan, Ill. PHARMACOLOGY AND PHYSIOLOGY. b. Changsha, Hunan, China, April 3, 1916. s. Hung Hsu and Tsung Su (Hsu) H. Edn.: M.D., Hsiang Ya Medical Coll., China, 1940; M.S., Univ. of Ill., 1947; Ph.D., ibid., 1953. m. Sheila Ning-tso Chen, July 17, 1948. c.: Leila; Miriam; Catherine; Jason Kao. Exp.: Asst. Instr. in Physiology, Hsiang Ya Med. Coll., 1940-45; Rsch. Fellow, Mayo Found., 1945-46; Rsch. Fellow, Rsch. Assoc., Dept. Clin. Sci., Univ. of Ill., 1946-58; Asst. Prof., ibid., 1958-61; Senior Pharmacologist, Group Leader, Section Head, Pharmacology, Abbott Labs., 1950—. Hon. Pos.: Invited speaker to Am. Coll. of Gastroenterology at Post-Grad. Course in Gastroenterology, 1955. Mem.: Chinese Med. Assn.; Fellow, A.A.A.S.; Soc. Exptl. Biol. and Med.; Sigma Xi; Am. Soc. for Pharmacol. and Exptl. Therapeutics. Contbrng. Author: Diseases of the Digestive System, 1953. Contbr. to: Am. Jour. Physiol.; Jour. Applied Physiol.; Ann. N. Y. Acad. Sci.; Antibiotics and Chemotherapy; Antibiotics Annual; Fed. Proc.; Gastroenterology; Am. Jour. Gastroenterology. Areas of Rsch.: Physiology and Pharmacology of the Alimentary Tract and Kidney; Pharmacology of Antibiotics; Safety Evaluation of Drugs.

HYDE, William Humphrey, Jr. (Mr.), Librn. and Prof. of Library Sci., Ill. Inst. of Tech., Chicago, Ill. ENGINEERING AND SCIENTIFIC LIBRARIES. b. Nov. 12, 1903, Cleveland, Ohio. s. Dr. Wm. H. and Lucy D. (Mathews) H. Edn.: B.A., Oberlin Coll., 1925; B.S., Columbia Univ., 1929; M.S., ibid., 1938. Exp.: Univ. Club, N. Y., Asst. Librn., 1929-36; Coll. of City of N. Y., Libr. Asst., 1938-39; Cornell Univ., Engr. Libr., 1939-45; Ill. Inst. of Tech. Librn., 1945—. Mem.: Chmn., Eng. Schl. Libr., Amer. C. and Ref. Libr., 1946; Amer. Soc. for Engr. Edn.; Amer. Lib. Assn.; A.S.E.E.; Spec. Libr. Contbr. to: Edni. Jours. Listed in: Who Knows—and What; Who's Who in Chicago; Who's Who in the Midwest; Who's Who in Libr. Services; Who's Who in Amer.

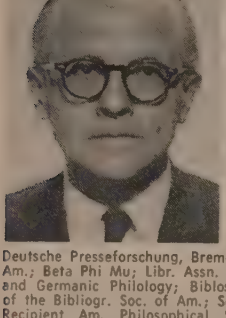
HYNEK, Josef Allen (Ph.D.), Dir., Dearborn Observatory, Northwestern Univ., Evanston, Ill. Home Add.: 2623 Ridge Ave., Evanston, Ill. ASTRONOMY. b. Chicago, Ill., May 1, 1910. s. Josef and Bertha (Waska) H. Edn.: B.Sc., Univ. of Chicago, 1931; Ph.D., ibid., 1935. m. Miriam Curtis, May 31, 1942. c.: Scott; Roxane; Joel; Paul. Exp.: Asst. Dean of Grad. Schl. and Prof. of Phys. and Astronomy Ohio Sta. Univ., Columbus, Ohio, 1950-53; Assoc. Dir., Smithsonian Astrophys. Observat., Cambridge, Mass., 1956-60; Dir. and Chmn., Astronomy Dept., Dearborn Observat., Evanston, Ill., 1960—. Hon. Pos.: Secy., Am. Astron. Soc., 1955-61. Mem.: Am. Astron. Soc.; Astron. Soc. of The Pacific; Internatl. Astron. Union; Phi Beta Kappa; Sigma Xi; Alpha Tau Omega; Chicago Planetarium Soc. Author: Astrophysics, 1951; Challenge of the Universe, 1961. Contbr. to: Astrophys. Jour.; Astron. Jour. Gen. Int.: Led Ohio Sta. Univ. Eclipse Expedition to Iran, 1954. Areas of Rsch.: Stellar Spectroscopy, Double Stars, Image Conversion Techniques.

IANNIELLO, Louis Carmin (Ph.D.), Metallurgist, Argonne Natl. Laboratory, Argonne, Ill. Home Add.: 31 East Ogden, Ill.

PHYSICAL METALLURGY. b. Troy, N. Y., Sept. 13, 1933. s. Louis, Sr. and Antonetta (Sparagna) I. Edn.: B.Met.E., Rensselaer Poly. Inst., 1954; M.Met.E., ibid., 1958; Ph.D., ibid., 1960. Exp.: Metallurgical Engr., General Elect. Co., Lynn, Mass., Syracuse, N. Y., Schenectady, N. Y., 1954-55; Rsch. Metallurgist, Rensselaer Poly. Inst., Troy, N. Y., 1957-60; Metallurgist, Argonne Natl. Lab., Argonne, Ill., 1960—. Mem.: Am. Soc. for Metals; Am. Inst. of Mining; Metallurgical Engrs.; The Inst. of Metals; A.A.A.S.; Sigma Xi; Tau Beta Pi. Contbr. to: Welding Jour.; Transactions of the Vacuum Metallurgy Conf.; Jour. of Metals; Jour. of Appl. Sci. Serv. Rec.: A.U.S., 1955-56. Areas of Rsch.: Transformations in Metals and Alloys, Zirconium-Rare Earth Alloys, Plutonium Alloys.

IBANEZ, Michael Louis (M.D.), Asst. Pathol., Univ. of Tex. M. D. Anderson Hosp. and Tumor Asst. Prof. of Path., Univ. of Tex. Post Grad. Schl. of Med., Houston 25, Tex. Home Add.: 3607 Meriburn Lane, Houston 21, Tex. PATHOLOGY. b. Havanna, Cuba, Nov. 9, 1916. s. Miguel Luis and Maria Luisa (Puentes) I. Edn.: B.A., Coll. of Havana, 1937; M.D., Univ. of Havana Med. Schl., 1948. m. Esther Puentes, Sept. 29, 1944. c.: Michael Louis; Lucia; Mary Ann. Exp.: Intern, McKennan Hosp., Sioux Falls, S. Dak., 1949-50; Res. in Path., Hermann Hosp., Houston, Tex., 1950; Res. in Path., Robert B. Green Mem. Hosp., San Antonio, 1950-53; Res. in Path., Univ. of Tex. M. D. Anderson Hosp. and Tumor Inst., 1953-56; Asst. Rsch. Pathol., ibid., 1956-58; Instr. in Exptl. Path., Univ. of Tex. Post-grad. Schl. of Med., 1957-59; Asst. Prof of Path., ibid., 1959—; Asst. Pathol., Univ. of Tex. M. D. Anderson Hosp. and Tumor Inst., 1959—. Mem.: Am. Med. Assn.; Tex. Med. Assn.; Harris Co. Med. Soc.; Houston Soc. Clin. Pathol.; Internatl. Acad. of Path.; Am. Assn. Adv. Sci. Contbr. to: Am. Jour. Path.; Unio Internationalis Contra Cancrum "Acta"; Jour. Lab. Inv. Areas of Rsch.: Cancer Research, Pathology of the Thyroid Gland; Histopathologic Technics.

IBEN, Icko (Ph.D.), Archivist, The Univ. of Ill., Urbana, Ill. Home Add.: 911 Linview Dr., Urbana, Ill. HISTORY OF CIVILIZATION AND COMMUNICATION. b. Hamshausen Jeverland, Friesland, Germany, Jan. 21, 1900. s. Karl MacDonald and Gretchen Henriette (Becker) I. Edn.: Ph.D., Halle Univ., 1923; M.A., (Libr.), Ill. Univ., 1929. m. 1st Kathryn L. Tomlin, 1927. m. 2nd Elisabeth Baroness von Haas-Hagenfels, Dec. 3, 1955. c.: Sigrid; Icko. Exp.: Vol. Tchr., Lanwirtschaftsschule, Jever, 1920-21; Hd., Exchange Div., Ill. Univ. Libr., Urbana, 1926-34; Dir., Okla. State Univ. Libr., Stillwater, Okla., 1934-39; Rsch., State Archives, Springfield, Ill., 1940-45; Archivist, Ill. Univ., Urbana, Ill., 1946—. Hon. Pos.: Editorial Bd. of Erasmus Darmstadt and Publizistik (Berlin); Corresponding Mem., Deutsche Presseforschung, Bremen. Mem.: A.A.A.S.; Biblio. Soc. of Am.; Beta Phi Mu; Libr. Assn. of Ill. Contbr. to: Jour. of English and Germanic Philology; Biblos. Library Quarterly; Libri. Papers of the Bibliogr. Soc. of Am.; Sci.; Publizistik (Berlin). Gen. Int.: Recipient Am. Philosophical Soc. (Phila.) grant for Rsch. in Northern Europe, 1958. Areas of Rsch.: History of Communications, Especially the Press; History of Civilization.

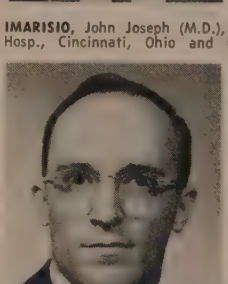


IDE, Frederick Palmer (Ph.D.), Prof. of Zoology, Univ. of Toronto, Toronto 5, Ontario, Can. INVERTEBRATE ZOOLOGY AND ENTOMOLOGY. b. Ottawa, Can., Sept. 4, 1904. s. William and Helen Winnifred (Masson) I. Edn.: B.A., Univ. of Toronto, 1928; M.A., ibid., 1930; Ph.D., ibid., 1934. Exp.: Lectr., Univ. of Toronto, 1935-39; Asst. Entomologist, Div. of Entomology, Federal Dept. of Agri., 1938-39; Asst. Prof., Univ. of Toronto, 1939-43, 1945-50; Assoc. Prof., ibid., 1950-62; Prof., ibid., 1962—. Mem.: Fellow, A.A.A.S.; Fellow, Entomological Soc. of Am.; Arctic Inst. of Am.; Soc. for the Study of Evolution. Contbr. to: Canadian Jour. of Zool.; Canadian Entomologist; Univ. of Toronto Studies. War Record: Civilian Meteorologist, Air Serv. Br., Dept. of Transport, 1943-45. Special Int.: Taxonomy and Ecology of Aquatic Insects; Studies of Environmental Factors; Population Dynamics.

IDLE, Dunning (Ph.D.), Prof. Hd. of Dept., Polit. Sci., Western Coll. for Women, Oxford, Ohio. BEHAVIORAL SCIENCE. s. Dr. Dunning and Bessie (Banks) I. Edn.: B.A., Univ. of Mich., 1925; M.A., ibid., 1926; Ph.D., Univ. of Ill., 1946. m. Helen Singer of Wilson, N. Y., 1926. d. Mr. and Mrs. R. R. Singer. c.: Dr. Dunning Idle, IV. Exp.: Instr., Govt. and Hist., Muskegon Jr. Coll., Mich., 1926-30; Instr., Asst. Prof., Assoc. Prof., Hist., Gettysburg Coll., 1931-49; For. Serv. Reserve Officer: Djakarta, Medan, and Taipeh, 1949-51; Visiting Prof., Government, Univ. of Miami, 1952-53; Asst. Prof. of Govt., Univ. of Md. Overseas Program, U.S.A.F. in Labrador and Newfoundland, 1954; Rsch. Assoc., Human Relations Area Files, Inc., Yale Univ., 1954-55; Rsch. Dir., OC/Psychological Warfare, D/Army, The Pentagon, Wash., D. C., 1955-56; Prof., Polit. Sci., Western Coll. for Women, 1956—. Mem.: Am. Polit. Sci. Assn.; Am. Histl. Assn.; Am. Acad. of Polit. and Social Sci.; A.A.U.P.; Assn. for Asian Studies; Lambda Chi Alpha; Phi Alpha Theta. Ph.D. Dissertation: The Post of St. Joseph River During the French Regime, 1679-1761. Travel: Asia; Africa; South Am.; Europe. Hobby: Photography.

ILOFF, Phillip Murray, Jr. (Ph.D.), Asst. Prof., Chem., Whittier Coll., Whittier, Calif. Home Add.: 497 Cedar Crest Ave., Claremont, Calif. CHEMISTRY. b. State Coll., Pa., Jan. 8, 1921. s. Phillip M. and Ethel (Rumberger) I. Edn.: B.S., Stanford Univ., 1948; Ph.D., ibid., 1957. m. Marie Griffen, Dec. 26, 1953. c.: Glen Phillip. Exp.: Rsch. Chemist, Univ. of Calif., 1952-56; Rsch. Chemist, Gallery Chemical Co., Pa., 1956-59; Rsch. Chemist, Aerojet-General Corp., 1959-62; Asst. Prof., Chem., Whittier Coll., 1962—. Mem.: Am. Chem. Soc.; The Chem. Soc., London; Am. Rocket Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Pharm. Assn. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Turpentine, Terpenes, Light Metal Hydrides, Organoboron Compounds.

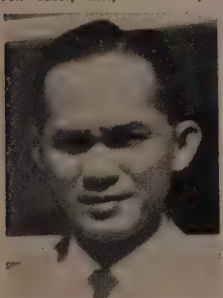
IMARISIO, John Joseph (M.D.), Chf., Radioisotope Serv., Cin. V.A. Hosp., Cincinnati, Ohio and Consultant and Asst. Chf. Radioisotope Serv., V. A. Hosp., Hines, Ill. Home Add.: 3N, 788 Central Ave., Bensenville, Ill. INTERNAL MEDICINE. b. New York City, N. Y., Sept. 8, 1922. s. Daniel and Ida (Ferrando) I. Edn.: B.A., N. Y. Univ., 1944; M.D., ibid., Coll. of Med., 1950; Diplomate National Boards, 1950. m. Aili Leppanen, Feb. 19, 1955. Exp.: Interne, Rotating, Rochester Gen. Hosp., N. Y., 1950-51; Asst. Resident Med., Buffalo Gen., N. Y., 1951-52; Resident and Sr. Resident in Med., State Univ. of N. Y. Med. Serv., Kings Co. Hosp., Brooklyn, N. Y., 1954-56; Rsch. Fellow, Dept. of Biophysics, Sloan-Kettering Institute, New York City, 1956-57; Special Fellow in Med. at Mem. Hosp., N. Y., 1956-57; Priv. Practice, New York City, 1957-60; Consultant and Asst. Chief Radioisotopes, V. A. Hosp., 1960—; Clin. Asst., Dept. of Med., Loyola Univ., Stritch Schl. of Med., Chicago, Ill. Mem.: A.M.A.; N. Y. Acad. of Scis.; Soc. of Nuclear Medicine. Contbrng. Author: Radioisotopes in Medicine, 1960. Contbr. to: Clin. Rsch. and Nuclear Med. Serv. Rec.: U. S. Army, 1943-44; Korean Conflict, 1952-54; Bronze Star, 1953. Areas of Rsch.: Medical Applications of Radioisotopes Techniques; Phosphorous and Thyroid Metabolism and Radiation Effects on Enzyme Reactions.



IMMERGUT, Edmund H. (Ph.D.), Editor, Interscience Publishers (a division of John Wiley and Sons, Inc.), 440 Park Ave. S., N. Y. 16, N. Y.; Lectr., Polytechnic Inst. of Brooklyn, N. Y. Home Add.: 19 Grace Ct., Brooklyn 1, N. Y. POLYMER CHEMISTRY. b. Vienna, Austria, Mar. 23, 1928. s. Walter and Nelly (Bleier) I. Edn.: B.S., Univ. of Calif., 1949; M.S., Polytechnic Inst. of Brooklyn, 1951; Ph.D., ibid., 1954. m. Brita Hassel, 1955. c.: Ellen; Eva; Karin. Exp.: Mgr., Exploratory Rsch., Dunlop Rubber Co., Toronto, Can., 1955-59; Editor, Interscience Publishers, N.Y.C., 1959—; Lectr., Polytechnic Inst. of Brooklyn, 1960—. Mem.: Am. Chemical Soc.; Soc. of Plastics Engrs.; N. Y. Acad. of Scis.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. of Polymer Sci.; Makromolekulare Chemie; Jour. Am. Chemical Soc. Areas of Rsch.: Polymer Chem.; Fibers; Graft Copolymers.

IMBODEN, John Baskerville, (M.D.), Asst. Prof. of Psychiatry, Johns Hopkins Univ. Schl. of Med., Baltimore, Md. Home Add.: 1010 Malvern Ave., Ruxton 4, Md. PSYCHIATRY. b. Morriltton, Ark., Sept. 17, 1925. s. Clarence A. and Landreth (Baskerville) I. Edn.: M.D., Johns Hopkins Univ., 1950. m. Mary Ellen Sawyers, 1950. c.: John B., Jr.; Connie Ellen. Exp.: Instr., Johns Hopkins Univ., Baltimore, Md., 1954-58; Asst. Prof., ibid., 1958—; Chf., In-Patient Serv., Henry Phipps Psychiatric Clinic, Johns Hopkins Hosp., 1961—. Hon. Pos.: Trustee and Program Chmn., Md. Psychiatric Soc. Mem.: Am. Med. Assn.; A.A.A.S.; Am. Psych. Assn.; Am. Psychosomatic Soc.; Nu Sigma Nu. Contbr. to: Am. Jour. of Psychiatry; Jour. of Clinical Psychol.; Jour. of Am. Med. Assn.; Bull. of the Johns Hopkins Hosp.; Jour. of Nervous and Mental Diseases; A.M.A. Archives of Neurology and Psychiatry; Jour. of Chronic Diseases. Serv. Rec.: A.U.S., 1953-56. Areas of Rsch.: Influence of Psychological Factors upon Recovery from Medical Disorders; Perception; Conversion Reactions.

IMPERIAL, George Romero (Ph.D.), Mem. of Technical Staff, Bell Tel. Labs., Inc., Laureldale, Pa. Home Add.: 2415 Bresler Dr., Whitfield, Reading, Pa. PHYSICAL CHEMISTRY. b. Dumaguete City, Philippines, Apr. 8, 1929. s. Gerardo A. and Angustias (Romero) I. Edn.: B.S.Ch., Silliman Univ., Philippines, 1952; M.S., Pa. St. Univ., 1957; Ph.D., ibid., 1962. m. Bolyn Ramos, June 23, 1956. c.: Beth R.; Gina R. Exp.: Chemist, Caltex, Inc., Manila, Philippines, 1953-55; Rsch. Asst., Pa. St. Univ., 1957-61; Mem. of Tech. Staff, Bell Tel. Labs., Laureldale, Pa., 1961. Mem.: A.C.S.; Am. Physical Soc.; Sigma Xi; A.A.A.S.; Sigma Gamma Epsilon. Contbr. to: Jour. of Physical Chem.; Nature. Areas of Rsch.: Chem. of Carbons; Adsorption; Gas-Solid Reactions.



IMRE, Paul D. (Mr.), Chf. Psychologist, Spring Grove St. Hosp., Baltimore, Md. Home Add.: 2111 Drummond Rd., Baltimore 28, Md. CLINICAL PSYCHOLOGY. b. N.Y.C., N. Y., May 30, 1925. s. Max and Bluma (Datz) I. Edn.: B.S., Univ. of Ill., 1950; M.S., N. Y. Univ., 1951. m. Jo Ellen Varner, Aug., 1956. c.: David M.; Robert B. Exp.: Intern Psycho., Springfield St. Hosp., Sykesville, Md., 1952-53; Chf., Psych., Mental Health Inst., Cherokee, Iowa, 1953-54; Chf. Psych., Spring Grove St. Hosp., Baltimore, Md., 1954-62; Trng. Grant, Johns Hopkins Schl. of Hyg., Balt., Md., 1962—. Hon. Pos.: Secy., Baltimore Clin. Psychol. Assn. Mem.: Projective Tech. Soc.; Am. Group Therapy Assn.; A.A.A.S.; Am. Psychol. Assn.; Md. Psychol. Assn.; Psi Chi; Phi Delta Kappa. Contbr. to: Jour. of Clin. Psychol.; Ednl. Theory. Serv. Rec.: A.U.S., 1943-46. Gen. Int.: Received the Mary Fallon Award, 1951-52. Areas of Rsch.: Psychodiagnostic Testing; Group Psychothrapy; Mental Health; Public Health.

INASHIMA, Osamu James (Ph.D.), Chmn., Dept. of Pharmacol. and Allied Scis., Prof. of Pharmacol., New England Coll. of Pharmacy, 70 Mt. Vernon St., Boston 8, Mass. Home Add.: 6 Sonrel St., Woburn, Mass. PHARMACOLOGY. b. Seattle, Wash., Aug. 8, 1922. s. Sadanobu and Suzu (Igawa) I. Edn.: B.S., Ida. St. Coll., 1947; M.S., Philadelphia Coll. of Pharmacy and Sci., 1949; Ph.D., Jefferson Med. Coll., 1954. m. Mary E. Shigeta, June 23, 1951. c.: John Harvey; Jamie Ellen; Cindy Joy. Exp.: Intern in Hosp. Pharmacy, Jefferson Med. Coll., 1947-49; Asst. in Pharmacol., ibid., 1950-52; Chmn., Dept. of Pharmacol. and Allied Scis., Prof. of Pharmacol., New England Coll. of Pharmacy, 1952—. Hon. Pos.: Asst. Editor, Bull. of Am. Soc. of Hosp. Pharmacy; Advisory Committee, Cosmetic Legislation, Mass. Dept. of Publ. Health. Mem.: A.A.A.S.; N. Y. Acad. of Scis.; Am. Pharmaceutical Assn.; Am. Soc. of Hosp. Pharmacists; Am. Assn. Colls. of Pharmacy; Rho Chi; Alpha Zeta Omega. Contbr. to: Am. Jour. of Pharmaceutical Edn.; Am. Jour. of Hosp. Pharmacists. Serv. Rec.: U. S. Army, 1944-46, 1948-61. Areas of Rsch.: Pharmacol.; Antityroid Agents; Blood Coagulation; Muscle Contraction.

INGALLS, Dorothy E. (Ph.D.), Prof. of Chem., Albion Coll., Albion, Mich. CHEMISTRY. b. Denver, Colo., 1900. d. Wilber Dwight and Emma (Agard) E. Edn.: A.B., Univ. of Denver, 1922; A.M., Univ. of Ill., 1924; Ph.D., Univ. of Mich., 1940. Mem.: Iota Sigma Pi; Sigma Xi; Pi Beta Phi; Delta Kappa Gamma. Ph.D. Dissertation: Basic Chromic Nitrate Solutions. Hobbies: Weaving; Travel. Listed in: A.M.S.; W. W. in Mich. Edn.; W. W. of Am. Women; W. W. in Am. Edn.

INGERSOLL, Alfred Cajori (Ph.D.), Dean of Engrng., Univ. of Sou. Calif., Los Angeles, Calif. Home Add.: 525 S. Wilson Ave., Pasadena, Calif. CIVIL ENGINEERING (FLUID MECHANICS, HYDRAULIC ENGINEERING). ENGINEERING EDUCATION. b. Madison, Wis., June 8, 1920. s. Leonard Rose and Helen (Flint) I. Edn.: B.S., Univ. of Wis., 1942; M.S., ibid., 1948; Ph.D., ibid., 1950. m. Elizabeth McNamara, Feb. 22, 1946. c.: John Thomas. Exp.: Tech. Staff, Lab. of Linde Air Products Co., Tonawanda, N. Y., 1942-46; Instr. in Civil Engrng., Univ. of Wis., 1946-50; Asst. and Assoc. Prof., Calif. Inst. of Technol., 1950-60; Dean of Engrng., Univ. of Sou. Calif., 1960—. Hon. Pos.: Natl. Pres., Chi Epsilon; Editor, Transit; Chmn., Pacific Southwest Sect., Am. Soc. for Engrng. Edn.; Chmn., Engrng. Edn. Comm., Los Angeles Sect., A.S.C.E. Mem.: A.S.C.E., Fellow; A.S.E.E.; A.A.U.P.; Sigma Xi; Tau Beta Pi; Phi Eta Sigma; Phi Kappa Phi; Pi Mu Epsilon; Pi Epsilon Tau; Los Angeles Electric Club; Los Angeles Town Hall. Co-author: Fluid Mechanics, 1954; Heat Conduction with Applications in Engineering and Geology, 1954. Contbr. to: Proc. and Trans., Am. Soc. of Civil Engrs.; Jour. of Engrng. Edn.; Applied Mechanics Revs.; Civil Engrng. Mag. Gen. Int.: Guest Prof., Bengal Engrng. Coll., India, 1954-55. Areas of Rsch.: Artificially Induced Sedimentation as in Settling Tanks for Water or Sewage Treatment, or Separation of Oil from Waste Water in Refineries; Low Turbulence Water Tunnel, Calif. Inst. of Technol.

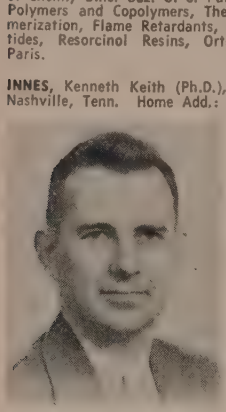
INGERSON, F(red) Earl Sr. (Ph.D.), Prof. of Geol. and Assoc. Dean, Grad. Schl., Univ. of Tex., Austin 12, Tex. Home Add.: 5101 Crestway Dr., Austin 3, Tex. GEOCHEMISTRY. b. Barstow, Tex., Oct. 28, 1906. s. Fred P. and Mamie (Carson) I. Edn.: B.A., Simmons Univ., 1928; M.A., ibid., 1931; Ph.D., Yale Univ., 1934. Hon. Deg.: D.Sc., Hardin-Simmons Univ., 1942. m. Martha Anna Duncan, June 5, 1930. c.: Mary Zoe, (dec.); Fred Earl, Jr. Exp.: Petrologist, Geophysical Lab., Carnegie Inst. of Wash., D. C., 1935-47; Chf., Geochem. & Petrol. Br., U. S. Geological Survey, Wash., D. C., 1947-58; Prof. of Geol., Univ. of Tex., 1958—. Hon. Pos.: Pres., Transl. Ed., Geochem. Soc. Mem.: Geol. Soc. of Am.; Min. Soc. of Am.; Min. Soc. Great Brit.; Min. Soc. Ger.; Min. Soc. France; Min. Soc. Japan; Soc. Econ. Geol.; Am. Geophys. Union; Geol. Soc. Mex.; Geol. Soc. Brazil; Geochem. Soc. France; Geochem. Soc. Japan; Min. Assn. Can.; Am. Assn. Petrol. Geol.; Assn. Geol. Petrol. Mex.; Sigma Xi; Geol. Soc. Wash.; A.C.S.; Cosmos Club; Sigma Xi; Foreign Policy Club. Author: Laboratory Techniques of Petrofabric Analysis, 1938; Pneumatolytic and Hydrothermal Alteration and Synthesis of Silicates, 1937. Contbr. to: Am. Mineralogist; Trans. of A.G.U.; GeoTimes; Bull. Geol. Soc. Am.; Am. Jour. Sci.; Bull. Geol. Soc. Mex.; Geochim. Cosmochim. Acta; Prof. Papers of U. S. Geol. Survey; Eng. Mine Metal, Brazil; Econ. Geol.; Jour. Geol.; Capital Chemist; Tech. Min. Petr. Mitt. Austria; Inst. Geokh. i Anal. Kh. Russia; Inst. Geol. Rud. Mest. Petr. Min. i Geokh. Russia; Bull. A.A.P.G. Areas of Rsch.: Geochem.; Volcanology; Petrofabric Analysis; Hydrothermal Rsch.; Isotope Geology.

INGLE, Lester (Ph.D.), Prof. of Zool., Univ. of Ill., Urbana, Ill. Home Add.: 10 G. H. Baker Dr., Urbana, Ill. PHARMACOLOGY AND TOXICOLOGY. b. Howard, Kans., July 30, 1908. s. Jess N. and Martha E. (Gadberry) I. Edn.: B.S., Kans. State Coll., 1932; M.A., Brown Univ., 1934; Ph.D., ibid., 1936. m. Edith Jaeger, 1935. c.: Linda Louise; Paul Edward. Exp.: Instr., Univ. of Ill., 1937-41; Asst. Prof., ibid., 1942-46; Assoc. Prof., ibid., 1943-52; Prof., ibid., 1952—. Mem.: A.A.A.S.; Am. Soc. Econ. Entomologists; Am. Soc. Zoology; Sigma Xi. Author: Seashores, 1955; Toxicology of Chlorinated Hydrocarbon Insecticides, 1956. Contbr. to: A.M.A. Arch. Industrial Hygiene and Occupational Med.; Am. Jour. Econ. Entomol.; Sci.; Jour. Exptl. Zoology; Physiological Zoology. Gen. Int.: Honorarium, Carnegie Inst., Cold Spring Harbor, L. I., N. Y., 1932; Natl. Rsch. Coun. Fellow, Univ. of Chicago, 1936-37. Areas of Rsch.: Toxicol. of Insecticides.

INGRAM, Alvin Richard (Ph.D.), Mgr., Expandable Polymers and Latices Rsch. Group, Koppers Co., Inc., Monroeville, Pa. Home Add.: 3131 Oak St., Murrysville, Pa. POLYMER CHEMISTRY. b. Enfield, N. H., May 16, 1918. s. Irving Ira and Wilma Amalia (Sacher) I. Edn.: B.S., Univ. of N. H., 1940; M.S., Northeastern Univ., 1942; Ph.D., Univ. of Pittsburgh, 1955. m. Virginia Elizabeth Long, Oct., 1942. c.: Richard G.; Carl M. Exp.: Tchng. Fellow, Northeastern Univ., Boston, Mass., 1940-42; TNT Chem., Gen. Chem. Defense Corp., Pt. Pleasant, W. Va., 1942-43; Orthopedic Bandage Rsch. Ldr., Johnson and Johnson, New Brunswick, N. J., 1943-48; Industrial Fellow, Mellon Inst., 1948-53; Koppers Co., Inc., Rsch. Dept., 1948—. Mem.: Sigma Xi; Phi Kappa Phi; Phi Lambda Upsilon; Alpha Chi Sigma; Am. Chem. Soc.; A.A.A.S.; Soc. of Plastics Engrs.; Tau Kappa Epsilon. Contbr. to: Jour. A.C.S.; Indust. and Engrng. Chem.; Canadian Jour.

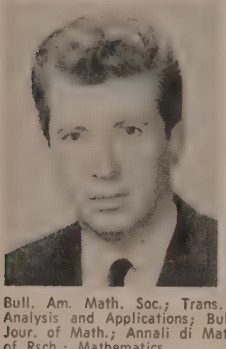
of Chem.; Offic. Gaz. U. S. Patent Office. Areas of Rsch.: Styrene Polymers and Copolymers, Thermoplastic Foams, Suspension Polymerization, Flame Retardants, Ziegler Polyethylene, Glutamyl Peptides, Resorcinol Resins, Orthopedic Bandages and Plaster of Paris.

INNES, Kenneth Keith (Ph.D.), Prof. of Chem., Vanderbilt Univ., Nashville, Tenn. Home Add.: 4006 Woodmont Blvd., Nashville 5, Tenn. MOLECULAR STRUCTURE AND SPECTROSCOPY. b. Fayette, Mo., June 6, 1928. s. William Warren and Helen (Rennolds) I. Edn.: A.B., Central Coll., Mo., 1947; Sc.M., Brown Univ., 1949; Ph.D., Univ. of Wash., 1951. m. Ruth H. Craig, Aug. 20, 1952. c.: Richard Craig; Alister Keith. Exp.: Postdoc. Rsch. Fellow, Natl. Rsch. Coun., Ottawa, Can., 1951-53; Asst. Prof. of Chem., Univ. of Okla., 1953-55; Assoc. Prof. and Prof. of Chem., Vanderbilt Univ., 1955—. Hon. Pos.: Chmn., Nashville Sect., Am. Chem. Soc., 1961. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Sigma Xi; Am. Assn. Univ. Profs. Contbr. to: Jour. of Chem. Physics; Can. Jour. of Physics; Jour. of Phys. Chem.; Jour. Am. Chem. Soc.; Nature; Jour. of Molecular Spectroscopy; Spectrochimica Acta; Indus. and Engrng. Chem.; Petroleum Refiner; Jour. of Chem. Edn. Gen. Int.: Guggenheim Fellow, 1961-62. Areas of Rsch.: Physical Chemistry; Molecular Structure and Spectroscopy.



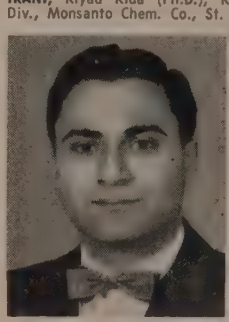
IONESCU TULCEA, Alexandra Bagdasar (Ph.D.), Asst. Prof., Dept. of Math., Univ. of Pa., Philadelphia, Pa. Home Add.: 53 Llanfair Rd., Apt. A, Ardmore, Pa. MATHEMATICS. b. Bucarest, Roumania, Aug. 30, 1935. d. Dumitru and Florica (Ciumeti) Bagdasar. Edn.: M.S., Univ. of Bucarest, 1957; Ph.D., Yale Univ., 1959. m. Cassius Ionescu Tulcea, April 28, 1956. Exp.: Rsch. Assoc. in Math., Yale Univ., 1959-61; Rsch. Assoc. in Math., Univ. of Pa., 1961-62; Asst. Prof., Math., ibid., 1962—. Mem.: Am. Math. Soc.; Sigma Xi. Contbr. to: Comptes Rendus de l'Academie des Sciences, Paris; Jour. of Math. and Mech.; Annali di Matematica pura ed applicata; Jour. of Math. Analysis and Applications; Arkiv for Mathematik; Proc. Natl. Acad. of Sciences. Areas of Research: Mathematics.

IONESCU TULCEA, Cassius (Ph.D.), Assoc. Prof., Math. Dept., Univ. of Pa., Philadelphia, Pa. Home Add.: 53 Llanfair Rd., Apt. A, Ardmore, Pa. MATHEMATICS. b. Bucarest, Roumania, Oct. 14, 1923. s. Ion and Ana (Caselli) I. T. Edn.: M.S., Univ. of Bucarest, 1946; Ph.D., Yale Univ., 1959. m. Alexandra Bagdasar, April 28, 1956. Exp.: Instr., Univ. of Bucarest, Roumania, 1946-51; Asst. Prof., ibid., 1951-52; Assoc. Prof., ibid., 1952-57; Rsch. Assoc., Yale Univ., 1957-59; Visit. Lectr., ibid., 1959-61; Assoc. Prof., Math. Dept., Univ. of Pa., 1961—. Mem.: Am. Math. Soc.; Sigma Xi. Contbr. to: Atti Accad. Naz. Lincei Rend. Cl. Sci. Fiz. Math. Nat. Italian Acad.; C. R. Acad. Sci., Paris; Proc. Natl. Acad., U.S.A.; Ann. Ec. Norm. Sup., Paris; Jour. Math. Mech.; Arkiv for Matematik, Swedish Acad.; Bull. Am. Math. Soc.; Trans. Am. Math. Soc.; Jour. of Math. Analysis and Applications; Bull. Sciences Math, Paris; Canadian Jour. of Math.; Annali di Matematica pura ed applicata. Areas of Rsch.: Mathematics.

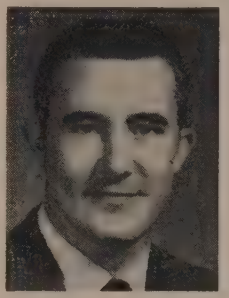


IPPEN, Arthur Thomas (Ph.D.), Prof. of Hydraulics, In Chg. of Hydrodynamics Lab., Mass. Inst. of Technol., Cambridge, Mass. Home Add.: 49 Pequossette Rd., Belmont, Mass. HYDROMECHANICS AND WATER RESOURCES ENGINEERING. b. London, Eng., July 28, 1907. s. Peter Josef and Augusta (Hechelmann) I. Edn.: Dipl. Ing., Tech. Univ., Aachen, Germany, 1931; M.S., Calif. Inst. of Technol., 1935; Ph.D., ibid., 1936. m. 1st Elisabeth A. Wagenplatz, 1937, (dec.). m. 2nd. Ruth M. Bishop, Apr. 10, 1955. c.: Erich; Karin. Exp.: Instr. and Rsch. Engr., Calif. Inst. of Technol., 1936-38; Asst. Prof., In Chg. of Hydraulic Lab., Lehigh Univ., 1938-45; Assoc. Prof., In Chg. of Hydraulic Lab., M.I.T., 1945-48; Prof., ibid., 1948—; In Chg. of Hydrodynamics Lab., ibid., 1950—. Hon. Pos.: Pres., Internatl. Assn. for Hydraulic Rsch.; Past Pres., Boston Soc. of Civil Engrs.; Past Chmn., Engrng. Mechanics Div., Past Chmn., Hydraulics Div., Past Chmn., Rsch. Committee, A.S.C.E. Mem.: Fellow, Am. Acad. of Arts and Scis., Fellow; A.S.C.E., Fellow; Am. Soc. of Mechanical Engrs.; Sigma Xi; Tau Beta Pi; Chi Epsilon. Contbrng. Author: Engineering Hydraulics, 1950; Mechanical Engineers Handbook, 1950. Contbr. to: Proc. and Trans. of A.S.C.E.; Proc. of Internatl. Assn. for Hydraulic Rsch.; Tech. Reports of Hydrodynamcis Lab., M.I.T.; Tech. Memoranda of Beach Erosion Bd., U. S. Corps of Engrs. Areas of Rsch.: Hydromechanics and Water Resources Engrng. Areas of Specialized Knowledge: Exptl. Hydromechanics; Free Surface Flow; Water Waves; Sediment Transport; Sedimentation.

IRANI, Riyad Rida (Ph.D.), Rsch. Group Ldr., Inorganic Chem. Div., Monsanto Chem. Co., St. Louis 66, Mo. Home Add.: 520 St. Edward Lane, Florissant, Missouri. PHYSICAL CHEMISTRY. b. Beirut, Lebanon, Jan. 15, 1935. s. Rida and Naz (Kiani) I. Edn.: B.A., Am. Univ. of Beirut, 1953; Ph.D., Univ. of Sou. Calif., 1957. m. Joan D. French, Jan., 1956. c.: Glenn; Lillian. Exp.: Rsch. Fellow, Univ. of Sou. Calif., 1953-56; Rsch. Assoc., ibid., 1956-57; Rsch. Chem., Monsanto Chem. Co., 1957-59; Sr. Rsch. Chemist, ibid., 1959-60; Rsch. Grp. Ldr., ibid., 1960—. Hon. Pos.: Adv. Particle Size Committees of Am. Assn. of Cereal Chemists and A.S.T.M. Mem.: Am. Chem. Soc.; Rsch. Soc. of Am.; A.A.A.S.; A.S.T.M.; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi. Author: Particle Size Distributions, 1963. Contbr. to: Jour. of Physical Chem.; Jour. of the Am. Chem. Soc.; Jour. De Chimie Physique; Cereal Sci. Today; Industrial and Engrng. Chem.; Analytical Chem. Areas of Rsch.: Physical Properties of Powders; Transport Processes and Thermodynamics of Solutions; Metal Complexing; Instrumental Analysis; Particle Size Measurements and Interpretations.



IRICK, Gether, Jr. (Ph.D.), Chemist, Tenn. Eastman Co., Kingsport, Tenn. Home Add.: 213 Dr. Lee Dr., Kingsport, Tenn. ORGANIC CHEMISTRY. b. Stone, Ky., Jan. 29, 1936. s. Gether, Sr. and Mae (Dotson) I. Edn.: B.S., Eastern Ky. Sta. Coll., 1957; Ph.D., Univ. of Louisville, 1960. m. Freda Myers, Sept. 2, 1956. c.: Timothy Alan; Steven Ray. Exp.: Chemist, Tenn. Eastman Co., 1960—. Hon. Pos.: Ky. Colo., 1960. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Chem. Mfg. Supvrs. Club; Sigma Xi. Contbr. to: Jour. of Org. Chem.; Jour. of Pharmacol. and Toxicol. Areas of Rsch.: The Chemistry of Hydrazine Derivatives, Aromatic Amines, Synthetic Lubricants.



IRISH, Sumner Bartholf (Mr.), Assoc. Prof., Dept. of Civil Engrng., Princeton Univ., Princeton, N. J. Home Add.: 120 McCosh Circle, Princeton, N. J. ANALYSIS OF DISTANCE MEASURING TECHNIQUES. b. Fultonville, N. Y., June 26, 1917. s. Edward Bartholf and Alice (Burr) I. Edn.: B.S., Union Coll., 1939; M.S., Columbia Univ., 1940. m. Betty Dimock, May 22, 1944. c.: James Sumner; Gladys Hughes. Exp.: Foreman, Procter & Gamble Mfg. Co., Staten Island, N. Y., 1940-45; Assoc. Prof., Princeton Univ., 1946—. Mem.: A.A.A.S., Fellow; Am. Soc. for Civil Engrng., Fellow; Am. Congress on Surveying and Mapping; Am. Soc. of Photogrammetry; Soc. of Photographic Scientists and Engrs.; Am. Geophysical Union; Beta Theta Pi; Sigma Xi. Editor: Proc. of 3rd Natl. Surveying Tchrs. Conference, 1954. Contbr. to: Photogrammetric Engrng.; Surveying and Mapping; Jour. of the Surveying and Mapping Div., Am. Soc. of Civil Engrs. Serv. Rec.: U. S. Navy, 1945-46.

IRVINE, Thomas Francis, Jr. (Ph.D.), Dean and Prof. of Engrng., St. Univ. of N. Y., Stony Brook, N. Y. Home Add.: Le Setavket Long Island, N. Y. THERMODYNAMICS, HEAT TRANSFER. b. Northmont, N. J., June 25, 1922. s. Thomas F. and Marie (Boeggeman) I. Edn.: B.S., Pa. St. Univ., 1947; M.S., Univ. of Minn., 1952; Ph.D., ibid., 1956. m. Martha Emery, Nov., 1950. c.: Laura; Kay; Phoebe; Jill; Sadi. Exp.: Rsch. Assoc., Pa. St. Univ., 1947-50; Rsch. Asst., Univ. of Minn., 1950-52; Instr., ibid., 1950-56; Asst. Prof. of Mech. Engrng., ibid., 1958-59; Prof. Mech. Engrng., N. C. St. Coll., 1959-60; Dean and Prof. of Engrng., St. Univ. of N. Y., Stony Brook, N. Y., 1960—. Hon. Pos.: Chmn., Papers Comm., Heat Transfer Div., Am. Soc. Mech. Engrs.; Chmn., Am. Soc. Mech. Engrs., Comm. on Rocket Heat Transfer; Chmn., Papers Comm., Internatl. Heat Transfer Conf. Mem.: Sigma Xi; Tau Beta Pi; Eta Kappa Nu; Sigma Tau; Theta Tau; Editorial Adv. Bd., Internatl. Jour. of Heat and Mass Transfer; A.A.A.S.; Am. Rocket Soc.; Am. Soc. of Mech. Engrs.; Assn. for Applied Solar Energy. Contbr. to: Jour. of Am. Rocket Soc.; Jour. of the Aero. Sci.; Trans. of the A.S.M.E.; Rev. of Scientific Instruments; Industrial and Engrng. Chem.; Mech. Engrng.; Jour. of Applied Mech.; Jour. of the Am. Inst. of Chem. Engrs.; Proc. of the 5th Midwestern Conf. of Fluid Mech.; Jour. of Solar Energy; Trans. of the A.I.E.E. Serv. Rec.: U. S. Army. Gen.

Int.: Consultant to U.S.A.F.; Chrysler Corp.; Gen. Elec. Co.; General Mills. Areas of Rsch.: Determination of Physical Properties, Heat Transfer in Non-Circular Ducts, Radiation Heat Transfer.

IRWIN, John (Henry) B(arrows) (Ph.D.), Prof., Astronomy Dept., Indiana Univ., Bloomington, Ind. Home Add.: 522 So. Swain Ave., Bloomington, Ind. ASTRONOMY AND ASTROPHYSICS. b. Princeton, N. J., July 7, 1909. s. Frank and Mary (Barrows) I. Edn.: B.S., Univ. of Calif., 1933; Ph.D., ibid., 1946. m. Ruth Catherwood, 1936. c.: Esther C.; Paul M.; Nancy B.; Alan W. Exp.: Jr. Astronomer, U. S. Naval Observatory, Wash., D. C., 1937-39; Asst., Lick Observ., Mt. Hamilton, Calif., 1941-42; Rsch. Asst. and Assoc., Calif. Tech., Pasadena, Calif., 1942-45; Physicist, U. S. Naval Ord. Test Sta., Inyokern, Calif., 1945; Asst. Prof., Univ. of Pa., 1946-48; Assoc. Prof., Ind. Univ., Bloomington, Ind., 1948-51; Prof., ibid., 1951—; Acting Chmn., Astronomy Dept., 1956-57. Hon. Pos.: Coun., Am. Astronomical Soc., 1957-60; Coun., A.A.A.S., 1957-60; Guggenheim Fellow, 1954-55; Fulbright Prof., Chile, 1959. Mem.: Am. Astronomical Soc.; A.A.A.S.; A.A.U.P.; Astr. Soc. of Pacific; Royal Astr. Soc.; Internatl. Astronomical Union; Sigma Xi. Contbr. to: Astrophysical Jour.; Astronomical Jour.; Publ. Astr. Soc. of Pacific; Science; Sky and Telescope; Ciel et Terre; Trans. of Internatl. Astronomical Union. Areas of Rsch.: Binary Star Orbits; Cepheid Variables; Photoelectric Photometry.

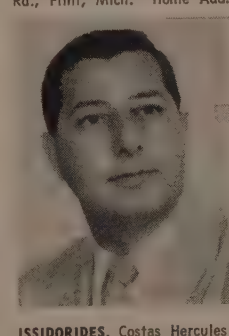
ISAACS, Hart, Jr. (M.D.), Resident in Pathology, Hosp. of the Univ. of Pa., Phila., Pa. Home Add.: 266 Hathaway Lane, Wynnewood, Pa. PATHOLOGY. b. Los Angeles, Calif., Mar. 7, 1932. s. Hart and Josephine (Harris) I. Edn.: B.S., Stanford Univ., 1954; M.D., ibid., Schl. of Med., 1958. m. Patricia Ann Levi, Aug. 26, 1955. c.: Dorothy Ann; Charles Hart; Diana. Exp.: Rsch. Assoc. in Biochem., Univ. of Ill., 1958-59; Interne, Univ. of Ill. Hosps., 1959-60; Fellow in Biophys. Chem., Johnson Fdtn. for Med. Physics, Univ. of Pa., 1960-61; Res. in Pathol., Hosp. of Univ. of Pa., 1961—. Mem.: Am. Chem. Soc.; Nu Sigma Nu; Pathol. Soc. of Phila.; Los Angeles Athletic Club. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Electron Transport; Biochemical Cytology.

ISBELL, Charles Levi (Ph.D.), Prof. of Hort., Emeritus, Auburn Univ., Auburn, Ala. Home Add.: 471 Pinedale Dr., Auburn, Ala. PLANT SCIENCE, HORTICULTURE AND PLANT PATHOLOGY. b. Albertville, R.F.D., Ala., Nov. 10, 1888. s. Wesley Sherman and Mary Almedia (Hulgin) I. Edn.: Grad. State Normal Schl., Jacksonville, Ala., 1911; B.S., Auburn Univ., 1917; M.S., ibid., 1918; Ph.D., Mich. St. Univ., 1928. m. Lela Alma Bentley, July 30, 1917. c.: Charles Levi, Jr.; William Harry. Exp.: Tchr. in Pub. Schls. of Ala., 1907-14; Inspector, Citrus Groves, summer, 1916, U.S.D.A.; Staff in Various Capacities of Rsch., Tchng. and Admin., including part-time Hd., Hort. Dept., Auburn Univ., 1917-31; Prof. of Hort., Horticulturist and Grad. Prof. of Hort., ibid., 1931-59; Prof. Emritus, ibid., 1961—. U. S. Farm Census, Oct. 1, 1959 to Jan. 18, 1960. Hon. Pos.: Secy., Hort. Sect., Sou. Agri. Workers, 1925; Chmn., ibid., 1929; Chmn., Judging Com., S.E. States Gardeners Contest, Sponsored by Sou. Ruralist Mag. Mem.: Am. Soc. Hort. Sci.; Gamma Sigma Delta; Phi Kappa Phi; Sigma Xi; Lions; Kiwanis; Mason; Shriner; Baptist. Author: Vegetable Gardening, 1951. Contbr. to: Botanical Gaz.; Jour. of Heredity; Proc. Natl. Pecan Growers; Proc., Am. Assn. for Hort. Sci.; Progressive Farmer; Am. Vegetable Growers and Market Growers Jour.; Am. Fruit Grower; Southern Seedsman; Seedsmen's Digest. Gen. Int.: Citation Bars for Cooperation with Natl. War Garden Commn. in Service to Home and Community War Gardens, 1st World War; Award for 25 Yrs. of Distinguished Service to Science and Education in the Schl. of Agriculture and Agricl. Expt. Sta., A.P.I., 1954; Progressive Farmer Man of the Year in Agr. Award for Outstanding Service to Farm People, 1956; Merit Award for Outstanding Work in the Field of Horticulture by Vegetable Growers Assn. of Am., 1957; Distinguished Tchng. Award Sou. Sect., Am. Soc. for Horticultural Sci., 1958. Areas of Rsch.: Determined Factors Associated with Freeze Injury of Satsuma Oranges in Sou. Ala.; Determined the Time and Nature of Fruit Bud Formation and the Influence of Shoot Growth, Pruning, and Girdling on Fruitfulness of the Pecan; Developed New Methods of Propagating Tomatoes, Cabbage, Collards, and Sweet Potatoes; Developed Root-knot Nematode Resistant Snap Beans and New Varieties of Snap Beans, Lettuce, Pumpkins, Southern Peas, and Watermelons; Worked out Methods of Farm Storage for Several Vegetable Crops. Hobbies: Gardening, including new methods of propagation and the creation of new varieties and kinds; Photography; Writing; Selecting and providing areas for development of desirable new communities.

ISAACS, Raphael (M.D.), Sr. Attending Physician in Hematol., Michael Reese Hosp., 104 S. Michigan Ave., Chicago 3, Ill. HEMATOLOGY. b. Cincinnati, Ohio, Aug. 29, 1891. s. Abraham and Rachel (Friedman) I. Edn.: A.B., Univ. of Cincinnati, 1911; A.M., ibid., 1912; M.D., ibid., 1918. m. Agnes Wolfstein, Oct. 11, 1923. c.: Roger David. Exp.: Asst. in Biol., Univ. of Cincinnati, 1910; Asst. in Zool., ibid., 1911-14; Asst. in Physiol., ibid., 1917-18; Res. Staff, Cincinnati Gen. Hosp., 1918-22; Instr. in Med., Univ. of Cincinnati Coll. of Med., 1920-22; Vol. Asst. in Med., Peter Bent Brigham Hosp., Boston, Mass., 1922-23; Instr. in Med., Harvard Med. Schl., 1923-27; Asst. Phys., Huntington Meml. Hosp., Harvard Univ., 1923-27; Consultant in Hematol., Beth Israel Hosp., Boston, Mass., 1926-27; Asst. Phys., Boston Dispensary, 1926-27; Asst. Prof. of Med., Univ. of Mich., 1927-29; Assoc. Porf. of Med., ibid., 1929-41; Asst. Dir., Simpson Meml. Inst. for Med. Rsch., Univ. of Mich., 1927-41; Attending Phys. in Hematol., Michael Reese Hosp., Chicago, Ill., 1940-52; Sr. Attending in Hematol., 1952—. Hon. Pos.: Mem. Med. Advisory Bds.; Hemophilia Found.; Hematology Rsch. Found.; Leukemia Rsch. Found.; Natl. Blood Rsch. Found. Mem.: Phi Beta Kappa; Sigma Xi; Alpha Omega Alpha; A.M.A.; Assn. Am. Phys.; Am. Soc. Clin. Investigation; Central Soc. Clin. Rsch.; Am. Coll. Physicians; Soc. Exptl. Biol. and Med.; Am. Soc. Exptl. Pathol.; Soc. Francaise d'Hematologie; Internatl. Soc. Hematol.; Inst. of Med., Chicago; Soc. Internal Med., Chicago; A.A.A.S.; Am. Soc. Hematol.; Internatl. Soc. Internal Med.; Biological Stain Commission; Syndicated Column (Columbia Features) in 30 newspapers. Author: Manual Clin. and Lab. Technic, 1926; Diseases of Blood, 1937; Diagnosis and Treatment of Diseases of Blood, 1937. Contbr. to: Jour. A.M.A.; Annals Internal Med.; Jour. Lab. and Clin. Med.; Sci.; Am. Jour. Med. Sci.; Ill. Jour. Med.; Am. Jour. Physiol.; Arch. Internal Med. War Record: Pvt., 1917-19; 1st Lt., 1919-21. Gen. Int.: Sect. Editor, Biol. Abstracts; Editorial Bd., Harofe Haivri Med. Jour. Consulting Editor, Leukemia Abstracts. Special Int.: Hematology.

ISENSTEAD, Joseph Herman (M.D.), Independent Med. Rsch., 33 Barclay St., Canajoharie, N. Y. HEPATOLOGY. b. Putzig, W. Prussia, Ger., Aug. 27, 1891. s. Hermann and Jenny (Eisack) Eisenstadt. Edn.: M.D., Friedrich Wilhelms Univ., Berlin, Ger., 1915. m. Elly Neumann, June 5, 1916. c.: Erich Wolfgang; Ruth Tausend. Mem.: A.A.A.S. Contbr. to: Medical Record; Internatl. Record of Med.; Am. Jour. Gastroenterol. Areas of Rsch.: The Liver and Blood Proteins; Changes of the Albumin-Globulin Ratio in Liver Diseases—Clin. Trials.

ISRAEL, Joseph (Mr.), Tchr., Ainsworth Sr. H. S., 1409 W. Maple Rd., Flint, Mich. Home Add.: 2157 Iroquois Ave., Flint, Mich. CHEMISTRY. b. Flint, Mich., Aug. 17, 1925. s. John and Mary (Baba) I. Edn.: A.S., Flint Jr. Coll., 1949; B.A., Eastern Mich. Univ., 1953; M.A., Univ. of Mich., 1961; Univ. of Colo., summer, 1956; Mont. St. Coll., summer, 1960; Coll. of St. Thomas, summer, 1961. Exp.: Tchr., R. N. Mandeville H. S., Flint, Mich., 1953-61; Tchr., Ainsworth Sr. H. S., Flint, Mich., 1961—. Hon. Pos.: Secd. Group Chmn., Genesee Co. Inst. Mem.: Mich. Sci. Tchrs. Assn.; Natl. Sci. Tchrs. Assn.; A.A.A.S. Serv. Rec.: U. S. Navy, 1943-46.

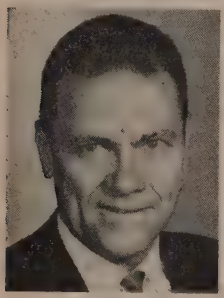


ISSIDORIDES, Costas Hercules (Ph.D.), Assoc. Prof. of Chem., Am. Univ., Beirut, Lebanon. ORGANIC CHEMISTRY. b. Athens, Greece, Dec., 1920. s. Hercules and Catherine (Stavropoulos) I. Edn.: B.A., St. Univ. of Ia., 1947; Ph.D., ibid., 1953. m. Marietta Radovits, Aug. 20, 1948. c.: Diane-Catherine; Fotini-Daphne. Exp.: Prof., Am. Univ., Beirut, Lebanon, 1952—; Rsch. Fellow, Harvard Univ., 1956-57; Rsch. Fellow, Karolinska Inst., 1960; Visiting Scientist, N.I.H., Bethesda, Md., 1961-62. Mem.: A.C.S.; A.A.A.S.; Chem. Soc. of London; Alpha Chi Sigma; Sigma Xi. Contbr. to: Jour. A.C.S.; Jour. Org. Chem.; Organic Syntheses. Serv. Rec.: U. S. Army, 1943-45; Royal Hellenic Navy, 1945-46. Areas of Rsch.: Synthesis of Pentaerythritol Derivatives; Reactions of Oxetanes; Steroids.

ISRAELSEN, Orson Winso (Ph.D.), Prof. Emeritus, Civil and Irrigation Engrng. Dept., Utah St. Univ., Logan, Utah. Home Add.: 469 E. 6th N., Logan, Utah.

IRRIGATION AND DRAINAGE. b. Hyrum, Utah, Dec. 25, 1887. s. Andrew M. and Boletta (Wilson) I. Edn.: B.S., Utah St. Univ., 1912; M.S., Univ. of Calif., 1914; Ph.D., ibid., 1925; D.Sc., Utah St. Univ., 1962. m. Jennie Mae Allen, Feb. 24, 1909. c.: Lettie Rodngo; Ester Ferguson; Orson A.; Melvin A. Exp.: Instr., Univ. of Calif., 1913-16; Asst. Prof., Utah St. Univ., 1916-20; Assoc. Prof., ibid., 1921-23; Prof., ibid., 1924-53. Life Fellow, Am. Soc. of Agric. Engrs.; Am. Soc. of Civil Engrs.; Am. Geophysical Union; Sigma Xi. Author: Irrigation Principles and Practices, 1932, 2nd Ed., 1950, 3rd Ed., 1962. Contbr. to: Jour. Agric. Rsch.; Agric. Engrng.; Utah Acad. Sci., Arts & Letters Proc.; Proc. A.S.C.E. Gen. Int.: John Deere Gold Medal Award, A.S.A.E., 1953; Utah Acad. of Scis., Arts and Letters Distinguished Service Award, 1962. Areas of Rsch.: Irrigation and Drainage Progress and Problems.

IVES, George M. (Mr.), Proj. Engr., Space Technol. Labs., Inc., One Space Park, Redondo Beach, Calif. Home Add.: 8386 Ponce Ave., Canoga Park, Calif. ELECTRONICS.



b. Chicago, Ill., Apr. 15, 1914. s. George M., Sr. and Hilma M. (Carlson) I. Edn.: B.S., Ill. Inst. of Technol., 1938. m.: Rose T. Zoller, Sept. 28, 1935. c.: Theron Bruce; Judith K. Polic. Exp.: Pres., Gen. Mgr., F.M. Sta. WRGK, Inc., Brookfield, Ill., 1947-50; Asst. Chf. Engr., Am. Broadcasting Co., Chicago, Ill., 1948-55; Engrng. Mgr., Space Technol. Labs., Inc., Los Angeles, Calif., 1955—. Hon. Pos.: Pres., Eta Kappa Nu; Pres., Kiwanis Club of Brookfield; City Coun., Brookfield, Ill.; Chmn., Boy Scout Fund Dr. for Brookfield, Ill.; Chmn., Industrial Div., Ill. Inst. of Technol. Fund Dr.; Bd. of Mgrs., Soc. of Motion Picture and TV Engrs. Mem.: Am. Rocket Soc.; A.A.A.S.; Inst. of Radio Engrs.; The Air Force Assn.; Theta Xi; Eta Kappa Nu. Contbr. to: Astronautics. Areas of Rsch.: Ballistic Missiles and Their Launching nnd Instrumentation Facilities.

IVES, Judson Dunbar (Sc.D.), Prof. Emer. of Biol., Carson-Newman Coll., Jefferson City, Tenn. Home Add.: Pinebluff, N. C. CAVES, THEIR ECOLOGY AND FAUNA. b. Alfred, Me., Feb. 19, 1884. s. Rev. Sumner Abraham and Alice (Dunbar) I. Edn.: A.B., Wake Forest Coll., 1905; M.A., ibid., 1906; Grad. Work, Univ. of Chicago; Peabody Coll.; Yale Univ., 1914-32. Hon. Deg.: Sc.D., Carson-Newman Coll., 1961. Exp.: Instr. in Biol., Wake Forest Coll., 1906-14; Prof. of Sci., Ouachita Coll., 1915-16; Prof. of Biol., Mount Allison Univ., Nova Scotia, Can., 1917-18; Prof. of Biol. and Geol., Coll. of Charleston, 1918-20; Prof. of Biol., Stetson Univ., 1920-21; Prof. of Biol., William Jewell Coll., 1921-22; Prof. of Biol., Carson-Newman Coll., 1923-52; Prof. Emer. of Biol., ibid., 1952—. Hon. Pos.: Mem., Tenn. Acad. of Sci. Exec. Com., 1937-40. Mem.: A.A.A.S.; N. C. Acad. of Sci.; Tenn. Acad. of Sci.; Natl. Speleological Soc.; Ecol. Soc. of Am.; Sigma Xi; Beta Beta Beta; Assn. Southeastern Biol.; N. C. Forest Assn.; Societe Linneenne de Lyon; Nature Conservancy; Entomol. Soc. of Am.; Am. Eugenics Soc.; Lions. Author: Laboratory Outline for Introductory Biology, 1947. Contbr. to: Jour. Elisha Mitchell Scientific Soc.; Jour. Tenn. Acad. of Sci.; Bull. of Natl. Speleological Soc. Gen. Int.: Report of the Cave Hibernation of Mosquitoes; Technique for Collecting Cave Flies; Cave Animals of Tenn.; Migrations in Tenn. Caves. Areas of Rsch.: Caves, Their Ecology and Fauna.

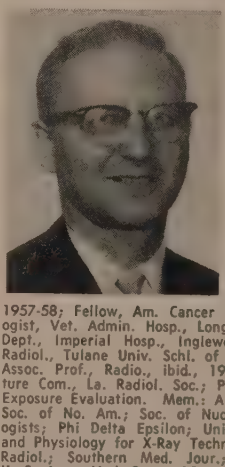
Bk. of Rural Life; Hilgardia; Arts & Letters Proc.; Proc. Gold Medal Award, A.S.A.E., 1953; Utah Acad. of Scis., Arts and Letters Distinguished Service Award, 1962. Areas of Rsch.: Irrigation and Drainage Progress and Problems.

IVEY, Michael Hamilton (Ph.D.), Asst. Prof. of Microbiol., Univ. of Mo., Columbia, Mo. Home Add.: 1100 Lakeshore Dr., Columbia, Mo. PARASITOLOGY. b. Auburn, Ala., Jan. 24, 1930. s. John E. and Vera (House) I. Edn.: B.S., Auburn Univ., 1951; M.S., Univ. of N. C., 1953; Ph.D., ibid., 1956. m. Mahla Haggard, June 5, 1951. c.: Paul; Mahla. Exp.: Grad. Asst., Univ. of N. C., 1953-55; Asst. Prof., Univ. of Mo., 1956—. Mem.: Am. Soc. Parasitol.; Am. Soc. Tropical Med. and Hygiene; A.A.A.S.; Sigma Xi; N. Y. Acad. of Sci.; Alpha Tau Omega; Delta Omega. Contbrng. Author: Gradwohl's Clinical Methods and Laboratory Diagnosis of Disease, 1962. Co-Author: Laboratory Manual of Medical Microbiology, 1961. Contbr. to: Jour. of Parasitol.; Mo. Medicine; Am. Jour. Tropical Med. and Hyg. Areas of Rsch.: Nematode Immunol. and Hypersensitivity; Strain Variation in Trichomonas Vaginalis.

IVESDAL, Trygve Andreas (Mr.), Staff Consult., Adv. Devel. Lab., Raytheon Co., Wayland, Mass Home Add.: 2 Hillcrest Rd., Bedford, Mass. ELECTRICAL ENGINEERING (ELECTRONICS).

b. Oslo, Norway, July 10, 1930. s. Johan and Margit (Fuglerud) I. Edn.: B.S., Mich. Coll. of Mining and Technol., 1956; M.S., ibid., 1960. m. Unni Winger, Mar. 1, 1952. c.: Terry-Ann; Heidi Jane. Exp.: Design Engr., Raytheon Co., Wayland, Mass., 1956-59; Design Engr., ibid., Sudbury, Mass., Summer, 1960; Instr., Mich. Coll. of Mining and Technol., 1959-61; Asst. Prof., ibid., 1961-62; Staff Consultant, Raytheon Co., Wayland, Mass., 1962—. Hon. Pos.: Pres., Bd. of Control for Sigma Rho; Advisor, Tau Beta Pi, Mich. Beta Chpt.; Coun. Mem., M.C.M. & T., Faculty Rsch. Coun. Mem.: I.R.E.; Eta Kappa Nu; Tau Beta Pi. Serv. Rec.: R.N.A., 1949-51, R.N.A.F., 1951-52, U.S.A.F., 1952, R.N.A.F., 1952-53. Areas of Rsch.: Radar Design Techniques; Fast Acting Automatic Frequency Control Techniques for Microwave Systems.

IZENSTARK, Joseph Louis (M.D.), Assoc. Prof., Radiol., Tulane Univ. Schl. of Med., 1430 Tulane Ave., New Orleans, La. Home Add.: 2836 State St., New Orleans, La. RADIOLOGY AND NUCLEAR MEDICINE.



b. Chicago, Ill., March 29, 1919. s. Paul and Flora (Berger) I. Edn.: B.A., Univ. of Calif., Berkeley, Calif., 1948; M.D., Univ. of Calif., San Francisco, 1951. m. Elizabeth Kaplan, June 25, 1944. c.: Susan Rebecca; John Kenneth; Florence Pauline. Exp.: Intern, U. S. Pub. Health Serv. Hosp., Chicago, Ill., 1951-52; Gen. Practice Resident, Kern Gen. Hosp., Bakersfield, Calif., 1952-53; Gen. Practice in Private Office, Inglewood, Calif., 1953-55; Radiol. Resident, Cedar of Lebanon Hosp., Los Angeles, Calif., 1955-57; Chief Radiol. Resident, Los Angeles Co., Harbor Gen. Hosp., Torrance, Calif., 1957-58; Fellow, Am. Cancer Soc., UCLA, 1958-59; Staff Radiologist, Vet. Admin. Hosp., Long Beach, Calif., 1959; Dir., Radio. Dept., Imperial Hosp., Inglewood, Calif., 1959-60; Asst. Prof., Radiol., Tulane Univ. Schl. of Med., New Orleans, La., 1960-62; Assoc. Prof., Radio., ibid., 1962—. Hon. Pos.: Chmn., Legislature Com., La. Radiol. Soc.; Project Dir., New Orleans Radiation Exposure Evaluation. Mem.: A.M.A.; Am. Coll. of Radiol.; Radiol. Soc. of No. Am.; Soc. of Nuclear Med.; Assn. of Univ. Radiologists; Phi Delta Epsilon; Univ. Club of La. Author: Anatomy and Physiology for X-Ray Technicians, 1962. Contbr. to: A.M.A.; Radiol.; Southern Med. Jour.; Arch. of Surgery. Serv. Rec.: U. S. Army Med. Dept., 1941-45; U. S. Pub. Health Serv., 1951-52; Reserves, 1952—. Areas of Rsch.: Nuclear Medicine and Radiological Health; Radiographic Anatomy.

JACKEL, Simon Samuel (Ph.D.), Lab. Dir., Quality Bakers of Am., 120 W. 42 St., N. Y. 36, N. Y. Home Add.: 96 Tewksbury Rd., Scarsdale, N. Y. BIOCHEMISTRY, FERMENTATION, FOOD TECHNOLOGY, BAKING TECHNOLOGY. b. N. Y., N. Y., Nov. 11, 1917. s. Victor and Sadie (Ungar) J. Edn.: B.S., City Coll. of New York, 1938; A.M., Columbia Univ., 1947; Ph.D., ibid., 1950. m. Betty Carlson, Jan. 22, 1954. c.: Phyliss Marcia; Glenn Edward. Exp.: Chemist, The Fleischmann Labs., Standard Brands, Stamford, Conn., 1944-47; Rsch. Asst., Columbia Univ., 1947-49; Head, Yeast Div., The Fleischmann Labs., Standard Brands, Stamford, Conn., 1949-59; Vice Pres., Rsch. and Dev., Vico Products Co., Chicago, Ill., 1959-61; Lab. Dir., Quality Bakers of Am., New York, N. Y., 1961—. Mem.: A.A.A.S.; A.C.S.; Am. Assn. of Cereal Chem.; Am. Soc. of Bakery Engrs.; Inst. of Food Technol.; N. Y. Acad. of Sci.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Archives of Biochem. and Biophysics; Cereal Chem.; Instruments; Jour. of Biol. Chem.; Science. Serv. Rec.: U. S. Army Air Corps, 1941-44. Areas of Rsch.: Ascorbic acid, bread staling, fermentations flavors, Microbiological biochemistry.

JACKINS, Carl Harvey (Mr.), Pres., Personal Counselors, Inc., 2327 4th Ave., Seattle, Wash. Home Add.: 3233 N. W. 65th St., Seattle 7, Wash. HUMAN BEHAVIOR. b. Spirit Lake, Idaho, June 28, 1916. s. Harvey Wilson and Caroline (Moland) J. Edn.: B.A., Univ. of Wash., 1960. m. Dorothy Diehl, Sept. 2, 1939. c.: Gordon; Timothy; Sarah; Christopher. Exp.: Pres., Personal Counselors, Inc., 1952—. Mem.: Math. Assn. of Am.; Phi Lambda Upsilon; Pi Mu Epsilon; Phi Beta Kappa. Author: Personal Re-Evaluation Counseling, 1955; Elementary Counselors Manual, 1962. Gen. Int.: Central Figure in the Devel. of the Theory of Human Behavior and the Syst. of Therapy Assoc. with it, Known as Personal Re-Evaluation Counseling. Areas of Rsch.: Personal Re-Evaluation Counseling.

JACKOBS, Joseph Alden (Ph.D.), Prof. of Crop Production, Univ. of Ill., Urbana, Ill. Home Add.: 507 W. Pennsylvania, Urbana, Ill. PASTURE AND FORAGE CROP MANAGEMENT. b. Shell Lake, Wis., Oct. 23, 1917. s. J. M. and Edith V. (Sawyer) J. Edn.: B.S., Univ. of Wis., 1940; M.S., ibid., 1942; Ph.D., ibid., 1947. m. Marian E. Caine, June 17, 1940. c.: James A.; Carol E.; Meredith Jo. Exp.: Asst. in Agronomy, Univ. of Wis., 1940-46; Asst. Agronomist, Irrig. Exp. Station, Prosser, Wash., 1946-51; Prof. of Crop Production, Univ. of Ill., 1951—. Hon. Pos.: Vice Chmn., Div. IX, Crop Mgmt., Am. Soc. of Agronomy. Mem.: Sigma Xi; A.A.A.S.; Alpha Zeta. Contbr. to: Agronomy Jour.; Crop Sci. Areas of Rsch.: Ecological Relationships Between Plants.

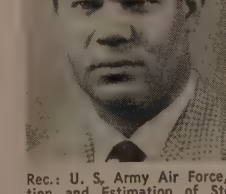
JACKSON, Eleanor Gertrude Alexander (Ph.D.), Rsch. Bacteriologist, 390 Riverside Dr., New York 25, N. Y. BACTERIOLOGY. b. N. Y. City, July 1, 1904. d. Jerome and Gertrude (Hammerslough) Alexander. Edn.: B.A., Wellesley Coll., 1925; M.A., Columbia Univ., 1928; Ph.D., New York Univ., 1934. m. Wm. R. Jackson, (div.) Nov. 1, 1934. c.: J. A. Togwell. Exp.: Rsch. Asst., Univ. Hosp., Ann Arbor, Mich., 1928-30; Rsch. Asst., N. Y. Univ., New York, N. Y., 1934-36; Spec. Rsch. Bacteriologist, Branch Lab., N. Y. St. Dept. of Health, N. Y. City, 1936-39; Rosenwald Rsch. Fellow, Cornell Univ., Med. Coll., N. Y. City, 1941-50; Rsch. Bacteriologist, Cancer Rsch. Lab., Presbyterian Hosp. of Newark, N. J., 1950-54; Rsch. Assoc., Inst. of Comparative Med., Coll. of Physicians and Surgeons, 1961—. Fellow: A.A.A.S.; N. Y. Microscopical Soc.; Assoc. Fellow, N. Y. Acad. of Med. Mem.: N. Y. Acad. of Sci.; Soc. of Am. Bacteriologists; Sigma Xi; Sigma Delta Epsilon. Contbr. to: Am. Review of Tuberculosis; Science; Soc. of Experimental Biol. and Med.; N. Y. Academy of Science; Internatl. Jour. of Leprosy; Am. Jour. of the Med. Sci.; Jour. of Am. Med. Women's Assn.; Jour. of Bacteriology. Gen. Int.: Demonstration of Non-Acid-Fast Forms of Mycobacterium Tubercubulosis, Cultivation of Hansen's Bacillus with Production of Disease in Animals. Special Int.: Mycobacteria: Their Developmental Morphology, Staining Reactions, Cultivation; Microbiology of Cancer and some other diseases of obsecure etiology.

JACKSON, George John (Ph.D.), Asst. Prof., The Rockefeller Inst., N. Y. 21, N. Y. PARASITOLOGY. b. Vienna, Austria, Dec. 10, 1931. s. Arthur and Louise (Wagner) J. Edn.: A.B., Univ. of Chicago, 1951; M.S., Univ. of Chicago, 1954; Ph.D., ibid., 1958. Exp.: Rsch. Assoc., Instr., Univ. of Chicago, 1958-59; Guest Investigator, N.I.H. Post-doctoral Rsch. Fellow, The Rockefeller Inst., 1959-62; Asst. Prof., ibid., 1962—. Mem.: A.A.A.S.; Am. Soc. of Parasitologists; Soc. of Protozoologists; Sigma Xi. Contbr. to: Jour. of Parasitol.; Jour. of Infectious Diseases; Exptl. Parasitol.; Jour. of Protozoology. Areas of Rsch.: Microbiology: Parasitology, Immunology.

JACKSON, John Edward (Ph.D.), Assoc. Prof., St. Univ. Coll. at Geneseo, N. Y. Home Add.: Stuyvesant Manor, Geneseo, N. Y. AGRICULTURAL BIOCHEMISTRY AND ORGANIC CHEMISTRY. b. Terre Haute, Ind., Feb. 18, 1917. s. Clark and Catherine (Beadle) J. Edn.: B.S. in Chem., St. Univ. of Ia., 1946; Ph.D., Univ. of Minn., 1958. m. Loraine Lindsey, Sept. 18, 1946. c.: Michaela Jill; John Michael; Jeffery Mark; Jeremy. Exp.: Asst. Scientific Aide, Northern Regional Rsch. Lab., U.S.D.A., Peoria, Ill., 1941-42; Jr. Chem., ibid., 1942-47; Rsch. Chem., Gen. Mills, Inc., Mpls., Minn., 1947-53; Rsch. Asst., Dept. of Agric. Biochem., Univ. of Minn., 1952-56; Rsch. Chem., Archer-Daniels-Midland Co., Mpls., Minn., 1956-62; Assoc. Prof., St. Univ. Coll., Geneseo, N. Y. Mem.: Am. Chem. Soc.; Am. Oil Chemists' Soc.; Am. Assn. for the Adv. of Sci.; Minn. Industrial Chemists' Forum; Minn. Acad. of Sci.; Sigma Xi; Phi Lambda Upsilon; Gamma Sigma Delta. Contbr. to: Jour. of Am. Oil Chemists' Soc.; Ind. and Engrng. Chem.; Analytical Chem. Serv. Rec.: U. S. Army, 1943-46 Gen. Int.: Third Award, Glycerine Producers' Assn., 1959, for Rsch. on the Synthesis of Glycerides of Fatty Acids. Areas of Rsch.: Chemistry of Vegetable Oils and Fatty Acids, and Derivatives of the Fatty Acids; Radiation Chemistry.

JACKSON, Patricia Lee (Ph.D.), Coordinator, Counseling Services, S.G.S., Hunter Coll., New York City, N. Y. Home Add.: 127 East 35th St., New York City, N. Y. PSYCHOLOGY. b. New York, N. Y., May 6, 1916. d. Albert G. Scharf and Lisbeth (Lee) Scharf. Edn.: B.A., Barnard Coll., 1938; M.A., Tchrs. Coll., Columbia Univ., 1939; Ph.D., Columbia Univ., 1950. m. Clifford L. Jackson, 1942. Exp.: Dir. Psychol. Testing, Macy's, New York, N. Y., 1941-49; Empl. Mgr., Alexander's Dept. Stores, Inc., N. Y., 1949-51; Rsch. Dir., Klein Inst. for Aptitude Testing, Inc., N. Y., 1953-59; Asst. Vice Pres., ibid., 1957-59; Asst. Prof., Hunter Coll. of the City Univ. of N. Y., 1951—; Coordinator, Counseling Services, SGS, ibid., 1959—. Mem.: A.A.A.S.; Am. Psychol. Assn.; Am. Stat. Assn.; Am. Personnel and Guid. Assn.; Psychometric Soc. Author: Employment Testing for Retail Stores, 1951. Contbr. to: Occupations, The Vocational Guid. Mag. Areas of Rsch.: Projective Techniques.

JACKSON, Silas James (Mr.), Biochemist, Natl. Insts. of Health, Bethesda 14, Md. Home Add.: 6109 14th St., N. W., Washington 11, D. C. DEVELOPMENT OF NEW PROCEDURES FOR THE ESTIMATION OF STEROID HORMONES AND MODIFICATION OF EXISTING PROCEDURES. b. Pitt Co., N. C., Aug. 5, 1923. s. John Thomas and Nancy (Randall) J. Edn.: B.S., Hampton Inst., 1948; M.S., Univ. of Mich., 1951. m. Charity McGee, June, 1950. c.: Rodney Craig. Exp.: Tchr. of Sci., Williston Industrial Schl., Wilmington, N. C., 1948-50; Tchr. of Sci., Hoffman-Boston H. S., Arlington, Va., 1951-52; Biochemist, Natl. Insts. of Health, Bethesda, Md., 1952—. Mem.: A.C.S.; A.A.A.S.; Div. of Biochem. and Div. of Anal. Chem., A.C.S.; Alpha Phi Alpha. Contbr. to: Cancer; The Endocrine Soc. Serv. Rec.: U. S. Army Air Force, 1944-46. Areas of Rsch.: Identification and Estimation of Steroids, Development and Modification of Assay Procedures for Steroid Hormones.



JACKSON, Ruth (M.D.), Med. Staff Officer, Med. Div., U. S. Civil Serv. Comm., Washington 25, D. C. Home Add.: 5404 Illinois Ave., N.W., Washington 11, D. C. MEDICINE. b. Wash-

ington, D. C., Oct. 31, 1904. s. Herbert C. and Nora Irene (Pyle) J. Edn.: A.B., George Washington Univ., 1927; M.S., ibid., 1931; M.D., ibid., 1933. Exp.: Intern, Geo. Wash. Univ. Hosp., 1933-34; Resident, Children's Hosp., Wash., D. C., 1934-36; Physician in Heart Clinic, Geo. Wash. Univ. Hosp., 1939; Med. Officer, U. S. Civil Serv. Comm., Wash., D. C., 1938-42; Chf., Professional Standards Sect., Med. Div., ibid., 1942-61; Med. Staff Officer, Med. Div., ibid., 1961—; Private Practice, Wash., D. C., 1936—. Mem.: A.M.A.; Med. Soc. of D. C.; Geo. Wash. Univ. Med. Soc.; A.A.A.S.; B. & P.W. Club; Phi Delta Gamma; Alpha Epsilon Iota; Brightwood Citizen's Assn., Wash., D. C.

JACKSON, Wendell Ford (Ph.D.), Asst. Mgr., Tech. Div., Explosives Dept., E. I. du Pont de Nemours and Co., Wilmington, Del.

CHEMISTRY. b. N. Y., N. Y., Nov. 25, 1907. s. Lambert Lincoln and Grace (Ford) J. Edn.: A.B., Princeton Univ., 1929; M.A., ibid., 1930; Ph.D., ibid., 1932. m. Margaret Blunt, Sept. 11, 1931. c.: Lambert B.; Anne. Exp.: Sayre Fellow in Applied Chem., Princeton Univ., 1929-30; Procter Fellow in Chem., ibid., 1930-31; Asst. in Chem., ibid., 1931-32; Natl. Rsch. Fellow in Chem., Calif. Inst. of Tech., 1932-34; Rsch. Chemist, Burnside Lab., E. I. du Pont de Nemours and Co., Inc., Pennsgrove, N. J., 1935-40; Ballistic Engr., ibid., 1940-45; Asst. Dir., ibid., 1945-48; Dir., ibid., 1948-50; Asst. Mgr., Tech. Div., Explosives Dept., ibid., Wilmington, Del., 1950—. Mem.: Am. Chem. Soc.; Princeton Engrng. Assn.; Fellow, A.A.A.S.; Sigma Xi; Phi Beta Kappa. Contbr. to: Jour. Am. Chem. Soc. Special Int.: Chem. Kinetics; Smokeless Powder; Interior Ballistics; Explosives; Cellulose Chem.

JACOBS, Alan. H., Anthropologist.

JACOBS, Horace (Ph.D.), Staff Scientist, Mgr., Scientific and Tech. Information Ctr., Lockheed-Calif. Co., Lockheed Aircraft Corp., Burbank, Calif. Home Add.: 5211 Calvin Ave., Tarzana, Calif.

ASTRONAUTICS. b. Chatham, Ontario, Canada, September 23, 1911. s. Jesse R. and Laura (France) J. Edn.: B.A., Univ. of Alberta, 1935; M.A., ibid., 1942; Ph.D., Univ. of Sou. Calif., 1952. m. Charlotte E. Zahn, July 9, 1949. c.: Lilo C.; Fred S.; Jeannette M.; Robert H. Exp.: Edn. Spec., Berlin, Ger., 1945-47; Instr., Univ. of Utah, 1947-49; Lectr., Univ. of Sou. Calif., 1949-51; Chf. Ed., Librascope, Inc., Glendale, Calif., 1951-55; Operations Planning Spec., Rsch. Info. Spec., Publication Spec. and Scientist, Lockheed Missiles and Space Div., Palo Alto and Van Nuys, Calif., 1955-60. Hon. Pos.: Natl. Chmn., Tech. Papers, Am. Astronaut. Soc., 1957—. Mem.: Am. Astronaut. Soc.; A.A.A.S.; Am. Rocket Soc.; Fellow, Brit. Interplanetary Soc.; Alpha Mu Gamma; Delta Phi Alpha. Editor: Advances in the Astronautical Scis. Asst. Editor: Astron. Sci. Rev., 1958. Contbr. to: Jour. of Astron. Scis. Serv. Rec.: U. S. Army, Office of Milit. Gov. of Ger., Liaison and Protocol, Edn. and Religious Affairs. Areas of Rsch.: Missile and Astronautics Systems; Technical Information and Publication Techniques; Linguistics.

JACOBS, Lawrence I., III (Mr.), Self-employed. Home Add.: 4218 Vantage Ave., Studio City, Calif.

HUMAN FACTORS AND ENVIRONMENTAL ENGINEERING. b. Atlanta, Ga., Nov. 25, 1925. s. Samuel M. and Fay (Williams) J. Edn.: A.B., Univ. of Miami, 1950; B.Engr., Univ. of Sou. Calif.; M.S., Stanford Univ., 1959. m. Marilyn White, Sept. 16, 1956. Exp.: Lab. Instr., Univ. of Ga., 1948; Rsch. Consult., Interdisciplinary Studies, Los Angeles, Calif., 1951-52; Planning Asst., Los Angeles Reg. Planning Comm., Los Angeles, Calif., 1955-56; Engr., Dept. of Pub. Works, State of Calif., Los Angeles, Calif., 1957-58; Consulting Engr., Privately Employed (Self), Palo Alto, Calif., 1959-60; Consulting Engr., Philco Corp., 1960-61; Consulting in Environmental Biodynamics, 1961—. Mem.: A.A.A.S.; Am. Ord. Assn.; Phi Eta Sigma; Alpha Phi Omega; Ecological Soc. of Am. Author: The Urban Complex (In press). Serv. Rec.: U. S. Army, 1944-45. Areas of Rsch.: Man- Machine Complex; General Systems Rsch.; Urban Problems; Environmental Design.

JACOBS, Myron S. (Ph.D.), Asst. Prof., Dept. of Anatomy, N. Y. Med. Coll., 5th Ave. and 106 St., N. Y. 29, N. Y. Home Add.: 139 Hillside Ave., Cresskill, N. J.

ANATOMY. b. Jersey City, N. J., May 17, 1922. s. Louis W. and Sophia (Spencer) J. Edn.: A.B., Univ. of Penn., 1945; M.S., N. Y. Univ., 1951; Ph.D., ibid., 1955. m. Miriam Klebaner, Aug. 23, 1959. Exp.: Teaching Asst., Anatomy, N. Y. Univ., 1951-54; Lectr., Histology and Embryology, Queens Univ., Kingston, Canada, 1954-56; Instr., Histol., Embryol., and Neuroanatomy, N. Y. Med. Coll., 1956-57; Asst. Prof., ibid., 1957—. Mem.: Am. Soc. Zool.; A.A.A.S.; N. Y. Acad. Sci.; Fed. Am. Sci.; Am. Assn. Univ. Profs.; Assn. Am. Med. Colls.; Sigma Xi. Contbr. to: Anat. Rec.; Jour. Cell and Comp. Physiol.; Am. Jour. Physiol.; Transpl. Bull. Serv. Rec.: U.S.A. Areas of Rsch.: Transplantation of Skin and Thermal Changes in Skin of Rodents, Alloxan Diabetes in Hamster, Comparative Anat. of Cetacean Brains, Neuroanatomy.

JACOBSEN, Frederick Marius, Jr. (Ph.D.), Tech. Computing Supr., Rsch. and Dev. Dept., Am. Oil Co., Whiting, Ind. Home Add.: 1625 Caroline, Whiting, Ind.

CHEMICAL ENGINEERING. b. Brooklyn, N. Y., May 19, 1925. s. Fred M. and Mina (Scheffbuch) J. Edn.: B.Ch.E., Poly. Inst. of Brooklyn, 1944; Ph.D., Ia. State Univ., 1954. m. Maude Battle, Aug. 27, 1949. c.: Fred. Exp.: Staff Mem., Los Alamos Sci. Lab., Los Alamos, N. M., 1946-50; Rsch. Asst., Inst. Atomic Rsch., Ames, Ia., 1951-54; Sr. Chem. Engr., Group Leader, Am. Oil Co., Tex. City, Tex., 1955-60; Tch. Computing Supv., ibid., Whiting, Ind., 1960—. Mem.: Am. Inst. Chem. Engr.; Am. Chem. Soc.; A.A.A.S.; Am. Statistical Assn.; Inst. Math. Stat.; Biometric Soc.; Assn. Computing Machinery; N. Y. Acad. of Sci.; Am. Soc. Qual. Control; Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon; Alpha Sigma Phi. Contbr. to: AIChE. Jour. Serv. Rec.: AUS, 1944-46. Areas of Rsch.: Digital computer management and applications; applied statistics and mathematics.

JACOBS, Woodrow Cooper (Ph.D.), Dir., Natl. Oceanographic Data Center, Washington 25, D. C. Home Add.: 3812 Nash St., S. E., Washington 20, D. C.

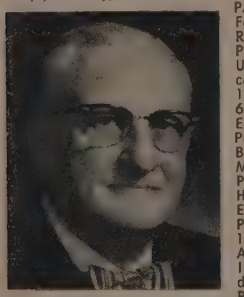
METEROLOGY-OCEANOGRAPHY. b. Pasadena, Calif., Sept. 11, 1908. s. William Rozel and Mabelle (Cooper) J. Edn.: B.A., Univ. of Calif. at L. A., 1930; M.S., Univ. of Sou. Calif., 1934; Ph.D., Univ. of Calif. at L. A., 1948. m. Dorothy Cecelia Quinn, June, 1933. c.: Marilyn Rozel, Ott. Exp.: U. S. Weather Bureau, San Diego and Sandberg, Calif., 1931-36; Forecaster, Fruit-Frost Service, Pomona, Calif., Imperial-Coachella Valleys, Calif. and Okanogan, Wash., 1936-41; Rsch. Assoc., Scripps Inst. of Oceanography and Carnegie Inst. of Wash., La Jolla, Calif., 1937; Chf. Civilian Meteorologist, Hdq. U.S.A.F., Washington, D. C., 1942-46; Asst. Chf., Div. of Climatological and Hydrological Serv. and Hd. Climatological Branch, U. S. Weather Bureau, 1946-48; Dir. of Climatology, U.S.A.F. Air Weather Service, Washington, D. C. and Scott AFB, Ill., 1948-60; Sci. Specialist, Lbr. of Congress, Wash., D. C., 1960-61; Dir., Natl. Oceanographic Data Center, Wash., D. C., 1961—. Hon. Pos.: Am. Met. Soc. Council, 1961—; Chmn., Bd. Cert. Cons. Met., 1960-62; Assoc. Ed., Bull., Jour. Met., Met. Mono., Jour. Apl. Met., 1948—; Am. Geoph. Union, Secy. Sect. of Met., 1947—, Exec. Comm., 1947-61, Council, 1961; U. S. Del., IUGG, Brussels, 1951, Rome, 1954, Toronto, 1957; Civ. Res. and Dev. Bd., 1948-52; World Met. Org. U. S. Rep. Com. on Climatology, 1950-58; Com. Clim. Jnt. Met. Com. Jnt. Chiefs Staff, 1948-58; Work Grp. Intergov. Ocean. Com., 1962—; Vis. Lecturer MIT, 1950; Chicago, 1956; Fac. USDA Grad. Schl., 1942-58. Mem.: N. Y. Acad. of Sci.; Wash. Acad. of Sci.; Royal Meteorological Soc. of London; Md. Acad. of Sci.; Am. Rocket Soc.; Md. Archaeological Soc.; Am. Soc. of Limnology and Oceanography; Sigma Xi; Alpha Tau Omega; Alpha Kappa Psi; Blue Key; Circle C and Ball and Chain (U.C.L.A.). Author: Meteorological Results of Cruise VII of the Carnegie, 1943; Wartime Developments in Applied Climatology, 1947; Energy Exchange Between Sea and Atmosphere and Some of Its Consequences, 1951; Meteorological Satellites, 1962. Co-Author: Arctic Meteorology, 1956. Contbr. to: Jour. of Meteorology; Bull. of Am. Meterol. Soc.; Jour. of Marine Rsch.; Met. Zeitschrift; Monthly Weather Review; Annals of N. Y. Acad. of Sci.; Trans. of Am. Geophys.

Union; Archiv. Meteor. Geoph. Biokl. Arch. Meteor. Geophy.; Encyclopaedia Britannica; Met. Rundschau. Gen. Int.: Received Certificate of Appreciation for Exceptionally Meritorious Achievements, USAAF, 1946. Areas of Rsch.: Applied Climatology; Ocean-Atmosphere energy transfer processes; minimum temperature forecasting; atmospheric chemistry.

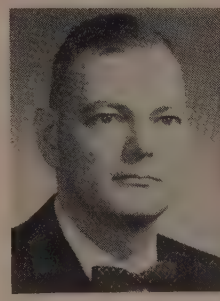
JACOBSON, Edmund (M.D.), Director, Laboratory for Clinical Physiol., Univ. of Chicago, 55 East Washington St., Chicago 2, Ill. Home Add.: 5532 South Shore Dr., Chicago, Ill. PHYSIOLOGY; PSYCHOLOGY; INTERNAL MEDICINE; PSYCHIATRY. b. Chicago, Ill., Apr. 22, 1888. s. Morris and Fanny (Blum) J. Edn.: B.S., Northwestern Univ., 1908; M.A., Harvard Univ., 1909; Ph.D., ibid., 1910; M.D., Univ. of Chicago, 1915. m. Elizabeth Ruth Silberman, 1925. c.: Ruth Frances Grommers; Edmund, Jr.; Nancy Elizabeth Engelsberg. Exp.: Diagnostician, North Chicago Hosp., Chicago, Ill., 1919-20; Attending Physician, Bridewell, Chicago, 1920-21; Assoc. Attending Physician, Michael Reese Hosp., Chi., Ill., 1919-26; Attending Physician, Micheal Reese Dispensary, Chicago, Ill., 1919-26; Rsch. Assoc., Dept. of Physiol., Univ. of Chicago, 1926-32; Asst. Prof., ibid., 1932-36; Dir., Lab. for Clinical Physiol., Chicago, 1936—. Mem.: Hon. Life Mem., St. Louis Med. Soc.; A.A.A.S.; Am. Coll. of Physicians; Am. Physiol. Soc.; Chi. Med. Soc.; Ill. Med. Soc.; Acad. of Psychosomatic Med.; Am. Psychosomatic Soc.; Phi Beta Kappa; Sigma Xi. Author: Progressive Relaxation, 1929, 1938; You Must Relax, 1934, 1957; You Can Sleep Well, 1938; The Peace We Americans Need, 1942; How To Relax and Have Your Baby, 1959. Contbr. to: Jour. of Am. Medical Assn.; Am. Jour. of Physiol.; Am. Jour. of Psychol.; Annals of Internal Med.; Arch. of Internal Med. Serv. Rec.: U.S.N., W. W. II. Areas of Rsch.: Applications of Electronics to psychology, physiology, medicine; Tension States in Medicine, Including Therapy and Prevention.

JAKWAY, George Elmer (Mr.), Asst. Prof., Zoology, Los Angeles State Coll., Los Angeles 32, Calif. Home Add.: 5317 Deane Ave., Los Angeles, 43, Calif. VERTEBRATE PALEONTOLOGY. b. Twin Falls, Ida., July 3, 1931. s. Dale C. and Edna (Carter) J. Edn.: B.A., Ida. State Coll., 1953; M.A., Univ. Kan., 1958. m. Jacqueline Sinks, Apr. 1, 1956. Exp., Instr., Biol., Univ. Kan., 1956-57; Rsch. Asst., Univ. Neb. State Museum, 1957-61; Asst. Prof., L. A. State Coll., 1961—. Mem.: Am. Assn. Adv. Sci.; Am. Soc. Mammalogists; Paleontological Soc.; Soc. Study Evolution; Soc. Vertebrate Paleontology; Phi Sigma Kappa; Sigma Xi; Phi Sigma Hon. Biological Soc.; Sigma Gamma Epsilon. Contbr. to: Jour. Mammalogy. Serv. Rec.: U.S.N.R., 1953-55. Areas of Rsch.: Pleistocene Paleomammalogy; Morphology; Evolution.

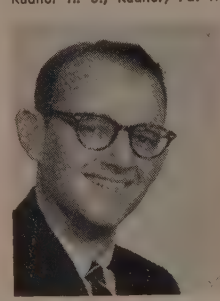
JACOBSON, Moses Abraham (M.D.), Pathologist, Veterans Admin. Hosp., Downey, Ill. Home Add.: Rt. 5, Box 252, Waukegan, Ill. PATHOLOGIST. b. Portsmouth, Va., Feb. 26, 1896. s. Isaac and Rebecca (Karp) J. Edn.: B.S., Va. Polyt. Inst., 1916; M.S., Purdue Univ., 1918; Ph.D., Univ. of Chicago, 1927; M.D., Rush Med. Coll., 1932. m. Elizabeth I. Sears, Aug. 6, 1950. c.: Elise Fuente; Joseph. Exp.: Instr. in Biol. and Bacteriol., Purdue Univ., 1916-18; Asst. Prof., Bacteriol. and Clinical Pathol., Med. Coll. of Va., 1921-22; Asst. Prof. of Bacteriol. and Public Health, Univ. of Tenn., 1922-24; Extension Instr. in Bacteriol. and Public Health, Univ. of Chicago, 1924-27; Part-Owner, Clin. and Analytical, Chicago Lab., Chicago, Ill., 1927-30; Medical Dir., Pepsodent Co., 1932-37; Owner, Medico-Pharmacal Rsch., Clin. and Analytical Lab., Chicago, Ill., 1937-41; Chief, Lab. Service, V.A. Hosp., Downey, Ill., 1946—; Consultant in Pathol. to Commanding Officer, U. S. Naval Hosp., Great Lakes, Ill., 1950-56; Med. Officer, U. S. Marine Corps Reserve, Great Lakes, Ill., 1956-58. Mem.: Am. Med. Assn.; Am. Pub. Health Assn.; Am. Soc. of Bacteriol.; Milit. Surgeon; Am. Soc. of Clin. Pathol.; Am. Coll. of Pathol.; Am. Assn. of Blood Banks; Am. Trudeau Soc.; A.A.A.S.; Sigma Xi; Cert. by Am. Bd. of Pathol. in Clin. Pathol. Contbr. to: Studies on Respiratory Diseases; The Jour. of Infectious Diseases; Proc. Soc. Expt. Biol. and Med.; Am. Jour. of Pub. Health; Jour. of Bacteriol.; The Jour. of Preventive Med; Ill. Med. Jour.; U. S. Naval M. Bull. #46. War Rec.: U. S. Army, 1918-19; U. S. Navy Med. Corps, 1942-46.



JAEGER, Arno (Dr. rer. nat.), Dir. of Grad. Studies and Prof., Math. Dept., Univ. of Cincinnati, Cincinnati, Ohio. Home Add.: 195 E. McMillan St., Cincinnati 19, Ohio. MATHEMATICS AND OPERATIONS RESEARCH. b. Berlin, Germany, July 10, 1922. s. Gustav and Malie (Beau) J. Edn.: Dr. rer. nat., Univ. of Gottingen, 1949. Exp.: British Council Rsch. Grantee, Univ. of Manchester, England, 1949-50; Lecturer, Univ. Coll. Ibadan, Nigeria, 1950-52; Rsch. Assoc., Univ. of Ill., 1952-53; Assoc. Prof., Univ. of Cincinnati, 1953-59; Prof., ibid., 1959—; Dir. of Grad. Studies, ibid., 1961—. Hon. Pos.: Visiting Professorships, University of Würzburg, 1956, Univ. of Gottingen, 1957, Free Univ. Berlin, 1957, and Univ. Munich, 1958, 1962. Mem.: Am. Math Soc.; Math. Assn. of Am.; Soc. for Industrial and Applied Math.; Operations Rsch. Soc. of Am.; Sigma Xi; Deutsche Mathematikervereinigung Gesellschaft fur Angewandte Mathematik und Mechanik; Deutsche Gesellschaft fur Unternehmensforschung; Schweizer Mathematische Gesellschaft; Schweizer Vereinigung fur Operations Rsch.; Societe Suisse de Statistique et d'Economie Politique. Author: Introduction to Analytic Geometry and Linear Algebra, 1960. Editor: Monographs on Operations Research. Reviewer of Mathematical Reviews and Zentralblatt fur Mathematik. Contbr. to: Trans. of the Am. Math. Soc.; Bull. of the Am. Math. Soc.; Can. Jour. of Math.; Math. Annalen; Archiv der Mathematik; Monatschefte fur Mathematik. Serv. Rec.: German Air Force, 1941-45. Areas of Rsch.: Abstract Algebra, Linear Algebra, Groups, Differential Algebra, Projective Geometry, Group Theoretic Quantum Mechanics, Math. Programming, Operations Research.



JAMES, Richard Leroy (Mr.), Biol. Instr., Chmn. Sci. Dept. Radnor H. S., Radnor, Pa. Home Add.: 32 Sunset Dr., Paoli, Pa. BIOLOGY. b. Hanover, Pa., Nov 8, 1935. s. Merle A. and Bertha (Duck) J. Edn.: B.S., Shippensburg, 1957; Summer NSF Fellowship Allegheny Coll., 1958, Univ. of Pa., 1960; In-service NSF Villanova, 1959-60; Academic Year Fellowship, Univ. of Pa., 1960-61; M.S., Univ. of Pa., 1961; NSF Summer Fellowship, Univ. of Pa., 1961. m. Karin Schade, Dec. 1956. c.: Deborah Anne. Exp.: Radnor H. S., Radnor, Pa., 1957—; Chmn. Sci. Dept., ibid., 1961—. Hon. Pos.: Chmn. Tenth Grade Faculty, Radnor H. S.; Advisor, NDEA In-service Lecturers, Sept., Oct., Nov.; Advisor, State Comm. on Microbiol. in Elementary Grades. Mem.: Natl. Audubon Soc.; Valley Forge Audubon Soc.; A.A.A.S.; Ornithologist Union, Franklin Inst.; Natl. Sci. Tchr. Assn. Contbr. to: Pa. Sci. Tchr. Newsletter. Gen. Int.: Lecturer gen. session Allegheny Coll. N.S.F. Summer Inst., 1959-60; NSF Fellow to the Darwinian Centennial Univ. of Chicago; Holder of three High Schl. Rsch. Fellowships from the Heart Assoc. of Southeastern Pa.



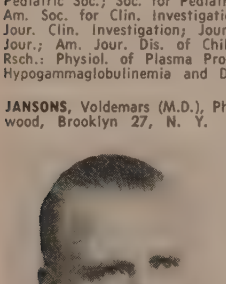
JAMES, Robert Clarke (Ph.D.), Prof. of Math., Chmn., Dept. of Math., Harvey Mudd Coll., Claremont, Calif. Home Add.: 135 W. 12th St., Claremont, Calif. MATHEMATICS. b. Bloomington, Ind., July 30, 1918. s. Glenn J. and Inez (Clarke) J. Edn.: B.A., U.C.L.A., 1940; Ph.D., Calif. Inst. of Technol., 1946. m. Edith Peterson, 1945. c.: Judith; Linda; David; Robert G. Exp.: Benjamin Peirce Instr. in Math., Harvard Univ., 1946-47; Instr. in Math., Univ. of Calif., 1947-49; Asst. Prof. of Math., ibid., 1949-51; Assoc. Prof., Haverford Coll., 1951-57; Prof., Chmn., Dept. of Math., Harvey Mudd Coll., 1957—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Soc. for Industrial and Applied Math.; Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon; Kappa Mu Epsilon. Co-author: Mathematics Dictionary, 1949, Revised Ed., 1959. Contbr. to: Annals of Math.; Duke Mathematical Jour.; Bull., Am. Math. Soc.; Proc. Am. Mathematical Soc.; Trans., Am. Mathematical Soc.; Math. Magazine; Pacific Jour. of Math. Areas of Rsch.: Normed Linear Spaces.

JAMISON, Sue Storer (Mrs.), Professional Staff, Operations Rsch. Group, Arthur D. Little, Inc., Cambridge 40, Mass. Home Add.: 175 Adams St., Apt. 4C, Brooklyn 1, N. Y. MATHEMATICS AND OPERATIONS RESEARCH. b. Indianapolis, Ind., Feb. 2, 1935. d. Horace Elbert and Billie Mae (Kreider) Storer. Edn.: B.S., Purdue Univ., 1956. m. John Callison Jamison, June 2, 1956. Exp.: Rsch. Engr., Conviar, San Diego, Calif., 1957-59; Professional Staff, Arthur D. Little, Inc., Cambridge, Mass., 1960—. Mem.: Am. Mathematical Soc.; Soc. for Industrial and Applied Math.; Natl. Planning Assn.; Am. Acad. of Polit. and Soc. Sci.; Kappa Kappa Gamma; Theta Sigma Phi. Contbr. to: Jour. Soc. of Industrial and Applied Math.; Aerospace Engrng.; Anti-Missile Rsch. Advisory Coun.; Natl. Conf. on Military Electronics. Areas of Rsch.: Operations Rsch.; Arms Control and Disarmament Analysis; Ballistic Missile Defense and Strategic Planning; Anti-Submarine Warfare.

JAMPOLSKY, Lester M. (Ph.D.), Rsch. Administrator, Hoffmann-La Roche, Inc., Nutley, N. J. Home Add.: 14 Windermere Rd., Upper Montclair, N. J. ORGANIC CHEMISTRY. b. Savannah, Ga., May 6, 1916. s. Leo and Mathilda (Fellman) J. Edn.: B.A., Univ. of Calif., 1938; Ph.D., Swiss Fed. Inst. of Technol., 1941. m. Rita Rietschel, 1942. c.: Paul; Mark. Exp.: Sr. Staff, Hoffmann-La Roche, Inc., Nutley, N. J. 1941—; Prof. Stevens Inst. of Technol., 1945—. Mem.: Am. Chem. Soc.; Chem. Soc. of London; Swiss Chem. Soc.; A.A.A.S.; Seminario de Cultura Maya; Explorers Club. Contbr. to: Jour. of Am. Chem. Soc.; Helv. Chim. Acta; Arch. Biochem.; Am. Jour. of Physical Medicine; Proc. Soc. Exptl. Biol. and Medicine. Areas of Rsch.: Synthetic Organic Chemistry.

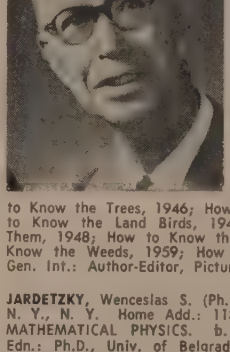
JANEWAY, Charles Alderson (M.D.), Thomas Morgan Rotch Prof. of Pediatrics, Harvard Med. Schl., 300 Longwood Ave., Boston 15, Mass. Home Add.: 445 Concord Rd., Weston 93, Mass. MEDICINE (PEDIATRICS) IMMUNOLOGY. b. N. Y. C., May 26, 1909. s. Theodore Caldwell and Eleanor C. (Alderson) J. Edn.: A.B., Yale Univ., 1930; M.D., Johns Hopkins Univ., 1934. Hon. Deg.: M.A., Harvard Univ., 1946. m. Elizabeth Bradley, July 9, 1932. c.: Anne Alderson; Elizabeth J. Gold; Charles A., Jr.; Barbara B. Exp.: Asst. Prof. of Pediatrics, Harvard Med. Schl., 1942-46; Physician-in-Chf., Children's Hosp. Med. Ctr., Boston, Mass., 1946—; Scientific Dir., Protein Foundation, Cambridge, Mass., 1960—. Hon. Pos.: Pres., Iran Foundation. Mem.: Am. Pediatric Soc.; Soc. for Pediatric Rsch.; Assn. of Am. Physicians; Am. Soc. for Clin. Investigation; Phi Beta Kappa. Contbr. to: Jour. Clin. Investigation; Jour. Exptl. Med.; Pediatrics; A.M.A. Jour.; Am. Jour. Dis. of Children; N.E. Jour. Med. Areas of Rsch.: Physiol. of Plasma Proteins; Kidney Disease in Children; Hypogammaglobulinemia and Disturbances in Resistance.

JANSONS, Voldemars (M.D.), Physician, 6055 Woodbine St., Ridgewood, Brooklyn 27, N. Y. Home Add.: 6055 Woodbine St., Ridgewood, Brooklyn 27, N. Y. INTERNAL MEDICINE. b. Liepaja, Latvia, Mar. 29, 1912. s. Mikelis and Anna (Karklins) J. Edn.: M.D., Univ. of Latvia, Riga, Latvia, 1936. m. Milda E. Dolfijs, Nov. 18, 1937. c.: Peteris; Uldis. Exp.: Interne, Univ. Hosps., Riga, Latvia, 1935-36; Res. in Med., Army Hosp., Liepaja, Latvia, 1937-41; Staff Physician, Jelgava Polyclinic, Jelgava, Latvia, 1939-41; Attending Phys. in Int. Med., Rezekne Co. Gen. Hosp., Rezekne, Latvia, 1941-43; Private Practice in Int. Med., Rezekne and Jelgava, Latvia, 1941-45; Director, Rezekne TB Clinic, ibid., 1942-43; Attending Phys. in Med., Rezekne Polyclinic, Rezekne, Latvia, 1942-43; Phys.-in-Chief, UNRRA Gen. Hosp., Guenzburg, Germany, 1945-48; Med. Officer, IRO Med. Dept., Augsburg, Germany, 1948-51; Interne in Pathol., Burbank Hosp., Fitchburg, Mass., 1951-52; Res. in Med., Quigley Mem. Hosp., Boston, Mass., 1952-56; Private Practice in Int. Med., Ridgewood, N. Y., 1956—; Staff Physician, Horace Harding Hosp., Elmhurst, N. Y., 1956-60; Asst. Visit. Phys. in Int. Med., Queens Hosp. Center, Jamaica, N. Y., 1956—; Staff Physician, Kew Gardens Gen. Hosp., Kew Gardens, N. Y., 1956—; Asst. Visiting Physician, Endocrine and Thyroid Clin., Queens Gen. Hosp., Jamaica, N. Y., 1957—; Staff Physician, Booth Memorial Hosp., Flushing, N. Y., 1957—; Asst. Visit. Phys., Pulmonary Serv., Triboro Hosp., Jamaica, N. Y., 1958—; Staff Physician, St. John's Queens Hosp., Elmhurst, N. Y., 1961—; Asst. Attend. Phys. in Int. Med., Wyckoff Heights Hosp., Brooklyn, N. Y., 1961—. Hon. Pos.: Pres., Latvian Student Med. Assn., 1934-35. Mem.: Fellow, Am. Geriatrics Soc.; Fellow, Clin. Soc. of New York Diabetes Assn.; Fellow, Am. Coll. of Chest Physicians; Internatl. Soc. of Intern. Med.; Pan Am. Med. Assn.; A.A.A.S.; Am. Thoracic Soc.; Am. Med. Assn.; World Med. Assn.; N. Y. Trudeau Soc.; N. Y. Cardiological Soc.; Fellow, Internatl. Coll. of Angiology; Industrial Med. Assn.; N. Y. State Med. Soc. Areas of Rsch.: Tuberculosis and Diseases of the Chest.



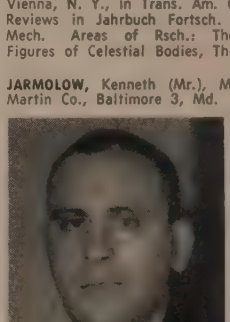
JAPHA, Erwin Maximilian (D.M.R.), Dir., Dept. of Therapeutic Radiol., Mt. Sinai Hosp., 2750 W. 15th Pl., Chicago 8, Ill. Home Add.: 462 Woodlawn Ave., Glencoe, Ill. THERAPEUTIC RADIOLOGY AND ASSOCIATED SCIENCES. b. Berlin, Germany, Nov. 17, 1910. s. Alfred F. and Vally (Reichmann) J. Edn.: M.B., B.S., Univ. of London, Eng., 1938; M.R.C.S., L.R.C.P., Conjoint Bd. of England, 1937; D.M.R., ibid., 1944. m. 1st, Eva Danielsohn (dec.), Mar. 30, 1935. m. 2nd, Etta Veit-Simon, Dec. 7, 1952. c.: Anthony F.; Carol M.; Irene R. Exp.: Clin. Cancer Rsch. Off. (B.E.C.C.), Middx. Hosp., London, Eng., 1938-40; Jr. Radiotherapist, ibid., 1941-44; Sr. Radiotherapist, ibid., 1946-49; Dept. Med. Off.-in-Chg., Radiotherapeutic Center, Addenbrooke's Hosp., Cambridge, Eng., 1944-46; Rsch. Investigator, Chicago Tumor Inst., Chicago, Ill., 1949-52; Radiotherapist, Mt. Sinai Hosp., Chicago, Ill., 1952—. Mem.: A.M.A.; Ill. St. Med. Soc.; Chicago Med. Soc.; A.R.S.; R.S.N.A.; A.C.R.; Inter-Am. Coll. of Radiol.; B.I.R.; R.S.M.; Fac. of Radiol.; Chicago Roentgen Soc.; A.A.A.S.; Inst. of Med. of Chicago; Natl. Geographic Soc. Contbr. to: Brit. Jour. of Cancer; Am. Jour. of Roentgenol. and Radium Therapy; Chicago Med. Schl. Quart. Areas of Rsch.: Clin. Radiation Therapy; Combination Chemotherapy and Radiation; Hist. of Telecurie-Therapy; Physics of Radium and Cobalt Therapy.

JAQUES, H(arry) E(dwin) (D.Sc.), Prof., Biol. Emer., Ia. Wesleyan Coll., Mt. Pleasant, Ia. Home Add.: 707 N. Main, Mt. Pleasant, Iowa. ENTOMOLOGY; IDENTIFICATION OF PLANTS AND ANIMALS. b. Danville, Ia., July 24, 1880. s. Wm. J. and Hannah (Alspach) J. Edn.: B.S., Ia. Wesleyan Coll., 1911; M.A., Ohio St. Univ., 1917. Hon. Deg.: D.Sc., Ia. Wesleyan Coll., 1923. m. (1) Ethel Benedict, Aug. 30, 1912; (2) Clara Morehart, July 5, 1925; (3) Mrs. Winifred Brant Simpson, Aug. 29, 1954. c.: Mabel; Martha; William; Francesca; Jean. Exp.: Hd. Biol. Dept., Ia. Wesleyan Coll., 1912-47; Prof., Biol., Emer., ibid., 1947—. Mem.: Entomological Soc. of Am.; A.A.A.S.; Ia. Ornithol. Soc.; Natl. Audubon Soc.; Lambda Chi Alpha. Author: How to Know the Insects, 1947; Living Things—How to Know Them, 1946; How to Know the Trees, 1946; How to Know the Beetles, 1951; How to Know the Land Birds, 1947; Plant Families—How to Know Them, 1948; How to Know the Economic Plants, 1957; How to Know the Weeds, 1959; How to Know the Water Birds, 1960. Gen. Int.: Author-Editor, Pictured Key Nature Books, 1935—.



JARDETZKY, Wenceslas S. (Ph.D.), Rsch. Assoc., Columbia Univ., N. Y., N. Y. Home Add.: 113 Grandview Ave., Elkins, W. Va. MATHEMATICAL PHYSICS. b. Odessa, Russia, Apr. 16, 1896. Edn.: Ph.D., Univ. of Belgrade, Yugoslavia, 1923. m. Tatiana Taranovsky, Feb. 27, 1927. c.: Oleg. Exp.: Rsch. Asst., Univ. of Odessa, Russia, 1917-20; Rsch. Asst., Univ. of Belgrade, Yugoslavia, 1920-25; Asst. Prof., ibid., 1925-29; Assoc. Prof., ibid., 1929-39; Prof., ibid., 1939-44; Visiting Prof., Univ. of Graz, Austria, 1945-48; Lectr., Technische Hochschule, Graz, 1948-49; Asst. Visiting Prof., Manhattan Coll., 1949-53; Assoc. Prof., ibid., 1953-61 (Ret.); Rsch. Assoc., Columbia Univ., 1949— Mem.: N. Y. Acad. Sci., Fellow; Am. Geophys. Union, A.A.A.S.; Sigma Xi; Hon. Mem., Chi Epsilon. Author: Recherches mathematiques sur l'evolution de la Terre, Belgrade, 1935; Theories of Figures of Celestial Bodies, N. Y., 1958. Co-Author: Elastic Waves in Layered Media, 1957. Contbr. to: Acad. Sci. of Belgrade, Paris, Vienna, N. Y., in Trans. Am. Geophys. Union; Bull. Seism. Soc.; Reviews in Jahrbuch Fortsch. Math.; Math. Rev.; Rev. Applied Mech. Areas of Rsch.: Theoretical Mechanics, Theories of Figures of Celestial Bodies, Theoretical Geophysics.

JARMOLOW, Kenneth (Mr.), Mgr., Rsch. and Development, The Martin Co., Baltimore 3, Md. Home Add.: Old Court Rd., Brooklandville, Md. FLUID MECHANICS, THEORETICAL MECHANICS. b. Lebanon, Conn., Sept. 15, 1924. s. Joseph H. and Rose (Lubetsky) J. Edn.: S.B., Mass. Inst. of Technol., 1948. m. Shirley Mendoza, Jan. 31, 1947. c.: Elizabeth Dale; Janet Alice. Exp.: Engr., Glen L. Martin Co., 1948-53; Rsch. Specialist, ibid., 1953-56; Chf., Aerodynamics Staff, ibid., 1956-58; Chf., Rsch. Staff, The Martin Co., 1958-60; Mgr., Rsch. and Development, ibid., 1960—. Mem.: Assoc. Fellow, Inst. of Aerospace Sciences; Sigma Xi; A.A.A.S.; Dir., Brotherhood Serv., Inc., Md. Contbr. to: Jour. Applied Physics. Serv Rec.: U. S. Army Air Corps, 1942-45. Areas of Rsch.: Pseudo-Rigid Body Mechanics; Space Mechanics.



JARVIE, John Milton (Ph.D.), Sr. Rsch. Chemist, Gulf Rsch. and Devel. Co., P. O. Drawer 2038, Pittsburgh 30, Pa. Home Add.: 103 Burke Dr., Monroeville, Pa. PHYSICAL CHEMISTRY, RADIATION CHEMISTRY. b. Sydney, N.S.W., Australia, Aug. 13, 1928. s. R. T. Kyle and Lillian S. (Smith) J. Edn.: B.Sc., Univ. of Sydney, 1948; M.Sc., ibid., 1952; Ph.D., ibid., 1955. m. Ruth E. Greer, Aug. 16, 1952. c.: Susan Ruth; Gary John. Exp.: Rsch. Assoc., Rensselear Polytechnic Inst., 1955-56; Post-Doctorate Fellow, Natl. Rsch. Coun., Ottawa, Can., 1956-57; Rsch. Chemist, E. I. du Pont de Nemours and Co., Inc., Wilmington, Del., 1958-60; Scientific Officer, Comm. Scientific and Ind. Rsch. Organization, Sydney, Australia, 1960-61; Sr. Rsch. Chemist, Gulf Rsch. and Devel. Co., Pittsburgh, Pa., 1961—. Mem.: Am. Chemical Soc.; A.A.A.S.; Royal Australian Chemical Inst.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Chem. Soc., London; Anal. Chem.; Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Can. Jour. Chem. Areas of Rsch.: Ultra-Violet Spectra of Organic Iodine Compounds; Photolysis of Iodobenzene; Kinetics of Diene/Nitrile Reactions; Oxygen Atom Reactions with Olefins; Kinetics of Tetraethyllead Formation; Explosive Characteristics of Tetramethyllead; Kinetic Studies of Water Uptake and Hydrogen Exchange by Coal; Radiation Chemistry of Hydrocarbons and Related Compounds.

JASTROW, Robert, Dir., Inst. for Space Studies.

JEFFERIES, William McKendree (M.D.), Asst. Prof. of Med., Western Reserve Univ. Schl. of Med., Univ. Hosps., Cleveland, Ohio. Home Add.: 14302 Shaker Blvd., Shaker Heights 20, Ohio. INTERNAL MEDICINE; ENDOCRINOLOGY. b. Richmond, Va., Oct. 1, 1915. s. Dr. Richard H. and Mary Adeline (Harris) J. Edn.: B.A., Hampden Sydney Coll., 1935; M.D., Univ. of Va. Schl. of Med., 1940. m. Jeanne Telfair Mercer, Dec. 28, 1946. c.: Richard Mercer; Scott McKendree; Colin Tucker; Leslie McLaurin. Exp.: Intern, East Med. Serv., Mass. Gen. Hosp., Boston, Mass., 1940-42; Rsch. Fellow, ibid., 1946-49; Instr. in Med., Western Reserve Univ., 1949-53; Physician-in-Charge of Endocrine Clinic, Univ. Hosp., Cleveland, 1949—; Asst. Prof. of Med., Western Reserve Univ., 1953—. Mem.: Omicron Delta Kappa; Alpha Omega Alpha; Sigma Xi; Endocrine Soc.; Am. Goiter Assn.; Am. Soc. for Study of Sterility; Am. Diabetes Assn.; Central Soc. for Clin. Rsch.; Am. Fd. for Clin. Rsch.; A.A.A.S.; N. Y. Acad. of Sci.; A.M.A.; Kappa Alpha; Phi Beta Pi; Raven Soc. Contbr. to: Jour. of Clinical Endocrinol.; New England Jour. of Med.; Radiol.; Fertility and Sterility. Serv. Rec.: 1st Lt. to Lt. Col., M.C., A.U.S., attached to India-China Div., A.T.C., 1942-46. Gen. Int.: Recipient of Van Meter Award. for Rsch. in Thyroid Physiol., 1949. Areas of Rsch.: Endocrinology, Particularly Thyroid and Adrenal Physiology and Infertility.

JEHLE, Herbert (Dr.), Prof. of Physics, the George Wash. Univ., Wash. 6, D. C. THEORETICAL PHYSICS. b. Stuttgart, Germany, Mar. 5, 1907. s. Julius and Maria (Gminder) J. Edn.: Doctor Ingenieur, Inst. of Tech., Berlin, 1933. m. Dietlinde von Kuenssberg. Exp.: 1935-36, Jahrbuch ueber die Fortschritte der Mathematik, editorial; 1937-38, Univ. Coll., Southampton, Rsch. Asst.; 1938-40, Univ. of Brussels, Rsch. Assoc.; 1942-46, Harvard Univ., Instr. in Physics; 1946-47, Franklin Inst., Phila., Rsch. Physicist. Development Projection Magnifier for Partially Blind for the Comm. for Sensory Devices, Natl. Rsch. Coun.; 1947-48, Inst. for Advanced Study, Princeton; 1947-49, Univ. of Pa., Asst. Prof.; 1949-59, Univ. of Neb., Assoc. Prof., Prof.; 1956-57—, Calif. Inst. of Tech., Rsch. Assoc.; 1959—, Geo. Wash. Univ.; Prof. Mem.: Fellow, Am. Phys. Soc.; A.A.U.P.; Sigma Xi; Former Editor, Newsletter of the Soc. for Social Responsibility in Sci. Contbr. to: Phys. Rev.; Proc. Natl. Acad. of Sci.; Astrophys. Jour. Ph.D. Dissertation: Theorie der Rundwebverfahren. Travel: Europe. Special Int.: Specific interactions Between Macromolecules; Replication, Biosynthesis and Structure of Nucleoproteins; Spinors. Personal Int.: Social implications of science and religion. Rejected positions in Germany's rearmament industry and declined academic appointment in Nazi Germany, 1936. Was in Nazi controlled internment camps in Southern France, 1940-41 and refused military service before Gestapo tribunal. Was engaged in relief work (Quaker), 1944-47. Member of Internatl. Comm., Fellowship of Reconciliation, 1942-49. Member of American Civil Liberties Union. Worked with Prof. Linus Pauling on the appeal of 11,000 scientists for an international agreement to stop the testing of nuclear weapons.

JEFFRESS, Lloyd Alexander (Ph.D.), Prof. of Psychology, Univ. of Tex., Austin 5, Tex. Home Add.: 3404 Hampton Rd., Austin 5, Tex. EXPERIMENTAL PSYCHOLOGY. b. San Jose, Calif., Nov. 15, 1900. s. Alexander Mitchell and Wilhelmina (Weaver) J. Edn.: B.A., Univ. of Calif., 1922; Ph.D., ibid., 1926. m. Sylvia Bloomberg, 1923. Exp.: Adj. Prof., Univ. of Tex., Austin, Tex., 1926-27; Assoc. Prof., to Prof., ibid., 1927—; Visiting Prof., Calif. Inst. of Tech., Pasadena, Calif., 1947-48. Mem.: Acoustical Soc. of Am.; Am. Psychol. Assn.; Sigma Xi; A.A.A.S.; Gamma Alpha; Sigma Pi Sigma. Editor, Cerebral Mechanisms in Behavior, 1950. Contbr. to: Jour. of Acoustical Soc. of Am.; Am. Jour. of Psychol.; Jour. of Experimental Psychol.; Psychol. Bull.; Jour. of Physiol. Psychol.; Jour. of Underwater Acoustics. Areas of Rsch.: Psychological Acoustics.

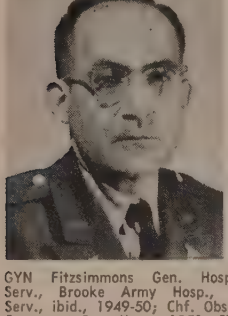
JELLISON, William Livingstn (Ph.D.), Parasitologist, U. S. Pub. Health Serv., Hamilton, Mont. Home Add.: 504 S. Third St., Hamilton, Mont. PARASITOLOGY AND ENTOMOLOGY. b. Kalispell, Mont., Feb. 28, 1906. s. Walter F. and Hester (Hay) J. Edn.: B.S., Mont. St. Coll., 1929; M.S., Univ. of Minn., 1934; Ph.D., ibid., 1940. m. Gretchen L. Gayhart, Aug. 13, 1932. c.: William Henry. Exp.: Parasitologist, U. S. Pub. Health Sserv., 1929—. Mem.: Am. Soc. of Parasitologists; Am. Soc. of Mammalogists; Helminthol. Soc. of Wash.; Wildlife Soc.; Kappa Sigma; Phi Sigma; Phi Kappa Phi. Contbr. to: Jour. of Mammalogy; Jour. of Parasitol.; Pub. Health Reports; and others. Areas of Rsch.: Specialist on North American Fleas; Tularemia; Spotted Fever; Rickettsialpox; Scrub Typhus; Rat-bite Fever and other Diseases of Wild Animals Transmissible to Man; Ectoparasites; Field Work and Laboratory Work on Diseases of Wild Animals.

JENSEN, Arthur S. (Ph.D.), Mgr., Special Electron Devices, Westinghouse Elec. Corp., Box 746, Baltimore 3, Md. Home Add.: 5602 Purlington Way, Baltimore 12, Md. ELECTRON PHYSICS. b. Trenton, N. J., Dec. 24, 1917. s. Emil A. and Emma A. (Lund) J. Edn.: B.S., Univ. of Pa., 1938; M.S., ibid., 1939; Ph.D., ibid., 1941. m. Lillian Elizabeth Reed, Aug. 9, 1941. c.: Deane E.; Alan F.; Nancy L. Exp.: Rsch. Physicist, Naval Rsch. Labs., 1941; Instr. of Physics, U. S. Naval Acad., 1941-46; Rsch. Physicist, RCA Labs., 1945-57; Mgr., Special Electron Devices, Westinghouse Electronic Tube Div., 1957—. Hon. Pos.: IRE Subcomm. Storage Tubes; Editor, Princeton Sct. IRE Bull.; Comm Officer, U. S. Naval Res. Rsch. Co. 5-4. Mem.: Fellow, Inst. of Radio Engrs.; Am. Physical Soc.; Am. Assn. Physics Tchrs.; A.A.A.S.; U. S. Naval Inst.; Sigma Xi; Pi Mu Epsilon; Kappa Phi Kappa. Contbr. to: Physical Rev.; RCA Rev.; Jour. Am. Physics. Serv. Rec.: Capt., U.S.N.R., 1940—. Gen. Int.: Inventor of Radechon, Photogenerator, Ebic Tape Storage Tube, Space Thermicon, and Mirrechon. Areas of Rsch.: Storage Tubes, Infrared Camera Tubes, Photoemission Power Generator; Coding Tubes; Bandwidth Compression; Pulse Amplitude Analysers; Secondary Electron Emission; Electron Optics; Noise Limitations to Detector Sensitivity.

JENSEN, Creighton Randall (Ph.D.), Postgrad. Rsch. Soil Physicist, Univ. of Calif., Riverside, Calif. Home Add.: 4191 St. George Pl., Riverside, Calif. SOIL PHYSICS. b. Harlan, Ia., Dec. 27, 1929. s. James and Fanny M. (Wiley) J. Edn.: B.S., Calif. St. Polytechnic Coll., 1956; M.S., Ia. St. Coll., 1959; Ph.D., Ia. St. Univ., 1961. m. Jo Ann S. Knudsen, June 18, 1956. Exp.: Rsch. Asst., Ia. St. Univ., 1956-61; Dir., Soil-Plant Systems, Tarzana, Calif., 1962—. Mem.: Soil Sci. Soc. of Am.; Am. Soc. of Agronomy; A.G.U.; A.A.A.S.; Ia. Acad. of Sci.; Sigma Xi; Gamma Sigma Delta. Contbr. to: Soil Sci. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Soil Aeration and Soil-Plant Relationships.

JESSEN, Frank Weldon (Ph.D.), Prof., Petroleum Engrng. Dept., Univ. of Tex., Austin, Tex. Home Add.: 2507 Inwood Place, Austin 3, Tex. PETROLEUM AND NATURAL GAS. b. Austin, Tex., Feb. 21, 1907. s. Wolfgang and Ella Elizabeth (Ilse) J. Edn.: B.A., B.S., Univ. of Tex., 1927; M.S., ibid., 1930; Ph.D., ibid., 1933. m. Stella Sodich, Aug. 28, 1932. c.: Elizabeth Mary; Esther Margaret. Exp.: Supvry. Engr., Humble Oil and Refining Co., Houston, Tex., 1933-44; Dir., Lab. Field Consultant, Petreoleos Mexicanos, Mexico City, Mex., 1944-45; Consulting Engr., Associated Engrs., Houston, Tex., 1945-48; Consulting Engr. and Mgr., Austin Econ. Dev. Foundation, Austin, Tex., 1948-52; Prof., Univ. of Tex., 1952—. Hon. Pos.: Chmn., Balcones Sect., A.I.M.E. Mem.: Soc. of Petroleum Engrs.; A.I.M.E.; A.I.Ch.E.; A.C.S.; A.P.I.; A.A.A.S.; N.A.C.E.; T.S.P.E.; Phi Lambda Upsilon; Sigma Xi; Tau Beta Pi; Sigma Gamma Epsilon; Pi Epsilon Tau. Contbr. to: Jour. Pet. Tech.; Ind. and Engr. Chem.; Corrosion. Areas of Rsch.: Production Problems of the Oil Industry, Drilling Fluids and Techniques, Secd. Recovery of Oil.

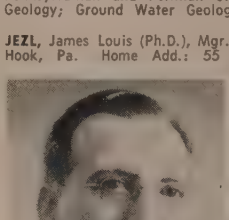
JESURUN, Harold Mendez (M.D.), Chf. Obstetrics and Gynecology Service, 97th General Hospital, Frankfurt, Germany. Home Add.: 1002-B O'Reilly Ave., Presidio of San Francisco 29, Calif. OBSTETRICS AND GYNECOLOGY. b. San Juan, Puerto Rico, Dec. 24, 1915. s. Willy and Esterlinda (Mendez) J. Edn.: B.A., Columbia Coll., Columbia Univ., 1937; M.D., Univ. of Mich., 1940. m. Dolores Lopez, May 17, 1947. c.: Carlos Antonio; John Alberto; Maria Celeste; Richard James. Exp.: Intern, Kings County Hosp., Brooklyn, N. Y., 1940-41; Asst. Area Med. Dir., British Guinea Base, 1941-42; Area Med. Dir., ibid., 1942-43; Malariologist, New Guinea, 1943-44; Provincial Pub. Health Dir., Taegu, Korea, 1945-46; Exec. Officer Natl. Pub. Health Serv. Korea. Dir. Cholera Control, Korea, 1946; Asst. Resident OB GYN Fitzsimmons Gen. Hosp., 1947-48; Resident OB GYN Serv., Brooke Army Hosp., 1948-49; Sr. Resident OB GYN Serv., ibid., 1949-50; Chf. Obstetrics and Gynecol. Serv., William Beaumont Gen. Hosp., 1950; Chf. Obst. and Gynecol. Serv., Percy Jones Gen. Hosp., 1951-52; Chf. Obst. and Gynecol., U. S. Army Hosp., Fort Ord, Calif., 1952; Asst. Chf. Obst. and Gynecol. Serv., Brooke Gen. Hosp., 1952-55; Asst. Prof. of Obst. and Gynecol., Baylor Univ., 1954-55; Chf. Obst. and Gynecol. Serv., Rodriguez U. S. Army Hosp., San Juan, Puerto Rico, 1955-58; Chf. Obst. and Gynecol. Serv., Letterman Gen. Hosp., Presidio of San Francisco 29, Calif., 1958-62; Chf., Obst. and Gyn. Serv., 97th Gen. Hosp., Frankfurt, Germany, 1962—; Consultant, U. S. Army, Europe, Surgeon, 1962—. Mem.: A.A.A.S.; Am. Soc. of Tropical Med. and Hygiene; Am. Coll. of Surgeons; Am. Coll. of Obstetricians and Gynecologists; Am. Med. Assn.; Phi Rho Sigma; Serra Soc.; Knights of Columbus; Diplomate, Am. Bd. of Obstetrics and Gynecol. and Natl. Bd. of Med. Examiners. Contbr. to: Jour. of the Puerto Rico Med. Assn.; Am. Jour. of Obstetrics and Gynecology; Armed Forces Seminar in Obstetrics and Gynecology; Western Jour. of Surgery; Obstetrics and Gynecology; Obstetrics and Gynecology. Serv. Rec.: Col., Med. Corps, U. S. Army, Bronze Star Medal, Army Commendation Medal; Certificate of Achievement in Obst. and Gyn., U. S. Army Surgeon General, 1962. Areas of Rsch.: Malariaology; Obstetrics and Gynecology.



JETTER, Lawrence Klosson (D.Sc.), Sr. Rsch. Metallurgist, Curtiss-Wright Corp., Rsch. Div, Quehanna, Pa. Home Add.: 105 Sycamore Lane, Pine Glen (Karthaus), Pa. PHYSICAL METALLURGY. b. Williamsport, Pa., Apr. 24, 1915. s. Max Willard Jetter and Helen Natalie (Johnson) Ramin. Edn.: B.S., Carnegie Inst. of Technol., 1936; M.S., ibid., 1937; D.Sc., ibid., 1939. m. Rhea Mae Wagner, Dec. 15, 1938. c.: Barbara Mae; Karen Eileen. Exp.: Rsch. Metallurgist, Aluminum Rsch. Labs., Aluminum Co. of Am., New Kensington, Pa., 1939-43; Staff Metallurgist, ibid., 1943-47; Prin. Metallurgist, Oak Ridge Natl. Lab., Union Carbide Nuclear Co., Oak Ridge, Tenn., 1947-60; Sr. Rsch. Metallurgist, Rsch. Div., Curtiss-Wright Corp., Quehanna, Pa., 1961—. Hon. Pos.: Chmn., Oak Ridge Chapt., Am. Soc. for Metals; Conferee (Metallurgical Rsch.), First World Metallurgical Conf. Mem.: Am. Soc. for Metals; Am. Inst. for Mining; Metallurgical and Petroleum Engrs.; A.A.A.S.; Am. Ordnance Assn.; Scientific Rsch. Soc. of Am.; Theta Xi; Theta Tau; Tau Beta Pi; Phi Kappa Phi; Sigma Xi, Author: Age Hardening of Metals, 1940; The Metal Thorium, 1958; Progress in Nuclear Energy—Metallurgy and Fuels, 1959. Contbr. to: Metal Progress; Trans. of the A.I.M.E.; Jour. of Applied Physics; Review of Scientific Instruments; Acta Crystallographica. Areas of Rsch.: Precipitation from Metallic Solid Solution; Preferred Orientation in Metals; Allotropic Transformations in Metals.

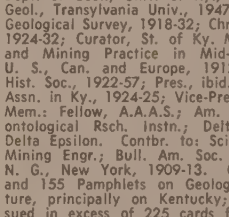
JEWETT, John Mark (Ph.D.), Sr. Geologist, Kans. Geol. Survey, Univ. of Kans., Lawrence, Kans. Home Add.: 529 Dhio St., Lawrence, Kans. STRATIGRAPHY AND ECONOMIC GEOLOGY, GROUND WATER GEOLOGY OF SEDIMENTARY ROCKS. b. De Soto, Kans., Feb. 11, 1896. s. Lorenzo M. and Laura (Roberman) J. Edn.: A.B., Univ. of Kans., 1921; M.A., ibid., 1930; Ph.D., ibid., 1943. m. Mavis Laizure, 1922. c.: Mrs. Martha J. Abbey; Mrs. Mary J. Kummer; Genevieve E.; Stephen L. Exp.: Curator, Univ. of Cincinnati, 1930-31; Instr., Univ. of Wichita, 1931-37; Geologist, St. Geol. Survey of Kans., 1937—; Assoc. Prof., ibid., 1958—. Hon. Pos.: Pres., Kans. Acad. of Sci.; Chmn., Rsch. Committee, Interst. Oil Compact Comm. Mem.: Sigma Xi; Geol. Soc. of Am., Fellow; Paleontological Soc., Fellow; Am. Assn. Petroleum Geologists; Am. Assn. Geol. Tchrs. Author: Coal Resources of the Douglas Group in Kansas, 1943; Oil and Gas in Eastern Kansas, 1945, 1949, 1954; Geologic Structures in Kansas, 1951. Contbr. to: Am. Assn. of Petrol. Geologists Bull.; Geol. Soc. of Am. Bull.; Mines Mag.; World Oil; Bull. of Interst. Oil Compact Comm.; Trans. Kans. Acad. of Sci.; Natl. Acad. of Sci., Natl. Rsch. Coun.; Petrol. Engr., Kans. Geol. Survey Bull. Serv. Rec.: U. S. Army, 1917-19, 1925-35. Areas of Rsch.: Pennsylvanian and Permian Stratigraphy; Petroleum Geol.; Coal Geology; Ground Water Geology.

JEZL, James Louis (Ph.D.), Mgr., Basic Rsch., AviSun Corp., Marcus Hook, Pa. Home Add.: 55 Dogwood Lane, Swarthmore, Pa. CHEMISTRY. b. Tobias, Neb., Dec. 12, 1918. s. John Frank and Anna (Laun) J. Edn.: A.B., Univ. of Neb., 1941; M.S., Pa. St. Univ., 1942; Ph.D., Univ. of Del., 1949. m. Elizabeth Bannister, July 31, 1943. c.: Barbara Ann; Patricia Jean. Exp.: Supvry. Chemist, U. S. Rubber Co., Marion, Ohio, 1942-43; Anal. Chemist, Sun Oil Co., Toledo, Ohio, 1943-47; Dev. Chemist, ibid., Marcus Hook, Pa., 1947-49; Rsch. Chemist, ibid., 1949-54; Rsch. Group Ldr., ibid., 1954-58; Sect. Chf., ibid., 1958-60; Mgr., Basic Rsch., AviSun Corp., Marcus Hook, Pa., 1960—. Mem.: Am. Chem. Soc.; Am. Inst. Chemists; A.A.A.S.; Catalysis Club of Philadelphia; Philadelphia Organic Chemists Club; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi; Theta Nu. Contbr. to: Anal. Chem.; Indusl. and Engrng. Chem.; Petroleum Processing; A.I.E.E. Jour. Gen. Int.: Over 50 Patents in Fields of Science Interest. Areas of Rsch.: Polymers; Polyolefins; Elastomers; Petrochemicals; Petroleum Processing.



JILLSON, Willard Rouse (Sc.D.), Consultant, Geologist and Mining Engr., 301 W. Third St., Frankfort, Ky. PALEOZOIC STRATIGRAPHY AND ECONOMIC GEOLOGY, OIL AND GAS, ASPHALT, COAL, LEAD, ZINC and FLUORSPAR MINING. b. Syracuse, N. Y., May 28, 1890. s. Willard Rogers and Anna Dell (Bailey) J. Edn.: B.S., Syracuse Univ., 1912; M.S., Univ. of Wash. (Seattle), 1915; Sc.D., Syracuse Univ., 1921; D.Sc., Berea Coll., 1925. m. Oriole Marie Gormley, Sept. 10, 1917. c.: Marie Jillson Sharp; Oriole Jillson Burlew; Willard Rogers, II; Ann Elizabeth Jillson Overstreet. Exp.: Geol. and Mining Pract., Lake Temiscaming Region, Ontario, Can., 1912; Instr., Geol., Univ. of Wash., Seattle, Wash., 1914-15; Grad. Fellow in Geol., Univ. of Chicago, 1915-16; Grad. Fellow, Yale Univ., 1916-17; Prof. of Geol., Hd., Dept. of Geol., Univ. of Ky., 1918-19; Prof. and Hd., Dept. of Geol., Transylvania Univ., 1947-52; St. Geologist and Dir. of Ky. Geological Survey, 1918-32; Chmn., Mem. of Ky. St. Park Commn., 1924-32; Curator, St. of Ky. Museum, 1924-32; General Geology and Mining Practice in Mid-Cont. and Appalachian Areas in U. S., Can. and Europe, 1912-62. Hon. Pos.: Vice-Pres., Ky. Hist. Soc., 1922-57; Pres., ibid., 1958-59; Vice-Pres., Yale Alumni Assn. in Ky., 1924-25; Vice-Pres., Ky. Soc. Profl. Engrs., 1935-36. Mem.: Fellow, A.A.A.S.; Am. Inst. of Min. Met. Engrs.; Paleontological Rsch. Instn.; Delta Kappa Epsilon; Sigma Xi; Pi Delta Epsilon. Contbr. to: Science; G.S.A. Bull.; Pan-Am. Geol.; Mining Engr.; Bull. Am. Soc. Pet. Geol. Serv. Rec.: 1st Cav., N. G., New York, 1909-13. Gen. Int.: Publications: 91 Books and 155 Pamphlets on Geology, History, Biography and Literature, principally on Kentucky; The Library of Congress has issued in excess of 225 cards for personal books and pamphlets. Areas of Rsch.: General Geology of Ohio Valley; Oil, Gas, Coal, Fluorspar, Lead and Zinc. Mining.

JIRGENSONS, Bruno, (Dr.), Biochemist, Prof., Univ. of Tex. Anderson Hosp. and Tumor Inst., Houston, Tex. Home Add.: 6022 Fordham, Houston 5, Tex. BIOCHEMISTRY, COLLOID CHEMISTRY, PROTEIN CHEMISTRY: ESPECIALLY THE OPTICAL ROTATORY DISPERSION OF PROTEINS IN RELATION TO MOLECULAR CONFIGURATION. b. Adazhi, Riga, Latvia, May 16, 1904. s. Fridrichs and Anna (Menca) J. Edn.: M.Chem., Univ. of Latvia, Riga, 1926; Dr. Chem., ibid., 1933; Dr. Chem. Habil., ibid., 1934. m. Anna Resnais, June, 1927. c.: George, Bruno; Andris (Andrew). Exp.: Instr., Asst. Prof., Univ. of Latvia, Riga, Latvia, 1928-40, 1941-44; Prof., Univ. of Latvia, 1940-41; I.C.I. Fellow, Univ. of Manchester, England, 1947-49; Prof., Tex. Lutheran Coll., Seguin, Tex., 1949-52; Biochemist, Prof., Univ. of Tex., Anderson Hosp. and Tumor Inst., Houston, Tex., 1952—. Hon. Pos.: Mem. of Editorial Bd. of Internatl. Die Makromolekulare Chemie. Mem.: Am. Chem. Soc.; A.A.A.S. Author: Organic Colloids, 1958; Natural Organic Macromolecules, 1962. Co-author: A Short Textbook of Colloid Chemistry, 1954. Contbr. to: Jour. of Polymer Sci.; Arch. of Biochem. and Biophysics; Cancer; Jour. Am. Chem. Soc. Gen. Int.: Co-founder, Clough-Lutz-Jirgensons rule, concerning the optical rotatory be-



havior of amino acids in relation to their configuration. Determined the rotatory dispersion constants of 45 proteins. Areas of Rsch.: The optical rotatory dispersion of proteins in relation to structure and configuration. Denaturation of Proteins. Studies on abnormal proteins in neoplastic diseases.

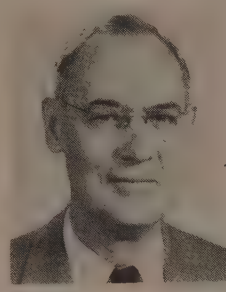
JOHANSEN, Erling (D.M.D.), Prof. of Dental Rsch., Chmn., Dept. of Dentistry and Dental Rsch., Schl. of Med. and Dentistry, Univ. of Rochester, 260 Crittenden Blvd., Rochester 20, N. Y. Home Add.: 169 Shelbourne Rd., Rochester, N. Y. ORAL PATHOLOGY, GRADUATE DENTAL EDUCATION. b. Overhalla, Norway, Apr. 8, 1923. s. Trygve and Jenny (Gansmo) J. Edn.: D.M.D., Tufts Coll. Dental Schl., 1949; Ph.D., Univ. of Rochester, 1955. m. Inger Marie Nordback, July 4, 1952. c.: Erling Trygve; Erik Bjarne; Steven. Exp.: Student Instr. in Oral Pathol., Tufts Coll. Dental Schl., 1948-49; Lctr. in Histol., Eastman Schl. of Dental Hygiene, 1952—; Eastman Fellow in Dental Rsch., Univ. of Rochester Schl. of Med. and Dentistry, 1950-52, 1953-54; Squibb Fellow in Dental Rsch., ibid., 1952-53; Sr. Fellow, ibid., 1954-55; Asst. Prof., Chmn., ibid., 1955-58; Assoc. Prof. and Chmn., ibid., 1958-61; Prof., Chmn., ibid., 1961—. Hon. Pos.: Counselor, Internatl. Assn. of Dental Rsch.; Special Consultant, Natl. Inst. of Dental Rsch.: Fellowship Rev. Panel, U.S.P.H.S. Mem.: A.A.A.S.; Fellow, N. Y. Soc. of Med. Rsch.; Am. Dental Assn.; Dental Soc. of Norway; Sigma Xi; Omicron Kappa Upsilon; Robert R. Andrews Honor Soc. of Tufts Dental Schl.; Am. Publ. Health Assn. Contbr. to: Jour. of Dental Rsch.; Jour. of Paristol.; Univ. of Rochester Alumni Mag.; Arch. of Oral Biol.; Jour. of Biophysical and Biochem. Cytology. Serv. Rec.: Norwegian Army, 1949-50. Areas of Rsch.: Dental Caries Rsch.; Electron Microscopy.

JOHANSON, Alva Joseph, (Ph.D.), Prof. of Chem., Weber Coll., Ogden, Utah. Home Add.: 2742 Van Buren Ave., Ogden, Utah. ORGANIC CHEMISTRY. b. Rexburg, Ida., May 10, 1903. s. Joseph A. and Anna (Blunck) J. Edn.: A.B., Brigham Young Univ., 1931; M.A., ibid., 1934; Ph.D., Univ. of Ill., 1938. m. Helen Bennion, June 10, 1936. c.: Carol; Joseph Bennion. Exp.: Asst. in Chem., Brigham Young Univ., 1931-34; Instr., ibid., 1934-36; Asst. Prof., ibid., 1938-44; Asst. in Chem., Univ. of Ill., 1937-38; Assoc. Chemist, Sou. Regional Rsch. Lab., U.S.D.A., New Orleans, La., 1944-47; Instr., Weber Coll., 1947-60; Assoc. Prof., ibid., 1960-62; Prof., ibid., 1962—. Mem.: A.C.S.; A.A.A.S.; Sigma Xi; Utah Acad. of Scis., Arts and Letters; Utah Edn. Assn. Contbr. to: Jour. of the A.C.S.; Proc. of the Utah Acad. of Scis., Arts and Letters. Areas of Rsch.: Sulfanilamide Derivatives; High Polymers, (Synthetic Rubber).

Industrial and Engrng. Chem.;

JOHLER, Joseph Ralph (Mr.), Physicist, Natl. Bureau of Standards, Boulder Lab., Boulder, Colo. Home Add.: 8295 W. 63rd Place, Arvada, Colo. RADIO WAVE PROPAGATION, THEORY AND PRACTICE. b. Scranton, Pa., Feb. 23, 1919. s. Joseph Jacob and Lillian Agnes (Dietzel) J. Edn.: B.S.E., George Wash. Univ., 1950; B.A., The Am. Univ., 1941. m. Nora Stella Callahan, Sept. 16, 1953. c.: Dennis Ralph; Mark Stephen; Paul Norman; Annette Diane. Exp.: Physicist, Chf., Appl. Electromagnetic Theory Section, Radio Systems Div., Natl. Bur. of Standards, Boulder Labs., Boulder, Colo., 1956—; Electronic Engr., Natl. Bur. of Standards, Cent. Radio Propagation Lab., Wash., D. C. 1946-56; Ballistic-Computer in Exterior Ballistics, Aberdeen Proving Ground, Ordnance Rsch. Center, Aberdeen, Md., 1942-46; Tchr. of Sci., Chem., Physics, Biol., Dir. of Athletics, Falls Church H. S., Fairfax Co. Schl., Fairfax, Va., 1941-42. Mem.: Inst. of Radio Engr.; Profl. Group on Antennas and Propagation; Profl. Group on Circuit Theory; Profl. Group on Milit. Electronics: International Scientific Radio Union; Am. Geophysical Union; A.A.A.S. Contbr. to: Proc. of the Inst. of Radio Engrs.; Inst. of Radio Engrs. Trans. on Antennas and Propagation; Jour. of Rsch. of the Natl. Bur. of Standards: Natl. Bur. of Standards Circular Series; Natl. Bur. of Standards Technical Note Series; Jour. Geophys. Rsch. Serv. Rec.: U.S.N. Areas of Rsch.: General Theory of Propagation of Pulses Through Dispersive Media and Circuits; Solution of Electromagnetic Wave Propagation Problems on Large Scale Electronic Computers; Theory of Propagation of Ground and Ionospheric Waves at Medium, Low, Very Low and Extra Low Radio Frequencies; Propagation of Radio Waves in Anisotropic Plasmas; Prediction of the Behaviour of Low Frequency Radio Navigation Systems.

JOHNS, Iral B. (Ph.D.), Sr. Scientist, Monsanto Chem. Co., Everett, Mass. Home Add.: Marblehead, Mass. PHYSICAL CHEMISTRY; CHEMICAL REACTIONS AT HIGH PRESSURE. b. Rossville, Ill., Oct. 24, 1901. s. Iral B., Sr. and Josephine (Kopt) J. Edn.: B.S., Knox Coll., 1924; Ph.D., Iowa St. Univ., 1930. m. Helen Farrankop, 1945. c.: Eleanor; Robert; Edward. Exp.: Asst. Prof., Iowa St. Univ., 1931-37; Assoc. Prof., ibid., 1937-41; Assoc. Dir., Ames Atomic Energy Project, 1941-43; Sect. Hd., Los Alamos Sci. Lab., 1944-45; Asst. Dir., Monsanto Chem. Co., Dayton, Ohio, 1945-54; Sr. Scientist, ibid., 1954—. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Am. Nuclear Soc.; A.A.A.S.; Phi Beta Kappa; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Indusl. and Engrng. Chem.; Anal. Chem.; Nucleonics; Rev. Sci. Instr. Areas of Rsch.: Physical Chemistry Radiochemistry; Microchemistry; Organic Compounds of Mercury; Chemical Reactions at Superpressure; Thermal Stability of Chemical Compounds; Nuclear Reactor Safety.



JOHNSON, Arnold Ivan (Mr.), Hydrologic Lab., U. S. Geological Survey, Ground Water Branch, Bldg. 25, Denver Federal Center, Denver, Colo. Home Add.: 4200 Ammons St., Wheat Ridge, Colo. HYDROLOGIC ENGINEER. b. Madison, Nebr., June 3, 1919. s. Casten Henery and Willa (Reeves) J. Edn.: B.S., Univ. of Nebr., 1949; A.B., ibid., 1950. m. Betty Spencer, June 3, 1941. c.: Robert Arnold; Bruce Gary; Carmen Sue. Exp.: Supvr. Testing Materials, Omaha Steel Works, Omaha, Nebr., 1940-44; Test Engr., Nebr. Hwy. Test Lab., Lincoln, Nebr., 1946-47; Chief, Hydrologic Lab., U. S. Geol. Survey, Denver Colo., 1948—. Hon. Pos.: Chmn., A.S.T.M. Com. on Nuclear Subsurface Methods; Chmn., A.S.T.M. Com. on Permeability and Capillarity Rsch. Mem.: Fellow, Am. Soc. Civil Engrs.; Am. Soc. for Testing Materials; Am. Soc. of Photogrammetry; Am. Soc. of Agronomy; Am. Geophys. Union; Internatl. Soc. of Soil Sci. Author: Infiltration Methods 1962; Measurement of Soil Moisture in Field, 1962; Specific Yield, Column Drain, and Cent. Moisture Equivalent, 1961; Specific Yield Annotated Bibliography, 1961. Contbr. to: Am. Soc. Testing Materials Tech. Jours. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: Award of Merit for Safety by the Dept. of Interior, 1962. Areas of Rsch.: Specific Yield, Permeability, Soil Moisture.

JOHNSON, Carl Harold (M.D.), Physician, 31 S. Washington St., Gettysburg, Pa. Home Add.: 52 E. Broadway, Gettysburg, Pa. INTERNAL MEDICINE, PATHOLOGY. b. Williamsport, Pa., Oct. 17, 1909. s. Charles Gustav and Anna Kristina (Lindgren) J. Edn.: B.S., Gettysburg Coll., 1931; M.D., Univ. of Pa. Med. Schl., 1935. m. Nancy McCurdy Keith, Oct. 30, 1936. c.: John Keith; Carl Harold, Jr.; Nancy Lindgren. Exp.: Intern, Philadelphia Gen. Hosp., Philadelphia, Pa., 1935-37; Resident Pathologist, ibid., 1937-38; Asst. Instr. in Pathol., Univ. of Pa., Med. Schl., Univ. of Pa. Post Grad. Med. Schl., 1937-38; Asst. Chf., Heart Clinic, Philadelphia Gen. Hosp., Philadelphia, 1937-38; Pathologist, Annie M. Warner Hosp., Gettysburg, Pa., 1938—; Chf. in Medicine, ibid., 1948—; Consultant in Cardiology and Pathol., Samuel G. Dixon St. Hosp., S. Mt., Pa., 1947—. Mem.: Adams Co. Med. Soc.; Pa. St. Med. Soc.; A.M.A.; Harrisburg Acad. of Med.; Am. Soc. of Clinical Pathologists, Fellow; Philadelphia Pathological Soc.; Am. Heart Assn.; Pa. Heart Assn.; Am. Coll. of Physicians, Fellow; Am. Coll. of Chest Physicians, Fellow; Pa. Pathological Soc.; Am. Assn. for the Adv. of Sci..; Assn. of Clinical Scientists; Am. Board of Internal Medicine, Diplomate; Phi Sigma Kappa; Phi Rho Sigma; Beta Beta Beta; Rotary Club. Contbr. to: Jour. of Insurance Medicine; Jour. of the A.M.A. General Int.: Serv. Award, Adams Co. Unit of Am. Cancer Soc., 1958. Areas of Rsch.: Private Practice, Internal Medicine and Pathol.

JOHNSON, Edward Carl, Dir. and Dean Emer. of Coll. of Agri., Washington State Univ., Pullman, Wash. Home Add.: 1501 Maple, Pullman, Wash. BOTANY AND PLANT PATHOLOGY. b. Apr. 18, 1880, Otisco, Minn. s. August and Josephine (Peterson) J. Edn.: B.A., Univ. of Minn., 1906; M.A., ibid. 1907. m. Ruth Daniels of W. Medway, Mass., June 28, 1911. d. Mr. and

Mrs. Leander S. Daniels. c.: Carola; Josephine Ruth; Margaret. Exp.: Student Asst. in Botany, 1905-06; Grad. Asst. in Bot., 1906-07, Univ. of Minn.; Asst. Plant Pathol., U. S. Dept. of Agri., 1907; Plant Pathol., U. S. Dept. of Agri. in Chg., of Cereal Disease Work, 1908-12; Supt. of insts. and Demonstrations, 1912-15; Dean of Div. of Coll. Ext., 1915-19; Kans. State Agril. Coll.; Dean of Coll. of Agril. and Dir., Agril. Expt. Sta., State Coll. of Wash., Pullman, Wash., 1919-46; Dean, Coll. of Agri., State Coll. of Wash., 1946-48; Dean Emer., Coll. of Agri. and Dir. Emer., Agril. Expt. Sta., 1949—; on leave, Chf. U. S. Agril. Mission to Colombia, S. Amer., 1947; Mem., Kans. State Coun. of Defense, 1917, 1918, and Chmn., Speakers Bur. of Coun. of Defense and of U. S. Food Admin. for Kans., 1917-18. Mem.: Fellow, A.A.A.S.; Northwest Sci. Assn.; Western Farm Econ. Assn.; Acad. of Polit. Sci.; Natl. Geog. Soc.; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi; Alpha Zeta; Gamma Sigma Delta. Author: Bull. and Papers. Travel: Russia; Poland; Germany; Scandinavian Countries; Switzerland; France; England; Colombia, S. Amer. and Central Amer. Hobbies: Fishing; Golf. Listed in: A.M.S.

JOHNSON, Clayton H(enry), Jr., (Ph.D.), Assoc. Prof. of Geol., Univ. of Mo., Columbia, Mo. Home Add.: 1010 S. Eastwood Circle, Columbia, Mo. IGNEOUS and METAMORPHIC PETROLOGY. b. Denver, Colo., Feb. 13, 1916. s. Clayton H. and Cora E. (McAfee) J. Edn.: A.B., Univ. of Mo., 1937; M.A., ibid., 1939; Ph.D., Cornell Univ., 1943. m. Louise Kuhn, Feb. 14, 1940. c.: Clayton H., III; George M. Exp.: Chief Writer, Ark. Mineral Survey, Little Rock, Ark., 1939-40; Mineral Microscopist, Am. Cyanimid Rsch. Lab., Stamford, Conn., 1943-45; Asst. Prof., Univ. of Mo., 1945-49; Assoc. Prof., ibid., 1949. Mem.: Geol. Soc. of Am.; Minerol. Soc. of Am.; Geochem. Soc. Author: Airphoto Analysis of Land Forms, Union of Burma, 1955. Contbr. to: Jour. of Geol.; Jour. of Sedimentary Petrology; Bull., Geol. Soc. of Am. Gen. Int.: Geologist, Burma Aerial Survey, Cornell Univ. Contract with U. S. State Dept., (FOA), 1954-55. Areas of Rsch.: Iron Ores; Regional Metamorphic Petrology; Igneous Metamorphism; Acid Volcanics; Underground Storage Facilities.

JOHNSON, Edward Elemuel (Ph.D.), Prof. and Hd., Psychol. Dept. Sou. Univ., Baton Rouge, La. Home Add.: P. O. Box 9884, Sou. Univ., Baton Rouge, La. PSYCHOLOGY. b. Jamaica, B.W.I., July 25, 1926. s. Rev. Edw. E. and Mrs. Mary E. (Blake) J. Edn.: B.S., Howard Univ., 1947; M.S., ibid., 1948; Ph.D., Univ. of Colo., 1952. m. Beverley J. Morris, Jan. 26, 1955. c.: Edward E.; Lawrence; Jeannine. Exp.: Research Psychol., Army Medical Research Lab., Fort Knox, Ky., 1953; Assoc. Prof., Grambling Coll., 1954-55; Assoc. Prof., Southern Univ., 1955-56; Prof., ibid., 1956—; Hd., Psychol. Dept., ibid., 1961—. Hon. Pos.: President-Elect, Sigma Xi Club of Sou. Univ. Mem.: Soc. of Sigma Xi; Am. Psychol. Assn.; Am. Assn. of Univ. Profs.; Pi Gamma Mu; Beta Beta Beta. Contbr. to: Jour. of Psychol.; Jour. of Comparative and Physiol. Psychol.; Jour. of Soc. Psychol. War Record: U. S. Army Med. Serv., Korean War. Areas of Rsch.: Motivation; Human Engineering.

JOHNSON, Francis Severin (Ph.D.), Hd., Atmospheric and Space Sci. Div., Prof. of Atmospheric and Space Sci., Grad. Rsch. Center of the Southwest, Box 8478, Dallas 5, Tex. Home Add.: 13619 Sprucewood, Dallas 30, Tex. UPPER ATMOSPHERE AND SPACE PHYSICS. b. Omak, Wash., July 20, 1918. s. Ralston Severin and Elizabeth (Gruenes) J. Edn.: B.S., Univ. of Alberta, 1940; M.A., Univ. of Calif. at Los Angeles, 1942; Ph.D., ibid., 1958. m. Maurine Marie Green, Sept. 12, 1943. c.: Sharan Kaye. Exp.: Hd., High Altitude Rsch. Sect., U. S. Naval Rsch. Lab., Washington, D. C., 1946-55; Mgr. of Space Physics Rsch., Lockheed Missiles and Space Co., Palo Alto, Calif., 1955-62; Div. Hd. and Prof., Grad. Rsch. Center of the Southwest, Dallas, Tex., 1962—. Mem.: Am. Geophysical Union; Am. Rocket Soc.; Am. Meteorological Soc.; Optical Soc. of Am.; Am. R.E.S.; A.A.A.S.; Sigma Pi Sigma; Chi Epsilon Pi; Sigma Xi. Author: Satellite Environment Handbook, 1961. Contbr. to: Jour. of Geophys. Rsch.; Jour. of Optical Soc. of Am.; Astrophys. Jour.; Phys. Rev.; Bull. Am. Meteorol. Soc. Serv. Rec.: U. S. Air Force, 1941-45. Areas of Rsch.: Ionospheric Physics, Atmospheric Physics, Meteorology, Space Phys., Solar Ultraviolet Spectroscopy, Rocket Instrumentation.

JOHNSON, Frederic Henry (Ph.D.), Rsch. Neurophysiologist, Med Scis. Rsch. Lab., Miles Laboratories, Inc., Elkhart, Ind. Home Add.: 518½ W. Franklin St., Elkhart, Ind. NEURO-ANATOMY, NEUROPHYSIOLOGY; PSYCHOBIOLOGY-SPECIALIZATION. b. Geneva, Ill., May 23, 1926. s. Leonard Walter, Sr. and Helena Elizabeth (Henry) J. Edn.: A.B., Cornell Univ., 1948; A.M., ibid., 1950; Ph.D., ibid., 1951. m. Divorced. c.: Gary Richard. Exp.: Rsch. Asst., Cornell Behavior Farm, 1950; Rsch. Asst., Naval Arctic Rsch. Lab., Point Barrow, 1948; Rsch. Asst., AMSGS Walter Reed, 1951-52; Guest Scientist, NMIR Bethesda Navy Rsch., 1951-52; Asst. Prof. of Anat., Univ. of Ore. Med. Coll., 1952-53; Instr. of Anat., Hahnemann Med. Coll., 1953-54; Rsch. Assoc., Neurophysiology Lab., Neuropsychiatric Inst., NPI, Univ. of Ill., 1957-58; Dir. of Neurophysiology Lab. Rsch. Inst., Univ. of Buffalo, 1959-60; Dir. of Neurophysiology Lab., ibid., 1960-61; Rsch. Neurophysiologist, M.S.R.L., Miles, 1961—. Mem.: Physiol. Soc. of Phila.; Am. Assn. of Anatomists; Am. Soc. Zool.; Am. Soc. Coll: Profs.; Phi Kappa Psi; Sigma Xi; Alpha Kappa Kappa; Cornell Statler Club. Contbr. to: Anatomical Record; Fed. Proc.; Am. Jour. of Physiol. Serv. Rec.: U.S.N.A.F., W. W. II. Areas of Rsch.: Neuroanatomy, the Structure of the Brain, Neurophysiology, and Psycho-biology, Reticular Formation, Auditory Hallucinations, Psychosis, Stereotype Behavior, Cause and Source EEG, Many obtained New Tracts in Brain. Cause of decebrate rigidity Functional Neuroanatomy.

JOHNSON, George Fiske (Ph.D.), Prof. of Agril. Extension, Pa. State Univ., 529 W. Nittany Ave., State College, Pa. COLOR PHOTOGRAPHY AND VISUAL EDUCATION. b. Minneapolis, Kans., May 8, 1898. s. Charles H. and Bertha (Fischer) J. Edn.: B.S., Ohio State Univ., 1919; M.S., Univ. of Wis., 1922; Ph.D., ibid., 1926. m. Inga Nelson, Nov. 29, 1924. c.: Celia Ann. Exp.: Special Staff Writer and Photographer, Ind. Farmers Guide, 1919-21; Dir., Bur. of Statistics and Information, Pa. Dept. of Agri., 1924-36; In Chg., Visual Edn., Pa. Agri. Extension Serv., Pa. State Univ., Univ. Park, Pa., 1936—. Hon. Pos.: Chmn., Color Div., Photographic Soc. of Am., 1950-52; Conventions Vice Pres., ibid., 1959—. Mem.: Am. Assn. Agri. Coll. Editors; Photographic Soc. Am.; Alpha Zeta; Gamma Sigma Delta; Epsilon Sigma Phi; Rotary; Torch. Contbr. to: Jour. Photographic Soc. Am.; Jour. Biol. Photographic Assn.; Audio-Visual Editor, County Agent and Vo-Ag. Teacher. War Record: Pvt., W. W. I. Special Int.: Color Photography; Visual Edn.; Illustrated Lecturing.

JOHNSON, Hal (Harold) G(ustav), (Ph.D.), Chem. Consultant, 116 South Ave., New Canaan, Conn. CHEMISTRY. b. Saginaw, Mich., April 30, 1915. s. Harold Hjalmar and Ruth W. (Broman) J. Edn.: B.S., Beloit Coll., 1936; M.S., ibid., 1938; Ph.D., Univ. of Wis., 1941. m. Elizabeth Schreiner, June, 1940. c.: Judith Lynn; David Schreiner; John Bradley. Exp.: Instr., Beloit Coll., 1935-38; Asst., Univ. of Wis., 1938-41; Organic Chem., Commercial Solvents Corp., Terre Haute, Ind., 1941-45; Asst. Gen. Mgr., Dykem Co., Mo., 1945-46; Mgr., Organic Intermediates, Pharmaceuticals, Organic Develop, Dept. Monsanto Chem. Corp., 1946-49; Asst. Dir. Gen. Div. Dept., ibid., 1949-52; Dir. Rsch and Div., Western Div., Calif., 1952-54; Develop. Dept. Rsch. and Engr. Div., 1954-57; Dir. Chem. and Rubber Div., BDSA, Dept. of Commerce, Wash., 1957; Vice-Pres., Vick Chem. Co., N. Y., 1957-59; Chem. Mgrm. Consultant, ibid., 1959-62; Vice-Pres., Mktng., Southwest Potash Corp. (Div. of Am. Metal Climax), 1962—; Dir., Tru-Scale Inc., Wichita, Kans., 1955-57; Chem. Consult., N. Y., N. Y., 1959—. Mem.: Am. Chem. Soc.; Soc. Chem. Industry; Am. Inst. Chem. Engr.; Am. Inst. Chem.; A.A.A.S.; Sigma Xi; Sigma Alpha Epsilon; Gamma Alpha; Chemists. Areas of Rsch.: Technical and economic research for industry and govt.; Management surveys, research and development administration, new product development.

JOHNSON, John Christopher (Ph.D.), The Rocky Mtn. Biological Lab., Crested Butte, Colo. Home Add.: 1495 So. Clayton St., Denver, Colo. ZOOLOGY. b. Sterling, Colo., Feb. 25, 1891. s. John and Anna Helena (Berg) J. Edn.: A.B., 1911, Colo. State Coll. of Edn.; M.S., 1915, Univ. of Calif.; Ph.D., 1919, Univ. of Calif.; Postgrad. Study, Columbia Univ., Chicago Univ., Harvard Univ. m. (1) Vera Adams (dec.) of Gunnison, Colo., July 23, 1915. (2) Mildred Fischer of West Chester, Pa., June 2, 1934. c.: Clarence and Lawrence, twins; John C., Jr.; Clea Marie. Exp.: Instr., Biol. and Agri. at Colo. State Normal Schl., 1911-14; Asst. in Zool., Univ. of Calif., 1914-15; Assoc. Prof. of Biol., Colo. State Coll., 1915-18; Fellow in Zoology, Univ. of Calif., 1918-19; Dean of Coll., Hd. of Biol. Dept., Western State Coll. of Colo., 1919-28; Vice-Pres., W. State Coll. of Colo., 1927-28; Dir. of the Rocky Mtn. Biological Lab., 1928-58; Pres., ibid., 1958-62; Pres., Dept. of Sci. Instr., N.E.A., 1920-21; Pres., Pa. Acad. of Sci., 1933-34; Chmn., Sci. Certification Comm. of Pa. Acad. of Sci., 1934-49; Pres., Assn. of Edn. of Tchrs. in Sci., 1933-35; Hd., Sci. Dept. and Prof. of Biol., S.T.C., W. Chester, Pa., 1928-38; Zool. Dept., Univ. of Pa., 1938-40; Prof. of Biol.

and Chmn., Sci. Div., Pa. St. Coll., Edinboro, 1940-59. Author: Educational Biology, 1930; Several Parasitology Rsch. Papers. Mem.: Masons; Phi Delta Kappa; Sigma Xi; Pa. Acad. of Sci.; Am. Assn. for Adv. of Sci.; Am. Soc. of Parasitologists; Colo.-Wyo. Acad. of Sci.; Phi Delta Kappa; Kappa Delta Pi; Beta Beta Beta. Ph.D. Dissertation: The Life Cycle of Echinostoma Revoltum. Listed in: A.M.S. Epecial Int.: Parasitic Flatworms in Vertebrates.

JOHNSON, Hamilton McKee (Ph.D.), Head, Dept. of Geol.; Prof. of Geol. and Geophysics, Tulane Univ., New Orleans, La. Home Add.: 4450 Painters St., New Orleans 22, La. EXPLORATION GEOPHYSICS AND FORMATION EVALUATION FOR PETROLEUM. b. Orlando, Fla., June 7, 1915. s. Wiley Hamilton and Elizabeth Sylvester (Carey) J. Edn.: B.S., La. State Univ., 1935; M.S., ibid., 1936; Ph.D., Univ. of Okla., 1954. m. Martha Ella Stockett, Nov. 19, 1937. c.: Martha Elizabeth J. Ragni; Cynthia Cora Cary J. Exp.: Engr., Schlumberger Well Surv. Corp., U.S.A. and Venezuela, 1937-47; Division Manager, Seismograph Service Corporation, Venezuela, 1947-50; Instr., Univ. of Okla., 1952-54; Dist. Geologist, Tex. Petr. Co., Venezuela, 1954-56; Logging Coordinator, Creole Petr. Co., ibid., 1956-58; Prof. of Geol. and Geophysics, Tulane Univ., 1958—; Logging Rsch. Consultant, Jersey Production Rsch. Co., Tulsa, Okla., 1958—; Head, Dept. of Geol., Tulane Univ., 1962—. Hon. Pos.: Chmn., La. Finance Comm., Thirteenth Gen. Assembly, I.U.G.G.; Pres., Southeastern Geophys. Soc., 1962-63; Editor, Soc. of Prof. Well Log Analysts, 1962-63. Mem.: Am. Assn. Petr. Geologists; Geol. Soc. Am.; Am. Geophysical Union; Soc. Explor. Geophysicists; Seismo. Soc. Am.; A.A.A.S.; European Assn. Petr. Geophysicists; Soc. Prof. Well Log Analysts; Soc. Petr. Engrs. of A.I.M.E.; Southeastern Geophys. Soc.; Sigma Gamma Epsilon; Sigma Pi Sigma; Sigma Xi; Phi Sigma; Lambda Chi Alpha; New Orleans Bd. Youth for Christ. Author: Log Analysis and Formation Evaluation, 1958. Contbr. to: World Oil; The Oil and Gas Jour.; Petroleo Interamericano; Geophysics; Jersey Exploration Newsletter; Creole Exploration Newsletter; Proc. S.P.W.L.A.; Proc. Natl. Landmen's Inst. Areas of Rsch.: Well Logging and Formation Evaluation; Exploration Seismology.

JOHNSON, John Threadgould (Ph.D.), Retired Author, 694 West 11th St., Claremont, Calif. MATHEMATICS. b. Sweden, June 24, 1881. s. Adam and Clara (Peters) J. Edn.: B.A., Valparaiso Univ., 1910; A.B., Ind. Univ., 1911; M.A., Univ. of Wis., 1913; Ph.D., Tchrs. Coll., Columbia Univ., 1938. m. Elsie Parker, July 18, 1921. Exp.: Hd. of Dept. of Math., Francis Parker Private Schl., Chicago, Ill., 1918-23; Hd. of Dept. of Math., Chicago Tchrs. Coll., 1926-46; Instr., North Park Jr. Coll., 1946-48; Instr., Northwestern Univ., 1948-50; Instr., Univ. of Calif., 1955-58; Retired Author, Claremont, Calif., 1959—. Hon. Pos.: Hon. Pres., Metric Assn.; Founder of Chicago Elem. Tchrs. Math. Club. Mem.: Interchange Fellow, A.A.A.S.; Natl. Council of Tchrs. of Math.; Life Mem., N.E.A.; Am. Assn. for the United Nations; Phi Delta Kappa; D.E.C.A. Author: The Relative Merits of Three Methods of Subtraction, 1938; Differentiated Subject Matter in Arithmetic, 12 booklets, 1939; The Metric System of Weights and Measures, 1948; The D.S.M. Arithmetics, 1963. Contbr. to: Jour. of Edn. Rsch.; Schl. Sci. and Math.; The Math. Tchr.; Tenth Year Book of the Natl. Coun. of Tchrs. of Math.; Am. Edn. Rsch. Jour.; Modern Machine Shop; Estadistica; The Arithmetic Tchr.; Scale Jour. Areas of Rsch.: Analyzing the Field of Arith. into its 60 Odd Skills and Arranging them in Order of Difficulty for Teaching.

JOHNSON, Laverne Clarence (Ph.D.), Hd., Psychophysiol. Br., U. S. Navy Med. Neuropsychiatric Rsch. Unit, San Diego 52, Calif. Home Add.: 8409 Abbotshill Rd., San Diego 11, Calif. PSYCHOLOGY (CLINICAL, PSYCHOPHYSIOLOGY). b. Blue Springs, Ala., Jan. 7, 1925. s. William C. and Carrie (Shehane) J. Edn.: A.B., Stanford Univ., 1949; M.A., ibid., 1952; Ph.D., ibid., 1954. m. Margaret Woollen, June 28, 1952. c.: Susan; Carol; David. Exp.: Instr., Med. Psychol., Washington Univ. Schl. of Med., 1954-58; Dir., Psychol. Serv., Malcolm Bliss Ment. Hlth. Ctr., St. Louis, Mo., 1957-60; Asst. Prof., Med. Psychol., Washington Univ. Med. Schl., 1958-60; Hd., Psychophysiol. Br., U. S. Navy Med. Neuropsychiatric Rsch. Unit, San Diego, Calif., 1960—; Lectr. in Psychol., San Diego State Coll., 1961—. Mem.: Am. EEG Assn.; Am. Psychol. Assn.; Soc. of Psycholphysiol. Rsch.; Western Psychol. Assn.; Western EEG Soc.; Sigma Xi. Contbr. to: Jour. Consult. Psychol.; EEG Clin. Neurophysiol.; Jour. Nerv. Ment. Dis.; Jour. Comp. Physiol. Psychol.; Jour. Neuropsychiat. Serv. Rec.: USAF, 1943-46. Gen. Int.: Diplomate in Clin. Psychol. awarded by the Am. Bd. of Examiners in Prof. Psychology, 1960. Areas of Rsch.: EEG, Psychophysiology concerned with cortical and autonomic correlates of behavior.

JOHNSON, Le Roy Crawford (Mr.), Captain, Meteorologist, U. S. Air Force, New Jersey. Home Add.: 534 Chestnut Ave., Bridgeton, N. J. METEOROLOGY. b. Bridgeton, N. J., Nov. 20, 1929. s. George W. and Fannie (Crawford) J. Edn.: B.S., Trenton St. Tchrs. Coll., 1952. m. Juanita Cowsert, Feb. 12, 1956. c.: Kathleen J.; Sylvia G. Exp.: Meteorologist, U. S. Air Force, New Jersey, 1952—. Mem.: Am. Meteorological Soc.; Am. Geophysical Union; Kappa Delta Pi.

JOHNSON, Leroy Dennis (Ph.D.), Dean of Coll., Lincoln Univ., Lincoln Univ., Pa. CHEMISTRY. b. Langhorne, Pa., Oct. 4, 1908. s. Thomas P. and Gertrude (Dunson) J. Edn.: B.A., Lincoln Univ., 1931; M.S., Univ. of Pa., 1934; Ph.D., ibid., 1954. m. Goldye Kent, Dec. 21, 1940. c.: Jacquelyn Ann; Leroy Kent. Exp.: Prof. of Chem., Storer Coll., 1934-55; Dean, ibid., 1940-55; Dean, Lincoln Univ., 1956—. Hon. Pos.: Chmn. of Edn., M. W. Prince Hall Grand Lodge of Masons; Bd. of Dirs., Red Cross. Mem.: A.C.S.; Sigma Xi; Phi Lambda Upsilon; A.A.A.S.; Philadelphia Organic Chemists Club; Pa. Acad. of Sci.; W. Va. Acad. of Sci.; Omega Psi Phi; Beta Kappa Chi. Contbr. to: Jour. of Chem. Edn.; Beta Kappa Chi Jour.; Analytical Chem.; Chem. Abstracts. Areas of Rsch.: Analytical and Organic Chem.; Chem. Edn.

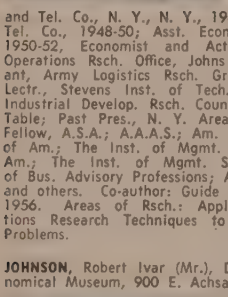
JOHNSON, Lorand V. (M.D.), Clin. Prof. of Ophthalmology, Western Reserve Schl. of Med. and Univ. Hosp. of Cleveland, 10515 Carnegie Ave., Cleveland 6, Ohio. Home Add.: 17600 Parkland Dr., Shaker Heights 20, Ohio. OPHTHALMOLOGY. b. Blockton, Ia., May 28, 1905. s. Silas W. and Julia Ann (Peters) J. Edn.: B.S., Huron Coll., 1926; M.A., Boston Univ., 1930; M.D., ibid., Schl. of Med., 1934. 1st m. Dorothy Strom. c.: Carolyn Jane; Madelyn Mayhew; Lorand Victor, Jr. 2nd m. Martha Jane Musselman, Feb., 1962. Exp.: Clin. Prof., Western Reserve Univ. Schl. of Med., Cleveland, Ohio, 1950—. Hon. Pos.: Secy-Treas., Assn. for Rsch. in Ophthalmol.; Trustee, East Central Sec., Assn. for Rsch. in Ophthalmology; Certif. of Award, Am. Acad. of Ophthalmol.; Assoc. Editor, Blakiston's New Gould Medical Dict. Mem.: Am. Ophthalmol. Soc.; Am. Acad. of Ophthalmol. and Otolaryngol.; Pan American Assn. of Ophthalmol.; Assn. for Rsch. in Ophthalmol.; A.A.U.P.; A.A.A.S.; Am. Coll. of Surgeons; Sigma Xi. Contbr. to: Am. Jour. of Ophthalmol.; Arch. of Ophthalmol.; Ohio State Med. Jour.

JOHNSON, Robert Bethune, (Ph.D.), Lctr. in Geography, Univ. of Calif., Santa Barabara, Calif. Home Add.: 4873 La Gama Way, Santa Barbara, Calif. GEOGRAPHY AND OPERATIONS ANALYSIS. b. St. Louis, Mo., Dec. 4, 1920. s. J. Forbes and Ora (Bethune) J. Edn.: B.A., Wash. Univ., 1942; M.A., Harvard Univ., 1948; Ph.D., ibid., 1960. m. June Main, Nov. 7, 1942. c.: Kathryn Forbes; Leslie Main. Exp.: Instr. in Geol., Wash. Univ., 1946; Tchng. Fellow, Dept. of Geol. and Geography, Harvard Univ., 1947-49; Rsch. Geographer, Boston Globe Retail Mkt. Survey, Boston, Mass., 1949; Asst. Prof., St. Lawrence Univ., 1949-51; Lctr. in Geography, Coll. of Gen. Studies, Univ. of Hawaii, 1957-59; Chf. Analyst, Operations Analysis Office, Hq., Pacific A. F., 1953-59; Acting Mgr., Advanced Planning Group, ITEK Corp., Waltham 54, Mass., 1959; Mgr., Milit. Operations Team, Evaluation Unit, Tech. Military Planning Operation, Gen. Elec. Co., Santa Barbara, Calif., 1959-60; Mem., Program Operation, ibid., 1961; Consultant, Stanford Rsch. Inst., Menlo Park, Calif., 1961—; Consultant to Gen. Elec. Co., Santa Barbara, Calif., 1961—; Lctr. in Geography, Univ. of Calif., Santa Barbara, Calif., 1961—. Mem.: A.A.A.S.; Assn. of Am. Geographers; Regional Sci. Assn.; Operations Rsch. of Am.; Pacific Coast Geographers; The Am. Acad. of Polit. and Social Sci.; Inst. of Aerospace Scis.; Sigma Xi; Sigma Nu; Citizen's Planning Assn. of Santa Barbara, Calif. Contbr. to: Annals of A.A.G.; Econ. Geography; Milit. Rev. Serv. Rec.: U.S.A.A.F., W. W. II, Korean War. Areas of Rsch.: Political, Economic and Military Geography; Military Operations Rsch.: Planning Rsch.

JOHNSON, Patricia Robbins (Mrs.), Rsch. Asst., Bur. of Biological Rsch., Rutgers, The St. Univ., New Brunswick, N. J. Home Add.: 1 Cherry Lane, Basking Ridge, N. J. PHYSIOLOGY AND BIOCHEMISTRY. b. Waco, Tex., Feb. 28, 1931. d. Thomas R. and Myrtle (Brooks) Robbins. Edn.: A.B., Baylor Univ., 1952; M.A., ibid., 1958. m. Joe W. Johnson, Dec. 19, 1952. c.: Katherine Leigh; Jeri Anne. Exp.: Health Physicist, Dow Chemical Co., Rocky Flats, Colo., 1952-53; Sci. Tchr., Sr. H. S., Marshall, Tex., 1956-60; Biol. & Chem. Instr., Malone Coll., 1960-61; Rsch. Asst., Bur. of Biological Rsch., Rutgers, The St. Univ., 1961—. Hon. Pos.: Pres., Marshall, Tex. Branch, A.A.U.W. Mem.: A.A.A.S.; Am. Mus. Nat. Hist.; N.A.B.T.; Beta Beta Beta; Alpha Chi; Alpha Epsilon Delta; Marshall, Tex. C. of C. Areas of Rsch.: Nutritional Metabolism, Chiefly Lipids.

JOHNSON, Robert Edward (Mr.), Economist and Actuary, Western Elec. Co., Inc., 222 Broadway, N. Y. 38, N. Y. Home Add.: 6 Skytop Terrace, Upper Montclair, N. J. ECONOMICS; STATISTICS AND OPERATIONS RESEARCH APPLIED TO THE FIRM, THE MUNICIPALITY AND THE MILITARY. b. Monson, Mass., Mar. 28, 1905. s. Ernest L. and Ida Mae (Whitcomb) J. Edn.: B.A., Clark Univ., 1928; M.B.A., N. Y. Univ., 1932. m. Edith McGowan, June 16, 1928. c.: Robert Edward, Jr.; Roger Hutchinson. Exp.: Statistician, N. Y. Tel. Co., 1928-40; Chf., Raw Materials Sect., U. S. Dept. of Navy, 1940-41; Chf., Raw Materials Div., War Production Bd., 1941-44; Dir., Milit. Div.; Asst. Dir., Program Bur., ibid., 1944-45; Dir., Office Rev. and Analysis, Civilian Prod. Admin., Wash., D.C., 1945-46; Statistician, Amer. Tel. and Tel. Co., N. Y., N. Y., 1946-48; Chf. Stat., New Jersey Bell Tel. Co., 1948-50; Asst. Economist, Western Elec. Co., N. Y., 1950-52, Economist and Actuary, ibid., 1952—; Consultant,, Operations Rsch. Office, Johns Hopkins Univ., 1950-54; Consultant, Army Logistics Rsch. Group, Geo. Wash. Univ., 1955-58; Lectr., Stevens Inst. of Tech., 1950-58. Hon. Pos.: Director, Industrial Develop. Rsch. Council; Chmn., Economic Rsch. Round Table; Past Pres., N. Y. Area Chapt., Am. Stat. Assn. Mem.: Fellow, A.S.A.; A.A.A.S.; Am. Econ. Assn.; Operations Rsch. Soc. of Am.; The Inst. of Mgmt. Scis.; Am. Inst. of Mgmt.; Soc. Am.; The Inst. of Mgmt. Scis.; Am. Inst. of Mgmt.; Soc. of Bus. Advisory Professions; Am. Acad. of Polit. and Soc. Scis., and others. Co-author: Guide to Elementary Statistical Formulas, 1956. Areas of Rsch.: Application of Statistical and Operations Research Techniques to Business, Community and Milit. Problems.

JOHNSON, Robert Ivar (Mr.), Dir., Adler Planetarium and Astronomical Museum, 900 E. Achsah Bond Dr., Chicago 5, Ill. Home Add.: 247 E. Chestnut St., Chicago 11, Ill. ASTROPHYSICS, SCIENTIFIC ADMINISTRATION, ASTRONOMICAL EDUCATION. b. Chicago, Ill., Aug. 18, 1933. s. Ivar Carl and Anna Elina (Wirkula) J. Edn.: A.B., Northwestern Univ., 1957. m. Patricia A. Horgan, June 30, 1962. Exp.: Technician, Adler Planetarium and Astronomical Museum, Chicago, Ill., 1953-55; Rsch. Asst., Northwestern Univ., Evanston, Ill., 1953-54, 1957; Tchng. Fellow, Spectrographic Observer, Univ. of Mich., 1958-59; Lectr., Ind. Univ., 1960—; Lectr., Chicago Tchrs. Coll., 1960—; Asst., Acting Dir., Adler Planetarium and Astronomical Museum, Chicago 5, Ill., 1959-60; Dir., ibid., 1960—. Hon. Pos.: Board of Directors and Membership Chmn., Chicago Physics Club; Bd. of Trustees, Chicago Planetarium Soc.; Bd. Directors, Chicago Astron. Soc.; Mu Beta Phi; Adult Edn. Coun. of Greater Chicago; Speakers Bureau; Exec. Comm. of the Sci. Assembly; Chmn., Museum Roundtable; Advisory Comm., Natural Scis., Lake Forest Coll.; Exec. Club of Chicago Youth Comm. Mem.: Am. Astronomical Soc.; A.A.A.S.; Am. Assn. of Museums; 1962 Chmn., Planetarium Sect., Midwest Museums Conference; Exec. Club of Chicago; Chicago Assn. of Commerce and Industry Edn. Comm. Author: Astronomy—Our Solar System and Beyond, 1961. Contbr. to: Annals of the Dearborn Observatory; Astronomical Jour.; Sky and Telescope; Issues and Events; Compton's Encyclopedia; World Topics Yrbk.; Space Frontiers. Service Record: U. S. Army, 1955-56. Gen. Int.: Awarded Certificate for Service to Outstanding Youth of Gary, Ind. Publ. Schls., 1960; Elected one of Chicago's Ten Outstanding Young Men by Chicago Jr. C. of C. and Industry, 1961. Areas of Rsch.: Multiple Star Systems; Spectrophotometry of Novae and Gaseous Nebulae; Stellar Atmospheres.



JOHNSON, Ross Byron (Mr.), Geologist, U. S. Geological Survey, Denver 25, Colo. Home Add.: 240 Quay St., Lakewood 26, Colo. GEOLOGY. b. Ladd, Ill., June 4, 1919. s. Ray R. and Katherine E. (Wolfe) J. Edn.: B.S., Univ. of N. Mex., 1946; M.S., ibid., 1948. m. Mary L. Wallenhorst, 1942. Exp.: Geologist, U. S. Geological Survey, Albuquerque, N. Mex., 1948-58; Geologist, ibid., Denver, Colo., 1958—. Mem.: Geol. Soc. Am.; A.A.A.S.; Am. Assn. Petrol. Geologists; Sigma Xi. Contbr. to: Am. Assn. of Petrol. Geol. Bull.; Geol. Soc. of Am. Bull.; Geol. Survey Publications. Serv. Rec.: U.S.A., 1941-45; U.S.A.R., 1946-61. Areas of Rsch.: Structural geology, stratigraphy, geology of organic fuels, engineering geology.

JOHNSON, Thomas Herbert (M.D.), Surgeon, Genito-urinary, 111 E. 71st St., New York 21, N. Y. Home Add.: 140 Cabrini Blvd., New York, N. Y. MEDICINE; UROLOGY. b. New York, N. Y., May 10, 1920. s. Herbert R. and Beatrice (Munn) J. Edn.: A.B., Columbia Coll., 1941; M.D., Columbia Univ. Schl. of Med., 1944. Exp.: Intern, Lenox Hill Hosp., New York, 1944-45; Resident, Metropolitan Hosp., N. Y., 1948-50; Basic Sci. Course, N. Y. Med. Coll., 1947-48. Mem.: Am. Med. Assn.; Am. Urological Assn.; Am. Geriatrics Assn.; Am. Therapeutic Soc.; Am. Coll. Surgeons; Diplomate, Am. Bd. Urology; N. Y. Section, Am. Urological Assn. Contbr. to: Internatl. Coll. Surgeons; Jour. Urology; Jour. Geriatrics; N. Y. State Jour. of Med. Serv. Rec.: Capt., M.C.A.U.S., 1945-47. Areas of Rsch.: Radiation Surgery with Precision Controls, International College Surgeons.

JOHNSON, Warren C. (Ph.D.), Vice-Pres. and Prof. of Chem., Univ. of Chicago, Chicago 37, Ill. Home Add.: 5822 Blackstone Ave., Chicago 37, Ill. CHEMISTRY, INORGANIC AND ANALYTICAL. b. Otter Lake, Mich., Sept. 22, 1901. s. Grant W. and Elizabeth (Osborne) J. Edn.: B.S., Kalamazoo Coll., 1922; M.A., Clark Univ., 1923; Ph.D., Brown Univ., 1925. Hon. Deg.: D.Sc., Kalamazoo Coll., 1946. m. Florence Campbell, June 27, 1928 c.: Barbara Ann; Margaret L.; Mary Elizabeth. Exp.: Rsch. Instr., Brown Univ., 1925-27; Instr., Univ. of Chicago, 1927-28; Asst. Prof. to Full Prof., ibid., 1928-42; Prof., ibid., 1943—; Chmn., Dept. of Chem., ibid., 1945-55; Dean, Div. of Physical Scis., ibid., 1955-58; Vice-Pres., ibid., 1958—. Hon. Pos.: Chmn., Gen. Advisory Comm. to U. S. Atomic Energy Comm., 1956-60. Mem.: Amer. Chem. Soc.; A.A.A.S.; Amer. Nuclear Soc. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Chem. Edn. Areas of Rsch.: Inorganic Chemistry; Rare Elements; Liquid Ammonia Solutions.

JOHNSTON, Betty Jane (Ph.D.), Prof., Chmn., Dept. of Home and Family, Sou. Ill. Univ., Carbondale, Ill. Home Add.: 1225 W. Freeman Ave., Carbondale, Ill. FAMILY ECONOMICS, HOME MANAGEMENT. b. Battle Creek, Mich., Nov. 2, 1919. d. Waldo B. and Nellie (Cutler) J. Edn.: B.S., Western Mich. Univ., 1941; M.S., Purdue Univ., 1949; Ph.D., ibid., 1958. Exp.: Asst. Prof., Univ. of Conn., 1949-54; Assoc. Prof., Drexel Inst. of Technol., 1955-57; Prof., Sou. Ill. Univ., 1957—; Chmn., Family Econs.-Home Mgmt. Sect., Am. Home Econs. Assn. Mem.: Ill. Home Econs. Assn.; Electrical Women's Round Table; A.A.U.W.; Natl. Coun. on Family Relations; Omicron Nu; Kappa Delta Pi. Contbr. to: Jour. of Home Econs.; Jour. of Clin. Nutrition; Forecast for Home Economists. Gen. Int.: Omicron Nu Natl. Fellowship, 1954. Areas of Rsch.: Work Habits of Homemakers and Equipment Use, Work Simplification and Its Application to Handicapped Homemakers, Consumer Econs.

JOHNSON, Willis Hugh, (Ph.D.), Chmn., Dept. of Biol., Wabash Coll., Crawfordsville, Ind. Home Add.: 1003 S. Grant Ave., Crawfordsville, Ind. BIOLOGY: PROTOZOA AND INVERTEBRATE ZOOLOGY. b. Parkersburg, Ind., Dec. 21, 1902. s. William C. and Cyrena (Harvey) J. Edn.: A.B., Wabash Coll., 1925, M.S., Univ. of Chicago, 1929; Ph.D., ibid., 1932. m. Elizabeth Schma, 1929. c.: Genevieve Johnson Binford; John David. Exp.: Instr. and Asst. Prof., Zool., Wabash Coll., 1925-35; Assoc. Prof. and Prof., Biol., Stanford Univ., Palo Alto, Calif., 1935-46; Prof. and Chmn., Biol., Wabash Coll., 1946—. Hon. Pos.: Chmn., Biol. Com., Advanced Placement Program, 1953-61; Chmn., NRC Conf. on Undergrad. Curricula in Biology, 1957; Chmn., Standards Com., AIBS, 1962. Mem.: Soc. of Zool.; Soc. of Natr.; Soc. of Protozool.; N. Y. Acad. of Sci., Fellow; A.A.A.S., Fellow; Ind. Acad. Sci., Fellow; Phi Beta Kappa; Sigma

Xi; Lambda Chi Alpha; Ouiatenon Club. Author: General Biology, 1961; Lab Manual for General Biology, 1961. Co-Editor: This s Life, 1962. Contbr. to: Physiol. Zool.; Biol. Bull.; Archiv. Protistenkde; Am. Nat.; Trans. Am. Micros. Soc.; Quart. Rev. Biol.; Science; Ecology; Ann. N. Y. Acad. Sci.; Archiv. Biochem.; Ann. Rev. Microbiol.; Proc. Ind. Acad. Sci.; Am. Biol. Tchr.; Jour. Protozool.; Anat. Rec. Areas of Rsch.: Nutrition of Protooans; Tissue Culture of Planarian Cells.

JOHNSTON, Charles Louis, Jr. (M.D.), Asst. Prof. of Physiol., Univ. of N. C., Chapel Hill, N. C. Home Add.: 309 Clayton Rd., Chapel Hill, N. C. PHYSIOLOGY, INTERNAL MEDICINE, HEMATOLOGY. b. Danville, Pa., Nov. 4, 1923. s. Charles L. and Lillian (Kerns) J. Edn.: A.B., Univ. of N. C., 1947; M.S., ibid., 1949; M.D., Univ. of Pa., 1953. m. Marjorie Hohenstein, Dec. 22, 1951. c.: John Clinton; Sarah A.; Bruce F.; C. Leif. Exp.: Interne, Phila. Gen. Hosp., Phila., Pa., 1953-54; Res. and Fellow, Hosp. of Univ. of Pa., ibid., 1954-56; Rsch. Assoc., Univ. of N. C., Chapel Hill, N. C., 1956-59; Fulbright Fellow, Univ. of Oslo, Oslo, Norway, 1959-60; Asst. Prof., Univ. of N. C., 1960—. Mem.: Am. Physiol. Soc.; Soc. for Exptl. Biol. and Med.; N. C. Med. Soc.; Sigma Chi; Sigma Xi; B.P.O.E.; Masons. Contbr. to: Jour. of Clin. Invest.; Blood; Thrombosis et Diathesis Haemorrhagica; Proc. Soc. for Exptl. Biol. and Med.; Jour. of Lab. and Clin. Med. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Rsch. Career Devel. Award, U. S. Pub. Hlth. Serv., 1960. Areas of Rsch.: Blood Coagulation Mechanisms; Surface Phenomena; Biologically Active Polypeptides.

JOHNSTON, Dorothy Mae, Rsch. Engr., Boeing Co., Seattle, Wash. Home Add.: c/o H. H. Johnston, Rt. 3, Prairie Grove, Ark. PSYCHOLOGY. b. Mutual, Okla., Feb. 22, 1924. d. Harry H. and Lena Bell (Barnes) J. Edn.: B.S., Univ. of Ark., 1949; M.A., Univ. of Denver, 1952. Exp.: Counselor, Univ. of Colo. Schl. of Nursing, Denver, Colo., 1950-52; Counselor, Fla. State Univ., Tallahassee, Fla., 1953-55; Assoc. Engr., Douglas Aircraft Co., Tulsa, Okla., 1956-57; Rsch. Engr., North American Aviation, Columbus, Ohio, 1957-60; Human Factors Analyst, Boeing Co., Wichita, Kans., 1960-61; Sr. Engr., Martin Co., Orlando, Fla., 1961-62; Rsch. Engr., Boeing Co., 1962—. Mem.: A.A.A.S.; Human Factors Soc.; Inst. of Radio Engrs. Areas of Rsch.: Human Factors; Vision, Radar Displays.

JOHNSTON, Francis Edgar (Ph.D.), Prof. of Math., The Geo. Wash. Univ., Washington 6, D. C. Home Add.: 307 W. Montgomery Ave., Rockville, Md. MATHEMATICS, THE THEORY OF FINITE GROUPS. b. Alexandria, Va., Apr. 24, 1897. s. James Edgar and Frankie (Fleming) J. Edn.: A.B., The Geo. Wash. Univ., 1921; A.M., The Univ. of Ill., 1923; Ph.D., ibid., 1926. m. Margaret Sage Hildreth, Aug. 8, 1950. Exp.: Instr., Univ. of Ill., 1926-28; Asst. Prof., Geo. Wash. Univ., 1928-31; Assoc. Prof., ibid., 1931-38; Prof., ibid., 1938—. Mem.: Sigma Xi; The Philosophical Soc. of Wash.; The Wash. Acad. of Scis.; The Am. Mathematical Soc.; The Mathematical Assn. of Am.; A.A.A.S.; A.A.U.P.; The Cosmos Club; Soc. of the Cincinnati. Author: Introductory College Mathematics, 1936, reprinted, 1940, 1941, 1942. Contbr. to: Am. Jour. of Math.; The Jour. of the Wash. Acad. of Scis.; The Am. Scientist; Sci.; The Mathematics Magazine. Areas of Rsch.: The Theory of Finite Groups.

JOHNSTON, George Irwin (Mr.), Dir., Rsch. Instrument Serv., Univ. of Ore. Med. Schl., Portland 1, Ore. Home Add.: 15135 N.W., Pioneer Rd., Beaverton, Ore. BIOMEDICAL ENGINEERING. b. Bryn Mawr, Pa., May 29, 1929. s. George I. and Evelyn Amelia (Goebel) J. Edn.: B.S., Johns Hopkins Univ., 1955. m. Randi Olivia Otness, Jan. 6, 1961. c.: Elise. Exp.: Engr., Natl. Inst. of Health, Bethesda, Md., 1955-58; Dir., Rsch. Instrument Serv., Univ. of Ore. Med. Schl., 1958—. Hon. Pos.: Chmn. and Organizer, Inst. of Radio Engrs., Prof. Group on Biomedical Engrng., 1959. Mem.: Inst. of Radio Engrs.; Ore. Sci. Assn. Contbr. to: Jour. of Applied Physiology. Areas of Rsch.: Biomedical Instrumentation.

JOHNSTON, Paul McKelvey (Mr.), Geologist, U. S. Geological Survey, 221 Redondo Ave., Long Beach 3, Calif. GROUND WATER GEOLOGY, ENGINEERING GEOLOGY. b. Pittsburgh, Pa., July 20, 1904. s. Robert Earl and Pearl C. (McKelvey) J. Edn.: B.S., Stanford Univ., 1947. m. Verda B. Hisey, 1930. c.: Terry McKelvey. Exp.: Civil Engr., Pittsburgh Coal Co., Pittsburgh, Pa., 1927-34; Civil Engr., U. S. Army Engrs., Huntington, W. Va., 1934-43; Geologist, ibid., Sacramento, Calif., 1943-50; Geologist, U. S. Geological Survey, 1950—. Mem.: Geological Soc. of Am.; Geological Soc. of Wash.; Am. Geophysical Union; Theta Chi. Contbr. to: Jour. Wash. Acad. of Scis.; U. S. Geological Survey Publications. Serv. Rec.: U.S.A.R., 1949-60. Areas of Rsch.: Geology and Ground-Water in Piedmont and Coastal Plain of Eastern U. S.; Development of Ground Water in Permafrost Areas; Engrng. Geol.; Foundations and Underground Structures.

JOHNSTON, John Jr. (Mr.), Engrng. Mgr., Instrument Products Div., E. I. duPont de Nemours and Co., Inc., Wilmington 98, Del. Home Add.: 1007 N. Rodney St., Wilmington, Del. INSTRUMENTATION TECHNOLOGY. b. Belfast, N. Ireland, November 26, 1911. s. John and Sarah (Manon) J. Edn.: B.S., Drexel Inst. of Tech., 1954. m. Ruth McKinley, Jan., 1938. c.: Jeffrey. Exp.: Asst. Chf. Instr. Engr., Sun Oil Co., Marcus Hook, Pa., 1939-46; Sr. Engr., E. I. duPont de Nemours and Co., Inc., Wilm., Del., 1946-50; Supv. Instr., Engrng. Consultants, ibid., 1950-59; Supv. Instrument Dev. Consults., ibid., 1959-61; Engrng. Mgr., Instrument Products Div., ibid., 1961—. Hon. Pos.: Pres., Instrument Soc. of Am.; Trustee, Found. for Instrumentation Edn. and Rsch. Mem.: I.S.A.; A.S.M.E.; A.A.A.S. Contbr. to: I.S.A. Jour.; Chem. Engrng.; Control Engrng. Areas of Rsch.: Automatic Process Control, Instrumental Methods of Analysis, Computer Control of Chem. Processes, Specialized Measurement Instrumentation.

JOHNSTONE, Edward Lehmann (Mr.), Pres., The Woods Schls., Langhorne, Pa. ADMINISTRATION, RESIDENTIAL FACILITIES FOR MENTALLY RETARDED AND EXCEPTIONAL. b. Vineland, N. J., Apr. 1, 1902. s. Edward Ransom and Olive (Lehmann) J. m. Angie Lirio, 1935. c.: Susan Bensing. Exp.: Asst. Supt., State Colony, Woodbine, N. J., 1929-30; Supt., ibid., 1950-53; Pres., The Woods Schls., Langhorne, Pa., 1953—. Hon. Pos.: Past Pres., Am. Assn. of Mental Deficiency; Pres., Rotary of Langhorne. Contbr. to: Am. Jour. of Mental Deficiency; Proc. Am. Correctional Assn.; Proc. Natl. Con. of Juvenile Agencies. Serv. Rec.: U. S. Coast Guard Reserve, 1943-45. Areas of Rsch.: Administration, Residential Facilities for Exceptional.

JOLING, Robert John (Mr.), Attorney at Law, 6321 23rd Ave., Kenosha, Wis. Home Add.: 4222 79th St., Kenosha, Wis. MEDICO, LEGAL. b. Lynden, Wash., Jan. 11, 1925. s. Edward and Mamie (Ludwick) J. Edn.: A.B., Calvin Coll., 1948; LL.B., Marquette Univ., 1951. m. Carolyn Rae Hubbard, Nov. 25, 1953. c.: Nancy Lee; Robert; Karen; Scott. Exp.: Attorney, Lepp and Phillips, Kenosha, Wis., 1951-53; Partner, Joling and Hubbard, ibid., 1957-61; Attorney, self, Kenosha, Wis., 1953-57; Attorney at Law, ibid., 1962—. Hon. Pos.: Secy., Jurisprudence Sect. of the Am. Acad. of Forensic Scis. Mem.: State Bar of Wis.; Bar Assn. of the Seventh Fed. Circuit; Natl. Lawyers Club; NACCA Bar Assn. of Wis.; Kenosha County Bar Assn., Aircraft Owners and Pilots Assn.; Am. Bar Assn.; Natl. Assn. Am. Acad. of Forensic Scis.; Phi Alpha Theta; Optimist Club Internatl. Contbr. to: Jour. of Forensic Scis. Serv. Rec.: U. S. Army Air Force, 1943-46. Gen. Int.: Pres. Unit Citation, Pacific Theatre of Operations; Admitted to Practice: St. of Wisc.; U. S. Dist. Ct., Wisc.; 7th Fed. Circuit Ct.; U. S. Tax Court; U. S. Supreme Court. Areas of Rsch.: Medico-legal, Comparative Analysis for Narcotic Addiction, Nalline Test Vs. Urinalysis Test by Use of Paper Chromotography; Head Trauma with Contrecoup Fracture of the Skull Resulting in Bilateral Sub Dura Hematomata; Incarrcerated and Strangulated Epigastric Hernia; Personal Injury Litigation.

JOLLEY, Madeleine Phaneuf, (Mrs.), Asst. Chf. for Hospitals, Maternal & Child Health Bur., Dept. of Publ. Health, Washington, D. C. Home Add.: 5023 Riverdale Rd., Riverdale, Md. NURSING. b. Boston, Mass., Oct. 5, 1916. d. Albert E. and Gratia (Phaneuf) Phaneuf. Edn.: B.S., Simmons Coll., 1939; M.P.H., Harvard Univ., 1951. m. Alfred B. Jolley, Nov. 6, 1960. Exp.: Instr. of Operating Rm. Technique, Asst. Operating Rm. Supvr., Peter Bent Brigham Hosp., Boston, Mass., 1940-41; Tchng. Supvr., Outpatient Dept., Boston Lying-in Hosp., Boston, Mass., 1941; Supvr., Delivery Suite, Operating Rooms and Central Supply Rm., Margaret Hagne Maternity Hosp., Jersey City, N. J., 1941-42; Tchng. Supvr., Outpatient Dept., Boston Lying-in Hosp., Boston, Mass., 1942-43; Instr. of Obstetrics and Obstetrical Nursing, ibid., 1943-46; Hosp. Nursing Consultant, Sect. of Maternal and Child Health, La. St. Dept. of

Health, New Orleans, La., 1946-48; Consultant, P. H. Nurse (Hosps.), Bur. of Maternal and Child Health, N. Y. St. Dept. of Health, Albany, N. Y., 1948-50; Staff Nurse, New Haven Visiting Nurse Assn., New Haven, Conn., 1951-52; Consultant P. H. Nurse (Hosps.) Bur. of Maternal and Child Health, N. Y. St. Dept. of Health, Albany, N. Y., 1952-61; Special Nursing Consultant (Mat. and Newborn Regs.) Bur. of Maternal and Child Health, Dept. of Publ. Health, Washington, D. C., 1954; Asst. Chf. for Hosps., Community Standards Div., Bur. of Maternal and Child Health, ibid., 1961—. Hon. Pos.: Vice-Chmn., Maternal Child Health Coun., D. C. League for Nursing. Mem.: Am. Publ. Health Assn., Fellow; A.A.A.S., Fellow; Natl. League for Nursing; Am. Nurses Assn. Co-Author: Communicable and Infectious Diseases, 4th Edit., 1960. Contbr. to: Annals of the N. Y. Acad. of Scis.; Pediatrics; N. Y. Jour. of Medicine; The Child; Nursing Outlook; Am. Jour. of Nursing; N. Y. St. Dept. of Health, Health News; N. Y. St. Dept. of Health, Parents Book. Areas of Rsch.: Maternal and Child Health.

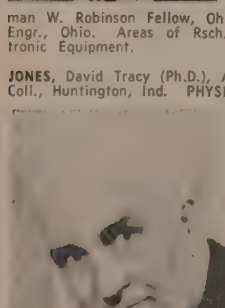
JOLLIFFE, Donald Charles (Mr.), Seismologist, Benish Geophysical Co., Denver, Colo. Home Add.: 910 Marion St., Denver 18, Colo.

GEOPHYSICS, SEISMOLOGY. b. North Platte, Neb., Apr. 14, 1928. s. Jesse Benton and Alice (Walker) J. Edn.: B.S., Denver Univ., 1952. m. Dolores Cox, Aug. 21, 1949. c.: Sherry Dee; David Benton; Valerie Jean. Exp.: Trainee, Continental Oil Co., Ponca City, Okla., 1952-53; Asst. Computer, ibid., 1954-55; Chf. Computer, Tower Exploration, Inc., Denver, Colo., 1955-56; Asst. Party Chf., Continental Geophysical Co., Ft. Worth, Tex., 1956-58; Party Chf. and Seismologist, Dawson Geophysical Co., Midland, Tex., 1958-60; Seismologist, Burton Exploration Inc., Midland, Tex., 1961; Consulting Geophysicist, Denver, Colo., 1961; Seismologist, Benish Geophysical Co., Denver, Colo., 1962—. Mem.: Soc. of Exporation Geophysicists; Am. Geophysical Union; Permian Basin Geophysical Soc.; Denver Geophysical Soc.; Rocky Mtn. Assn. of Geologists; Am. Assn. of Petroleum Geoiogists. Serv. Rec.: U. S. Army, 1946-48. Gen. Int.: 18 Month Study Program, Continental Oil Company, La-Salle Extension Univ., 1953-54. Areas of Rsch.: Experiments on the Value of Various Seismic Interpretive Techniques and Exploration Methods Relative to Geologic Understanding, Economic Support, and Petroleum Discovery.

JONES, Charles Dingee (Ph.D.), Assoc. Prof. and Rsch. Supvr., Mech. Engr. Dept., The Ohio Sta. Univ., Columbus, Ohio. Home Add.: 3628 Clearview Ave., Columbus 21, Ohio.

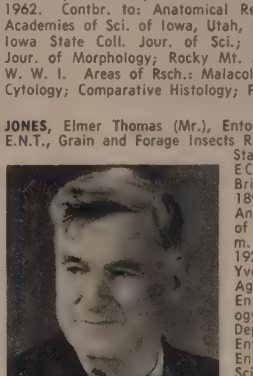
HEAT TRANSFER, THERMODYNAMICS, FLUID DYNAMICS. b. Hammond, Ind., July 21, 1925. s. Charles Coleman and Dorothea (Dingee) J. Edn.: B.S., M.E., Lehigh Univ., 1947; M.S., M.E., Univ. of Ky., 1948; Ph.D., The Ohio State Univ., 1952. m. Mary Elizabeth Fulton, May 1, 1947. c.: Charles Bradford; Linda Louise. Exp.: Instr., Univ. of Ky., Lexington, Ky., 1948-49; Rsch. Assoc. to Supvr., Ohio Sta. Univ., 1951-55; Asst. Prof. to Assoc. Prof. and Rsch. Supvr., ibid., 1956—. Mem.: A.S.M.E.; A.S.E.E.; Pi Tau Sigma; Sigma Xi. Contbr. to: Trans. A.S.M.E.; Trans. I.R.E. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Stillman W. Robinson Fellow, Ohio Sta. Univ., 1950-51; Reg. Prof. Engr., Ohio. Areas of Rsch.: Cooling of Electrical and Electronic Equipment.

JONES, David Tracy (Ph.D.), Assoc. Prof. of Biology, Huntington Coll., Huntington, Ind.



PHYSIOLOGY; ZOOLOGY. b. Mt. Auburn, Iowa, Jan. 9, 1900. s. John William and Enna (Black) J. Edn.: B.A., State Univ. of Iowa, 1923; M.S., ibid., 1925; Ph.D., Ind. Univ., 1933. Exp.: Instr., Univ. of Utah, 1926-27; Dir. of Labs., Univ. of Ore., 1927-28; Instr., Marietta Coll., 1928-31; Assoc. Prof., Univ. of Utah, 1933-45; Prof. and Hd., Dept. Phys. Sci., Huntington Coll., Ind., 1945-46; Asst. Prof. of Physiol., Miami Univ., 1946-49; Assoc. Prof. of Physiol., ibid., 1949-57; Assoc. Prof. of Biological Scis., Olivet, Nazarene Coll., 1957-61; Assoc. Prof. and Head of Dept. of Biology, Huntington Coll., 1961—. Mem.: Fellow, A.A.A.S.; Iowa Acad. Sci.; Ohio Acad. of Sci.; Ind. Acad. of Sci.; Fellow, Utah Acad. Sci., Arts and Letters; Kans. Acad. Sci.; State Hist. Soc. Iowa; Am. Malacological Union.; Soc. Systematic Zool.; Phi Beta Kappa; Sigma Xi. Co-author: Mollusca of Utah, 1929. Author: Practical Exercises in Basic Animal Histology, 1939, 1941; The Spinal Cord of Amphioxus, 1944; Protozoa in Great Salt Lake, 1945; A Working Arrangement of Free-living Amebae, 1951; Microscopic Techniques as a Clinical Introduction to Premedics, 1962. Contbr. to: Anatomical Record; Jour. Morphology; Proc. Academies of Sci. of Iowa, Utah, Ind.; Ohio Jour. Sci.; Vintonia; Iowa State Coll. Jour. of Sci.; Nautilus; Entomological News; Jour. of Morphology; Rocky Mt. Med. Jour. War Record: Pvt., W. W. I. Areas of Rsch.: Malacology; Dipterology; Protozoology; Cytology; Comparative Histology; Physiology, Anatomy; Taxonomy.

JONES, Elmer Thomas (Mr.), Entomologist (Ret.), U.S.D.A.-A.R.S.-E.N.T., Grain and Forage Insects Rsch. Div., Entomol. Dept., Kans. State Univ., Manhattan, Kans.



ECONOMIC ENTOMOLOGY. b. Bridgend, South Wales, July 6, 1892. s. John William and Sarah Ann (Morgan) J. Edn.: B.S., Univ. of Mo., 1924; M.S., ibid., 1925; m. Johannah F. Heck, Aug. 6, 1921. c.: Elmer David; Virnelle Yvonne. Exp.: Tchr. of Voc. Agri., Butler, Mo. H. S., 1925-27; Entomologist, Bureau of Entomology and Plant Quarantine, U. S. Dept. of Agri., 1927—. Mem.: Entomology Soc. of Am.; Kans. Entomol. Soc.; Kans. Acad. of Sci.; Sigma Xi; Gamma Sigma Delta; Gamma Alpha. Contbr. to: Jour. of Econ. Entomol.; Jour. Am. Soc. of Agron.; Trans. Kans. Acad. of Sci.; Jour. Kans. Entomol. Soc. War Record: Inf., U. S. Army, W. W. I. Special Int.: Studies of the Hessian Fly and Wheat Insects with Special Emphasis on Host Plant Resistance to Insect Attack.

JONES, Ernest Victor (Ph.D.), Consultant, Reactor Chemistry Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 213 E. Vanderbilt Dr., Oak Ridge, Tenn. CHEMISTRY; INORGANIC. b. Bronaugh, Mo., Jan. 7, 1882. s. Alfred Persia and Maria Irene (Jones) J. Edn.: B.A., Morrisville Coll., 1905; M.A., Vanderbilt Univ., 1909; Ph.D., ibid., 1912. Hon. Deg.: D.Sc., Birmingham-Southern Coll., 1955. m. Eunice Beth Vaughan, Aug. 9, 1908. Exp.: Prof. of Sci., Morrisville Coll., Mo., 1906-08; Prof. of Sci., Jacksonville St. Normal, Ala., 1912-13; Hd. Depts. Chem. and Physics, Soochow Univ., Soochow, China, 1913-32; Prof. of Inorganic and Physical Chem., Univ. of Nanking, China, 1922-27; Prof. Chem. and Dept. Hd., Birmingham-Southern Coll., Ala., 1928-46; Rschr., Naphthalene Prods. Co., Birmingham, Ala., 1944-46; Prof. Inorganic Chem., Univ. of Ala., 1947-52; Consultant, Oak Ridge Natl. Lab., 1951—. Hon. Pos.: Sec. China Assn. Christian Higher Edn., 1922-23; Pres., East China Intercollegiate Athletic Assn., 1922-25; Mem. Exec. Comm. Bd. of Control, Ginling Woman's Coll., Nanking, China, 1925-27; Chmn., Ala. Sec. Am. Chem. Soc., 1933-34; Pres., Ala. Acad. of Sci., 1943-44. Mem.: Ala. Acad. of Sci.; Am. Chem. Soc.; Fellow, A.A.A.S.; Phi Beta Kappa; Phi Tau Phi (Chinese Phi Beta Kappa); Civitan. Contbr. to: Jour. Chem. Edn.; Jour. Am. Chem. Soc.; Anal. Chem., Jour. Inorg. and Nuclear Chem. Areas of Rsch.: Solubility of Metal Sulphates at High Temperature and Pressure in Water and in Uranyl Sulphate Solutions; Two-Liquid Phase Studies at High Temperature and Pressure in Uranyl Sulphate Solutions in Water and Heavy Water; Properties of Thorium Oxide Slurries at Various Temperatures; Properties of Uranyl Sulfate Solutions at High Temperatures; Solubility of $CaSO_4$ in dil. H_2SO_4 and in NaCl Solutions at High Temperatures.

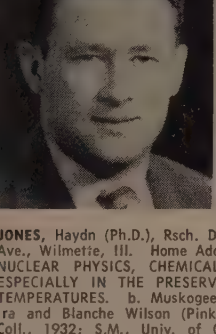
JONES, Eugene Wise (Ph.D.), Chmn., Div. of Soc. Sci., Wayland Bapt. Coll., Plainview, Tex. Home Add.: 1315 Vernon St., Plainview, Tex.

POLITICAL SCIENCE. b. Henderson, Ky., Feb. 26, 1908. s. David Clinton and Arcadia (Wise) J. Edn.: B.A., Univ. of Akron, 1943; M.A., ibid., 1949; Ph.D., Univ. of N. C., 1955. m. Mildred Barlett of Akron, Ohio, June 1, 1935. d. Mr. and Mrs. Ward Barlett. c.: Milligene Wise. Exp.: De-icer Builder, B. F. Goodrich, Akron, Ohio, 1942-43; De-icer builder, ibid., 1945-47; Instr., Wingate Coll., 1947-50; 1953-55; Student, 1950-53; Chmn., Div. Soc. Sci., Wayland Coll., Plainview, Tex., 1955—. Mem.: Am. Polit. Sci. Assn.; Sou. Polit. Sci. Assn.; A.A.U.P.; Am. Studies Assn.; Chi Sigma Nu; Pi Sigma Alpha; Masons; Lions. Contbr. to: W. Va. Hist. Ph.D. Dissertation: Employment Security Commn. of N. C. War Record: U. S. Army, 1943-45. Travel: England; France; Germany. Hobbies: Baseball; Golf; Photography. Areas of Rsch.: Unemployment Insurance. Listed in: A.M.S.; Dir. of Am. Polit. Sci. Assn.; W. W. Am. Edn.

JONES, Eve (Ph.D.), Consulting Psychologist, 5833 Dorchester, Chicago, Ill. PSYCHOLOGY. b. Toledo, Ohio, 1924. d. Samuel Spiro and Mary (Urbach) Spiro. Edn.: B.Ph., Univ. of Chicago, 1945; S.M., S.B., ibid., 1949; (Ph.D.), ibid., 1953. m. William O. Bonner, 1943. c.: Sarah Andree; Sheila Penelope; Mary Susan; Thomas Samuel. Exp.: Lctr. and Instr., Univ. of Chicago, 1954—; Consulting Psychologist, Chicago, Ill., 1954—. Mem.: Am. Psychological Assn.; Midwestern Psychological Assn.; Sigma Xi; A.A.A.S. Author: Psychotherapy and Personality Change, 1954; Natural Child Rearing, 1958; The Intelligent Parent's Guide to Raising Children, 1961; How to Raise Your Child in A Fatherless Home, 1962. Contbr. to: Am. Jour. of Physiol. Gen. Int.: Presented Scroll, Am. Personnel & Guidance Assn. for Outstanding Rsch., 1955. Areas of Rsch.: Personality Theory, Endocrine, Mental Health Relationships.

JONES, Frank Pierce (Ph.D.), Rsch. Assoc., Tufts Inst. for Psychological Rsch., Medford 55, Mass. Home Add.: 33 Lexington Ave., Cambridge 38, Mass. KINESTHESIS. b. Appleton, Wis., Apr. 10, 1905. s. George W. and Maude (Sackett) J. Edn.: B.A., Stanford Univ., 1926; M.A., ibid., 1928; Ph.D., Univ. of Wis., 1937. m. Helen Rumsey, Aug. 10, 1931. c.: Thomas R.; Emlen V.; John E. Exp.: Instr., Brown Univ., 1937-41; Asst. Prof., ibid., 1941-44; Rsch. Assoc., Inst. for Psychological Rsch., Tufts Univ., 1954; Lectr. in Classics, ibid., 1955—. Mem.: Am. Psychological Assn.; A.A.A.S.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Psychol.; Ergonomics; Perceptual and Motor Skills. Areas of Rsch.: Kinesthetic Perception, Multiple-Image Photography; Electromyography.

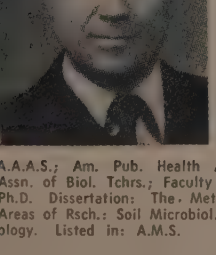
JONES, Franklin McGehee (Mr.), Chem. Prof., Ferrum Jr. Coll., Ferrum, Va. CHEMISTRY. b. Reidsville, N. C., Mar. 10, 1933.



s. William N. and Myrtle Louise (Soyars) J. Edn.: B.S., Appalachian St. Coll., 1955; M.A., ibid., 1960; M.Ed., Univ. of N. C., 1960. Exp.: Tchr., Mineral Springs H. S., Winston-Salem, N. C., 1956-58; Chem. Prof., Ferrum Jr. Coll., Ferrum, Va., 1960—. Mem.: Beta Beta Beta; A.A.A.S.; Va. Edn. Assn.; Natl. Sci. Tchrs. Assn.; Lions Club. Gen. Int.: Natl. Sci. Found. Grant, Univ. of N. C., 1958-59, '60; N.S.F. Grant, Emory Univ., 1962; Tchng. Fellow, Appalachian St. Coll., 1959-60. Areas of Rsch.: Compleximetric Titrations of Urinary Magnesium and Calcium, and Inducing Polyploidy by Use of Colchicine.

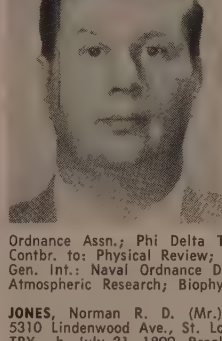
JONES, Haydn (Ph.D.), Rsch. Dir., Hizone Labs., 1211 Washington Ave., Wilmette, Ill. Home Add.: 710 Roger Ave., Kenilworth, Ill. NUCLEAR PHYSICS, CHEMICAL PRODUCT DEVELOPMENT WORK, ESPECIALLY IN THE PRESERVATION OF TISSUES AT ORDINARY TEMPERATURES. b. Muskogee, Okla., Feb. 15, 1911. s. Hilton Ira and Blanche Wilson (Pinkerton) J. Edn.: A.B., Lake Forest Coll., 1932; S.M., Univ. of Chicago, 1932; Ph.D., ibid., 1939. m. Emilie Jenne Banning, June 2, 1938. c.: Lowell Haydn; Milton Addison; Gail Pinkerton. Exp.: Fellow, Univ. of Chicago, 1934-37; Asst., ibid., 1937-38; Rsch. Assoc., ibid., 1938-39; Rsch. Dir., Hizone Labs., Wilmette, Ill., 1939-42; Rsch. Assoc., Metallurgical Lab., Univ. of Chicago, 1942-43; Sr. Physicist, Clinton Labs., Manhattan Proj., Oak Ridge, Tenn., 1943-45; Rsch. Dir., Hizone Labs., Wilmette, Ill., 1945—. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Am. Inst. of Chemists; Alpha Sigma Kappa; Gamma Alpha; Sigma Pi Sigma; Sigma Xi; Phi Eta Sigma; Sigma Eta. Contbr. to: Physical Rev. Areas of Rsch.: Nuclear Physics, Preservation of Animal Tissues at Ordinary Temperatures.

JONES, Lewis William (Ph.D.), Prof.; Acting Hd. of Dept. of Bacteriol., Utah St. Univ., Logan, Utah. Home Add.: 744 N. 5th St., E. Logan, Utah. BACTERIAL PHYSIOLOGY. b. Malad, Ida., July 6, 1906. s. Joesph and Ann (Jones) J. Edn.: B.S., Utah St. Agri. Coll., 1936; M.S., ibid., 1937; Ph.D., Stanford Univ., 1952. m. Anna Evans of Malad, Ida., Aug. 30, 1928. d. Daniel Evans. c.: Sidney. Exp.: Grad. Schl. Principal, 1926-34; Instr., ibid., 1937-41; Asst. Prof., ibid., 1941-49; Assoc. Prof., Utah St. Univ., 1949-60; Prof. and Acting Hd. of Dept., ibid., 1960—; Visiting Lectr., Univ. of Sou. Calif., summer, 1945. Hon. Pos.: Pres., Internatl. Br., Soc. Am. Bacteriol.; Chmn. Dept. Bacteriol., Utah St. Univ.; Natl. Sci. Fdtn. Fellowship, 1959-60. Mem.: Utah Acad. of Sci.; Soc. of Am. Bacteriol.; Fellow, A.A.A.S.; Am. Pub. Health Assn.; A.A.U.P.; Sigma Xi; Natl. Assn. of Biol. Tchrs.; Faculty Men's Club. Contbr. to: Soil Sci. Ph.D. Dissertation: The Metabolism of Clostridium Chauvoei. Areas of Rsch.: Soil Microbiol.; Dairy Microbiol.; Bacterial Physiology. Listed in: A.M.S.



JONES, Lloyd Meredith (Ph.D.), Prof. of Edn., Univ. of Bridgeport, Bridgeport, Conn. Home Add.: Apt. 2-G, 7 Manor Ave., Hempstead, N. Y. BIOLOGY, PSYCHOLOGY, LEARNING. b. Attica, Kan., July 16, 1900. s. Lewis Albert and Mary Ann (Williams) J. Edn.: A.B., Univ. of Wichita, 1922; M.A., Columbia Univ., 1927; Ph.D., ibid., 1935. m. Theresa Averil Dower, Dec. 20, 1929. c.: David Lloyd; Barbara Theresa. Exp.: Tchr., Wichita, Kan., Pub. Schls., 1921-26; Instr., Western Mich. Univ., 1927-28; Prof., W. Va. Univ., 1928-40; Prof., Pa. State Univ., 1940-57; Prof., St. Univ. of N. Y. Coll. of Edn., Buffalo, 1957-60; Prof., Univ. of Bridgeport, 1960—. Mem.: Am. Acad. Polit. and Soc. Sci.; A.A.A.S.; Am. Acad. Phys. Edn.; Am. Pub. Health Assn.; Am. Edn. Rsch. Assn.; Natl. Soc. Study of Edn.; Beta Theta Pi; Phi Delta Kappa; Kappa Delta Pi; Kiwanis; Torch. Contbr. to: Edn.; Rsch. Quart.; Am. Jour. Pub. Hlth. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Tests and Measurements; Learning Theory.

JONES, Mark Wallon (Ph.D.), Pres. and Sr. Physicist, Geo-Science, Inc., Box 1128, Alamogordo, N. M. Home Add.: 2302 Willow Dr., Alamogordo, N. M. PHYSICS; GEOPHYSICS. b. Wheeling, Va., Dec. 20, 1916. s. John William and Alice Virginia (Thomas) J. Edn.: A.B., Univ. of W. Va., 1938; M.S., Univ. of Fla., 1948; Ph.D., ibid., 1953. m. June Grimm, Feb. 17, 1940. Exp.: Observer, Dept. of Terrestrial Magnetism, Carnegie Inst. of Wash., 1939-47; Fellow, Sr. Physicist, Geophysical Inst., Univ. of Alaska, 1948-50; Sr. Physicist, Ordnance Div., Aerojet Gen. Corp., Frederick, Md., 1953-55; Pres. and Sr. Physicist, Geo-Sci., Inc., 1955—. Hon. Pos.: Chmn., Alamogordo, Holloman Section of Inst. of Radio Engr. Mem.: Am. Geophysical Union; Soc. of Exploration Geophysicists; A.A.A.S.; Inst. of Radio Engr.; Am. Ordnance Assn.; Phi Delta Theta; Sigma Xi; Rotary; C. of C. Contbr. to: Physical Review; Sci.; Jour. of Geophysical Research. Gen. Int.: Naval Ordnance Dev. Award. Areas of Rsch.; Upper Atmospheric Research; Biophysics; Ordnance Research.



JONES, Norman R. D. (Mr.), Asst. Prof., Harris Tchrs. Coll., 5310 Lindenwood Ave., St. Louis 9, Mo. BIOLOGY AND CHEMISTRY. b. July 31, 1899, Brooklyn, Ind. s. Wm. Gilbert and Anna (Leonard) J. Edn.: B.S., Eureko Coll., 1922; M.S., Univ. of Ill., 1928. m. Esther M. Hamilton of Monmouth, Ill., Aug. 18, 1925. d. Mr. and Mrs. S. Leigh Hamilton. c.: Margaret Annette; Donald Leigh. Exp.: U. S. Post Office, 1917-18; Instr., Sci., Mt. Morris, Ill., H. S., 1922-23; Lincoln, Ill., 1923-25; Prin., Hopedale, Ill., Community H. S., 1925-27; Instr., Sci., Alton, Ill., Community H. S., 1927-29; Safety Inspector and Instr., Shell Pet. Corp., Woodriver, Ill., 1929-30; Sci. Instr., H. S., St. Louis, Mo., 1930-56; Asst. Prof., Harris Tchrs. Coll., 1956—. Mem.: N.S.T.A.; N.E.A.; A.A.U.P.; A.A.A.S.; British Sci. Masters Assn.; NA-B.T.; Am. Nature Study Soc.; Central Assn. Sci. and Math. Tchrs.; Mo. St. Tchrs. Assn.; Mo. Sci. Tchrs. Assn., Secy., 1944-45; Exec. Comm., 1942; St. Louis Audubon; Boy Scout Fathers Club; Beta Beta Beta; Sigma Delta Sigma; Psi Alpha Lambda; Mason; St. Louis Edni. Craftsman; Men's Club of H. S. Tchrs. Hon. Pos.: Serv. Award, Civilian Defense Leadership, 1942-43; Pres., Am. Coun. of Sci. Tchrs. Assn., 1943; Vice-Pres., N.S.T.A., 1944-48; Pres., ibid., 1948-49; Retired Pres., ibid., 1949-50; Bd. of Dirs., ibid., 1950-53; Gen. Chmn., Greater St. Louis Sci. Fair, 1948—; Consultant, Sci. Fair Workshops, 1950—; Organizer and Conductor of Sci. Week-ends, 1950-56; Organizer and Conductor of Sci. Summer H. S., 1950—; Boy Scout Councilor, 1946, etc. Author: This and That, 1943-49; Edni. Publ. Contributions; The Bull. of Natl. Assn of Secd. Schl. Prins. and Sci. Fairs; Sci. Edn. in the Community. War Record: U. S. Army, 1918. Travel: N. Am. Hobby: Bird Study. Listed in: Who's Who, Monthly Supplement; A.M.S.; etc.

JONES, Roger Clyde (Ph.D.), Sec. Hd. of Physics, Rsch. Div., Melpar, Inc., 3000 Arlington Blvd., Falls Church, Va. Home Add.: 5313 Garner St., Springfield, Va. PLASMA PHYSICS AND ELECTRICAL ENGINEERING. b. Lake Andes, S. Dak., Aug. 17, 1919. s. Robert Clyde and Martha (Albertson) J. Edn.: B.S., Univ. of Neb., 1949; M.S., Univ. of Md., 1953; Ph.D. (Cand.), ibid., 1962. m. Katherine M. Tucker, June, 1952. c.: Linda Lee; Vonnie Lynette. Exp.: Elect. Scientist, Naval Rsch. Lab., Wash., D. C., 1949-57; Consulting Project Engr., Melpar, Inc., Falls Church, Va., 1957-59; Sec. Hd. of Physics, ibid., 1959—. Mem.: Inst. of Radio Engrs.; A.A.A.S.; Pi Mu Epsilon; Eta Kappa Nu. Contbr. to: Microwave Jour.; Three Naval Rsch. Lab. Reports; Classified Reports. Serv. Rec.: A.U.S., 1942-45. Gen. Int.: Inventor of the Plasma Resonance Scanner; Co-Inventor of the Gaseous Eaton Lens; Original Rsch. in H and E-plus H Type Discharges. Areas of Rsch.: Guided Missile Command Systems, Fuze Systems, Nuclear Instrumentation, ECM, Antennas, Plasma Physics Research.

JONES, Russell Stine (M.D.), Professor Pathology, Univ. of Utah, Coll. of Med., Salt Lake City, Utah. Home Add.: 4539 Loren Von Dr., Salt Lake City, Utah. MEDICINE (PATHOLOGY). b. Corvallis, Ore., June 5, 1914. s. Albert N. and Emma (Stine) J. Edn.: B.A., Univ. of Ore., 1936; M.D., ibid., 1940. m. Fredaline Ramey, Aug. 2, 1941. c.: Russell; Frederick; Cynthia; Stephen; Gregory; Christopher; Susan; Marianne; Barbara. Exp.: Res., Pathol., Univ. of Ore. Med. Schl., 1941-44; Instr., Pathol., Univ. of Tenn. Coll. Med., 1947-48; Asst. Prof., Pathol., ibid., 1948-52; Assoc. Prof., Pathol., ibid., 1952; Assoc. Prof., Pathol., Univ. of Ore. Med. Schl., 1952-54; Assoc. Prof., Pathol., Univ. of Utah, Coll. Med., 1954-62; Prof., ibid., 1962—. Mem.: A.A.A.S.; Am. Assn. Pathol. and Bacteriol.; Am. Rheumatism Assn.; Endocrine Soc.; Am. Assn. Cancer Rsch.; Am. Soc. Exptl. Pathol.; Utah Soc. Pathol.; Sigma Xi; W. Soc. Clin. Rsch.; Theta Kappa Psi. Contbr. to: Arch. Pathol.; Fed. Proc.; Brit. Jour. Exptl. Pathol.; Proc. Soc. Exptl. Biol. and Med.; Jour. Lab. and Clin. Med.; Cancer Rsch.; Am. Heart Jour.; and many others. War Record: U. S. Army, W.W. II. Areas of Rsch.: Exptl. Study of Rheumatic-like and Arthritic Lesions, Metabolism and Distribution of C-14 Labelled Bacterial Products in Experimental Animals; Renal Hypertrophy in Exptl. Animals; Pulmonary and Cardiac Lesions in Man.

JONES, Shannon (Mr.), Physicist, Gen. Elec. Co., 1099 Ivanhoe Rd., Cleveland 10, Ohio. Home Add.: 1829 Allendale St., E. Cleveland 12, Ohio. SOLID STATE, PHOSPHORS AND PHOSPHOR COATINGS. b. Girard, Ohio, Dec. 25, 1906. s. Herbert L. and Clara (Shannon) J. Edn.: A.B., Hiram, 1927; B.S., Case Inst. Technol., 1928. Exp.: Physicist, Army Air Corps, Dayton, Ohio, 1928-29; Physicist, Gen. Electric, Glass Technol., 1929-41; Physicist, Gen. Electric, Phosphors, 1941—. Contbr. to: Jour. of the Electrochemical Soc. Areas of Rsch.: Phosphors, Phosphor Suspensions and Coatings.

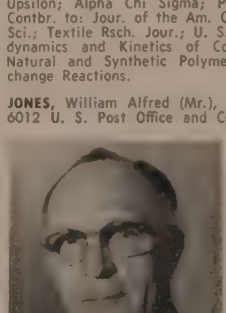
JONES, Varnakale Lorenzo (Mr.), Consultant, Terrametric Exploration Co., P. O. Box 3731, Tulsa 14, Okla. Home Add.: 1412 So. Norfolk, Tulsa 20, Okla. PHYSICS-GEOPHYSICS; GEOPHYSICAL TECHNIQUES FOR MEASURING AND COMPUTING POTENTIAL FIELD DATA. b. Carthage, Mo., Aug. 8, 1902. s. Henry Lorenzo and Zettie Lenora (White) J. Edn.: B.A., Univ. of Okla., 1925; M.S., ibid., 1927. Exp.: Asst. Phys., Univ. of Okla., Norman, Okla., 1925-27; Instr., Univ. of Colo., Boulder, Colo., 1927-28; Geophysicist, Amerada Petrol. Corp., Tulsa, Okla., Summer, 1927; Instr., Univ. of Okla., Norman, Okla., 1931-32; Consultant, Phys. and Geophys., Tusla, Okla., 1932-43; Geophyst. and Instr., Univ. of Tulsa, Tulsa, Okla., 1943-44; Geophyst., Stanolind Oil and Gas, Tulsa, Okla., 1944-45; Rsch. Geophyst. Geophys. Devel. Corp., Tulsa, Okla., 1945-46; Asst. Prof. and Hd., Dept. Geophy., Univ. of Tulsa, Tulsa, Okla., 1946-51; Chf., Geophyst., Terrametric Explor. Co., 1951—. Hon. Pos.: Pres., Tulsa Astronomical Soc., 1942-43; Vice-Pres., Geophys. Soc. of Tulsa, 1948-49; Chmn., Student Mem. Comm. Soc., Explor. Geophyst., 1948-49; Editor, Procs. of the Geophys. Soc. of Tulsa., 1956-57. Mem.: Am. Geophys. Union; Seismol. Soc. of Am.; Soc. of Explorn. Geophysts; European Assn. of Exploration Geophysts.; Am. Assn. of Phys. Tchrs.; Am. Inst. of Phys.; Tulsa Geol. Soc.; Geophys. Soc. of Tulsa; Sigma Xi; Sigma Pi Sigma; Alpha Sigma Delta; Phi Gamma Kappa; Knight Templer; Scottish Rite; Tulsa Consistory Club. Contbr. to: Trans. of Am. Geophys. Union; Geophys.; Procs. of the Geophys. Soc. of Tulsa; Tulsa Geol. Soc. Digest; Oil and Gas Jour.; Bull. of the Okla. Acad. of Sci. Areas of Rsch.: Effect of Drawing Upon the Density of Tungsten; Thermo-Electric Measurements and Designs; Geophical Techniques for Measuring and Computing Potential Field Data; Derivation of Formulas for Extrapolation and Interpolation; Electrical and Radioactive Measurements and Methods.

JONES, Vernon (Ph.D.), Prof., Ednl. Psychol., Chmn., Dept. Edn., Clark Univ., Worcester, Mass. Home Add.: 267 Salisbury St., Worcester Mass. EDUCATIONAL PSYCHOLOGY. b. Portsmouth, Va., Oct. 13, 1897. s. Frank and Pattie (McLemore) J. Edn.: B.A., Univ. of Va., 1920; M.A., ibid., 1920; M.A., Columbia Univ., 1924; Ph.D., ibid., 1926. m. Harriet Marble of Worcester, Mass., 1929. d. Mr. and Mrs. William C. Marble. c.: Patricia Lovell; Nancy Pearson. Exp.: Tchr., Asst. Prin., H. S., Appalachia, Va., 1917-18; Prin., Ashland H. S., Va., 1920-21; Prin., Richmond Pub. Schls., Va., 1922-24; Dir., Rsch., ibid., 1924-25; Assoc. Edn. Tchrs. Coll., Columbia Univ., 1925-26; Assoc. Prof., Ednl. Psychol., Clark Univ., Worcester, Mass., 1926-38; Prof., Chmn., Dept. Psychol. and Edn., ibid., 1938-49; Prof., Ednl. Psychol. Chmn., Dept. Edn., ibid., 1949—. Mem.: A.A.A.S.; N.E.A.; Am. Psychol. Assn.; Am. Personnel Guid. Assn.; Am. Edni. Rsch. Assn.; Phi Beta Kappa. Author: Effect of Age and Experience in Tests of Intelligence, 1926; What Would You Have Done?, 1931; Character and Citizenship Trng. in Pub. Schl., 1936; Character and Citizenship Edn., 1950; Youth Decides—Group Guid. in Everyday Citizenship, 1952. Contbr. to: Schl. and Soc.; Jour. Edni. Psychol.; Psychol. Bull.; Manual Child Psychol.; Encyc. Edni. Rsch.; Collier's Encyc. Ph.D. Dissertation: See Author. Travel: Egypt; Israel; Lebanon; Greece. Gen. Int.: Citation, Rsch. Am. Edni. Rsch. Assn., 1940. Hobbies: Tennis; Volleyball; Reading. Listed in: W. W. in Am.; A.M.S.; Internatl. World Who's Who. Areas of Rsch.: Aptitude Testing and Guid.; Psychological Approach to Character and Citizenship Development.

JONES, Walter Bryan (Ph.D.), Consulting Geologist, Geological Survey of Ala., University, Ala. Home Add.: 510 Capstone Ct., Tuscaloosa, Ala. GEOLOGY. b. Huntsville, Ala., Feb. 25, 1895. s. George Walter and Elva Lena (Moore) J. Edn.: B.A., Univ. of Ala., 1918; M.A., ibid., 1920; Ph.D., Johns Hopkins Univ., 1924. m. Hazel Lucile Phelps, June 30, 1924. c.: Nelson Bolling; Douglas Eppes; Warren Phelps. Exp.: Instr., Univ. of N. C., 1920-21; Asst. St. Geologist, Geological Survey of Ala., University, Ala., 1924-27; St. Geologist, ibid., 1927-61; Consulting Geologist, ibid., 1961—. Hon. Pos.: Dir., Ala. Mus. of Natural Hist.; Dir., Dept. of Conservation; St. Oil and Gas. Supvr. Mem.: G.S.A., Fellow; A.A.A.S., Fellow; A.I.-M.E.; Am. Association Petroleum Geologists; Natl. Speleological Soc.; Assn. Am. St. Geologists; Ala. Acad. of Sci.; Soc. Am. Mil. Engrs.; Southeastern Geological Soc.; Ala. Archaeological Soc.; Sigma Xi; Gamma Alpha; Gamma Alpha Pi; Am. Legion; Mason; Kiwanis. Contbr. to: Reports, Bull. and Papers of Ala. Geological Survey; World Oil; Engrng. and Mining Jour. Serv. Rec.: U. S. Army, 1918-19; 1940-45. Areas of Rsch.: Geol.; Speleol.; Archaeol.

JONES, Walter Harrison (Ph.D.), Mem., Rsch. and Engrng. Support Div., Inst. for Defense Analyses, 1825 Connecticut Ave., Wash., D. C. Home Add.: 1850 Columbia Pike, Apt. 717, Arlington 4, Va. CHEMISTRY. b. Griffin, Saskatchewan, Can., Sept. 21, 1922. s. Arthur F. and Mildred T. (Walter) J. Edn.: B.S., Univ. of Calif. (L.A.), 1944; Ph.D., ibid., 1948. m. Marion C. Twomey, Oct. 25, 1959. Exp.: Chemist, W. Reg. Rsch. Lab., U.S.D.A., Albany, Calif., 1948-51; Staff Mem., Los Alamos Scientific Lab., Los Alamos, N. M., 1951-54; Rsch. Assoc., Univ. of Calif., 1954; Sr. Rsch. Engr., N. Am. Avn., Inc., Canoga Park, Calif., 1954-56; Staff Mem., Hd., Thermochem. Sect.; Mgr., Chem. Dept., Aeron. Div., Ford Motor Co., Newport Beach, Calif., 1956—. Presently on leave from Position as Mgr., Chem. Dept., Aeronutronic Div. of Ford Motor Co., Newport Beach, Calif.; Rsch. and Engrng. Support Div., Inst. for Defense Analyses, Wash., D. C., 1960—. Hon. Pos.: Chmn., Joint Army-Navy-Air Force Thermochem. Panel, 1960-62; Co-Chmn., H. S. Contest Comm., Sou. Calif. Sect., Am. Chem. Soc., 1958; Papers Subcomm., The Combustion Inst. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Combustion Inst.; A.A.A.S.; Sigma Xi; Phi Beta Kappa; Phi Lambda Upsilon; Alpha Chi Sigma; Pi Mu Epsilon; Alpha Mu Gamma. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Chem. Physics; Sci.; Textile Rsch. Jour.; U. S. Patents. Areas of Rsch.: Thermodynamics and Kinetics of Combustion Processes; Chemistry of Natural and Synthetic Polymers; Solution Kinetics; Isotope Exchange Reactions.

JONES, William Alfred (Mr.), U. S. Army Engrng. Dist., Omaha; 6012 U. S. Post Office and Court House, Omaha 2, Neb. Home Add.: 604 South 22nd St., Omaha 2, Neb. OPERATION AND MAINTENANCE MANUALS FOR LARGE DAM, RESERVOIR, AND POWERHOUSE PROJECTS; SAFETY; WRITER; SPEAKER. b. Los Andes, Chile, June 1, 1896. s. Captain William Higham and Rosario (del Canto) J. Edn.: B.S., Mass. Inst. of Technol., 1918; B.S., Harvard Univ., 1918. m. Margaret Wolfram, Dec. 31, 1926. c.: Doris Jeannine; Dorothy Elaine. Exp.: Field Engr., Indust. Plant. Am. Smelting and Ref. Co.; Highway, Dominican Repub.; Irrigation Proj., Barahona Sugar Co., Dominican Republic, 1918-20; Resident Engr., Monumental Bk. and Office Bldg., Stone and Webster Engrng. Corp., Buenos Aires, Argentina, S. Am.; Steam Power Plants, ibid., Beaumont, Tex., and Norfolk, Va.;

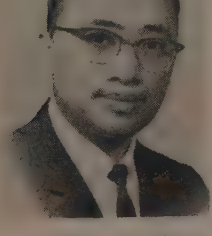


Large Indusl. Projects, U.S.A. and S. Am., 1921-33; Bridge Designer, Pa. Turnpike; Chf. Engr., Const. Gaseous Diffusion Atomic Bomb Plant, Oak Ridge, Tenn.; Assoc. Consulting Engr., Development, Design and Appraisal, San Antonio, Tex., 1934-47; Mechanical-Electrical Engr., Large Hydroelectric and Milit. Projects, U. S. Army Corps of Engrs., 1948-55; Mech. Engr., Missouri River Basin Improvement Program, ibid., 1956-60. Hon. Pos.: Repr., President's Hwy. Safety Meetings and Governor's Hwy. Safety Meetings, Neb.; Admiral, Neb. Navy. Mem.: Am. Soc. Safety Engrs.; Soc. Am. Milit. Engrs.; A.A.A.S.; A.F. and A.M.; Omaha Engrs. Club; Omaha Safety Coun.; Post 1, Am. Legion; Ft. Worth Chapt. of A.S.S.E.; Great Plains Chapt., A.S.S.E. Author: Am I My Brother's Keeper?, 1956; The Big Delusion, 1958; Industrial Safety Engineering (Manuscript), 1959. Contbr. to: Am. Concrete Inst. Jour. Serv. Rec.: U. S. Corps of Engrs., W.W. I. Gen. Int.: "Who's Who" Omaha and Douglas County, Neb.; Initiated, Prepared and Taught the First Course Industrial Safety Engrng. at Univ. of Omaha, 1959; Engrng. Firsts: Cantilever Wall Design Method which eliminated all preliminary guesswork and re-check steps; Travel and Writing in Interest of Traffic Safety; Telecaster, Days End, KMTV, Omaha, WCCO, Minneapolis; One of 4 Founders of Great Plains Chapt., A.S.S.E.; Helped Organize Internatl. Christian Leadership Groups; Recipient, Internatl. Superior Performance Award, U. S. Corps of Engrs., 1960-61. Areas of Rsch.: Structural Design; Languages; Safety; Radiological Monitoring.

JONES, Walter LaRue (Ph.D.), Prof., Dept. of Biol., Langston Univ., Langston, Okla. Home Add.: 3318 Adair St., Houston 4, Tex. ZOOLOGY AND ENTOMOLOGY (ANIMAL ECOLOGY) AND MOSQUITO BIOLOGY. b. Houston 4, Tex., Nov. 20, 1925. s. Lark J. and Nettie (Davis) J. Edn.: B.S., Prairie View A. & M. Coll., 1947; M.S., Ohio St. Univ., 1949; Ph.D., ibid., 1960. Exp.: Biol. Instr., Tuskegee Inst., 1949-50; Biol. Instr., Langston Univ., 1956-58; N.I.H. Rsch. Fellow, Ohio St. Univ., 1958-60; Biol. Prof., Langston Univ., 1961—. Hon. Pos.: Chmn., Dept. of Biol., Langston Univ., 1961. Mem.: Soc. of Sigma Xi; Entomological Soc. of Am.; Ohio Acad. of Sci.; Am. Mosquito Control Assn.; A.A.A.S.; A.I.B.S.; Gamma Sigma Delta; Phi Epsilon Phi; Omega Psi Phi. Contbr. to: Mosquito News; Annals of the Entomological Soc. of Am.; Jour. of Econ. Entomol. Serv. Rec.: QM Corps, 1944-46. Areas of Rsch.: Mosquito Biol. (Ecol. and Taxonomy); Aseptic and Sterile Techniques.

JONES, William Norton, Jr. (Ph.D.), Prof. of Chem. and Chmn., Div. of Sci. and Math., McMurry Coll., Abilene, Tex. ORGANIC CHEMISTRY. b. Nov. 16, 1908, Augusta, Ark. s. Wm. Norton, Sr. and Beatrice (Roddy) J. Edn.: B.A., Hendrix Coll., Ark., 1928; M.A., 1930; Ph.D., 1932, Johns Hopkins Univ.; Grad. Study, Univ. of Sou. Calif., 1939; Ford Fellow at Univ. of Calif. and Stanford Univs., 1953-54. m. Roberta Jackson of Durango, Colo., June 15, 1938. d. Mr. and Mrs. Robert L. Jackson. Exp.: Sci. Instr., Hulbert, Ark., H. S., 1931-32; Supt., Citizens' Schls., Osceola, Ark., 1932-33; Assoc. Prof. of Chem. and Hd., Dept., Ft. Lewis Br., Colo. St. Coll., 1933-44; Acting Vice-Dean, Colo. A. & M., Fort Lewis Br., Hesperus, Colo., 1943-46; Prof. of Chem. and Hd. of Dept., 1944-48; Prof. of Chem. and Hd. of Dept., McMurry Coll., Abilene, Tex., 1948—; Chmn., Div. of Sci. and Math., ibid., 1949—; Visit. Prof., N. Mex. Highlands Univ., Summer, 1957. Hon. Pos.: Mem., Exec. Comm. and Marshal of Faculty, Ft. Lewis Br., Colo. St. Coll. Mem.: Sigma Xi; Alpha Chi; Am. Chem. Soc.; Fellow, Tex. Acad. of Sci.; A.A.A.S.; Gamma Alpha. Contbr. to: Am. Photography; Chem. Rev.; N. Y. Times; The Pan Am. Ph.D. Dissertation: The Composition and Possible Constitution of Some Sulfur Dyes. Travel: N. Am.; Europe; N. Africa; etc. Hobbies: Photography; Writing; Handball. Author: Textbook, Inorganic Chem., published by the Blakiston Co., Jan., 1947; General Chemistry, Blakiston, 1954; Lab. Exercises in Inorganic Chem., Blakiston Co., 1947; Lab. Exercises in Gen. Chemistry, Brown, 1954; Elem. Qual. Analysis, Brown, 1956. Special Int.: Dye Chem., Organic Sulfur Compounds.

JONG, Francis M. (Mr.), Gen. Mgr., China Dry Goods Co., San Francisco 3, Calif. Home Add.: 2511 Alva Ave., El Cerrito, Calif. METEOROLOGIST, MATHEMATICAL RESEARCH. b. Ryde, Calif., Sept. 5, 1917. s. S. K. and C. H. (Sun) J. Edn.: B.S., Univ. of Calif., 1941; M.S., U.C.-L.A., 1943. m. Elizabeth Chen, Dec. 18, 1945. c.: Andrew; Bendrew; Christine; Daniel. Exp.: Inspr., Bur. of Ships, San Fran., 1941-42; Tech. Adv., U. S. Army Adv. Group, Nanking, China, 1946-47; Sales Mgr., China Dry Goods Co., San Francisco, 1950—. Mem.: Am. Math. Soc.; A.A.A.S.; Mr. and Mrs. Club, Berkeley, Calif. Author: Aerological Phenonema in Central China and Manchuria, 1947. Contbr. to: A.M.S.; A.A.-A.S. Serv. Rec.: U. S. Army Air Force, 1943-46. Areas of Rsch.: Heat Radiation, Upper Atmosphere.



JORDAN, Charles M., Chief Designer, General Motors, Detroit, Mich.

JOQUEL, Arthur Louis, II (Mr.), Independent Rschr., Tchr., Journalist, #1 Wash. Sq. Village, N. Y. 12, N. Y. SOCIAL ANTHROPOLOGY, SOCIOLOGY. b. Steelville, Mo., Feb. 9, 1919. s. Arthur Louis and Evelyn Seay (Woodruff) J. Edn.: B.S., Ariz. State Univ., 1958; M.A., ibid., 1959; M.A., ibid., 1960. m. Marie Louise Burnett, June 17, 1948. Exp.: Asst. Custodian, Philos. Rsch. Soc., Los Angeles, Calif., 1938-50; Dir., Challenger Rsch. Inst., Los Angeles, Calif. and Phoenix, Ariz., 1950—; Tchr., Sunnyslope H. S., Phoenix, Ariz., 1958-61; Asst. Ed., Grolier, Inc., N. Y., 1961—. Mem.: A.A.A.S.; Am. Sociol. Assn.; Natl. Coun. for Soc. Studies; Am. Hist. Assn.; Ariz. Acad. Sci.; Phi Kappa Phi; Torch Club. Author: The Challenge of Space, 1952; Contraterrene Atoms (in Press). Contbr. to: Ariz. Engr. and Scientist.

Areas of Rsch.: Interdisciplinary Approach to Social and Physical Sciences; Research in Area of Contraterrene Matter (antimatter).

JORDAN, Richard C. (Ph.D.), Prof., Head, Dept. of Mechanical Engrng., Univ. of Minn., Minneapolis, Minn. Home Add.: 2252 Folwell St., St. Paul 8, Minn. MECHANICAL ENGINEERING. b. Minneapolis, Minn., Apr. 16, 1909. s. Al C. and Estelle R. (Martin) J. Edn.: B.Aero., Univ. of Minn., 1931; M.S., ibid., 1933; Ph.D., ibid., 1940. m. Freda M. Laudon, 1935. c.: Mary Ann; Carol; Linda. Exp.: In Charge, Air Conditioning Div., Minneapolis Br., Am. Radiation and Standard Sanitary Co., Minneapolis, Minn., 1933-36; Instr., Univ. of Tulsa, 1936-37; Instr., Univ. of Minn., 1937-41; Asst. and Assoc. Prof., Asst. Dir., Engrng. Expt. Sta., ibid., 1941-44; Assoc. Prof., ibid., 1944-46; Prof., ibid., 1946-49; Prof., Head, Dept. of Mechanical Engrng., ibid., 1950—. Hon. Pos.: Past Pres., Am. Soc. of Heating, Refrigerating and Air Conditioning Engrs.; Chmn., Div. of Engrng. and Industrial Rsch.; Natl. Acad. of Science; Natl. Rsch. Council; Chmn., Advisory Panel for Engineering Socs.; N.S.F., Vice-Pres., Exec. Comm., Internatl. Inst. of Refrigeration, Paris, France; Chmn., U. S. Natl. Comm. for Internatl. Inst. of Refrigeration; Natl. Acad. of Scis.; Natl. Rsch. Coun. Mem.: A.S.M.E.; A.S.E.E.; Natl. Soc. of Professional Engrs.; A.A.U.P.; A.A.A.S.; A.S.H.R.A.E.; A.F.A.S.E.; Institut Internatl. Du Froid; Minn. Soc. of Profl. Engrs.; Minn. Fed. Engrng. Soc.; Sigma Chi; Pi Tau Sigma; Tau Beta Pi. Author: Refrigeration and Air Conditioning, European Edition, 1956, Asian Edition, 1960. Co-Author: Refrigeration and Air Conditioning, 1948. Contbr. to: Mechanical Engrng.; Newsletter, Natl. Acad. of Scis., Natl. Rsch. Coun.; Jour. of Am. Soc. of Heating, Refrigerating and Air Conditioning Engrs.; A.I.E.E.; Encyc. Dictionary of Physics; Solar Energy; Jour. of Assn. for Applied Solar Energy; Refrigerating Engrng.; Heating Piping and Air Conditioning; Air Pollution Control Assn. Jour.; Collier's Encyc.; Jour. of Engrng. Edn.; Canadian Refrigeration Jour.; Paper Trade Jour.; Jour. of Industrial Hygiene and Toxicol.; The Minn. Engr. Areas of Rsch.: Mechanical Engrng., Solar Energy Utilization; Air Filtration; Air Pollution Control and Fine Particle Technol.; Refrigeration, Heating and Air Conditioning.

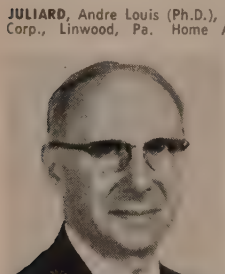
JOSEPH, Margaret (Miss), Chmn. Math. Dept., Shorewood H. S., Milwaukee, Wis. Home Add.: 1504 N. Prospect Ave., Milwaukee 2, Wis. MATHEMATICS. b. Grayline, Mich., Nov. 24, 1897. d. Hyman and Rosa (Wolf) J. Edn.: B.S., Univ. of Mich., 1923; M.A., ibid., 1929. Exp.: Tchr., Horicon H. S., Horicon, Wis., 1918-20; Tchr., Grayling H. S., Mich., 1920-22; Chmn. Dept. of Math., River Rouge H. S., River Rouge, Mich., 1923-25; Chmn. Dept. of Math., Shorewood H. S., Milwaukee, Wis., 1925—. Hon. Pos.: Past Vice-Pres. and Secy., Wis. Math. Tchrs. Assn.; Past Pres. and Secy., Milwaukee Suburban Math. Coun. Mem.: Wis. Edn. Assn.; N.E.A.; Natl. Coun. Tchrs. of Math.; Math. Assn. Am.; Delta Kappa Gamma; Fellow, A.A.-A.S. Author: New Trend Geometry, 1940; Basic General Math., 1958; Byroads of Algebra, 1953. Contbrng. Author: Be a Better Reader, 1958; General Math. in High School, 1950; College Preparatory Math., 1957; Arithmetic Learning Sequence for Elem. School, 1948. Contbr. to: Math. Tchr.; Schl. Sci. and Math.; Yearbook of N.C.T. Math. Gen. Int.: Named the Outstanding Math. Tchr. in Wis. in 1959 by Wis. Soc. of Professional Engrs.; Rec'd Schoiarship from N. Sc. Found. to Attend Math. Session at Princeton, 1960. Areas of Rsch.: Mathematics; Designed the Perspectograph, a Plastic Template used to draw all three-dimensional figures.

JORDAN, Thomas Friedrich (Ph.D.), Rsch. Engr., E. I. DuPont de Nemours and Co., Polychemicals Dept., Rsch. and Devel. Div., Exptl. Sta., Wilmington 98, Del. Home Add.: R.D. #4, West Chester, Pa. APPLIED MECHANICS, SOLID STATE BEHAVIOR OF MATERIALS, POLYMER AND METAL PROCESSING. b. Kobe, Japan, Feb. 24, 1931. s. Johannes S. and Helene (Lichtwark) J. Edn.:

Diplom Ing., Techn. Inst., Hannover, Germany, 1954; M.Sc., Univ. of Calif., 1955; Ph.D., Techn. Inst., Hannover, Germany, 1957. m. Carla Nelle, Aug. 27, 1955. c.: Michael T.; Kristen. Exp.: Rsch. Engr., Univ. of Calif., 1955; Tchng. and Rsch. Asst., Techn. Inst., Hannover, Germany, 1955-58; Rsch. Engr., E. I. DuPont de Nemours and Co., Wilmington, Del., 1958-. Mem.: A.A.A.S.; A.S.M.E.; R.E.S.A.; Sigma Xi. Contbr. to: Jour. of Mechanics and Physics of Solids; Trans. A.S.M.E.; Werkstattstechnik. Gen. Int.: Fulbright Scholar, 1954-55. Areas of Rsch.: Applied Mechanics (Elasticity, Plasticity, Viscous Flow, etc.); Solid State Behavior of Materials; Mechanics of Rigid Bodies and Deformable Solids; Forming Processes and Equipment for Working of Metals and Polymers.

JOSEPHSON, Emanuel M. (M.D.), 230 E. 61st St., N.Y.C. 21, N. Y. MEDICINE OTOLARYNGOLOGY AND OPHTHALMOLOGY. b. Baltimore, Md., Sept. 23, 1895. s. Joseph C. and Mary (Kobin) J. Edn.: Johns Hopkins Univ., 1910-12; B.S., Columbia Univ., 1916; M.D., ibid., 1917. Exp.: Asst. Med. Dir., Am. Red Cross, 1921-22; Bellevue Hosp., 1923-24; Vanderbilt Clinic, 1924-25; Post Grad. Hosp., 1926-27; N.Y.C. Dept. of Health, 1928-40 Mem.: A.A.A.S., Fellow; Internatl. Cong. of Ophthalmology; Pan Am. Ophthalmologic Soc.; N. Y. Acad. of Sci.; Internatl. Cong. of Otolaryngology. Author: Glaucoma and Its Med. Treatment with Cortin, 1937; Near-Sightedness Is Preventable, 1939; Your Life Is Their Toy—Rackets Soc. Serv. and Medical, 1940; The Strange Death of F. D. Roosevelt, 1948; Rockefeller "Internationalist," The Man Who Misrules the World, 1952; Roosevelt's Communist Manifesto, 1955; Thymus, Manganese and Myasthenia Gravis; Breathe Deeply and Avoid Colds; Unheeded Teachings of Jesus; The Rockefeller-Soviet Water Fluoridation Conspiracy; Public Enemy No. 1: A Biography of Nelson A. Rockefeller, The Rewards of Treason; Lincoln and the Communists. Contbr. to: Jour. of Am. Med. Assn.; Science; Nature; Archives of Otolaryngology; Med. Record; Laryngoscope, Zeitschrift fur Ohr-Nasen-, Halsheilkunde; Proc. of the XVth Internatl. Congress of Ophthalmol.; Proc. of Internatl. Cong. of Otolaryngol. Areas of Rsch.: Ophthalmology, Otolaryngology, Neurology, History, Medicine.

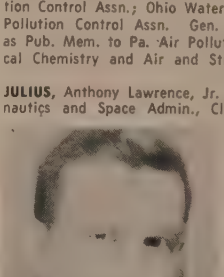
JULIARD, Andre Louis (Ph.D.), Hd. Analytical Dept., Houdry Process Corp., Linwood, Pa. Home Add.: Bryn Mawr, Pa. RESEARCH PHYSICAL CHEMIST. b. Antwerp, Belgium, Nov. 9, 1901. s. Louis and Rose (Hocchaus) J. Edn.: B.S., Univ. of Brussels, 1922; Sc.D., ibid., 1925; Ph.D., ibid., 1932. m. Denise Freedman, Sept. 12, 1933. c.: France; Claudie Cristian. Exp.: Instr. Analytical Chem., Univ. of Brussels, 1925-28; Fellow and Assoc., Belgian Natl. Scientific Rsch. Fdtn., 1928-38; Asst. Prof., Hd., Analytical Lab., Univ. of Brussels, 1938-40; Prof., Dir., Analytical Lab., ibid., 1945-51; Hd. Analytical Dept., Houdry Process Corp., 1951—; Special Lecture, Univ. of Pa., 1953—. Hon. Pos.: Vice-Pres., Analytical Sect., Internatl. Cong. of Indusl. Chem., 1949; Hon. Prof., Univ. of Brussels, 1951. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Electrochem. Soc.; Faraday Soc.; C.I.T.C.E. Contbr. to: Jour. of Physical Chem.; Analytical Chem.; Jour. of Faraday Soc.; Jour. of Electroanalytical Chem.; Nature. Gen. Int.: Mechanism of Heterogene Reaction. Areas of Rsch.: Electrode Processes; Catalysis; New Methods of Analysis.



JOYNER, Weyland Thomas, Jr. (Ph.D.), Assoc. Prof. of Physics, Hampden-Sydney Coll., Hampden-Sydney, Va. Home Add.: Box 86, Hampden-Sydney, Va. NUCLEAR PHYSICS (EXPERIMENTAL). b. Suffolk, Va., Aug. 9, 1929. s. Weyland Thomas and Thelma O. (Neal) J. Edn.: B.S., Hampden-Sydney Coll., 1951; M.A., Duke Univ., 1952; Ph.D., ibid., 1955. m. Marianne Steele, 1955. c.: Anne Newman; Weyland Thomas, III. Exp.: Asst. in Instrn., Hampden-Sydney Coll., 1949-50; Rsch. Asst., Duke Univ., 1951-53; Tchng. Fellow, ibid., 1953-54; Rsch. Physicist, Dept. of Defense, Wash., D. C., 1954-57; Rsch. Assoc., Univ. of Md., 1955-57; Asst. Prof. of Physics, Hampden-Sydney Coll., 1957-59; Assoc. Prof. of Physics, ibid., 1959—. Hon. Pos.: Consult., Oak Ridge Inst. of Nuclear Studies, 1960-62. Mem.: Am. Phys. Soc.; Am. Assn. Phys. Tchrs.; A.A.A.S.; Inst. Rad. Engr.; Va. Acad. of Sci.; Phi Beta Kappa; Sigma Xi; Sigma Pi Sigma; Chi Beta Phi; Lambda Chi Alpha. Contbr. to: Rev. of Scientific Instruments; The Phys. Rev.; I.R.E. Trans. on Nuclear Sci. Gen. Int.: Pres., Pd. Fms. Inc.; Dir., Windsor Supply Corp., Inc Areas of Rsch.: Time-of-Flight Neutron Spectroscopy, Nuclear Instrumentation, Angular Distributions and Correlations, Nanosecond Circuitry, Magnetic Thin Films.

JUKKOLA, Waino Helmer (Ph.D.), Supv. Chem. Servs., Jones and Laughlin Steel Corp., 3 Gateway Ctr., Pittsburgh 30, Pa. Home Add.: 100 So. Brodhead Rd., Aliquippa, Pa. ANALYTICAL CHEMISTRY (METALLURGICAL) AIR AND STREAM POLLUTION ABATEMENT. b. Lead, S. Dak., Feb. 15, 1907. s. Carl A. and Hilma (Killinen) J. Edn.: B.S., S. Dak. Schl. of Mines and Tech., 1929; M.S., Univ. of Colo., 1932; Ph.D., ibid., 1935. m. Bedelia Pyle, Feb., 1935. c.: Kendren A.; Carl E.; George D. Exp.: Asst. Instr., Univ. of Colo., Boulder, Colo., 1930-35; Phy. Sci. Aide, Tenn. Valley Auth., Wilson Dam, Ala., 1935-36; Jr. Chemist, Natl. Bur. of Standards, Wash., D. C., 1936-40; Asst. Chf., Chem., Jones and Laughlin Steel Corp., Aliquippa, Pa., 1939-57; Sr. Dev. Engr., ibid., Pittsburgh, Pa., 1957; Supv. Chem. Servs., ibid., 1957—. Hon. Pos.: Past Chmn., Steel Ind. Action Comm.; Chmn., Am. Iron and Steel Inst. Task Force on Control of Fumes from Steelmaking Processes. Mem.: A.A.A.S.; Am. Chem. Soc.; Air Pollution Control Assn.; Ohio Water Pollution Control Conf.; Pa. Water Pollution Control Assn. Gen. Int.: Appointed by Gov. in 1960 as Pub. Mem. to Pa. Air Pollution Com. Areas of Rsch.: Analytical Chemistry and Air and Stream Pollution Abatement.

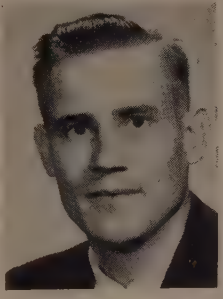
JULIUS, Anthony Lawrence, Jr. (Ph.D.), Rsch. Scientist, Natl. Aeronautics and Space Admin., Cleveland, Ohio. Home Add.: 7622 Alan Parkway, Middleburgh Hgts. 30, Ohio. GEOPHYSICS. b. Campbell, Ohio, July 10, 1923. s. Anthony Julius and Rose Ann (Schettine) J. Edn.: A.B., Ohio Wesleyan, 1948; B.S., Mass. Inst. of Technol., 1950; M.S., Ohio St. Univ., 1952; Ph.D., St. Louis Univ., 1959. m. Carmel Pappano, Aug. 20, 1955. c.: Lorraine. Exp.: Physicist, Firestone Tire Co., Akron, Ohio, 1953-54; Instr., St. Louis Univ., 1955-58; Physicist, Designers for Industry, Cleveland, Ohio, 1959-61; Rsch. Scientist, Natl. Aeronautics and Space Administration, Cleveland, Ohio, 1961—. Mem.: A.A.A.S.; Sigma Xi; Am. Rocket Soc.; Am. Meteorological Soc.; Sigma Pi Sigma; Neumann Assn.; N.A.S.A.; Chess Assn. Contbr. to: Jour. of Meteorol.; Sci. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Physics of the Upper Atmosphere; Study of Solar-Terrestrial Relationships.



JUSTER, Norman Joel (Ph.D.), Assoc. Prof. of Chem., Univ. of Calif. at Los Angeles, Summer Sessions; Prof. of Chem., Pasadena City Coll., Pasadena, Calif. Home Add.: 8323 Willoughby Ave., Los Angeles 69, Calif. PHYSICAL ORGANIC CHEMISTRY. b. N. Y., N. Y., Feb. 19, 1924. s. Herman Edward and Shirley Claire (Schofield) J. Edn.: B.A., Univ. of Calif. at L. Angeles, 1943; M.S., Univ. of Colo., Sierra St. and Univ. of Calif. at Los Angeles, 1947; Ph.D., ibid., 1956. m. Marian R. Wohl, 1950. c.: Jeanette Ilene; Deborah Ann; Cindy Lee. Exp.: Asst. Prof. to Prof., Pasadena City Coll. and John Muir Coll., 1947—; Asst. Prof. to Assoc., Univ. of Calif. at Los Angeles, summer, 1957—; Sr. Chem. and Hd., Organic Polymer Labs., Motorola Semiconductor Products, Inc., Phoenix, Ariz., 1960-61. Hon. Pos.: Chmn., Var. Committees of Am. Chem. Soc. Mem.: A.C.S.; A.A.A.S.; Sigma Xi; Phi Beta Kappa; Chem. Soc. London; Phi Delta Kappa; Alpha Mu Gamma; Alpha Chi Sigma; Phi Lambda Upsilon. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Organic Chem.; Jour. of Chem. Edn.; SCALACS; Insulation. Serv. Rec.: U. S. Navy, 1943-46, now Comdr., U.S.N.R. Areas of Rsch.: Organic Reaction Mechanisms, the Polymerization of Acetylenes and Allenes, Organic Semiconductors and Charge Complexes, Silicones and Stannanes.

URGELSKY, William, Jr. (Ph.D.), Pharmacologist, Food and Drug dmin., Wash., D. C. Home Add.: 5011 Aurora Dr., Kensington, Md. TOXICOLOGY OF PESTICIDES. b. Englishtown, N. J., May 25, 1931. s. William and Mary (Waselevitz) J. Edn.: B.S., Rutgers Univ., 1953; M.S., ibid., 1955; Ph.D., ibid., 1958. m. Annette Lanquist, Sept. 4, 1954. c.: Susan Elizabeth; William Martin. Exp.: Geneticist, Fed. Expt. Sta., Mayaguez, Puerto Rico, 1957-60; Pharmacologist, Food and Drug Adm., Wash., D. C., 1960—. Mem.: Soc. for Exper. Biol. and Med.; A.A.-A.S.; Alpha Zeta; Sigma Xi; Phi Beta Kappa. Contbr. to: Proc. of the Natl. Acad. of Scis.; Economic Botany. Areas of Rsch.: Genetics of Plant Agglutinins; Toxicology of Tropical Plants; Toxicology of Pesticides.

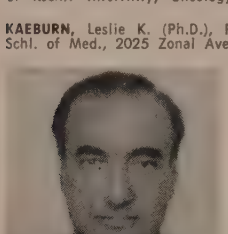
JUTILA, Sakari Tapani (Ph.D.), Asst. Prof., Elect. Engrng., Syracuse Univ., Syracuse, N. Y. Home Add.: R.D. #2, Lafayette, N. Y. ELECTRICAL ENGINEERING EDUCATION, PHYSICAL ELECTRONICS, ECONOMICS. b. Helsinki, Finland, Oct. 18, 1926. s. Dr. Kalle Theodor and Mrs. Hilja (Pastinen) J. Edn.: B.S., Purdue Univ., 1950; M.S., ibid., 1951; Ph.D., Syracuse Univ., 1960. m. Shirley Jutila Rinkinen, 1951. c.: Kristiina; Sakari; Helena; John. Exp.: Engr., General Elec. Co., Syracuse, N. Y., 1953-56; Instr., Elect. Engr., Syracuse Univ., N. Y., 1956-60; Asst. Prof., ibid., 1960—. Mem.: Sigma Xi; A.A.A.S.; Acad. of Polit. Sci.; Econometric Soc.; A.A.U.P. Contbr. to: Univ. Coll Adult Edn. Div. Publication; Econometrica. Areas of Rsch.: Engineering Edn., Economics, Physical Electronics, Reliability Studies.



KACHER, Leon (M.D.), 2037 Pine St., Phila. 3, Pa. Home Add.: 2037 Pine St., Phila. 3, Pa. OBSTETRICS AND GYNECOLOGY.

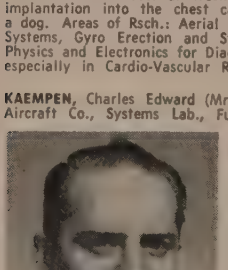
b. Phila., Pa., Jan. 14, 1913. s. Abraham and Elsie (Packman) K. Edn.: B.A., Univ. of Pa., 1932; M.D., ibid., 1936. m. Hester B. Ziserman, Nov. 27, 1935. c.: Joy Alynne. Exp.: Assoc. Obstets. and Gynecology, St. Luke's Children's Med. Ctr., Phila., Pa., 1937—; Adjunct-Obstet. and Gynec., Einstein Med. Ctr., So. Div., ibid., 1947—; Obstetn. and Gynecol., Pa. Hosp., ibid., 1953—; Gynecologist, Grad. Hosp., Univ. of Pa., Phila., Pa., 1955—; Chief, Gynecol., Oxford Hosp., ibid., 1957—; Instr., Hahnemann Med. Schl., Phila., Pa., 1945-51; Instr., Univ. of Pa. Med. Schl., Phila., Pa., 1955—. Mem.: Diplomate, Am. Bd. Obst. and Gyn.; F.A.C.S.; F.I.C.S.; F.A.C.O.G.; Fellow, Phila. Coll. Phys.; Mem., Phila Co. Med. Soc.; Pa. State Med. Soc.; A.M.A.; Am. Soc. Abd. Surg.; Israeli Med. Soc.; Pan-Am. Cancer Cytol. Soc.; Am. Cancer Soc.; Am. Assn. Maternal and Infant Health; Obst. Soc. Phila.; A.A.A.S.; Assn. Am. Med. Colls.; Phi Lambda Kappa; Phi Mu Sigma; Faculty Club, Univ. of Pa.; F. and A.M.; U. S. Chess Fed.; Franklin-Mercantile Chess Club. Contbr. to: Surg. Gyn. and Obst.; Am. Jour. Diseases of Children. Serv. Rec.: Selective Serv. System, 1943—. Areas of Rsch.: Infertility, Oncology.

KAEBURN, Leslie K. (Ph.D.), Rsch. Assoc., Univ. of Sou. Calif. Schl. of Med., 2025 Zonal Ave., Los Angeles 33, Calif. and Vice Pres. in Chg. of Res. and Dev., The Christina Corp., El Segundo, Calif., 1961—. Home Add.: 11473 Sunshine Terr., Studio City, Calif.



BIO-MEDICAL PHYSICS, BIO-ELECTRONICS; ANALOGUES OF PHYSIOLOGICAL PROCESSES; MONITORING IN SPACE MEDICINE. s. (both dec.). Edn.: M.E., Univ. of Tech., Budapest, 1919; M.E., Bennet Coll., England, 1920; Ph.D., (Physics), Univ. of London, 1923. m. Elizabeth Kuhn Aug. 12, 1942. Exp.: Staff Engr., Siemens-Halske, London, Engl., 1923-26; Chf. Staff Physicist to Dr. Lee deForest, London, 1926-29; Chief Physicist, Edibell Ltd., London, 1929-31; Dir. of Rsch., Universal Sound Systems, London, 1931-33; Rsch. Physicist, Air-Navigational Instr., Cunliffe-Owen Aircraft, Eng., 1933-40; Chf. Physicist, Indusl. Electronics Corp., N. Y., 1941-44; Chf. Physicist in Chg. of Rsch., Hub Industries, Inc., L. I. City, N. Y., 1944-45; Consult. Physicist, N.Y.C. and Los Angeles, 1946-52; Rsch. Assoc., Univ. of Sou. Calif. Schl. of Med., Hd. of Bio-Electronics Lab., 1952—; V.-Pres. in Chg. of Res. and Dev., The Christiana Corp., El Segundo, Calif., 1961—. Hon. Pos.: Chmn., Professional Group on Med. Electronics of Inst. of Radio Engrs., 1956-57. Mem.: Fellow, Physical Soc. of London; Am. Inst. Physics; Soc. of Rheology; Sr. Mem., Inst. of Radio Engrs.; Electron Microscope Soc.; Am. Assn. Adv. Sci.; A.A.U.P. Gen. int.: Paper presented in Nov., 1959 at the Convention of the Am. Rocket Soc. at Wash., D. C. dealing with the chronic implantation into the chest cavity of an EKG transmitter into a dog. Areas of Rsch.: Aerial Navigational and Intertial Guidance Systems, Gyro Erection and Stabilization Platforms; Bio-Medical Physics and Electronics for Diagnostics, Monitoring and Aanalysis, especially in Cardio-Vascular Rsch.

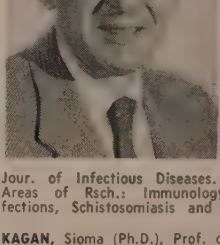
KAEMPEN, Charles Edward (Mr.), Consultant, Staff Engr., Hughes Aircraft Co., Systems Lab., Fullerton, Calif. Home Add.: 3202 Larkstone Drive, Orange, Calif.



AERONAUTICAL ENGINEERING; SYSTEMS ANALYSIS; ASTRONAUTICS RESEARCH. b. Quincy, Ill., Mar. 10, 1927. s. Charles Herman and Margo Mary (Gochicoa) K. Edn.: B.S., Univ. of Ill., 1950. m. Inger Nystrom, Aug. 4, 1951. c.: Charles Robert; Donald Michael; Annette Earline. Exp.: Designer, SAAB Aircraft Co., Linkoping, Sweden, 1950-52; Design Analyst, Sikorsky, United Aircraft, Stratford, Conn., 1952-57; Rsch. Spec., Missile Div., N. Amn. Aviat., Downey, Calif., 1957-60; Vice Pres., Am. Space Transport Co., Seal Beach, Calif., 1960-61; Consultant, Staff Engr., Hughes Ground Systs., Hughes Aircraft, 1961—. Hon. Pos.: Chmn. of Space Sess., Eleventh Internatl. Astronaut. Congress, Stockholm, 1960. Mem.: Am. Astronaut. Soc.; Am. Rocket Soc.; Am. Geophys. Union; Inst. of Aerospace Scis.; Am. Helicopter Soc.; Ancient Free and Accepted Masons; Royal Arch Masons; Toastmasters Internatl. Contbr. to: Proces. Eleventh Internatl. Astronaut. Congress. Serv. Rec.: U. S. Army, 1944-47. Gen. Int.: Originator of the In-Transit Rendezvous Concept of Spac Travel and Transport; Inventor of Regeneratively Cooled Missil Structures; Inventor of Explosive Welding of Super-Strengt Metals; Inaugurated Space Technology Radio Series, Gravit Zero. Areas of Rsch.: Simultaneous Launch and Space Rendezvou Operations; Space Transport and Lunar Base Systems; Spac Surveillance Sensor Integration; Environmental Simulation Analysis Underground Structures Design.

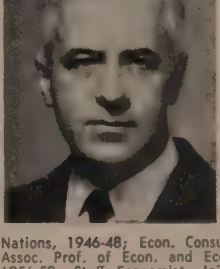
KADEY, Frederic Lionel, Jr. (Mr.), Petrographer, Johns-Manvill Corp., Rsch. Ctr., Manville, N. J. Home Add.: Four Bridge Rd., Chester, N. J. GEOLOGY. b. Toronto, Can., June 21, 1918 s. Frederic L. and Amelia Catherine (Davies) K. Edn.: B.S. Rutgers Univ., 1941; M.A., Harvard Univ., 1947. m. Brend Boocock, Oct. 7, 1950. c.: Brenda Catherine; Frederic Lionel III Exp.: Tchng. Fellow, Harvard Univ., Cambridge, Mass., 1946-47 Geological Field Asst., Sinclair Oil Co., Casper, Wyo., 1946, summer Petrographer, U. S. Steel Corp., Pittsburgh, Pa., 1947-51; Petrographer, Johns-Manville Corp., Rsch. Center, Manville, N. J., 195—. Mem.: A.A.A.S.; Mineralogical Soc. of Am.; Am. Ceramic Soc.; Am. Inst. of Mining; Met. and Petrol. Engrng.; Alpha Sigma Phi; Bd. of Edn. Contbr. to: Agric. Chem.; Trans. of Soc. of Mining Engrs., Science Service. Serv. Rec.: U. S. Army, 1941-45 Areas of Rsch.: Mineralogy and Petrography of Steel Making Slag-Metal-Refractory Reactions; Evaluation of Diatomaceous Earth and of Perlite Deposits, Petrography of Synthetic Silicates.

KAGAN, Irving George (Ph.D.), Chief, Parasitology Unit, Communicable Disease Center, Atlanta 22, Ga. Home Add.: 107 Oakdale Rd., N. E., Atlanta, Ga



IMMUNOLOGY OF PARASITIC INFECTIONS. b. New York, N. Y., June 1, 1919. s. Harry and Miriam (Slatoff) K. Edn.: A.B. Brooklyn Coll., 1940; M.A., Univ of Mich., 1947; Ph.D., ibid., 1950 m. Mildred Reese, June 17, 1940 c.: Mila Rosalyn; Jule Greer Exp.: Asst. Prof., Univ. Pa., 1952-57; Chief, Helminthology Unit Communicable Disease Center, Atlanta, Ga., 1957—. Mem.: Am Soc. of Tropical Med. and Hygiene; Am. Soc. of Parasitologists; The Am. Assoc. of Immunologists; Am Acad. of Microbiology; A.A.A.S., Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Phi Sigma. Contbr to: Am. Jour. of Tropical Med. and Hygiene; Jour. of Parasitology; Jour. of Infectious Diseases. Serv. Rec.: U.S.A.A.F., 1942-45 Areas of Rsch.: Immunology and Serology of Parastic Infections, Schistosomiasis and Hydatid Disease.

KAGAN, Sioma (Ph.D.), Prof. of Internatl. Bus., Univ. of Oregon Eugene, Oregon. Home Add.: 226 Nelson Road, Scarsdale

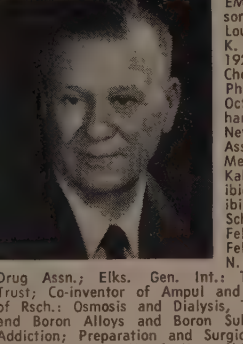


N. Y. ECONOMIC DEVELOPMENT; POPULATION AND RESOURCES. b. Riga, Russia, Sept. 29, 1907. s. Jacques and Bertha (Kaplan) K. Edn.: Tech. Hochschule, Berlin, 1931; M.A., Am. Univ., 1949; Ph.D., Columbia Univ., 1954. m. Jean Batt, Apr. 5, 1947. c.: (stepdaughters): Judith Wood Richie; Susan Roberts Richie Clark. Exp.: Sci. Asst. to Dir., Heinrich Hertz Inst., Tech. Hochschule, Berlin, 1931-33; Founder and Partner, Lab. Electro-Acoustique, Neuilly-Sur-Seine, 1933-48; Chf., Mission of Telecommunications and Mem. of the Bd. of the French Supply Coun. in N. Am., 1944-46; Mem. of the Bd., Telecommunications Advisory Bd. and Econ. Affairs Officer, United Nations, 1946-48; Econ. Consultant, 1949-55; Visiting Prof. and Assoc. Prof. of Econ. and Econ. Geog., Wash. Univ., St. Louis, 1956-59; Staff Economist, Joint Council on Econ. Edn., N. Y., 1959-60; Prof. of Internatl. Bus., Univ. of Ore., 1960—. Hon. Pos.: Panel Chmn., Am. Assembly of the Midwest, 1957. Mem.: TV Round Table, Am. Econ. Assn.; Acad. of Polit. Sci.; Population Reference Bur.; Omicron Delta Gamma. Co-Author: Report of the Advisory Com. on U.N. Telecommunications, 1947; Partners in Progress, 1951; Stanvac in Indonesia, 1957. Contbr. to: Revue D'Acoustique; Indian Econ. Rev.; Foreign Serv. Jour. War Rec.: Free French Forces, 1941-43. Gen. Int.: During World War II planned and set up "Voice of Free France." Areas of Rsch.: Economic Development; Population; Energy; Far East.

KAHLENBERG, Erlhard Nash (Ph.D.), Pres., Kahlenberg Labs., P. O. Box 1660, Sarasota, Fla. and Pres., U. S. Marine Coatings, Inc., Sarasota, Fla. Home Add.: 1930 Clematis St., Sarasota, Fla. PHARMACEUTICAL ORGANIC CHEMISTRY. b. Manitowoc, Wis., Oct. 9, 1926. s. Herman H. Kahlenberg and Alice (Nash) Kahlenberg Yost. Edn.: B.S., Univ. of Fla., 1950; Ph.D., Univ. of Tex., 1954. Exp.: Dir. of Rsch., Kahlenberg Labs., Sarasota, Fla., 1954-62; Dir., ibid., 1962—; Pres., Kahlenberg Labs., Inc. and Pres., U. S. Marine Coatings, Inc., 1962—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; A.A.A.S.; N. Y. Acad. Sci.; Sigma Xi; Alpha Chi Sigma; Phi Lambda Upsilon; Phi Kappa Phi; Phi Beta Kappa. Author: "Utilization of Alpha-Gamma Dialkoxyacetoacet

ates in the Synthesis of Certain Thiouracils, Uracils, and Hydantoins," 1954. War Record: U. S. Army, 1944-46. Gen. Int.: astman Kodak Fellow, Univ. of Tex., 1953-54. Areas of Rsch.: litrogen Heterocycles such as Hydantoins, Thiouracils and Uracils ontaining both Aliphatic and Pyridyl Groups, Ketones and Ketosters, Salt Water Anti-Fouling Paints for Ships Bottoms. Anti-Mildew Agents and Anti-Fungus Agents; Dermatologic lotions, Preparation and surgical uses of Bichloracetic Acid. Reproducible ine particles of 0.01 microns or less.

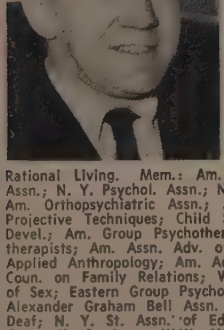
KAHLENBERG, Herman Heald (Dr.), (dec.), Dir. and Owner, Kahlenberg Labs., Sarasota, Fla. Home Add.: 1930 Clematis St., Sarasota, Fla. CHEMISTRY, MEDICINE, CHEMICAL ENGINEERING, EMPHASIS ON COLLOIDS. b. Madison, Wis., Feb. 19, 1901. s. Louis A. and Lillian Belle (Heald) K. Edn.: B.S., Univ. of Wis., 1922; M.S., ibid., 1923; Cand. Chemie, Freiburg, Ger., 1923-24; Ph.D., ibid., 1925. m. Alice Nash, Oct., 1925 (div., 1938). c.: Eilhard; Piri; Greta. Exp.: Techn., Newport Chem. Works, 1920; Asst., Hosp. Rockefeller Inst. Med. Rsch., 1920-21; Vice Pres., Kahlenberg Labs., 1925-41; Pres., ibid., 1941-44; Dir. and Owner, ibid., 1944-61. Hon. Pos.: Pres., Schl. Bd., Two Rivers, Wis. Mem.: Fellow, A.A.A.S.; Am. Chem. Soc.; Fellow, A.I.C.; Chem. Club N. Y.; N. Y. Acad. of Scis.; Parenteral



Drug Assn.; Elks. Gen. Int.: Trustee, Lillian H. Kahlenberg Trust; Co-inventor of Ampul and Tube Sealing Machine. Areas of Rsch.: Osmosis and Dialysis, Tungsten and its Alloys, Boron and Boron Alloys and Boron Suboxide; Surgical Sutures; Drug Addiction; Preparation and Surgical Uses of Bichloracetic Acid; Dermatomycoses, Non-fouling Ship's Bottom Paint; Impetigo; Psoriasis; Enzyme Therapy; Colloidal Gold Therapy; Colloidal Mercury Bioleate; Larva Migrans; Sun-screen; Carcinoma; Colloidal Gold Therapy of Arthritis; Fine Particles even in Size and Reproducible; Mildew Proofing.

KAHLER, Clyde M. (Ph.D.), Prof. of Insurance and Chmn., Dept. of Ins., Wharton Schl. of Finance and Commerce, Univ. of Pa., Philadelphia 4, Pa. Home Add.: 900 Weldon Lane, Bryn Mawr, Pa. INSURANCE. b. Millersburg, Dauphin Co., Pa., Apr. 13, 1901. s. Walter E. and Etta (McCarty) K. Edn.: B.S., Wharton Schl. Univ. of Pa., 1922; A.M., ibid., 1925; Ph.D., ibid., 1930; C.L.U., Am. Coll. of Life Underwriters, Phila., Pa., 1929. m. Mildred E. Kulp, Aug. 15, 1929. Exp.: Instr. in Insurance, Univ. of Pa., 1922-30; Asst. Prof. of Ins., ibid., 1930-41; Dir. of Ednl. Publications, Am. Coll. of Life Underwriters, 1939-46; Assoc. Prof. of Ins., Univ. of Pa., 1941-51; Ednl. Dir., Ins. Soc. of Pa., 1942-51; Dir., Personnel Index, Univ. of Pa., 1944-47; Prof. of Ins., ibid., 1951—; Dir., Wharton Grad. Div., ibid., 1951-53; Vice Dean, ibid., 1953-55; Chmn., Insurance Dept., Wharton Schl. of Finance and Commerce, ibid., 1955—. Hon. Pos.: Chmn., Pension Rsch. Coun., Wharton Schl., 1956—; Mem., Admin. Bd., Huebner Found. for Ins. Edn., 1955—; Bd. of Trustees, Am. Inst. for Prop. and Liability Underwriters, 1954—; Bd. of Dir., Fed. Crop Ins. Corp., U.S.D.A., 1955-61. Mem.: Am. Econ. Assn.; Am. Acad. of Political and Social Sci.; Am. Risk and Insur. Assn., Pres., 1952-53; Am. Soc. of Chartered Life Underwriters. Author: Bus. Interruption Insurance, 1930. Areas of Rsch.: Insurance.

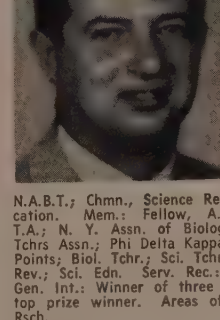
KAHN, David Frederick (Ph.D.), Dir. of Psychological Serv., Lexington Schl. for the Deaf, 904 Lexington Ave., N. Y. 21, N. Y. Home Add.: 27 Spring St., Stamford, Conn. CLINICAL PSYCHOLOGY. b. Stamford, Conn., June 5, 1914. s. Otto and Rebecca (Gruber) K. Edn.: B.S., Conn. Univ., 1942; M.S., Purdue Univ., 1946; Ph.D., ibid., 1948. Exp.: Clin. Psychol., Child Guidance Clinic, Wash. Univ., 1948-49; Staff Psychol., Merrill-Palmer Schl., 1950-53; Faculty, Wayne Univ., 1951-52; Faculty, Brooklyn Coll., 1954-55; Dir., Psychological Services, Lexington Schl. for the Deaf, 1955—; Pvt. Pract. in Psychotherapy, 1953—; Lectr., Dept. of Grad. Edn., Hunter Coll., N.Y.C. Hon. Pos.: Certified Psychol., N. Y. St. and St. of Conn.; Diplomate, Am. Bd. of Examiners in Professional Psychol.; Adv. Coun., Inst. for



Rational Living. Mem.: Am. Psychol. Assn.; Eastern Psychol. Assn.; N. Y. Psychol. Assn.; N. Y. Soc. Clin. Psychol.; Sigma Xi; Am. Orthopsychiatric Assn.; Am. Assn. Univ. Profs.; Soc. for Projective Techniques; Child Study Assn. Am.; Soc. Res. Child Devel.; Am. Group Psychotherapy Assn.; Am. Acad. of Psychotherapists; Am. Assn. Adv. of Sci.; Am. Sociol. Soc.; Soc. for Applied Anthropology; Am. Acad. of Polit. and Soc. Sci.; Natl. Coun. on Family Relations; W.F.M.H.; Scientific Soc. for Study of Sex; Eastern Group Psychotherapy Assn.; Gerontological Soc.; Alexander Graham Bell Assn. for the Deaf; Am. Instrs. of the Deaf; N. Y. St. Assn. of Educators of the Deaf. Serv. Rec.: Capt., U. S. Army, W.W. II; Korean War. Contbr. to: Jour. Applied Psychol. Gen. Int.: Guest Lectr., Univ. of Kwansei Gakuin, Japan, summer, 1958. "Am. Specialist" in Clinical Psychology, State Dept. Internatl. Edn. Exchange Program—S. Am., 1960. Areas of Rsch.: Psychotherapy; Child Devel.; Gerontology; Problems of the Deaf.

KAHN, Edward (M.D.), Obstetrician, Gynecologist, 213-16 85th Ave., Queens Village 27, L. I., N. Y. Home Add.: 257 Edgewood Ave., Smithtown, L. I., N. Y. OBSTETRICS, GYNECOLOGY, FEMALE INFERTILITY AND STERILITY. b. N. Y., N. Y., Sept. 16, 1913. s. Emile and Pauline (Andorn) K. Edn.: B.S., Univ. Coll. of Arts and Pure Sci., N. Y. Univ., 1934; M.D., L. I. Coll. of Med., 1939. m. Faith Hope Green, May 29, 1942. c.: Ellen Leora; Faith Hope, 2nd; Paula Amy. Exp.: Asst. in Pathology, L. I. Coll. of Med., Kings Co. Hosp. Div., Brooklyn, N. Y., 1939-40; Internship and Residency, Knickerbocker Hosp., N. Y., N. Y., 1940-42; Clin. Asst. in Obst. and Gynecol., Sydenham Hosp., N. Y., N. Y., 1944-47; Asst. Adjunct in Obst. and Gynecol., ibid., 1947-48; Adjunct in Obst. and Gynecol., ibid., 1948-49; Asst. Visiting Obstn. and Gynecolst., Dept. of Hosps., Sydenham Hosp., N. Y., N. Y., 1949-55; Assoc. Visit. Obstn. and Gynecolst., ibid., 1955—; Chf. of the Female Sterility Clinic and The Gynecological Specialty Clinics, ibid., 1950—; Culdoscopist to the Gynecological Serv., Sydenham Hosp., 1954—; In Chg., Hysterography and Hysterosalpingography Clinic, ibid., 1950—. Mem.: Am. Med. Assn.; N. Y. St. Med. Soc.; N. Y. Co. Med. Soc.; Queens Co. Med Soc.; Founding Fellow, Am. Coll. of Obstetricians and Gynecologists; Internatl. Coll. of Surgeons; Am. Soc. for the Study of Sterility; Am. Assn. for Maternal and Infant Health; Internatl. Fertility Assn.; Pan-Am. Cancer Cytology Soc.; A.A.A.S.; N. Y. Acad. of Sci.; Am. Soc. of Abdominal Surgeons; Med. Jurisprudence Soc. of N. Y.; Am. Geriatrics Soc.; Y.M.C.A. Contbr. to: Am. Jour. of Obst. and Gynecol.; Obst. and Gynecol.; Fertility and Sterility; Mod. Med.; Am. Jour. of Surg. Serv. Rec.: U. S. Army, 1942-44. Areas of Rsch.: Development of New and Improved Gynecological Instruments and Techniques; Study of Female Infertility and Sterility; The Problem of Treating Severe Primary, Recurrent Menstrual Pain; Causes of Pregnancy Loss in New York City, in cooperation with the Dept. of Health, Bur. of Vital Statistics.

KAHN, Paul (Ph.D.), Sci. Curriculum Consult., Office of Sci. Edn., N.Y.C. Home Add.: 1244 Grand Concourse, Bronx 56, N.Y.C., N. Y. BIOLOGY. b. N. Y. C., N. Y., Sept. 12, 1916. s. Harry and Bessie (Reinstein) K. Edn.: Ph.D., N. Y. Univ., 1955. Exp.: Tchr. of Biol., Boys' H. S., N. Y., 1938-39; Tchr. of Biol. and Physics, Haaren H. S., N. Y., 1946-47; Tchr. of Gen. Sci., P.S. 189, Manhattan, 1947-52; Tchr. of Gen. Sci., Jr. H. S. 79, Bronx, 1952-56; Tchr. of Biol., Bronx H. S. of Sci., 1956-59; Asst. Prin., Jr. H. S. 45, Bronx, 1959-62; Sci. Curr. Consult., Office of Edn., 1962—; Visiting Tchr., New Paltz Coll. of Edn., New Paltz, N. Y., summer, 1961, '62. Hon. Pos.: Vice-Pres., Fed. of Sci. Tchrs. Assn.; Pres., Gen. Sci. Tchrs. Assn.; Exec. Bd. Mem., N. Y. Doctorate Assn.; Local Repr. of

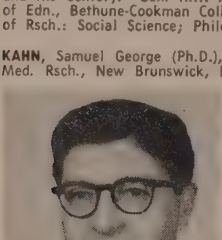


N.A.B.T.; Chmn., Science Revision Comm., N.Y.C. Board of Education. Mem.: Fellow, A.A.A.S.; N.A.B.T.; N.A.R.S.T.; N.S.-T.A.; N. Y. Assn. of Biology Teachers; N. Y. General Science Tchrs Assn.; Phi Delta Kappa; Kappa Delta Pi. Contbr. to: High Points; Biol. Tchr.; Sci. Tchr.; Schl. Sci. and Math.; Detroit Sci. Rev.; Sci. Edn. Serv. Rec.: U. S. Army Signal Corps, 1943-46. Gen. Int.: Winner of three Star Tchr. Recognition Awards as a top prize winner. Areas of Rsch.: Microbiology and Sci. Edn. Rsch.

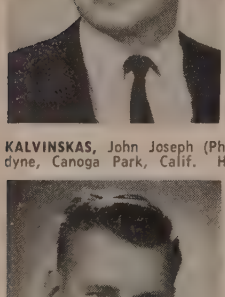
KAHN, Lina Assoc. Prof., Bethune-Cookman Coll., Daytona Beach, Fla. Home Add.: 54 Baker Hill Rd., Great Neck, L. I., N. Y. PHILOSOPHY, SOCIAL SCIENCE. b. Libau, Kurland, Latvia. d. Samuel and Sarah Katzel K. Edn.: B.A., European Gymnasium, 1903; Tchr's Diploma, ibid., 1904; M.A., Columbia Univ., 1907; Ph.D., ibid., 1916. Tchng. Exp.: Tchr., Philosophy, Barnard Coll., 1913-14; Substituting, French, German, N.Y.C. H. Schls, 1916, 1917; P. S. No. 2, Grades, Lodi, N. J., 1921-22; Tchr French, German, Nazareth Coll., 1929-30; German, Russian, Mohawk Coll., 1946-48; Assoc. Prof., Social Sci., Philosophy, German, Bethune-Cookman Coll., 1948—. Profl. Exp.: Asst. to Econ., Russian Embassy, Wash., D. C., 1918-20; Ed. Asst., C. A. Nichols Publ. Co., Springfield, Mass., 1920-21; Rsch. Worker, Russell Sage Fdtn., N.Y.C., 1922-23; Ed. Asst., Rsch. Bur. for Med. Lit., N.Y.C., 1923-24; Soc. Econ., U. S. Dept of Labor, Children's Bur., Wash., D. C. and Stat. Work, Dairymen's League Coop. Assn., Bur. of Nutrition, N.Y.C., 1924-25; Soc. Rsch., Bur. of Jewish Soc. Rsch., N.Y.C., 1925-27 and Welfare Coun. of N. Y., 1927-29; Abstracter of French, German and Eng. Publications on Econ. and Sociol., Social Sci. Abstracts, N.Y.C., 1931-33; Rsch. Asst. Tchrs. Coll., Columbia Univ., 1934-35; Rsch. Worker, U. S. Office of Edn.,

1935-36; Ed. Work, Tchrs. Coll., Columbia Univ. and Writer, Wilson Publ. Co., N. Y., N. Y., 1937-41; Rsch., Writing, Editing in Fields Food and Nutrition, Jour. of Living Publ. Corp., N.Y.C., 1941-42; Rsch. and Translation in Geodetics, War Dept., U. S. Corps of Engrs., 1942-45. Mem.: A.A.U.P.; A.A.U.W.; Acad. Polit. Sci.; Am. Sociol. Soc.; A.A.A.S.; Grad. Faculties Alumni of Columbia Univ. Contbr. to: Jour. of Philos.; Soc. Sci. Abstracts; Dictionary of Biographies of Am. Authors; New Larned Hist. for Ready Reference and Rsch.; World's Markets. Author: Metaphysics of the Supernatural, as illustrated by Descartes; Archives of Philosophy, Issue No. 9, 1918. Ph.D. Dissertation: Descartes and His Century. Gen. Int.: Awarded Citation of Merit by Dept. of Edn., Bethune-Cookman Coll. by Student Body Election. Areas of Rsch.: Social Science; Philosophy.

KAHN, Samuel George (Ph.D.), Asst. Dept. Hd., Squibb Inst. for Med. Rsch., New Brunswick, N. J. Home Add.: 18-C-4 Redfield Village, Metuchen, N. J. NUTRITION-BIOCHEMISTRY. b. Belleville, N. J., May 29, 1929. s. Maxwell M. and Edith (Feldstein) K. Edn.: B.S., Ill. Wesleyan Univ., 1951; M.S., Univ. of Ill., 1953; M.S., ibid., 1954; Ph.D., ibid., 1955. m. Irma Berger, July 17, 1960. Exp.: Res. Asst., Univ. of Ill., 1952-55; Res. Assoc., ibid., 1955-56; Sr. Res. Scientist, Squibb Inst. for Med. Res., New Brunswick, N. J., 1956-58, Asst. Dept. Head, ibid., 1958—. Mem.: A.C.S.; A.A.A.S.; N. Y. Acad. Sci.; Gamma Alpha; Phi Sigma; Alpha Epsilon Delta. Area of Rsch.: Atherosclerosis, Obesity, Vitamins, Feed Additives.



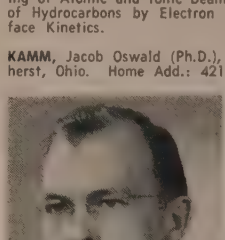
KALVINSKAS, John Joseph (Ph.D.), Supvr., Basic Studies, Rocketdyne, Canoga Park, Calif. Home Add.: 13433 Moorpark, Apt. E., Sherman Oaks, Calif. CHEMICAL ENGINEERING. b. Philadelphia, Pa., Jan. 14, 1927. s. Anthony and Anna (Slezute) K. Edn.: B.S., Mass. Inst. of Tech., 1951; M.S., ibid., 1952; Ph.D., Calif. Inst. of Tech., 1959. m. Louanne Adams, Sept. 3, 1955. Exp.: Rsch. Engr., Eastern Lab., Explosives Dept., DuPont, Gibbstown, N. J., 1952-55; 1959-60; Research Specialist, Rocketdyne, Canoga Park, Calif., 1960-61; Supvr., Basic Studies, Rocketdyne, Canoga Park, Calif., 1961—. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Kappa Kappa Sigma. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Chemical Reaction Kinetics, Machine Computation, Chem. Engrng. Process Design, Heat Transfer.



KAMEN, George Francis, Clin. Asst., Dept. of Preventive Med., Memorial Center for Cancer and Allied Diseases, N. Y., N. Y. Home Add.: Scott Lane, Greenwich, Conn. MEDICINE, IMMUNOCHEMISTRY. b. Hazleton, Pa., May 28, 1916. s. Alexander and Frances (Levich) K. Edn.: B.S., Villanova Coll., 1940; M.D., Temple Univ., 1943. m. Adele Alliot. c.: Steven; Sara; John; Katherine. Exp.: Intern, U. S. Marine Hosp., Chicago, 1944; Asst. Res., Path., Bellevue Hosp., 1946-47; Asst. Res., Med., ibid., 1947-49; Clin. Asst., Dept. of Prev. Med., Mem. Center for Cancer and Allied Dis., 1949—. Mem.: A.A.A.S.; N. Y. Co. Med. Soc. Contbr. to: Proc., Soc. Exptl. Biol. and Med.; Jour. Am. Ger. Soc.; Bull. N. Y. Acad. Med.; N. Y. St. Jour. Med.; Jour. Med. Soc. N. J.; Medical Times; Nature. Serv. Rec.: U.S.N., 1943-46. Gen. Int.: Pioneer in the Therapeutic effects of intrathecal admin. of antiinflammatory steroids in certain neurologic diseases, i.e., Guillian-Barre Synd., Multiple Sclerosis, Encephalomyelitis, etc.; Developed and patented a process for solubilizing and stabilizing steriods (Free alcohol), a non-toxic preparation for use via the parenteral or intrathecal route of administration; Recently developed a totally different and new "Acolein-Killed Virus" vaccine. Areas of Rsch.: Immunochemistry and Clinical Investigation.

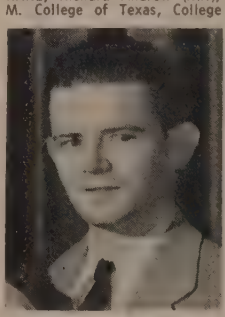
KAMINSKY, Manfred Stephan (Ph.D.), Assoc. Physicist, Argonne Natl. Lab., Argonne, Ill. Home Add.: 216 E. Chicago Ave., Hinsdale, Ill. MASS SPECTROMETRIC INVESTIGATION OF ATOMIC AND IONIC IMPACT PHENOMENA ON SOLIDS; MOLECULAR BEAM RESEARCH; ELECTROLYTIC SOLUTIONS. b. Koenigsberg, Germany, June 4, 1929. s. Dr. Stephan and Kaethe (Gieger) K. Edn.: B.S., Univ. of Rostock, Germany, 1951; Ph.D., Univ. of Marburg, Lahn, Germany, 1957. m. Elisabeth Kaminsky, Moellering, May 1, 1957. c.: Cornelia; Mark-Peter. Exp.: Res. Assoc., Univ. Rostock, Rostock, Germany, 1950-51; Res. Assoc., Univ. Marburg, Germany, 1953-57; Sci. Asst., ibid., 1957-58; Physicist, Argonne Natl. Lab., Argonne, Ill., 1958—. Mem.: Am. Phys. Soc.; Am. Chem. Soc.; German Phys. Soc.; A.A.A.S. Contbr. to: Phys. Rev.; Jour. Chem. Phys.; Zeitschrift F. Naturforschung; Z. F. Physikalische Chemie N.F.; Z.F. Electrochemie; Discuss of Faraday Soc.; Advances in Mass Spectrometry; Phys. Verhandlg.; Ergeb d exakt Naturwiss. Areas of Rsch.: Mass Spectrometry; Pulsed Molelular Beam Mass Spectrometter; Surface Ionization; Sputtering; Scattering of Atomic and Ionic Beams on Metal Surfaces; Fragmentation of Hydrocarbons by Electron Impact; Electrolytic Solutions; Surface Kinetics.

KAMM, Jacob Oswald (Ph.D.), Pres., Cleveland Quarries Co., Amherst, Ohio. Home Add.: 4211 Wooster Rd., Cleveland 26, Ohio. ECONOMICS. b. Cleveland, Ohio, Nov. 29, 1918. s. Jacob and M. Katherine (Christensen) K. Edn.: A.B., Baldwin-Wallace Coll., 1940; M.A., Brown Univ., 1942; Ph.D., Ohio State Univ., 1948. Exp.: Asst. in Econs., Brown Univ., 1940-42; Instr. in Econs., Baldwin-Wallace Coll., 1944-45; Instr., Ohio State Univ., 1945-46; Assoc. Prof. and Chmn., Dept. of Econ., Baldwin-Wallace Coll., 1946-49; Prof. and Dir., Schl. of Comm., ibid., 1949-53; Pres., Cleveland Quarries Company, Amherst, Ohio, 1955—; Pres., Cleveland Stone Co., 1954; and Am. Growers, Inc., 1955. Mem.: Am. Econ. Assn.; Am. Finance Assn.; A.A.U.P.; Beta Gamma Sigma; Delta Phi Alpha; Delta Mu Delta; Phi Alpha Kappa.



Author: Econ. of Investment, 1951; Making Profits in the Stock Market, 1952, '58, '61; Investor's Handbook, 1954. Contbr. to: Jour. Finance; Jour. Mktg.; Rev. of Econs. and Statistics; Am. Jour. of Econs. and Sociol.; Scientific Monthly; The Controller; Advanced Mgt.; Comm. and Financial Chronicle. Gen. Int.: Received Natl. Alumni Award, Baldwin-Wallace Coll., 1956; Trustee, Baldwin-Wallace Coll.; Mem., Bd. of Counsellors, Erskine Coll.

KANE, Richard Andrew (Mr.), Asst. Prof. of Physics, The A. & M. College of Texas, College Station, Texas. Home Add.: 511 Restwood, Bryan, Texas. SOLID STATE PHYSICS AND CRYSTAL GROWTH. b. Brooklyn, N. Y., Aug. 28, 1933. s. Andrew Thomas and Albenia Leonie (McKay) K. Edn.: B.S., Mass. Inst. of Technol., 1956; M.A., Harvard Univ., 1956. Exp.: Instr. in Physics, Wayne State Univ., 1956-59, Physicist, Research Laboratories, Genl. Motors Corp., 1956-57; Physicist, Research Div., Raytheon, Waltham, Mass., 1955-56; Physicist, Scientific Lab., Ford Motor Co., Dearborn, Mich., 1960-61; Asst. Prof. of Physics, A. & M. Coll. of Tex., 1961—. Mem.: Am. Physical Soc.; Physical Soc. of Japan; Am. Soc. for Metals; A.A.A.S.; Am. Assn. of Physics Tchrs. Author: Fields, Currents and Radiations, 1960. Contbr. to: Bul. Am. Physical Soc.; Jour. Applied Physics; Am. Jour. of Physics.



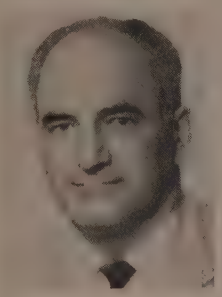
KANEKO, Thomas Motomi (Ph.D.), Rsch. Metallurgist, Wyandotte Chemicals Corp., Wyandotte, Mich. Home Add.: 1579 Boxford Rd., Trenton, Mich. EXTRACTIVE METALLURGY OF NONFERROUS METALS AND CHEMICAL PROCESS DEVELOPMENT. b. Tokyo, Japan, Aug. 15, 1914. s. Bert Y. and Miwako (Tokunaga) K. Edn.: B.S., Univ. of Utah, 1936; Ph.D., ibid., 1956. m. Yoko Moro, Mar. 16, 1957. Exp.: Assayer, Kennecott Copper Corp., Ruth, Nev., 1936-39; Rsch. Chem., Mitsubishi Chem. Ind., Ltd., Tokyo, Japan, 1939-41; Rsch. Engr., Mitsubishi Rayon Co., Ltd., Tokyo, Japan, 1950-52; Rsch. Asst., Univ. of Utah, Salt Lake City, Utah, 1953-56; Rsch. Metallurgist, Union Carbide Nuclear Co., Tonawanda, N. Y., 1956-57; Rsch. Chem., Natl. Dist. and Chem. Corp., Cincinnati, Ohio, 1957-59; Rsch. Metallurgist, Wyandotte Chemical Corp., 1959—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; A.I.M.E.; Am. Soc. for Metals; A.A.A.S.; Sigma Xi; Sigma Pi Sigma; Bretton Estates Assn. Contbr. to: Bull of the Chem. Soc. of Japan; Jour. Phys. Chem.; Ind. and Engr. Chem. Gen. Int.: Naturalized as Citizen of U.S.A. on Mar. 7, 1957 at Buffalo, N. Y. Areas of Rsch.: Extractive Metallurgy of Refractory Metals; Sodium Reduction of Metal Halides; Hydrometallurgy at Elevated Temps. and Pressures.

KANNER, Leo, (M.D.), Prof. (Emer.) of Child Psychiatry, The Johns Hopkins Univ., Baltimore 5, Md. Home Add.: 4510 Wentworth Rd., Baltimore 7, Md. CHILD PSYCHIATRY. b. Klekotow, Austria, June 13, 1894. s. Abraham and Klara (Reisfeld) K. Edn.: M.D., Univ. of Berlin, 1919. m. June Lewin, Feb. 11, 1921. c.: Albert; Anita Gilbert. Exp.: Asst., Charite Hosp., Berlin, 1920-23; Priv. Pract., Berlin, 1921-23; Sr. Asst., Phys., Yankton Sta. Hosp., Yankton, S. D. Sta. Hosp., 1924-28; Commonwealth Fund Fellow in Psychiatry, Johns Hopkins Univ., 1928-30; Dir., Children's Psychiatric Clinic, Johns Hopkins, 1930-59; Consultant Psychiat., Juvenile Court of Baltimore, Md., 1930-41; Assoc. in Psychiat., Johns Hopkins Univ., 1932-33; Assoc. Prof., ibid., 1933-57; Visiting Lectr., Dalhousie Univ., Nova Scotia, 1937; Visiting Lectr., Univ. of Mich., Dept. of Edn., Ann Arbor, Mich., 1945; Visiting Lectr., Univ. of Minn., Ext. Course, Mlps., Minn., 1946; Assoc. Prof. of Peds., Johns Hopkins Univ., 1948-57; Visiting Lectr., Goucher Coll., Baltimore, Md., 1948-51; Lectr., McCoy Coll., Johns Hopkins Univ. Dept. of Adult Edn., 1949—; Visiting Lectr., Univ. of Tex., Schl. of Med., 1951; Visiting Lectr., Mount Sinai Hosp., N. Y. City, 1956; Prof. of Child Psychiatry, The Johns Hopkins Univ., 1957-59; Prof. (emer.), ibid., 1959—; Visiting Prof. of Psychiatry, Univ. of Minn., Mlps., 1959-60; Visiting Prof., Stanford Univ. Schl. of Med., Calif., 1961—. Hon. Pos.: Mem. Bd. of Dirs., Jewish Family and Children's Soc. Child Study Ctr. of Md., 1937-44; Mem., Bd. of Dirs., Natl. Org. for Mentally Ill Children; Hon. Pres., Fourth Internatl. Congress of Child Psychiatry, Lisbon, 1958; Mem., Scientific Rsch. Advisory Comm., Natl. Assn. for Retarded Children; Mem., Exec. Comm., The Children's Guild, Baltimore. Mem.: Am. Psychiatric Assn., Chmn., Sect. of Child Psychiat., 1942-43; Am. Assn. on Mental Deficiency; Am. Orthopsy. Assn.; Am. Acad. of Child Psychia.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Am. Acad. of Peds.; Fourth Internatl. Congress of Child Psychiatry; History of Sci. Soc.; Assn. for the History of Med.; Am. Epilepsy Soc.; Md. Soc. for Med. Rsch.; Baltimore City Med. Soc.; Am. Assn. of Univ. Profs.; Md. Ped. Soc; Johns Hopkins Med. Soc.; Md. Psychiat. Soc., Pres., 1957-58. Author: Folklore of the Teeth, 1928; Judging Emotion from Facial Expressions, 1931; Child Psychiatry, 1935, 1948, 1957; In Defense of Mothers, 1941; A Miniature Textbook of Feeblemindedness, 1949; A Word to Parents About Mental Hygiene, 1957. Contbr. to: Am. Jour. of Psychia.; Nervous Child; Jour. of Child Psychiatry; Quarterly Jour. of Child Behavior; Archives of Criminal Psychodynamics; Jour. of Child Psychiatry and Psychol. Areas of Rsch.: Child Psychiatry; Mental Deficiency; Early Infantile Autim; History and Folklore of Medicine.

KANOF, Norman B., (M.D.), Physicjan, 580 Fifth Ave., N. Y. 36, N. Y. Home Add.: 737 Park Ave., N. Y. 21, N. Y. DERMATOLOGY AND SYPHILOLOGY. b. N. Y., N. Y., May 31, 1920. s. William J. and Minnie G. (Vogelson) K. Edn.: B.A., George Wash. Univ., 1941; M.D., ibid., 1941; Med. Sc.D., Columbia Univ., 1949. m. Joan Sher, Dec. 15, 1946. c.: David Andrew. Exp.: Instr., Clin. Derm. and Syph., N. Y. Univ., Post Grad. Med. Schl., N. Y., N. Y., 1949-52; Asst. Clin. Prof., ibid., 1952-57; Assoc. Prof., ibid., 1957—; Asst. Attend. in Derm. and Syph., Univ. Hosp., ibid., 1949-58; Assoc. Attend., ibid., 1958—; Director and Attend., Dept. of Dermatol., N. Y. Polyclinic Hosp., 1961—. Mem.: Phi Delta Epsilon. Contbr. to: Archives of Dermatol.; Jour. of Invest. Dermatol.; N. Y. Sta. Jour. of Med.; Acta Dermato-Vernereologica. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Allergy, Pigmentation of the Skin, Dermatologic Therapy.

KANTER, Gerald Sidney (Ph.D.), Assoc. Prof. of Physiology, Albany Med. Coll., Albany, N. Y. Home Add.: 269 Tampa Ave., Albany 8, N. Y. PHYSIOLOGY. b. New York City, N. Y., Dec. 7, 1925. s. Louis and Shirley (Barmatz) K. Edn.: B.S., L. I. Univ., 1947; Ph.D., Univ. of Rochester, 1952. m. Gloria Katcher, 1956. c.: Eileen; Joyce. Exp.: Jr. Instr. Physiol., Univ. of Rochester, 1952; Instr. in Physiol., Albany Med. Coll., 1952-55; Lecturer in Biochem., ibid., 1953-55; Asst. Prof. of Physiol., ibid., 1955-58; Assoc. Prof. of Phys., ibid., 1958—. Mem.: Am. Physiol. Soc.; Soc. for Experimental Biol. and Med.; A.A.A.S.; Sigma Xi. Contbr. to: Am. Jour. of Phys.; Jour. of Applied Physiol.; Can. Jour. of Biochem. and Physiol.; Proceedings of Soc. for Experimental Biol. and Med. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Body Fluid and Electrolyte Regulation, Kidney Function, Thirst; Temperature Regulation, and Environmental Physiology.

KANTROWITZ, Adrian (M.D.), Dir., Cardiovascular Surgery, Maimonides Hosp., Brooklyn, N. Y. Home Add.: 546 E. 17th St., Brooklyn, N. Y. SURGERY, PARTICULAR INTEREST IN THE SURGERY OF THE HEART. b. N. Y. City, Oct. 4, 1918. s. Bernard Abraham and Rose (Esserman) K. Edn.: B.A., N. Y. Univ., 1940; M.D., Long Island Coll. Med., 1943. m. Jean Rosensaft, Nov. 28, 1948. c.: Niki; Lisa; Allen. Exp.: Tchng. Fellow, Physiology, Western Reserve Univ., 1951-52; Instr., Surgery, N. Y. Med. Coll., 1952-55; Asst. Prof. Surgery, State Univ., N. Y. Coll. Med., 1955-56; Assoc. Prof. Surgery, ibid., 1957—; Dir., Cardiovascular Surg., Maimonides Hosp., Brooklyn, 1955—. Hon. Pos.: Chmn., Rsch. Comm., Maimonides Hosp., Brooklyn. Mem.: Am. Coll. Surgeons; N. Y. Acad. Scis.; Am. Soc. Artificial Internal Organs; Harvey Soc.; N. Y. Soc. Cardiovascular Surg.; N. Y. Surgical Soc.; Soaring Soc. Am. Contbr. to: Jour. Neurosurg.; N. Y. St. Jour. Med.; Proc. Soc. Exptl. Biol. and Med.; Sci.; Archives Surg.; Am. Coll. Surgeons; Surg.; Aorta Angiology; Am. Heart Jour.; Clinical Congress; Surgical Clinics N. Am. Jour. Thoracic Surg.; New England Jour. Med.; Trans. Am. Soc. Artificial Internal Organs. Serv. Rec.: U. S. Army, Captain, 1944. Gen. Int.: First Motion Picture Photographs inside a Living Heart, 1951; Contbr. to: the Development of Open Heart Surgery; Received Henry L. Moses Prize for Rsch., First Award for Scientific Rsch., N. Y. State Med. Soc., 1952. Area of Rsch.: Exptl. Surgery and Cardiovascular Surgery.



KANWAL, Ram Prakash (Ph.D.), Prof. of Applied Math., Pa. State Univ., University Park, Pa. Home Add.: 242 Bradley Ave., State College, Pa. DYNAMICS OF ELECTRICALLY CONDUCTING AND NON-CONDUCTING FLUIDS. b. Jhang, W. Pakistan, July 4, 1924. s. Ishar Dass and Nandi (Kumari) K. Edn.: B.A., Punjab Univ., India, 1945; M.A., ibid., 1948; Ph.D., Ind. Univ., 1957. m. Vimla Kumari, June 16, 1954. c.: Neeru; Neeraj. Exp.: Rsch. Assoc., Ind. Univ., 1954-57; Asst. Prof., Univ. of Wis., 1957-59; Sr. Scientist, Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1959; Assoc. Prof., Pa. State Univ., 1959-62; Prof. of Applied Math., ibid., 1962—. Mem.: Am. Math. Soc. Contbr. to: Quart. Jour. Mech. Applied Math.; Jour. of Acoustical Soc. of Am.; Jour. of Math. and Mech.; Archive for Rational Mechanics and Analysis; Proc. Royal Soc., London; Jour. of Fluid Mechanics. Areas of Rsch.: Hydrodynamics; Aerodynamics; Magnetohydrodynamics; General Relativity; Differential Geometry.

KAPACINSKAS, Joseph, (Mr.), Electrician, 5600 W. Ogden, Cicero 50, Ill. Home Add.: 6811 S. Maplewood Ave., Chicago 29, Ill. TOOL ENGINEERING. b. Mazucial, Lithuania, Oct. 20, 1907. s. Jurgis and Teofile (Baskeviciute) K. Edn.: B.E., Allied Instit. of Technol., Chicago, Ill., 1960; C.E., Lithuanian Tech. Coll., Augsburg, Germany, 1948. m. Marie Sadauskas, Dec. 27, 1952. c.: Joseph Vytautas. Exp.: Chief Elect., Lithuanian Natl. R. R., Kaunas, Lithuania, 1929-44; Chief Elec., Deutsche Reichsbahn, German Natl. R. R., Treuchtlingen, Germany, 1944-45; Instr., Chief Elect., U. Nations Relief and Rehabilitation Adm., Ansbach Germany, 1946-47; Electrician, C.B.&Q.R.R. Co., Chicago, Ill., 1951—. Mem.: Am. Soc. of Tool and Mfg. Engrs.; Soc. of Am. Lithuanian Engrs. and Architects, Chicago Chapter; U. S. Lithuanian Journalist Assn.; Am. Assn. for the Adv. of Sci.; Fathers Club. Areas of Rsch.: Journalism.

KAPLAN, Emanuel B. (M.D.), Assoc. Prof. of Clin. Anatomy, Consultant, Orthopaedic Surg., 1001 Grand Concourse, Bronx 52, N. Y. Home Add.: 23 Monterey Ave., Teaneck, N. J. ORTHOPAEDIC SURGERY AND ANATOMY. b. Krementchoug, Russia, April 24, 1894. s. Boris and Dina (Loadman) K. Edn.: P.N.S., Montpellier Univ., France, 1912; M.D., Kharkov Imperial Univ., Russia, 1916. m. Virginia Smith, 1959. c.: Robert; Elizabeth. Exp.: Instr. of Anatomy, Columbia Univ., Coll. of Physicians and Surg., 1940-50; Asst. Prof., ibid., 1950-56; Assoc. Prof., ibid., 1956—. Hon. Pos.: Hon. Mem., Societe Francaise D'Ortopedie et De Traumatologie; N. J. Soc. of Orth. Surg.; Past Chmn., N. Y. State Orthopaedic Sec. of N. Y. Acad. of Med. Mem.: Am. Assn. of Anatomists; Am. Orthopaedic Assn.; Am. Acad. of Orthopaedic Surg.; Am. Coll. of Surg.; Am. Soc. of Surg. of the Hand; Am. Soc. Hist. of Science; Am. Anthropological Assn.; Am.

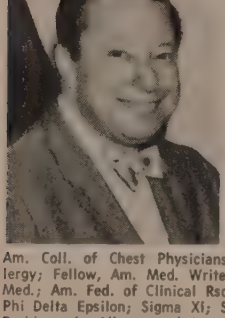
Soc. of Physical Anthropology; Internatl. Soc. of Orthopaedic Surg. and Traumatology, Fellow, A.A.A.S. Author: Functional and Surgical Anatomy of the Hand, 1953; Translation of Duchenn's Physiology of Motion, 2 editions, 1949, 1959. Contbr. to: Jour. of Bone and Joint Surg.; Bull. of the Hosp. for Joint Diseases; Anatomical Record; Surg., Gynecology and Obstetrics; Clinical Orthopaedics Surgery. Areas of Rsch.: Comparative and Human Anatomy; Hist. of Med.; Clinical Orth. Surg.; Hosp. for Joint Diseases.

KAPLAN, Harold Irwin (M.D.), Assoc. Clinical Prof. of Psychiatry, N. Y. Med. Coll., 750 Park Ave., N. Y. 21, N. Y. Home Add.: 912 Fifth Ave., New York 21, N.Y. MEDICINE—PSYCHIATRY.

b. Brooklyn, N. Y., Oct. 1, 1927. s. William and Fanny (Rose) K. Edn.: M.D., N. Y. Med. Coll., 1949. m. Helen Singer, June 19, 1953. c.: Phillip; Peter. Exp.: Assoc. Clin. Prof. Psychiatry, N.Y. Med. Coll., 1954—; Assoc. Psychiatrist, Metropolitan Hosp., New York, 1954—; Assoc. Attending Psychiat., Flower and Fifth Ave. Hosp., 1954—; Chief, General Psychiatry Residency Training at New York Med. Coll., 1960—. Mem.: Acad. of Psychoanaysis; Am. Psychiatric Assn.; Am. Psychosomatic Soc.; Am. Orthopsychiatric Assn.; Soc. of Med. Psychoanalysts. Contbr. to: Am. Jour. of Psychiatry; Jour. of Nervous and Mental Dis.; Diseases of Nervous System; N. Y. State Jour. of Med.; New England Jour. of Med.; Psychiatric Quart.; Am. Jour. of Psychotherapy; Conn. State Jour. of Med. Areas of Rsch.: Psychosomatic Med.; Psychoanalysis; Group Psychotherapy, Psychiatric Training.

KAPLAN, Harold M. (Ph.D.), Prof. of Physiol., Southern Ill. Univ., Carbondale, Ill. Home Add.: 106 N. Almond St., Carbondale, Ill. PHYSIOLOGY. b. Boston, Mass., Sept. 4, 1908. s. Max and Mollie E. (Smith) K. Edn.: A.B., Dartmouth Coll., 1930; M.A., Harvard Univ., 1931; Ph.D., ibid., 1933. m. Bernice Stone, 1935. c.: Elaine; Joyce; Lee. Exp.: Prof., Middlesex Med. and Vet. Colls., Waltham, Mass., 1934-47; Assoc. Prof., Univ. of Mass., Ft. Devens, Mass., 1947-49; Prof., Sou. Ill. Univ., 1949—. Hon. Pos.: Chmn., Dept. of Physiol., Sou. Ill. Univ.; Assoc. Editor, Proc. Animal Care Panel. Mem.: Am. Physiol. Soc.; Am. Assn. for the Adv. of Sci.; Am. Soc. Zool.; Am. Assn. Univ. Profs.; Animal Care Panel; Electron Micros. Soc. of Am.; Am. Soc. Ichth.; Herp. League; Am. Med. Writers Assn.; Ill. Acad. of Sci.; Ill. Soc. Med. Rsch.; Natl. Assn. Biol. Tchrs.; Sigma Xi; Phi Eta Sigma; Elks. Author: Anatomy and Physiology of Speech, 1960; The Rabbit in Experimental Psysiology, 1956. Contbr. to: Herpetologica; Procs. Animal Care Panel. Areas of Rsch.: Blood; Comparative Animal Disease; Electron Microscope.

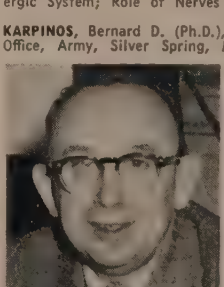
KAPLAN, Morris Aaron (M.D.), Physician, Educator, 111 N. Wabash Ave., Chicago 2, Ill. Home Add.: 534 Strattford Pl., Chicago 13, Ill. ALLERGY; IMMUNOLOGY; BIOCHEMISTRY. b. Brooklyn, N. Y., Apr. 5, 1907. s. David and Eva (Erenberg) K. Edn.: B.S., Univ. of Ill., 1929; M.S., ibid., 1931; M.D., ibid., 1952. m. Celia Furlett, Dec. 27, 1931. Exp.: Intern Cook Co. Hosp., 1931-33; Instr., Univ. of Ill., 1931-33; Asst. Med., ibid., 1933-37; Instr., ibid., 1937-41; Assoc., ibid., 1941-46; Clin. Assoc., 1946-50; Dir., Allergy Rsch. Unit, Chicago Med. and Mt. Sinai Rsch. Found., Ill., 1954—; Assoc. Prof. Med., Attending Phys., Mt. Sinai Hosp., 1953—; Attend. Phys., Weiss Meml. Hosp., 1955—. Mem.: Fellow, Am. Acad. of Allergy; Fellow, Am. Coll. of Allergists; Fellow, Am. Coll. of Chest Physicians; Fellow, Internatl. Assn. of Allergy; Fellow, Am. Med. Writers Assn.; Soc. of Exptl. Biol. and Med.; Am. Fed. of Clinical Rsch.; A.A.A.S.; N. Y. Acad. of Sci.; Phi Delta Epsilon; Sigma Xi; Shriner. Contbrng. Author: Current Problems in Allergy and Immunology, 1959; Antibiotics Annual, 1958, 1959; Progress in Allergy, 1945-50. Contbr. to: Jour. of Allergy; Annals of Allergy; Quarterly Rev. of Allergy and App. Immunology; Bull. of Rutgers Univ.; Ear, Nose and Throat Monthly. Serv. Rec.: U. S. Naval Reserve, 1946—. Gen. Int.: Vice-Pres. Am. Coll. of Allergists, 1952; Pres., Chicago Soc. of Allergy, 1949; Chmn., Section of Allergy, Ill. State Med. Soc., 1950; Secy. of Session on Allergy, A.M.A., 1962; Consulting Allergist, Childrens Asthma Rsch. Inst. and Hosp., Denver, Colo., 1952—; Mem. Medical Advisory Board of Asthmatic Children's Aid, Chicago, 1956—. Areas of Rsch.: Standardization of Allergenic Extracts, Antigens and Antibodies as Related to Allergy, Antihistaminics, Corticosteroids and Chemical Mediators as Related to Allergy, Pharmacological Agents and Pulmonary Physiology as Related to Bronchial Asthma.



KARAS, Jonathan (D.Sc.), Pres., Sci. House, Manchester, Mass. Home Add.: 57 Lothrop St., Beverly, Mass. PHYSICS. b. Lebanon, Pa., Apr. 7, 1922. s. Athan J. and Soultana (Gialouri) K. Edn.: B.S., Lehigh Univ., 1943; M.S., ibid., 1947. Hon. Deg.: D.Sc., Lowell Technological Inst., 1960. m. Marion Lucie Van De Ryn, Sept., 1958. c.: Maria Lisa. Exp.: Instr., Lehigh Univ., 1943-50; Asst. Prof., Univ. of N. H., 1950-57; Dir., M.V.R. Scientific Evaluation Group, Manchester, Mass., 1957—. Mem.: Am. Phys. Soc.; A.A.U.P.; A.A.A.S.; Sigma Xi; Sigma Pi Sigma; B.I.S.; Hiway. Rsch. Bd.; A.A.P.T. Contbr. to: Many Legal Jours. Serv. Rec.: U. S. Army, 1944-45. Gen. Int.: Bausch and Lomb Medal; Citation from War Dept. Areas of Rsch.: Science Information for Publ. and Legal Testimony.

KARCZMAR, Alexander George (Ph.D.), Prof. and Chmn., Dept. of Pharmacol. and Therapeutics, Stritch Schl. of Med., Chicago 12, Ill. Home Add.: 327 N. Euclid Avenue, Oak Park, Illinois. NEUROPHARMACOLOGY; CENTRAL AND PERIPHERAL SYNAPTIC TRANSMISSION; CHOLINERGIC AND ANTICHOLINESTERASE AGENTS. b. Warsaw, Poland, May 9, 1918. s. Stanislaus and Helena (Billauer) K. Edn.: M.A., Columbia Univ., 1941; Ph.D., ibid., 1946. m. Marion H. Allen, Jan. 18, 1947. c.: Gregory Stanislaus; Christopher Anthony. Exp.: Instr. to Assoc. Prof., Georgetown Univ. Med. Schl., Wash., D. C., 1946-54; Pharmacolt., Sterling Winthrop, Rsch. Inst., Rensselaer, N. Y., 1954-56; Prof., Stritch Schl. of Med., Chicago 12, Ill., 1956—. Mem.: Am. Soc. for Pharmacol. and Expt. Therap.; Am. Soc. of Zoologists; Am. Assn. of Anatomists; Am. Assn. for the Adv. of Sci., Fellow; Am. Coll. of Psycho-Neuropharm., Fellow; N. Y. Acad. of Sci.; Sigma Xi. Author-Co-Author: Experimental Pharmacodynamics, 1958. Contbr. to: Jour. Pharmacol. and Exptl. Therap.; Proc. Soc. Biol. and Exptl. Med.; Fed. Procs.; Annals N. Y. Acad. Sci.; Arch. Int. Pharmacodyn.; Jour. Exptl. Zool.; Exptl. Pharmacol. Areas of Rsch.: Role of Cholinesterase in Synaptic Transmission; Pharmacology and Physiology of Neuromyal Transmission; Comparative Physiology and Pharmacology of Cholinergic System; Role of Nerves in Regeneration.

KARPINOS, Bernard D. (Ph.D.), Med. Statistician, Surg. General's Office, Army, Silver Spring, Md. Home Add.: 3502 May St., Silver Spring, Md. HEALTH AND POPULATION STATISTICS. b. Russia, Nov. 12, 1903. s. Sroul and Rachel (Bari) K. Edn.: B.S., Univ. of Ia., 1930; M.A., ibid., 1932; Ph.D., ibid., 1934. m. Sophie Gelber, Apr. 14, 1946. c.: Stephen; Ralph. Exp.: Ia. State Planning Bd., 1933-35; Natl. Resources Comm., Wash., D. C., 1935-36; W.P.A., Chicago, Ill., 1936-38; U. S. Public Health Serv., Wash., D. C., 1938-41; Med. Statistician, Surg. General's Office, Army, Wash., D. C., 1946—. Mem. Am. Stat. Assn.; Royal Statistical Soc.; Population Assn. of Am.; Order of Artus; Pi Gamma Mu. Contbr. to: Am. Jour. of Sociol.; Am. Jour. of Hygiene; Public Health Reports; Human Biology; Milbank Memorial Fund Quarterly; Population Studies; U. S. Armed Forces Medical Jour.; Jour. Am. Cancer Institute; Am. Rev. Respir. Diseases; Jour. Am. Stat. Assn. Serv. Rec.: U. S. Army, 1941-46. Areas of Rsch.: Fitness of American Youth for Military Service.



KARST, Otto Jacob (Ph.D.), Prof. of Maths., Webb Inst. of Naval Archit., Glen Cove, N. Y. Home Add.: Bayville Rd., Locust Valley, N. Y. MATHEMATICS. b. Newark, N. J., Oct. 4, 1914. s. Otto J. and Rose M. (Ackerman) K. Edn.: B.A., Montclair Coll., 1936; M.S., N. Y. Univ., 1944; Ph.D., ibid., 1956. m. Marie A. Reitschky, 1940. c.: Otto; Kathryn; Marilyn. Exp.: Actuarial Clerk, Metropolitan Life Ins. Co., N. Y. City, 1937-42; Instr., Newark Coll. of Engrng., Newark, N. J., 1942-44; Instr. to Assoc. Prof., Stevens Inst. of Tech., Hoboken, N. J., 1944-57; Assoc. Prof., N. Y. Univ., 1957-59; Prof., C. W. Post Coll., Brookville, N. Y., 1959-60; Prof., Webb. Inst. of Naval Archit., 1960—. Hon. Pos.: Rsch. Assoc., Brookhaven Natl. Lab., L. I., summer, 1950; Chmn., Sci. Div. of C. W. Post Coll.; Pres., Stevens Inst. Faculty Club; Lectr., Metropolit. Speakers Bur. Mem.: Mathl. Assn. of Am.; Am. Soc. for Engrng. Edn.; Sigma Xi; Am. Assn. Univ. Profs.; Phi Delta Kappa; Kappa Delta Pi. Contbr. to: Jour. of Am. Statt. Assn.;

Maths. Tchr.; Maths. Mag.; Am. Mathl. Monthly; Schl. Sci. and Maths.; N. J. Maths. Tchrs. Jour.; N. Y. State Maths. Tchrs. Jour. Areas of Rsch.: Mathematical Statistics.

KARST, Edgar (Dr.), Prof., Head, Math. Dept., Evangel Coll., Springfield, Mo. Home Add.: 1111 N. Glenstone, Springfield, Mo. THEORY OF NUMBERS, COMPUTER PROGRAMMING. b. Kattowitz, Germany, May 11, 1911. s. Johannes and Clara (Paetzold) K. Edn.: B.S., Univ. of Gottingen, Germany, 1938; Dr. Equiv., Univ. of Breslau, Germany, 1942. m. Johanna Arndt, Jan. 10, 1942. c.: Udo. Exp.: Computing Analyst, Great Lakes Pipe Line Co., Kansas City, Mo., 1955-56; Computer Programmer, I.B.M. Corp., Endicott, N. Y., 1956-58; Asst. Prof., Brigham Young Univ., 1958-61; Asst. Prof., Evangel Coll., 1961-62; Prof., Head, Math. Dept., ibid., 1962—. Mem.: Am. Mathematical Soc.; Deutsche Mathematiker-Vereinigung; Osterreichische Mathematische Gesellschaft; Sigma Xi; Univ. Club, Springfield, Mo. Author: Six-Digit Fraction Conversion From Decimal to Octal With Unlimited Accuracy, 1959. Contbr. to: Computing Revs.; A.C.M. Communications; A.M.S. Notices; Am. Mathematical Monthly; Math. Magazine; Numerische Mathematik. Serv. Rec.: Germany Army, 1939-45. Areas of Rsch.: Factorization of Large Numbers, Algorisms, Computer Programming, Number Theory.

KASE, Francis Joseph (J.D.), Asst. Librn., Copyright Office, Libr. of Congress, Wash., D. C. Home Add.: 5206 Little Falls Drive, Green Acres, Wash. 16, D. C. POLITICAL SCIENCE. b. Austria, Sept. 21, 1910. s. Francis and Alberta (Retovska) K. Edn.: Dr. jur., Charles Univ., Prague, 1934; D.S.P., Acad. of Polit. Sci., Prague, 1934; Fellow, Grad. Council, George Wash. Univ., 1958. Exp.: Couns. and Div. Chf., Min. of Foreign Trade, Prague, Czechoslovakia, 1945-48; Secy.- Treas. and Rsch. Anlyst, Internatl. Peasant Union, Wash., D. C., 1950-53; Student Asst., Dept. of Polit. Sci., Geo. Wash. Univ., 1955-56; Asst. Librn., Copyright Office, Libr. of Cong., 1956—. Mem.: Am. Polit. Sci. Assn.; Am. Acad. of Polit. and Soc. Sci.; Pi Gamma Mu; Am. Assn. for the Adv. of Slavic Studies; Am. Libr. Assn. Author: Handbook of Foreign Trade, 1948; Public Libraries in Czechoslovakia Under the Unified Library System, 1961. Areas of Rsch.: Polit. Theory; Comparative Govt.; Eastern Europe; U.S.S.R.; Africa; Internatl. Relations and Organization; Pub. Admin.; Library Science; Copyright Law.

KASEL, Julius Albert (Ph.D.), Scientist, Natl. Inst. of Health, Bethesda, Md. Home Add.: 1717 Wilmart St., Rockville, Md. MICROBIOLOGY, VIROLOGY. b. Homstead, Pa., Dec. 7, 1923. s. Julius and Anna (Kudis) K. Edn.: B.S., Univ. of Pittsburgh, 1949; M.S., Georgetown Univ., 1958; Ph.D., ibid., 1960. m. Nan E. Cleghon, Sept. 29, 1950. c.: Gary Lee; John Foster; Patricia Joyce. Exp.: U.S.P.H.S., Special Lecturer, Georgetown Univ., 1960-61; Bacteriologist Scientist, Natl. Inst. of Health, Bethesda, Md., 1950—. Mem.: A.A.A.S.; Montrose Civic Assn. Contbr. to: Jour. A.M.A.; New Eng. Jour. Med.; Pediatrics; Proc. Soc. Exptl. Biol. and Med.; Virology; Fed. Proc.; Jour. Clin. Res. Serv. Rec.: U. S. Air Force, 1943-45. Areas of Rsch.: Virology.

KASSING, Edith (Rhoda) Force (Mrs.), Retired Tchr. of Sci. Home Add.: 906 N. Blvd., Cottage #2, Edmond, Okla. HERPETOLOGY, ORINTHOLOGY AND SCIENCE EDUCATION. b. Chicago, Ill., Oct. 26, 1890. d. James Grant and Estella (Spring) Force. Edn.: B.S., Lewis Inst. of Tech., 1919; M.S., Univ. of Mich., 1931; Grad. Study: Univ. of Chicago, Okla., Tulsa, Cornell. m. David O. Kassing, Dec. 23, 1949. Exp.: Tchr., Publ. Schls., Cook Co., Ill., 1912-18; Tchr., H. S., Beatrice, Nebr., 1918-21; Asst. Prof., Coll. of Industrial Arts (Tex. Sta. Coll. for Women), Denton, Tex., 1921-23; Tchr., H. S. Okmulgee, Okla., 1923-26; Tchr., Wilson Jr. H. S., Tulsa, Okla., 1926-56; Tchr., Dem. H. S, North Tex. St. Coll., Denton, Tex., S. 1938; Exch. Tchr., Calder H. S., Liverpool, Eng., 1939; Hon. Pos.: Chmn, Local, Dist., State, Comm. Okla. Edn. Assn.; Charter Mem., Beta Chap., Gamma State; Chmn. Internatl. Relations, Delta Kappa Gamma. Mem.: Fellow, A.A.A.S.; Fellow, Okla. Acad. Sci.; Tex. Acad. Sci.; Mich. Acad. Sci., Arts and Letters; Natl. Audubon Soc.; Natl. Edn. Assn.; Tulsa, Okla. City, Okla. Ornithological Soc.; Delta Kappa Gamma; Sigma Delta Epsilon; Phi Sigma. Author: Time Table of Birds of Tulsa County and Vicinity, 1930; Rev., 1940. Contbr. to: Proc. Okla. Acad. Sci.; Tex. Acad. Sci.; Mich. Acad. Sci., Arts and Letters; Copeia; Herpetologia; Bull. Anti. Inst. Am.; Bird Lore; Audubon Field Notes; Wilson Bull.; Schl. Sci. and Math.; Biologist; Sc. Counsellor; Nature Mag.; Bull. Okla. Jr. Acad. Sci.; O.E.A. Jour. Gen. Int.: Ed., News Notes; Ed., Busy Outdoors, Feature writer, Tulsa, Okla. Sun World. Areas of Rsch.: Reptiles, Birds, Insects, Education.

KATZ, Ailbert Barry (Ph.D.), Dir., Hackensack Clin. Lab., 269 Passaic St., Hackensack, N. J. Home Add.: 677 Rutland Ave., W. Englewood, N. J. BIOCHEMISTRY. b. New York, N. Y., Feb. 25, 1917. s. David and Fannie (Nadam) K. Edn.: B.S., N. Y. Univ., 1938; M.S., ibid., 1939; Ph.D., ibid., 1942. m. Marion Katz, Oct. 13, 1940. c.: Jeffrey Howard; Stephanie T. Exp.: Capt., 43rd General Hosp., U. S. Army, 1943-45; Dir., Hackensack Clin. Lab., Hackensack, N. J., 1940—. Mem.: Fellow, Am. Inst. of Chem.; Fellow, Am. Assn. Clin. Chem.; Am. Chem. Soc.; Fellow, A.A.A.S.; N. Y. Acad. of Sci.; Men's Club; Diplomate, Am. Bd. of Clin. Chems. Contbr. to: Jour. of Lab. and Clin. Med.; Jour. of Am. Chem. Soc. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: General Field of Biochemistry.

KATZ, Frank Fred (Ph.D.), Asst. Prof. of Biology, Seton Hall University, South Orange, New Jersey. Home Address: 1714 Benson Street, Philadelphia 15, Pa. PARASITOLOGY. b. Philadelphia, Pa., July 19, 1927. s. Max and Tillie (Chanover) K. Edn.: B.S., Philadelphia Coll. of Pharm. and Sci., 1951; M.S., Tulane Univ., 1953; Ph.D., Univ. of Pa., 1956. m. Renee Kroll, Oct. 23, 1955. c.: Howard Edan; Loren Stuart. Exp.: Radio Officer, War Shipping Admn., Various Shipping Firms, 1945-47; Asst., Zool. Lab., Philadelphia Coll. of Pharm. and Sci., 1951; Parasitol. Technician, Tulane Univ., summers, 1952-53; Asst. in Zool., Philadelphia Coll. of Pharm. and Sci., 1953-54; Parasitologist, Med. Rsch., Tulane Team in Panama, summer, 1954; Instr. in Parasitol., Univ. of Pa. Schl. of Vet. Med., 1954-55; Rsch. Collaborator (Guest Appointment), Brookhaven Natl. Lab., 1955-56; Sr. Parasitologist, Norwich Pharmaceutical Co., 1956-57; Asst. Prof., Microbiology, Jefferson Medical Coll., 1957-62; Asst. Prof., Seton Hall University, 1962—. Hon. Pos.: Pres., Beta Sigma, 1950-51. Mem.: A.A.A.S.; Am. Soc. Parasitologists; Am. Soc. Tropical Med. and Hygiene; Am. Soc. Zoologists; Am. Microscopical Soc.; Helminthological Soc. of Wash.; Soc. of Protozoologists; Sigma Xi; Wildlife Disease Assn. Contbr. to: Am. Jour. of Tropical Med. and Hygiene; Jour. of Parasitology. Areas of Rsch.: Parasitology, Particularly Nematology, the Biology of Strongyloides and Trichinella.

KATZ, J. Lawrence (Ph.D.), Assoc. Prof. of Physics, Rensselaer Polytechnic Institute, Troy, N. Y. Home Add.: 6 Cooper Ave., Troy, N. Y. X-RAY DIFFRACTION AND CRYSTALLOGRAPHY. b. Brooklyn, N. Y., Dec. 18, 1927. s. Frank and Rose (Eidenberg) K. Edn.: B.S., Polytechnic Inst. of Brooklyn, 1950; M.S., ibid., 1951; Ph.D., ibid., 1957. m. Gertrude Seidman, June 17, 1950. c.: Robyn Laurie; Andrea Lee; Talbot Michael. Exp.: Tchng. Fellow in Physics, Polytechnic Inst. of Brooklyn, 1950-51; Sr. Rsch. Fellow in Math., ibid., 1951-52; Instr. of Math., ibid., 1952-56; Dir., X-Ray Lab., Wright Aeronautical, Woodbridge, N. J., Summer, 1956; Asst. Prof. of Physics, Rensselaer Polytechnic Inst., 1956-61; Summer Rsch. Assoc., Knolls Atomic Power Labs., Schenectady, N. Y., Summer, 1957; N.S.F. Sci Faculty Fellow, Univ. Coll., London, 1959-60; Assoc. Prof. of Physics, Rensselaer Polytechnic Inst., 1961—. Mem.: Am. Physical Soc.; Am. Crystallographic Assn.; Mathematical Assn. of Am.; X-Ray Analysis Group; A.A.P.T.; A.A.A.S.; Sigma Xi; Alpha Phi Omega. Contbrng. Author: Handbook of X-Rays in Research and Analysis, 1963. Contbr. to: Acta Crystallographica. Serv. Rec.: U. S. Navy, 1946-48. Areas of Rsch.: Low Temperature Crystallography; Diffuse X-Ray Scattering; Anisotropic Thermal Vibrations; Computing.

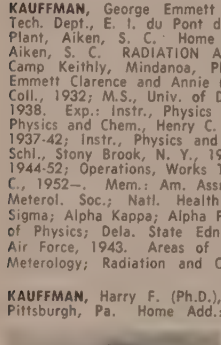
KATZ, Martin (Sc.D.), Dir. of Pharml. Devel., Syntex Labs., P. O. Box 245, Morris Plains, N. J. Home Add.: 22 Junard Dr., Morristown, N. J. PHARMACEUTICAL CHEMISTRY. b. N. Y., May 16, 1927. s. David and Fannie (Miller) K. Edn.: B.S., St. John Coll. of Pharm., 1947; M.S., Columbia Coll. of Pharm., 1948; M.A., Edn., ibid., 1951; Sc.D., Phila. Coll. Pharm. Sci., 1954. m. Lee Nesenblat, Dec. 21, 1947. c.: Billie; Hallie; Barry. Exp.: Gp. Ldr., Pfizer, Brooklyn, N. Y., 1953-55; Gp. Ldr., Revlon, Corp., Bronx, N. Y., 1955-60; Research Director, Syntex Labs., 1960—. Hon. Pos.: Chmn. Soc. of Cosmetic Chemists, 1962. Mem.: A. Pharm. Assn.; A.A.A.S.; Am. Chem. Soc.; Soc. Cosm. Chem.; Rho Chi; Delta Sigma Theta. Contbr. to: Jour. of Pharm. Scis. Serv. Rec.: U. S. Army, 1948. Gen. Int.: Ebert Award, A. Ph.A., 1954. Areas of Rsch.: Sublingual Absorption; Comparisons of in Virtro and in Vivo Absorption.

KATZ, Matthew (Mr.), Dir., Rsch. and Develop., Astron Corp., East Newark, N. J. Home Add.: 598 Montgomery St., Brooklyn 25, N. Y. ELECTROCHEMISTRY; POLYMER CHEMISTRY; ENGINEERING. b. New York, N. Y., March 20, 1929. s. Benjamin and Frieda (Hausman) K. Edn.: B.A., Yeshiva Univ., 1949; M.A., Columbia Univ., 1950. m. Bernice F. Weisberg, Oct. 24, 1954. c.: Henny Esther; Paul Martin. Exp.: Chf. Chemist, Kaspiah Silver Co., New York, N. Y., 1953-55; Chf. Chemist and Dir., Rsch. and Dev., Harte & Co., Brooklyn, N. Y., 1955-57; Sr. Rsch. Fellow, Poly. Inst. of Brooklyn, 1957-58; Consult. and Exec. V.-Pres., Minitronics Corp., New York, 1957-58; Mgr., ibid., Div. of Astron. Corp., 1958-61; Dir., Rsch. and Develop., Astron. Corp., 1961—. Mem.: Am. Chem. Soc.; Inst. of Radio Engrs.; A.A.A.S.; The Electrochem. Soc.; Phi Lambda Upsilon; Am. Radio Relay League. Areas of Rsch.: Tantalum Electrolytic Capacitors; Allyl Polymers; Vinylpolymers-Compounding and Processing; Graft Copolymers; Electrolytes.

KAUFERT, Frank Henry (Ph.D.), Dir. and Prof., Schl. of Forestry, Univ. of Minn., St. Paul, Minn. Home Add.: 2337 Carter Ave., St. Paul 8, Minn. FORESTRY; BOTANY. b. Princeton, Minn., Dec. 2, 1905. s. Frank and Mary (Kraft) Kaufert. Edn.: B.S., Univ. of Minn., 1928; M.S., ibid., 1930; Ph.D., ibid., 1935. m. Ione Elizabeth, Oct. 28, 1938. c.: Joseph M. Exp.: Instr., Univ. of Minn., 1933-36; Rsch. Biologist, DuPont Chem. Co., 1936-40; Wood Technologist, U. S. Forest Products Lab., Madison, Wis., 1942-45; Dir. and Prof., Schl. of Forestry, Univ. of Minn., 1945—. Hon. Pos.: Fellow, Soc. Am. Foresters; Pres., Forest Hist. Fdtn.; Pres., Forest Products Rsch. Soc.; Pres., Keep Minn. Green. Mem.: Sigma Xi; Alpha Zeta; Gamma Sigma Delta. Author: Forestry and and Related Reearch in N. Am., 1955. Contbr. to: Jour. of Forestry; Forest Products Jour.; Jour. of Botany; Forest Sci.; Phytopathology; and others. Areas of Rsch.: Forest Products; Forest Mgmt.; Wood Preservation.

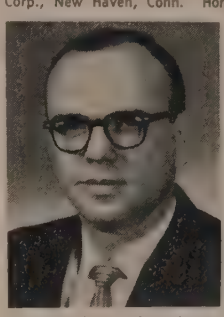
KAUFFMAN, George Emmett Clarence (Mr.), Sr. Supvr., Works Tech. Dept., E. I. du Pont de Nemours and Co., Savannah River Plant, Aiken, S. C. Home Add.: 1430 Canterberry Ct., S.E., Aiken, S. C. RADIATION AND CONTAMINATION CONTROL. b. Camp Keithly, Mindanoa, Philippine Is., April 18, 1908. s. Emmett Clarence and Annie (Yarnall) K. Edn.: B.S., Washington Coll., 1932; M.S., Univ. of Delaware, 1947. m. Eloise Hepburn, 1938. Exp.: Instr., Physics Dept., Alfred Univ., 1933-37; Instr. Physics and Chem., Henry C. Conrad High Schl., Woodcrest, Del., 1937-42; Instr., Physics and Elem. of Aeronautics, Stony Brook Schl., Stony Brook, N. Y., 1942-43; Instr. Phys., Univ. of Dela., 1944-52; Operations, Works Tech. Dept., du Pont SRP, Aiken, S. C., 1952—. Mem.: Am. Assn. of Phys. Tchrs.; A.A.A.S.; Amer. Meterol. Soc.; Natl. Health Physics Soc., 1957—; Sigma Pi Sigma; Alpha Kappa; Alpha Phi Omega. Contbr. to: Amer. Jour. of Physics; Dela. State Edn. Assn. Jour. War Record: U. S. Air Force, 1943. Areas of Rsch.: General Physics and General Meterology; Radiation and Contamination Control.

KAUFFMAN, Harry F. (Ph.D.), Chemist, U. S. Bureau of MINES, Pittsburgh, Pa. Home Add.: 35 Glenburn Dr., Pittsburgh 36, Pa. ORGANIC CHEMISTRY. b. Prince Edward County, Va., July 26, 1920. s. Harry F. and Emily (Johns) K. Edn.: B.S., Univ. of Va., 1941; Ph.D., Univ. of Ill., 1950. Exp.: Rsch. Chemist, Allied Chemical Co., Morristown, N. J., 1944-46; Postdoctoral Fellow, Univ. of Va., Charlottesville, Va., 1950-51; Chemist, F. O. Cockerille, Greenwood, Va., 1951-52; Rsch. Chemist, Pittsburgh Coke and Chemical Co., Pittsburgh, Pa., 1952-55; Chemist, U. S. Bureau of Mines Pittsburgh, Pa., 1957—. Mem.: Am. Chemical Soc. Hon. Frat.: Alpha Chi Sigma, Sigma Xi. Contbr. to: Jour. of Organic Chemistry. Areas of Rsch.: Coal and Carbon Chemistry, Organic Process Development, Organic Synthesis.



KAUFMAN, I(rving) Charles (M.D.), Prof. and Chmn., Dept. of Psychiatry, State Univ. of N. Y., Downstate Med. Coll., New York, N. Y. Home Add.: 20 the Glenada, Roslyn Estates, N. Y. PSYCHIATRY, BEHAVIORAL SCIENCE. b. New York, N. Y., Aug. 1, 1919. s. Morris and Ethel (Applebaum) K. Edn.: A.B., Lafayette Coll., 1939; M.D., L. I. Coll. of Med., 1943. m. Zena Cipis, June 15, 1941. c.: David Harold; Joshua Robert. Exp.: Instr., Asst. Prof., Assoc. Prof., Boston Univ. Schl. of Med., 1947-60; Prof. and Chmn., Dept. of Psychiatry, State Univ. of N. Y., 1960—. Mem.: A.A.A.S.; Am. Electroencephalographic Soc.; Fellow, Am. Psychiatric Assn.; Am. Psychoanalytic Assn.; Brooklyn Psychiatric Soc.; Internation League Against Epilepsy; N. Y. Acad. of Scis.; Psychoanalytic Assn. of N. Y.; Soc. of Animal Behaviour; Phi Beta Kappa; Sigma Xi; Alpha Omega Alpha. Contbr. to: Proc. Soc. Exp. Biol. Med.; Psychosom Med.; Arch. Neur. Psychiat.; Jour. Nerv. Ment. Dis.; EEG Clin. Neurophysiol.; N.E.J. Med.; Med. Clin. N. Am.; Am. Jour. Psychiat.; Animal Behaviour Internatl. Jour. Psychoanalysis; Jour. Am. Psychoanalytic Assn. Serv. Rec.: U. S. Army, 1945-47; U. S. Navy, 1953. Areas of Rsch.: Electroencephalography, Epilepsy, Psychiatry, Psychoanalysis, Ethology.

KAUFMAN, Herbert C. (Mr.), Sr. Chemist, Olin Mathieson Chem. Corp., New Haven, Conn. Home Add.: 481 Edgewood Ave., New Haven, Conn. CHEMISTRY. b. Brooklyn, N. Y., Oct. 16, 1923. s. Henry C. and Anne (Cooper) K. Edn.: B.S., N. Y. Univ., 1947. m. Ruth Odes, Sept. 14, 1946. c.: Clark; Fredric; Kevin. Exp.: Rsch. Chemist, Johnson and Johnson, New Brunswick, N. J., 1947-51; Rsch. Chemist, Reaction Motors, Inc., Rockaway, N. J., 1953-54; Sr. Chemist, John B. Pierce Found., Raritan, N. J., 1951-53; Sr. Chemist, ibid., 1954-61; Sr. Chemist, Olin-Mathieson Chem., 1961. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci. Author: Handbook of Organometallic Compounds, 1961. Contbr. to: Indust. and Engrng. Chem.; Jour. of Chem. and Engrng. Data. Serv. Rec.: U. S. Army, 1943-45. Gen. Int.: Authored only Comprehensive Compilation of Phys. Properties of Organometallic Compounds in U. S. Areas of Rsch.: Thermally-Stable Fluids; Their Preparation and Evaluation; Organosilicon, Organoboron, Phosphonitrilic Chemistry; Compounding of Thermoplastic Adhesives; Radiation Effects on Materials; Chemical Literature.

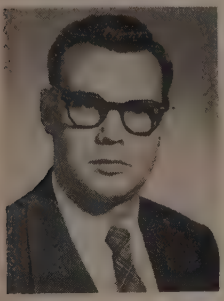


KAUFMANN, Kenneth Andrew (Mr.), Asst. Dir., Rsch. and Devel., Rexall Chem. Co., Paramus, N. J. Home Add.: 54 Westbrook Rd., Westfield, N. J. CHEMICAL ENGINEERING. b. N. Y. City, June 1, 1923. s. Andrew F. and Emma (Johnson) K. Edn.: B.Ch.E., Pratt Instit., 1943; M.Ch.E., Rensselaer Polytech. Instit., 1947; D.Ch.E., (can.), Polytech., Instit. of Brooklyn, 1950. m. Dorothy Clifton Mitchell, May 13, 1944. c.: Kurt Alan; Pamela Lynn; Susan Marion. Exp.: Product and Proc. Dev., Celanese Corp. of Am., Newark, N. J., 1943-49; Prod. Mgr., Gering Prods., Inc., Kenilworth, N. J., 1949-53; Asst. Plant Mgr., Catalin Corp. of Am., Chicago, Ill., 1953; Mgr. Plastics Tech. Serv. and Lab., Spencer Chem. Co., Kans. City, Mo., 1954-58; Mgr. Market Rsch. and Dev., Amoco Chem. Corp., ibid., 1958-60; Asst. Dir., Rsch. and Devel., Rexall Chem. Co., 1960—. Mem.: Sigma Xi; Soc. of Plastics Engrs.; Soc. of Plastics Indus.; Packaging Instit., ASTM Comm. D-20 on Plastics; Internatl. Standards Orgn., Comm. TC/61 on Plastics; Bureau of Defense and Bus. Admin. Contbrng. Author: Mod. Plas. Encyclopedia, 1957; Polyethylene Density, Yardstick of Classification and Performance, 1958; Embrittlement of Polyethylene, 1958; Method of Evaluating Polyethylene Molding Compounds, 1957; Higher Density Polyethylene, 1957. Contbr. to: Mod. Plastics; Mod. Packaging; Package Engrng.; A.S.T.M. Bull. Serv. Rec.: U. S. Naval Res., 1943-45. Areas of Rsch.: Thermoplastics, Particularly Polyolefins, Polystyrenes; Compounding, Formulation and Utilization of Same; Market Research and Development, Plastics and Resins.

KAUSHAGEN, W(illiam) Maurice (Mr.), Dir., Electronics Div., Cornell Aeronautical Lab., Inc., 4455 Genesee St., Buffalo 21, N. Y. Home Add.: 408 McKinley Ave., Kenmore 23, N. Y. ACOUSTICS, PIEZOELECTRICS, ELECTRONICS AND INSTRUMENTATION. b. Twin Valley, Minn., Apr. 6, 1919. s. Eli H. (dec.), and Hanna (Spangelo, dec.) K. Edn.: B.A., Concordia Coll., 1941; M.S., Univ. of Ill., 1942. m. Doris L. Larson, July 18, 1943. c.: Kristi Maren; Carol Jean; Beverly Ann. Exp.: Asst. Physicist, Naval Ordnance Lab., Washington, D. C., 1942-45; Physicist, Proj., Cornell Aero. Lab., Buffalo, N. Y., 1945-49; Sect. Hd. Engr., ibid., 1949-52; Asst. Hd., Phys. Dept., ibid., 1952-57; Dept. Hd., Electronics Dept., ibid., 1957-61; Div. Dir., Electronics Div., ibid., 1961—. Hon. Pos.: Mem. of three N.A.S.A. Comms. on Satellite Launching Vehicles, 1958-60. Mem.: A.A.A.S.; Phys. Soc.; Sr. Mem. Inst. Radio Eng.; Inst. Aeronautical Sci.; Sigma Xi. Serv. Rec.: U.S.N.R., 1944-45. Gen. Int.: Co-inventor of Flight Line Computer, 1950. Areas of Rsch.: Physicist, Rsch. and Development Work in Acoustics, Piezoelectrics, Electronics and Instrumentation at NOL and Rsch. and Development Work Associated with Aircraft and Guided Missile Instrumentation, Telemetering, Electronic and Electromechanical Computations, and Automatic Flight Control at CAL.

KAUTZ, Harold Douthitt (M.D.), Hd., Prod. Information, Abbott Labs., North Chicago, Ill. Home Add.: 75 Wooded Lane, Lake Forest, Ill. MEDICAL WRITING AND EDITING; THERAPEUTICS. b. Fremont, Nebr., June 13, 1908. s. Ernest Frederick (dec.) and Anna Pearl (Douthitt) K. Edn.: B.A., Univ. of S. D., 1932; M.D., Univ. of Nebr., 1937. m. Imogene Louisa Ewing, Aug. 12, 1933. c.: Allan Douglas. Exp.: Med. Assoc., Coun. on Pharm. and Chem., Am. Med. Assn., Chicago, Ill., 1939-42; Asst. and Assoc. Secy., ibid., 1946-55; Secy., Coun. on Drugs, Am. Med. Assn., ibid., 1955-60; Hd., Prod. Information, Abbott Labs., North Chicago, Ill., 1960—. Mem.: Lake Co. Med. Soc.; Ill. Sta. Med. Soc.; Am. Med. Assn.; The World Med. Assn., U. S. Comm., Inc.; Am. Med. Writers' Assn.; Am. Assn. Adv. of Sci.; Phi Chi; Alpha Omega Alpha. Contbr. to: Jour. Am. Geriat. Soc.; Am. Jour. of Nursing; Jour. Mich. Sta. Med. Soc.; Jour. A.M.A. Serv. Rec.: U. S. Army Medical Corps, 1942-46. Areas of Rsch.: Literary Research; Drug Therapy.

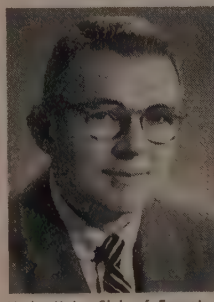
KEACH, Thomas George, (Mr.), Instr. of Maths., Pearl River H. Schl., Pearl River, N. Y. MATHEMATICS EDUCATION—ADOLESCENT PSYCHOLOGY. b. Seneca Falls, N. Y., Jan. 12, 1924. s. George L. and Margaret M. (McGraw) K. Edn.: B.Edn., Univ. of the Sta. of N. Y., Tchrs. Coll. at Oswego, 1948; M.A., N. Y. Univ., 1951. Exp.: Instr., Dix Hills Schl., Huntington, L. I., N. Y., 1948-50; Field Rep., Boys Life Dept., Supreme Coun., Knights of Columbus, New Haven, Conn., 1951-52; Instr., Port Byron Cent. Schl., Port Byron, N. Y., 1952-54; Instr., Pearl River H. Schl., 1954—. Mem.: Natl. Coun. of Tchrs. of Maths.; N. Y. Sta. Tchrs. of Maths.; Natl. Edn. Assn.; N. Y. Sta. Tchrs. Assn.; Bd. of Dirs. of Rockland Co. Tchrs. Assn.; Phi Delta Kappa; Kappa Delta Pi. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Lectured Nationally on Adolescent Psychology in Recreational Planning and Modern Mathematics in Todays Schools. Areas of Rsch.: Psychology of the Adolescent and Pre-Adolescent as It Applies to Arithmetic Education.



KEARNEY, Dora Evelyn (Miss), Rsch. Asst., Adaptronics, Inc., 4121 Chatelain Road, Annandale, Virginia. MATHEMATICS. b. Maquoketa, Iowa, July 2, 1897. d. Adrian Fletcher and Ruth Maria (Cort) K. Edn.: B.A., Univ. of Minn., 1920; M.A., ibid., 1924. Exp.: Tchr., Elem. Schls., Maquoketa, Ia., 1915-16; Math. Tchr., H. S., Fennimore, Wis., 1920-22; Supvr. of Jr. and Sr. H. S. Math., State Tchrs. Coll., Valley City, N. Dak., 1924-25; Asst. Prof., Ia. State Tchrs. Coll., Cedar Falls, Ia., 1925-46; Asst. Prof. of Math., Northern St. Tchrs. Coll., Aberdeen, S. D., 1947; Math. and Phys. Tchr., Itasca Jr. Coll., Coleraine, Minn., 1947-49; Math. and Coml. Tchr., High Schl., Holcomb, Wis., 1951-52; Asst. Prof., Math. and Physics, Westminster Coll., Salt Lake City, Utah, 1952-53; Assoc. Prof. Math. and Physics, Upper Iowa Univ., 1953-55; Asst. Prof., Math., Iowa Wesleyan Coll., 1955-56; Instr., Math., Univ. of Md., 1956-59; Asst. Prof., Miss. State Univ., 1959-61; Rsch. Asst., Adaptronics, Inc., 1962—. Mem.: N.C.T.M.; A.A.A.S.; N. Y. Acad. of Scis.; Phi Delta Gamma; Y.W.C.A.; Phi Beta Kappa; Kappa Mu Epsilon; Pi Mu Epsilon; Math. Assn. of Am.; Am. Math. Soc.; A.A.U.W.; Natl. Federation of Bus. and Prof. Women's Clubs; D.A.R.; Societe Mathematique de France. Contbr. to: Schl. Sci. and Math.

KECK, Warren Norwood (Ph.D.), Prof. of Biol., North Central Coll., Naperville, Ill. Home Add.: 224 E. Chicago Ave., Naperville, Ill. BIOLOGY. b. Stockport, Iowa, Nov. 11, 1900. s. Judson H. and Jane Florence (Teal) K. Edn.: B.A., Univ. of Iowa, 1924; M.S., ibid., 1926; Ph.D., ibid., 1933. Exp.: Instr., North Dakota State Univ., Fargo, N. D., 1933-36; Prof., Coe Coll., Cedar Rapids, Iowa, 1936-47; Prof., North Central Coll., Naperville, Ill., 1947—. Hon. Pos.: Pres., Iowa Ornithologists Union; Dir., Ill. Audubon Soc. Mem.: Am. Soc. of Zool.; Wilson Ornithological Soc.; Iowa Acad. of Sci.; Chicago Ornithol. Soc.; Sigma Xi; Phi Kappa Phi; Beta Beta Beta; Alpha Tau Omega. Contbr. to: Proc. Soc. of Exptl. Biol.; Jour. of Exptl. Zool.; Iowa Acad. Sci.; Iowa Bird Life. Areas of Rsch.: Ornithology of Iowa and Illinois; Ecology of Birds, Hormonal Regulations of Plumages in Birds, Embryology of Birds.

KEARNS, John Edward (M.D.), Assoc. Prof. Surg., Northwestern Univ., Evanston, Ill. Home Add.: 1918 E. Circle Dr., Northbrook, Ill. SURGERY. b. Schenectady, N. Y., Aug. 28, 1905. s. John E. and Margaret E. (Wallace) K. Edn.: B.S., Univ. of Notre Dame, 1927; M.D., Northwestern Univ., 1932. Exp.: Instr., Univ. of Ill., 1931-32; Asst. in Physiol., Northwestern Univ., 1928-30; Clin. Asst. in Surg., ibid., 1936; Instr., Surg., ibid., 1937-50; Assoc. in Surg., ibid., 1950-51; Asst. Prof., ibid., 1951-54; Assoc. Prof., ibid., 1954-60. Mem.: Chicago Med. Soc.; Chicago Surg. Soc.; Ill. St. Med. Soc.; Am. Med. Assn., Fellow; Am. Coll. of Surg.; Internatl. Surg. Soc.; Am. Goiter Assn.; The Endocrine Soc.; Assn. Milit. Surg.; W. Surg. Assn.; Pan Pac. Surg. Assn.; Ill. Soc. of Med. Rsch.; Am. Assn. for Adv. Sci.; The Royal Soc. of Med.; Univ. Club of Evanston; Sigma Xi; Delta Upsilon; Phi Chi. Contbr. to: Jour. Plastic and Reconstruction Surg., S.G.&O.; Annals of Surg.; Archives of Surgery; Bull. N. U. Med. Schl., etc. Serv. Rec.: Commander, U.S.N.R. (M.C.), 1941-45. Areas of Rsch.: Thyroid, Isotopes, Cancer, Exopothalmus, etc.



KEBLER, Richard William (Ph.D.), Rsch. Group Ldr., Union Carbide Rsch. Inst., P. O. Box 278, Tarrytown, N. Y. Home Add.: 201 Hunter Ave., No. Tarrytown, N. Y. PHYSICS. b. Owosso, Mich., Nov. 25, 1920. s. Otto W. and Helen M. (Robertson) K. Edn.: B.S., Univ. of Mich., 1943; M.S., ibid., 1948; Ph.D., ibid., 1953. m. Shirley M. Morris, Dec. 30, 1950. c.: Julie L.; Karen M.; Richard S.; David G. Exp.: Rsch. Physicist, Linde Co., Tonawanda, N. Y., 1953-55; Dev. Group Ldr., ibid., Speedway, Ind., 1955-59; Rsch. Physicist, General Motors, Warren, Mich., 1959; Rsch. Group Ldr., Union Carbide Rsch. Inst., Tarrytown, N. Y., 1960—. Mem.: Am. Physical Soc.; Optical Soc. of Am.; Am. Ceramic Soc.; Sigma Xi; Am. Assn. for Adv. of Sci.; Tau Beta Pi; Gamma Alpha. Contbr. to: Jour. of the Optical Soc.; Am. Ceramic Soc. Serv. Rec.: U. S. Army, 1943-46, 1951-53. Areas of Rsch.: Emission Spectroscopy, Single Crystal Growth, High Temperature Materials.

KEE, Jeanette (Miss), Instr. in Biol., Northeastern Inst. for Christian Edn., Villanova, Pa. Home Add.: 596 Barrett Ave., Haverford, Pa. MYCOLOGY. b. Tipton, Okla., Jan. 31, 1934. d. James Henry and Bonnie (Gaylor) K. Edn.: B.A., Harding Coll., 1955; M.Ed., Univ. of Ark., 1956; M.S., Syracuse Univ., 1959. Exp.: Tchr., Pubi. Schls., New Edinburg, Ark., 1955-56; Tchr., Pubi. Schls., Wichita, Kans., 1956-58; Instr., Northeastern Inst. for Christian Edn., Villanova, Pa., 1959—. Mem.: A.A.A.S.; Mycological Soc. of Am.; Pa. Acad. of Sci.; Am. Inst. of Biol. Sci.; Kappa Delta Phi. Gen. Int.: Natl. Sci. Found. Academic Year Scholarship, 1958. Areas of Rsch.: Mycology, Fungi Parasitic on Insects.

KEELAN, Harry Sanderlin (Mr.), Consult. Chemist and Mem. Bd. of Dirs., Photo-Dynamics, Inc., 2637 No. Jerusalem Rd., E. Meadow, L. I., N. Y. COLLOID CHEMISTRY, PHOTOGRAPHIC CHEMISTRY. b. Wash., D. C., Sept. 30, 1892. s. John Calvin and Mary Louise (Lewis) K. Edn.: A.B., Harvard Univ., 1915. m. Vera Ramos, Aug. 23, 1942. Exp.: Rsch. Chem., Wm. H. Warner and Co., N. Y., N. Y., 1931-36; Rsch. Chem., Philip Morris and Co., N. Y., 1936-49; Colloid Chem., Mexican-Am. Commn., Foot and Mouth Diseases, Mex., 1949-50; Rsch. Assoc., Boston Univ., 1951-58; Vice-Pres., Cormac Chem. Corp., N. Y., 1958-61; Consult. Chem. and Mem. of Bd. of Dirs., Photo Dynamics, Inc., E. Meadow, L. I., N. Y., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Royal Photographic Soc. of Gr. Brit.; Soc. Photographic Scientists and Engrs.; Sigma Xi. Contbr. to: Jour. Photographic Sci.; Photographic Engrng., Jour. Am. Pharmaceutical Assn.; etc. Gen. Int.: Developed Photographic monobaths, the simultaneous developing end fixing of photographic emulsions. Areas of Rsch.: Photographic Chemistry; Pharmaceutical Colloids and Emulsions, such as Colloidal Lead in Cancer Research, Colloidal Silver Iodide Disinfectants, Colloidal Alumnia for the Manufacture of Foot and Mouth Vaccine (in Mexico).

KEEGAN, Joseph Gerard, S.J., Dir., Counseling Center; Assoc. Prof. Dept. of Psychol., Graduate Schl., Fordham Univ., Bronx 58, N. Y. EXPERIMENTAL PSYCHOLOGY. b. Brooklyn, N. Y., May 19, 1906. s. Patrick J. and Mary (Kelly) K. Edn.: B.A., Woodstock Coll., 1929; M.A., ibid., 1930; S.T.L., ibid., 1937; M.A., Yale Univ., 1943; Ph.D., ibid., 1949. Exp.: Lectr. in Biol., Canisius Coll., 1930-33; Instr. in Psychol., Fordham Univ., 1942-46; Asst. Prof. of Psychol., ibid., 1946-54; Assoc. Prof., 1955—; Chmn., Dept. of Psychol., ibid., 1949-58; Asst. Dean, Grad. Schl. of Arts and Sci., ibid., 1952-53; Dir., Counseling Ctr., ibid., 1961—. Mem.: Am. Psychol. Assn.; N. Y. St. Psychol. Assn.; Am. Catholic Psychol. Assn.; British Psychol. Soc.; Sigma Xi. Special Int.: Psychophys. Methods; Scaling Techniques; Social, Religious and Ethical Values.

KEELER, Carl Rives (Mr.), Prof. of Biol., Manatee Jr. Coll., Bradenton, Fla. Home Add.: 3709 Gulf Dr., Bradenton Beach, Fla. ECOLOGY, SCIENCE EDUCATION, MARINE BIOLOGY. b. Chicago, Ill., Mar. 8, 1933. s. Carl R. and Helen (Sable) L. Edn.: B.A., Northwestern Univ., 1956; M.S., ibid., 1957. Exp.: Rsch. Asst., Northwestern Univ., 1954-56; Lab. Instr., ibid., 1956-59; Instr. of Biol., Univ. of Omaha, 1959-61; Resident-in-Rsch., Northwestern Univ., 1961-62; Prof. of Biol., Manatee Jr. Coll., 1962—; Sci. Consult., Nebr. Schl. for the Blind, Nebraska City, Neb., 1959-61. Mem.: A.A.A.S.; Am. Inst. of Biol. Sci.; Ecol. Soc. of Am.; Natl. Assn. of Biol. Tchrs.; Sigma Xi; Tri-Beta. Serv. Rsc.: U. S. Army, 1951-53. Areas of Rsch.: Ecology and Taxonomy of the Cladophoraceae; Human Ecology; Marine Ecology; Improved Methods of Science Education.

KEELER, Rhea Irene (Ed.D.), Assoc. Prof. Voc. Edn., Univ. of Nebr., 303 Food and Nutr. Bldg., Lincoln 3, Neb. Home Add.: 1035 S. 17th St., Lincoln, Neb. HOME ECONOMICS EDUCATION. b. Reno Co., Kans., Aug. 31, 1903. d. James C. and Eva Bell (Dix) Potter. Edn.: B.S., Kans. State Coll., 1935; M.S., Colo. State Univ., 1940; Ed.D., Colo. St. Coll., 1957. m. Paul Keeler (dec.). 2nd m.: Claude O. Heniger, July 30, 1962. c.: Velva K. Bomberger; Donald. Exp.: Home Ec. Tchr., H. S., Windom, Kans., 1935-38; Tchr., H. S., Buhler, Kans., 1938-42; Asst. St. Supvr., St. of Neb., Lincoln, Nebr., 1942-44; Hd., Voc. Edn. Hm. Div., Univ. of Nebr., Assoc. Prof., ibid., 1944—. Hon. Pos.: Pres., Nebr. Home Econ. Assn., 1958-60; Pres., Zeta Chapt., Delta Kappa Gamma, 1956; Pres., Natl. Assn. of Tchrs. Edrs., Sect. of Am. Voc. Assn., 1953. Mem.: Am. Home Econ. Assn.; Natl. Edn. Assn.; Am. Voc. Assn.; Pi Lambda Theta; Omicron Nu; Phi Upsilon Omicron; Delta Kappa Gamma. Author: The Development of A Marriage Readiness Rating Scale, 1962. Contbr. to: Jour. of Home Econ.; Delta Kappa Gamma Bull. Gen. Int.: Winner of Silver Ann. Scholarship, Delta Kappa Gamma, 1956. Areas of Rsch.: Early Marriage; Home Economics Curriculum; Supervision in Home Economics Education; Educational Psychology and Guidance.

KEENER, Harry Allan (Ph.D.), Dean, Coll. of Agric. and Dir. of Agric. Expt. Sta., Univ. of N. H., Durham, N. H. Home Add.: Canney Rd., Durham, N. H. ANIMAL NUTRITION. b. Greensboro, Pa., Dec. 22, 1913. s. Franklin H. and Mary A. (Kelley) K. Edn.: B.S., The Pa. State Univ., 1936; M.S., W. Va. Univ., 1938; Ph.D., The Pa. State Univ., 1941. m. Elizabeth M. Hartley, July 26, 1941. c.: Allan W.; William F. Exp.: Instr., Univ. of N. H., 1941-43; Asst. Prof., ibid., 1943-45; Assoc. Prof., ibid., 1945-50; Prof., ibid., 1950—; Dir., Agric. Expt. Stan., ibid., 1958—; Dean, ibid., 1961—. Mem.: Am. Soc. of Animal Prodn.; Am. Dairy Sci. Assn.; N. Y. Acad. of Scis.; Alpha Gamma Rho; Alpha Zeta; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; P.T.A. Author: Milk Production, Co-Author, 1960. Contbr. to: Jour. for Dairy Sci.; Jour. of Animal Scis. Areas of Rsch.: Minor Elements in Animal Nutrition; Energy Metabolism; Carotene, Vitamin A and Vitamin D in Nutrition.

KEITH, Hubert Wiley, Jr. (Mr.), LCDR, Coast and Geodetic Survey, Dept. of Commerce Bldg., Wash. 25, D. C. GEOPHYSICS, HYDROGRAPHIC AND GEODETIC SURVEYING. b. Ft. Benning, Ga., May 18, 1927. s. Hubert W. and Sallie (Geiger) K. Edn.: B.S., Ga. Schl. of Tech., 1945. m. Virginia Cox, Oct. 28, 1948. c.: Kenneth Wayne; Joyce Lin. Exp.: Student Asst., Ga. Schl. of Tech., 1944-45; Various, Coast and Geodetic Survey, 1948—. Mem.: A.A.A.S.; Am. Geophysical Union; Seismological Soc. of Am.; Inst. of Navigation; Soc. of Am. Military Engrs.; Am. Ordnance Assn.; Naval Inst.; Sigma Nu; Chi Epsilon; Tau Beta Pi. Serv. Rec.: U. S. Army, 1945-47. Areas of Rsch.: Geophysics; Hydrography.

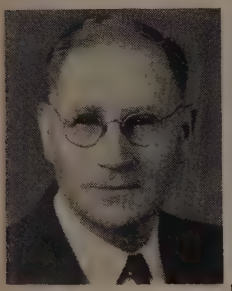
KELKER, George Hills, Prof. of Wildlife Management, Utah St. Univ., Logan, Utah. Home Add.: 117 South, 4th West, Logan, Utah. WILDLIFE MANAGEMENT. b. Morrow Co., Ohio, May 30, 1906. s. Challen Marius and Faith (Hills) K. Edn.: B.A., Hiram Coll., 1928; B.S.F., Univ. of Mich., 1931; M.S.F., ibid., 1932; Sc.D., ibid., 1946. m. Dorothy Esther Miller, June 14, 1935. c.: Challen Hills; Douglas Herson; Paul Herbert. Exp.: Tchr., Miles Hgts. Jr. H. S., Cleveland, Ohio, 1928-29; Tech. Foreman, Civilian Conservation Corp., 1933-34; Jr. Range Examiner, U. S. Forest Serv., 1934-35; In Charge, Dept. of Wildlife Management, U.S.A.C., 1937-50; Tchr., Utah St. Univ., 1937—. Hon. Pos.: Natl. Secy. and Treas., Xi Sigma Pi; Chmn., Classroom Schedule Com., U.S.-A.C.; Editor, Schedule Bull., 1950-55; Mem., Editorial Bd., Jour. of Wildlife Mgmt., 1959—. Mem.: Am. Soc. Mammalogists; Wildlife Soc.; Am. Wildlife Inst.; Wilson Ornithol. Club; Natl. Audubon Soc.; Soc. Am. Foresters; A.A.A.S.; Utah Acad. Arts; Sci. and Letters; Natl. Parks Assn.; Internatl. Inst. of Arts and Letters (Kreuzlingen, Switzerland); Am. Mus. Natural Hist.; Arctic Inst.; Sigma Xi; Phi Kappa Phi; Phi Sigma; Xi Sigma Pi. Contbrng. Author: Handbook of Biological Data, 1958. Author: Research Methods for the Beginner, 1958. Contbr. to: Jour. Wildlife Management; Jour. of Forestry; Jour. Mammalogy; Proc. Utah Acad. Sci., Arts, Letter; Bull. Utah Fish and Game Dept.; Abstracted Natural Hist. for Biol. Abstracts. War Record: Utah State Guard, 1941-43. Gen. Int.: Schoen-Rene Scholarship, 1943, 1955. Areas of Rsch.: Vertebrate Ecology, especially Population Dynamics; Census Methods for Birds and Mammals and Statistical Analysis Results; Food Habits Analysis of Birds and Mammals; Winter Camping and Touring; First Aid.

KELLER, Alexander Paul, Jr. (M.D.), Physician, 1010 Prince Ave., Athens, Ga. Home Add.: Riverview Rd., Athens, Ga. MEDICINE; EYE AND EAR. b. Athens, Ga., May 19, 1921. s. Alexander Paul, Sr. and Henrietta (Douen) K. Edn.: B.S., Univ. of Ga., 1940; M.D., Emory Univ., Schl. of Med., 1944. m. Saidee Hodgson, Sept. 6, 1942. c.: Alex; Susanne; Patricia; Dianne. Exp.: Pvt. Pract., Physician, E.E.N.T., Athens, Ga., 1950—. Hon. Pos.: Past Chmn., Cherokee Dist., B.S.A.; Past Bd. Dir., Community Chest; Past Pres., Athens Gen. Hosp. Med. Staff and Past Chf. of Staff, ibid.; Present Chf., E.E.N.T. Serv., Athens Gen. Hosp. Mem.: Fellow, Am. Acad. Ophthalmology and Otolaryngology; Fellow, Am. Laryngological, Rhinological and Otological Soc.; Diplomate, Am. Bd. Ophthalmology; Diplomate, Am. Bd. Otolaryngology; Crawford W. Long Med. Soc.; Ga. Soc. Ophthalmology and Otolaryngology; Am. Med. Assn.; Fellow, A.A.A.S.; Phi Chi; Phi Beta Kappa; Alpha Omega Alpha; Rotarian. Contbr. to: Archives Otolaryngology; E.E.N.T. Monthly; Laryngoscope; Southern Med. Jour.; Med. Times; Jour. Med. Assn. Ga. Serv. Rec.: A.U.S., 1945-47, 1st Lt. to Capt.; Past, Major, U.S.A.F. Reserve. Gen. Int.: Instr., Otolaryngology, Emory Univ. Schl. of Med.; Visiting Staff, E.E.N.T., Grady Mem. Hosp., Atlanta, Ga. Areas of Rsch.: Pressure Factors in Relation to Human Ear Drum; Bacteriology of Nasal Passageways; Pollen Allergy Relationships to Pollen Count.

KELLER, Dolores Elaine (Ph.D.), Assoc. Prof. Sci. and Chmn., Dept. of Science, Coll. of Sci. and Engineering, Fairleigh Dickinson Univ., 1000 River Rd., Teaneck, N. J. Home Add.: 96 Cypress St., Woodcliff Lake, N. J. b. N. Y., N. Y., Oct. 29, 1926. d. Louis and Ada Betsy (Ross) Greene. Edn.: Northwestern Univ.; B.S. magna cum laude, Long Island Univ., 1945; M.A., N. Y. Univ., 1947; Ph.D., ibid., 1956. m. Martin Edward Keller, Essex Fells, N. J., July 27, 1946. s. Sidney Clarence and Emily Adeline Keller. c.: Steven Edward; Kevin Edward; Wendy Anne. Exp.: Asst. to Chmn. Biol. Dept., Long Island Univ., 1945-46; Tchr., Biol. and Gen. Sci., Prospect Heights H. S. and N. Y. City Publ. Schl. System, N. Y., N. Y., 1946-48; Instr. in Philos. and Sci., and Asst. Dean of Women, Long Island Univ., 1948-54; Asst. Dir. of Adult Edn., Union Free Dist. #5, Nassau Co., Long Island, 1953-56; Instr., Asst. Prof. to Chmn., and Assoc. Prof., Dept. of Science, Coll. of Sci. and Engineering, Fairleigh Dickinson Univ., 1956—. Hon. Pos.: Chmn., Northern Jersey Sci. and Math. Fair; U. S. Delegate, Internatl. Oceanographic Congress, United Nations; Dir., Natl. Sci. Found., Summer Sci. Inst. for High School Teachers, 1961; Dir., N.S.F. Instit., 1962-63. Mem.: A.A.A.S.; N.E.A.; A.A.U.P.; Am. Soc. Hygiene Assn; Child Study League; Natural Hist. Soc; Biophysical Soc.; Kappa Delta Pi; Pi Lambda Theta; N. J. Women's Republican Club. Contbr. to: Sci. Edn.; Jour. of Soc. Hygiene; Parent's Mag. Sci.; Columnist.; Children and Life; Personality Aspects Related to Misinformation About Sex Among College Students, 1959. Ph.D. Dissertation: The Relationship Between Misinformation About Sex Manifested in a Group of College Students and

Certain Social and Physical Aspects of Personality. Travel: Caribbean; W. Indies; Can. Gen. Int.: Lectr., Before Various Natl. Edn. Conventions; Pianist; Fluent French Speaker. Hobbies: Oil Painting; Swimming; Skin Diving; Skiing; Ceramics. Listed in: W.W. in Am. Coll. and Univ.; W.W. in Am. Edn. Areas of Rsch.: Lactation and the Lactogenic Hormone; Hormones and Homosexuality; Ecology of Coral Reefs; Keller Inventory of Beliefs and Misbeliefs in Sex Education; Marine Biology.

KELLER, Edwin Henry (Mr.), Biol. Instr., 325 N. Arthur, Pocatello, Ida. Home Add.: 653 S. 5th Ave., Pocatello, Ida. BIOLOGY, CONSERVATION, AND NATURE ACTIVITIES. b. Pinckneyville, Perry Co., Ill., Sept. 27, 1898. s. William Henry and Catherine (Gernand) K. Edn.: B.S., Utah State Univ., 1931; M.S., ibid., 1956; Yosemite Field Schl., Yosemite N. P., Calif., 1936. m. Mary Ellen Randall, Aug. 30, 1922. c.: Ellen; James; Ruth; Richard; Glen. Exp.: Summer Term Work, U.S.F.S., N.P.S., St. Forest, 1930, 1935, 1936, 1937, 1942, 1952—; Tchr., Sci. Biol., Ida. Pub. Schl., Utah, 1931-33; Jr. Range Examiner, U.S.G.S. Range Surveys, Ida., 1939-41; Tchr. Biol., Pub. Schls., Jefferson Co. and Pocatella, Ida., 1942—; Forest Recreation, Park Ranger and Ranger Naturalist, Jr. Nature Schl., Camp Naturalist and Dir., Insect Control, Field Schl. Activities, Forest Warden, Gr. Canyon, Yellowstone Natl. Parks or Western Parks, Ariz., Wyo., Cache, Targhee Natl. Forest, Utah, Idaho, 1930, 1937, 1942, 1952—. Hon. Pos.: State Conservation Comm. for N.A.B.T.; Chmn., Sec. Sci. Tchrs. Inst. for Tchrs. Mem.: A.A.A.S.; Ida. Acad. of Sci.; Natl. Assn. of Biol. Tchrs.; Am. Nature Study Soc. Gen. Int.: Jr. Nature Schls. (Volunteer Groups); Development of Sci. and Nature Tchng. Material; Scouting Ldrship., Silver Beaver Award. Areas of Rsch.: Conservation and Science Teaching.

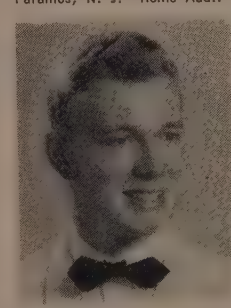


KELLER, John Francis (Rev.), Assoc. Prof., Chmn., Dept. of Math., Loyola Univ., New Orleans 18, La. Home Add.: 6363 St. Charles Ave., New Orleans 18, La. MATHEMATICS. b. New Orleans, La., Mar. 7, 1917. s. William Xavier and Helen (Emmett) K. Edn.: B.S., Spring Hill Coll., 1941; M.S., St. Louis Univ., 1945; Lic. Theol., St. Mary's Coll., Kans., 1948. Exp.: Asst. Prof., Spring Hill Coll., 1953-55; Asst. Prof., Loyola Univ., La., 1955-57; Assoc. Prof., ibid., 1957—; Chmn., Dept. of Math., ibid., 1957—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Soc. for Industrial and Applied Math.; Assn. for Computing Machinery; Natl. Coun. of Tchrs. of Math.; Am. Assn. Adv. Sci.; Sigma Xi; Sigma Pi Sigma. Gen. Int.: Visiting Lectr., Universidad Iberoamericana, Mexico, 1958; 1959. Areas of Rsch.: Electron Diffraction Experimental Research; Numerical Analysis; Computer Oriented Research.

KELLER, Paul Dudley (M.D.), Surg., Mem. Med. Center, 2000 S. 9th East, Salt Lake City, Utah. Home Add.: 54 N. Wolcott, Salt Lake City, Utah. CANCER SURGERY. b. Mink Creek, Ida., Mar. 16, 1912. s. Torval and Deliiah F. (Dudley) K. Edn.: B.S., Utah St. Univ., 1934; M.D., Univ. of Ore. Med. Schl., 1939. m. Maurine Flint, Dec. 24, 1939. c.: Paul D.; David F.; Steven A.; Virginia L.; Tamara A. Exp.: Rsch. Asst., Univ. of Ala., 1934-35; Rsch. Asst., Univ. of Ore., 1934-39; Rotating Intern, L. I. Coll. Hosp., 1939-40; Clin. Instr., Yale Univ. Med. Schl., 1940-41; Asst. Res., Surg., Barnes Hosp., St. Louis, Mo., 1945-48; Med. Adv. Bd., Mead Johnson and Co., 1953-60; Asst. Res., Surg., St. Louis Children's Hosp., St. Louis, Mo., 1945-48; Chf. Res. in Surg., Barnard Free Skin and Cancer Hosp., St. Louis, Mo., 1948-49; Chf. Res. in Surg., St. Louis Children's Hosp., St. Louis, Mo., 1949-50; Trainee, Natl. Cancer Inst., 1948-49; Chf. Res. in Surg., Barnes Mem. Hosp., St. Louis, Mo., 1949-50; Instr. in Surg., Washington Univ. Med. Schl., St. Louis, Mo., 1949-50; Dir., Armed Forces Med. Center, Ft. Douglas, Utah, 1950-55; State Med. Consult. for Vocat. Rehabilitation, St. of Utah, 1953-60; Exec. Staff, LDS Hosp., Salt Lake City, Utah, 1952-60; Surg. Comm., LDS Hosp., Salt Lake City, Utah, 1957-60; Surgeon, Memorial Med. Center, Salt Lake City, Utah, 1953—. Mem.: Am. Med. Assn.; Salt Lake Surg. Soc.; S. W. Surg. Cong., Fellow; Am. Coll. of Surg., Fellow; Am. Assn. for Adv. of Sci., Fellow; Certified by Am. Bd. of Surg.; Certified by Am. Bd. of Abdominal Surg.; Kiwanis; Listed with Am. Men of Sci. and W. W. in the West. Contbr. to: Yale Jour. of Biol. and Med.; Jour. of Am. Med. Assn.; Am. Jour. of Pediatrics; Armed Forces Med. Jour.; Rocky Mt. Med. Jour. Serv. Rec.: U. S. Army, 1941-45. Gen. Int.: Was the First Physician to Report on the Clinical Effects from the Atomic-Bomb Explosions in Nagasaki and Hiroshima; First Surgeon to Successfully Combine a Pelvic Evisceration with a Hemipelvectomy for Cancer of the Rectum; First to Publish a Classification of Cirrhosis of the Liver in Children; Has Made Significant Contributions to Technique of Internal. Mammary Dissection in Radical Mestectomy; Designed "Cardiocaster" Instrument for Amplifying and Broadcasting Heart Sounds During Surgery. Areas of Rsch.: Cancer; Cancer Surgery.

KELLER, Robert Ellis (Ph.D.), Group Leader, Monsanto Chem. Co., St. Louis 77, Mo. Home Add.: 1004 Grovena Dr., St. Louis 26, Mo. CHEMISTRY. b. Marshalltown, Ia., Jan. 10, 1923. s. Ellis E. and Hazel (Tucker) K. Edn.: B.A., State Univ. of Iowa, 1947; M.S., ibid., 1949; Ph.D., ibid., 1951. m. Virginia Snell, 1946. c.: Karen Lee; James Robert. Exp.: Rsch. Chemist, Smith, Kline and French Labs., Philadelphia, Pa., 1950-52; Project Ldr., Monsanto Chem. Co., St. Louis, Mo., 1952-54; Group Leader, Monsanto Chem. Co., ibid., 1954—. Hon. Pos.: Chmn., Analytical Gr., St. Louis Sect., Am. Chem. Soc. Mem.: Am. Chem. Soc.; Iowa Acad. of Sci.; Applied Spectroscopy Soc.; St. Louis Soc. of Analysts; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; St. Louis Congregational Missionary Soc. Contbr. to: Analytical Chem.; Jour. Pharmacology and Exprntl. Therapeutics; Jour. Am. Pharmaceutical Assn.; Jour. of Assn. of Official Agric. Chemists; Iowa Acad. of Sci.; Agricultural and Food Chem. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Analytical Chemistry and Spectroscopy; Method Development and Absorption, Emission, and Nuclear Magnetic Resonance Spectroscopy.

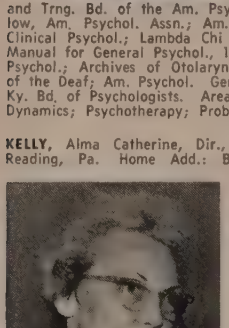
KELLEY, Joseph Matthew (Ph.D.), Group Ldr., Rexall Chem. Co., Paramus, N. J. Home Add.: 1321 E. Broad St., Westfield, N. J. ORGANIC AND POLYMER CHEMISTRY. b. Baltimore, Md., Dec. 10, 1929. s. Joseph M., Sr. and Bertha Louise (Uebel) K. Edn.: B.S., Loyola Coll., 1950; M.S., Fordham Univ., 1952; Ph.D., ibid., 1956. m. Margaret J. Bradish, Apr. 16, 1955. c.: James; Steven; Susan. Exp.: Rsch. Chem. and Project Ldr., Esso Rsch. and Engrng. Co., Linden, N. J., 1955-61; Group Ldr., Rexall Chem. Co., Paramus, N. J., 1961—. Mem.: A.C.S.; R.E.S.A.; A.A.A.S.; A.R.-R.L.; Sigma Xi; Zeta Eta Theta; Coll. Mens Club of Westfield. Areas of Rsch.: Polyolefins Enzyme Chem., Petrochemicals Heterogeneous Catalysis, Electronics.



KELLEY, Maurice Joseph (Ph.D.), Dir., Rsch. Labs., The Diversey Corp., 212 W. Monroe St., Chicago 6, Ill. Home Add.: 515 Sheridan Rd., Evanston, Ill. ORGANIC CHEMISTRY, INDUSTRIAL RSCH. b. Danielson, Conn., Aug. 6, 1916. s. John Bennett and Ethel May (Bowen) K. Edn.: A.B., La Salle Coll., 1936; M.S., Fordham Univ., 1941; Ph.D., Univ. of Pa., 1942. m. Frances Violette Sailsbery, June 16, 1945. Exp.: Rsch. Chemist, Nopco Chem. Co., 1936-44; Chf. Chemist, Sales Dev. Lab., ibid., 1944-48; Dir., Industrial Dev. Lab., ibid., 1948-53; Dir., Industrial Specialties Lab., ibid., 1953-58; Dir., Project Co-ordination Dept., ibid., 1958-61; Dir., Rsch. Labs., The Diversey Corp., 1961—. Hon. Pos.: Secy.-Treas., 1948-50, Chmn., 1950-51, Natl. Councilor, 1951-54, Am. Inst. of Chemists, N. Y. Chapt. Mem.: Am. Chem. Soc.; A.A.A.S.; Chemical Soc.; Soc. of Chem. Industry; Chemical Mkt. Rsch. Assn.; Am. Oil Chemists Soc.; Societe de Chimie Industrielle; Inst. of Food Technol.; The Chemists Club; (N. Y.) Chicago Chemists Club. Contbr. to: The Chemist; Chemical and Engrng. News. Gen. Int.: Honor Scroll Award, Am. Inst. of Chemists, 1959. Areas of Rsch.: Mgmt. of Rsch. and Development—Organic Chemistry, Surface-Active Chemicals, Nitrogen Compounds, Oil and Fat Chemicals, Synthetic Resins, Metallic Soaps, Synthetic Detergents, Industrial Processing Chemicals.

KELLEY, Noble Henry (Ph.D.), Rsch. Prof. in Psychol., Sou. Ill. Univ., Carbondale, Ill. Home Add.: 1200 Chautauqua, Carbondale, Ill. PSYCHOLOGY. b. Thamesville, Ontario, Can., Aug. 10, 1901. s. Isaac Wesley and Louise (Ross) K. Edn.: A.B., The State Univ. of Iowa, 1933; M.A., ibid., 1935; Ph.D., ibid., 1936. m. Ethel B. Patterson, July 9, 1927. c.: Alan Douglas. Exp.: Chmn., Dept. of Psychol., Univ. of Louisville, 1937-51; Prof. and Chmn., Dept. of Psychol., Sou. Ill. Univ., 1951-60; Rsch. Prof. in Psychol., ibid., 1960—. Hon. Pos.: Past Pres., Ky. Psychol. Assn.; Past Pres., Ill. Psychol. Assn.; Chmn., Conf. of State Psychol. Assns. of the Am. Psychol. Assn.; Exec. Secy. and Treas., Am. Bd. of Examiners in Prof. Psychol., 1951—; Mem., Ill. Psychiatric Trng. and Rsch. Authority, 1957—; Mem., Edn. and Trng. Bd. of the Am. Psychol. Assn., 1956-59. Mem.: Fellow, Am. Psychol. Assn.; Am. Assn. Univ. Profs.; Diplomate in Clinical Psychol.; Lambda Chi Alpha; Sigma Xi; Lions. Author: Manual for General Psychol., 1943. Contbr. to: Jour. of Expmtl. Psychol.; Archives of Otolaryngology; Laryngoscope; Am. Annals of the Deaf; Am. Psychol. Gen. Int.: Certified Clin. Psychologist, Ky. Bd. of Psychologists. Areas of Rsch.: Personality Theory and Dynamics; Psychotherapy; Problems of Professional Psychology.

KELLY, Alma Catherine, Dir., Correct Seating Inst., Box 244, Reading, Pa. Home Add.: Box 146, San Ramon, California. ANATOMY, KINESIOLOGY, PHYSIOLOGY, HEALTH. b. Albany, N. Y., Aug. 7, 1903. d. Dr. Albert Boulware and Ella Blanche (Murphy) K. Edn.: Panzer Schl. of Phys. Edn., 1923; New Haven Schl. of Physical Therapy, 1925; B.S., Rutgers Univ., 1931; M.A., N. Y. Univ., 1937; Ph.D., ibid., 1941. m. Thomas N. Scoville, 1956. Exp.: Instr. in Corrective Phys. Edn., Chautauqua Schl. of Phys. Edn., summer, 1923; Instr. in Phys. Edn., Y.W.C.A., Baltimore, Md., 1923-25; Physiotherapist, Newark, N. J., 1925-31; Asst. Prof. of Phys. Edn., Ithaca Coll., 1931-37; Assoc. Prof. of Phys. Edn., ibid., 1937-40; Prof. of Phys. Edn., ibid., 1940-41; Prof. of Physical Edn., Mary Wash. Coll., Univ. of Va., 1941-45; Post-Grad. Fellowship, Coll. of Physicians and Surgeons, Columbia Univ., 1945-46; Dir. of Rsch. (Rest and Fatigue), Hiram House, Cleveland, Ohio, 1946-48; Dir., Neuro-somatic Prog., Shailer Emery Lawton Found., N.Y.C., 1948-56; Dir., Correct Seating Inst., 1956—; Coordinator for All Agencies for Health, Mary Wash. Coll., Univ. of Va., 1941-45. Mem.: N. Y. Acad. of Scis.; A.A.A.S.; A.A.U.W.; Delta Psi Kappa. Author: Kinesiology Work Book, 1939; Science of Relaxing (Radio Series), 1948-49; Know Your Angles, 1956; New Habits for Old, 1956; Be Alive After Five, 1956; Tuberology Handbook, 1959. Co-author with K. Rahl, "Correct Seating Institute," 1956. Gen. Int.: Pub. Lectr. on Efficiency, Relaxation, Health; Established Correct Seating Inst. (Including Sleep Products Div.), Internatl. in Scope, to Provide Sleeping and Seating Equipment to Meet Individual Requirements, 1956. Areas of Rsch.: Rsch. on Reduction of Energy Expenditure in the Standing Position; Muscle Actions; Efficiency and Relaxation; Developing Measuring Instruments; Preparing Literature for Correct Seating Institute.

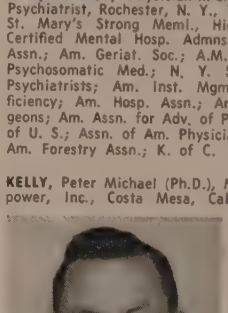


KELLY, Bruce (Ph.D.), Chief, Rsch. and Development Branch, S.R.S. U.S.D.A., Wash. 25, D. C. Home Add.: 7296 Long Pine Dr., Springfield, Va. STATISTICS. b. Clintwood, Va., Oct. 6, 1911. s. Joseph P. and Sylvia (Clarkson) K. Edn.: Ph.D., Univ. of Fla., 1953. m. Faye Lucius, 1936. c.: Bruce, Jr.; Josephine. Exp.: Asst. Prof. and Instr., Univ. of Fla., 1951-57; Math. Stat., U.S.D.A., Wash., D. C., 1957-59; Math. Stat. and Assoc. Prof., U.S.D.A., Univ. of Fla., 1959-60; Chief, Rsch. and Development Branch, U.S.D.A., Wash., D. C., 1961—. Mem.: Am. Stat. Assn.; Farm Economic Assn.; Lambda Chi Alpha; Phi Kappa Phi. Contbr. to: Estatistica; Ag. Economics Rsch. Serv. Rec.: U. S. Army, 1940-48. Areas of Rsch.: Statistical Methology.

KELLY, Elizabeth Halsey (Mrs.), Proj. Nutrn.-Dietn., Chicago Heart Assn., 22 W. Madison St., Chicago 2, Ill. Home Add.: Goethe Shore Apt. Hotel, 61 E. Goethe St., Chicago 10, Ill. NUTRITION. b. E. Orange, N. J., Jan. 24, 1904. d. Harvey Reynolds Halsey and Isabelle (Randolph) H. Edn.: B.S., Tchrs. Coll., Columbia Univ., 1926; M.S., ibid., 1957; M.P.H., ibid., 1958. m. M. Gerard Kelly (dec.), 1941. Exp.: Project Nutritionist, Anti-Coronary Club, Montclair, N. J., 1959-61; Dietary Consultant, N. C. St. Dept. of Health, Raleigh, N. C., 1961-62; Proj. Nutrn.-Dietn., Chicago Heart Assn., 1962—. Mem.: Am. Dietetic Assn.; Am. Pub. Health Assn.; Am. Assn. for the Adv. of Sci. Contbr. to: The Jour. of the Med. Soc. of N. J. Serv. Rec.: So. African Womens Auxiliary Corps, W.W. II. Areas of Rsch.: Coronary Heart Disease; Nutrition.

KELLY, Francis W. (M.D.), Psychiatrist, 1351 Mt. Hope Ave., Rochester 20, N. Y. Home Add.: 7 Harwood Lane, E. Rochester, N. Y. b. Brooklyn, 1913. s. William F. and Mary Anne (McMahon) K. Edn.: M.D., Long Island Coll. of Med., 1939. m. Mary Rose Mackovjak, Dec. 1, 1944. c.: William; Maureen; Francis, Jr.; Jonathan Richard; Margaret Anne; Kathleen. Exp.: Intern, Mary Immaculate Hosp., Jamaica, N. Y., 1939-40; Psychiatrist, Brooklyn St. Hosp., 1940-41; Attending Neuropsychiatrist, Mary Immaculate Hosp., Jamaica, N. Y., 1941-42; Attending Neuropsychiatrist, Lutheran Hosp., Brooklyn, 1941-42; Psychiatrist, Bishop de Goesbriand Hosp., Burlington, Vt., 1947-51; Psychiatrist, Weeks Schl., Vergennes, Vt., 1947-50; Supt., Brandon St. Schl., Vt., 1947-51; Instr. in Psychiatry, Univ. of Vt. Med. Schl., 1947-51; Physician-in-Chg., Brigham Hall Hosp., 1951-56; Psychiatrist, Rochester, N. Y., 1951—; Pvt. Practicing Psychiatrist, St. Mary's Strong Meml., Highland Hosps., Rochester, 1951—; Certified Mental Hosp. Admnstr. Mem.: Fellow, Am. Psychiat. Assn.; Am. Geriat. Soc.; A.M.A.; N. Y. Acad. of Sci.; Acad. of Psychosomatic Med.; N. Y. St. Med. Soc.; Guild of Catholic Psychiatrists; Am. Inst. Mgmt. Assn.; Am. Assn. Mental Deficiency; Am. Hosp. Assn.; Am. Assn. Ind. Physicians and Surgeons; Am. Assn. for Adv. of Psychotherapy; Assn. Milit. Surgeons of U. S.; Assn. of Am. Physicians and Surgeons; Air Force Assn.; Am. Forestry Assn.; K. of C. Serv. Rec.: U. S. Army, 1942-46.

KELLY, Peter Michael (Ph.D.), Mgr., Electronic System Div., Astropower, Inc., Costa Mesa, Calif. Home Add.: 1136 Pembroke Lane, Newport Beach, Calif. COMMUNICATIONS AND COMPUTERS. b. N. C., July 6, 1922. s. Peter and Alice (Hornky) K. Edn.: B.S., Union Coll., 1950; M.S., Calif. Inst. of Tech., 1952; Ph.D., ibid., 1960. m. Betty Jane, Kelly, Sept. 13, 1946. c.: Peter; Alice. Exp.: Mem. of Tech. Staff, Hughes Aircraft Co., Culver City, Calif., 1953-56; Prin. Scientist, Aeronutronic Div., Ford Motor Co., Newport Beach, Calif., 1956-61; Mgr., Electronic Div., Astropower, Inc., 1961—. Hon. Pos.: Chmn., Bionics Sess., 1961 Western Joint Computer Con. Mem.: Inst. of Radio Engrs.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Sigma Xi; Y.M.C.A. Contbrng. Author: Human Factors in Technology, 1962. Contbr. to: I.R.E. Procs.; Procs. of Milit. Electronics Convention. Serv. Rec.: U. S. Army, 1941-46. Areas of Rsch.: Radar Design and Development, Special Purpose Computer Design and Development.

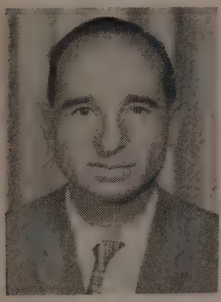


KELLY, William Eager (M.D.), Psychiatrist, 111 N. 49th St., Phila. 39, Pa. Home Add.: 336 Woodley Rd., Merion, Pa. PSYCHIATRY. b. Nashville, Tenn., Mar. 17, 1914. s. Charles P. and Alice (Eager) K. Edn.: B.S. in Edn., Antioch Coll., 1938; M.D., Univ. of Virginia, 1945; B.S. in Edn., ibid., 1938. m. Martha Parks, June 6, 1953. c.: Susie Eager; Penelope Ellen; Benjamin Alexander. Exp.: Instr., Psychiatry, Univ. of Pa., 1951-54; Assoc. Psychiatrist, Camden Co. Hosp. for Mental Dis., Lakeland, N. J., 1951-55; Neuropsychiat. Staff, St. Vincents Hosp., Phila., Pa., 1954-56; Asst. Visit. Phys. in Psychiat., Phila. Gen. Hosp., 1950-59; Instr., Clinical Neuro., Jefferson Med. Coll., 1960—; Asst. Neurologist, ibid., 1952-60; Psychiatrist, Phila., Pa., 1951—; Asst. Neurologist, Wills Eye Hosp., 1959—; Attend. Physn., V.A. Hosp., Phila., Pa., 1955—. Hon. Pos.: Secy., Del. Valley Group Psychotherapy Assn., 1959-60; Pres., Student Organization of the Institute of the Phila. Assn. for Psychoanalysis, 1959-60; Mem., Pa. Psychiatric Soc. Comm. in Liaison with the Pa. Branch of the Am. Acad. of Gen. Pract., 1959—; Clin. Assoc. in Psychoanalysis, Inst. of Phila. Assn. for Psychoanalysis. Mem.: Phila. Co. Med. Soc.; Pa. St. Med. Soc.; Am. Med. Assn.; Phila. Psychiatric Soc.; Pa. Psychiatric Soc.; Am. Psychiatric Assn., Fellow; Phila. Neurol. Soc.; Am. Acad. of Neurol.; Acad. of Religion and Mental Health; Del. Valley Group Psychotherapy Soc.; Am. Group Psychotherapy Assn., Inc.; N. Y. Acad. of Scis.; The Franklin Inst.; Fellow, Coll. of Phys. of Phila.; Phi Delta Kappa. Contbr. to: Clin. Pathol. Rev.; Archives of Neurol.; Transactions of Phila. Neurol. Soc. Areas of Rsch.: Psychiatry.

KELSALL, Margaret Aston (Ph.D.), Staff, Cleveland Psychiatric Inst., Cleveland, Ohio. Home Add.: 4092 Fulton Rd., Cleveland, Ohio. HISTOLOGY; CANCER RESEARCH. b. Boulder, Colo., May 20, 1919. d. Charles A. and Helen (Hiatt) K. Edn.: B.A., Univ. of Colo., 1939; M.A., ibid., 1940; Ph.D., ibid., 1943. Exp.: Rsch. Assoc., Roscoe B. Jackson Mem. Lab., Bar Harbor, Me., 1943-46; Rsch. Fellow, Finney-Howell Co., 1944-46; Rsch. Assoc., Dept. Biol., Univ. of Colo., 1947-61; Rsch. Staff, ibid., 1955-61. Mem.: Am. Assn. Anatomists; Am. Assn. for Cancer Rsch.; Am. Med. Writers' Assn.; Am. Micros. Soc.; Am. Assn. Zool.; Genetics Soc. of Am.; N. Y. Acad. Scis.; Radiation Soc.; Soc. for Indust. Microbiol.; Sigma Xi; Phi Sigma; Iota Sigma Pi. Co-Author: Lymphocytes and Mast Cells, 1959. Contbr. to: Jour. Natl. Cancer Inst.; Sci.; Am. Jour. Clin. Pathol. Gen. Int.: Recipient, A. Cressy Morrison Award, N. Y. Acad. Scis., 1957. Areas of Rsch.: Mast Cells; Lymphocytes and Lymphoid Tissue; Trephocytes.

KELSO, Albert Frederick (Ph.D.), Prof. and Chmn., Dept. Physiol. and Pharm., Chicago Coll. of Osteopathy, Chicago 15, Ill. Home Add.: 15443 Univ., Dolton, Ill. PHYSIOLOGY: CIRCULATION, RESPIRATION, AUTONOMIC NERVOUS SYSTEM. b. Ft. Wayne, Ind., Nov. 19, 1917. s. Newton Thompkins and Dorothy (Leidolf) K. Edn.: B.S., George Williams Coll., 1943; M.S., ibid., 1946; Ph.D., Loyola Univ. Grad. Schl., Chicago, 1959. m. Margaret Esther Wade, Oct. 21, 1943. c.: Elizabeth Ann; Pamela Dorothy; Arthur Frederick. Exp.: Instr., Geo. Williams Coll., Chicago, Ill., 1946-47; Instr., Chicago College of Osteopathy, 1946-48; Chmn. and Prof., Dept. Physiol. and Pharm., ibid., 1956—. Mem.: Am. Physiol. Soc.; Am. Assn. for Adv. of Sci.; Soc. for Exptl. Biol. and Med.; Am. Heart Assn.; Am. Geol. Soc.; Am. Assn. of Univ. Profs.; Assoc. Mem. Inst. of Radio Engrs.; Sigma Xi. Contbr. to: War Med.; Am. Jour. of Physiol.; The Physiologist. Serv. Rec.: U. S. Naval Res., 1943-46. Areas of Rsch.: Peripheral Circulation, Hypothermia, Polarography.

KEMPER, William Alexander (Ph.D.), Physicist, U. S. Naval Weapons Lab., Dahlgren, Va. Home Add.: Dahlgren, Va. PHYSICS. b. Baltimore, Md., Jan. 1, 1911. s. Julius and Carrie (Alexander) K. Edn.: Ph.D., Johns Hopkins Univ., 1934. m. Genevieve Haile, May 26, 1956. Exp.: Chemist, Consolidated Gas. and Elec. Co., Baltimore, Md., 1934-43; Physicist, U. S. Navy, 1946—. Mem.: Am. Phys. Soc.; A.A.A.S. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Missile and Satellite Trajectories and Orbits, Ballistics, Test Range Procedures and Instrumentation, Bomb and Range Tables.



KELTON, Gilbert (Ph.D.), Program Mgr., Emertron, Inc., 1140 E.W. Hwy., Silver Spg., Md. Home Add.: 6101 16th St., N.W., Wash. 11, D. C. TECHNICAL MANAGEMENT. b. N. Y., N. Y., Feb. 20, 1921. s. Robert and Sylvia (Kaye) K. Edn.: B.S., Fordham Univ., 1941; M.S., ibid., 1947; M.S., N. Y. Univ., 1943; Ph.D., ibid., 1951. Exp.: Phys. Instr., N. Y. High Schl., N. Y., 1941; Phys. Instr., Fordham Univ., N. Y., 1946-47; Chmn., Dept. of Phys., Skidmore Coll., Saratoga Spgs., N. Y., 1947-51; Physt. Admin. Engr., Office, Asst. Secy. of Defense, R. and D., Wash., D. C., 1951-54; Rsch. Supvr., Univ. of Mich., Ann Arbor, Mich., 1954-56; Exec. Asst. to Vice Pres., N. Am. Philips Co., Inc., Irvington, N. Y., 1956-60; Prog. Mgr., Emertron, Inc., 1960—. Hon. Pos.: Chmn., Advry. Grp. on Infrared (WGIRB), Dept. of Defense; Occasional Lectr. on Engr. Mgtn., Cornell Univ., Geo. Wash. Univ. Mem.: Sr. Mem., Inst. of Radio Engrs.; Am. Meteorol. Soc.; Am. Assn. of Phys. Tchrs.; Am. Geophys. Union; Sesimol. Soc. of Am.; Infrared Inform. Sympos.; Am. Assn. of Univ. Profs. Contbr. to: I.R.E. Trans.; Rsch. Mgmt.; Personnel Admin.; Rsch. Devel.; Libr. Jour.; Infrared Infor. Symp. Serv. Rec.: Major, U. S. Air Force, 1942-46. Areas of Rsch.: Management Techniques, Infrared, Geophysics, Meteorology, Military Electronics, Teaching Science and Education.

KEMPF, Edward J(ohn) (M.D.), Pvt. Pract., N. Y., N. Y. Home Add.: Wading River, N. Y. PSYCHO-BIOLOGY. b. Jasper, Ind., July 26, 1885. s. Edward J. and Caroline Judy (Kempf) K. Edn.: A.B., Ind. Univ., 1907; M.D., Western Reserve Med. Schl., 1910. m. Helen Dorothy Clarke, Sept. 28, 1914. Exp.: Staff Officer, Cleveland St. Hosp., 1910-11; Indianapolis St. Hosp., 1911-13; Asst. Res., Phipps Psychiatric Clinic, Johns Hopkins Hosp., 1913-14; Clin. Psychiatrist, St. Elizabeths Hosp., Wash., D. C., 1914-20; Pvt. Pract., N. Y., N. Y., 1920—. Hon. Pos.: Chmn., Conf. on Comparative Conditioned Neuroses, N. Y. Acad. of Sci., 1952; Past Pres., Am. Psychopath. Assn.; Vice-Pres., N.Y. Acad. Sci. Mem.: Am. Med. Assn.; A.A.A.S., Fellow; Am. Psychiat. Assn., Fellow; N. Y. Neurol. Soc.; N. Y. Soc. Clin. Psychiat.; Nu Sigma Nu; Delta Tau Delta; Pi Gamma Mu. Author: The Autonomic Functions and the Personality, 1918; Psychopathology, 1920. Contbr. to: Am. Jour. Psychol.; Am. Jour. Insanity; Jour. Phil., Psychol. and Sci. Methods; Jour. Animal Behavior; Jour. Abnormal Psychol.; Jour. Nervous and Ment. Dis.; Psychoan. Rev.; N. Y. Med. Jour.; Med. Rec.; Jour. Gen. Psychol.; Jour. Genet. Psychol.; Jour. Clin. Psychopath. and Psychotherapy; Jour. Psychol.; Jour. Abnorm. and Soc. Psychol.; Arch. Neurol. and Psychiatry; Ann. N. Y. Acad. Sci. War Record: U. S. Army Med. Corps, W.W. I. Areas of Rsch.: Demonstration of Laws of Biodynamics consistently with Laws of Thermodynamics; Demonstration that Hereditary Genic Systems Determine the Qualitative Production of Cytoplasmic Properties, and Environmental Actions Determine Their Quantitative Ratios.

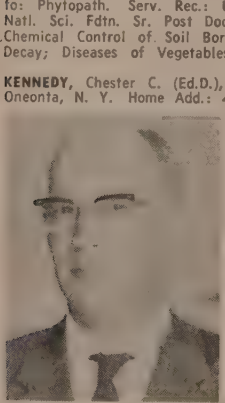
KEMPNER, Robert M. W. (J.U.D.), Polit. Scientist, Internatl. Lawyer and Lectr. on For. Relations and European Hist. Home Add.: 112 Lansdowne Court, Lansdowne, Pa. POLITICAL SCIENCE, INTERNATIONAL LAW, PUBLIC ADMINISTRATION. b. Oct. 17, 1899, Freiburg, Germany; U. S. Citizen. s. Walter and Lydia (Rabinowitsch) K. Edn.: Univ. of Berlin; Freiburg; Breslau; Penna.; J.U.D. Diploma of Pub. Admin. and Bar Exam. m. Ruth Hahn (Social Worker). c.: Lucian W. F.; Andre B. Franklin. Exp.: Asst. to State Atty., 1926; Judge, Municipal Court, Berlin, 1927; Sr. Govt. Counselor and Chf. Legal Adviser of the Police Div. in the Ministry of the Int., Berlin, and Judge of Discip. Tribunal, 1928-33; Lectr. and Prof. of Govt. and Criminol., at the Police Inst., Acad. of Polit., Schl. of Social Work, and Radio, Berlin, 1926-33; Counselor in Pub. Law, 1934-35; Dir. and Prof. of Polit. Sci., Fiorenza Coll., Florence, Italy, and Nice, France, 1936-39; Staff Mem., Govt. Inst., Univ. of Pa., 1939-42; Lectr., U. S. Milit. Acad., West Point; Columbia Univ., Provost Marshal General's Schl.; Univ. of Mich.; Univ. of Pa.; Lectr., Adult Edn.; Cons. in For. Admin. and Law; Expert of the U. S. Govt. in Various Trials Against For. Agents and Propagandists, 1942-45; Deputy U. S. Chief of Counsel for Prosecution of Major Axis War Criminals in Nurenberg, Chief Prosecutor of Nazi Diplomats and Cabinet Mems.; Visit. Prof., Law, For. Rel. Univ. of Erlangen, Germany, 1945-49; U. S. Rep. at the Pub. Affairs Inst., Frankfurt; Directing a Civil Servants' Exchange Group, Wash., D. C., 1950; Lectured and counseled on Foreign Relations and International Law and Foreign Claims in Switzerland, France, Germany, Israel; e.g., the Eichmann case, the final solution of the Jewish question; U.S.A., 1951—; Fellow, Carnegie Corp.; Carl Schurz Memorial Fdtn. Mem.: Am. Assn. Polit. and Soc. Sci.; Am. Polit. Sci. Assn.; Am. Assn. of Internatl. Law; the German Bar. Author: Ed. of Judges and Judged, 1928; Code of Polic. Admin., 1931; Civil Serv. in Prussia, 1932; Twilight of Justice, 1932; Police Admin. and Civil Rights, 1933; Albanian Constitution, 1941; Blueprint of the Coming Nazi Underground, 1943; German Natl. Registration System, 1943; Women in Germany (together with Ruth Kempner), 1944; The Wilhelmstrassen Trial, 1950; Post-War German Police Adm., 1953; Eichmann and Accomplices, 1961. Contbr. to: Am. Jour. of International Law; Univ. of Pa. Law Review; Saturday Evening Post; Readers Digest; Tulane Law Rev.; Am. Polit. Sci. Rev. Lang.: German, French, Italian. Travel: Most European Countries; Near East; Africa. Gen. Int.: Admin., Polit. Sci. and Intelligence Systems. Hobbies: Books; Travel. Areas of Rsch.: Foreign Police Systems; German-Soviet Relations.

KEMPTHORNE, Oscar (Sc.D.), Prof., Statistical Lab., Iowa St. Univ., Ames, Ia. Home Add.: 2020 Ashmore Dr., Ames, Ia.

STATISTIC. b. Cornwall, England, Jan. 31, 1919. s. James Thomas and Emily Frances (Cobeldick) K. Edn.: B.A., Cambridge Univ., 1940; M.A., ibid., 1943; Sc.D., ibid., 1960. m. Valda M. Scales, June 10, 1949. c.: Valda Jill; Wanda Joan; Peter James. Exp.: Statistician, Rothamsted Exptl. Sta., England, 1941-46; Assoc. Prof. of Statistics, Ia. St. Coll., 1947-51; Prof., Ia. St. Univ., 1951—. Hon. Pos.: Past Mem. of Coun., Inst. of Mathematical Statistics; Past Dir., Am. Statistical Assn.; Assoc. Editor, Annals of Mathematical Statistics; Editorial Bd., Biometrics; Pres., Biometric Soc. ENAR. Mem.: Inst. of Mathematical Statistics, Fellow; Am. Statistical Assn., Fellow; A.A.A.S., Fellow; Royal Statistical Soc., Fellow; Am. Naturalists. Author: The Design and Analysis of Experiments, 1952; An Introduction to Genetic Statistics, 1957; Mathematics and Statistics in Biology, 1954; Biometrical Genetics, 1960. Contbr. to: Biometrics; Jour. of Am. Statistical Assn.; Annals of Mathematical Statistics; Jour. of Royal Statistical Soc.; Biometrika; Genetics; Proc. of Royal Soc. of London. Areas of Rsch.: Design and Analysis of Experiments, Genetic Statistics, Biometrics, Mathematical Statistics.

KENDRICK, James Blair, Jr. (Ph.D.), Prof. of Plant Pathol and Plant Patholt., Univ. of Calif., Riverside, Calif. Home Add.: 1779 Prince Albert Dr., Riverside, Calif. PLANT PATHOLOGY. b. Lafayette, Ind., Oct. 21, 1920. s. James B., Sr. and Violet (McDonald) K. Edn.: A.B., Univ. of Calif., Berkeley, 1942; Ph.D., Univ. of Wis., 1947. m. Evelyn Henle, May 17, 1942. c.: Janet; Douglas. Exp.: Jr. Plant Patholt., Univ. of Calif., Riverside, 1947-49; Asst. Plant Patholt., ibid., 1949-55; Assoc. Plant Patholt. and Lectr., ibid., 1955-61; Prof. of Plant Pathol. and Plant Patholt., ibid., 1961—. Hon. Pos.: Asst. to the Chancellor, Univ. of Calif., Riverside, 1960. Mem.: Am. Phytopathol. Soc.; Fellow, Am. Assn. for the Adv. of Sci.; A.I.B.S.; Phi Beta Kappa; Sigma Xi; Phi Sigma. Contbr. to: Phytopath. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Natl. Sci. Fdtn. Sr. Post Doc. Fellow, 1961. Areas of Rsch.: Chemical Control of Soil Borne Diseases and Biology of Root Decay; Diseases of Vegetables.

KENNEDY, Chester C. (Ed.D.), Prof. of Chem., St. Univ. Coll., Oneonta, N. Y. Home Add.: 409 S. Bdwy., Konawa, Okla. OR-



GANOMETALLIC CHEMISTRY AND SPECIFICALLY, ORGANOLITHIUM CHEMISTRY. b. Pearson, Ark., Oct. 30, 1915. s. Virgil A. and Emma (Baldridge) K. Edn.: B.S., East Central St., Ada, Okla., 1939; M.A., Colo. St. Coll., 1954; Ed.D., ibid., 1961. Exp.: Sci. Tchr., Coach, Stratford, Okla., Pub. Schls., 1937-41; Sci. Tchr., Coach, Benson, Ariz., Pub. Schls., 1944-49; Sci. Tchr., Coach, Tempe, Ariz., Pub. Schls., 1950-60; Prof. of Chem., St. Univ. Coll., Oneonta, N. Y., 1960—. Mem.: Faculties Assn., St. Univ. of N. Y.; A.A.U.P.; N.S.T.A.; Phi Delta Kappa; Lambda Sigma Tau; A.C.S.; N. Y. St. Tchrs. Assn. Serv. Rec.: Air Force, 1941-44. Areas of Rsch.: n-Butyllithium and Some of Its Reactions with Such Compounds as Tetrahydrofuran; Tetrahydropyran, Diethyl Ether, Etc.

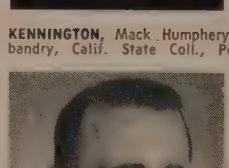
KENNEDY, Joseph Patrick (Ph.D.), Asst. Prof. of Anatomy, The Univ. of Tex., Dental Branch, Houston 25, Tex. Home Add.: 7943 Brays, Houston, Tex. HERPETOLOGY. b. Houston, Tex., Mar. 9, 1932. s. Joseph P. and Johnnie Belle (Davis) K. Edn.: B.A., Univ. of St. Thomas, 1954; M.A., Univ. of Tex., 1955; Ph.D., ibid., 1958. Exp.: Chmn., Dept. Biol., Univ. of St. Thomas, Houston, Tex., 1958-60; Asst. Prof. of Anatomy, Univ. of Tex., Dental Branch, 1960—. Hon. Pos.: Univ. of Va. Mtn. Lake Biol. Station, Summer Course in Herpetol., 1962. Mem.: Am. Soc. of Ichthyol. and Herpetols.; Tex. Herpetol. Soc.; Herpetols. League; Soc. for the Study of Evolution; Southwestern Assn. of Naturalists; Tex. Acad. of Sci., Fellow; British Herpetol. Soc.; Am. Assn. for the Adv. of Sci.; Ecol. Soc. of Am.; Sigma Xi; Am. Assn. of Anats. Contbr. to: Am. Midland Naturalist; Southwestern Naturalist, Herpetologica; Tex. Jour. of Sci.; Procs. of the Biol. Soc. of Wash.; Copeia. Areas of Rsch.: Herpetology-Evolution; Isolating Mechanisms in Treefrogs, Ecology of Lizards.

KENNEDY, Allen D. (Mr.), Asst. Dir., Inst. of Mineral Rsch., Mich. Coll. of Mining and Technol., Houghton, Mich. Home Add.: Pilgrim Rt., Houghton, Mich. MINERALS BENEFICATION (METALLURGICAL ENGINEER). b. Missoula, Mont., Mar. 15, 1924. s. Paul H. and Edith M. (Gill) K. Edn.: B.S., Mont. Schl. of Mines, 1950; M.S., Mich. Coll. of Mining and Tech., 1951. m. Helen Holland, Mar. 17, 1946. c.: David M.; Daniel P.; Kenneth J.; Jack A. Exp.: Rsch. Metallurgist, Cleveland Cliffs Iron Co., Ishpeming, Mich., 1950-55; Asst. Dir., Inst. of Mineral Rsch.; Mich. Coll. of Mining and Tech., 1955—. Mem.: A.I.M.E., Sigma Rho. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Iron Ore Flotation, Magnetic Roasting, and Magnetic Separation; Autogeneous Grinding and Concentration Processes of All Types of Ores; Research Administration.

KENNELLY, Mary Marina, B.V.M. (Sister), Chmn. of Chem., Mundelein Coll., Chicago 26, Ill. INORGANIC CHEMISTRY. b.

Chicago, Ill., Nov. 12, 1922. d. Patrick J. and Mary (Maguire) K. Edn.: B.S., Mundelein Coll., 1942; M.S., Univ. of Notre Dame, 1950; Ph.D., ibid., 1959. Exp.: Assoc. Prof. and Chmn., Dept. of Chem., Mundelein Coll., 1950-57; Chmn., Dept. of Chem., ibid., 1957—. Hon. Pos.: Chmn. of Chem., Mundelein Coll., 1959—. Mem.: Sigma Xi; Am. Chem. Soc.; Ill. St. Acad. of Sci.; Chicago Catholic Sci. Tchrs. Assn.; Albertus Magnus Guild. Contbr. to: Chemical Abstracts. Areas of Rsch.: Metal Complexes.

KENNINGTON, Mack Humpherys (Ph.D.), Asst. Prof. Animal Husbandry, Calif. State Coll., Pomona, Calif. Home Add.: 1113

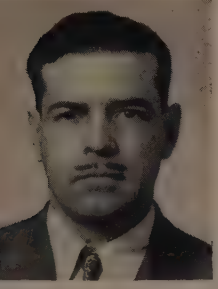


N. Park Avenue, Pomona, Calif. ANIMAL NUTRITION; PHYSIOLOGY AND PRODUCTION. b. Kamas, Utah, Apr. 6, 1923. s. Ira L. and Emeline (Humpherys) K. Edn.: B.S., Univ. of Idaho, 1946; M.S., Purdue Univ., 1956; Ph.D., ibid., 1958. Exp.: Missionary, Church of Jesus Christ of Latter-Day Saints, Eastern States Mission, 1946-48; Asst. County Extension Agent, Univ. of Idaho Extension Serv., Pocatello, Idaho, 1948-54; Grad. Rsch. Asst., Purdue Univ., 1954-58; Assistant Prof., Animal Husbandry, California State Coll., Pomona, 1958—. Mem.: A.A.A.S.; Am. Soc. Animal Production; Canadian Soc. of Animal Production; Alpha Zeta; Sigma Xi. Contbr. to: Jour. Animal Sci. Serv. Rec.: U. S. Army Air Force, 1942-43. Areas of Rsch.: Mineral Requirements of Swine and Cattle; Ruminant Nutrition and Environmental Physiology Studies.

KENT, John Franklin (Ph.D.), Assoc. Rsch. Scientist, Div. Lab. and Rsch., N. Y. St. Health Dept., Albany 1, N. Y. Home Add.: 33 Thorndal Rd., Slingerlands, N. Y. EXPERIMENTAL SEROLOGY. b. New Britain, Conn., June 8, 1908. s. Franklin R. and Ellen M. (Curtin) K. Edn.: A.B., Holy Cross Coll., 1931; A.M., Coll. of P. and S., 1934; Ph.D., Duke Univ., 1950. m. Mary Elizabeth Hincks, 1943. Exp.: Bacteriologist, Div. Labs. and Rsch., N. Y. State Health Dept., Albany, N. Y., 1935-43; Chief, Dept. Serology, Walter Reed Army Inst. of Rsch., Wash., D. C., 1943-57; Assoc. Rsch. Scientist, Div. Labs. and Rsch., N. Y. St. Health Dept., Albany, N. Y., 1958—. Hon. Pos.: Asst. Dept. Bacteriology, Univ. of Md., 1952-57; Assoc. in Microbiology, Albany Med. Coll., 1961—. Mem.: Am. Assn. Immunologists; Soc. for Exper. Biol. and Med.; Royal Soc. Tropical Med. and Hygiene; Am. Soc. Trop. Med. and Hyg.; Fellow, Am. Pub. Health Assn.; Fellow, A.A.A.S.; N. Y. Acad. of Sci.; Sigma Xi. Contbr. to: Jour. Immunology; Jour. Lab. and Clin. Med.; Proc. Soc. Exper. Biol. and Med.; Am. Jour. Clin. Path.; Science; Jour. Chron. Diseases. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Studies in Immune Hemolysis and Complement Fixation; Development of Antigens for the Serodiagnosis of Treponematosis, and of Protozoan and Helminthic Diseases.

KENYON, Richard Lee (Ph.D.), Editorial Dir., Applied Jours., Am. Chem. Soc., 1155-16th St., N.W., Washington, D. C. Home Add.: Washington, D. C. ORGANIC CHEMISTRY. b. Athens, Ill., Dec. 11, 1917. s. Thomas W. and Elizabeth (Kincaid) K. Edn.: A.B., Univ. of Ill., 1938; Ph.D., Univ. of N. C., 1942. m. Carol Elward, 1951. c.: Coleen; Stephanie; Jan; Christopher. Exp.: Post-Doctoral Fellow, Univ. of Ill., 1942-43; Rsch. Chemist, Du Pont Co., Wilmington, Del., 1943-46; Assoc. Ed., Applied Pubs., Am. Chem. Soc., Chicago, Ill., 1946-50; Assoc. Ed. in Charge, European Office, Applied Pubs. Am. Chem. Soc., London, Eng., 1950-53; Managing Ed., Jour. Agric. and Food Chem., Wash., D. C., 1953-56; Editor, Chem. and Engrng. News, ibid., 1956—; Editorial Dir., Applied Jour., Am. Chem. Soc., ibid., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; Chem. Soc. (London); Societe de Chimie Industrielle France; Sigma Xi.

KEPL, Maxwell Frank (M.D.), Physician-Surgeon, W. 407 Riverside Ave., Spokane 1, Wash. **SURGERY.** b. Havre, Mont., Oct. 12, 1914. s. Frank and Elsye (Clements) K. Edn.: B.S., Northwestern Univ., 1940; M.D., ibid., M.S., ibid. m. Natalie Winifred Bachemin, Mar. 3, 1943. c.: Diane Natalie; Maxwell Frank, Jr.; Michael John; David James. Exp.: Internship, Cook Co. Hosp., Chicago, Ill., 1940-41; Resident, Passavant Memorial Hosp., Dept. of Surgery, Chicago, Ill., 1942-43; Asst. in Surgery, Tulane Med. Schl., New Orleans, La., 1943-45; Fellow in Surgery Oschsner Clinic, New Orleans, La., 1944-45; Visiting Surgeon, Charity Hosp., New Orleans, La., 1942-46; Attending Surgeon, St. Luke's Hosp., Spokane, Wash., 1946-53. Mem.: Am. Med. Assn.; Am. Fed. of Clin. Rsch.; Spokane Co. Med. Assn.; Fellow, Am. Coll. of Surgeons; West. Assn. of Railway Surgeons; Sigma Alpha Epsilon; Alpha Kappa Kappa; Blue Key; Spokane C. of C. Contbr. to: Proc. Soc. of Exptl. Biol.; Arch. of Pathol.; Northwest Med.; Am. Jour. of Surgery; Jour. of Surgery, Gynecology and Obst. Special Int.: Thoracic Surgery.

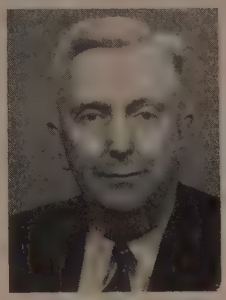


KEREKES, Frank (Mr.), Dean of the Faculty, Mich. Coll. of Mining and Technology, Houghton, Mich. Home Add.: 208 Hubbell St., Houghton, Mich. **EDUCATION AND STRUCTURAL ENGINEERING.** b. Budapest, Hungary, Jan. 13, 1896. s. Louis and Emilia (Grabinsky) K. Edn.: B.S., City Coll. of N. Y., 1917; C.E., Columbia Univ., 1920. m. Jessie McCorkindale of Odebolt, Ia., Sept. 9, 1922. d. Angus and Florence McC. c.: Frances Emilia. Exp.: Engrng. Staff, I.S.C., Prof. to Asst. Dean, 1920-54; Constl. Structl. Engr., Engrng. Employment; Lawyers Title Trust Co., N. Y. C., 1918; Tutor, Coll. of City of N. Y., 1917; Tutor, Columbia Univ., 1919; Asst. Engr., N. Y. Central R.R., 1917, 1926, 1927; Rsch. Asst. Bur. of Pub. Roads, 1921, '22, '23, '24; Bridge Computor, Robinson and Steinman, 1925. Honors: Hon. Mem., Iowa Engrng. Soc.; Hon. Mem., Am. Soc. of Civil Engrs., 1960; Tau Beta Pi; Phi Kappa Phi; Sigma Xi; Phi Eta Sigma; Chi Epsilon; John Dunlap and Anson Marston Awards, Mar., 1954; Award, Ia. Engrng. Soc.; Second Century Leader Award, Des Moines—Register and Tribune, Cardinal Key, Knights of St. Patrick; Tounsend Harris Medal, Coll. of City of N. Y., 1955; Recd. Citation for Patriotic Civilian Serv., Secy. of Army, 1959; Recd. Meritorious Civilian Serv., Secy. of the Air Force, 1960; Elected Honorary Member, A.S.C.E., 1960. Author: Engineering Drawing Theories with Applications, 1928; Analysis and Design of Steel Structures, 1933 (Co-author, A. H. Fuller); Report Preparation, 1951 (Co-author, Robley Winfrey). Articles: Contbr. to: Jour. of Engineering Education; Jour. Am. Concrete Institute; Research Bulletins, Iowa Engineering Exper. A.R.E.A.; A.I.M.E.; M.E.S.; I.E.S.; A.S.P.O.; BO.C.A.; A.S.E.E.; Registered Professional Engr.; Chmn., Iowa Building Code Council; Ames City Planning Commn.; Bldg. Code Com., A.C.I. Committees: Reinforced Concrete Detail Standards, A.C.I.; Lamme Award Comm., A.S.E.E.; Impact and Bridge Stresses, A.R.E.A.; Forces Acting on Structures, A.S.C.E.; Engrng. Edn., A.S.C.E.; Pres., Am. Concrete Inst.; Past Pres.: Ia. Engr. Soc.; Ia. Sect., A.S.C.E., and Ames Kiwanis Club; Bd. of Dirs., A.C.I.; Mem., Gen. Coun., A.S.E.E., 1953-56; Sci. Adv. Bd., Mich. Mem.: Union League Club of Chicago; Miscowaubik Club of Calumet, Mich.; Rotary Club, Houghton. Listed in: W. W. in Am.; W. W. in Engineering; A.M.S.; W. W. in Am. Men of Sci.; W. W. in Am. Edn. Areas of Rsch.: Elastic behavior of reinforced concrete and steel structures both actual field tests and laboratory model analysis.

KERR, James Wilson (Col.), Asst. Dir. of Rsch., (Support Systs.) for the Asst. Sect. of Defense, Civil Defense. Home Add.: 4727 Arlington Blvd., Arlington 31, Va. **PHYSICS; MILITARY ELECTRONICS;** R. & D. b. Balt., Md., May 21, 1921. s. James W., II and Laura Virginia (Wright) K. Edn.: B.S., Chem., Davidson Coll., 1942; M.S. N. Y., 1948; Albert Ludwig Univ., Freiburg, Germany, 1958-60. m. Mary Thomas Montgomery, Feb. 25, 1945. c.: April M.; M. H. Catherine; J. Wilson, IV; Andrew A. Exp.: Electronics, Rsch. and Testing, Ft. Bragg, N. C., 1946-51; Spec. Weapons Devel., Albuquerque, N. Mex., 1953-57; Electronics, Ft. Monroe, Va., 1960-62; Asst. Dir. of Rsch., Support Systs. for the Asst. Sec. of Defense, 1962—. Mem.: Am. Assn. for the Adv. of Sci.; Assn. of U. S. Army; Phi Beta Kappa; Gamma Sigma Epsilon; Delta Phi Alpha; SAR, 32° Mason. Contbr. to: Phys. Rev.; Army Mag.; Milit. Publs. Serv. Rec.: ROTC, 1938-42; Reg. Army, 1942-62. Areas of Rsch.: Atomic Radiation; Medieval French; Military R and D in Special Weapons and Electronics.

KERLEY, Troy Lamar (Ph.D.), Sr. Pharmacologist, Pitman-Moore Co., Box 1656, Indianapolis, Ind. Home Add.: 2513 Philwood Dr., Indianapolis 24, Ind. **PHARMACOLOGY.** b. Allen, Okla., Aug. 20, 1929. s. Troy Lelian and Therma Maxine (Martindale) K. Edn.: B.S., Okla. Univ., 1953; M.S., ibid., 1955; Ph.D., Purdue Univ., 1958. m. Bobbie Zelle Patterson, Aug 28, 1950. c.: Sue Lynn. Exp.: Sr. Pharmacologist, Pitman-Moore Co., Indianapolis, Ind., 1957—. Mem.: Am. Soc. Pharmacol. and Exptl. Therapeutics; Am. Pharmaceutical Assn.; A.A.A.S.; Sigma Xi; R.E.S.A.; Phi Delta Chi. Contbr. to: Jour. Pharm. and Exptl. Therapeutics; Jour. Pharm. Scis.; Toxicology and Applied Pharm.; Fed. Proc.; The Pharmacologist. Serv. Rec.: U. S. Army, 1950-51. Areas of Rsch.: Neuromuscular Pharmacodynamics and General Neuropharmacology, Allergic Disease Pharmacology.

KERR, Paul Francis (Ph.D.), Newberry Prof. of Mineralogy, Dept. of Geol., Columbia Univ., N. Y. 27, N. Y. Home Add.: 501 W. 120th St., New York 27, N. Y. **GEOLOGY; MINERALOGY AND GEOLOGY.** b. Hermet, Calif., Jan. 12, 1897. s. Joseph and Emma (Fowler) K. Edn.: B.S., Occidental Coll., 1919; Ph.D., Stanford, 1923; Hon.D.Sc., Occidental Coll., 1960. m. Helen Squire, Sept. 2, 1924. c.: Paul Squire; Nancy Ann; Ruth Kerr Jakoby. Exp.: Acting Instr., Mineral., Stanford, 1923-24; Instr., Columbia Univ., 1924-26; Asst. Prof., ibid., 1926-32; Assoc. Prof., ibid., 1932-40; Prof., ibid., 1932-40; Prof., ibid., 1940—; Acting Exec. Officer of Dept. of Geol., ibid., 1942-44; Exec. Officer, Dept. of Geology, ibid., 1944-50; Rsch. Coordinator, Department of Geology, ibid., 1950—; Newberry Prof., ibid., 1959; NATO Visiting Prof. of Geol., Univ. of Oslo, Norway, fall, 1960. Hon. Pos.: Past Secy., Mineralogical Soc. of Am.; Fellow, Bavarian Academy of Sciences; Past Orton Lectr., Am. Ceramic Soc.; Past Chmn., N. Y. Acad. of Sci.; Past Chmn., Comm. of Internatl. Inspection of Radioactive Minerals, Carnegie Endowment for Internatl. Peace; Past Consultant, Army-Navy Munitions Bd.; Past Consultant, Manhattan Dist.; Past Pres., Mineralogical Soc. of Am.; Past. Vice Pres., Geological Soc. of Am.; Past Dir., Clay Minerals Standards Project, Am. Petrol. Inst.; Past Chmn., Div. of Geol. and Geog., Am. Assn. for the Advancement of Sci.; Past Pres., Sigma Xi. Mem.: Mineralogical Soc. of Great Britain; Geol. Soc. of Belgium; Geol. Soc. of Am. (fellow); Soc. of Economic Geol.; Am. Inst. of Mining Engrs.; Am. Assn. of Petroleum Geol.; Am. Geographical Soc. (Fellow). Author: Thin Section Mineralogy, 1932; Optical Mineralogy, 1940, 1959; Tungsten Mineralization in the U. S., 1946. Contbng. Author: Reference Clay Minerals, 1950; Natural Occurrence of Uranium and Thorium, 1955. Contbr. to: Bull. of the Geological Soc. of Am.; Marysvale Uranium Deposits; Am. Mineralogist; Mining Mag.; Economic Geol.; Publications of U. S. Atomic Energy Comm.; Publications of the U. N. War Rec.: U. S. Army, 1918. Gen. Int.: Work on the natural occurrence of uranium since 1942; Dir. of a Columbia A.E.C. research project on uraninite veins and related deposits since 1949; Selected as United Nations consultant to review uranium occurrences at the Geneva Conference, Aug. 1955, on the Peaceful Uses of Atomic Energy. Areas of Rsch.: Mineralogy of uranium; Clay Minerals; Optical Mineralogy; Saline Minerals; X-ray Studies of Minerals; Genesis of Mineral Deposits. Recipient of K.C. Li Medal and Prize for outstanding work in the field of Tungsten, 1958; Chmn., Div. of Geol. and Geog., A.A.A.S., 1957.



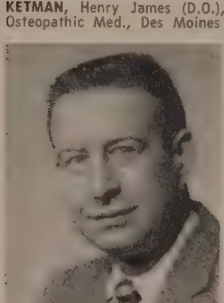
KERR, Ralph Waldo (Ph.D.), Sr. Chemist, Chem. Div., Corn Products Company, Argo, Ill. Home Add.: 3944 Park Ave., Brooksfield, Ill. **STARCH CHEMISTRY.** b. Mongaup Valley, N. Y., May 19, 1899. s. Marvin O. and Minnie (Ballard) K. Edn.: A.B., Columbia Univ., 1921; M.A., ibid., 1924; Ph.D., ibid., 1924. m. Anne E. Mabbett, 1949. c.: Robert; Barbara; Charlotte. Exp.: Asst. in Chem., Columbia Univ., 1922-24; Instr. in Biochem. and Rsch. Assoc., ibid., 1924-29; Rsch. Chemist, Corn Products Refining Co., Argo, Ill., 1929—. Mem.: Am. Chem. Soc.; A.A.A.S.; N. Y. Acad. of Sci.; Sigma Xi. Author: Chem. and Industry of Starch, 1944; 2nd Edition, ibid., 1950. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Biol. Chem.; Archives for Biochem.; Cereal Chem. War Rec.: U. S. Navy, 1918-19. Sepcial Int.: Chem. of Starch and related Carbohydrates; Starch Mfg. Processes; Enzyme Chem.

KERSTETTER, Amy Margaret Johnson (Mrs.), Asst. Prof. of Zoology and Entomol., Pa. State Univ., University Park, Pa. Home Add.: Kimport Ave., Boalsburg, Pa. **MAMMALIN ANATOMY AND ENTOMOLOGY. HISTOLOGICAL TECHNIQUE.** b. Uniontown, Fayette Co., Pa., Dec. 30, 1900. d. Jesse N. and Mae Estell (Deffenbaugh) Johnson. Edn.: B.S., Pa. State Univ., 1940; M.S., ibid., 1946. m. Leon W. Kerstetter, July 3, 1925. Exp.: Sci. Tchr., H. S., Fairchance, Pa., 1921-24; Sci. Tchr., Centralized H. S., Church

Hill, Ohio, 1924-25; Instr. Zool. and Ent., Pa. State Univ., 1939-42; Head, Biol. Dept., Ebensburg Cambria H. S., Ebensburg, Pa., 1942-45; Instr., Zool. and Ent., Pa. State Univ., 1945-61; Asst. Prof., Zool. and Ent., ibid., 1961—. Mem.: A.A.U.P.; A.A.U.W.; A.A.A.S.; Ent. Soc. of Am.; Am. Inst. of Biological Sci.; Phi Epsilon Phi; Phi Sigma; Alpha Epsilon Delta; Bus. and Prof. Women's Club; Faculty Women's Club; Boalsburg Garden Club; Safety First Coun. Areas of Rsch.: Biological Sci.; Mammalian Anatomy; Gen. Entomol.; Histological Technique.

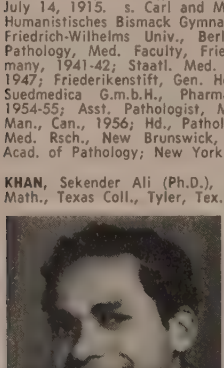
KESSLER, Wayne Vincent (Ph.D.), Asst. Prof. of Health Physics, Bionucleonics Dept., Purdue Univ., West Lafayette, Ind. Home Add.: 2825 Forest Lane, Lafayette, Ind. BIONUCLEONICS. b. Milo, Ia., Jan. 10, 1933. s. Joe E. and Genevieve E. (Frueh) K. Edn.: B.S., N. Dak. State Univ., 1955; M.S., N. D. State Univ., 1956; Ph.D., Purdue Univ., 1959. m. Olive B. Buremaster, Sept. 10, 1953. c.: Katherine Marie. Exp.: Asst. Prof., N. D. State Univ., 1959-60; Asst. Prof., Purdue Univ., 1960—. Mem.: Am. Chem. Soc.; Am. Pharmaceutical Assn.; Am. Nuclear Soc.; A.A.A.S.; Sigma Xi; Rho Chi; Phi Lambda Upsilon; Phi Kappa Phi. Contbr. to: Jour. of Pharm. Sci. Areas of Rsch.: Bionucleonics, Analytical Chem., Organic Chem.

KETMAN, Henry James (D.O.), Assoc. Prof. in Radiol., Coll. of Osteopathic Med., Des Moines 9, Ia. Home Add.: 3119 Prospect Dr., Des Monies 10, Ia. RADIOLOGY. b. Winterset, Ia., Apr. 28, 1908. s. Isaac James and Eleanor (Aikins) K. Edn.: D.O., Coll. of Osteopathic Med., 1937. m. Pauline Overton, Jan. 25, 1943. c.: Theodore James; Janet Lynn. Exp.: Priv. Pract., Des Moines, Ia., 1939-42; Assoc. Prof., Coll. of Osteopt. Med., 1946—. Mem.: Am. Assn. for the Adv. of Sci.; Ia. Acad. of Sci.; Am. Assn. of Univ. Profs.; Atlas Club; Sigma Sigma Phi; Univ. Club; Hyperian Field Club. Contbr. to: Profs. Jour. Serv. Rec.: U. S. Naval Reserve, 1942-45. Areas of Rsch.: Radiology.



KEYSSER, Carl Hans (M.D.), Hd., Pathology Lab., The Squibb Institute for Medical Rsch., New Brunswick, N. J. Home Add.: River Road (Mt. Rte.), Bound Brook, N. J. b. Berlin, Germany, July 14, 1915. s. Carl and Margaret (Moncke) K. Edn.: Abitur, Humanistisches Bismack Gymnasium, Berlin, Germany, 1934; M.D., Friedrich-Wilhelms Univ., Berlin, Germany, 1940. Exp.: Dept. Pathology, Med. Faculty, Friedrich-Wilhelms Univ., Berlin, Germany, 1941-42; Staatl. Med. Unters. Amt., Hannover, Germany, 1947; Friederikenstift, Gen. Hosp., Hannover, Germany, 1948-53; Suedmedica G.m.b.H., Pharmaceutical Co., Munich, Germany, 1954-55; Asst. Pathologist, Misericordia Gen. Hosp., Winnipeg, Man., Can., 1956; Hd., Pathology Lab., The Squibb Institute for Med. Rsch., New Brunswick, N. J., 1957—. Mem.: Internatl. Acad. of Pathology; New York Academy of Sciences.

KHAN, Sekender Ali (Ph.D.), Chmn., Div. of Natural Scis. and Math., Texas Coll., Tyler, Tex. Home Add.: Chandanbaisa, Bogra, E. Pakistan. PLANT PATHOLOGY, PHYTO-NEMATOLOGY, NEMATODE DISEASES OF SUGARCANE. b. Bogra, E. Pakistan, Feb. 1, 1933. s. Dianatullah and Masirannessa (Ashraf) K. Edn.: B.Ag., Dacca Univ., E. Pakistan, 1953; M.Ag., ibid., 1954; Ph.D., La. State Univ., 1959. Exp.: Sectional Officer, Pakistan Industrial Development Corp., E. Pakistan, 1955-57; Asst. Agric. Cane, Carew and Co., E. Pakistan, 1957; Prof. of Biol., Tex. Coll., 1959-60; Hd., Biol. Dept., ibid., 1960-61; Chmn., Div. of Natural Scis. and Math., ibid., 1962—. Hon. Pos.: Chmn., Comm. on Rsch., Tex. Coll. Mem.: Am. Phytopathological Soc.; Internatl. Soc. of Sugarcane Technologists; Helminthological Soc. of Wash.; Tex. Acad. of Sci.; Am. Museum of Natural Hist.; Natl. Assn. of Biol. Tchrs.; Am. Assn. Adv. Sci. Contbr. to: Phytopathol.; Proc. of I.S.S.C.T.; Proc. of Helminthological Soc. of Wash.; Tex. Jour. of Sci. Areas of Rsch.: Plant Parasitic Nematodes, Population Genetics and Neurospora Physiol.

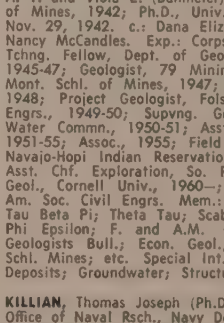


KIEFER, Norvin Charles (M.D.), Chief Med. Dir., The Equitable Life Assurance Soc. of the U. S., 1285 Ave. of the Americas, New York 19, N. Y. Home Add.: 2440 Sedgwick Ave., New York 68, N. Y. MEDICINE. b. Lorain, Ohio, Mar. 28, 1905. s. Charles and Maude Ann (Hodgins) K. Edn.: M.D., Univ. of Mich., 1930; M. Publ. Hlth., Johns Hopkins Univ., 1947. m. Annetta Elizabeth Singler, Feb. 3, 1928. c.: Mrs. William Wimsatt; Mrs. William J. Brandle; Mrs. Lloyd Boothby; Eva. Exp.: Private Practice of Med., Geneva, Ohio, 1930-45; Med. Dir., U.S.P.H.S., Wash., D. C., 1945-53; Dir., Hlth. Resources Office, Natl. Security Resources Bd., Wash., D. C., 1949-51; Dir., Hlth. and Special Weapons Defense Office, Fed. Civil Defense Admin., Wash., D. C., 1951-53; Chief Med. Dir., Equitable Life Assurance, New York, N. Y., 1953—. Hon. Pos.: Pres Natl. Health Coun., 1958-59; Pres., Greater N. Y. Safety Coun 1956-61. Mem.: Diplomate of the Am. Bd. of Preventive Me and Publ. Health; Fellow, Am. Coll. of Allergists; Fellow, An Coll. Preventive Med.; Fellow, Indust. Med. Assn.; Am. Me Assn.; Am. Pub. Health Assn.; Am. Heart Assn.; Am. Soc. Tropical Med.; Am. Trudeau Soc.; Am. Assn. Military Surgs Phi Chi; Sigma Nu; C. of C. Author: Present Concepts Rehabilitation in Tuberculosis, 1948. Contbr. to: Jour. An Med. Assn.; Pub. Hlth. Reports; Military Surgeon; Am. Jour. Pub. Hlth.; Jour. of Med. Edn.; Jour. Occupational Med. Ser Rec.: U.S.P.H.S., 1945-53. Gen. Int.: Awarded the First Di tinguished Service Award from the Fed. Civil Defense Admin 1953. Areas of Rsch.: Special Weapons defense, Tuberculosi Safety.

KIEFFER, Sherman Newton (M.D.), Deputy Med. Officer in Chg U.S.P.H.S., Hosp., Ft. Worth, Tex. PSYCHIATRY. b. Polan Dec. 13, 1919. s. Abraham an Goldie (Stemp) K. Edn.: B.S., I Inst. of Tech., 1940; M.A., Uni of Minn., 1942; M.D., ibid., 195 m. Natlie Joyce Kolb, May 2 1943. c.: Marjorie Ann; Charl Henry; Donald Meyer. Exp.: Rsch and Tchng. Asst., Univ. of Minn Mips., Minn., 1941-42; Clin. I str., Psychiatry and Psychiatris OPD, Johns Hopkins Schl. of Med 1954-57; Clin. Instr., Univ. Md., Baltimore, Md., 1954-5 Clin. Instr., Tulane Univ., Ne Orleans, La., 1957-59; Clin. Ass Prof., La. State Univ., Ne Orleans, La., 1957-59 Chf., Psy Serv., USPHS Hosp., Baltimor Md., 1954-57; Chf. Psy. Serv ibid., New Orleans, La., 1957-5 Chf., Psy. Serv., ibid., Lexingto Ky., 1959-61; Clin. Asst. Prof., Univ. of Ky., Lexington, Ky 1960-61; Southwestern Med. Schl. Clin. Asst. Prof., Dallas, Tex 1961—; Deputy Med. Officer in Charge, U.S.P.H.S. Hosp., Ft. Wort Tex., 1961—. Mem.: Ky. Psy. Assn.; Am. Psy. Assn.; Tex. Psychia Assn.; Dallas Neuropsychiatric Soc.; Am. Med. Assn.; Clin. Soc Phi Delta Epsilon; Psi Chi. Serv. Rec.: U. S. Army, 1942-4 Areas of Rsch.: Phychiatry.

KIERSCH, George Alfred (Ph.D.), Assoc. Prof. Geology, Corne Univ.; Consult. Geologist; c/o McGraw Hall, Cornell Univ Ithaca, N. Y. GEOLOGY. b. Lodi, Calif., Apr. 15, 1918. A. T. and Viola E. (Bahmeier) K. Edn.: Geol. Engr., Colo. Sch of Mines, 1942; Ph.D., Univ. of Ariz., 1947. m. Jane Keit Nov. 29, 1942. c.: Dana Elizabeth; Mary Annan; George Keith Nancy McCandles. Exp.: Corps of Engrs., U. S. Army, 1942-4 Tchng. Fellow, Dept. of Geol., Univ. of Ariz., Tucson, Ariz 1945-47; Geologist, 79 Mining Co., 1946-47; Instr. in Geol Mont. Schl. of Mines, 1947; Geologist, U. S. Corps of Engrs 1948; Project Geologist, Folsom Dam, Calif., U. S. Corps Engrs., 1949-50; Supvng. Geologist, Internatl. Boundary an Water Commn., 1950-51; Asst. Prof. of Geol., Univ. of Ariz 1951-55; Assoc., 1955; Field Dir. and Geologist, Min. Surve Navajo-Hopi Indian Reservations, 1952-53; Dir., ibid., 1953-5 Asst. Chf. Exploration, So. Pacific Co., 1956-60; Assoc. Pro Geol., Cornell Univ., 1960—; Fellow, Geol. Soc. Am.; Fellow Am. Soc. Civil Engrs. Mem.: Soc. Econ. Geologists; Sigma X Tau Beta Pi; Theta Tau; Scabbard and Blade; Blue Key; Sigm Phi Epsilon; F. and A.M. Contbr. to: Am. Assn. Petroleu Geologists Bull.; Econ. Geol.; Univ. Ariz. Press; Quart. Col Schl. Mines; etc. Special Int.: Engrng. Geol.; Nonmetallic Mi Deposits; Groundwater; Structural Geol.

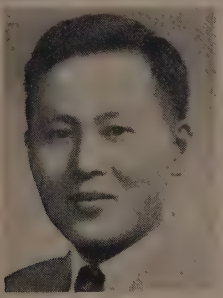
KILLIAN, Thomas Joseph (Ph.D.), Deputy Chf. and Chf. Scientis Office of Naval Rsch., Navy Dept., Wash. 25, D. C. Home Add 3900 16th St., N. W., Wash. 1 D. C. PHYSICS AND ELECTRICA ENGINEERING. b. Schenectad N. Y., Aug. 4, 1904. s. Edwi A. and Abigail M. (Fitzgerald) Edn.: B.S., M.I.T., 1926; M.S ibid., 1926; M.A., Princeto 1927; Ph.D., ibid., 1929. Ilona E. Bucho, Nov. 14, 193 c.: Thomas Joseph, Jr. Exp Rsch. Asst., Gen. Electric Co Schenectady, N. Y., 1925-29 Instr., M.I.T., Cambridge, Mass 1929-32; Dean of Math., Seatt Coll., Seattle, Wash., 1933-3 Dir. of Rsch., Barkon Tube Ligh ing Corp., Seattle, Wash., 193 39; Tech. Dir., Frink Corp., Lon Island, N. Y. 1939-41; Hd. Sc Branch, Office of Naval Rsch 1946-47; Sci. Dir., Rsch. Div ibid., 1947-52; Chf. Scl., Office of Ordnance Rsch., U. S. Arm Durham, N. C., 1952-54; Consultant, Office of Operations Rsch Wash., D. C., 1954—; Dean of Engrng. and Arch., Catholi Univ., Wash., D. C., 1954-55; Deputy Chf. and Chf. Sci Office of Naval Rsch., Wash., D. C., 1955—. Mem.: Fellow, A.A A.S.; Fellow, Am. Inst. Elec. Engrng.; Fellow, Inst. Radio Engrs Fellow, Illuminating Engrng. Soc.; Fellow, Operations Rsch. Soc Fellow, Am. Physical Soc.; Phi Kappa; Tau Beta Pi; Sigma X Tech. Club of N. Y.; Cosmos Club; Princeton Club; Annapol



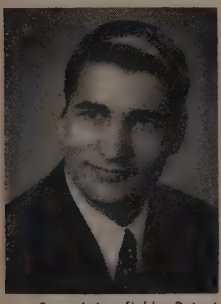
Yacht Club. Contbr. to: Physics Rev.; Jour. of Engrng. Edn.; Social Sci.; Jour. of Operations Rsch. Soc. Serv. Rec.: U. S. Navy, 1941-46. Gen. Int.: Holder of patents on pressure control devices and electronic developments

KILLEEN, Owen Patrick (Mr.), Development Spectrographer, Union Carbide Nuclear Co., Oak Ridge, Tenn. Home Add.: 20 Westover Dr., Oak Ridge, Tenn. EMISSION SPECTROSCOPY. b. Detroit, Mich., Jan. 3, 1922. s. Patrick J. and Mary Agatha (Burk) K. Edn.: B.S., Univ. of Detroit, 1948; M.S., ibid., 1950. m. Billie Elizabeth Braden, Sept. 1, 1956. c.: Patrick Francis. Exp.: Spectrographer, Gulf Rsch., Harmarville, Pa., 1950-51; Spectrographer, Union Carbide Nuclear Co., Oak Ridge, Tenn., 1951—. Mem.: Am. Chem. Soc.; Soc. for Applied Spectroscopy; Knights of Columbus. Contbr. to: Applied Spectroscopy; A.E.C. Reports. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Emission Spectroscopy, Flame Photometry, Analytical Chemistry.

KIM, Jai Soo (Ph.D.), Assoc. Prof. of Physics, Univ. of Idaho, Moscow, Idaho. Home Add.: 1106 East Third St., Moscow, Idaho. UPPER ATMOSPHERIC PHYSICS. b. Taegu, Korea, Nov. 1, 1925. s. Wan Sup and Cha Nam (Whang) K. Edn.: B.Sc., Seoul Natl. Univ., Korea, 1949; M.Sc., Univ. of Saskatchewan, Can., 1957; Ph.D., ibid., 1958. m. Hai Kyou, Nov. 2, 1952. c.: Kami G.; Tomi S. Exp.: Asst. Prof. of Physics, Clarkson Coll. of Technol., 1958-59; Asst. Prof. of Physics, Univ. of Idaho, 1959-62; Assoc. Prof. of Physics, ibid., 1962—. Mem.: Am. Geophys. Union; Am. Assn. of Physics Tchrs. Contbr. to: Canadian Jour. of Physics; Jour. of Geophys. Rsch. Areas of Rsch.: Physics of Aurora, Plasma Physics, Magnetohydrodynamics.



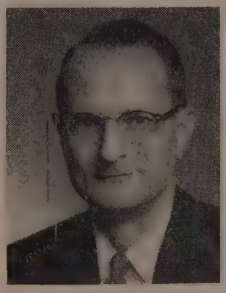
KINDLER, Herbert S. (Mr.), Dir., Technical and Ednl. Operations, Instrument Soc. of Am., Penn-Sheraton Hotel, Pittsburgh 19, Pa. Home Add.: 128 Elatan Dr., Pittsburgh 16, Pa. INSTRUMENTATION. b. N.Y.C., Feb. 16, 1928. s. Samuel and Alice (Yanklowitz) K. Edn.: B.S., Mass. Inst. of Technol., 1948. m. Phyllis Pitegoff, 1952. c.: Alex Michael; David John; Peggy Blanche. Exp.: Instrument Engr., Catalytic Constrn. Co., Phila., Pa., 1951-54; Chf., Gasoline Plant Engrng., Black, Sivalls and Bryson, Inc., Okla. City, Okla., 1954-56; Dir., Technical and Ednl. Operations, Instrument Soc. of Am., Pittsburgh, Pa., 1956—. Mem.: Instrument Soc. of Am.; A.A.A.S. Author: Organizing the Technical Conference, 1960. Contbr. to: I.S.A. Jour.; Technol. Rev.; Consulting Engr.; The Petroleum Engr. Gen. Int.: Holds Patents; Licensed Professional Engineer. Areas of Rsch.: Instrumentation.



KIMERER, Neil B(anard) (M.D.), Dir., Okla. City Mental Health Clinic; Med. Physician, 2600 Northwest Highway, Oklahoma City 12, Okla. Home Add.: 2800 N.W. 25th St., Oklahoma City, Okla. PSYCHIATRY. b. Wauseon, Ohio, January 13, 1918. s. William and Ruby (Upp) K. Edn.: B.S., Univ. of Toledo, 1941; M.D., Univ. of Chicago, 1944. m. Ellen Jane Scott, May 23, 1943. c.: Susan Leigh; Neil B., Jr.; Brian Scott; Sandra Lynn. Exp.: Intern, Emanuel Hosp., Portland, Ore., 1944-45; Fellow, Menninger Schl. of Psychiatry, Topeka, Kan., 1947-50; Asst. Phy., Central St. Hosp., Norman, Okla., 1950-51; Dir., Okla. Psy. Dept., Mental Health Clinic Schl. of Med., Oklahoma City, Okla., 1951-53; Dir., Okla. City Mental Health Clinic, ibid., 1953—. Hon. Pos.: Certified Am. Bd. of Psychiatry and Neurology in Psychiatry; Pres., Okla. Psychiatric Soc., 1956, 1960-62. Mem.: Am. Med. Assn.; Am. Psychiatric Assn.; Okla. St. Med. Assn.; Am. Orthopsychiatric Assn.; Central Nuropsychiatric Soc.; A.A.A.S.; Okla. Co. Med. Soc.; Okla. City Clin. Soc.; Okla. Soc. of Psychiatrists and Neurologists; Alpha Kappa Kappa; Rotary; Okla. City C. of C. Contbr. to: Jour. of Okla. Med. Assn. Serv. Rec.: U. S. Army, 1945-47. Areas of Rsch.: Intra Family Dynamics.

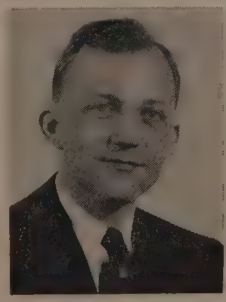
KING, Albert Leland (Mr.), Meteorologist in Charge, Weather Bur. Office, 1167 Shrine Bldg., Memphis, Tenn., 1944—. Home Add.: 719 N. Trezevant St., Memphis 12, Tenn. HYDROLOGY AND AGRICULTURAL METEOROLOGY. b. Rutherford, Tenn., Oct. 7, 1901. s. Alonzo Lee and Mary Belle (Molly) K. Edn.: A.B., Univ. of Colo., 1923. m. Evelyn Glisson King, May 18, 1924. Exp.: Hd. Sci. Depts., Cairo H. S., Cairo, Ill., 1924-30; Meteorol. and Hydrol., Cairo, Ill.; Memphis; Yellowstone Park, Wyo.; Kans. City, Mo.; Wash., D. C., 1931-44; Meteorolt. in Charge, Weather Bur. Office, 1944—. Mem.: Am. Meteorol. Soc.; Mem., Am. Geophys. Union; Pi Kappa Alpha. Contbr. to: Jour. of the Irrigation and Drainage Div.; Procs. of the Am. Soc. of Civil Engrs. Areas of Rsch.: Precipitation, Climatology, River Forecasting.

KING, Donald DeWolf (Ph.D.), Vice Pres. Rsch., Electronic Communications, Inc., Timonium, Md. Home Add.: 1011 W. Wind Ct., Ruxton 4, Md. MICROWAVE ELECTRONICS, ANTENNAS, MILITARY SYSTEMS. b. Rochester, N. Y., Aug. 7, 1919. s. J. Percival and Edith (Seyerlen) K. Edn.: A.B., Harvard, 1942; A.M., ibid., 1944; Ph.D., ibid., 1946. m. Mary Anne Henderson, Aug. 21, 1944. c.: Stuart D.; Alison A.; Mary S.; James W. Exp.: Asst. Prof., Applied Physics, Harvard Univ., 1947-48; Assoc. Prof., Johns Hopkins Univ., 1948-50; Asst. Dir., Radiation Lab., ibid., 1950-55; Dir., ibid., 1955-56; Vice Pres., Rsch., Electronics Communications, Inc., 1956—. Fellow: Inst. of Radio Engrs.; A.A.A.S. Mem.: A.P.S.; Sigma Xi; Internatl. Torch. Author: Measurements at Centimeter Wave Length, 1950. Contbr. to: Jour. of Applied Physics; Proc. Inst. of Radio Engrs.; Editor, Trans. on Microwave Theory and Techniques; Inst. of Radio Engrs. Areas of Rsch.: Microwave Circuits, Antennas, Radar and Electronic Warfare Systems.



KING, Elizabeth Raymond (Miss), Exploration Geophysicist, Regional Geophysics Br., U. S. Geological Survey, Washington 25, D. C. Home Add.: 2441 40th St., N.W., Washington 7, D. C. GEOPHYSICS (EXPLORATION). b. Halifax, Nova Scotia, Can., Dec. 5, 1923. d. Harold S. and Susan (Raymond) K. Edn.: A.B., Smith Coll., 1947. Exp.: Geologist, U. S. Geological Survey, Wash., D. C., 1948-51; Geophysicist, ibid., 1951-54; Exploration Geophysicist, ibid., 1954—. Mem.: Soc. of Exploration Geophysicists; Am. Geophysical Union; Geological Soc. of Wash., Sigma Xi. Contbr. to: Bull. of Am. Assn. Petrol. Geologists; Geophysics. Areas of Rsch.: Geologic Interpretation of Geophysical Data, Primarily Magnetic.

KING, Harold (M.D.), Assoc. Prof. of Surgery, 1100 W. Mich. St., Indianapolis, Ind. Home Add.: 4606 Wash. Blvd., Indianapolis, Ind. SURGERY. b. Bedford, Ind., Aug. 12, 1922. s. Harry D. and Sarah Elizabeth (Miller) K. Edn.: M.D., Yale Univ. Schl. of Med., 1946. m. Betty Jane Fink, 1953. c.: Edward Dale; James Alan. Exp.: Instr. in Surg., Ind. Univ. Med. Schl., Indpls., Ind., 1955-57; Asst. Prof. of Surg, ibid., 1957-61; Assoc. Prof. of Surg., ibid., 1961—. Mem.: Am. Med. Assn.; Cent. Surgical Soc.; Soc. of Univ. Surgeons; Soc. for Vascular Surgery; Internatl. Cardiovascular Soc.; Internatl. Soc. of Surg.; Am. Coll. of Surgeons; Chest Club; Am. Assn. for the Adv. of Sci. Contbrng. Author: Extracorporeal Circulation. Contbr. to: Surgery; Annals of Surgery; Surgery, Gynecol. and Obstets.; Surgical Forum of American Coll. of Surgeons; Archives of Surgery. Serv. Rec.: U. S. Med. Corps, 1947-49. Gen. Int.: Certified Am. Bd. of Surgery. Areas of Rsch.: Cardiovascular Surgery.



KING, John A. (Ph.D.), Mgr. of Rsch. and Develop., Agric. Div., Am. Cyanamid Co., Princeton, N. J. Home Add.: 90 Battle Rd., Princeton, N. J. ORGANIC CHEMISTRY. b. Columbus, Ind., Sept. 6, 1916. s. Perry and Mary Esther (Holland) K. Edn.: B.A., Ind. Univ., 1938; M.S., Univ. of Minn., 1940; Ph.D., ibid., 1942. m. Martha Lee Frank, June 10, 1941. c.: Mary Lee; Clarissa Anne; Dennis P.; John A. Exp.: Sr. Chemist, Winthrop Chem. Co., Rensselaer, N. Y., 1943-46; Dir. Chem. Res., Warner Lambert Pharmaceutical Co., N. Y. then Morris Plains, N. J., 1946-57; Dir., Rsch., Armour and Co., Chicago, Ill., 1957-60; Mgr. of Rsch. and Develop., Agric. Div., Am. Cyanamid Co., Princeton, N. J., 1961—. Hon. Pos.: Treas., Med. Chem. Div., Am. Chem. Soc., 1955-56; Chmn. Chem., Am. Assn. Adv. of Sci., 1959; Vice-Pres., A.A.A.S., 1959; Counc. Mem., A.A.A.S., 1961-63. Mem.: Fellow, Am. Inst. Chem.; Fellow, Chem. Soc. London; Fellow, N. Y. Acad. of Sci.; Chem. Soc.; Soc. Chem. Industry; Armed Forces Chem. Assn.; Am. Ordnance Assn.; Am. Soc. Animal Prod.; int. of Food Technologists; Am. Pharmaceutical Assn.; Am. Inst. of Mgt.; Am. Mgt. Assn.; Sigma Xi; Delta Tau Delta; Gamma Alpha; Phi Lambda Upsilon; Nassau Club; Sons of the Am. Revolution. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem.; Jour. of the Pharmaceutical Assn. Areas of Rsch.: Rsch. and Development Management and Administration.

KING, Joseph Clement (M.D.), Internist, 3344 W. Peterson Ave., Chicago 45, Ill. Home Add.: 624 Forest Ave., Evanston, Ill. INTERNAL MEDICINE. b. Colo. Springs, Colo., Aug. 20, 1922. s. Charles Clement and Gladys (Ascher) K. Edn.: B.S., Tulane Univ., 1944; M.D., ibid., 1946. m. Margie Leopold, Apr. 2, 1947. c.: Leopold Ascher; Jocelyn. Exp.: Internship and Residency in Med., Michael Reese Hosp., Chicago, Ill., 1946-50; Chief Res., ibid., 1949-50; Attend. Staff, Louis A. Weiss Meml. Hosp., 1954—; Internist, Chicago, Ill., 1951—; Assoc. in Med., Northwestern Univ. Med. Schl. Mem.: Am. Bd. of Internal Med.; Fellow, Am. Coll. of Phys.; Fellow, Am. Coll. of Gastroenterology; Beta Mu; Phi Beta Kappa; Alpha Omega Alpha; Zeta Beta Tau; Phi Delta Epsilon; Chicago Soc. Internal Med.; Ill. and Am. Med. Assn.; Am. Heart Assn.; Am. Rheumatism Assn.; Fellow, Am. Geriatrics Soc.; Am. Assn. for Adv. of Sci.; Am. Med. Writers Assn.; N. Y. Acad. of Sci. Contbr. to: Jour. Lab. and Clin. Med.; Jour. A.M.A.; Ann. Int. Med.; Am. Jour. Digestive Diseases; Industrial Med. and Surgery; Am. Jour. Gastroenterology; Internatl. Rec. Med.; Clinical Medicine. Serv. Rec.: U. S. Army, 1951-53. Areas of Rsch.: Gastroenterology; Cardiology.

KING, Peter DeWitt (M.D.), Med. Dir., Madre De Vida Inst., 18646 Tophidam St., Tarzana, Calif. Home Add.: 4530 Gable Dr., Encino, Calif. PSYCHIATRY. b. Chicago, Ill., Feb. 20, 1927. s. Ralph DeWitt and Jane Munn (Spear) K. Edn.: B.A., Univ. of Chicago, 1950; B.S., ibid., 1954; M.D., ibid., 1954. m. Virginia Morse, Dec. 16, 1950. c.: Katherine Virginia; Dana Hutchins; Kevin Allison. Exp.: Resident in Psychiatry, Warren State Hosp., Warren, Pa., 1955-58; Clin. Dir. and Dir. of Rsch., Madison State Hosp., Madison, Ind., 1958-59; Fellow (U.S.P.H.S.) in Child Psychiatry, Reiss-Davis Clinic, Los Angeles, Calif., 1959-61; Consultant in Psychiatry, Los Angeles Juvenile Hall, 1960-61; Candidate, Inst. for Psychoanalytic Med. of Sou. Calif., 1960—; Asst. Prof. of Psychiatry, U.C.L.A. Schl. of Med., 1961-62; Staff Psychiatrist, Neuropsychiatric Institute, U.C.L.A. Medical Center, Los Angeles, Calif., 1961-62; Asst. Clin. Prof., Psychiat., U.C.L.A. Schl. of Med., 1962—; Med. Dir., Madre De Vida Inst., 1962—. Mem.: A.A.A.S.; Am. Psychiat. Assn.; Am. Med. Assn.; Sou. Calif. Psychiatric Soc. Author: The Principle of Truth, 1960. Contbr. to: Jour. of Lab. and Clin. Med.; Sci.; Jour. of Nerv. and Ment. Diseases; Am. Jour. of Psychiatry; Amer. Jour. of Obstetrics and Gynecology; Jour. of Clin. and Exp. Psychopathology; Mental Hosps.; Jour. of Am. Med. Assn. Service Rec.: U. S. Army Air Forces, 1945-47. Areas of Rsch.: Psychiatry; Comparative Studies of Treatment; Basic Rsch. in Hypnosis and Schizophrenia; Philosophy of Science; Relationship of Science to Society and Government; Creativity.

KING, Richard Wayne (Ph.D.), Prof. of Physics, Purdue Univ., Lafayette, Ind. Home Add.: 918 Vine St., W. Lafayette, Ind. THEORETICAL NUCLEAR PHYSICS. b. Moline, Ill., June 21, 1924. s. Chauncey M. and Rosa E. (Hamm) K. Edn.: B.A., Wash. Univ., Mo., 1948; Ph.D., ibid., 1952. m. Patricia A. Casady, Feb. 23, 1946. c.: Jeffrey T.; Christopher K. Exp.: Physicist, Nuclear Dev. Assocs., White Plains, N. Y., 1952-53; Physicist, Natl. Rsch. Coun., Natl. Acad. of Sci., Wash., D. C., 1953-55; Asst. Prof., Physics Dept., Purdue Univ., 1955-58; Assoc. Prof., Physics Dept., ibid., 1958-61, Prof., Physics Dept., ibid., 1961—; Pres., Advanced Research Corp., W. Lafayette, Ind., 1961—. Mem.: Am. Phys. Soc.; Am. Assn. Univ. Profs.; Sigma Xi; Sigma Pi Sigma; Pi Mu Epsilon. Contbr. to: Physical Rev.; Rev. of Mod. Physics; Nuclear Sci. and Engrng.; Science; Proc. of Phys. Soc. of Japan. Serv. Rec.: U.S.A.A.F., 1943-46. Gen. Int.: Alfred P. Sloan Rsch. Fdn. Fellow, 1959-63. Areas of Rsch.: Nuclear Structure, Weak Interactions, Radiations Associated With Fission.

KING, Ronald W. P. (Ph.D.), Gordon McKay Prof. of Applied Physics, Gordon McKay Lab., Harvard Univ., Cambridge 38, Mass. Home Add.: 92 Hillcrest Parkway, Winchester, Mass. ELECTROMAGNETISM ESPECIALLY AS APPLIED TO RADIATION AND TRANSMISSION. b. Williamstown, Mass., Sept. 19, 1905. s. J. Percival and Edith (Seyerlen) K. Edn.: A.B., Rochester, 1927; S.M., ibid., 1929; Ph.D., Wisconsin, 1932. Hon. Deg.: A.M., Harvard, 1942. m. Justine Merrell, June 17, 1937. c.: Christopher M. Exp.: Instr., Asst. Prof., Phys., Lafayette Coll., 1934-37; Guggenheim Fellow, Berlin and Munich, 1937-38; Western Europe, 1958; Instr. to Prof., Harvard Univ., 1938—. Mem.: Inst. of Radio Engrs.; Amer. Phys. Soc.; Amer. Acad. of Arts and Scis.; A.A.A.S.; A.A.U.P.; Phi Beta Kappa; Sigma Xi; Bavarian Acad. of Scis. Author: Electromagnetic Engineering, 1945; Transmission-Line Theory, 1955; Theory of Linear Antennas, 1956. Co-Author: Transmission Lines, Antennas, and Wave Guides, 1945; Scattering and Diffraction of Waves, 1959. Contbr. to: Pro. and Transactions of Inst. of Radio Engrs.; Jour. of Applied Phys.; Scientific Monthly; Philosophical Mag.; Quarterly of Applied Math.; Frequenz; Ztschr. fur angewandte Physik. Areas of Rsch.: Electromagnetic Theory; Transmission Lines; Antennas.

KING, Theodore Oscar (Ph.D.), Dir., Div. of Pharmacol., Ortho Rsch. Fdn., Raritan, N. J. Home Add.: 1 Piedmont Dr., R.D. 1, Cranbury, N. J. PHARMACOLOGY. b. Portsmouth, Ohio, May 29, 1922. s. Edward and Rose (Haber) K. Edn.: B.S., Univ. of Mich., 1943; Ph.D., Georgetown Univ., 1949; LL.B., Univ. of Wyo., 1960. m. Dorothy Sillman, Dec. 28, 1952. c.: Jeremy E.; Naomi E. Exp.: Control Chemist, Wm. R. Warner and Co., Inc., N. Y. C., 1943-45; Analytical Chemist, Colgate-Palmolive Peet Co., Jersey City, N. J., 1946; Assoc. Prof., Univ. of Wyo., 1949-55; Prof., ibid., 1955-58; Chf. Pharmacologist, Johnson and Johnson Rsch. Fdn., New Brunswick, N. J., 1957-59; Dir., Div. of Pharmacol., Ortho Rsch. Fdn., Raritan, N. J., 1959—; Adj. Lectr., Rutgers Univ., 1958—. Mem.: A.A.A.S., Fellow; Am. Soc. Pharmacol. Expt. Therap.; A.C.S.; Sigma Xi; A.A.U.P.; N. Y. Acad. of Sci.; West Windsor Democratic Club. Contbr. to: Sci.; Arch. Internatl. Pharmacodyn.; Jour. A.Ph.A.; Experientia. Gen. Int.: Am. Fdn. for Pharmaceutical Edn., Fellow, Georgetown Univ., 1948-49; World Health Organization Fellow, Guy's Hosp. Med. Schl., London, Eng., 1951; Fulbright Rsch. Scholar, Univ. of Ghent, Belgium, 1955-56. Areas of Rsch.: Gen. Pharmacol.; Autonomic Nervous System; Toxicol.; Endocrine Pharmacol.

KING, Tsoo E. (Ph.D.), Prof. Chem., Ore. Univ., Corvallis, Ore. BIOCHEMISTRY. b. China, 1916. Edn.: B.S., Natl. Central Univ., Nanking, China, 1936; M.S., Ore. State Coll., Corvallis, Ore., 1948; Ph.D., ibid., 1949. Exp.: Postdoctorate, Biochem., Univ. Wis., 1949-50; Rsch. Assoc., Biochem., Ore. State Coll., 1950-51; Asst. Prof. Chem., ibid., 1951-53; Assoc. Prof. Chem., ibid., 1953-57; N.S.F. Sr. Rsch. Fellow, and John Simon Guggenheim Fellow, Univ. Cambridge, England, 1957-58; Prof. Chem., Oregon Univ., 1958—. Mem.: Am. Chem. Soc.; Am. Soc. Biological Chemists; Soc. Am. Bacteriologists; Biochemical Soc. (England); Faraday Soc. (England); Phi Lambda Upsilon; Sigma Xi; Phi Kappa Phi; Phi Sigma. Editor: Proteins, 1956. Contbr. to: Jour. Bacteriology, Biochemical Jour.; Nature; Jour. Biological Chem.; Federation Proc.; Proc. Soc. Exptl. Biol.; Sci.; Proc. Royal Soc. (London). Areas of Rsch.: Biological Oxidation; Enzymology; Biochemistry.

KING, Willis Alonzo (Ph.D.), Prof. of Dairy Sci., Clemson Coll., Clemson, S. C. Home Add.: 118 Riggs Dr., Clemson, S. C. DAIRY CATTLE NUTRITION AND MANAGEMENT, PASTURE AND FORAGE CROPS. b. Abbeville, S. C., Jan. 8, 1915. s. William

A. and Hattie A. (Robertson) K. Edn.: B.S., Clemson Coll., 1936; M.S., Univ. of Wis., 1938; Ph.D., ibid., 1940. m. Louise L. Collins, May 25, 1940. c.: Willis A., Jr.; Evelyn L. Exp.: Asst. Prof., Rutgers Univ., N. Brunswick, N. J., 1940-45; Assoc. Prof., Purdue Univ., W. Lafayette, Ind., 1945-48; Prof., Clemson Coll., 1949—. Hon. Pos.: Pres., Past and Chmn. of Bd., Past of Am. Grassland Coun.; Past Secy.-Treas., Vice Pres. and Pres., Sou. Div. Am. Dairy Sci. Assn.; Chmn. of Clemson Rsch. Faculty Coun.; Chmn., Dairy Cattle Hlth. Comm. of Am. Dairy Sci. Assn. Mem.: Am. Soc. of Animal Sci.; Am. Dairy Sci. Assn.; Am. Grassland Coun.; Sigma Xi; Gamma Sigma Delta; Phi Kappa Phi; Alpha Zeta; Phi Sigma; Masons; Forum Club; Fellowship Club; Pendleton Farmer's Soc. Author: Grass Silage and Dairying, 1949. Contbr. to: Jour. Dairy Sci.; Jour. Animal Sci.; Am. Chem. Soc. Jour. Areas of Rsch.: Dairy Cattle Feeding and Management; Utilization of Feeds, Pastures, Silages, Pelleting Hays.

KINGREY, Burnell Wayne (D.V.M.), Prof. and Hd. Dept., Vet. Med. and Surg., Dir. Vet. Clinics, Ia. State Univ., Ames, Ia. Home Add.: 1101 Blackwood Circle, Ames, Ia. CLINICAL VETERINARY MEDICINE. b. Worthington, Minn., Sept. 12, 1921. s. H. R. and Iva (Goodrich) K. Edn.: A.A., Worthington Jr. Coll., 1941; D.V.M., Ia. State Univ., 1944; M.S., ibid., 1954. m. Patricia Abbott, 1946. c.: Michael; Jean; Karel. Exp.: Private Practice, Lena, Ill., 1944-53; Asst. Prof., Ia. St. Univ., 1953-55; Prof. and Hd. Dept., ibid., 1955—; Dir. of Clinics, ibid., 1959—. Hon. Pos.: Prof. of Year, 1961; Exec. Bd., Ia. Vet. Med. Assn.; Exec. Bd., Board-Midwest Animal Care Panel. Mem.: Am. Vet. Med. Assn.; Ia. Vet. Med. Assn.; Animal Care Panel; A.A.A.S.; Am. Pub. Health Assn.; Am. Assn. of Vet. Clinicians; Phi Kappa Phi; Phi Zeta; Gamma Sigma Delta; Delta Psi Omega; Rotary Club. Author: Cattle Diseases, 1957; Equine Medicine and Surgery, 1962. Contbr. to: Am. Jour. of Vet. Rsch.; Jour. of Am. Vet. Med. Assn.; Vet. Med. Serv. Rec.: U.S.A.R.S., 1950-55. Areas of Rsch.: Clinical Vet Med.

KINNETT, Isabel Hackett (Mrs.), Tchr., Lanier S.H. Schl., Macon, Ga. Home Add.: 1752 Hardeman Ave., Macon, Ga. MATHEMATICS. b. Augusta, Ga., Dec. 13, 1900. d. William Wright and Isabel (Dendy) Hackett. Edn.: A.B., Wesleyan, 1922; M.Ed., Mercer, 1955. m. Donovan DeWitt Kinnett, June 24, 1925. c.: Don; Mary Isabel K. Davis. Exp.: Tchr., Lanier Sr. High Schl., Macon, Ga., 1941—. Hon. Pos.: Pres., Ga. Math. Coun.; Pres., Bibb Edn. Assoc.; A.A.A.S.; Math. Assn. of Am.; Am. Math. Assn., Natl. Coun. of Math.; Delta Kappa Gamma; Bus. and Prof. Women; Ga. Edn. Assn.; Life member, Natl. Edn. Assn.; Mem., Edinburgh Maths. Soc. Contbr. to: Jour. of the Ga. Edn. Assn.; Phi Delta Kappa.

KINNIELL, William T. (Mr.), Dir., Div. of Instrnl. Media, Tex. Edn. Agency, Austin, Tex. Home Add.: 5313 Peacedale, Austin, Tex. CHEMISTRY. b. Hot Springs, Ark., Feb. 21, 1929. s. William T. and Ethel (Chennault) K. Edn.: B.S., Henderson Sta. Coll., 1951; M.Edn., Univ. of Tex., 1958. m. Katherine Parker, 1951. Exp.: Tchr., Benton Pub. Schls., Benton, Ark., 1951-54; Hd., Sci. Dept., Raymondville H. Schl., Raymondville, Tex., 1954-58; Sci. Consultant, Tex. Edn. Agency, 1959-61; Dir., Div. of Instrnl. Media, ibid., 1961—. Hon. Pos.: Chmn., Tex. Pilot Study, Sci. and Maths. Youth Acts. Program. Mem.: Am. Assn. for the Adv. of Sci.; Tex. Acad. of Sci.; Natl. Sci. Tchrs. Assn.; Sci. Tchrs. Assn. of Tex.; Tex. Audio-Visual Edn. Assn.; Phi Delta Kappa; F.&A.M.; Phi Lambda Chi. Areas of Rsch.: Area Utilization of Instructional Media in Instruction in Science.

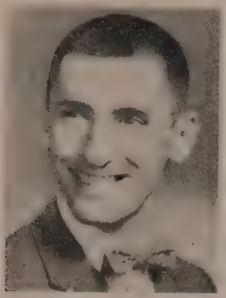
KINSLEY, Richard Nelson, Jr. (Ph.D.), Postdoctoral Fellow, Ohio Sta. Univ., Columbus 10, Ohio. Home Add.: 3527 Shelmire Ave., Phila. 36, Pa. INDUSTRIAL MICROBIOLOGY—FOODS. b. Phila., Pa., Oct. 22, 1929. s. Richard N. and Marion (Rickards) K. Edn.: A.B., Earlham Coll., 1951; M.A., Wash. Univ., St. Louis, Mo., 1956; Ph.D., Purdue Univ., 1962. Exp.: Lab. Instr., Wash. Univ., St. Louis, Mo., 1951-54; Rsch. Asst., Med. Labs. Army Chem. Ctr., Edgewood, Md., 1954-56; Microbiologist, Anheuser-Busch, Inc., St. Louis, Mo., 1956-58; Rsch. Fellow, Purdue Univ., Lafayette, Ind., 1958-62; Postdoctoral Fellow, Ohio Sta. Univ., 1962—. Mem.: Acad. of Natural Scis. of Phila., Pa.; Am. Assn. for the Adv. of Sci.; Am. Instit. of Biol. Scis.; British Mycol. Soc.; Mycol. Soc. of Am.; Soc. for Indust. Microbiol.; Am. Soc. for Microbiol.; Sigma Xi; Alpha Phi Omega. Serv. Rec.: U. S. Army Chem. Corps, 1954-56. Areas of Rsch.: Yeasts, and Fungi Imperfecti.

KINSINGER, Floyd Elton (Ph.D.), Asst. Prof., Botany, Fort Hays Kans. State Coll., Hays, Kans. Home Add.: 1106 Drum Ave., Hays, Kans. BOTANY, RANGE MANAGEMENT, PLANT PHYSIOLOGY. b. Ness City, Kans., Jan. 17, 1925. s. Samuel Frederick and Ruth Eleanor (Hunter) K. Edn.: B.S., Fort Hays Kans. State Coll., 1952; M.S., ibid., 1953; Ph.D., Utah St. Univ., 1957. m. Frances Robinson, 1950. c.: Ruthann Eileen; Janet Lynn. Exp.: Rsch. Asst., Utah St. Univ., Logan, Utah, 1953-55; Asst. Ecologist, Univ. of Nev., Reno, Nev., 1955-60; Asst. Prof., Fort Hays Kans. St. Coll., 1960—. Mem.: Ecol. Soc. of Am.; Am. Soc. Range Mgmt.; Kans. Acad. of Sci.; Beta Beta Beta; Phi Kappa Phi; Sigma Xi; Delta Epsilon. Contbr. to: Jour. of Ecology; Jour. of Range Mgmt. Serv. Rec.: U. S. Navy, 1943-47. Areas of Rsch.: Physiological Ecology.

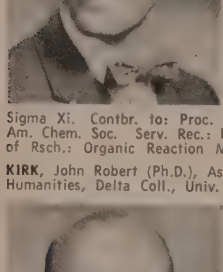
KINSTLER, Milton Carl (Mr.), Vice-Pres., Oscar Fisher Co., Inc., Newburgh, N. Y. Home Add.: 1525 E. 26th St., Brklyn., N. Y. CHEMICAL AND PHOTOGRAPHIC ENGINEERING. b. Brklyn., N. Y., Dec. 18, 1912. s. Abraham and Grace (Ostrovsky) K. Edn.: B.S.E., Coll. of the City of N. Y., 1934; M.S., Ch.E., ibid., 1935. Exp.: Rsch. Chemist, Agfa-Ansco Corp., Binghamton, N. Y., 1938-39; Dir. of Rsch., Philip A. Hunt Co., Palisades Park, N. J. 1939-53; Dir. of Rsch., Clayton Chem. Co., Inc., Chicago, Ill., 1953; Vice-Pres., L. B. Russell Chems., Inc., Queens, N. Y., 1953-54; Vice-Pres., Oscar Fisher Co., Inc., 1954—. Mem.: A. I. Ch.E.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; S.P.S.&E.; S.R.E.; Free and Accepted Masons; Little League. Contbr. to: Am. Photoengraver; Police Photographer; Blue Printer Areas of Rsch.: Photographic Chemistry; Consultant in Photo graphic Chemistry and Engineering to Vac Inc., Mont., Can.

KIRK, John Esben (Dr.), Dir. of Rsch., Assoc. Prof. of Med., Wash. Univ., Schl. of Med., St. Louis 10, Mo. GERONTOLOGY, INTERNAL MEDICINE, BIOCHEMISTRY. b. Kallundborg, Denmark, Nov. 8, 1905. s. Ole Christian Mathias and Augusta Dorthea (Bang) K. Edn.: M.D., Univ. of Copenhagen, 1929; Ph.D., ibid., 1936. m. Irma Muser, May 28, 1934. c.: Ermalynn; Peter; Lillian; Thomas Esben; Paul Albert. Exp.: Asst., Rockefeller Inst. for Med. Rsch., N.Y.C., 1931-34; Resident Physician, Med. Dept., Univ. Hosp., Copenhagen, Denmark, 1936-39; Dir., City Health Laboratory, Copenhagen, Denmark, 1936-39; Chf. Physician, Med. Dept., Holstebro Co. Hosp., Denmark, 1939-47; Dir. of Rsch., Div. of Gerontol., Wash. Univ., Schl. of Med., St. Louis, Mo., 1947—; Asst. Prof. of Med., ibid., 1947-50; Assoc. Prof. of Med., ibid., 1950—. Mem.: Pres., Am. Soc. for the Study of the Premortal Condition, 1960; Am. Coll. of Physicians; Am. Soc. of Biol. Chem.; Gerontol. Soc.; Soc. for Study of Arteriosclerosis; Cent. Soc. for Clin. Rsch.; Soc. for Exptl. Biol. and Med.; Harvey Soc.; Royal Soc. of Med. of London; Alpha Omega Alpha. Editor: Jour. of Gerontol., 1948-62. Author: Amino Acid and Ammonia Metabolism in Liver Diseases, 1936; Acidosis, Clin. Aspects and Treatment with Isotonic Sodium Bicarbonate Solution, 1942; Hypometabolism, 1946; Intestinal Gas, 1947. Contbr. to: Jour. of Biol. Chem.; Jour. of Gerontol. Gen. Int.: Discovered Increase in Blood Ammonia Level in Liver Cirrhosis, 1936; Introduced Treatment of Acidosis with Isotonic Sodium Bicarbonate Solution in Europe; Discovered Renal Tubular Secretion of Uric Acid in Humans, 1950. Special Int.: Biochemistry, Particularly the Enzyme Activities of Human Arterial Tissue; Development of Gasometric Methods for Carbon and Lipid Determination and for Measurement of Tissue Metabolism.

KINTNER, Robert Roy, (Ph.D.), Assoc. Prof. and Chmn., Dept. of Chem., Augustana Coll., Sioux Falls, S. Dak. Home Add.: 2717 So. Glendale Ave., Sioux Falls, So. Dak. ORGANIC CHEMISTRY. b. Weeping Water, Nebr., April 3, 1928. s. Dr. Elmer Hayes and Rae Imogene (Swartwout) (dec.) K. Edn.: B.S., Iowa State Univ., 1953; Ph.D., Univ. of Wash., 1957. m. Helen Ruth Remmers, Aug. 31, 1952. c.: Timothy Roy; Melinda Rae. Exp.: Visiting Summer Prof., Univ. of Wash., 1959; Nuclear Sci. Instr., Wash. St. Univ., summer, 1962; Assoc. Prof. and Chmn., Dept. of Chem., Augustana Coll., S. Dak., 1957—. Hon. Pos.: Chmn., Sioux Valley Sect., A.C.S., 1962-63; Secy.-Treas., ibid., 1960-61. Mem.: Am. Chemical Soc.; Sioux Valley Sect., A.C.S.; S. Dak. Acad. of Sci.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Proc. of S. Dak. Acad. of Sci.; Jour. of Am. Chem. Soc. Serv. Rec.: U. S. Marine Corps, 1946-49. Areas of Rsch.: Organic Reaction Mechanisms.



KIRK, John Robert (Ph.D.), Assoc. Prof., Coll. of Letters, Div. of Humanities, Delta Coll., Univ. Ctr., Mich. Home Add.: 727 Fillmore Pl., Bay City, Mich. PHILOSOPHY OF SCIENCE; EPISTEMOLOGY; LOGIC AND SEMANTICS. b. Albuquerque, N. M., Jan. 9, 1920. s. Ray Hawkins and Alice (Rich) K. Edn.: A.B., Univ. of N. M., 1941; Ph.D., Univ. of Calif. at L. A., 1951. m. Joyce Opp, April 4, 1954. d. Mr. and Mrs. Emil Opp of Leola, S. Dak. c.: Gregory Hawkins. Exp.: Instr., Univ. of Tex., 1950-53; Coll. Rep., Univ. of Chicago Press, 1953-54; Lectr. in Communication and Humanities, Univ. of Chicago, 1954-55; Rsch. Analyst, Chicago Area Transportation Study, 1956; Lectr. in Phil., Roosevelt Univ., 1955; Asst. Prof., Communication Skills, Mich. St. Univ., 1956-61; Assoc. Prof., Coll. of Letters, Div. of Humanities, Delta Coll., 1961—. Mem.: A.A.A.S.; Am. Assn. Univ. Profs.; Am. Phil. Assn.; Internatl. Soc. for Gen. Semantics; Natl. Soc. for the Study of Communication; Phil. of Sci. Assn.; Speech Assn. of Amer.; Soc. for Gen. Systems; Pi Gamma Mu; Amer. Civil Liberties Union. Contbr. to: Chicago Rev.; ETC; A Rev. of Gen. Semantics; Centennial Rev. of Arts and Sci.; Jour. of Communication. Ph.D. Dissertation: Cognitive and Valuational Factors in Scientific Research. Serv. Rec.: U.S.A. Air Force, 1941-45. Travel: Scotland; England. Gen. Int.: Radio and TV. Commentator and Narrator in Music and the Fine Arts (KFAC, Los Angeles; WTTW, Chicago; WMSB, East Lansing). Areas of Rsch.: History and Philosophy of Science, History of Ideas, Logic, Semantics, Pragmatics, Communication Theory.



KIRKENDALL, Ernest Oliver (D.Sc.), Gen. Secy., Am. Inst. of Mining, Metall. and Petroleum Engrs, 345 E. 47 St., N. Y. 17, N. Y. Home Add.: 15 Lord Kitchener Rd., New Rochelle, N. Y. METALLURGICAL ENGINEERING. b. E. Jordan, Mich., July 6, 1914. s. George Oliver and Rachel (Geck) K. Edn.: B.S., Wayne State Univ., 1934; M.S., Univ. of Mich., 1935; D.Sc., ibid., 1938. m. Maxine Marrs, Feb. 2, 1938. c.: Mrs. Carol Leunk, Jr.; Howard; Barbara. Exp.: Instr., Wayne State Univ., Detroit, Mich., 1937-42; Asst. Prof., ibid., 1942-46; Secy., Metals Div., A.I.M.E., N. Y., 1946-55; Gen. Secy., A.I.M.E., 1955—. Mem.: Am. Inst. of Mining, Metall. and Petr. Engrng.; Am. Soc. for Metals; Natl. Soc. of Profl. Engrs.; Tau Beta Pi; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Trans. of the Am. Inst. of Mining, Metall. and Petr. Engrs. Gen. Int.: Discoverer of the Phenomenon in Diffusion of Metals and now Known as the "Kirkendall Effect." Areas of Rsch.: Diffusion in Metals.

KIRKHAM, Don (Ph.D.), Soil Physicist, Educator, Agron. Dept., Iowa State Univ., Ames, Ia. Home Add.: 822 Grand Ave., Ames, Ia. THEORY OF SOIL WATER MOVEMENT b. Provo, Utah, Feb. 11, 1908. s. Farncis Washington and Martha Alzina (Robison) K. Edn.: A.B., Columbia Coll., N. Y. C., 1933; A.M., Columbia Univ., 1934; Ph.D., (Physics), ibid., 1938; Erediplom, Ghent Univ., Belgium, 1958. m. Mary Elizabeth Erwin, Sept. 2, 1939. c.: Victoria Eulalia; Mary Beth; Don Collier. Exp.: Asst. in Phys., Columbia Univ., 1934-38; Instr. and Asst. Prof., Math. and Phys., Agri. Expt. Sta., Utah St. Univ., 1937-40; Hydraulic Engr., Soil Conservation Serv., U.S.D.A., 1940; Assoc. in Physics, George Washington, 1946; Assoc. Prof., Ia. State Univ., 1946-48; Prof., ibid., 1948-59; Curtiss Distinguished Prof., 1959—; Fulbright Prof., Netherlands, 1950-51; Fulbright Prof., Guggenheim Fellow, Belgium, 1957-58; Lectr., Vienna Univ., Austria, 1958; Land Reclamation Advisor, Turkish Govt., 1959; Lectr., Ireland, 1960; Ford Found., Land Reclamation Consultant to U.A.R. and Lecturer, Alexandria Univ., 1961. Mem.: Fellow, Am. Phys. Soc.; Am. Geophys. Soc.; Fellow, Soil Sci. Soc. Am.; Am. Soc. Agron.; Am. Math. Assn.; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta. Contbr. to: Jour. Geophys. Rsch.; Soil Sci. Soc. Am. Proc.; Agronomy Jour.; Physical Review; Jour. Applied Physics; Jour. Math. and Physics; Soil Sci.; Am. Soc. Testing Materials; Advances in Agronomy; U. S. Atomic Energy Publ.; Internatl. Soil Sci. Soc. Proc.; Hydrology Handbook; Agric. Engineers Handbook. Serv. Rec.: Utah Natl. Guard, 1925-27. Areas of Rsch.: Soil Physics, Artificial Drainage of Land, Atomic Methods in Soil Physics Rsch.

KIRKNER, Frank J. (Ph.D.), Chief, Psychol. Serv., V.A. Hosp., Long Beach 14, Calif. Home Add.: 460 Peralta Ave., Long Beach 14, Calif. CLINICAL PSYCHOLOGY. b. Independence, Ia., Apr. 1, 1903. s Joseph Henry and Wilamina Sarah (Davies) K. Edn.: B.A., Ia. State Tchrs. Coll., 1930; M.S., Univ. of Ia., 1930-31; Ph.D., Univ. of Calif., 1942. m. Margaret B. Campbell, 1941, div., 1961. c.: Diana. Exp.: Physical Director, Y.M.C.A., Waterloo, Iowa, 1925-30; Instr., Junior Coll., Bloomfield, Iowa, 1931-35; Assoc. Secy., Y.M.C.A., Santa Monica, Calif., 1936-39; Employee Counselor, Douglas Research Laboratories, Santa Monica, Calif., 1942-44; Vocational Adviser, Veterans, Admin., Los Angeles, Calif., 1944-45; Chief Psychologist, L.A.R.O. Mental Hygiene Clinic, Los Angeles, Calif., 1945-46; Chief, Clinical Psychology Section, Veterans' Administration Hospital, Long Beach, Calif., 1946-60; Chief, Psychology Service, V.A.H., Long Beach, Calif., 1960—. Hon. Pos.: Editor, Internatl. Jour. for Clin. and Exper. Hypnosis, 1961; Pres., Long Beach Council on Alcoholism, Inc.; Chmn. Rsch. Comm. and Mem. of the Bd. of Dir., Comm. Rehabilitation Industries, Long Beach, Calif. Mem.: Am. Psychol. Assn.; Am. Rehabilitation Soc.; A.A.A.S.; Soc. for Clin. and Expt. Hypnosis; Internatl. Soc. for Clin. and Expt. Hypnosis; Psi Chi; Sigma Xi; Pacific Coast Club. Contbr. to: Am. Jour. of Psychiatry; Jour. of Abnormal and Social Psychol.; Jour. of Comparative and Physiol. Psychol.; British Jour. of Med. Hypnotism; Jour. of Projective Techniques; Jour. of Clin. and Expt. Hypnosis; Proc. of First Inst. for Hosp. Recreation Therapists; Am. Personnel and Guid. Assn. Bull. Rehabilitation Counseling; Rehabilitation Lit.; National Soc. for Crippled Children and Adults. Serv. Rec.: U. S. Navy, 1920-22. Areas of Rsch.: Differential Diagnosis, Prognosis, Psychotherapy, and Rehabilitation.

KIRKPATRICK, Forrest H. (Mr.), Assistant to Chairman, Wheeling Steel Corporation, Wheeling, W. Va. Home Add.: Penkirk Cottage, Bethany, W. Va. INDUSTRIAL PSYCHOLOGY. b. Galion, Ohio, Sept. 4, 1905. s. Arch M. and Mildred (Hunter) K. Edn.: A.B., Bethany Coll., 1927; A.M., Columbia Univ., 1931. Hon. Degrs.: LL.D., Bethany Coll., 1948; LL.D., The Coll. of Steubenville, 1954. Exp.: Dean and Prof., Bethany Coll., 1927-41; R.C.A. Personnel Adm., 1941-46; Cons. to R.C.A. and Wheeling Steel, 1946-52; Asst. to Chmn. and to Pres., Wheeling Steel Corp., W. Va., 1952—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Stat. Assn.; Ind. Rel. Rsch. Assn.; Am. Econ. Assn.; Am. Mgt. Assn. Contbr. to: Indust. Rels. Handbook; Student Personnel Work in the Post-War College, 1945; Careers in Personnel Work, 1946; Helping Students in Finding Employment, 1949; Outline of Executive Development, 1953; The Issue of the Shorter Work Week, 1961. Areas of Rsch.: Mgt. Devel. and Selection.

KIRSCH, Robert Raymond (Mr.), Coordinator of Math., Long Beach City School. Dist., Long Beach, N. Y. Home Add.: 3270 Neptune Ave., Oceanside, N. Y. MATHEMATICS. b. Rockaway Beach, N. Y., Mar. 23, 1925. s. Louis and Bessie (Sulkis) Kirschenblatt. Edn.: B.S., Queens Coll., 1950. m. Alice Berg, June 12, 1944. c.: Debra Ann; Linda Susan; Jeffrey Alan. Exp.: Tchr., Long Beach Jr. Schl., Long Beach, New York, 1951-54; Tchr., ibid., H. S., 1954-61; K-12 Coordinator, Long Beach City Schl. Dist., ibid., 1961—. Hon. Pos.: Pres., Long Beach Classroom Tchrs. Assn., 1961-62. Mem.: N. Y. St. Math. Tchrs. Assn.; Math. Assn. of Am.; Am. Assn. for the Adv. of Sci.; Natl. Coun. of Tchrs. of Math.; Natl. Edn. Assn. Serv. Rec.: U.S. Army, 1942-45.

KIRSNER, Joseph B. (Ph.D.), Prof. of Med., Univ. of Chicago, Chicago 37, Ill. Home Add.: 5807 Dorchester Ave., Chicago 37, Ill. INTERNAL MEDICINE AND GASTROENTEROLOGY. b. Boston, Sept. 21, 1909. s. Harris and Ida (Waizer) K. Edn.: M.D., Tufts Coll. Med. Schl., 1933; Ph.D., Univ. of Chicago, 1942. m. Minnie Schneider of Des Moines, Ia., Jan. 6, 1934. d. Mr. and Mrs. H. Schneider. c.: Robert S. Exp.: Asst. in Med., Univ. of Chicago, 1935-39; Instr. in Med., ibid., 1939-42; Asst. Prof. of Med., ibid., 1942-47; Army of U. S., 1943-46; Assoc. Prof., Univ. of Chicago, 1947-51; Prof. of Med., ibid., 1951—. Mem.: Amer. Soc. for Clinical Investigation, Central Soc. for Clinical Rsch.; Amer. Gastoenterological Assn.; Amer. Coll. of Physicians; Institute of Med. of Chicago; Pres., Chicago Soc. of Internatl Med.; Assn. of Am. Physicians; Am. Assn. for Adv. of Sci.; Chmn., Section on Gastroenterology and Proctology, Am. Med. Assn.; Sigma Xi; Alpha Omega Alpha. Author: Author or co-author of more than 250 scientific papers dealing principally with clinical and experimental studies in the field of gastroenterology. Contbr. to: Jour. A.M.A.; Arch. Int. Med.; Jour. Clin. Invest.; Am. Jour. Med.; Am. Int Med.; Gastoenterology; Jour.

Lab. Clin. Med. Ph.D. Dissertation: A Study of Alkalosis with Special Reference to the Electrolyte Composition of the Blood Serum and the Role of the Kidney. Travel: England; France; Belgium; Panama; Philippines; Japan. Hobbies: Music; Sports. Listed in: Army Med. Lib.; Who's Important in Med. Special Int.: Gastrointestinal Diseases; Gastric Secretion in Health and Disease; Diseases of Liver; Cancer of Digestive Tract.

KISER, Robert Wayne (Ph.D.), Assoc. Prof. of Chem., Kans. St. Univ., Manhattan, Kans. Home Add.: 2813 Nevada St., Manhattan, Kans. INORGANIC-PHYSICAL CHEMISTRY. b. Rock Island, Ill., April 26, 1932. s. Jay C., Sr. and Margaret W. (Lutz) K. Edn.: B.A., St. Ambrose Coll., 1953; M.S., Purdue Univ., 1955; Ph.D., ibid., 1958. m. Barbara M. Hatje, May 29, 1954. c.: Mark David; Scott Alan; Ann Marie. Exp.: Grad. Asst., Purdue Univ., 1953-55; A.E.C. Fellow, ibid., 1955-56; P.R.F. Fellow, ibid., 1956-57; Asst. Prof., Kan. St. Univ., 1957-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Chemical Soc.; Chemical Soc. London; Am. Physics Soc.; Am. Assn. for the Adv. of Sci.; Faraday Soc. London; The Soc. of Sigma Xi.; Kans. Acad. of Sci.; Alpha Chi Sigma; Phi Lambda Upsilon. Author: Tables of Ionization Potentials, 1960; Basic and Applied Isotope Technology, 1959; Problems and Experiments in Instrumental Analysis, 1962. Contbr. to: Jour. of the Am. Chem. Soc.; Rev. of Sci. Instruments; Jour. of Chem. Phys.; Jour. of Phys. Chemistry; Applied Science Research; Analytical Chemistry; Jour. of Chemistry and Engineering Data, Inorganic Chemistry. Areas of Rsch.: Radiation Chemistry; Geiger and Proportional Counter Operation and Gas Characteristic Parameters; Mass Spectroscopy, Ionization Potentials and Appearance Potentials, Mass Spectra and Molecular Structure and the Theory of Mass Spectra; and Crystal Field Theory Applications.

KISHORE, Nand (Ph.D.), Asst. Prof., Univ. of San Francisco, San FGrancisco, Calif. Home Add.: 759 Shrader St., San Francisco 17, Calif. NUMBER THEORY AND ANALYSIS. b. Bhandara City, India, Sept. 25, 1913. s. Chhotelal and Jai Bai K. Edn.: B.A., Nagpur Univ., India, 1936; M.A., ibid., 1938; Ph.D., Univ. of Calif., Berkeley, 1961. m. Ritsuko Fujii, 1941. c.: Kiyoshi; Masao; Kikuo. Exp.: Math. and Sci. Instr., Army Edn. Center, Tokyo, Japan, 1946-56; Prof., Univ. of the Sacred Heart, ibid., 1949-51; Asst. Prof., Univ. of San Francisco, 1956—. Mem.: Sigma Xi. Contbr. to: Proc. Am. Math. Soc. Areas of Rsch.: Rayleigh Functions and Polynomials; Number Theory.

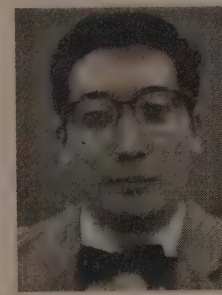
KISSANE, Ray William (M.D.), Cardiologist, 9 Buttles Ave., Columbus 15, Ohio. Home Add.: 4817 Olentangy Blvd., Columbus, Ohio. CARDIOLOGY. b. Galion, Ohio, Nov. 15, 1894. s. Richard Percifer and Metta (Remy) K. Edn.: M.D., Ohio Sta. Univ., 1918. m. Helen Harrod, May 5, 1919. c.: Richard Litter (dec.); Mrs. Elien Harrod Rose. Exp.: Chmn., Cardiol. Dept. White Cross Hosp. and Riverside Methodist Hosp., Columbus, Ohio, 1930—; Dir. of Med. Div., ibid., 1938-53; Dir., Cardiol. Dept., Children's Hosp., ibid., 1929—; Prof. of Med. in Cardiology, Ohio Sta. Univ., 1949—; Cardiologist, Columbus, Ohio, 1961—. Hon. Pos.: Fellow and Gov., Am. Coll. Chest Phys. in Ohio; Fellow and Past Vice-Pres., Am. Therapeutic Soc.; Past Pres., Mem.: of the Bd. and Exec. Comm. of the Ohio Sta. Heart Assn.; Past Pres. and Chmn. of the Bd., Cent. Ohio Heart Assn.; Mem. Bd. of Dirs. of the Am. Heart Assn.; Diplomate Am. Bd. Internal Med. and Cardiol. Mem.: Ohio Soc. of Internal Med.; Acad. Internatl. Med.; Ohio Sta. Med. Soc.; Am. Med. Soc.; Rotary; Cent. Ohio Heart Assn.; Am. Heart Assn.; Am. Geriatrics Soc., Fellow; Fellow Am. Coll. Sports Med.; Fellow, A.C.P.; Fellow, A.A.A.S.; Fellow, Am. Coll. Cardiol.; Acad. Internatl. Med.; Rev. Club; Ohio Soc. S.A.R.; Phi Rho Sigma; Mason; Sons of the Am. Revol.; Faculty Club, Ohio Sta. Univ. Gen. Int.: Distinguished Achievement Medal Am. Heart Assn.; Certificate of Meritorious Achievement, Ohio Sta. Heart Assn., 1957. Serv. Rec.: U. S. Army, 1919; U. S. Natl. Guard, 1914-16. Areas of Rsch.: Traumatic Heart Disease; Penetrating, Non-Penetrating Wounds, and Foreign Bodies; Cardiac Arrhythmias, Coronary Artery Occlusion, Myocardial Infarction.

KISTNER, David Harold (Ph.D.), Asst. Prof. of Biol., Chico St. Coll., Chico, Calif. Home Add.: Flying C Ranch, Nye, Mont.; 1281 Marvin Way, Chico, Calif. ENTOMOLOGY, ECOLOGY. b. Cincinnati, Ohio, July 30, 1931. s. Harold A. and Hilda (Gick) K. Edn.: A.B., Univ. of Chicago, 1952; S.B., ibid., 1956; Ph.D., ibid., 1957. m. Alzada Carlisle, 1957. c.: Alzada H. Exp.: Asst. Rsch. and Tchng., Univ. of Chicago, 1953-57; Summer Asst., Chicago Natl. Hist. Museum, Chicago, Ill., summers, 1952, 1953, 1956; Res. Assoc., Chicago Acad. of Scis., 1957; Instr., Univ. of Rochester, 1957-59; Instructor, Chico State Coll., 1959-60; Asst. Prof., ibid., 1960—. Mem.: Entomological Soc. of Am.; Lepidopterist's Soc.; Soc. for the Study of Evolution; Soc. for the Study of Systematic Zool.; Am. Inst. of Biol. Scis.; Am. Assn. of Univ. Prof.; Pacific Coast Entomological Soc.; Sigma Xi. Contbr. to: Annals of Ent. Soc. Am.; Natl. Hist. Misc.; Explor. Parc. Natl. de l'Upemba; Explor. Parc. Nat. Albert.; Explor. Parc. Nat. de la Garamba; Annales de la Musee Royal du Congo Belge; Mem. Inst. Frans. d'Afrique Noire; Pan-Pacific Entomologist; Publ. Cult. Co. Diam. Angola. Areas of Rsch.: Systematics of Staphylinidae (Coleoptera); Systematics, Evolution, and Behavior of Old World Myrmecophiles Associated with Doryline Ants.

KITCHEN, Leland J(oseph) (Ph.D.), Investment Analyst, The Chase Manhattan Bank, New York 15, New York. Home Add.: 180 Woodland Ave., Summit, New Jersey. ORGANIC CHEMISTRY. b. Sentinel Butte, N. D., Feb. 12, 1917. s. Joseph A. and Pearl (Smith) K. Edn.: B.S., Univ. of Fla., 1939; Ph.D., ibid., 1943. m. June Louise Pert, Feb. 23, 1943. c.: Daniel W.; Diane E.; Clifford P. Exp.: Grad. Asst. in Chem., Univ. of Fla., 1939-43; Organic Rsch. Chem., Firestone Tire and Rubber Co., Akron, Ohio, 1943-52; Rsch. Admin. Asst., ibid., 1952-61; Chase Manhattan Bank, New York City, 1961—. Mem.: Am. Chem. Soc.; Am. Rocket Soc.; A.A.A.S.; Sigma Xi; Phi Beta Kappa; Phi Kappa Phi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Organic Chem.; Ind. and Eng. Chem.; Rubber World; Rubber Age. Areas of Rsch.: Chemistry of Piperazine and Amino Alcohols; Antioxidants and Monomers for Synthetic Rubber; Alkyl Phenols; Heat-Restistant Elastomers; Solid Propellants.

KITTELL, Mary Teresita (Sister), Hd. of Biol. Dept., Holy Family Coll., Manitowoc, Wis. BOTANY. b. W. DePere, Wis., Nov. 10, 1892. d. William Orin and Elizabeth (Jacobs) K. Edn.: A.B., Catholic Sisters Coll., 1931; M.S., Catholic Univ. of Am., 1938; Ph.D., ibid., 1941. Exp.: Instr., Holy Family Coll., 1940-45; Assoc. Prof., ibid., 1945-56; Prof., ibid., 1956—; Visiting Prof., Chaminade Coll., Honolulu, Hawaii, 1960-61; Hd. of Biol. Dept., Holy Family Coll., 1941—. Hon. Pos.: Admin. Coun., Holy Family Coll., Wis., 1956-60; Academic Senate, ibid., 1956—. Mem.: Am. Assn. for Adv. of Sci.; Am. Gloxinian Soc.; Am. Fern Soc.; Natl. Assn. Biol. Tchrs.; Wis. Chapter of Nature Conservancy; Local Nature Club. Co-Author: Flora of Arizona and New Mexico. Contbr. to: Am. Gloxinian Soc. Gen. Int.: Local Conservation Work, Nature Trails. Areas of Rsch.: Botany, Conservation, Nature Study.

KIYASU, John Yutaka (Ph.D.), Asst. Prof., Univ. of Rochester, Rochester, N. Y. Home Add.: 170 Castleman Rd., Rochester 20, N. Y. BIOCHEMISTRY. b. San Francisco, Calif., Dec. 25, 1927. s. Kynisada and Sadako (Kiyasu) K. Edn.: B.A., Univ. of Calif., 1950; M.A., ibid., 1951; Ph.D., ibid., 1955. m. Lily Y. Nomura, 1954. c.: Patricia; Anne; Lynn. Exp.: Asst., Univ. of Calif. Med. Ctr., 1953-54; Instr., Univ. of Chicago, 1957-60; Asst. Prof., Univ. of Rochester, 1960—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Oil Chem. Soc.; Sigma Xi. Contbr. to: Jour. Biol. Chem.; Biochim. et Biophys. Acta.; Nature; Fed. Proc.; Am. Jour. Physiol. Areas of Rsch.: Enzymatic and Chem. Syntheses of Phosphorylated Lipids.



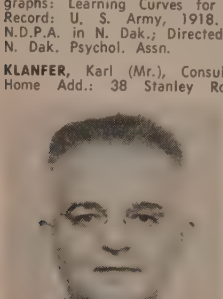
KITTRELL, Flemmie Pansy (Ph.D.), Prof. of Home Econs., Howard Univ., Washington, D. C. Home Add.: 3200 Warder St., N.W., Washington 1, D. C. NUTRITION. b. Henderson, N. C., Dec. 25, 1904. d. James Lee and Alice (Mills) K. Edn.: B.S., Hampton Inst., 1928; M.S., Cornell Univ., 1930; Ph.D., ibid.,

1936. Exp.: Dean of Students, Bennett Coll., 1928-40; Dean of Women and Chmn., Home Econs. Dept., Hampton Inst., 1940-44; Prof., Howard Univ., 1944—; Fulbright Prof., Baroda Univ., 1950, 1951-53, 1955. Hon. Pos.: Consultant, Home Econs. Schl., Congo Repubi.; Prog. Comm., A.A.U.W.; Home Econs. Coun., Cornell Univ. Bd. of Trustees, Hampton Inst. and Sibly Hosp.; Bd. of Trustees, Palmer Inst.; Mem., Natl. Bd., Y.W.C.A. Mem.: A.A.A.S., Fellow; Am. Home Econs. Assn.; Am. Dietetic Assn.; A.A.U.W.; Sigma Xi; Beta Kappa Chi; Pi Lambda Theta; Omicron Nu; Phi Kappa Phi; Sigma Delta Omicron; Round Table; Delta Sigma Theta; Neighborhood Civic Assn. Author: Nutrition Survey of Liberia, 1948. Contbr. to: Am. Home Econs. Assn. Jour.; Beta Kappa Chi Bull.; Jour. of Negro Edn.; Y.W.C.A. Magazine; The Methodist Woman. Gen. Int.: Received Liberian Award, 1948; Received Hampton Inst. Alumni Award, 1955. Areas of Rsch.: Human Nutrition and Child Development.

KJERSTAD, Conrad Lund (Ph.D.), Prof. Emer. of Philos. and Edn. and Hd. Dept. of Philos., Univ. of N. D., Grand Forks, N. D.

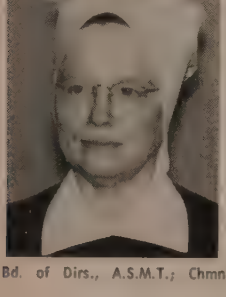
PSYCHOLOGY. b. 1883, Platte, S. D. s. Peter Nelson and Maria (Jonson) K. Edn.: B.A., Univ. of S. D., 1911; M.A., 1916; Ph.D., cum laude, Univ. of Chicago, 1917. m. Alma Nelson of Canton, S. D., 1916. c.: Muriel Adele; Ruth Elaine; Phyllis Clare. Exp.: Dir. of Normal Trng. Dept., Augustana Coll., S. Dak., 1911-15; Fellow, Dept. of Psychol., Univ. of Chicago, Chicago, Ill., 1915-16; Psychol., State Tchrs. Coll., Winona, Minn., 1916-17; Asst. in Psychol., State Normal Schl., Valley City, N. Dak., 1917-18; Hd. Dept. of Edn., State Tchrs. Coll., ibid., 1919-20; Hd. Dept. of Edn. and Psychol., ibid., 1920-29; Dean of the Faculty, ibid., 1924-29; Pres., State Tchrs. Coll., Dickinson, N. Dak., 1929-36; Prof. of Phil. and Edn., Univ. of N. Dak., Grand Forks, N. Dak., 1936; Prof. of Philos. and Edn., and Hd. Dept. Philos., Univ. of N. D., 1938-54; Prof. Emer., ibid., 1954—. Hon. Pos.: Char. Mem., N. Dak. Psych. Assn., 1954; Pres., N.D.P.A., 1958-59. Mem.: Fellow, A.P.A.; Sigma Xi; A.A.A.S.; P.D.K.; A.A.U.P.; Am. Phil. Assn. Author: Monographs: Learning Curves for Memory, Psychol. Rev. Co. War Record: U. S. Army, 1918. Gen. Int.: Directed Incorp. of N.D.P.A. in N. Dak.; Directed Organ. of Tri-St., Nebr., S. Dak., N. Dak. Psychol. Assn.

KLANFER, Karl (Mr.), Consulting Chemist, Swampscott, Mass. Home Add.: 38 Stanley Rd., Swampscott, Mass. ORGANIC



CHEMISTRY. b. Vienna, Austria, Oct. 10, 1904. s. Saul and Cecilia (Horn) K. Edn.: Inst. of Tech., Vienna, 1927. m. Herta Sheffer, 1956. c.: John. Exp.: Chief-Chemist, Wiener Led. Industrie, Vienna, 1927-35; Super Intene, E. Traub Co., Prague, 1935-39; Res. Chemist, Beardmore Co., Acton, Ont., Can., 1940-46; Dir., Res. Dir., Cortume Carioca, Rio de Janeiro, 1946-50; Dir. Res. Dev., A. R. Clarke Co., Toronto, Can., 1950-56; Tech. Dir., A. C. Lawrence Leather Co., Peabody, Mass., 1956-60; Cons. Chemist, Swampscott, Mass., 1961—. Mem.: Am. Chem. Soc.; Fellow, Chem. Inst. Can.; Chem. Soc. of Great Britain; Am. Leather Chem. Assn.; Fellow, A.A.A.S. Contbr. to: Jour. Am. Leather Chem. Assn.; Jour. Soc. Leather Chem.; Microchimica Acta; Microchemie; Collegium; Z. Analyt. Chemie; Leather Manufactur; Leather and Shoes; Kolloid Zeitschrift; Kolloid Chemische Beihette. Areas of Rsch.: Coworker Prof. Fritz Feigl; Chem. and Tech. of Leather.

KLAPHEKE, Mary Antonia, (Sister), S.C.N., Lab. Supvr., St. Joseph Infirmary, 735 Eastern Pkwy., Louisville, Ky. and Assoc. Prof., Chmn., Dept. of Med. Technol., Nazareth Coll., Louisville, Ky. MEDICAL TECHNOLOGY. b. Louisville, Kentucky, Sept. 6, 1910. d. Charles G., Sr. and Carrie (Riester) K. Edn.: B.S., Nazareth Coll., 1937; M.S., Georgetown Univ., Wash., D. C., 1950. Exp.: Lab. Supvr., St. Joseph Hosp., Lexington, Ky., 1933-35; Student, Nazareth Coll., Louisville, Ky., 1935-36; Asst. Supvr., St. Joseph Infirmary, Louisville, Ky., 1936-37; Lab. Supvr., St. Joseph Hosp., Lexington, Ky., 1937-47; Lab. Supvr., Georgetown Univ., Hosp., Wash., D. C., 1947-50; Lab. Supvr., St. Joseph Infirmary, 1950—; Assoc. Prof. and Chmn., Dept. of Med. Technol., Nazareth Coll., 1962—. Hon. Pos.:



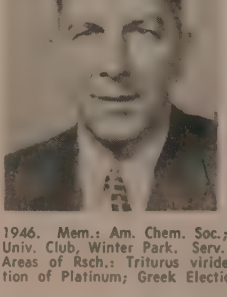
Bd. of Dirs., A.S.M.T.; Chmn., Edn. Comm., A.S.M.T.; Chmn., Med. Tech. Comm., Catholic Hospital Assn.; Chmn. of the Schools Comm., Medical Technology, C.H.A. Mem.: Louisville Soc. of Med. Tech.; Ky. Sta. Soc. of Med. Technol.; Am. Soc. of Med. Technol.; Am. Assn. for Adv. of Sci.; Catholic Hosp. Assn.; Am. Assn. of Blood Banks. Contbr. to: Am. Jour. of Med. Tech.; Hosp. Progress; Diseases of the Chest; Bull. Ky. Sta. Soc. of Med. Technols.; Bull., Georgetown Univ. Med. Ctr.

KLAUS, Elmer Erwin (Ph.D.), Assoc. Prof., Pa. State Univ., University Park, Pa. Home Add.: 120 E. Hamilton Ave., State College, Pa. CHEMICAL ENGINEERING (PETROLEUM CHEMISTRY). b. Neffsville, Pa., Apr. 19, 1921. s. Elmer Ernest and Esther (Graver) K. Edn.: B.S., Franklin and Marshall Coll., 1943; M.S., Pa. St. Univ., 1946; Ph.D., ibid., 1952. m. Jean Hartswick, Sept. 22, 1945. c.: Dennis Richard; Diane Gail. Exp.: Rsch. Asst., Pa. State Univ., 1943-47; Instr., ibid., 1947-52; Asst. Prof., ibid., 1952-56; Assoc. Prof., ibid., 1956—. Mem.: A.C.S.; Am. Soc. of Lubrication Engrs.; Sigma Xi; Alpha Chi Sigma; Sigma Pi Sigma; Phi Lambda Upsilon. Contbr. to: Lubrication Engrng.; A.S.T.M. Bull.; A.S.L.E. Trans.; Chem. and Engrng. Data. Areas of Rsch.: Lubrication, Viscometry, Liquid Phase Oxidation, Petroleum Refining, High Temperature Behavior of Fluids.

KLEIGER, Barnard (M.D.), Orthopaedic Surg., Hosp. for Joint Diseases, 1150 Fifth Ave., New York, N. Y. Home Add.: 21 Forster Ave., Mount Vernon, N. Y. ORTHOPAEDIC SURGERY. b. Brooklyn, N. Y., Nov. 21, 1911. s. Jacob and Rebecca (Sobel) K. Edn.: B.S., Univ. of Mich., 1933; M.D., ibid., 1936. m. Estelle Fox, Dec. 10, 1939. c.: Miriam Louise; Richard Allen. Exp.: Attending Orthopaedic Surg., V. A. Hosp., Brooklyn, N. Y., 1950-59; Adjunct Orthopaedic Surg., Hosp. for Joint Diseases, New York, N. Y., 1947-51; Assoc. Orthopaedic Surg., ibid., 1951-57; Attending Orthopaedic Surg., ibid., 1957—. Mem.: Am. Acad. of Orthopaedic Surg.; Am. Coll. of Surg.; N. Y. Acad. of Med.; A.A.A.S.; N. Y. Co. Med. Soc.; Am. Med. Assn.; International. Soc. of Orthopaedic Surgery and Traumatology, 1962. Contbr. to: Jour. of Bone and Joint Surg.; N. Y. State Jour. of Med.; Bull. of Hosp. for Joint Diseases, Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Musculo-Skeletal Diseases of Childhood, Particularly Congenital Deformities of the Lower Extremities, Ankle Injuries.

KLEIN, John Sharpless (Ph.D.), Assoc. Prof. and Chmn., Dept. of Maths., Wilson Coll., Chambersburg, Pa. Home Add.: Wilson Coll., Chambersburg, Pa. APPLIED MATHEMATICS—INTEGRAL TRANSFORMS. b. Ossining, N. Y., Sept. 9, 1922. s. Edwin B. and Katharine S. (Sharpless) K. Edn.: B.S., Haverford Coll., 1943; S.M., Mass. Inst. of Tech., 1949; Ph.D., Univ. of Mich., 1959. Exp.: Asst. Prof., Univ. of R. I., Kingston, R. I., 1956-58; Assoc. Prof., Lafayette Coll., Easton, Pa., 1959-60; Assoc. Prof., Wilson Coll., 1960—. Mem.: Am. Mathl. Soc.; Math. Assn. of Am.; Assn. for Computing Machinery; Sigma Xi. Contbr. to: Jour. of Am. Soc. of Mech. Engrs. Serv. Rec.: U. S. Naval Reserve, 1944-45. Areas of Rsch.: Hankel Transformers.

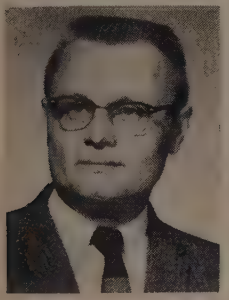
KLEINHANS, Robert B(urton) (Mr.), Instr., Chem. and Biol., A. L. Johnson Regional H. S., Clark, N. J. Home Add.: 1021 Kenyon Ave., Plainfield, N. J. BIOLOGY, GENERAL CHEMISTRY. b. Reynoldsville, Pa., Nov. 22, 1907. s. Louis D. and Mary Jane (Copping) K. Edn.: A.B., Western Reserve Univ., 1931; M.A., ibid., 1933; M.A., Univ. of Fla., 1947; Rutgers Univ., 1958-59; Pratt Inst., 1960. m. May B. Hummer, July 30, 1937. c.: Theda Mae; Roberta R.; Beverly J.; Ellen C. Exp.: Hd. Biol. Dept., Athens Coll., Greece, 1934-36; Dir., Natl. Sci. Museums, Rollins Coll., 1946-48; Biology, Xavier Univ., Cincinnati, Ohio, 1948-52; Chem., A. L. Johnson Regional H. S., 1958—; Hd., Dept. of Sci., N. Plainfield H. S., 1957-58; Chem. Res. Internatl. Nickel, Ltd., 1958; Exec. Secy., AMFOGE, Crete, Greece, 1946. Mem.: Am. Chem. Soc.; Natl. Sci. Tchrs. Assn.; A.A.A.S.; Univ. Club, Winter Park. Serv. Rec.: U.S.N.R., U.S.N.A., 1941-46. Areas of Rsch.: Triturus viridescens; Buprestidae; Chem. deposition of Platinum; Greek Elections, Listed in: Am. Men of Sci.;



Who's Who in Midwest; Who Knows—and What. Author: "Quant. Lab. Experiments"; Weekly article: "Science Notebook."

KLEIN, Rachel Clymore (Mrs.), Secondary Tchr., Riverside, Ill. Home Add.: 416 Shenstone Rd., Riverside, Ill. ZOOLOGY. b. Vienna, Ill. d. H. I. and Atha (Hight) Clymore. Edn.: B.S., Sou. Ill. Univ., 1949; B.A., ibid., 1949; M.S., Univ. of Ill., 1953. m. Albert E. Klein, Jan. 21, 1956. c: Ivan William. Exp.: Secd. Tchr., Danville, Ill.; Riverside, Ill., 1942—. Mem.: A.A.A.S.; Ill. State Acad. of Sci.

KLEINKNECHT, Raymond Wilbur (Mr.), Biol. Instr., Covina H. Schl., Covina, Calif. Home Add.: 826 N. Barranca, Covina, Calif. MARINE ZOOLOGY. b. Hillside, N. J., June 4, 1925. s. Henry and Anna Bell (Vincent) K. Edn.: A.B., Occidental Coll., 1952; M.S., Univ. of So. Calif., 1955. m. Grace Aitkenhead, May 11, 1946. Exp.: Instr., Upland Jr. H. Schl., Upland, Calif., 1955-57; Instr., Covina H. Schl., 1957—. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Assn. of Biol. Tchrs.; Calif., Sci. Tchrs. Assn.; Am. Museum of Natl. History; Alpha Gamma Sigma; Vet. of Foreign Wars. Contbr. to: Yosemite Nature Notes. Serv. Rec.: U. S. Navy, 1942-46. Gen. Int.: Allan Hancock Found. Fellow, 1953-55. Areas of Rsch.: Photometric Measurement of Protozoan Growth Rates; Ecology of Marine Molluscs.



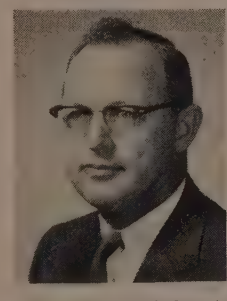
KLEINMAN, David Tsevi, (Ph.D.), Assoc. Prof. of Finance, Fordham Univ., N. Y. 58, N. Y. Home Add.: 319 W. 105th St., Apt. 3C, N. Y. 25, N. Y. FINANCE; INDUSTRIAL MANAGEMENT; ECONOMICS. b. Tel-Aviv, Israel, Sept. 3, 1927. s. M. Nathan and Schifra (Schwartzberg) K. Edn.: B.S.C.E., Purdue Univ., 1950; M.B.A., Ind. Univ., 1951; Ph.D., Ohio State Univ., 1953. Exp.: Gen. Mgr., W. Ralston & Co., Old Bridge, N. J., 1953-57; Gen. Mgr., Am. Tuck Corp., New Rochelle, N. Y., 1953-57; Gen. Mgr., Technical Tape Corp., N. Y., N. Y., 1953-57; Asst. to Pres., ibid., 1953-57; Instr., Management, N. Y. Univ., 1957-58; Assoc. Prof., Fordham Univ., 1960—; Lectr., Finance, Columbia Univ., 1960-62; Bus. and Financial Consultant, N. Y., N. Y., 1957—; Visiting Scholar, Harvard Univ., 1955-56. Mem.: Am. Econ. Assn.; Am. Finance Assn.; Am. Assn. Adv. of Sci.; Am. Polit. Sci. Assn.; Am. Sociol. Assn.; Beta Gamma Sigma; Chi Epsilon; Phi Eta Sigma. Author: Corporate Growth Through Acquisitions, 1959; Thoughts Regarding Organization Theory, 1958. Gen. Int.: Univ. Scholar, Ohio St. Univ., 1951-53; Social Sci. Rsch. Coun. Post-Doct. Fellow, Harvard Univ., 1955-56. Areas of Rsch.: Corporate Growth Through Acquisitions; Methods of Financing Corporate Acquisition Programs; Financing Small Businesses; Management and Organization Problems of Small Businesses.

KLER, Joseph Henry (M.D.), Physician, 151 Livingston Ave., New Brunswick, N. J. Home Add.: Cedarcrest, Bound Brook, Ill., Oct. 15, 1903. s. James and Marie Francis (..) K. Edn.: A.B., Univ. of Wis., 1925; M.D., Univ. of Pa., 1928. m. Elizabeth Vaughan, 1928. c.: Marjorie Hale; Mary Heisinger. Exp.: Dir., Student Health Dept., Rutgers Univ., 1929-41; Assoc. Prof. Physiology, ibid., 1929-41; Chf., Dept. Ophth. and Oto., St. Peters Hosp., ibid., 1940—; Chf., Dept. Ophth. and Oto., Middlesex Hosp., ibid., 1940-59. Hon. Pos.: Pres., N. J. State Comm. for Blind; Vice-Pres., and Mem. Bd. of Mgrs., N. B. Savings Inst.; Internatl. Relations Rotary Club, Chmn.; Pres., Board of Trustees, Churchill Fund for Blind; Consulting Ophth. State Home for Boys, Jamesburg, N. J. Mem.: Am. Coll. Surg.; A.A.O.O.; N.J.A. Ophth.; N. J. Soc. of Surg.; Pan-Am. Assn. of Oph.; Am. Med. Soc. of Vienna; A.M.A.; A.A.A.S.; N.S.P.B.; Am. Found. for Blind; Am. Hearing Soc; Am. Pewter Club; A.T.A. Sec.; Phi Chi; Lions Club. Author: History of the Presbyterian Church of Bound Brook, 1962. Contbr. to: Jour. Am. Med. Assn.; Jour., Lancet; Archives of Otolaryngology; Trans. of the Acad. of Oph. and Oto.; E.E.N.T. Monthly; Jour. of the Med. Soc. of N. J.; Proceedings of the Am. Student Health Assn.; Proceedings of the Pa.-N. J. Sec. Student Health Assn.; Rotarian. Serv. Rec.: U. S. Navy, 1928-30. Areas of Rsch.: Studies in the Cause and Prevention of the Common Cold; Cancer Control; Sight Conservation and Prevention of Blindness.

KLINE, Nathan Schellenberg (M.D.), Dir. of Rsch., Rockland St. Hosp., Orangeburg, N. Y. Home Add.: 1155 Sussex Rd., Teaneck, N. J. PSYCHIATRY. b. Phila., Pa., Mar. 22, 1916. s. Ignatz and Florence (Schellenberg) K. Edn.: B.A., Swarthmore Coll., 1938; M.D., N. Y. Univ. of Med., 1943; M.A., Clark Univ., 1951. m. Margot Hess, June 29, 1942. c.: Marna Ellen. Exp.: Interne and Res., St. Elizabeths Hosp., Wash., D. C., 1943-44; Reserve Officer, U.S.P.H.S., 1944-46; Part-time Child Psychiat., Union Co. Mental Hygiene Soc. Clinic, Plainfield, N. J., 1946-47; Assoc., Columbia Greystone, N. Y., 1947-50; Assoc., N. Y. St. Brain Rsch. Proj., N. Y., 1948-50; Dir. of Rsch., Worcester St. Hosp., Worcester, Mass., 1950-52; Rsch. Assoc., Dept. of Psychiatry, Columbia Univ., N. Y., 1952-55; Rsch. Assoc., ibid., 1955-57; Asst. Clin. Prof., ibid., 1957—; Dir. of Rsch., Rockland St. Hosp., 1952—; Visiting Lectr., Schl. of Edn., Rutgers Univ., 1955-57. Hon. Pos.: Mem. of Clin. Advry. Panel, Natl. Inst. of Mental Health; Temp. Advry., Study Group on Schizophrenic World Health Organization; Mem. of the Med. Adv. Coun., and Mem., Bd. of Trustees, Medico; Editor, Psychiatry in General Practice; Advisory Editorial Bd. Psychopharmacologia; Internatl. Jour. of Social Psychiatry, Advisory Editorial Bd.; Pres., Internatl. Comm. Against Mental Illness, 1961—; Charter, Fellow Am. Coll. of Neuropsychopharmacol., 1961—; Chmn. of Rsch. Comm., Am. Psychiatric Assn., Fellow, 1947, 1956-57. Mem.: Natl. Comm. Against Ment. Illness; The Royal Soc. of Med., Engl., Fel.; Manhattan Soc. for Mental Health; Am. Chem. Soc.; Am. Med. Assn.; Soc. for Exptl. Biol. and Med.; Soc. for Biol. Psychiatry; N. Y. Acad. of Scis., Fellow; Am. Philos. Assn.; N. Y. Acad. of Med., Fellow; Sigma Xi; Am. Coll. of Phys., Fellow; Am. Assn. for the Adv. of Sci.; Assn. for Rsch. in Nervous and Mental Disease; Am. Psychol. Assn.; Am. Psychiatric Assn.; Am. Therapeutic Soc.; Societe Moreau de Tours, France; Royal Medico-Psychol. Assn.; Internatl. Comm. Against Mental Illness. Contbr. to: Editor, Internatl. Jour. of Social Psychiatry; Contbrng. Editor, Excerpta Medica. Serv. Rec.: U. S. Pub. Health Serv., 1944-46. Gen. Int.: Sanctae Marie Seremissimus Militaris Ordo.; Grande Officeur Legion d'Honneur et Merite, Republique d'Haiti, 1959; Commandeur Order Toussaint-Louverture, Republique d'Haiti, 1959; Albert Lasker Award of the Am. Pub. Health Assn., Outstanding Achievements in the Develop. of the Uses of Rauwolfia, 1957; Rockland Hosp. Guild, Outstanding Serv. in the Field of Mental Rsch., 1956; Assn. for Improvement of Mental Health, Adolf Meyer Award, 1956; Newspaper Guild of N. Y., Page One Award in Sci., 1956. Areas of Rsch.: Psychopharmaceuticals, Research Design, Interdisciplinary Studies, International Mental Health, Psychiatric Treatment in the Underdeveloped Countries.

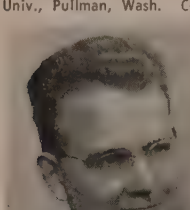
KLINE, Charles Howard (Ph.D.), Pres., Charles H. Kline & Co., Inc., 1440, Route 23, Pumpton Plains, N. J. Home Add.: Smoke Rise, Butler, N. J. CHEMISTRY. b. Pittsfield, Mass., Oct. 22, 1918. s. C. Howard and Elizabeth L. (Tillett) K. Edn.: A.B., Princeton Univ., 1940; Ph.D., ibid., 1944. m. Emily I. Porter, 1947. c.: Philip; John; Caroline; Thomas. Exp.: Mgr., Chem. Div., Climax Molybdenum Co., N. Y., N. Y., 1952-56; Sci. Dir., Shulton, Inc., Clifton, N. J., 1956-59; Pres., C. H. Kline & Co., Inc., 1959—. Mem.: Am. Chem. Soc.; Soc. of Chem. Industry; Commercial Chem. Develop. Assn.; Am. Inst. of Mining Metallurgical and Petroleum Engrs.; Am. Soc. for Agronomy; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Sigma Xi. Contbr. to: Harvard Bus. Rec.; Advanced Mgmt.; Jour. Am. Chem. Soc.; Jour. of Agricl. and Food Chem.; Indust. and Engrng. Chem.; Chem. and Engrng. News; Jour. of Chem. Physics; Jour. of Chem. Edn.; Agricl. Chems.; Jour. Soil and Water Conservation. Serv. Rec.: U. S. Naval Res., 1943-46. Areas of Rsch.: Inorganic Chemicals; Catalysts; Pigments; Mineral Nutrition of Crops and Animals; Agricultural Chemicals; Synthetic Resins and Latices; Commercial Development and Product Planning.

KLINGMAN, Glenn Charles (Ph.D.), Prof. of Agronomy, N. C. St. Coll., Raleigh, N. C. Home Add.: 1013 Gardner, Raleigh, N. C. AGRONOMY (WEED CONTROL). b. Jan. 7, 1915. s. William and Mabel (Eickman) K. Edn.: B.Sc., Univ. of Nebr., 1939; M.Sc., Kansas State College, 1941; Ph.D., Rutgers Univ., 1950. m. C. Loree Ross, June 3, 1939. c.: Charles Ross; Glenda Lee; Richard Lynn; Nila Ann. Exp.: Instr., Univ. of Neb., 1940-46; Prof., Tchng. and Rsch. in Agron., N. C. St. Coll., Raleigh, N. C., 1947-53, Prof., 1953—. Hon. Pos.: Chmn., Student Sections of Am. Soc. of Agron.; Chmn., Resident Tchng. Sec., ibid., Vice-Chmn. of Agronomic Edn. Sect., ibid.; etc. Mem.: Sigma Xi; Gamma Sigma Delta; Alpha Zeta; A.A.A.S.; Am. Soc. Agron.; Southern Weed Conf. Author: Crop Production in the South, 1957; Weed Control: As a Science, 1961. Co-Author: Principles of Weed Control, 1951. Contbr. to: Botanical Gazette; Agron. Jour.; Southern Weed Conf. Proc.; Weeds; Sci. War Record: U. S. Navy, 1943-46; Released as Lt.(sr.g.). Gen. Int.: Established Volatility of Herbicide Formulations; Established Use of Fertilizer Salts for Use as Herbicide; Developed Use of Soil Incorporation Techniques for Improved Weed Control. Areas of Rsch.: Weed Control—Corn, Small Grains, Tobacco, Wild Garlic, Bermuda Grass.



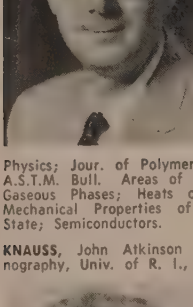
KLIPHARDT, Raymond A. (Mr.), Assoc. Prof. of Engrng. Scis., Northwestern Univ., Evanston, Ill. Home Add.: 6619 Palma Lane, Morton Grove, Ill. GEOMETRY, MECHANICS. b. Chicago, Ill., Mar. 18, 1917. s. Adolph Lewis and Hortense Marietta (Brandt) K. Edn.: B.S., Ill. Inst. of Tech., 1938; M.S., ibid., 1948. m. Rhoda Joan Anderson, May 5, 1945. c.: Janis; Judith; Jill; Joan. Exp.: Instr., North Park Coll., Chicago, Ill., 1938-43; Asst., Ill. Inst. of Tech., 1943; Ensign, U. S. Naval Reserve, 1943-44; Asst. Prof., Northwestern Univ., 1945-51; Assoc. Prof., ibid., 1951—. Hon. Pos.: Bd. of Edn., Golf Pub. Schl. and Niles Township H. S. Mem.: A.A.U.P.; A.S.E.E.; A.A.A.S.; Tau Beta Pi; Pi Mu Epsilon; Sigma Xi; Scarab. Author: Study Guide for Descriptive Geometry, 1955; Analytical Graphics, 1957; Introduction to College Mathematics, 1959. Contbr. to: Jour. of Engrng. Edn.; Civil Engrng. Bull.; Jour. of Engrng. Drawing. Serv. Rec.: U. S. Naval Reserve, 1944-45. Areas of Rsch.: Three-Dimensional Analysis, Finite Geometry, Nomography.

KLOPFER, F. Dudley (Ph.D.), Assoc. Prof. of Psychol., Wash. St. Univ., Pullman, Wash. COMPARATIVE PSYCHOLOGY. b. Seattle, Wash., Apr. 11, 1921. s. Florenz A. and Francel (Holcomb) K. Edn.: B.S., Univ. of Mich., 1946; M.S., ibid., 1947; Ph.D., ibid., 1952. m. Barbara Jean McQuary, June 26, 1945. Exp.: Tchng. Fellow in Psychol., Univ. of Mich., 1946-48; Instr. in Psychol., Wash. St. Univ., 1948-52; Asst. Prof. of Psychol., ibid., 1952-58; Assoc. Prof. of Psychol., ibid., 1958—. Mem.: Am. Psychol. Assn.; Western Psychol. Assn.; State Psychol. Assn. of Wash.; Ecol. Soc. Am.; Psi Chi; Sigma Xi. Contbr. to: Am. Jour. Psychol.; Jour. Comparative and Physiol. Psychol.; Jour. Psychol.; etc. Special Int.: Methodology for Interspecific Comparisons; Endocrinological Influences on Animal Behavior; Motivation and Animal Neuroses.



KLUTE, Charles Henry (Ph.D.), Consultant, Diamond Ordnance Fuze Labs., U. S. Dept. of the Army, Wash. 25, D. C. Home Add.: 4545 Connecticut Ave., N.W., Wash. 8, D. C. PHYSICAL CHEMISTRY. b. San Francisco, Calif., Aug. 18, 1917. s. Henry L. and Hilda A. (Gebhardt) K. Edn.: B.S., Univ. of Calif., 1939; Ph.D., Univ. of Rochester, 1942. m. Desiree Davis, Aug. 29, 1953. c.: Daphne E. Exp.: Chemist, Shell Develop. Co., Emeryville, Calif., 1942-52; Rsch. Supvr., ibid., 1952-56; Consult., Diamond Ordnance Fuze Labs., 1956—. Hon. Pos.: Mem., Conf. on Electrical Insulation of the Natl. Rsch. Coun. Mem.: Am. Chem. Soc.; Am. Physical Soc.; A.A.A.S.; N. Y. Acad. of Sci.; The Philosophical Soc. of Wash.; Kappa Alpha; Wash. Acad. of Sci.; Sigma Xi. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Applied Physics; Jour. of Polymer Sci.; Jour. of Applied Polymer Sci.; A.S.T.M. Bull. Areas of Rsch.: Reaction Kinetics in Liquid and Gaseous Phases; Heats of Reaction; Electrical, Magnetic and Mechanical Properties of Nonmetallic Materials in the Solid State; Semiconductors.

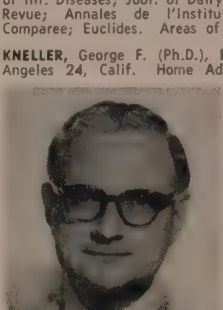
KNAUSS, John Atkinson (Ph.D.), Dean, Grad. Schl. of Oceanography, Univ. of R. I., Kingston, R. I. Home Add.: Apt. E-1 Faculty Apts., Univ. of R. I., Kingston, R. I. PHYSICAL OCEANOGRAPHY. b. Detroit, Mich., Sept. 1, 1925. s. Karl and Lois (Atkinson) K. Edn.: B.S., Mass. Inst. of Technol., 1946; M.A., Univ. of Mich., 1949; Ph.D., Scripps Inst. of Oceanography, Univ. of Calif., 1959. m. Marilyn Matson, Sept. 6, 1954. c.: Karl. Exp.: Oceanographer, Office of Naval Rsch., Washington, D. C., 1949-51; Jr. Rsch. Oceanographer, Scripps Inst. of Oceanography, 1955-59; Assistant Rsch. Oceanographer, ibid., 1959-61; Dean, Prof. of Oceanography, Univ. of R. I., 1962—. Mem.: Am. Geophysical Union; Soc. of Limnology and Oceanography; Oceanographical Soc. of Japan; A.A.A.S.; Sigma Xi. Contbrng. Author: The Sea, 1962. Contbr. to: Jour. of Geophysical Rsch.; Deep Sea Rsch.; Jour. of Marine Rsch.; Nature; Tellus; Sci. Serv. Rec.: U. S. Navy, 1943-46, 1953-54. Areas of Rsch.: Physical Oceanography (Studies of Ocean Circulation and Ocean Currents).



KLOEPFER, H. Warner (Ph.D.), Assoc. Prof., Genetics, Dept. of Anatomy, Tulane Univ., New Orleans, La. Home Add.: 306 Pine St., New Orleans 18, La. HUMAN GENETICS. b. Roseville, Ohio, Feb. 25, 1913. s. John A. and Mayme Grace (Ivett) K. Edn.: B.S., Ohio Univ., 1934; A.B., Muskingum Coll., 1935; M.A., Ohio Univ., 1938; Ph.D., Ohio St. Univ., 1942. m. Ruth McCoy, May 26, 1936. c.: Jean; Karol; Ann; John. Exp.: Prof., Dakota Wesleyan Univ., Mitchell, S. D., 1942-46; Dean, Emporia Coll., Emporia, Kan., 1946-47; Dean, Coll. of the Ozarks, Clarksville, Ark., 1947-52; Assoc. Prof., Tulane Univ., 1952—. Hon. Pos.: Treas., Am. Soc. of Human Genetics, 1957-60; Bd. Mem., Am. Soc. of Human Genetics, 1960—; Secy., Problem Com. on Neurogenetics of the World Fed. of Neurology, 1961-64. Mem.: Sigma Xi; Genetics Soc.; Am. Assn. for the Adv. of Sci. Contbr. to: Am. Jour. of Human Genetics; Annals of Human Genetics; Acta Genetica et Statistica Medica; Eugenics Quarterly; Jour. Internatl. Coll. of Surgeons; Acta Genetica Medicae et Genellologicae; Am. Jour. of Immuniology. Areas of Rsch.: Human Clinical Genetics.

KNAYSI, Georges Abdallah (Ph.D.), Prof. of Bacteriol., Stocking Hall, Cornell Univ., Ithaca, N. Y. BACTERIOLOGY, PARTICULARLY BACTERIAL CYTOLOGY. b. Hasbaya, Lebanon, June 21, 1898. s. Abdallah and Saleemy (Mattar) K. Edn.: B.S., Cornell, 1924; M.S., ibid., 1925; Ph.D., ibid., 1929. Hon. Deg.: D.Sc., St. Bonaventure Univ., 1952. m. Adele Maosha, Apr. 23, 1939. c.: Georges, Jr.; Edmund Joseph; Fareed Anthony. Exp.: Instr. in Bacteriol., Cornell Univ., Ithaca, N. Y., 1926-31; Asst. Prof., ibid., 1931-42; Assoc. Prof., ibid., 1942-44; Prof., ibid., 1944—; Fulbright Lectr., Faculty of Med., Univ. of Paris, 1953; Consultant, U. S. Dept. of Agri., Wash., D. C., 1960. Mem.: A.A.A.S.; Soc. of Am. Bacteriol.; Am. Dairy Sci. Assn.; Societe Francaise de Microbiologie; Societe de Pathologie Comparee; Sigma Xi; Phi Kappa Phi. Author: Elements of Bacterial Cytol., 1944-51. Contbr. to: Jour. of Bacteriol.; Sci.; Am. Rev. of Tuberculosis; Jour. of Inf. Diseases; Jour. of Dairy Sci.; Bacteriol. Rev.; The Botanical Revue; Annales de l'Institut Pasteur; Revue de Pathologie Comparee; Euclides. Areas of Rsch.: Cytol. of Microorganisms.

KNELLER, George F. (Ph.D.), Prof. of Edn., Univ. of Calif., Los Angeles 24, Calif. Home Add.: 372 Hilgard, Los Angeles 24, Calif. PHILOSOPHY OF SCIENCE. b. Oldham, England, Aug. 30, 1908. s. John William and Margaret Ann (Truslove) K. Edn.: B.A., Clark Univ., 1929; M.A., London Univ., 1953; Ph.D., Yale Univ., 1940. Exp.: Asst. Prof., Yale Univ., 1945-50; Visit. Prof., London Univ., 1950-53; Prof. of Edn., Calif. Univ., 1953—. Mem.: Phil. of Edn. Soc.; Am. Geographic Soc.; Comp. Edn. Soc.; A.A.A.S.; Masonic Order. Author: Educational Philosophy of National Socialism, 1941; Higher Learning in Britain, 1954; Existentialism and Education, 1958. Contbr. to: Harvard Edn. Rev.; Edn. Forum; Schl. and Soc.; Jour. of Higher Edn.; Schl. Rev.; Edn. Theory; Bd. of Editors; Encyclopedia Britannica. Serv. Rec.: U. S. Air Force, Major. Areas of Rsch.: Phil. of Sci.; Social Found. of Edn.; Comparative Edn.; Philosophy of Edn.



KNEPLER, Abraham Eleazar (Ph.D.), Dir., Human Relations Center at the Univ. of Bridgeport; Assoc. Prof. of Edn., Social Sci. Coordinator, Univ. of Bridgeport, Bridgeport 4, Conn. Home Add.: 5678 Main St., Trumbull, Conn. SOCIOLOGY, INTERGROUP RELATIONS, MARRIAGE AND FAMILY. b. Bridgeport, Conn., July 6, 1911. s. George and Sarah L. (Abramowitz) K. Edn.: B.S., Rutgers Univ., 1932; Ph.D., Yale Grad. Schl., 1939. m. Bertha R. Klahr, Oct. 26, 1947. c.: Michael K.; David R. Exp.: Instr., Social Problems, Evening H. S., Bridgeport, Conn., 1934-37; Instr., Sociol. and Eng., Middlesex Jr. Coll., Perth Amboy, N. J., 1939-40; Tchr., Eng. and Latin, Upper Freehold Twp. H. S., Allentown, N. J., 1940-43; Hd. Tchr., The Home Schl., Plainfield, N. J., 1943-44; Rsch. Asst. Rsch. Specialist, Am. Council on Edn., Comm. on Motion Pictures, New Haven, Conn., 1944-47; Lectr. in Soc. and Psych., Jr. Coll. of Conn., 1945-47; Asst. Prof. of Soc., Assoc. Prof. of Soc., Univ. of Bridgeport, 1947-57; Adjunct Assoc. Prof., ibid., 1957-61; Prog. Analyst, Natl. Comm. Relations, Advisory Council, N.Y.C., 1957-58; Chmn., Sociol. Dept., Univ. of Hartford, 1958-61; Marriage Counselor, Counseling Center of Conn., Bridgeport, Conn., 1958—; Dir., Human Relations Center, Univ. of Bridgeport, and Assoc. Prof. of Edn., ibid., 1961—. Hon. Pos.: Mayor's Comm. on Human Rights, Bridgeport, Conn., 1958—; Bd. Mem., Bridgeport Inter-Group Coun.; Bd. Mem., Greater Bridgeport Mental Health Assn.; Chmn., Human Relations Comm., Conn. Jewish Comm. Relations Council; Consultant in Family Life, Parent-Tchr. Assn. of Conn. Mem.: Am. Sociol. Assn.; Eastern Sociol. Soc.; A.A.A.S.; Am. Acad. of Pol. and Soc. Sci.; Am. Soc. of Group Psychotherapy and Psychodrama; Exec. Coun., Natl. Assn. of Intergroup Relations Officials; Natl. Council on Family Relations; Am. Assn. of Marriage Counselors; Phi Delta Kappa; Pi Gamma Mu. Contbr. to: Group Psychotherapy; Marriage and Family Living; Jour. of Edn. Sociol.

Schl. and Soc.; Adult Edn.; Jour. of Higher Edn.; Tchr. Edn. Quart. Areas of Rsch.: Intergroup Relations; Marriage and Family; Psychodrama, Sociodrama, Role Playing.

KNERR, Henry William (Ph.D.), Prof. of Phys. and Assoc. Dean of The Grad. Schl., Pa. State Univ., State College, Pa. Home Add.: 219 Adams Ave., State College, Pa. PHYSICS. b. Fisher, Ill., Dec. 6, 1905. s. William Smith and Mathilda (Heyer) K. Edn.: A.B., Univ. of Ill., 1928; A.M., Harvard Univ., 1935; Ph.D., Univ. of Mich., 1937. m. Catherine Margaret Conner, June 17, 1929. c.: Elizabeth Anne; Anthony David. Exp.: Rsch. Asst., G. E. Rsch. Lab., Schenectady, N. Y., 1930; Instr., Math., Ga. Inst. of Tech., 1930-33; Instr., Phys., Pa. State Univ., 1936-41; Asst. Prof., ibid., 1941-42; Assoc. Prof., ibid., 1942-53; Prof. of Phys. and Assoc. Dean of Grad. Schl., ibid., 1953—. Mem.: Fellow, A.A.A.S.; Am. Phys. Soc.; Am. Assn. of Phys. Tchrs.; Natl. Sci. Tchrs. Assn.; Natl. Edn. Assn.; Lambda Chi Alpha; Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon; Phi Eta Sigma. Contbr. to: Phys. Rev. Areas of Rsch.: Microwave Transmission; Sci. Tchng.

KNEVEL, Adelbert Michael (Ph.D.), Assoc. Prof., Purdue Univ., Lafayette, Ind. Home Add.: 138 Ivy Hill Rd., W. Lafayette, Ind. MEDICINAL CHEMISTRY. b. St. Joseph, Minn., Oct. 20, 1922. s. Henry and Angeline (Terwey) K. Edn.: B.S., N. Dak. St. Univ., 1952; M.S., ibid., 1953; Ph.D., Purdue Univ., 1957. m. Lillian Zent, June 19, 1950. c.: Kenneth; Laura; Christi; Robert. Exp.: Instr., N. Dak. St. Univ., 1953-54; Instr., Purdue Univ., 1954-57; Asst. Prof., ibid., 1957-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Chem. Soc.; Am. Pharm. Assn.; A.A.A.S.; Phi Lambda Upsilon; Rho Chi; Phi Kappa Phi; Sigma Xi. Contbr. to: Jour. of Organic Chem.; Jour. of Pharm. Sci.; Proc. of N. Dak. Acad. of Sci. Serv. Rec.: U. S. Navy, 1942-48. Areas of Rsch.: Medicinal Chemistry; Synthesis and "in vitro" Testing of Alkylating Agents.

KNIFFEN, Donald Avery (Mr.), Rsch. Physicist, N.A.S.A. Goddard Space Flight Ctr., Greenbelt, Md. Home Add.: 2006 Peabody St., W. Hyattsville, Md. COSMIC RAY PHYSICS. b. Kalamazoo, Mich., Apr. 27, 1933. s. Fred Bowerman and Virginia (Arp) K. Edn.: B.S., La. State Univ., 1959; A.M., Wash. Univ., St. Louis, 1960. m. Kay Nesom, June 14, 1952. c.: Karyol Kay; Donald Avery, Jr. Exp.: Physicist, Goddard Space Flight Ctr., 1960—. Mem.: Am. Phys. Soc.; Am. Geophys. Union; Phi Kappa Phi; Omicron Delta Kappa; Phi Gamma Delta. Contbr. to: Phys. Rev. Letters; Jour. of Geophys. Rsch.; Il Nuovo Cimento. Serv. Rec.: U. S. Navy, 1952-56. Areas of Rsch.: Van Allen Belt Radiation and Solar Cosmic Rays; Nuclear Emulsion Techniques, Galatic Cosmic Rays.

KNIGHT, Clifford Burnham, Jr. (Ph.D.), Assoc. Prof., E. Car. Coll., Greenville, N. C. Home Add.: 604 Oak St., Greenville, N. C. INVERTEBRATE ECOLOGY. b. Rockville, Conn., Jan. 6, 1926. s. Clifford B., Sr. and Daphene E. (Keeney) K. Edn.: B.A., Univ. of Conn., 1950; M.A., Univ. of Conn., 1952; Ph.D., Duke Univ., 1957. m. Margaret R. Hamlett, Jan. 1, 1956. c.: Kimberly Kay. Exp.: Asst. Prof., E. Car. Coll., Greenville, N. C., 1956-61; Assoc. Prof., ibid., 1961—. Mem.: Ecol. Soc. of Am.; N. Car. Acad. of Sci.; Sigma Xi. Contbr. to: Jour. of Elisha Mitchell Soc.; Sci; Ecol. Serv. Rec.: U. S. Army, 1943-46; U. S. Army Reserve, 1949—. Areas of Rsch.: Ecology of Freshwater Gastropoda; Ecology of Collembola in Old Field Stands of North Carolina; Microstratification of Collembola in Deciduous Woodland.

KNIGHT, Odon Stahlhut (Ph.D.), Chf. Engr., S. B. Penick and Co., 100 Church St., N.Y.C. Home Add.: 94 Vreeland Ave., Rutherford, N. J. CHEMICAL ENGINEERING. b. Denver, Colo., June 22, 1907. s. Odon Wilkes and Minnie A. (Stahlhut) K. Edn.: B.S., Univ. of Colo., 1928; M.S., ibid., 1932; Ph.D., ibid., 1933; Ch.E., ibid., 1935. m. Lola Dell Johnson on Sept. 18, 1936. c.: Odon George; Velma Elizabeth; James Fred. Exp.: Jr. Engr., Link-Belt Co., Indianapolis, Ind., 1928-29; Instr. in Mechanical Engrng., Univ. of Colo., 1929-35; Rsch. Chemist, Link-Belt Co., Indianapolis, 1935-36; Asst. Prof. of Chem. Engrng., Univ. of Colo., 1936-37; Dir., Chem. Div., J. P. Devine Mfg. Co., Mount Vernon, Ill., 1937-39; Asst. Prof. of Chemical Engrng., Rose Poly. Inst., Terre Haute, Ind., 1939-44; Chem. Engr., Commercial Solvents Corp., Terre Haute, Ind., 1943-51; Administrative Asst. to the Chf. Engr., ibid., 1951-52; Chf. Engr., S. B. Penick & Co., 100 Church St., N.Y.C., 1952—. Hon. Pos.: Chmn., Wabash Valley Sect., Am. Chem. Soc., 1950-51; Chmn., No. Jersey Sect., Am. Inst. of Chem. Engrs., 1958-59. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Am. Soc. for Engrng. Edn.; Sigma Xi; Tau Beta Pi; Alpha Chi Sigma; Theta Xi; Licensed Prof. Engr. Contbr. to: Jour. of A.C.S.; Indusl. and Engrng. Chem.; Trans. of the Am. Inst. of Chem. Engrs.; Chem. Engrng.; Jour. of Chem. Edn. Special Int.: Design of Chem. Process Equipment; Design and Construction of Chem. Plants; Vapor Pressure-Temperature Relationships; Mass Spectrometry; Engrng. Mgmt.

KNIPE, Richard Hubert (Ph.D.), Assoc. Rsch. Scientist, U.S.N.O.T.S., China Lake, Calif. Home Add.: 69 A Rowe, China Lake, Calif. CHEMICAL PHYSICS. b. Salmon, Idaho, Sept. 12, 1927. s. Hubert B. and Zola (Shaw) K. Edn.: B.S., Calif. Inst. of Tech., 1950; Ph.D., Duke Univ., 1954. m. Teresa Herrera, 1957. c.: Krina; Kevin. Exp.: Physicist, U. S. Naval Ordnance Test Sta., China Lake, Calif., 1950—. Mem.: Am. Physical Soc.; Am. Chem. Soc.; Rsch. of Am.; Am. Assn. for the Adv. of Sci.; The Combustion Inst.; Phi Beta Kappa. Contbr. to: The Jour. of Chem. Physics; The Jour. of Physical Chem. Serv. Rec.: U. S. Army, 1946-47. Areas of Rsch.: Electronic Structure of Molecules; Chemical Kinetics of Gas Phase Reactions.

KNISS, Martha Jane (Mrs.), Tchr., Edison Schl., Redondo Beach, Calif. Home Add.: 10388 Keswick Ave., Los Angeles 64, Calif. EDUCATION. b. Monmouth, Ill., May 27, 1920. d. Joseph J. and Blanche (Hurxthal) Glas. Edn.: A.B., Univ. of Southern Calif., 1955. m. Fred R. Kniss, 1939. c.: Michael. Exp.: Tchr., E. W. Ward Schl., Downey, Calif., 1958-60; Tchr., Imperial Schl., Downey, Calif., 1960-61; Tchr., Edison Schl., Redondo Beach, Calif., 1961—. Mem.: Phi Delta Gamma; Alpha Kappa Delta; Calif. Tchrs. Assn.; Pi Lambda Theta; A.A.A.S.

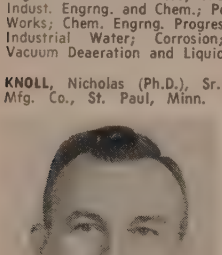
KNOBLAUCH, Arthur Lewis (Ed.D.), Pres., Western Ill. Univ., Macomb, Ill. Home Add.: R.F.D. 1, Macomb, Ill. CHEMISTRY, PHYSICS, BIOLOGY. b. Nov. 17, 1906, Riga, Mich. s. William and Welhelmenia (Kolz) K. Edn.: B.S., Mich. St. Univ., 1929; M.A., Univ. of Mich., 1933; Ed.D., Harvard Univ., 1942; Studied at Western Mich. Univ., 1934 and at Univ. of Calif., 1936. m. Muriel Marguerite Clemes of Blissfield, Mich., Aug. 12, 1929. d. Dr. W. T. and Florence Cook Clemes. c.: Jane Harriett; Nancy Carolyn; Muriel Ann. Exp.: Tchr., Buchanan H. S., Buchanan, Mich., 1929-31; Coach Inter-Schl. Debate, Buchanan H. S., 1929-35; Dir. of Athletics, Buchanan H. S., 1931-35; Prin., Sr. H. S., Buchanan, Mich., 1931-35; Supt. of Schls., Cassopolis, Mich., 1935-39; McGregor Student (Mich. Student Aid Fund), Harvard Univ., 1939-40; Exec. Sec. Conn. State Tchrs. Assn., 1940-41; Ed., Conn. Tchr., 1940-41; Assoc. Prof. of Edn., Univ. of Conn., 1941-43; Prof. Edn. and Dir. of Univ. S. S. and Continuing Edn., ibid., 1943-55; Pres., State Coll., Moorhead, Minn., 1955-58; Pres., Western Ill. Univ., Macomb, Ill., 1958—. Mem.: Pres., Eastern Conn. Coun., B.S.A.; 1954; Pres., Prairie Council, B.S.A., 1960-63; Pres., Macomb Comny. Chest, 1960-62; Pres., Western Foundation, 1958—; Fulbright Lectr. in Edn., St. Trng. Coll. for Tchrs. at Kanbe and Insein, Burma, 1952-53; Pres., Eastern Conn. Schlmens. Club, 1945; Conn. Schlmasters Assn.; Alpha Gamma Rho; Alpha Zeta; Phi Kappa Delta; Phi Delta Kappa; Phi Sigma; Rotary; Mason; M.E.A.; N.E.A.; Schl. Pub. Relations Assn.; Repr. to U. N. from non-governmental Organization, the N.U.E.A., 1954; Consultant, U.S.S.D., on Exchange Persons, 1954; Pres. Conn. Chapt. A.S.P.A., 1946-47, 1949-50; Am. Soc. for the Adv. of Sci.; Soc. for Adult Edn.; Assn. of Coll. Tchrs. of Edn.; Am. Acad. of Polit. and Soc. Sci.; Mem., First Presbyterian Church, Macomb, Ill. Co-Author: Foundations of Method in Secondary Schools, 1949. Contbr. to: Sec. Edn.; Conn. Tchrs.; Mich. Edn. Assn. Jour.; Phi Delta Kappan; Nation's Schls. Gen. Int.: Attendance Study in Hartford, Conn., Higher Edn. Study for State of N. H., 1946; Visiting Prof. at Univ. of Mich., 1950; N.U.E.A. Regional Chmn., 1950-51; Distinguished Grad., Coll. of Edn., Mich. St. Univ., 1958; Disting. Alumni, Mich. St. Univ., 1960; Legion of Honor, Internatl. DeMolay, 1960; Silver Beaver Award, B.S.A., 1955. Areas of Rsch.: Surveys in Administration, Fiscal Ability, and Plant Planning.

KNOBLOCK, Edward Charles (Mr.), Dir., Div. of Biochem., Walter Reed Army Inst. Rsch., Wash., D. C. Home Add.: 9226 Mintwood St., Silver Spring, Md. BIOCHEMISTRY. b. Cortez, Colo., Apr. 5, 1920. s. Charles William and Bertha (Longenbaugh) K. Edn.: A.B., Western St. Coll. of Colo., 1942; M.S., Univ. of Md., 1959. m. Rose Elaine Walker, Aug. 1, 1942. c.: Charles R.; Rhona E.; Brion E. Exp.: Biochemist, U. S. Army Med. Dept., Europe, 1942-46; Instr., Lab. Tech. Schls., ibid., Ft. Sam Houston, Tex., 1946-50; Dept. Chf., 406 Med. Gen. Lab., ibid., Tokyo, Japan, 1950-53; Asst. Chief, Dept. Biophysics, Walter Reed Inst. Rsch., 1953-57; Chief, Dept. of Biochem., ibid., 1957-61; Dir., Div. of Biochem., ibid., 1961—. Hon. Pos.: Bd. of Civil Serv. Examiners for Chemists, Natl. Bur. of Standards; Mem. Army Scientific Advisory Group for Chem.; Mem., N.I.H. Study Section for Biochemistry. Mem.: B.B.B.; Sigma Xi. Contbrng. Author: Battle Casualties in Korea, Vol. II, 1954; Recent Advances in Medicine and Surgery, Vol. II, 1953. Contbr. to: Armed Forces Med. Jour.; Arch. Ind. Hygiene and Occ. Med.; Am. Jour. Med.; Exptl. Cell Rsch.; Jour. Clin. Chem.; Jour. Biol. Chem. Serv. Rec.: U. S. Army, 1942—, Europe-European Theater

of Operations. Areas of Rsch.: Study of Preservation of Whole Blood, Biochemical Response to Irradiation Injury, Development of Instrumental Techniques for Biochemical Analysis; Intermediary Metabolism of Lipoproteins and Trace Metals.

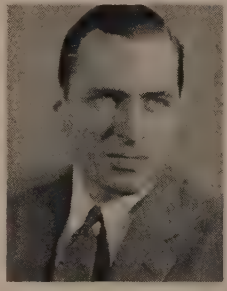
KNOEDLER, Elmer L. (Ph.D.), Partner, Sheppard T. Powell and Assocs., 305 N. Charles St., Baltimore 1, Md. Home Add.: Box 174, R.F.D. 2, Tydings-on-the-Bay, Annapolis, Md. CHEMICAL ENGINEERING, SPECIALIZING IN INDUSTRIAL WATER AND WASTE. b. Gloucester, N. J., Feb. 12, 1912. s. Elmer L. and Carolyn B. (Gentry) K. Edn.: M.E., Cornell, 1934; M.S. in Ch.E., Columbia, 1936; Ph.D., in Ch.E., ibid., 1952. m. Ruth Timanus, Oct. 14, 1960. Exp.: Engr., Atlantic Refining Co., Phila., Pa., 1934-35; Asst. Supt. R & D., Davis Emergency Equip., N. Y., 1936-37; Chg. Metal Powder Devel., Metals Disintegrating Co., Elizabeth, N. J., 1939-41; Partner, Sheppard T. Powell and Assocs., Baltimore, Md., 1941—. Hon. Pos.: Rep. to Engr., Joint Counc. to Revise Engrs., Law of Md., A.I.Ch.E.; Rep. of A.W.W.A. on A.S.A. Cooling Towers and A.S.A. Heat Exchangers; Chmn. of Baltimore Sect. of A.I.Ch.E.; A.S.Me. Power Test Code Comm. Mem.: Am. Assn. for the Adv. of Sci.; Am. Inst. of Chem. Engr.; Am. Soc. of Mech. Engr.; Am. Chem. Soc.; Am. Water Works Assn.; Sigma Xi; Phi Lambda Upsilon; The Cornell Club; The Engrs. Culb of Baltimore; The Engrs. Club of N. Y. Contbr. to: Indust. Engrng. and Chem.; Petroleum Refiner; Water and Sewage Works; Chem. Engrng. Progress; Sci.; Corrosion. Areas of Rsch.: Industrial Water; Corrosion; Boiler Feedwater Conditioning; Vacuum Deaeration and Liquid Gas Transfer, Powder Metallurgy.

KNOLL, Nicholas (Ph.D.), Sr. Rsch. Chem., Minn. Mining and Mfg. Co., St. Paul, Minn. Home Add.: 251 Birmingham St., St. Paul 6, Minn. CHEMISTRY, POLYMERS' APPLICATION. b. Szbenna, Poland, July 5, 1920. s. Maurycy and Pelagia (Siwak) K. Edn.: Ph.D., Univ. of Bologna, Italy, 1951. Exp.: Rsch. Chem., Anheuser-Busch, Inc., St. Louis, Mo., 1955-56; Sr. Rsch. Chem., Minn. Mining and Mfg. Co., St. Paul, Minn., 1956—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci. Contbr. to: Jour. of Polymer Sci. Serv. Rec.: 2nd Polish Corps, 8th British Army, 1942-46. Areas of Rsch.: Applications for New Materials (Plastics, Elastomers, Ceramics); New Products from Natural Polymers (Starch, Cellulose); Evaluation of Chemical and Physical Properties of Materials.



KNOLL, Isaac (M.D.), Physician, Surgeon, Linguist, Author, Civic Leader, 7829 Euclid Ave., Cleveland 3, Ohio. Home Add.: 3102 Van Aken Blvd., Shaker Heights 20, Ohio. Summer Home: 20 Seward St., Sitka, Alaska. INTERNAL MEDICINE, DIAGNOSIS, CHILDREN AND TROPICAL DISEASES, GEOLOGY, MINERALOGY, MINING, LANGUAGES. b. Tlumacz, Poland, June 25, 1907. s. Marcus and Bertha (Inslicht) K. Edn.: Doctor of Med. and Surg., 1935, Royal Univ., Naples, Italy; Diplomate Specialist, in Pediatrics and Infantile Hyg., cum laude, 1936, Royal Univ., Bologna, Italy. m. Pearl Rosenstock, July 3, 1938. c.: Mark Sador. Exp.: Univ. Asst., Royal Pediatrics Clinics, Hospitals Gozzadini, Bologna, 1935-36; Rsch. work, Trop. Diseases, Honduras, Cent. Am.; Pvt. Practice in Jutiacalpa and Danli; Chf. Outpatient Dept. and Isolation Div., Vincente D'Antoni Hosp., LaCeiba, Honduras, 1937; Asst. Res. Pediatrician, Beth El Hosp., Brooklyn, N. Y., 1937-38; Prof. and Translator, Berlitz Schl. of Langs., N.Y.C., 1938-39; Res. House Surgeon, Bethany Deaconess Hosp., Brooklyn, N. Y., 1940-41; House Physician and Surgeon, Unity Hosp., 1941-43; Res. Physician, Chronic Diseases, Montefiore Hosp., Bronx, N. Y., 1943; Diagnostician and Admitting Physician, Gouverneur and Lincoln Hosps. Dept., N.Y.C. Hosp., 1944-45; Med. Dir. and Deputy Med. Supt., Fordham Hosp., Bronx, N. Y., 1945-46; Physician in Chg., Kanakanak Govt. Hosp. and Med. Officer, Juneau Govt. Hosp., Alaska Native Serv., Dept. of Interior, 1946-47; Consultant and Attending Physician, Sitka Community Hosp., Mt. Edgecumbe Med. Center Hosp. Clinic, Pioneer Hosp., Sitka, Alaska, 1947-58; Assoc. with Va. Mason Hosp. and Clinic, Seattle, Wash., 1947-58; Secy. and later Vice-Pres., Med. Staff Sitka Community Hosp., Sitka, Alaska, 1947-58; Consultant and Med. Examiner for Equitable Life Assurance Soc., U. S. Olympic Life Ins. Co., Crown Life Ins. Co., World Ins. Co., Mutual Health and Accident Ins. Co., Natl. Serv. Life Ins. Co., 1947-58; Designated Physician Vets. Admin., Consultant and Med. Examiner for Disabled Fishermen, Aid to the Blind, Alaska Dept. of Health, Alaska Welfare Dept., 1947-58; Mem., Med. Staff, Polyclinic Hosp., Cleveland, Ohio, since 1959. Hon. Pos.: Governor for St. of Israel Devel. Corp.; Chmn., High Holy Days Campaign; Mem., Advisory Coun. and Chmn., Finance Com. to Exec. Bd., S.E. Alaska, Boy Scouts of Am. and Mem., Exec. Bd., Ohio Boy Scouts, Cleveland. Mem.: Fellow, A.M.A.; Alaska and Ohio St. Med. Assns.; A.A.A.S.; N. Y. Acad. of Scis.; Cleveland Acad. of Med.; Cuyahoga Co. Med. Soc.; Natl. Rehab. Assn.; Alaska Obst. and Gyn. Soc.; Alaska Crippled Children Assn.; Am. Alaskan and Ohio Cancer Soc.; Alaska and Ohio TB Assn.; Fellow, Am. Geriatrics Soc.; Alumnus Beth El and Fordham Hosps. Med. Soc.; Cleveland Health Museum; Arctic Inst. of N. Am.; Am. Polar Soc.; Phi Lambda Kappa; Loyal Order of Moose; Elks; C. of C. Contbr. to: Am. Jour. of Diseases of Children. Serv. Rec.: Consultant and Med. Officer, N. Y. Port of Embarkation, War Dept. Indusl. Med. Br., Brooklyn, N. Y., 1945. Gen. Int.: Originator and Sponsor Bell of Universal Prayer, Sitka, Alaska; Recipient of Certificates of Merit and Appreciation from Natl. Am. Red. Cross, Alaska Natl. Guard, S.S.S., Elks, Moose, City of Juneau and State of Israel Devel. Corp. Areas of Rsch.: Children and Trop. Diseases, Geology, Mineralogy, Mining and Langs.

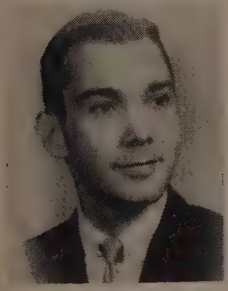
KNOPPERS, Antoinie Theodoor (M.D.), Pres., Merck Sharp and Dohme Internatl., Div. of Merck and Co., Inc., 100 Church St., New York 7, New York. Home Add.: 1535 Coles Avenue, Mountainside New Jersey. MEDICINE; PHARMACOLOGY. b. Kappelle, The Netherlands, Feb. 27, 1915. s. Bastiaan Antonie and Annetje (Valkenier) K. Edn.: M.D., Univ. of Amsterdam, Netherlands, 1939; D.Pharm., Univ. of Leyden, Netherlands, 1941. m. Maria Johanna Willemsen, June 1, 1939. c.: Bastiaan A.; Maria H.; Anneke C.; Elizabeth E. Exp.: First Asst., Pharmacological Inst., Univ. of Amsterdam, 1940-43; Dir. of Pharmacol., Amsterdamsche Chininefabriek, Netherlands, 1943-49; Managing Dir., Nederlansche Kininefabriek, 1949-52; Prof. of Pharmacol., Free Univ. of Amsterdam, 1950-52; Mem., Therapy Comm., Netherlands Med. Jour., 1950-53; Mem. Managing Bd. Comb., Amsterdamsche, Bandoengsche en Nederlandsche Kininefabrieken, 1950-52; Mgr. Med. Servs., Merck-North Am., Inc., 1952-53; Dir. Med. Servs., Merck Sharp and Dohme Internatl., 1953-55; Dir. Scientific Activities, ibid., 1955; Vice-Pres. and Gen. Mgr., ibid., 1955-57; Pres., ibid., 1957—. Hon. Pos.: Mem. Bd. of Dirs., MEDICO, Inc.; Mem. Assn. of Med. Dirs.; Mem. Malaria Commn. of the Netherlands, 1951-53; Mem. Malaria Commn. of No. Holland, 1950-53; Mem., Council on Foreign Relations, Inc.; Mem. Internatl. Comm. and Exec. Comm., Y.M.C.A. Mem.: Am. Soc. of Trop. Med.; Honorary Fellow, Royal Inst. of Trop. Hyg., 1950-53; Echo Lake Country Club; Pinnacle Club; Recess Club. Co-Author: Malaria, 1950; Chemotherapy, 1950. Contbr. to: Documenta Tropico Neerlandica et Indonesica. Serv. Rec.: Netherland Army, 1939-40, Active Duty, 1956. Areas of Rsch.: Medicine and Pharmacology.



KNOWLTON, George Franklin (Ph.D.), Prof. of Entomology and Ext. Entomologist, Utah St. Univ., Logan, Utah. Home Add.: 304 E. 4th No., Logan, Utah. ENTOMOLOGY AND GENERAL BIOLOGY. b. July 28, 1901, Farmington, Utah. s. Benjamin Franklin and Minerva (Richards) K. Edn.: B.S., Utah St. Univ., 1923; M.A., ibid., 1925.; Grad. Study, Univ. of Minn., 1925-26; Ph.D., Ohio St. Univ., 1932. m. Mary Watkins of Logan, Utah, July 29, 1925. d. Mr. and Mrs. L. P. Watkins. c.: Betty Jean; Kathryn Marie. Exp.: Asst. Entomologist, Utah St. Univ., 1925-30; Assoc., ibid., 1930-40, Rsch. Assoc. Prof. of Entomol., ibid., 1940-45; Ext. Entomologist, ibid., 1943—; Entomologist in Chg. of Insect and Rodent Control Unit for Ninth Serv. Command, U. S. Army Engrs., 1944-45; Prof. of Entomol., Utah St. Univ., 1945—; State Ldr. in Grasshopper and Mormon Cricket Control for Utah, 1937-58. Hon. Pos.: Vice-Pres., Utah St. Sigma Xi Club; Co-Chmn., Rocky Mtn. Entomol. Conf., 1939-40; Chmn., Pacific Slope Br. of the Am. Assn. of Econ. Entomologists, 1941-42; Chmn., Biological Sect. of the Utah Acad. of Sci., Arts and Letters, 1942-44 and 1949-50; Co-Chmn., No. West Spray Project, 1956-57, Chmn., 1957-58; Pres., Epsilon Sigma Phi, Iota Chapt.; Vice-Chmn., Utah Mosquito Abatement Assn., 1961-62, Chmn., 1962-63. Mem.: Am. Assn. Adv. Sci.; Entomological Soc. of Am.; Utah Acad. of Sci., Arts and Letters; Herpetologists League; Sigma Xi; Entomol. Soc. of Wash.; Pacific Coast Entomological Soc.; Epsilon Sigma Phi; Utazoa Soc.; Soc. Syst. Zool.; Ecological Soc. of Am.; Am. Mosquito Control Assn.; Utah Mosquito Abatement Assn.; Sons of Utah Pioneers; Phi Beta Rho. Author: One Sect., Culture Methods for Invertebrate Animals, 1937. Contbr. to: Jour. of Econ. Entomology, Proceedings of Utah Acad. of Sci.; Proceedings of th Entomological Soc. of Wash.; Annals of the Entomological Soc. of Am.; Entomological News; Bulletin of the Brooklyn Entomological Soc.; Canadian Entomologist; Jour. of Entomological Soc. of Kan.; Am. Midland Naturalist; The Auk; Condor; Fla. Entomologist; Gleanings in Bee Culture; Am. Bee Jour.; Ohio Jour. of Sci.; Great Basin Naturalist; Pan-Pacific Entomologist; The Sanitarian, etc.; Jour. of the Am. Veterinary Med. Assn.; Jour. of the Elisha Mitchell Scientific Soc.; Farm and Home Sci.; Bull. of the Utah Agric. Exptl. Sta.,

Utah St. Univ. Serv. Rec.: Ninth Serv. Command, U. S. Army Engrs. Gen. Int.: Rsch. and Tchng. Areas of Rsch.: Agricultural Entomology; Aphid Taxonomy; Insect Food of Lizards and Birds; Ecology; Natural Enemies of Beet Leafhopper and Aphids; Predacious Habits of Insects; Effect of Pesticides on Honey Bees; Western Insects.

KNOTTS, Glenn R(ichard) (Mr.), Asst. Dir., Dept. of Adv. Evaluation (Scientific Activities), Am. Med. Assn., 535 N. Dearborn St., Chicago 10, Ill. Home Add.: 900 Lake Shore Dr., Chicago 11, Ill. PHARMACY. b. East Chicago, Ind., May 16, 1934. s. V. Raymond and Opal Ione (Alexander) K. Edn.: B.S. in Pharm., Purdue Univ., 1956; M.S., ibid., 1960. Exp.: Instr. of Pharm. (Field Med. and Surg. Comm.), U.S.A. Med. Trng. Ctr., Ft. Sam Houston, Tex., 1956-58; Mem., Profl. Staff, Bapt. Meml. Hosp., San Antonio, Tex., 1957-60; Instr. of Chem., San Antonio Coll., 1958-60; On Academic Leave-of-Absence, San Antonio Coll., 1960-61; Administrative Asst., Am. Med. Assn., 1960-61; Rsch. Assoc., ibid., 1961-62; Asst. Dir., Dept. of Adv. Evaluation, ibid., 1962—. Hon. Pos.: Mem. and Acting Chmn., Edn. Comm., Am. Chem. Soc., San Antonio Sect., 1960; Acting Secy., Chem. Sect., Tex. Coll. Tchrs. Assn., 1960. Mem.: Am. Chem. Soc.; Am. Assn. of Univ. Profs.; Tex. Acad. of Sci.; Am. Pharmaceutical Assn.; Philosophy of Sci. Assn.; Am. Assn. for the Adv. of Sci.; Chicago Acad. of Scis.; Sigma Delta Chi; Purdue Chemists Club; Purdue Club of Chicago; Purdue Univ. Alumni Assn.; The Univ. Club of San Antonio, Tex.; The Press Club of Chicago. Contbr. to: The Retort. Serv. Rec.: U. S. Army, 1956-58. Areas of Rsch.: Pharmacy, Pharmacology, Pharmaceutical Chemistry.



KNOX, Walter Eugene (M.D.), Visiting Prof. and Chmn. Dept. of Biochem., Am. Univ., Beirut, Lebanon. Home Add.: 64 Dudley St., Brookline, Mass. BIOCHEMISTRY. b. Norcatur, Kan., July 21, 1918. s. Walter Eugene, Jr. and Lucy (Frewen) K. Edn.: A.B., Univ. of Neb., 1939; M.D., Harvard Univ., 1943. m. Marjorie LeMay, Feb. 7, 1948. c.: Walter Eugene, IV; Tamsin Ann; Phebe Lee. Exp.: Assoc. Physician, Presbyterian Hosp., N. Y., N. Y., 1946-48; Assoc Prof., Tufts Med. Schl., 1952-53; Asst. Prof., Harvard Med. Schl., 1953-61; Visiting Prof. and Chmn. Dept. of Biochem. Am. Univ., 1962—. Mem.: Am. Soc. Biol. Chem.; Am. Chem. Soc.; Biochem. Soc.; Am. Soc. Human Genetics; Harvey Soc.; N. Y. Acad. of Sci.; A.A.A.S. Author: Research in Medical Science, 1950; Albinism, 1962. Contbr. to: Jour. Biol. Chm.; Am. Jour. Human Genetics; Science; Nature; Encyclopedia Brittania. Serv. Rec.: U. S. Army, 1943-47. Areas of Rsch.: Adaptive Enzymes and Hereditary Disease.

KOBERG, Gordon Earl (Mr.), Project Hydrologist, U. S. Geological Survey, Denver, Colo. Home Add.: 1075 Ames St., Lakewood, Colo. HYDROLOGY, LIMNOLOGY. b. Hood River, Ore., Nov. 30, 1919. s. Earl C. and Phoebe (Gorton) K. Edn.: B.S., Ore. St. Univ., 1943. m. Freda Burt, 1946. c.: Brian; Christine. Exp.: Engr., Pan Am. Airways, Seattle, Wash., 1943-44; Hydraulic Engr., U. S. Geological Survey, Medford, Ore., 1946-50; San Diego, Calif., 1950-51, Boulder City, Nev., 1952-53, Denver, Colo., 1954—. Hon. Pos.: Pres., Denver Geological Survey Employees Assn. Mem.: A.G.U.; Phi Kappa Tau. Contbr. to: Internatl. Assn. of Scientific Hydrology; U. S. Geological Survey Water Supply Paper; Jour. of Geophysical Rsch.; U.S. Geological Professional Papers; U. S. Bur. of Reclamation Chem. Engrng. Lab. Reports. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Experiments to Measure and Control Evaporation From Open Water Surfaces, To Eliminate Taste and Odor Problems From Lakes and Reservoirs.

KOCH, Helen Lois (Ph.D.), Prof. of Child Psychol. (Emer.), Univ. of Chicago, 1374 E. 57th St., Chicago, Ill. PSYCHOLOGY. d. Louis G. Koch and Sophia (Uhlich). Edn.: Ph.B., Univ. of Chicago, 1918; Ph.D., ibid., 1921. Exp.: Instr., Edn. Psychol., Univ. of Tex., 1922-23; Adjunct Prof., ibid., 1924-25; Assoc. Prof., ibid., 1926-27; Prof. of Edn. Psychol., ibid., 1928-29; Assoc. Prof. of Child Psychol., Univ. of Chicago, 1929-42; Prof., 1942—; Dir., Univ. Cooperative Nursery Schl., 1934-38; Coordinator, Univ. of Chicago Nursery Schl., 1938-49; Exchange Prof., Johann Wolfgang Goethe Universitaet, Frankfurt-on-Main, Germany, 1948-49, 1958; Lectr. at Julius Maximilians Universitaet, Wuerzburg, Germany, 1948-49. Hon. Pos.: Secy.-Treas., Illinois Soc. of Consult. Psychol., 1935-40, Pres., 1940-41; Pres., Chicago Psychol. Club, 1936-37; Vice-Pres., Chicago Assn. for Child Study and Parent Edn., 1935-37; Founder, The Delta Kappa Gamma Soc., Fellow; Am. Psychol. Assn., Soc. for Rsch. in Child Development; Pres., Div. of Developmental Psychol., Am. Psychol. Assn., 1961-62. Mem.: Psychom. Soc.; Delta Kappa Gamma; Phi Beta Kappa; Sigma Xi; Phi Lambda Theta; Am. Assn. Adv. Sci.; Sec. Ednl. Psychol. Sect., Am. Assn. of Applied Psychol., 1943-45; Exec. Bd. Soc. Res. in Child Development, 1942-45; Sec., Div. of Consulting Psychol., Am. Psychological Assn., 1948-54; Comm. Child Welfare, O.C.D. Author: 6 Monographs. Contbr. to: Psychol. Rev.; Jour. of Exptl. Psychol.; Child Develop.; Jour. of Genetic Psychol.; Genetic Psychol. Monographs; Psychol. Abstracts; Mental Hygiene; Childhood Edn.; Psychol. Bull.; Jour. of Comp. Psychol.; Jour. of Gen. Psychol.; Internatl. Jour. of Ethics; Jour. of Abn. and Soc. Psychol.; Psychol. Monographs; Jour. Soc. Psychol.; Monographs Soc. Res. Child Development.

KOCH, Adolph Meyer (Ph.D.), Psychologist, Tchr., Broward Co. Jr. Coll., Ft. Lauderdale, Fla. Home Add.: 2319 N. E. 15th Terrace, Ft. Lauderdale, Fla. PSYCHOLOGY. b. Austria-Poland, June 18, 1908. s. Harry and Dora (Roth) K. Edn.: B.A., Geo. Wash. Univ., 1930; M.A., Columbia Univ., 1931; Ph.D., ibid., 1935; LL.B., St. Johns Univ., 1937; J.S.D., St. Lawrence Univ., 1939. m. Evelyn Friedberg, June, 1939. c.: Marlene Harriet; Bruce Stuart. Exp.: Prof. and Hd. Dept., Essex Jr. Coll., Newark, N. J., 1932-38; Pres., ibid., 1939-45; Pres. and Prof., ibid., 1945-46; Pvt. Pract., Atlantic City, N. J., 1946-52; Tchng., Univ. of Miami (Ext. Div.), Ft. Lauderdale, Fla., 1957-60; Psychologist, Tchr., Broward Co. Jr. Coll., 1960—. Hon. Pos.: Vice-Pres., Broward Co. Psychol. Assn.; Bd. Mem., Doctors Hosp. Mem.: Fellow, Am. Psychol. Assn.; Fellow, Am. Assn. for the Adv. of Sci.; Sigma Xi; F.P.A.; Southeastern Psychol. Assn.; B.C.P.A.; Sigma Xi; Ft. Lauderdale Country Club. Contbr. to: Am. Jour. of Psychol.; Jour. of Genetic Psychol. Monog.; The Jr. Coll. Jour.; Sci.; Jour. of Genetic Psychol. Areas of Rsch.: Clinical Psychology; Psychology of Learning; Education.

KOCH, Roderick Malcolm (Mr.), Exec. Vice-Pres., George Koch Sons, 10 S. 11th Ave., Evansville, Ind. Home Add.: 2200 Lincoln Ave., Evansville 14, Ind. CHEMICAL ENGINEERING AND PLANT CHEMISTRY. b. Evansville, Ind., Sept. 29, 1904. s. Louis J. and Clarice (Ashburn) K. Edn.: A.B., Evansville Coll., 1945. m. Loretta Kaltenbacher, Jan. 8, 1925. c.: Constance K. Exp.: George Koch Sons, Design Dept., 1926-32; Gen. Mgr., George Koch Sons, 1932-44; Exec. Vice-Pres., George Koch Sons, 1945—; Pres., Standard Industrial Products, Inc., 1940—; Pres., Louisons Pharmaceuticals, 1957—. Hon. Pos.: Past Pres., Evansville Museum Arts and Science; Life Member, Am. Num. Assn. Mem.: A.A.A.S. (Life Member); Evansville Museum of Arts and Sciences; Am. Pharmaceutical Assn.; Life Member, National Geographical Soc.; Indiana Acad. of Science; Pi Gamma Mu; Petroleum Club; Kennel Club; Central Turners. Contbr. to: Industrial Finishing; Products Finishing; Sky and Telescope. Gen. Int.: Patents on Metal Cleaning Products, Spray Booths, Vapor Degreasing. Areas of Rsch.: Organic Coatings and Pre Coat Cleaning of Metals.

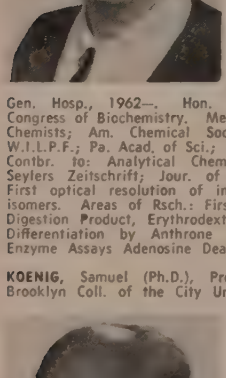
KOCHANOWSKY, Boris Julius (Dr.), Prof. of Mining Engrng., M. I. Bldg., The Pa. State Univ., Univ. Park, Pa. Home Add.: 426 Homan Ave., State College, Pa. MATERIALS HANDLING, BLASTING, AND ECONOMICS OF MINING ENGINEERING. b. Krasnojarsk, Siberia, Russia, May 4, 1905. s. Julius and Maria (Borovski) K. Edn.: Mine Surveying, Dipl. Ing., Schl. of Mines., Freiberg, Germany, 1927; Mng. Engrng., Dipl. Ing., ibid., 1929; Dr. Ing., ibid., Clausthal, Germany, 1955. m. Anna Rosa Stahel, July 30, 1946. c.: Vera Ann. Exp.: Rsch. Engr., Mining, Coal Mine Owner's Assn., Essen, Germany, 1930; Rsch. Assoc., Schls. of Mines, Freiberg, Germany, 1930-32; Asst. to Pres. and Mgr. of Mining Operations, Devel. and Rsch., Rhienische Kalksteinwerke GMBH, (Fr. Krupp-Thyssen) Wulfrath, Germany, 1933-39; Mgr., Mine d'Anthracite Dorenaz, Dorenaz, Val, Switzerland, 1945; Mgr. of Asphaltite Mine MINACAR Malargue, Mendoza, Argentina, 1946-48; Prof. of Econs. and Coal Mining, Universidad Nacional de Cuyo, San Juan, Mendoza, Argentina, 1948-53; Prof. of Mining, The Pa. State Univ., 1953—. Mem.: Am. Inst. of Min. Engrs.; A.S.E.E. Grundlagen des Tagebaues, Pt. 1, Gewinnung, 1933, Part 2, Foerderung, 1935, Co-Author. Contbr. to: Trans. of AIME; Mining Engrng.; Mining Congress Jour.; Rock Prods.; Pit and Quarry; Mineral Industs.; Internatl. Symposiums on Mining Rsch.; Quarterly of the Colo. Schl. of Mines; Rock

Mechanics Symposium; Nobel Hefte; Fordern und Heben; Sci. and Industry, Holland; Spanish Ingenieria. Gen. Int.: Postulation of "Theory of Blasting" and "Dynamic Costs Analysis"; Invention of Mining Machinery and Blasting Method With Inclined Drilled Boreholes; Mining Machineries and Mining Methods. Areas of Rsch.: Theory of Rock Fragmentation (Blasting); Material Handling in Mining; Economics of Mining Engineering.

KOCH, Wendell Reuben (Mr.), Chf., Resource Planning Div., Aeronautical Systems Div., Wright-Patterson A.F.B., Ohio. Home Add.: 560 Monteray Ave., Dayton 19, Ohio. PHYSICS, MATERIALS SCIENCES. b. Phillipsburg, Ohio, Aug. 12, 1909. s. Reuben and Anna (Musselman) K. Edn.: B.A., Ohio St. Univ., 1929; M.A., ibid., 1932. m. Dorotha Davis, Sept. 6, 1939. c.: David Wendell; Doris Davis. Exp.: Physicist, Materials Lab., Wright Field, Ohio, 1929-39; Chf., Physics Branch, Materials Lab., Engrng. Div., Wright Air Development Ctr., Wright Field, Ohio, 1939-51; Chf., Plans Branch, Rsch. Div., ibid., 1951-53; Asst. Tech. Dir., Directorate of Rsch., ibid., 1953-56; Gen. Engr., Plans Div., ibid., 1956-61; Chf., Resource Planning Div., Aeronautical Systems Div., Wright-Patterson A.F.B., Ohio, 1961—. Hon. Pos.: Vice-Chmn., Ohio Acad. of Sci.; Chmn., Ohio Sect., Am. Physical Soc. Mem.: Optical Soc. of Am.; Inst. of Mgmt. Scis.; Am. Rocket Soc.; Am. Soc. for Testing and Materials; Ohio Acad. of Sci.; A.A.A.S.; Inter-Soc. Color Coun.; Am. Soc. for Metals; Special Librs. Assn.; Pi Mu Epsilon; Torch Club. Contbr. to: Physical Rev.; Proc. Am. Soc. Testing Materials. Areas of Rsch.: Chemical and Physical Analysis of Aircraft Materials; Transparent Plastics and Glass Properties; Colorimetry and Photometry; Mgmt. Sci. Applications to Rsch. and Development.

KOEHLER, Leonore (Beatrice) Hollande (Ph.D.), Assoc. Chf. of Biochem., Phila. Gen. Hosp., Phila., Pa. Home Add.: 1035 Moravia St., Bethlehem, Pa. CARBOHYDRATES (STARCH, DIFFERENTIAL SUGAR ANALYSIS) ENZYMES, AMYLASE, ADENOSINE DEAMINASE. b. Ferguson, Mo., May 27, 1906. d. Charles S. and Elsa (Windstosser) Hollander. Edn.: A.B., Bryn Mawr Coll., 1928; M.S., ibid., 1929; Ph.D., Univ. of Ill., 1932. m. Franz Koehler, (Div.) 1934. c.: Greda (Winifred); Eckehart (Adolf); Ulrike (Ida). Exp.: Cancer Rsch. Inst., Phila., Pa., 1932-33; Starch Fellow, Natl. Inst. of Health, Bethesda, Md., 1947-48; Asst. Prof., Organic and Bioch., Cedar Crest Coll., 1948-49; Rsch. Assoc. Inst. of Cancer Rsch., Phila., 1950-53; Biochemist, Clinical and Rsch., St. Luke's Hosp., 1953-62; Assoc. Chf. of Biochem., Phila. Gen. Hosp., 1962—. Hon. Pos.: Secy. Comm., International Congress of Biochemistry. Mem.: A.A.A.S.; Am. Assn. of Clinical Chemists; Am. Chemical Soc.; Sigma Xi; A.A.U.W.; L.W.V.; W.I.L.P.F.; Pa. Acad. of Sci.; Iota Sigma Pi; Sigma Delta Epsilon. Contbr. to: Analytical Chemistry; Clinical Chemistry; Hoppe-Seylers Zeitschrift; Jour. of Biological Chemistry. Gen. Int.: First optical resolution of inactive cystine; dietary testing of isomers. Areas of Rsch.: First Isolation of a Crystalline Starch Digestion Product, Erythrodextrin. First Study of Carbonhydrate Differentiation by Anthrone Color Reaction. Clinical Use of Enzyme Assays Adenosine Deaminase.

KOENIG, Samuel (Ph.D.), Prof. of Sociol. and Anthropology, Brooklyn Coll. of the City Univ. of N. Y., Brooklyn 10, N. Y. Home Add.: 1890 East 21st St., Brooklyn 29, N. Y. SOCIOLOGY AND CULTURAL ANTHROPOLOGY. b. Austria-Hungary, Mar. 29, 1899. s. Berl and Rebecca (Liebster) K. Edn.: Ph.B., Marquette Univ., 1929; M.A., Yale Univ., 1931; Ph.D., ibid., 1935. m. Miriam Nelson, Oct. 13, 1932. c.: Paul Maimon. Exp.: Tchr., Pvt. Schls., St. Paul, Minn., Milwaukee, Wis., New Haven, Conn., 1921-35; Dir., Sociol. Studies, Federal Writers' Project of Conn., 1936-41; Rsch. Fellow in Sociol., Yale Univ., 1937-40; Rsch. Assoc., Study of Recent Immigration from Europe, 1944-46; Instr. in Sociol. and Anthropol., Brooklyn Coll., 1941-48; Asst. Prof. of Sociol. and Anthropol., ibid., 1949-51; Assoc. Prof., ibid., 1952-59; Prof., ibid., 1960—; Dept. Deputy Chmn., ibid., 1948—. Hon. Pos.: Mem., Bd. of Dirs., Am. Friends of the Hebrew Univ. (Brooklyn), and of its American Students' Program Committee for Scholarships to the Hebrew Univ. in Jerusalem. Mem., Bd. of Dirs., Yivo Inst. for Jewish Rsch.; Editorial and Publications Com., Soc. for the Study of Social Problems, 1953-55; Comm. for the Study of Jewish Edn. in the U. S., 1952-54. Mem.: Am. Sociol. Assn., Fellow; Eastern Sociol. Soc.; N. Y. Acad. of Scis.; Am. Acad. of Polit. and Soc. Sci.; Soc. for the Study of Social Problems; A.A.U.P.; Am. Jewish Hist. Soc.; Sigma Xi; Alpha Kappa Delta. Author: Immigrant Settlements in Connecticut, 1938; Sociology: An Introduction to the Science of Society, 1957; Hebrew edition, Ha'Adam ve Hahevra, 1961, Chinese edition, 1962. Co-Author: Studies in the Science of Society, 1937; Jews in a Gentile World, 1942; History of the Jewish Labor Movement in the U. S., 1943; The Refugees Are Now Americans, 1945; One America, 1945, Rev. Ed., 1952; Sociology: A Book of Readings, 1953; Criminology: A Book of Readings, 1953; Contemporary Sociology, 1958; Sociology of Crime, 1961; Readings in Contemporary Sociology, 1961. Contbr. to: Am. Sociol. Rev.; Am. Jour. of Sociol.; Social Forces; Sociol. and Social Rsch.; Annals of the Am. Acad. of Polit. and Soc. Sci.; Folk-Lore (Britain); Sa'ad (Israel); Jour. of Central European Affairs; Phylon; Jour. of Soc. Philos.; Jewish Soc. Studies; The Jewish Rev.; New Currents; Yivo Bleter; Yivo Annual of Jewish Social Science; Publications of the Am. Jewish Historical Soc.; Indiana Jour. of Social Research; Slavonic Encyclopedia. Gen. Int.: Social Science Research Council Grant for Study of Cultural Patterns in Israel, 1950-51; Visiting Prof. on a Fulbright Grant, Bar-Ilan Univ., Israel, 1957-58; Book Rev. Editor, Social Problems, 1953-56; Mem., Editorial Bd., Slavonic Encyclopedia, 1947-49. Areas of Rsch.: Race and Ethnic Group Relations, Criminology, Sociological Theory, Middle Eastern Cultures.



KOEPF, Ernest Henry (Ph.D.), Mgr., Rsch. and Technical Services, Core Laboratories, Inc., P. O. Box 10185, Dallas, Tex. Home Add.: 6951 Wallinglane, Dallas 31, Tex. CHEMICAL ENGINEERING, PHYSICAL CHEMISTRY, PETRONEUM ENGINEERING. b. Bruceville, Tex., Jan. 23, 1912. s. Henry W. Koepf (dec.) and Mattie Lula (Ewing) K. Sturkie. Edn.: B.S., Univ. of Tex., 1934; M.S., ibid., 1936; Ph.D., ibid., 1939. m. Josephine Presley, 1938. c.: Roxanne; Rhoena Sue. Exp.: Instr., Dept. of Chem., Univ. of Tex., 1934-37; Rsch. Fellow, Bureau of Ind. Chem., ibid., 1937-39; From Jr. Chem. Engr. through Asst., Assoc. and Sr. to Prin. Chem. Engr. in Rsch. and Dev., Dept. of Atlantic Ref. Co., 1939-52; Vice-Pres. and Gen. Mgr., Tex. City Chem., Inc., 1952-54; Admin. Asst., Atlantic Refining Co., 1954-55; Mgr., Rsch. and Development, Core Lab., Inc., 1955-58; Mgr., Rsch. and Tech. Services, ibid., 1958—. Mem.: S.P.E. of A.I.M.E.; Tex. Acad. of Scis.; Reg. Prof. Engrs.; Tau Beta Pi; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Transactions A.I.M.E.; A.P.I. Production Practices; Producers Monthly. Areas of Rsch.: Phase Behavior of Hydrocarbon Systems; Physical Properties of Porous Materials; Flow of Fluids through Porous Materials; Petroleum Reservoir Engineering; Plant Design.

KOHL, Walter Heinrich, (D.Engrng.), Electronics Consultant, P.O. Box 426, Los Altos, Calif. Home Add.: 12598 Valley View Dr., Los Altos, Calif. MATERIALS AND TECHNIQUES FOR ELECTRON DEVICES. b. Kitzingen a.M., Germany, Jan. 22, 1905. s. Franz Leopold and Elfriede (Klauser) K. Edn.: Dipl. Ing., Technische Hochschule Dresden, Germany, 1928; Dr. Ing., ibid., 1930. m. Helen Jean Hope, Sept. 15, 1932. c.: Wilfrid L. Exp.: Devel. Engr., Rogers Electronic Tubes, Ltd., Toronto, Ont., Can., 1930-40; Lectr., McLennan Instit., Univ. of Toronto, ibid., 1935-40; Proj. Engr., Rogers Electronic Tubes, Ltd., Toronto, Ont., Can., 1941-43; Chief Engr., ibid., 1944-45; Vice-Pres. and Dir., ibid., 1945-46; Hd., Vacuum Tube Lab. Collins Radio Co., Cedar Rapids, Ia., 1947-48; Consultant to Dir. of Rsch., ibid., 1949-52; Staff Consultant, Sylvania Electric Prods. Inc., Mt. View, Calif., 1958-61; Lectr., Dept. Elect., Engrng., Stanford Univ., Stanford Calif., 1956—; Electronics Consultant, Los Altos, Calif., 1961—. Mem.: Rsch. Soc. of Am.; Fellow, Inst. of Radio Engrs.; Am. Physical Soc.; Am. Assn. for the Adv. of Sci.; Am. Ceramic Soc.; Electrochem. Soc.; Am. Vacuum Soc.; Intern. Vac. Soc.; Am. Soc. of Metals. Author: Co-Author, The Elctron Microscope, 1942; Materials Technology for Electron Tubes, 1951; Materials and Techniques for Electron Tubes, 1960. Contbr. to: Proc. I.R.E.; Materials and Methods; Can. Jour. Rsch.; Symposium Transactions. Gen. Int.: Holder of 8 Patents; Mem. of Internatl. Editorial Bd., Vacuum. Areas of Rsch.: Receiving Tubes, Power Tubes, Klystrons and Traveling Wave Tubes; Thin Films, Vacuum Gauges and Vacuum Friction; Administration of Research and Management.

KOHLMILLER, Elmer Frank, Jr. (Ph.D.), Asst. Prof., Biol., Gannon Coll., Erie, Pa. Home Add.: 4305 Wayne St., Erie, Pa. MICROBIOLOGY. b. Erie, Pa., Aug. 27, 1922. s. Elmer Frank and Ruth M. (McGoey) K. Edn.: B.S., Western Reserve Univ., 1947; M.S., ibid., 1950; Ph.D., Institutum Divi Thomae, 1960. m. Margaret C. Westcott, Sept. 30, 1950. c.: Paul Hallinan; Christopher Kevin; Mary Ruth; Michael John. Exp.: Lab. Supvr., Streptococcal Disease Lab., F. E. Warren AFB, Cheyenne, Wyo., 1950-52; Rsch. Asst., Lobund Inst., Univ. of Notre Dame, S. Bend, Ind., 1952-56; Asst. Prof., Gannon Coll., 1956—. Mem.: Albertus Magnus Guild; Am. Assn. for the Adv. of Sci.; Am. Inst. of Biol. Scis.; Delta Tau Delta. Contbr. to: Jour. of Bacteriol. Areas of Rsch.: Microbiology and Cancer.

KOHN, Anthony (M.D.), Doctor, 375 East Main St., Bay Shore, N. Y. Home Add.: 165 Secatogue Lane West, West Islip, N. Y. ENDOCRINOLOGY - RADIOISOTOPES. b. Gyor, Austria-Hungary, Dec. 24, 1906, s. Zsigmund and Bertha (Kronfeld) K. Edn.: B.S., Coll. of City of N. Y., 1927; M.D., Tufts Coll. Med. Schl., 1931; Oak Ridge Inst. of Nuclear Studies, 1954. m. Vera Gross, Mar., 1956. c.: Fleur Strand; Frank Emanuel (Stepchildren). Exp.: Asst. in Surgery, Long Island Medical Coll., 1931-32; Intern, Worcester City Hosp., Worcester, Mass., 1932-34; Resident Surgeon, Mt Sinai Hosp., New York, 1934-35; Private Med. Practice, 1935—; Consulting Endocrinologist and Chief of Radioisotope Service, Central Islip St. Hosp., Central Islip, N. Y.; Radioisotope Staff, Jewish Memorial Hosp., N. Y.; Med. Staff, Southside, Bay Shore, N. Y.; Good Samaritan, West Islip, Lakeside Hosp., Copiague, N. Y.; Consultant in Atomic Medicine, Huntington Hosp.; Consulting Physician, Pilgrim St. Hosp. Hon. Pos.: Sec., Southside Clinical Soc. since 1948; Vice Pres., Suffolk County Med. Soc., 1959; Pres., ibid., 1960; Chmn., Graduate Edn. Comm.; Former Chmn., Atomic Med. Comm.; Former Assoc. Editor, Suffolk County Med. Soc. Bulletin. Mem.: Am. Nuclear Soc.; Soc. of Nuclear Medicine, Am. Diabetes Assoc.; Clin. Soc. N. Y. Diabetes Soc.; Am. Soc. for Study of Sterility; Psycho-Endocrine Assn. of Great Britain; Am. Med. Assn.; N. Y. St. Med. Soc.; Suffolk County Med. Soc.; N. Y. Acad. of Sci.; A.A.A.S.; First Intl. Congress Endocrinology, Copenhagen; Fourth Int'l. Goitre Conf., Londondon; Alpha Omega Alpha; Kismet Shrine; Corresponding Mem., Biological Engrng. Soc. (G.B.); Prof. Group on Bio-medical Electronics, Inst. of Radio Engrs. Contbr. to: A.M.A. Archives of Internal Medicine; Am. Jour. of Surgery; N. Y. State Jour. of Medicine; Fertility and Sterility; First Internatl. Congress of Endocrinology, Copenhagen. Serv. Rec.: Capt., U.S.A. Medical Corps, 1942-45. Areas of Rsch.: Radioisotopes and Thyroid.

KOHN, Vera (Dr.), Physician, 1111 Deer Park Ave., Babylon, N. Y. Home Add.: 165 Secatogue Lane W., West Islip, N. Y. PEDIATRICS. b. Kimberley, S. Africa, June 7, 1906. d. Frank Gross and Lillian (Jacobs) G. Edn.: B.A., Grey Coll., Univ. S. Africa, 1923; M.B., Ch.B., Univ. Witwatersrand, S. Africa, 1941; D.C.H., (R.C.P., London, R.C.S. Eng.), 1946; M.R.C.P., Edinburgh, 1946; F.A.A.P., 1960. m. Dr. Anthony Kohn, March, 1956. c.: Dr. Fleur Strand; Frank Emanuel. Exp.: Staff, Johannesburg General Hosp., Joburg, Africa, 1941-44; Jr. Asst. Ped., Babies Hosp., Vanderbilt Clinic, Columbia Presbyterian Med. Ctr., N. Y., 1944-46; Post-Grad., Great Ormond St. Childrens Hosp., London, 1946; Ped., Addington Hosp., Durban, S. Africa, 1947-49; Consultant, N. Y. S. Dept. Health, Cerebral Palsy, 1950; Ped. in Charge, N. Y. Univ. Inst. of Rehabilitation, 1951-52; Private Practice, 1952—. Mem.: British Med. Assn.; Med. Soc. Suffolk Co.; Am. Med. Assn.; N. Y. State Med. Soc.; N. Y. Sta. Womens Med. Soc.; Am. Womens Med. Assn.; World Med. Assn.; Southside Clin. Soc.; F.A.A.P.; L. I. Craftsmens Guild; S. Shore Art Assn. Serv. Rec.: Chief Med. Officer, Civil Prot Serv., Western Division, Johannesburg, Africa, 1942-43.

KOJIS, Ferdinand George (M.D.), 30 West 59th St., New York 19, N. Y. Home Add.: 12 West Rd., Carmel, N. Y. INTERNAL MEDICINE; IMMUNOLOGY. b. Slovakia, Oct. 4, 1901. s. Ferdinand and Magdalena (Vacho) K. Edn.: B.S., Univ. of Wis., 1924; M.S., Yale, 1926; M.D., ibid., 1928. m. Harriet Anne Henderson, June 6, 1942. c.: Peter; Ann. Exp.: Visiting Physician, Willard Parker Hosp., N. Y. City, 1936-55; Asst. Attending Univ. Hosp., New York, 1938-60; Asst. Phys. OPD New York Hosp., 1940-46; Asst. Attending, Bellevue Hosp., New York, 1948-60; Clinical Instr., N.Y.U. Post Grad. Med. Schl., 1948-60. Mem.: Am. Heart Assn.; Am. Med. Assn.; Am. Geriatrics; A.A.A.S.; New York County Med. Soc.; N. Y. State Med. Soc.; N. Y. Acad. Sci.; Delta Sigma Phi; Sigma Tau Sigma. Contbr. to: Am. Jour. Dis. Child; Am. Jour. Med. Sci.; Jour. Am. Med. Assn.; New York Acad. Sci. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Serum Sickness and Anaphylaxis; Toxic Reactions to Therapeutic Agents; Acute Infections of the Central Nervous System.

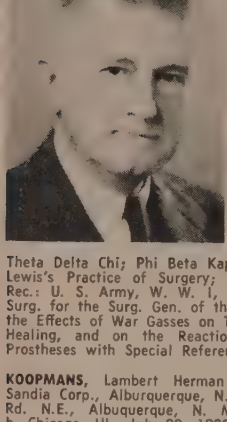
KOLB, Lawrence Coleman (Mr.D.), Prof. of Psychiatry, Coll. of Physicians and Surgs., Columbia Univ.; Dir., N. Y. State Psychiatric Inst., 722 West 168 St., New York 32, N. Y. Home Add.: 31 Old Smith Rd., Tenafly, N. J. PSYCHIATRY. b. Baltimore, Md., June 16, 1911. s. Lawrence and Lillian Hess (Coleman) K. Edn.: B.A., Trinity Coll., Dublin Univ., 1932; M.D., Johns Hopkins Schl. of Med., 1934. m. Madeleine Currie, July 3, 1937. c.: Pamela; Mary; Richards. Exp.: Intern, Strong Memorial Hosp., Rochester, N. Y., 1934-36; Neurological Fellowship, Johns Hopkins Univ., 1936-38; John and Mary R. Markle Found., Fellow, Natl. Hosp. Queens Square, London, 1938-39; Instr. in Neurology, Johns Hopkins Univ., 1939-41; Psychiatric Res., Milwaukee Sanitarium, Wauwatosa, Wis., 1941-42; Consultant in Neurology, U. S. Naval Hosp., Bethesda, Md., 1946-49; Dir., Res. Proj., N.I.M.H., 1946-49; Rsch. Assoc., Wash. Schl. of Psychiatry, 1947-48; Consultant, Neurology and Psychiatry, Mayo Clinic, Rochester, Minn., 1949-54; Assoc. Prof. of Psychiatry, Univ. of Minn., 1949-54; Prof. and Chmn., Dept. of Psychiatry, Coll. of Phys. and Surgs., Columbia Univ.; Dir., Psychiatry Serv. Presbyterian Hosp., 1954—. Hon. Pos.: Pres., N. Y. Soc. for Clin. Psychiatry; Pres., Assn. for Rsch. in Nervous and Mental Disease, 1959. Mem.: Am. Neurolog. Assn.; Assn. Res. Nerv. and Ment. Dis.; Am. Psychoanal. Assn.; Fellow, Acad. of Neurol.; N. Y. Acad. Med.; Psychiat. Assn.; Vidonia; Practitioners. Serv. Rec.: U.S.N.R., 1942-46. Areas of Rsch.: Psychiatry; Psychoanalysis; Neurophysiology.

KOLODNER, Louis J. (M.D.), Surg., 2502 Eutaw Place, Baltimore 17, Md. Home Add.: 6107 Biltmore Ave., Baltimore 15, Md. GENERAL SURGERY. b. Baltimore, Md., Dec. 17, 1911. s. George F. and Rose (Lieberman) K. Edn.: A.B., Johns Hopkins Univ., 1932; M.D., Univ. of Md., 1936. m. Lee Bressler, Feb. 18, 1937. c.: George; Robert. Exp.: Attending Surg. and Assoc., in Path., Sinai Hosp., Courtesy Priv., St. Agnes Hosp., Womans Hosp., Lutheran Hosp. (all in Baltimore, Md.), 1954—; Attending Surgeon, Levindale Hebrew Home and Infirmary, Baltimore, Md., 1954—; Instr. in Surg., Johns Hopkins Univ., 1958—. Hon. Pos.: Pres., Med. Staff, Sinai Hosp. of Baltimore, Inc., 1958-59; Chmn., Med. Div., Assoc. Jewish Charities and Welfare Fund. Mem.: Am. Bd. of Surg.; Am. Coll. of Surg.; Southeastern Surg. Congress; Am. Assn. for Adv. of Sci.; A.M.A.; Johns Hopkins Med. Soc.; Univ. Club; Johns Hopkins Club. Contbr. to: Anatomical Record; Am. Jour. of Obstetrics and Gynecology. Serv. Rec.: U. S. Navy, W. W. II. Areas of Rsch.: Conducted Rsch. on Pancreatitis. New Instruments for Biliary Tract Surgery.

KOLODNY, Abraham Lewis (M.D.), Physician, 1825 Eastern Blvd., Baltimore 21, Md. Home Add.: Box 424, Rt. 7, Greenspring Ave., Baltimore 8, Md. RHEUMATOLOGY AND MEDICINE. b. Norfolk, Va., July 2, 1917. s. William and Jennie (Eisenberg) K. Edn.: M.D., Univ. of Va., 1934-41. m. Mildred Fiske, Aug. 10, 1942. c.: William (dec.); David Greene; Sue Carol; Douglas Merrill; Peggy Lee. Exp.: Practice, Rheumatology and Med., Baltimore, Md., 1946-62; Adjunct Attending, Internal Med. and Arthritis Clin., Sinai Hosp., ibid., 1946-62; Hd., Div., Rheumatology, N. Charles Gen. Hosp., ibid., 1960-62; Lectr., Postgrad. Inst., ibid., 1962—. Mem.: Am. Rheumatism Assn.; Am. Assn. for Adv. of Sci.; Am. Geriatrics Soc.; Am. Fed. for Clin. Rsch.; Baltimore Co. Med. Soc.; Med. and Chirurgical Faculty of Md.; Am. Med. Assn.; Phi Lambda Kappa. Contbr. to: Jour. of Chronic Diseases; The Sinai Hosp. Jour.; Diseases of the Nervous System; Am. Jour. of the Med. Scis.; Angiology; Current Therapeutic Rsch.; Antibiotic Med. and Clin. Therapy; Archives of Surg.; Med. Times; Md. St. Med. Jour.; N. Y. St. Med. Jour.; Jour. Am. Med. Assn. Serv. Rec.: U. S. Army, 1942-44. Gen. Int.: Bronze Star, Combat Med. Badge, Presidential Citation. Areas of Rsch.: Rheumatology, Internal Med., Clinical Rsch.

KONIKOFF, Benjamin Samuel (D.D.S.), Dentist, 135 Phillips Ave., Baton Rouge, Louisiana. Home Add.: Route #1, Box 235, Baker, La. DENTISTRY AND NUTRITIONAL RESEARCH. b. Chicago, Ill., July 16, 1912. s. Samuel and Manya (Levinson) K. Edn.: D.D.S., Loyola Univ., 1945; M.S., La. St. Univ., 1960. m. Gloria V. Stanley, Feb. 3, 1945. c.: Benj. S., Jr.; Susan Lynne; Charles Edward; Connie Anne; Robert William. Exp.: Instr., Sou. St., Magnolia, Ark., 1934-35; Instr., Loyola Univ., 1940-44; Dentist, Private Practice, Baton Rouge, La., 1948—; Our Lady of the Lake Hosp. Dental Staff, Chief of Dental Service, 1960; Baton Rouge Gen. Hosp. Dental Staff; Clin. Asst., Prof., Schl. of Med., L.S.U., New Orleans, La. Mem.: Am. Dental Assn.; La. St. Dental Soc.; La. 6th Dist. Dental Assn.; E.B.R. Parish Dental Assn.; Royal Soc. of Health, Great Britain; A.A.A.S.; La. Acad. of Sci.; Am. Dairy Sci. Assn.; Delta Sigma Delta; Theta Beta; Gamma Sigma Delta; Sigma Xi. Contbr. to: Jour. Oral Surg., Anesth. and Dental Hosp. Serv.; Am. Jour. Clin. Nutrition. Serv. Rec.: U. S. Navy, W. W. II. Areas of Rsch.: Nutrition, Fluoride in Milk; Consultant: Dental Nutrition, Brook Hill Farms, Chicago, Ill.

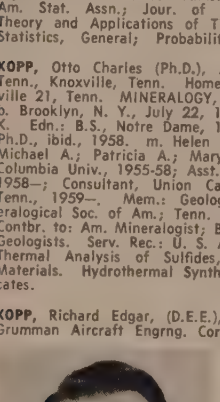
KOONTZ, Amos Ralph (M.D.), Surgeon, 1014 St. Paul St., Baltimore 2, Md. Home Add.: Garrison, Md. GENERAL SURGERY. b. Marksville, Va., Feb. 12, 1890. s. Hubert L. and Annie (Brown) K. Edn.: A.B., William and Mary Coll., 1910; B.S., ibid., 1910; A.M., ibid., 1911; M.D., Johns Hopkins Univ., 1918. Hon. Deg.: D.Sc., William and Mary Coll., 1950. m. Besse Stocking, July 3, 1920. c.: James W., II. Exp.: Asst. in Biol., William and Mary Coll., 1910-14; Asst. to Asst. Prof., Dept. of Surg., Johns Hopkins Univ. Schl. of Med., 1926-55; Surgeon, Private Practice, Baltimore, Md., 1921—. Hon. Pos.: Pres., Assn. of Milit. Surgeons of the U. S.; Pres., The Univ. Club of Baltimore; Pres., Baltimore City Med. Soc. Mem.: Societe Internationale de Chirurgie; Am. Surg. Assn.; Sou. Surg. Assn.; Theta Delta Chi; Phi Beta Kappa; Sigma Xi. Contbrng. Author: Lewis's Practice of Surgery; Allen's Abdominal Surgery. Serv. Rec.: U. S. Army, W. W. I, W. W. II. Gen. Int.: Consult. in Surg. for the Surg. Gen. of the Army. Areas of Rsch.: Rsch. on the Effects of War Gasses on Tissues, on the Principles of Wound Healing, and on the Reaction of Tissues to Various Foreign Prostheses with Special Reference to Their Use in Hernia Repair.



KOOPMANS, Lambert Herman (Ph.D.), Mem. of Techn. Staff, Sandia Corp., Alburquerque, N. Mex. Home Add.: 7400 Dellwood Rd. N.E., Albuquerque, N. Mex. MATHEMATICAL STATISTICS. b. Chicago, Ill., July 23, 1930. s. John O. and Pearl (Andrews) K. Edn.: A.B., San Diego State Coll., 1952; Ph.D., Univ. of Calif., Berkeley, 1958. m. Sharon Archibald, Dec. 24, 1955. c.: Melissa; Vanessa; David. Exp.: Tchng. Asst., Univ. of Calif., Berkeley, Calif., 1953-55; Rsch. Assoc., ibid., 1955-58; Techn. Staff Mem., Sandia Corp., 1958—. Mem.: Am. Maths. Soc.; Inst. of Mathl. Stats.; Am. Stat. Assn.; Am. Geophys. Union; Sigma Xi. Contbr. to: Anns. of Mathl. Stats.; Jour. of the Am. Stat. Assn.; Jour. of Geophys. Rsch. Areas of Rsch.: Theory and Applications of Time Series Analysis; Mathematical Statistics, General; Probability Theory; Seismology; Geology.

KOPP, Otto Charles (Ph.D.), Asst. Prof. of Geology, Univ. of Tenn., Knoxville, Tenn. Home Add.: 4516 Silverhill Dr., Knoxville 21, Tenn. MINERALOGY, MINERAL SYNTHESIS, PETROLOGY. b. Brooklyn, N. Y., July 22, 1929. s. Frank and Hattie (Gruhn) K. Edn.: B.S., Notre Dame, 1951; M.A., Columbia Univ., 1955; Ph.D., ibid., 1958. m. Helen E. Shotkowski, Sept. 4, 1954. c.: Michael A.; Patricia A.; Mary B. Exp.: Rsch. Assoc., Texaco, Columbia Univ., 1955-58; Asst. Prof. of Geology, Univ. of Tenn., 1958—; Consultant, Union Carbide Nuclear Corp., Oak Ridge, Tenn., 1959—. Mem.: Geological Soc. of Am.; Fellow, Mineralogical Soc. of Am.; Tenn. Acad. of Sci.; A.A.A.S.; Sigma Xi. Contbr. to: Am. Mineralogist; Bull. of the Am. Assn. of Petroleum Geologists. Serv. Rec.: U. S. Army. Areas of Rsch.: Differential Thermal Analysis of Sulfides, Arsenides, and Other Corrosive Materials. Hydrothermal Synthesis of Minerals, Particularly Silicates.

KOPP, Richard Edgar, (D.E.E.), Group Leader, Computing Rsch., Grumman Aircraft Engrng. Corp., Bethpage, N. Y. Home Add.: 928 Gardiner Dr., Bay Shore, N. Y. ELECTRICAL ENGINEERING (COMPUTING AND CONTROL). b. Brooklyn, N. Y., July 12, 1931. s. Edgar Allen and Nancy (Barto) K. Edn.: B.E.E., Polytech. Instit. of Brooklyn, 1953; M.E.E., ibid., 1957; D.E.E., Ibid., 1960. m. Elaine Barbara Hecker, June 14, 1953. c.: Debra Marie; Richard Edward; Lisa Ann. Exp.: Rsch. Engr., Grumman Aircraft, Bethpage, N. Y., 1953-56; Group Leader-Special Projs. in Computing, ibid., 1956-59; Group Leader Rsch., ibid., 1959—; Lectr., Polytech. Inst. of Bklyn., 1960—. Hon. Pos.: Chmn. of Guid., Control System Optimization Sess. of I.A.S. Vehicle Optimization Symposum, 1961. Mem.: I.R.E.; P.G.A.C.; P.G.E.C.; Sigma Xi; A.A.A.S. Contbrng. Author: "Optimization Techniques," 1962; "Contributions to Differential Equations," Vol. III, 1962. Contbr. to: Author, I.R.E. Internatl. Convention Rec., 1961; Co-Author, Eastern Joint Computer Conf., 1961; S.A.E.; I.A.S. Areas of Rsch.: Computing, Control Systems and Allied Fields.



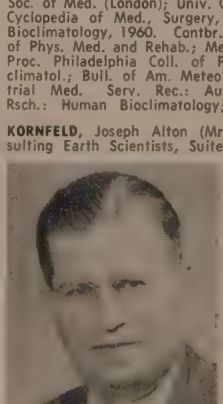
KOPPITZ, Werner Joseph (Ph.D.), Rsch. Psychologist, I.B.M., Thomas J. Watson Rsch. Ctr., Box 218, Yorktown Heights, N. Y. Home Add.: RFD #1, Box 200, Stanwood, Mount Kisco, N. Y. PSYCHOLOGY OF VISION, PATTERN RECOGNITION, PERCEPTION, STATISTICS, TEACHING MACHINES. b. Berlin, Germany, Nov. 5, 1915. s. Heinrich and Rosalie (Lehrs) K. Edn.: M.A., Ohio St. Univ., 1955; Ph.D., ibid., 1958. m. Elizabeth Munsterberg, June 14, 1955. Exp.: Rsch. Psychologist, I.B.M. Thomas J. Watson Rsch. Ctr., Yorktown, N. Y., 1960—; Rsch. Psychologist, I.M.B., G.P.L. Endicott, Endicott, N. Y., 1958-59. Mem.: A.A.A.S.; Am. Psychol. Assn.; Sigma Xi; R.E.S.A. Areas of Rsch.: Perc Phenomena, Pattern Recognition, Application of Computer Sy tems to Teaching.

KOPROWSKI, Hilary (M.D.), Dir., The Wistar Inst., Philadelph 4, Pa. Home Add.: 334 Fairhill Rd., Wynnewood, Pa. BIOLOGICA AND MEDICAL RESEARCH. b. Warsaw, Poland, Dec. 5, 1916. Paul and Sarah (Berlanti) K. Edn.: M.D., Univ. of Warsa Poland, 1939. m. Dr. Irena Grasberg, July 14, 1938. c. Claude Eugene; Christopher Dorian. Exp.: Rsch. Asst., Dept. Expt. Pathology, Univ. of Warsaw, Poland, 1936-39; Rsc Assoc., Yellow Fever Rsch. Service, Rockefellor Found. an Ministry of Edn., Rio de Janeiro, Brazil, 1940-44; Rsch. Assoc Sect. of Viral and Rickettsial Rsch., Lederle Lab., Am. Cyanami Co., Pearl River, N. Y., 1944-46; Asst. Dir., Sect. of Viral an Rickettsial Rsch., ibid., 1946-57; Dir., the Wistar Inst. Anatomy and Biology, Philadelphia, Pa., 1957—; Wistar Pro of Rsch. Med., Univ. of Pa., 1957—; Prof. of Microbiolog Grad. Schl. of Arts and Scis., ibid., 1957—. Hon. Pos.: Pres N. Y. Acad. of Scis., 1959; Trustee, ibid., 1960—. Mem.: N. Y Acad. of Med.; Am. Soc. Microbiol.; Am. Assn. of Immunologists Am. Assn. for Cancer Rsch.; Am. Fed. for Clin. Rsch.; Am Assn. of Univ. Prof.; Am. Soc. of Tropical Med.; Biochem. So (England). Contbr. to: Assoc. Editor, Virology, 1955-60; Jou of Bacteriology, 1956-60; Cancer Rsch., 1957-61. Gen. Int Awarded Ordre du Lion by King of Belgium for Polio Im munization Work in Belgium Congo; Alvarenga Prize of Col of Phys. of Philadelphia. Areas of Rsch.: Cellular Biology; Viro ogy; Tumor Rsch.

KORKES, Harold (Mr.), Avocational Researcher. Home Add 845 Corinthian Ave., Phila. 30, Pa. ANTI-GRAVITY AND NU CLEAR METEOROLOGY RESEARCH. b. Newport, Ky., Nov. 1, 190 s. John (dec.) and Celia (Siegel) K. m. Jeannette Shirk, Jan 4, 1938. c.: Donna Karen. Exp.: Indep. Rschr., 1929- Salesman, Dubin Paper Co., Phila., Pa., 1961—. Mem.: Gravit Assn. for Universal Scient. Studies; Am. Meteorol. Soc.; Am Geophys. Union. Contbr. to: Gauss Scient. Jour. Areas of Rsch. Anti-Gravity, Nuclear Meteorology, Tidal Influences, Long Rang Weather Forecasting.

KORNBLUEH, Igho Hart (M.D.), Med. Dir., Dept. of Physical Med and Rehabilitation, The Grad. Hosp., Univ. of Pa., Philadelphi 46, Pa. Home Add.: 1023 Welsh Rd., Bustleton, Philadelphia 15 Pa. PHYSICAL MEDICINE. b. Austria, Oct. 20, 1902. s. Michae and Adele (Safrin) K. Edn.: M.D., Univ. of Vienna, 1924. m Margaret Rosoff, 1948. Exp.: Chf., Dept. of Phys. Med., North eastern Hosp. of Philadelphia, 1942—; Med. Dir., Dept. of Phys Med., Grad. Hosp., Univ. of Pa., 1955—; Chf., Frankford Hosp Dept. of Phys. Med. and Rehabilitation, Philadelphia, Pa., 1958— Secy. and Dir., Am. Inst. of Med. Climatology, 1958—. Hon Pos.: Chmn., Comm. on Ionization of the Air, Internatl. Soc. o Bioclimatol. and Biometeorol.; Chmn., Sect. on Med. Hydrology Am. Inst. of Med. Climatology. Mem.: Coll. of Physicians, Phila delphia; A.A.A.S.; A.M.A.; Biophysical Soc.; Am. Congress o Phys. Med. and Rehab.; Pa. Acad. of Phys. Med.; Am. Meteorol Soc.; Internatl. Soc. of Bioclimatol. and Biometeorol.; Correspond ing Mem. of Gesellschaft der Aerzte (Vienna) Austria; Roya Soc. of Med. (London); Univ. Club; and others. Contbrng. Author Cyclopedia of Med., Surgery, Specialities, 1959; Introduction t Bioclimatology, 1960. Contbr. to: Am. Jour. of Phys. Med.; Arch of Phys. Med. and Rehab.; Med. Sci.; Clin. Med.; Pa. Med. Jour. Proc. Philadelphia Coll. of Physicians; Internatl. Jour. of Bio climatol.; Bull. of Am. Meteorol. Soc.; Wetter und Leben; Indus trial Med. Serv. Rec.: Austrian Army, 1917-19. Areas o Rsch.: Human Bioclimatology; Aeroionization; Balneology.

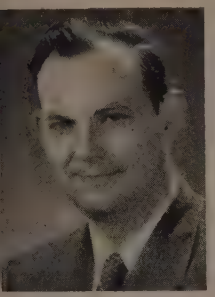
KORNFELD, Joseph Alton (Mr.), Pres., Kornfeld Internatl., Con sulting Earth Scientists, Suite 610 Mid-Continent Bldg., Tulsa 3 Okla. Home Add.: 5135 S. Tren ton Ave., Tulsa 3, Okla. ENERGY FUELS, PETROLEUM, NATURAL GAS, METHANE LIQUEFACTION, UNDERGROUND NATURAL-GAS STORAGE, ENGINEERING EDUCA TION, RADIATION CHEMISTRY OF THE HALOGENS. b. Marietta, Ohio, June 9, 1907. s. Hyman Isaac and Fannie (Travis) K. Edn.: B.A., Tex. Christian Univ., 1946; M.A., ibid., 1948. m. Freda Arlosoroff, Apr. 14, 1935. c.: Howard Allan. Exp.: Reservoir Engr., Texaco, Inc., Ft. Worth, Tex., 1944-48; Reservoir Engr., Standard Oil Co. (Ohio), Oklahoma City, Okla., 1948-50; Dist. Editor, Oil and Gas Jour., Tulsa, Okla., 1950-54; Exploration Editor, Petroleo Interamericano, Tulsa, Okla., 1950-54; Pres., Kornfeld Internatl., Tulsa, Okla., 1954—. Hon. Pos.: Exec. Committee, Tulsa Sect., A.C.S. Mem.: A.A.A.S.; Am. Inst. of Mining, Metallurgical Engrs.; Soc. of Petroleum Engrs.; Am. Geophysical Union; Am. Soc. of Agronomy; Soil Sci. Soc. of Am.; Mineralogical Soc. of Am.; Geochemical Soc.; Paleon. Soc. of Am.; Tulsa Geological Soc.; Okla. City Geological Soc.; Engr's. Club. of Tulsa; Assn. Francaise des Techniciens du Petrole, Paris, France; Pi Lambda Phi; Tulsa Committee for U. N. Author: Natural Gas Economics, 1949. Contbr. to: Proc. of Internatl. Cong. of Pure and Applied Chem., Paris, Munich; Internatl. Geological Cong., Algiers, Mex. City; Internatl. Cong. on Detergence, Univ. of Cologne, W. Germany; Geochimica Acta; Clay and Clay Minerals Confs. Gen. Int.: Certificate of Merit, Thomas Gilcrease Inst. of Am. History and Art; Okla. St. Treas.



B'Nai B'Rith; Okla St. Chmn., Zionist Organization of Am.; Natl. Comm., Am. Israel Publ. Affairs. Areas of Rsch.: Radiation Chem. of the Halogens; Mineralogy of Clay Minerals; Geology of Aquifers; Econs. of Energy Fuels (Petroleum and Natural Gas).

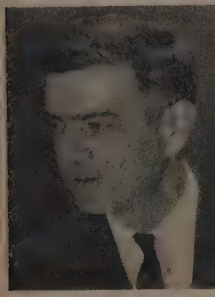
KORNSTEIN, Edward (Mr.), Physicist, R.C.A., Burlington, Mass. Home Add.: 34 Choate Rd., Belmont, Mass. PHYSICAL OPTICS AND OPTICAL INSTRUMENTATION. b. N. Y., Sept. 7, 1929. s. Max and Margit (Stahl) K. Edn.: B.A., N. Y. Univ., 1951; M.S., Drexel Instit. of Tech., 1954. m. Marion B. Stein, Dec. 20, 1958. c.: Sandra P. Exp.: Physicist, RCA, Camden, N. J., 1951-57; David Sarnoff Fel., Boston Univ., Boston, 1957-59; Physicist, RCA, Burlington, Mass., 1960—. Hon. Pos.: Mgr., Boston Sect., Soc. of Motion Picture and Television Engrs. Mem.: S.M.P.T.E.; Optical Soc. of Am.; Am. Assn. for the Adv. of Sci.; United World Federalists, Vice-Chmn., Boston Chapter. Contbrng. Author: Proc. London Conf. on Optical Instruction, 1961. Contbr. to: Jour. Optical Soc. of Am.; RCA Rev. Areas of Rsch.: Optics and Information Theory, Optical Instrumentation, Optical Masers and Electro-optical Systems.

KORTY, Vernon Morris (Mr.), Chf., Environmental Evaluation Department, Naval Ordnance Lab., Silver Spring, Md. PHYSICS. b. Bluffs, Ill., Apr. 25, 1916. s. Fred H. and Stella Weedon (Morris) K. Edn.: A.B., Ill. Coll., 1937; A.M., Univ. of Ill., 1939. m. Margaret Ruby Barton on July 18, 1942. c.: Peggy Jo; Frederick William; Robert David. Exp.: Tchng. Asst. in Phys., Univ. of Ill., 1937-41; Special Rsch. Asst., Mech. Engrng. Expt. Station, 1941-42; Physicist and Ord. Engr., Naval Ord. Lab., Silver Spring, Md., 1942—. Hon. Pos.: Chmn., Joint Army-Navy Fuze Field Test Subcom., 1951-53; Secy., JAN Fuze Lab. Tests Subcom., 1949-51. Mem.: Phi Beta Kappa; Am. Assn. Adv. of Sci.; Am. Phys. Soc.; Amer. Ordnance Assn. Gen. Int.: Meritorious Civilian Serv. Award, U. S. Navy. Special Int.: Test Methods in Ordnance Phys.: Safety and Reliability of Explosive Components.

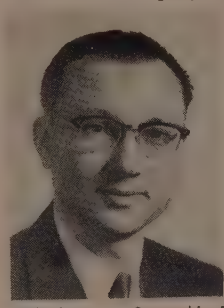


KOSA, John (Ph.D.), Assoc. Prof., Schl. of Publ. Health, Univ. of N. C., Chapel Hill, N. C. Home Add.: Northside Drive, Chapel Hill, N. C. SOCIOLOGY. b. Hungary, Europe, Aug. 29, 1914. s. Arthur K. and Helen (Visontai) K. Edn.: Ph.D., Univ. of Budapest, Hungary, 1937. m. Catherine M. Green, 1956. c.: John E.; Francis P.; Mark, V. Exp.: Assoc. Prof., Le Moyne Coll., 1954-59; Res. Assoc., Cornell Univ., 1959-61; Assoc. Prof., Schl. of Publ. Health, Univ. of N. C., 1961—. Mem.: Am. Sociological Assn.; Can. Political Sci. Assn.; Soc. for the Sci. Study of Rel. Author: Two Generations of Soviet Men, 1962; Land of Choice: The Hungarians in Canada, 1957; Immigrants in Canada, 1955. Contbr. to: Jour. of Soc. Psychol.; Studies in Human Ecol.; Jour. of Gerontol.; Jour. of Psychol., Can. Jour. of Econs. and Polit. Sci.; Jour. of Cent. European Affairs. Areas of Rsch.: Sociology of Occupational Selection; Sociology of Health-Related Professions.

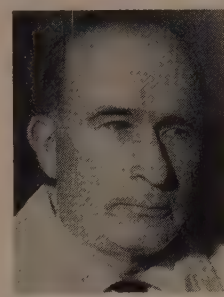
KOSEL, George Eugene (Mr.), Mgr., Graphic Arts Rsch., Philip A. Hunt Co., Palisades Park, N. J. Home Add.: 6 Pretoria St., Passaic, N. J. INORGANIC CHEMISTRY, BIOCHEMISTRY. b. Rochester, N. Y., July 22, 1923. s. George Carl and Caroline Emma (Cooligan) K. Edn.: A.B., Cornell Univ., 1944; M.S., Univ. of Rochester, 1951. m. Jean Elizabeth Glenn, Aug. 26, 1950. c.: Liza Gretchen; Leslie Anne; Ellen Maria. Exp.: Rsch. Assoc., Atomic Energy Comm., Rochester, N. Y., 1945-50; Chief Biochemist, Passaic Gen. Hosp., Passaic, N. J., 1951—; Mgr., Graphic Arts Rsch., Philip A. Hunt Co., Palisades Park, N. J., 1954—. Hon. Pos.: Bd. of Trustees, N. J. Assn. for Dental Rsch. Mem.: A.A.A.S.; Am. Chem. Soc.; Soc. of Photographic Sci. and Engrs.; N. J. Assn. for Dental Rsch.; Acad. of Sci. of N. J.; Alpha Chi Sigma; Gamma Alpha; Phi Lambda Upsilon; Sigma Xi; Am. Legion. Contbr. to: Analytical Chem.; Science; Jour. of Dental Rsch.; Northwest Med.; Reproduction Methods. Serv. Rec.: U. S. Army, 1942-44. Areas of Rsch.: Electrophotography, Solid State Chem. and Physics, Fluoride Chem. and Metabolism.



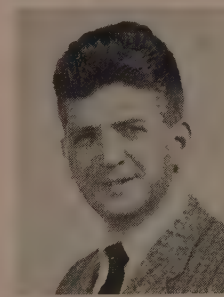
KOSTANICK, Huey Louis (Ph.D.), Professor of Geography, Univ. of Calif. at Los Angeles, Los Angeles 24, Calif. Home Add.: 22338 Philiprimm St., Woodland Hills, Calif. GEOGRAPHY. b. Horning, Pa., April 7, 1918. s. Nick and Anna Eva (Popovich) K. Edn.: A.B., Univ. of Pittsburgh, 1940; M.A., Clark Univ., 1942; Ph.D., ibid., 1948. m. Celeste Budd, Feb. 4, 1950. c.: Christopher Harrell. Exp.: Rsch. Analyst, Office of Strategic Services, Washington, D. C. and Overseas, 1943-45; Rsch. Analyst, State Dept., Washington, D. C., 1946; Assoc. Prof., Univ. of Calif. at L. A., 1946-62; Prof., ibid., 1962—. Hon. Pos.: Pres., Assn. of Pacific Coast Geographers, 1957. Mem.: Assn. of Am. Geographers; Am. Geographical Soc.; Assn. of Pacific Coast Geogrs.; A.A.A.S.; Am. Assn. for the Adv. of Slavic Studies; Calif. Coun. on Geographic Edn.; Calif. Acad. of Scis.; Sigma Xi; Pi Gamma Mu. Author: Monograph: The Resettlement of Bulgarian Turks in Turkey, 1953. Contbr. to: Chapters, Military Aspects of World Political Geography and Readings in Contemporary Eastern Europe, 1953; Geographical Rev.; Annals of the Assn. of Am. Geographers; Econ. Geog.; Science; Current Hist.; Education; Childhood Edn.; Yearbook of the Assn. of Pacific Coast Geographers; Bull. of the Calif. Coun. on Geog. Edn.; The Calif. Geographer. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Problem Areas and Population Changes in Eastern Europe and the Soviet Union.



KOSTOWIECKI, Marjan (M.D.), Assoc. Prof., Anat., Dept., G.S.M., Univ. of Pa., Phila. 4, Pa. Home Add.: 5940 Woodbine Ave., Phila. 31, Pa. ANATOMY AND HISTOLOGY. b. Dobromil, Poland, Jan. 23, 1904. s. Joseph and Eleonora (Karwacka) K. Edn.: M.D., Univ. of Lwow, Poland, 1928; Docent of Anat., 1939. Exp.: Lectr. in Histol., Lwow, Poland, 1924-28; Senior Lectr. Anat., ibid., 1929-39; Hd. of Hist. Dept., Polish Schl. of Med., 1941-46; Asst. Prof. of Anat. Grad. S.M., Univ. of Pa., 1951-52; Assoc. Prof. of Anat., ibid., 1952—. Mem.: Am. Assn. Anatomists; Am. Assn. Adv. Sci.; Natl. Geographic Soc.; Polish Assn. of Prof. and Docents; Am. Riffle Assn. Contbr. to: Many Papers on Thymus. Serv. Rec.: Polish Med. Corps.



KOSZEWSKI, Bohdan Julius (M.D.), Asst. Prof. of Med., Creighton Univ. Schl. of Med., Omaha, Neb. Home Add.: 336 S. 70th St., Omaha 32, Neb. INTERNAL MEDICINE AND HEMATOLOGY. b. Warsaw, Poland, Dec. 17, 1918. s. Mikolaj and Helen (Janczarek) K. Edn.: M.D., Univ. of Zurich, Switzerland, 1946; M.S., Creighton Univ., 1956. m. Eileen Hruska, Apr. 11, 1955. c.: Mikolaj Joseph; Wanda Maria. Exp.: Assoc. Med., Univ. of Zurich, Switzerland, 1950-52; Instr., Creighton Univ., 1956-57; Asst. Prof., ibid., 1957—; Head, Sect. of Hematol., Dept. of Med., ibid., 1960—. Hon. Pos.: Chmn., Omaha Rsch. Club. Mem.: A.A.A.S.; Am. Fed. Clin. Rsch.; Am. Heart Assn.; Am. Soc. Hemat.; Internatl. Soc. Hemat.; A.M.A. Author: Prognosis in Diabetic Coma, 1952. Contbr. to: Gastroenterologia; Helv. Med. Acta; Virchow's Arch. Path. Anat.; Blood; Acta. Haematol.; Am. Jour. Med.; Arch. Int. Med.; Ann. Int. Med.; Circulation; Am. Heart Jour.; Am. Jour. Med. Sci.; Angiology. Serv. Rec.: Polish Army, 1940-45. Areas of Rsch.: Hematol. and Immunohematol.; Pathophysiol. and Cytochem. of Leukocytes.



KOSZTARAB, Michael (Ph.D.), Assoc. Prof., Va. Polytech. Inst., Dept. of Entomol., Blacksburg, Va. ENTOMOLOGY. b. Bucharest, Romania, July 7, 1927. s. Michael, Sr. and Berta (Albert) K. Edn.: Dipl. Horticult., Municipal Schl. of Hort., Budapest, Hungary, 1947; Ing. Hort., Hung. Univ. of Agric. Scis., Budapest, Hungary, 1951; Ph.D., The Ohio St. Univ., 1962. m. Matilda Pinter, Oct. 21, 1953. Exp.: Asst., Hungarian Sta. Bur. of Plant Protection, Budapest, Hungary, 1947-50; Asst. Prof., Coll. of Hort. and Viticult., Budapest, Hungary, 1951-56; Entomolt., Insect Control and Rsch., Inc., Balt., Md., 1957-60; Rsch. Asst., The Ohio Sta. Univ., Dept. of Zool. and Entomol., 1960-62; Assoc. Prof., Va. Polytech. Inst., Dept. of Entomolo., 1962—. Mem.: Ent. Soc. of Am.; Ent. Soc. of Wash.; Ohio Acad. of Scis.; Sigma Xi; Gamma Sigma Delta. Contbr. to: Annales Hist. Nat. Musei Nat. Hungarici; Acta Agronomica (Budapest);

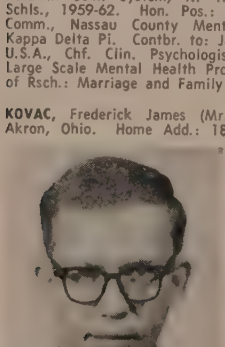
Anns. Ent. Soc. of Am. Areas of Rsch.: Taxonomy and Biology of Scale Insects; Horticultural Entomology.

KOTTLOWSKI, Frank Edward, (Ph.D.), Econ. Geologist, N. Mex. Bureau of Mines, Socorro, N. Mex. Home Add.: 803 Sunset Drive, Socorro, N. Mex. ECONOMIC GEOLOGIST, STRATIGRAPHER. b. Indianapolis, Ind., April 11, 1921. s. Frank C. and Adella Marie (Markworth) K. Edn.: A.B., Ind. Univ., 1947; M.A., ibid., 1949; Ph.D., ibid., 1951. m. Florence J. Chriscoe, Sept. 15, 1945. c.: Karen; Janet; Diana. Exp.: Party Chief, Ind. Geol. Survey, Bloomington, Ind., 1947-51; Econ. Geol., N. Mex. Bur. Mines, Socorro, N. Mex., 1951—; Faculty Assoc., N. Mex. Inst. of Min. & Tech., 1954—. Hon. Pos.: Pres., N. Mex. Geol. Soc.; Commissioner on Am. Stratigraphic Comm. Mem.: Fellow, Geol. Soc. Am.; Am. Assn. Petrol. Geol.; Am. Geophys. Union; Sigma Xi; Soc. Econ. Geol.; Natl. Assn. Geol. Tchrs.; N. Mex. Geol. Soc.; N. Mex. Min. Assn.; Ind. Acad. Sci.; Lions. Author: Pennsylvanian of Southwestern New Mexico, 1960; Stratigraphic Studies of the San Andres Mountains, 1956. Co-author: Gypsum Resources of New Mexico, 1959. Contbr. to: Geol. Soc. of Am. Bull.; Bull. Am. Assn. Petrol. Geol.; Proc. Ind. Acad. Sci.; Economic Geol. Serv. Rec.: U. S. Army Air Force, 1942-45. Areas of Rsch.: Stratigraphy, Economic Geology.

KOTTMAN, Roy Milton (Ph.D.), Dean, Coll. of Agric. and Home Econ., Ohio St. Univ., Dir., Ohio Agric. Expt. Sta., 2120 Fyffe Rd., Columbus 10, Ohio. Home Add.: 1375 Kirkley Rd., Columbus 21, Ohio. ANIMAL SCIENCE. b. Thornton, Ia., Dec. 22, 1916. s. William D. and Millie J. (Christensen) K. Edn.: B.S., Ia. St. Coll., 1941; M.S., Univ. of Wis., 1948; Ph.D., Ia. St. Coll., 1952. m. Wanda L. Moorman, Dec. 31, 1941. c.: Gary Roy; Robert William; Wayne David; Janet Kay Exp.: Sales Trainee, Ralston-Purina, St. Louis, Mo., 1941; Asst. Prof., Ia. St. Coll., 1946; Grad. Asst., Univ. of Wis., 1947-48; Grad. Asst., Ia. St. Coll., 1948-50; Asst. to Dean of Agric., Asst. Prof., ibid., 1950-51; Asst. Dean of Agr. and Assoc. Prof., ibid., 1951-54; Assoc. Dean of Agric. and Prof., ibid., 1954-58; Dean, Coll. of Agric., Forestry and Home Econ., Dir., W. Va. Expt. Sta., W. Va. Univ., 1958-60; Dean, Coll. of Agric. and Home Econ., Dir., Ohio Agric. Expt. Sta., Ohio St. Univ., 1960—. Hon. Pos.: Advisor to Am. Feed Mgrs. Assn.; Mem., Food for Peace Council. Mem.: A.A.A.S.; Am. Soc. of Animal Production; Am. Men of Sci.; Gamma Sigma Delta; Alpha Zeta; Phi Kappa Phi; Pi Kappa Phi; Sigma Xi. Serv. Rec.: U. S. Army, 1941-46. Areas of Rsch.: Animal Breeding.

KOUGUELL, Maurice (Mr.), Schl. Psychologist, Office of Psychological Serv., Baldwin Schl. System, Baldwin, N. Y. Home Add.: 997 Clinton Place, Baldwin, Long Island, N. Y. MARRIAGE AND FAMILY LIFE IN COMMUNITY SERVICE. b. Beirut, Lebanon, Mar. 8, 1930. s. Arkadie and Maria (Malinskaya) K. Edn.: French Baccalaureat, American Univ. of Beirut, 1946; License de Concert, Ecole Normale de Musique de Paris; B.S., City Coll. of N. Y., 1953; M.S., ibid., 1956. m. Catherine Gray, Dec. 17, 1953. c.: Susan Lynn. Exp.: Chf. Clin. Psychologist, Ft. Dix, N. J., 1954-56; Clin Psychologist Intern, Northside Center, N. Y., 1956-57; Clin. Asst., City Coll. of N. Y., 1957-59; Schl. Psychologist, Baldwin Schl. System, N. Y., Educational Consultant, Nursery Schls., 1959-62. Hon. Pos.: Past Pres., Kappa Delta Pi; Edncl. Comm., Nassau County Mental Health Assn. Mem.: A.P.A.; Kappa Delta Pi. Contbr. to: Jour. of Consulting Psy. Serv. Rec.: U.S.A., Chf. Clin. Psychologist Specialist. Gen. Int.: Founded Large Scale Mental Health Program Baldwin Schl. System. Areas of Rsch.: Marriage and Family Life; Clin. Psychology.

KOVAC, Frederick James (Mr.), Mgr., Tire Cord Constructions, Akron, Ohio. Home Add.: 180 South Rose Blvd., Akron, Ohio. SYNTHETIC FIBER CHEMISTRY AND TECHNOLOGY. b. Akron, Ohio, Apr. 26, 1930. s. John and Mary Kouac (dec.) K. Edn.: B.S., Univ. of Akron, 1952; M.S., ibid., 1955; LL.B., ibid., 1962. Exp.: Chem. Engr., Firestone Tire and Rubber, Akron, Ohio, 1952-56; Chem. Engr., Goodyear Tire and Rubber, ibid., 1956—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Soc. Testing Mat.; A.C.S. Rubber Div.; Akron Rubber Group; Theta Chi; Phi Sigma Alpha; Phi Alpha Delta; Sertoma; Y.M.C.A. Author: Compounding of Butyl for Passenger Tires, 1955; Dictionary of Man-Made Fibers, 1961. Contbr. to: Rubber World; Rubber Age. Areas of Rsch.: Synthetic Fiber Chem. and Tech.; Adhesive Chem.; Polymer Chem. and Tech.



KOUVEL, James Spyros (Ph.D.), Physicist, General Electric Rsch. Lab., Schenectady, N. Y. Home Add.: Denison Rd., R.D. 2, Albany 5, N. Y. SOLID STATE PHYSICS. b. Jersey City, N. J., May 23, 1926. s. Spyros and Ifegenia (Cassianos) K. Edn.: B.E., Yale Univ., 1946; M.E., ibid., 1950; Ph.D., ibid., 1951. m. Andrey Lumsden, June 26, 1953. c.: Diana; Alexander. Exp.: Engr., Fed. Telecommunications Lab., Nutley, N. J., 1947-48; Rsch. Fellow, Univ. of Leeds, England, 1951-53; Rsch. Fellow, Harvard Univ., 1953-55; Physicist, General Electric Res. Lab., Schenectady, N. Y., 1955—. Mem.: Am. Physical Soc.; A.A.A.S.; Sigma Xi; Tau Beta Pi. Contrbng. Author: Encyclopedia of Electronics, 1962; Solids Under Pressure, 1962. Contbr. to: Journal of the Phys. and Chem. of Solids; Phys. Rev.; Jour. of Applied Physics. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Magnetism; Magnetic, Thermal, and Electrical Properties of Solids.

KOVACH, Robert Louis (Ph.D.), Sr. Scientist, Jet Propulsion Lab., Calif. Inst. of Techn., Pasadena, Calif. Home Add.: 1390 Nicholas Marengo, Pasadena, Calif. GEOPHYSICS. b. Los Angeles, Calif., Feb. 15, 1934. s. Nicholas A. and Stephanie (Russler) K. Edn.: M.A., Columbia Univ., 1959; Ph.D., Calif. Inst. of Techn., 1962. m. Linda Heyn, Dec., 1961. c.: Denise. Exp.: Rsch. Asst., Lamont Geol. Observ., Columbia Palisades, N. Y., 1955-58; Rsch. Asst., Columbia Univ., 1958-59; Rsch. Asst., Seismol. Lab., Calif. Inst. of Tech., 1959-61; Sr. Scient., Jet Propulsion Lab., Calif. Inst. of Techn., 1961—. Hon. Pos.: Assoc. Editor, for "Geophysics." Mem.: Am. Geophys. Union; Seismol. Soc. of Am.; Soc. of Exploration Geophysts.; Tau Beta Pi; Sigma Gamma Epsilon; Sigma Xi. Contbr. to: Jour. of Geophys. Rsch.; Geophys. Jour. of the Royal Astron. Soc. Serv. Rec.: U. S. Army, 1956-58. Areas of Rsch.: Seismology; Planetary Physics; Gravity.

KOZAI, Yoshihide (D.Sc.), Astronomer, Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge, Mass. Home Add.: 1 Forest St., Cambridge, Mass. CELESTIAL MECHANICS, POSITIONAL ASTRONOMY. b. Tokyo, Japan, April 1, 1928. s. Yoshimasa and Sumie (Shidehara) K. Edn.: M.S., Univ. of Tokyo, Japan, 1951; D.Sc., ibid., 1958. m. Mine Nagai, Sept., 1958. c.: Aya. Exp.: Rsch. Asst., Tokyo Astronomical Observatory, Tokyo, Japan, 1952-58; Astronomer, Smithsonian Astrophysical Observatory, Cambridge, Mass., 1958—; Rsch. Assoc., Harvard Coll. Observatory, 1959—. Mem.: Astronomical Soc. of Japan; Am. Astronomical Soc.; Am. Geophysical Union; International Astronomical Union. Contbr. to: Astronomical Jour.; Publ. of Astronomical Soc. of Japan; Annals of Tokyo Astronomical Observatory; Smithsonian Astrophysical Observatory Special Reports; Smithsonian Contbrns. to Astrophysics; Proc. of Japan Acad. Areas of Rsch.: Motions of Artificial Satellites and Asteroids; Potential of the Earth.

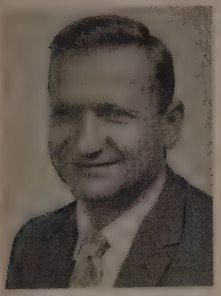
KRAFCHUK, John Damion (M.D.), Asst. Prof., Bacteriol., Univ. of Minn., Physician, Dermatologist, Mlps., Minn. Home Add.: 32 Oak St., S.E., Mlps. 14, Minn. DERMATOLOGY AND MICROBIOLOGY (MYCOLOGY, CELLULAR IMMUNOLOGY) SKIN HISTOPATHOLOGY. b. N. Y. City, Dec. 13, 1922. s. David and Katherin (Nikolyn) K. Edn.: B.S., N. Y. Univ., 1941; M.D., L. I. Coll. of Med., 1944. Exp.: Intern, U. S. Naval Hosp., Brooklyn, N. Y., 1944-45; Fellow in Bacteriol. and Pathol., Schl. of Med., Univ. of Rochester, N. Y., 1946-47; Instr. in Bacteriol. and Asst. Visiting Phsy., Med., L.S.U., Schl. of Med. and Charity Hosp., New Orleans, La., 1947-48; Post-Doctorate Fellow in Mycol., Instit. of Infectious Dis., Natl. Instit. of Health, N. Y., 1948-49; Grad. Fellow, Univ. of Minn. Hosp., Mlps., Minn., 1950-53; Instr., Med., Univ. of Minn. Hosp., Mlps., Minn., 1953-54; Asst. Prof. of Dermatol., Schl. of Med., La. Sta. Univ., New Orleans, La., 1955-56; Asst. Prof. of Med., Tulane Univ. Schl. of Med., ibid., 1956-58; Consultant in Dermatol., Kessler A.F.B., Miss., 1956-58; Priv. Pract., Dermatol. and Skin Histopatnol., Minn., 1958 ; Asst. Prof., Bacteriol., Univ. of Minn., 1959 . Hon. Pos.: Chmn., Secy.-Treas. and Pres., La. Dermatol. Soc ; Consulting Editor in Dermatology, Jour. of Allergy; Consulting Editor in Dermatol.; Minn. Med. Mem.: Am. Acad. of Dermatol. and Syphilol.; Soc. for Invest. Dermatol.; Am. Coll. of Allergists; Am. Acad. Allergy; Soc. of Am. Bacteriols.; Am. Fed. for Clinical Rsch.; Royal Soc. of Med.; Royal Soc. of Tropical Med. and Hygiene; Internatl. Soc. for Human and Animal Mycol.; Biol. Photographic Assn.; Am. Geriatric Soc.; N. Y. Acad. of Scis.; Am. Assn. for the Adv. of Sci.; Assn. of Milit. Surgeons of the U. S.; Am. Assn. of Univ. Profs.; Am. Assn. Med. Schls.; La. Dermatol. Soc.; Minn Dermatol. Soc.; Minn. Dermatol. Soc.; Assn. of Milit. Dermatols. Contbr. to: Arch. Otolaryng.; Bull. Univ. of Minn. Hosp.; Bull. Tulane Med.; Arch. Derm.; Am. Jour. of Human Genetics; So. Med. Jour. Serv. Rec.: U. S. Navy, 1944-46; U.S.N. Reserve, 1954-55. Gen. Int.: One of the Youngest Men to Have Graduated from an Accredited Medical School in the United States in the Past 20 Years. Areas of Rsch.: Clinical and Research Dermatology; Skin Histopathology; Mycology; Phagocytosis.

KRAFT, Chris, Jr., Project Mercury Flight Chief, Cape Canaveral, Fla.

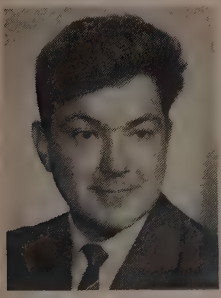
KRALL, Harry LeVern (Ph.D.), Prof. of Maths., Univ. Pa., Univ. Pk., Pa. Home Add.: 346 E. Irvin Ave., Sta. Coll., Pa. MATHEMATICS: DIFFERENTIAL EQUATIONS, SPECIAL FUNCTIONS. b. York, Pa., June 13, 1907. s. Harry Resh and Nora (Klepper) K. Edn.: B.S., Gettysburg Coll., 1927; M.S., ibid., 1928; Ph.D.

Brown Univ., 1932. m. Nellie Morton, March 31, 1934. c.: Allan Morton; John Morton. Exp.: Instr., Gettysburg Coll., 1927-28; Instr., Brown Univ., Providence, R. I., 1928-32; Instr., Pa. Sta. Univ., 1933-38; Asst. Prof., ibid., 1938-44; Assoc. Prof., ibid., 1944-48; Prof., ibid., 1948—. Mem.: Mathl. Assn. of Am. Am. Math. Soc.; Phi Beta Kappa; Sigma Xi. Contbr. to: Am. Jour. of Math.; Math. Monthly Bull.; Am. Math. Soc. Bull.; Trans. Am. Math. Soc. Areas of Rsch.: Differential Equations, Orthogonal Polynomials.

KRAMER, Amihud (Ph.D.), Prof., Univ. of Md., Coll. Park, Md. Home Add.: 415 Windsor St., Silver Spring, Md. FOOD QUALITY EVALUATION AND QUALITY CONTROL. b. Drohoby, Austria-Hungary, May 7, 1913. s. Nathan and Sabina (Puder) K. Edn.: B.S., Univ. of Md., 1938; M.S., ibid., 1939; Ph.D., ibid., 1942. m. Diana Stevan, 1938. c.: John B.; Marc S. Exp.: Agent, Soil Cons. Serv., U.S.D.A., Beltsville, Md., 1939-40; Chemist, Natl. Canners Assn., Wash., D. C., 1941-43; Rsch. Assoc., Natl. Rsch. Coun., Univ. of Med., Coll. Park, Md., 1943-45; Assoc. Prof., ibid., 1945-49; Prof., ibid., 1949—. Hon. Pos.: Chmn. Md. Sect. Wash. Sect. Instit. of Food Technols., Quality Control Comm.; Chmn., Processing Sect. Am. Soc. Horticul. Sci.; Councellor, Assoc. Editor, Inst. Food Tech. Mem.: Instit. of Food Technols.; Am. Soc. for Quality Control; Am. Soc. for Horticultural Sci.; Am. Assn. Adv. of Sci., Fellow; Am. Statistical Assn.; Am. Assn. Univ. Profs.; Sigma Xi; Alpha Zeta; Phi Tau Sigma. Author: Fundamentals of Quality Control for the Food Industry, 1961. Contbr. to: Food Technol.; Food Rsch.; Agricl. and Food Chem.; Proc. Am. Soc. Hort. Sci.; Plant Physiol.; Jour. Am. Dietetic Assn.; Food and Cosmetic Law Jour.; Proc. Am. Soc. of Quality Control. Gen. Int.: Consultant to Food Institns. and Govt. on Quality Standards and Quality Control of Foods. Areas of Rsch.: Development of Instruments and Physical-Chemical Procedures for Measuring Quality and Identity Attributes of Foods; Statistical Procedures for Quality Control.



KRAMER, Henry Paul (Ph.D.), Sr. Rsch. Mathn., Tempo, Genl. Elec. Co., Santa Barbara, Calif. MATHEMATICS; COMMUNICATIONS THEORY PROBABILITY THEORY; FUNCTIONAL ANALYSIS. b. Dusseldorf, Germany, Dec. 10, 1924. s. Frederick and Helene (Oppenheim) K. Edn.: B.A., Univ. of Calif., Berkeley, 1944; M.A., ibid., 1950; Ph.D., ibid., 1954. m. Frances E. Sorbello, 1946. c.: Helen Anne-Marie; Henry, Jr.; Rebecca; Jeremy; David. Exp.: Aerodynamicist, Glenn L. Martin, Co., Baltimore, Md., 1946-48; Mathn., Rad. Lab., Univ. of Calif., Berkeley, Calif., 1948-54; Mathn., Bell Tele. Labs., Murray Hill., N. J., 1954-59; Mathn., Tempo, Genl. Elec. Co., Santa Barbara, Calif., 1959—; Rsch. Assoc., Univ. of Calif. at Los Angeles, 1960—. Mem.: Am. Math. Soc.; I.R.E.; Soc. of Ind. and App. Math.; Kappa Delta Rho; Sigma Xi; Pi Mu Epsilon; Channel City Club. Contbr. to: Pac. Jour. of Math.; Jour. of Assn. for Computing Machines; Jour. of App. Physics; Annals of Mathl. Stats.; Jour. of Phys. and Math.; Trans. of Grp. on Inform. Theory. Areas of Rsch.: Communications Theory, Mathematical Physics, Theory of Automata, Probability Theory, Functional Analysis.

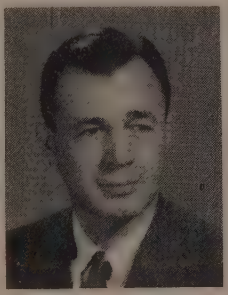


KRAMISH, Arthur Aaron (Ph.D.), Chief of Pychol. Servs., U. S. Pub. Health Serv., U. S. Bureau of Prisons, Fed. Reformatory, Chillicothe, Ohio. Home Add.: Rt. 1, Fed. Reserv., Chillicothe, Ohio. CLINICAL PSYCHOLOGY. b. Denver, Colo., May 2, 1917. s. Louis (dec.) and Tillie (Kaufman) K. Edn.: Ph.D., Univ. Denver, 1951. m. Bernardette Maxiner, 1948. Exp.: Chief, Personal Counselor, V.A. Reg. Office, Denver, Colo., 1946-51; Asst. Chf., Pychol. Serv., ibid., Lexington, Ky., 1951-53; Chief Psychol. Serv., V. A. Hosp., Lincoln, Nebr., 1953-57; Chief, Psych. Serv., ibid., Knoxville, Ia., 1957-61; Chief, Psycho. Serv., U. S. Pub. Health Serv., U. S. Bureau Prisons, Fed. Reformatory, 1961—. Hon. Pos.: Cert. Clin. Psycholt., Ky. Bd. of Psychol., 1952. Mem.: A.P.A.; A.P.G.A.; Natl. Rehab. Assn.; Assn. of Milit. Surgeons of U. S.; Acad. of Relig. and Mental Health; Am. Soc. of Group Psychothera and Psychodrama; Am. Med. Correctional Assn.; Am. Soc. Proj. Tech.; Am. Assn. for the Adv. of Sci.; Psi Chi; Kiwanis; Masonic. Contbr. to: Jour. Group Psychotherapy; Jour. Social Psychol.; Jour. of Rehab.; Probation Fed.; Psychol. Abstracts. Serv. Rec.: U. S. Army, 1941-46. Gen. Int.: Devised Group Therapy Technique Called "Letter Reading in Group Psychotherapy"; Development of Psychol. Trng. Program for U. S. Bureau of Prisons; Meritorious Serv. Award in W.W. II. Areas of Rsch.: Group Psychotherapy; Behavior Deviations; Mental Deficiency; Projective Techniques, Correctional Psychology.

KRAMP, Joseph J(ohn) (Mr.), Sr. Engr., Westinghouse Elec. Corp., Air Arm Div., Baltimore, Md. Home Add.: 5604 Wildwood Lane, Baltimore 9, Md. AEROSPACE ELECTRO OPTICAL SYSTEMS. b. Newburgh, N. Y., Oct. 24, 1915. s. Joseph F. and Florence R. (Glassel) K. m. Helen M. Jones, Jan. 12, 1946. c.: Joseph J., Jr.; John Marshall; Raphael Semmes. Exp.: R. & D. Admin., Hq., A.R.D.C., U.S.A.F., Baltimore, Md., 1955-59; Sr. Engr., Westinghouse Elect. Corp., Baltimore, Md., 1959—. Mem.: Am. Geophysical Union; Inst. of Radio Engrs.; Am. Rocket Soc.; Am. Optical Soc.; British Interplanetary Soc. Serv. Rec.: U. S. Air Force, 1939-58. Areas of Rsch.: Aerial Recon, Photo Mapping, Optical Design and Development.

KRANTZ, Reinhold John (Ph.D.), Prof. of Chem., Dir., Div. of Sci. and Math., Univ. of Redlands, Redlands, Calif. Home Add.: 1314 College Ave., Redlands, Calif. ORGANIC CHEMISTRY, CHEMICAL EDUCATION. b. Bradford, Pa., Aug. 12, 1915. s. Paul George and Jennie (Leonard) K. Edn.: A.B., Greenville Coll., 1936; M.S., Univ. of Ill., 1937; Ph.D., Mich. St. Univ., 1947. m. Elizabeth Wade, Sept. 1, 1937. c.: David Roger; Ronald John; Nicholas James; Dennis Paul. Exp.: Instr., Moberly Jr. Coll., 1938-41; Instr., Mich. St. Univ., 1941-47; Prof., Univ. of Redlands, 1947—. Hon. Pos.: Chmn., San Gorgonio Sect., Am. Chem. Soc., 1956; Fulbright Lectr., Pakistan, 1958-59; Dir. of Div. of Sci. and Math., Univ. of Redlands, 1961. Mem.: Sigma Xi; Am. Chem. Soc.; A.A.A.S.; Pi Mu Epsilon; Omicron Delta Kappa; Knights of the Round Table. Contbr. to: Jour. of Org. Chem. Serv. Rec.: U.S.N.R., 1944-46. Gen. Int.: Mem., Fulbright Screening Comm., Pacific Ocean Area. Areas of Rsch.: Organo-Silicon Chemistry; Chemical Education in Pakistan.

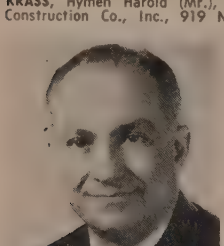
KRASNO, Louis Richard (M.D.), Dir., Clinical Rsch., United Air Lines, San Francisco, Calif. Home Add.: 2111 Pullman Ave., Belmont, Calif. AVIATION MEDICINE. b. Chicago, Ill., Sept. 2, 1914. s. Morris and Anne (Kein) K. Edn.: B.S., Northwestern Univ., 1936; M.S., ibid., 1937; Ph.D., ibid., 1939; M.D., ibid., 1945. m. Elaine Ross, Apr., 1940. c.: Richard Michael. Exp.: Practice of Internal Med., Chicago, Ill., 1946-51; Asst. Prof., Univ. of Ill. Med. Schl., 1946-51; Rsch. Naval Med. Rsch. Inst., Bethesda, Md., 1951-53; Tchng. and Rsch., U. S. Naval Schl. of Aviation Med., Pensacola, Fla., 1953-56; Flight Surgeon and Sr. Med. Officer aboard USS Lake Champlain CVS-39, 1956-57; Dir., Clinical Rsch., United Air Lines, 1957—; Asst. Prof., Med., Stanford Univ., 1959—. Mem.: Am. Med. Assn.; Sigma Xi; Soc. Exptl. Biol. and Med.; Aero-Med. Assn.; Am. Assn. Adv. Sci.; Assn. Milit. Surgeons of the U. S.; Bohemian Club, San Francisco. Contbr. to: J.A.M.A.; Jour. Anesthesiology; Am. Int. Med.; Endocrinology; Am. Heart Jour.; Jour. Aviation Med.; Am. Practitioner; Jour. Allergy. Serv. Rec.: U. S. Navy, 1951-57. Gen. Int.: Bronze A.M.A. Medal for Cardiovascular Rsch., 1951; Development of method for treatment of respiratory diseases. Areas of Rsch.: Aviation Medicine; Physiology of Circulation; Cardiovascular Med.



KRASNOW, Frances (Ph.D.), Resc. Dir., Universal Coatings, Inc., Newark 5, N. J. BASIC SCIENCE APPLICATION TO MEDICAL-DENTAL PROBLEMS; EMPHASIS ON CHEMICAL PHYSIOLOGY. b. N. Y., N. Y. d. Raphael and Sara Rifka (Lubarsky) K. Edn.: B.S., Barnard Coll., 1917; A.M., Columbia Univ., 1917; Ph.D., ibid., 1922. m. Marcus Thau, Dec. 25, 1930. c.: Hudelle K. Exp.: Mem. of Tchng. and Rsch. Staff, Dept. of Biochem., Columbia Univ., 1918-32; Consultant, N. Y. State Labor Dept., N. Y., N. Y., 1929—; Consultant, Dept. of Dermatol. and Syphilogy —Post Grad. Schl. and Hosp., 1928-40; Staff Mem., Caries Rsch. Commonwealth Fund, Columbia Univ., 1930-32; Hd., Dept. of Basic Sciences and Asst. Dir. of Schl. for Dental Hygiene, Guggenheim Dental Clinic, 1932-44; Dir. of Dept. of Rsch., ibid., 1944-52; Dir., Universal Rsch. Labs., Newark, N. J., 1952—. Hon. Pos.: Editor, Internatl. Assn. for Dental Rsch., N. Y. Sect., 1934-36, 1940-44; Vice Pres., ibid., 1945-47; Pres., ibid., 1947-49; Editor, ibid., 1949—; Special Consultant in the Field of Nutrition for the Greater N. Y. Bureau on Dental Information, 1940; Secy., A.A.A.S. Sect. on Dentistry, 1949, 100th Ann. Local Com., etc. Mem.: Phi Beta Kappa; Am. Chem. Soc.; A.A.A.S.; N. Y. Acad. Med.; A.M.A.; Sigma Xi; Soc. of Am. Bacteriologists; Soc. for Exptl. Biol. and Med.; N. Y. Acad. Scis.; Internatl. Assn. for Dental Rsch.; Am. Inst. Chemist;

Am. Assn. Dental Editors; Am. Assn. Clin. Chemists; Sigma Delta Epsilon. Contbr. to: Am. Chem. Soc. Abstracts; Jour. Dental Rsch.; etc. Special Int.: Hemolysins; Agglutinins Root Canal Bacteriol.; Yeast and Streptococcus Metabolism; Sterilization; Disinfectants; Synthetic Media; Vitamins; Blood Chem. of Syphilis and Skin Diseases; Cholesterol; Phospholipid; Caries; Saliva Chem.; Place of Nutrition in Dentomedical Problems; Longevity; Correlation between Metabolic Inorganic-Organic Levels in Blood, Saliva, Urine and Tooth Conditions; Application of Basic Scis. to Dental-Medical Projects.

KRASS, Hymen Harold (Mr.), Vice Pres. and Chf. Engr., Crane Construction Co., Inc., 919 N. Michigan Ave., Chicago 11, Ill. Home Add.: 3600 Lake Shore Dr., Chicago 13, Ill. CIVIL ENGINEERING-RESEARCH AND DEVELOPMENT PERTAINING TO HEAVY CONSTRUCTION. b. Chicago, Ill., June 12, 1914. s. Louis and Rebecca (Blank) K. Edn.: M.S., Ill. Inst. of Tech., 1939. Exp.: Chf. Engr., Missner Constr. Co., Builders, 1950-53; Pres., Constructors Co., Inc., 1953-55; Chief Engr., Inland Constr., Inc., 1955-57; Pres., Constructors Co., Inc., 1957-61; Mgr. of Engrng., Consulting Engrs., Hamon, Inc., 1960-61; Vice Pres. and Chief Engr., Crane Construction Co., Inc., Chicago, Ill., 1961—. Mem.: Fellow, A.A.A.S.; Fellow, A.S.C.E.; Fellow, N.A.C.E.; W.S.E.; A.M.E.; Am. Tech. Soc.; A.C.I.; N.S.P.E.; I.S.B.S.E.; A.S.T.M.; Prestressed Concrete Development Assn., London, Eng.; Internatl. Assn. for Shell Structures, Madrid, Spain; Licensed Profl. Engr., State of Ill., No. 1767; Tau Beta Pi; Chi Epsilon; Delta Lambda Xi; Mason; B'nai B'rith; Ill. State Acad. of Sci.; Covenavy Club of Chicago. Areas of Rsch.: Construction Materials, Constrn. Costs; Precast and Prestressed Concrete.



KRATZER, Frank Howard (Ph.D.), Prof. of Poultry Husbandry, Univ. of Calif., Davis, Calif. Home Add.: 10 Parkside Dr., Davis, Calif. POULTRY NUTRITION. b. Baldwinsville, N. Y., Jan. 24, 1918. s. Richard N. and Frances (Watts) K. Edn.: B.S., Cornell Univ., 1940; Ph.D., Univ. of Calif., 1944. m. Georgina Garbutt, 1946. c.: James; Paul; Charles. Exp.: Rsch. Asst. and Assoc., Univ. of Calif., Berkeley, Calif., 1940-44; Assoc. Prof., Colo. A. and M., Fort Collins, Colo., 1944-45; Asst. Prof. to Prof., Univ. of Calif., Davis, Calif., 1945—. Mem.: A.A.A.S.; Am. Instit. Nutr.; Soc. Exptl. Biol. and Med.; Poultry Sci. Assn.; World's Poultry Sci. Assn.; Am. Chem. Soc.; Biochem. Soc.; Sigma Xi; Alpha Zeta; Phi Kappa Phi; Phi Sigma. Contbr. to: Poultry Sci.; Jour. of Nutrition; Proc. Soc. for Expl. Biol. and Med.; Jour. of Biol. Chem.; Archives of Biochem. and Biophys. Areas of Rsch.: Nutrition of Chickens and Turkeys With Special Reference to Amino Acid, Vitamin and Mineral Needs and Function.

KRATZER, Guy Livingston, Chief, Proctology Dept., Allentown Hosp. Home Add.: 1447 Hamilton St., Allentown, Pa. RECTAL AND COLONIC SURGERY. b. Gratz, Pa., Apr. 24, 1911. s. Clarence U. and Carrie E. (Schwalm) K. Edn.: M.S., Univ. of Minn., 1945; M.D., Temple Univ., 1935. m. Kathryn H. Miller, Jan. 27, 1940. c.: Guy Miller. Exp.: Assoc. Surgeon, Pottsville Hosp., 1936-41; Assoc. Proctologist, Allentown Hosp., Pa., 1946-58; Courtesy Staff, Sacred Heart Hosp., Pa., 1946—; Consultant, Quakerstown Community Hosp., Pa., 1950—; Consultant, Good Samaritan Hosp., Pottsville, Pa., 1954—; Chief, Proctology Dept., Allentown Hosp., Pa., 1958—. Hon. Pos.: Pres., Pa. Soc. of Colon and Rectal Surg., 1962; Vice Pres., Pa. Proctologic Soc.; Pa. Cancer Commission; Mem., Tumor Bd., Allentown Hospital. Mem.: Am. Coll. of Surgeons; Am. Bd. of Proctology; Am. Proctologic Soc.; Internatl. Coll. of Surgeons; Barzilian Proctologic Soc.; Am. Med. Writers Assn.; Assn. for Adv. of Sci.; Internatl. Acad. of Med.; Lions Club; New York Acad. of Scis. Contbr. to: Surgical Clinics of N. A.; Surgery; Gynecology and Obstetrics; Am. Jour. of Surgery; Diseases of the Colon and Rectum; Jour. of the Am. Med. Assn.; Internatl. Abstracts of Medicine; The Jour. for Digestive Diseases; Portions of Various Textbooks in the Specialty of Proctology. Areas of Rsch.: Diseases and Surgery of the Colon and Rectum.

KRAUSS, William Ernest (Ph.D.), Assoc. Dir., Ohio Agril. Exp. Sta., Wooster, Ohio. Home Add.: 2404 Cleveland Rd., Wooster, Ohio. ANIMAL NUTRITION (BIOCHEMISTRY). b. Newark, N. J., Jan. 11, 1899. s. Ernest and Amelia (Trimborn) K. Edn.: B.S., Cornell Univ., 1922; Ph.D., Cornell Univ., 1926. m. Mildred Stratton, Feb. 2, 1924. c.: William C.; Roscoe E. Exp.: Instr., Cornell Univ., 1922-26; Asst., Dept. of Dairy Indus., Ohio Agril. Exptl. Sta., 1926-31; Assoc., ibid., 1931-41; Chf., ibid., 1941-47; Chmn., Dept. of Dairy Husb., Ohio State Univ., 1946-47; Assoc. Dir., Ohio Agril. Expt. Sta., Wooster, Ohio, 1947—. Hon. Pos.: Chmn., Comm. on Milk, Food and Nutrition Bd., Natl. Rsch. Coun.; Chmn., Agril. Bd., ibid. Mem.: Am. Dairy Sci. Assn.; Am. Soc. of Animal Production; Am. Inst. of Nutrition; Am. Soc. of Biol. Chemists; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta. Contbr. to: Jour. Dairy Sci.; Jour. Animal Sci.; Jour. Biol. Chem.; Jour. Am. Med. Assn.; Jour. Am. Vet. Med. Assn. War Rec.: W.W. I. Gen. Int.: Winner of Borden Award in Dairy Production, 1938; Delegate to 12th Internatl. Dairy Congress, Stockholm, Sweden, 1949. Areas of Rsch.: Nutritive Value of Milk and Dairy Products; Nutrition Requirements of Dairy Cattle; Nutritive Value of Forages.

KRAUSZ, Charles Edward (D.S.C.), Chiropodist, 911 W. Lehigh Ave., Philadelphia 33, Pa. Home Add.: 810 Gilbert Rd., Cheltenham, Pa. NAIL DISEASES (ONYCHOPATHY). b. Philadelphia, Pa., July 25, 1902. s. Charles H. and Louise (Krauskopf) K. Edn.: G.Cp., Temple Univ., 1923; D.Sc., ibid., 1934. Hon. Deg.: D.S.C., Ill. Coll. if Chiropody, 1941; D.S.C., Chicago Coll. of Chiropody, 1952; Ed.D., Ohio Coll. of Chiropody, 1956. m. Alice Worrall, Nov. 25, 1937. Exp.: Instr., Temple Univ., Schl. of Chiropody, 1923-30; Prof., ibid., 1931-40; Dean ibid. 1941-60; Emeritus Dean ibid. 1961—. Hon. Pos.: Secy., Am. Assn. of Colls. of Chiropody; Pres., Natl. Assn. of Chiropodists. Mem.: Chiropody Soc. of Pa.; Am. Acad. of Chiropodists; Conn. Chiropody Soc.; Pi Epsilon Delta; Phi Alpha Pi; Northeast Shrine Club. Author: Chiropody Quiz Compends, 1939; Chiropody Index, 1943. Contbr. to: Jour. of Natl. Assn. of Chiropodists; Chiropody Rec.; British Chiropody Jour.; Can. Chiropody Jour.; Australasian Chiropodist; Revue de Podologie; Die Fuss Praxis. Areas of Rsch.: Nail Diseases.

KRAYNAK, Matthew Edward (Ph.D.), Asst. Prof., Div. of Chem., Univ. of Tenn., Memphis, Tenn. Home Add.: 1382 Jefferson Avenue, Apa. #5, Memphis 4, Tenn. BIOCHEMISTRY. b. Scranton, Pa., Dec. 19, 1927. s. Matthew Alexander and Veronica Helen (Repasky) K. Edn.: B.S., Univ. of Scranton, 1950; M.S., Univ. of Tenn., 1952; Ph.D., ibid., 1956. Exp.: Instr., Div. of Chem., Univ. of Tenn., 1953-55; Asst. Prof. and Visiting Chmn., Dept. of Biochem., Univ. of Indonesia Med. Schl., 1956-60; Asst. Prof., Div. of Chem., Univ. of Tenn., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi. Serv. Rec.: U. S. Army Med. Corps, 1946-47. Areas of Rsch.: Intermediary Metabolism of Aromatic, Polycyclic and Carcinogenic Hydrocarbons in Relation to Sulfur Metabolism; Role of Sulfur Containing Amino Acids in General Metabolism; Protein Synthesis and Protein Structure.

KREKELER, Carl H(erman) (Ph.D.), Prof. of Biol., Valparaiso Univ., Valparaiso, Ind. Home Add.: 360 McIntyre Ct., Valparaiso, Ind. ZOOLOGY, SPECIFICALLY SPECIATION OF CAVERNICOLOUS BEETLES. b. Leavenworth, Kans., Jan. 12, 1920. s. Carl and Louise (Wagner) K. Edn.: B.A., Concordia Seminary, 1941; Ph.D., Univ. of Chicago, 1955. m. June L. Paulson, 1944. c.: Nancy June; Barbara Sue. Exp.: Instr., Bethany Coll., 1942-44; Asst. Pastor, Trinity Lutheran Ch., Milwaukee, Wis., 1945-47; Instr. to Prof., Valparaiso Univ., 1947—; Chmn., Dept. of Biol., ibid., 1959—. Mem.: Ecological Soc. of Am.; Soc. for the Study of Evolution; Soc. of Systematic Zoology; Ind. Academy of Science; Am. Inst. of Biological Scis.; Natl. Speleological Soc.; Sigma Xi. Co-author: General Biology, 1959; 1960. Contbr. to: Am. Midland Naturalist; Systematic Zoology. Areas of Rsch.: Speciation and Distribution of Cave Dwelling Beetles.

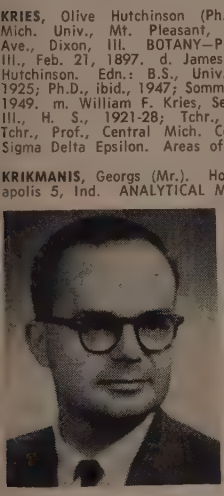
KRESS, Roy Alfred (Ph.D.), Assoc. Prof. of Edn. and Dir., The Reading Clinic, Syracuse Univ., Syracuse 10, N. Y. Home Add.: 925 W. Onondaga St., Syracuse 4, N. Y. PSYCHOLOGY. b. Elmira, N. Y., Oct. 4, 1916. s. Roy A. and Alice (Whitaker) K. Edn.: B.S., Lock Haven State Tchrs. Coll., 1938; M.Ed., Temple Univ., 1949; Ph.D., ibid., 1956. m. Doris Parker, Mar. 29, 1940. c.: Keith D.; Lance W.; G. Gordon. Exp.: Instr., The Woods Schl., Langhorne, Pa., 1938-43; Training Officer,

Veterans Adm., Phila., Pa., 1946-49; Supvr., Reading Analysis Div., Temple Univ., 1949-55; Educational Dir., Shady Brook Schls., Richardson, Tex., 1955-58; Assoc. Prof., Syracuse Univ., 1958—. Hon. Pos.: Exec. Secy., I.C.I.R.I. Mem.: Am. Psychol. Assn.; A.A.A.S.; N.S.S.E.; Internatl. Reading Assn.; A.E.R.A.; N.R.A.; A.A.U.P.; N.C.R.E.; Phi Delta Kappa; F. and A.M.; Boy Scouts of Am. Author: That All May Learn to Read, 1960. Contbr. to: The Reading Teacher; Edn. Serv. Rec.: U.S.M.C. Gen. Int.: Certified Psychologist, N. Y. Areas of Rsch.: The Psychology of Reading; Clinical Diagnosis and Treatment of Reading Difficulties; Research in Concept Formation.

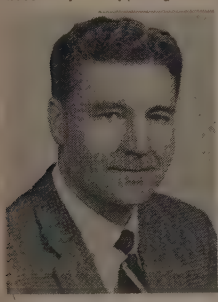
KRIEBS, Jean (Mrs.), Teacher. Home Add.: 11 E. Essex Ave., Linwood, N. J. SCIENCE EDUCATION. b. Des Moines, Ia., Sept. 6, 1922. d. Wilbur W. Oak and Minnie (Porter) O. Edn.: B.S., Kent State Univ., 1944; M.Ed., Univ. of Alaska, 1960. m. Harold C. Kriebs, July 2, 1955. c.: David. Exp.: Tchr., Detroit Bd. of Edn., Detroit, Mich., 1948-56; Technical Editor, Geophysical Inst., 1956-57; Grad. Asst., Univ. of Alaska, 1958-60; Instr., ibid., 1960-61; Tchr., Greater Egg Harbor Regional H. S., Mays Landing, N. J., 1961-62. Hon. Pos.: St. Chmn., D.A.V.I., Alaska, 1960-61. Mem.: A.A.A.S.; N.S.T.A.; N.J.M.T.A.; N.L.A.; N.J.E.A.; D.A.V.I. Areas of Rsch.: Elementary Science Edn.

KRIES, Olive Hutchinson (Ph.D.), Prof. Emer., Biol., Central Mich. Univ., Mt. Pleasant, Mich. Home Add.: 816 Peoria Ave., Dixon, Ill. BOTANY—PLANT PHYSIOLOGY. b. Compton, Ill., Feb. 21, 1897. d. James Allen and Josephine (Christiance) Hutchinson. Edn.: B.S., Univ. of Chicago, 1920; M.S., ibid., 1925; Ph.D., ibid., 1947; Sommerschulen, Univ. of Vienna, Austria, 1949. m. William F. Kries, Sept. 3, 1930. Exp.: Tchr., Moline, Ill., H. S., 1921-28; Tchr., Northern Mich. Coll., 1928-30; Tchr., Prof., Central Mich. Coll., 1936-60. Mem.: Sigma Xi; Sigma Delta Epsilon. Areas of Rsch.: Plant Physiology.

KRIKMANIS, Georgs (Mr.). Home Add.: 2446 Broadway, Indianapolis 5, Ind. ANALYTICAL MECHANICS, ELECTRO AND MAGNETOPHYSICS. b. Lativa, Mar. 11, 1924. s. Jorens and Eda (Burns) K. Exp.: RCA Scholar, Ind. Univ., 1954; Stewart Warner Corp., Indianapolis, Ind., Test Engr., 1956; Engr. Rsch., Bryant Mfg. Co., Indplis., Ind., 1956-60. Mem.: Am. Acad. of Polit. and Soc. Sci.; A.A.A.S.; Soc. for the History of Technol.; Soc. for Internatl. Development; Natl. Planning Association; Committee for Economic Development, Reader Forum; Am. Mgmt. Assn.; Am. Forestry Assn.; Am. Civil Liberties Union; Indiana Univ. Club. Areas of Rsch.: Kinematics of Merchanisms; Pheonomena of Gas Combustion; Problems of Electrophysics.

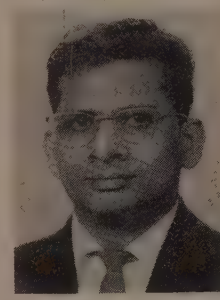


KRING, Charles U. (Ph.D.), Consulting Engr., Charles U. Kring Associates, Pres., Kring Construction Co., Inc., 1425 Foxworthy Ave., San Jose, Calif. CIVIL AND STRUCTURAL ENGINEERING AND GENERAL CONTRACTING. b. Belle Rive, Ill., Aug. 31, 1910. s. Charles H. and Carolyn M. (Schoenmetzler) K. Edn.: B.S., Univ. of Ill., 1932; M.S., ibid., 1939; Ph.D., ibid., 1948. m. Marguerite Kay, Aug. 25, 1945. c.: Meredith Kay; Judith Leslie; Gary Kevin. Exp.: Field Engr., Am. Bridge Co., Construction of San Francisco-Oakland Bay Bridge, 1934-35; Engrng. Inspector, Constrn. of Golden Gate Bridge, S. F., Calif., 1936-37; Constrn. Supt., Ben Hur Constrn. Co., St. Louis, Mo., 1937-38; Instr. in Civil Engrng., Univ. of Ill., Urbana, Ill., 1938-39; Rsch. in Design of Structures to Resist Bombing, Switzerland, France and Spain, Office of Chf. of Engrs., War Dept., 1940-41; Engr., Parsons, Binkerhoff, Hall and Macdonald, Consulting Engrs., N. Y., 1941-42; Chf. Structural Engr. on design of Airbase, Bermuda Architect-Engrs., 1942-43; Rsch. Staff, Office of Scientific Rsch. and Development, Princeton Univ., Princeton, N. J., 1943; Consultant, Operational Analysis Section, Hq., 8th Air Force, England, 1943-45; Bombing Rsch. Analyst, U. S. Strategic Bombing Survey, London and Tokyo, 1945-46; Consulting Engr., Charles U. Kring Associates, and Consultant to the War Dept., Dept. of the Air Force, and Atomic Energy Commn., 1946—. Mem.: Am. Soc. Civil Engrs.; Internatl. Assn. for Bridge and Structural Engrng.; Tau Beta Pi; Chi Epsilon; Alpha Kappa Lambda; Santa Clara Co. Contractors and Builders Assn. Author: Selection of Weapons and Estimation of Force Requirements for Aerial Bombardment, 1947. Contbr. to: Trans. Am. Soc. Civil Engrs.; Engrng. News Record. War Rec.: Civilian Consultant, Hq. 8th Air Force, rank of Col., 1943-45; Awarded Medal of Freedom by War Dept., 1945. Special Int.: Structural Analysis and Design; Vulnerability of Structures to High Explosive, Incendiary and Atomic Bombs; Target Analysis, Bomb and Fuze Selection and Force Requirements for Aerial Bombing.



KRIPPNER, Stanley Curtis (Ph.D.), Dir., Kent St. Univ. Child Study, Ctr., Kent, Ohio. Home Add.: 226 E. Main St., Kent, Ohio. COUNSELING PSYCHOLOGY. b. Edgerton, Wis., Oct. 4, 1932. s. Carroll P. and Ruth (Volenberg) K. Edn.: B.S., Univ. of Wis., 1954; M.A., Northwestern Univ., 1957; Ph.D., ibid., 1961. Exp.: Speech Therapist, Community Unit 205, Warren, Ill., 1954-55; Speech Therapist, Richmond Publ. Schls., Richmond, Va., 1955-56; Assoc. Dir., Camp Richmond, Charles City, Va., 1956-59; Grad. Asst., Northwestern Univ., 1957-60; Grad. Asst., Univ. of Hawaii, 1960; Dir., Kent St. Univ. Child Study Ctr., 1960—. Mem.: Am. Psychol. Assn.; Am. Speech and Hearing Assn.; Am. Personnel and Guid. Assn.; Natl. Assn. for Gifted Children; Coun. for Exceptional Children; Parapsychological Assn.; Internatl. Soc. for Gen. Semantics; Internatl. Reading Assn.; Natl. Edn. Assn.; Natl. Vocational Guidance Assn.; Natl. Coun. for Psychological Aspects of Disability; Natl. Soc. for the Study of Edn.; Am. Soc. for Clinical Hypnosis; A.A.A.S.; Am. Acad. for Soc. and Polit. Sci.; The Menninger Foundation; Phi Delta Kappa; Phi Kappa Phi; Delta Sigma Rho. Co-Author: A Study of the Interests of Children and Youth, 1960. Contbr. to: The Personnel and Guidance Jour.; Elem. English; The Tri-Quar.; The Gifted Child Quart.; ETC.; A Rev. of Gen. Semantics. Gen. Int.: Y.M.C.A. Serv. to Youth Award, 1959. Areas of Rsch.: Child Psychol.; Edn. of Exceptional Children; Diagnosis of Learning Disorders; Speech Pathol.

KRISHNAIAH, Paruchuri Rama (Mr.), Sr. Statistician, Remington Rand Univac, Blue Bell, Pa. Home Add.: 20 S. 39th St., Philadelphia 4, Pa. STATISTICS. b. India, July 15, 1932. s. P. Bhavanarayana Chowdary and P. Manikyam (Chowdary). Edn.: M.A., Univ. of Minn., 1957. Hon. Deg.: B.Sc., Univ. of Madras, India, 1954. m. Indira, July, 1960. Exp.: Sr. Statistican, Remington Rand Univac, Blue Bell, Pa., 1960—. Mem.: Inst. of Math. Statistics; Am. Statistical Assn.; A.A.A.S. Contbr. to: Am. Math. Monthly; Jour. of Expt. Edn. Areas of Rsch.: Multivariate Analysis, Analysis of Variance, Reliability.

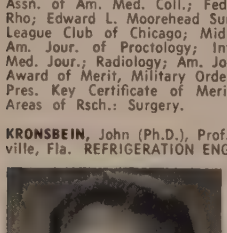


KROL, Adam T. (Mr.), Chem. Consultant and Pres., Tech. Dir., Clearing Chem. Labs., Inc., 4730 W. Rice St., Chicago 51, Ill. Home Add.: 10501 S. Kildare Ave., Oak Lawn, Ill. PERFUMES; ODORMASKS; DEODORANTS; COSMETICS; FOODS; ORGANIC CHEMICALS PREPARATIONS; AROMATIC CHEMICALS. b. Chicago, Ill., Apr. 3, 1913. s. Alexander and Mary (Madalinski) K. Edn.: B.S., Cent. Y.M.C.A. Coll., 1936. m. Helen T. Kornel, Aug. 14, 1944. c.: Andrea; Kevin. Exp.: Chemist, Wm. J. Stange Co., Chicago, Ill., 1936-37; Chf. Chemist, Verley Chem. Co., Chicago, Ill., 1937-42; Chf. Rsch. Chem., Matam Corp., N. Y., 1942-45; Indep. Chem. Consult., 1945-50; Pres. and Tech. Dir., Clearing Chem. Labs., Inc., 1950—; Profl. Engr., License No. 9249, State of Ill. Hon. Pos.: Past Pres., Pi Chi Phi; Chmn. on Edn., Soc. Cosmetic Chem., Chicago Sect., 1961 and '62. Mem.: Am. Soc. for Test. Materials; Chem. Arts Forum; Am. Inst. of Chem. (Fellow); Am. Assn. for Adv. of Sci. (Fellow); Am. Chem. Soc.; Am. Milit. Engrs.; Chicago Perfumery and Ext. Assn.; Soc. of Cosmetic Chemists; Professional Mem., Inst. of Food Tech; Pi Chi Phi. Contbr. to: The Iron Age. Areas of Rsch.: Deodorants; Odormasks; Preparation of Specialized Organic Chemicals for the Perfume Industry; Cosmetics; Foods.

KROL, Edward Joseph (M.D.), Physician and Surgeon, 4255 W. 63rd St., Chicago, Ill. Home Add.: 3555 W. 102nd St., Evergreen Park, Ill. SURGERY. b. Chicago, Ill., Apr. 3, 1913. s. Alexander and Mary (Madalinski) K. Edn.: B.S., Central Y.M.C.A. Coll., 1936; M.D., Loyola Univ., 1940. m. Anne Estelle Shirvin, Feb. 1, 1942. c.: Edwina Ann; Cynthia Lee; Edward Joseph; Gerald John. Exp.: Externship, Holy Cross Hosp., Chicago, Ill., July, 1938-39; Internship, St. Elizabeth's Hosp., Chicago, Ill., 1939-40; Assoc. Attending Staff to Chmn. Dept. of Surgery, Holy Cross Hosp., Chicago, Ill., 1940-59; Clinical Asst. in Surgery, Rush Med. Schl., Chicago, Ill., 1940-42; Private Practice, Chicago, Ill., 1940-42; U.S.A.F., Chief Surgeon Station Hosp., 1942-45; Private Practice, Chicago, Ill., 1945—; Clinical Asst. in Surgery, Stritch Schl. of Med., Chi-

cago, Ill., 1945-50; Clinical Instr. of Surgery, ibid., 1950—. Hon. Pos.: Chmn., Sect. on Gen. Surg. of the Am. Med. Assn., 1962; Chmn., Clinical Cong. of Abd. Surgs., 1962; Mem., Board of Trustees, Internatl. Academy of Proctology, 1950—; Board of Trustees, Am. Coll. of Gastroenterology, 1952—; Bd. of Trustees, Intestinal Rsch. Inst., 1955—; Civic Advisory Bd., Holy Cross Hosp., Chicago, 1956—; Chmn., Exec. Comm., ibid., 1950—; Editorial Staff, Am. Jour. of Proctology, 1952—; Past Pres., Pi Mu Phi Med. Frat.; Past Pres., Pi Chi Phi; Past Pres., Internatl. Acad. of Proctology, 1953-54; Past. Gov., Am. Coll. of Gastroenterology, 1951-52; Past Chmn., Finance and Budget Comm., Am. Coll. of Gastroenterology, 1957; Past Chmn., Constitution and By-Laws Comm., Am. Coll. of Gastroenterology, 1958; Chmn., Dept. of Surg., Holy Cross Hosp., 1959—; Pres. Elect., Am. Coll. of Gastroenterology; Chmn., Grad. Edn. Comm., Interns and Residents, Holy Cross Hosp., Chicago; Chmn., Credentials Comm., Holy Cross Hosp.; Chmn., Credentials Comm., Am. Coll. of Gastroenterology; Chmn., Advisory Bd., Immaculata Coll., 1955—; Pres., Council, St. Xavier's Coll., 1956—; Vice Chmn., Sect. of Gen. Surgery of Am. Med. Assn.; Diplomate, Internatl. Bd. of Applied Nutrition; Editorial Staff of Am. Jour. of Proctology, Internatl. Jour. of Applied Nutritions, Am. Jour. of Abdom. Surgery, Mod. Nutrition Jour. Mem.: Diplomate, Internatl. Bd. of Surgery; Diplomate, Am. Bd. of Abdominal Surgery; Fellow, Internatl. Coll. of Surgeons; Fellow, Am. Soc. of Abdominal Surgery; Fellow, Internatl. Acad. of Proctology; Fellow, Am. Coll. of Gastroenterology; Fellow, Miss. Valley Med. Soc.; Fellow, N. Y. Acad. of Sci.; Fellow, Am. Geriatric Soc.; Fellow, Am. Med. Assn.; Fellow, Acad. of Psychosomatic Med.; Fellow, Am. Coll. of Nutrition; World Med. Assn.; Assoc. Fellow, The Am. Coll. of Chest Physicians; Ill. Med. Soc.; Chicago Med. Soc.; Chicago Pathological Soc.; A.A.A.S.; Ill. Acad. of Sci.; Ill. Soc. for Med. Rsch.; Am. Nutrition Soc.; Assn. of Military Surgeons; Am. Trudeau Soc.; Assn. of Am. Med. Coll.; Federation of Am. Scientists; Lambda Rho; Edward L. Moorehead Surgical Seminar; Italo Volini; Union League Club of Chicago; Midlothian Country Club. Contbr. to: Am. Jour. of Proctology; Internatl. Acad. of Proctology; Ill. Med. Jour.; Radiology; Am. Jour. of Gastroenterology. Gen. Int.: Award of Merit, Military Order of Purple Heart, Dept. of Calif.; Pres. Key Certificate of Merit, Internatl. Acad. of Proctology. Areas of Rsch.: Surgery.

KRONSBEIN, John (Ph.D.), Prof. of Engrng., Univ. of Fla., Gainesville, Fla. REFRIGERATION ENGINEERING; METALLURGY; ELECTROCHEMISTRY; MATHEMATICS; GENERAL ENGINEERING. b. Ohiowa, Nebr., Nov. 27, 1904. s. Rev. William Henry and Anna Katherine (Thyssen) K. Edn.: Ph.D., Leipzig, Germany, 1930; Dr. rer. nat. Jena, Germany, 1931. Exp.: Development Engr., Incandescent Heat Co., Birmingham, England, 1932-33; Technical Dir., Brightside Plating and Mfg. Co., Birmingham, England, 1933-38; Managing Dir., Electrochem. Engrng. Co., London, England, 1938-44; Dir. of Rsch. and Development, Hoosier Cardinal Corp., Evansville, Ind., 1945-48; Consultant, Ill. Tool Works, Chicago, Ill., 1945-50; Prof. and Hd. of Dept. of Engrng., Evansville Coll., Evansville, Ind., 1948-58; Prof., Engrng and Theoretical



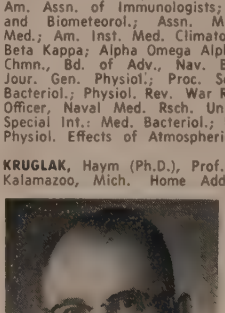
Physics, Univ. of Fla., 1958—; Chf. Engr., Chicago Midway Laboratories, Univ. of Chicago, Chicago, Ill., 1951-52; Staff Physicist, Protestant Deaconess Hosp., Evansville, Ind., 1952-58. Hon. Pos.: Was Awarded Grant from "Rsch. Corp." of New York, 1949; Directorate and Fellowship for Research on Current and Metal Distribution in Electrodeposition by Am. Electroplaters' Soc., 1948. Mem.: Am. Mathematical Soc.; Mathematics Assn. of Am.; London Math. Soc.; Societe Mathematique de France, Paris, France; The Electrochem. Soc.; The Faraday Soc., England; Am. Phys. Soc.; Am. Inst. of Phys.; Fellow, Am. Assn. for Adv. of Sci.; Am. Soc. for Engrng. Edn.; A.A.U.P.; Natl. Geographic Soc.; Ind. Acad. of Sci.; Masons; Phi Beta Chi; Sigma Pi Sigma; Acacia. Contbr. to: Proc. London Math. Soc. (England); Duke Math. Jour. Proc. Ind. Acad. of Sci.; Proc. Internatl. Congress of Mathematicians, 1950; Jour. London Math. Soc.; Jour. Electrochem. Soc.; Jour. E.T.S. (England); Plating. Gen. Int.: Designed and Supervised Construction of Dress Memorial Isotopes Lab. for Cancer Rsch., Protestant Deaconess Hosp., Evansville, Ind. Special Int.: Gen. Engrng.; Electrochem.; Heat Treatment of Metals; Radioactive Isotopes; Pure and Applied Math.; Fluid Dynamics; Relativity.

KRUESI, Paul John (ScD.), Ret. Mfgr., 1101 McLellan Bldg., Chattanooga 2, Tenn. b. Menlo Park, N. J., Feb. 3, 1878. s. John and Emily Margaret K. Edn.: Union Coll., 1896-98. Hon. Deg.: Dr. Sci., Union Coll., 1935. m. Myra Kennedy Smartt, July 26, 1906 (dec. Nov. 1, 1941). c.: Myra; Margaret; Rowena; Paul John, Jr.; Eleanor. 2nd m. Mrs. Margaret Thomas Patten, Apr. 16, 1943. Exp.: Associated with Genl. Elec. Co., Schenectady, N. Y., 1896-97; Edison Labs., Orange, N. J., 1898; Stat. Dept. of Chicago Edison, 1898-99; Asst. to Sales Mgr. of former Genl. Incandescent Arc Light Co. (later absorbed by Genl. Elec. Co.), N. Y., 1899-1902; Secy.-Treas. and Genl. Mgr., Am. Lava Corp., Chattanooga, Tenn., 1902-18; Pres., ibid., 1918-49; Chmn., ibid., 1949-54; organized Sou. Ferro Alloys Co., 1917; Pres., ibid., 1917-47; Pres., East. Tenn. Iron and Coal Co., 1929-51; Chmn., ibid., 1951-59; Dir. of Hamilton Natl. Bank, Provident Life and Accident Ins. Co., Sou. Chem. Cotton Co., Chattanooga. Hon. Pos.: Past Pres., Chattanooga C. of C; former Dir., C. of C. of the U. S. Mem.: Am. Inst. of Elec. Engrs.; Am. Iron and Steel Inst.; Electrochem. Soc. (Pres., 1928-29; Elected Hon. Mem., 1944); Fellow, A.A.A.S.; Am. Inst. Newcomen Soc. England; Former Vice Pres., Edison Pioneers.

KRUEGER, Albert Paul (M.D.), Prof. of Bacteriol. Emer. Lec in Med. Emer., Univ. of Calif., Berkeley 4, Calif. BACTERIOLO AND EXPERIMENTAL PATHOLOG b. Butte, Mont., Mar. 17, 190 s. James and Lillian (Ornsten) Edn.: A.B., Stanford Univ., 192 M.D., ibid., 1928. m. Rose berta Margolis, Sept. 30, 192 (dec., 1952). c.: James S.; Eli L. m. Mildred Freeman, 195 Exp.: Asst., Bacteriol. and Exp Pathol., Stanford Univ., Sta ford, Calif., 1927-28; Acting str., ibid., 1928-29; Instr. a Asst. Prof., ibid., 1929; Asso in Gen. Physiol., Rockefeller Ins 1929-31; Assoc. Prof. of Bacterio Univ. of Calif., Berkeley, Cali 1931-38; Prof., ibid., 1938-5 Chmn., Dept. of Bacteriol., ibi 1946-52; Lectr. in Med., ibi 1932—; Emer., ibid., 195 Scientific Dir., Naval Biol. La

Oakland Naval Supply Center, 1950-54; Rsch. Scientist, Kais Fdtn. Rsch. Inst., 1959-61. Mem.: Fellow, Am. Acad. Microbiol.; Calif. Acad. of Sci.; Am. Med. Assn.; Am. Pu Health Assn.; Royal Soc. of Health (Gr. Britain); Soc. A Bacteriol.; Soc. Exptl. Biol and Med.; Am. Soc. Exptl. Pathol Am. Assn. of Immunologists; Internatl. Soc. of Bioclimatolo and Biometeorol.; Assn. Milit. Surgeons; Calif. Acad. Med.; Am. Inst. Med. Climatology; Soc. Gen. Physiologists; P Beta Kappa; Alpha Omega Alpha; Sigma Xi; Alpha Kappa Kapp Chmn., Bd. of Adv., Nav. Biol. Labs., 1954-57. Contbr. t Jour. Gen. Physiol.; Proc. Soc. Exptl. Biol. and Med.; Jou Bacteriol.; Physiol. Rev. War Rec.: Capt., U.S.N.R., 1940-46, Co Officer, Naval Med. Rsch. Unit #1. Award: Legion of Mer Special Int.: Med. Bacteriol.; Bacteriophage; Airborne Infection Physiol. Effects of Atmospheric Ions.

KRUGLAK, Haym (Ph.D.), Prof. of Physics, Western Mich. Univ Kalamazoo, Mich. Home Add.: 1103 Howard St., Kalamazo Mich. PHYSICS. b. Ukraine, Ma 24, 1909. s. Abraham and Fan (Schuster) K. Edn.: B.A., Uni of Wis., 1934; M.A., ibid., 193 Ph.D., Univ. of Minn., 195 m. Mary Lee Stewart, May, 194 c.: Joyce; David. Exp.: Inst Central H. S., Sheboygan, Wis 1936-38; Instr., Milwaukee Ins of Technol., 1938-44; Visitin Asst. Prof., Princeton Univ., 194 46; Instr., Univ. of Minn., 194 51; Asst. Prof., ibid., 1951-5 Assoc. Prof., Western Mich. Univ 1954-56; Prof., ibid. 1956—. Ho Pos.: A.I.P. Regional Counsel in Physics. Mem.: Am. Assn. Physics Tchrs.; Mich. Sci. Tchr Assn.; A.A.A.S.; Phi Beta Kapp Author: Laboratory Performanc Tests for General Physics, 196



Contbr. to: Am. Jour. of Physics; Schl. Sci. and Math.; Sc Edn.; Jour. of Chem. Edn.; Metropolitan Detroit Sci. Re Areas of Rsch.: Radioactive Fallout; Design of Lab. an Demonstration Apparatus; Lab. Achievement in Physics; Achiev ment Tests in Physics.

KRUKOVSKY, Vladimir Nicitich (Ph.D.), Prof., Dairy and Foo Sci., Cornell Univ., 125 Stocking Hall, Ithaca, N. Y. Hom Add.: 116½ Heights Ct., Ithaca N. Y. BIOCHEMISTRY OF MIL AND FAT-CONTAINING FOOD PR DUCTS. b. Odessa, Russia, Oct. 1901. s. Nikita and Feodosi (Avdusin) K. Edn.: Eng., Poly Inst. of Prague, Czechoslovakia 1926; M.S., Cornell Univ., 193 Ph.D., ibid., 1935. m. Josef Kozova, 1929. c.: Nicholas. Exp Research Assoc. and Consultan Czechoslavakia, 1926-30; Faculty Cornell Univ., N. Y., 1935—. Ho Pos.: Mem., Liaison and Scientifi Advisory Bd., Quartermaster Foo and Container Inst. for the Arme Forces, 1948; Secy.-Treas., Corne Sect., Am. Chem. Soc., 1953-55 Chmn., ibid., 1957-58. Mem Am. Chem. Soc.; A.A.A.S.; Am Dairy Sci. Assn.; N. Y. Acad. o Scis.; Sigma Xi; Phi Kappa Phi. Contbr. to: Jour. of Dair Sci.; Science; Jour. of Agricultural and Food Chem.; A official translator and abstractor of Russian scientific paper for the Am. Chem. Soc. Chem. Abstracts, 1953. Gen. Int Am. Chem. Soc. Gold Medal Award in the Chem. of Mil sponsored by the Borden Co. Fdtn., Inc., 1961. Areas Rsch.: Teaching Biochemistry. Analysis of Milk and Fa

Containing Food Products, and Basic Research on Milk Fat Globules, Fat Constants, Activation of Milk Enzyme Lipase by Temperature Changes, Vitamins A, E and C, and the Mechanism of Lipide Deterioration in Milk and Milk Products as Influenced by the Type and Quality of Roughages and Supplements fed to the Cows of a Given Breed, the Physiological Response of Cows to the Feed Consumed, and the Handling of Milk after Withdrawal from the Mammary Gland.

KRUSEN, Frank Hammond (M.D.), Pres., Sister Elizabeth Kenny Foundation, Dir., Kenny Rehabilitation Inst. Home Add.: 820 Third St., S.W., Rochester, Minn. PHYSICAL MEDICINE AND REHABILITATION. b. Philadelphia, Pa., June 26, 1898. s. Wilmer and Elisabeth (Gilbert) K. Edn.: M.D., Jefferson Med. Coll., 1921. m. Margaret L. Borland, May 28, 1921. c.: Mrs. Joanne K. Hart; Janice A. Exp.: Resident in Pathol., Jefferson Med. Coll., 1921-22; Intern, Jefferson Hosp., 1922-24; Clin. Asst. in Surgery, Jefferson Med. Coll., 1924-26; Asst. Surgeon, Philadelphia Gen. Hosp., Philadelphia, Pa., 1925-28; Assoc. Dean, Temple Univ. Med. Schl., 1925-35; Dir. of Dispensaries, Temple Univ. Hosp., 1929-35; Assoc. in Med., Dir., Dept. of Physical Med., Temple Univ. Med. Schl., 1929-35; Head, Sect. of Physical Assoc. Prof. of Physical Med., Mayo Foundation, Univ. of Med. and Rehabilitation, Mayo Clinc, Rochester, Minn., 1935-58; Minn. Grad. Schl. of Med., 1935-41; Prof. of Physical Med. & Rehabilitation, ibid., 1941—; Sr. Consultant in Physical Med. & Rehabilitation, Mayo Clinic, Rochester, Minn., 1958—; Special Asst. for Health and Med. Affairs, Dir. of Office of Pocational Rehabilitation, U. S. Dept. of Health, Edn. and Welfare, Washington, D. C., 1959-60; Med. Dir., Am. Rehabilitation Foundation, Mpls., Minn., 1957—; Pres., Sister Elizabeth Kenny Foundation, Mpls., Minn., 1960—; Dir., Kenny Rehabilitation Inst., Mpls., Minn., 1960—. Hon. Pos.: Past Pres., Treas., Mem., Bd. of Governors, Am. Congress of Physical Med. and Rehabilitation; Past Pres., Mem. Committee on Liaison with the Am. Hosp. Assn., Am. Acad. of Physical Med. and Rehabilitation; Founder, First Chmn., Am. Bd. of Physical Med. and Rehabilitation; Former Exec. Dir., Chmn., Baruch Comm. on Physical Med. and Rehabilitation; Founder, Pres., Internatl. Fed. of Physical Med.; Committee on Rehabilitation, Am. Heart Assn.; Pres., Minn. St. Bd. of Health; Vice Pres., Staff of Mayo Clin. Mem.: Am. Coll. of Physicians, Fellow; A.A.U.P.; A.A.A.S.; Am. Congress of Physical Med. and Rehabilitation; Am. Acad. of Physical Med. and Rehabilitation; Am. Bd. of Physical Med. and Rehabilitation; Internatl. Fed. of Physical Med.; World Med. Assn.; A.M.A.; Minn. St. Med. Assn.; Am. Rheumatism Assn.; Natl. Rehabilitation Assn.; Sigma Xi; Am. Med. Authors Soc.; Blue Key; Minneapolis Rotary Club. Author: Light Therapy, 1933, 1937; Physical Therapy in Arthritis, 1937; Textbook of Physical Medicine, 1941; The Yearbook of Physical Medicine and Rehabilitation, 1949; 1950, 1951; Physical Medicine and Rehabilitation for the Clinician, 1951. Contbr. to: Arch. of Physical Med. and Rehabilitation; Jour. of A.M.A.; Rehabilitation Record; Jour. of Rehabilitation. Serv. Rec.: U. S. Army, 1918, 1921-25, W. W. II. Gen. Int.: 1953, Physician's Award of the Pres. of the United States; 1958, Dist. Service Gold Medal Award of the Am. Med. Assn.; and 1961, Hon. Fellowship in The Royal Soc. of Med. of London, England. Areas of Rsch.: The Applications of Therapeutic Heat.

KRZESINSKI, Andrew John (Ph.D., S.T.D.). Home Add.: 1436 Otis St., N.E., Washington 17, D. C. PHILOSOPHY, PHILOSOPHY OF CULTURE, ABNORMAL PSYCHOLOGY. b. Niepolomice, Cracow, Poland, Nov. 20, 1884. s. Francis and Mary (Klima) K. Edn.: S.T.D., Jagellonian Univ., Cracow, 1919; Ph.D., ibid., 1923. Exp.: Prof. Agr. of Philosophy, Agr. Univ., Warsow, 1925-28; Prof. Agr., Jagellonian Univ., Cracow, 1928-39; Visit. Prof., Universite Laval, Quebec, Universite de Montereal, 1941-43. Mem.: Am. Philos. Assn.; Am. Cath. Philos. Assn.; Am. Eastern Psychol. Assn.; Am. Cath. Psychol. Assn.; Am. Assn. for the Adv. of Sci.; The Polish Inst. of Arts and Scis.; Wash. Philos. Club. Author: Reality, Knowledge and Truth in the History of Philosophy, 1924; Une Nouvelle Philosophie de L'Immanence, 1931; Is Modern Culture Doomed?, 1944; National Cultures, Nazism and the Church, 1945; Christianity's Problem in the Far East, 1946; and many others. Contbr. to: Philos. Quart.; Philos. Rev.; Cath. Edn. Rev.; The Ecclesiastical Rev. Areas of Rsch.: Giving a New Definition to Abnormal Types, and using Different, More Effective Methods; In Philosophy repres. a system of order and harmony, and a creative ability of men.

KUBIN, Rosa (Ph.D.), Assoc. Prof., 19 Appleton St., Waltham 54, Mass. BIOCHEMISTRY AND CLINICAL PATHOLOGY. b. Dec. 15, 1906, St. Poelten, Austria. d. Richard and Clara Loewy Lustig. Edn.: St. Poeltner Unter and Ober-Gymnasium (Classical Coll.) Matura, June, 1925; Summa Cum Laude, Univ. of Vienna, II Chemisches Inst., Ph.D., July 13, 1931; Postgrad., Dr. Jolles' Clinical Lab., Hematology. m. Ludig Kubin of Waltham, Mass., Dec. 22, 1931 (dec.). Exp.: Oesterreichische Chemische Werke, Rsch. Chem., 1931-35; Syngala, Inc., Pharm. Co., ibid., 1935-38; Eli Lilly Fellow, Univ. of Ore. Med. Schl., Portland, Ore., 1938-39; Univ. of Ore. Med. Schl., Portland, Ore., Rsch. Asst., 1939-41; Middlesex Univ., Waltham, Mass., Asst. Prof., Biochem., Clin. Pathol., 1941-47; Univ. of Mass. at Ft. Devens, Mass., 1947-49; Asst. Prof. in Chem.; N. England Coll. of Pharm., Assoc. Prof. in Biochem., 1951-52; Dir., Lab. for Veterinary Clin. Pathol., Waltham, Mass.; Lectr. in Chem., Wellesley Coll., Wellesley, Mass., 1955-57; Concord Acad., Concord, Mass., 1957-61; Waltham High Schl., 1961—. Mem.: Am. Chem. Soc.; New England Assn. of Chem. Tchrs.; A.A.U.P.; Am. Assn. of Adv. of Sci. Author: Co-author of Chronic Effects of Various Barbiturates in Dogs; Effects of Anterior Pituitary-like Substance on Carbohyd. Metab.; Placental Transmission of Blood Iodine Quantitative Determination of Bile Pigment in Urine; Collection of specimen for Labor, examination; Lymphatic leukemia with myeloid blood picture, Modified technic for red-cell determination in goat's blood; Convulsions in puppies caused by congenital microcytic anemia; Normal blood and urine values in mink; Lead poisoning in dogs. Title of Ph.D. Dissertation: Einwirkung of Chlorsulfonsaure auf Authrachinon and Benzophenon. Travel: Switzerland; France; Italy; Czechoslovakia. Listed in: A.M.S.; W.W. in Edn.; Jews in the World of Sci.

KUC, Joseph (Ph.D.), Assoc. Prof., Purdue Univ., Lafayette, Ind. Home Add.: 2104 N. Salisbury St., W. Lafayette, Ind. PLANT BIOCHEMISTRY. b. New York, N. Y., Nov. 24, 1929. s. Peter and Helen (Dubec) K. Edn.: B.S., Purdue Univ., 1951; M.S., ibid., 1953; Ph.D., ibid., 1955. m. Ruth Shaffit, June, 1954. c.: Paul David; Rebecca Ruth. Exp.: Asst. Prof., Purdue Univ., 1955-58; Assoc. Prof., ibid., 1958—. Mem.: Am. Chem. Soc.; Am. Phytopathological Soc.; Phi Lambda Upsilon; Sigma Xi; Alpha Zeta; Ceres; Alpha Phi Omega. Contbr. to: Jour. of Am. Chem. Soc.; Science; Phytopathology. Areas of Rsch.: Plant and Microbial Metabolism, Biosynthesis of Lignin and other Natural Products.

KUCHER, Charles Gierman (Mr.), Supvr., Technical Serv., Rexall Chem. Co., Paramus, N. J. Home Add.: 708 Tamaques Way, Westfield, N. J. PLASTICS RESIN AND PROCESSING DEVELOPMENT. b. Newark, N. J., June 2, 1922. s. Charles C. and Emma (Gierman) K. Edn.: B.S., Lehigh Univ., 1943. m. Alma Wittig, June 8, 1946. c.: Donald Charles; Deborah Louise. Exp.: Chemist, Atlas Power Co., Tamaqua, Pa., 1943-45; Devl. Engr., Irvington Varnish and Insulator Co., Irvington, N. J., 1945-48; Partner, Dumont Mfgng. Co., Dumont, N. J., 1948-50; Devl. Engr., Gering Products Co., Kenilworth, N. J., 1950-55; Staff Mem., Spencer Chem. Co., Kansas City, Mo., 1955-57; Sr. Tech. Serv., ibid., New York, N. Y., 1957-60; Supvr. Tech. Services, Rexall Chem. Co., Paramus, N. J., 1960—. Mem.: Soc. of Plastics Engrs.; Theta Xi; Masonic Lodge. Areas of Rsch.: Plastics Extrusion and Processing, Polyethylene.

KUFFEL, Stanley (Ed.D.), Hd., Dept. of Psychol. and Chmn., Div. of Sci. and Math., Western Mich. Univ., Kalamazoo, Mich., 1814 Hazel Ave., Kalamazoo, Mich. PSYCHOLOGICAL TESTING, MENTAL HEALTH, GUIDANCE AND COUNSELING. b. Graham Twp., Minn., Mar. 24, 1905. s. Henry Andrew and Katherine (Bogenski) K. Edn.: B.A., Coll. of St. Thomas, 1927; M.A., Univ. of Minn., 1938; Ed.D., Western Reserve Univ., 1952. m. Ruth Ward, August 16, 1928. c.: George Slade; Robert Ward. Exp.: State Dir. of Guid., N. Dak., 1945-47; Personal Counsellor, Veterans Administration, Fargo, N. Dak., 1947-49; Coordinator-Student Personnel Services, Bemidji State Teachers Coll., 1949-50; Head of Department of Psychology, Western Mich. Coll., 1950—; Chmn., Div. of Sci. and Math., ibid., 1959—. Hon. Pos.: Mem., Natl. Guid. Testing Com. Mem.: Mich. Acad. of Sci.; Mich. Acad. of Psychol.; Phi Delta Kappa; M.E.A.; N.E.A.; A.A.A.S.; A.A.U.P.; R.O.A.; M.P.A.; WMC Sci. Club; Omicron Alpha Pi; Newman Club; Mich. Rehab. Assn.; Natl. Rehab. Assn.; Coun. Soc. Agencies. Author: Careers in the U. S. Navy, 1946; Student Personnel Services in Minn. and N. D. Tchrs. Colls., 1952. Contbr. to: S.R.A.; U.S.O.E. War Record: U. S. Navy, 1942-45. Gen. Int.: Received Cross of the Order of St. Cloud for work with Minn. Youth. Received Cardinal Newman Key for work with Mich. Youth. Invented Navy Underwater Obstacle Course. Areas of Rsch.: Financial Problems of Pub. Schls.; Student Personnel Services in Tchrs. Colls.; Selection Testing; Guidance Testing; Psychol. of the Handicapped; Mental Health; Thought Control.

KULCINSKI, Louis E. (Ph.D.), Prof. and Hd. of Dept. of Hygiene, Univ. of S. C., Columbia, S. C. BIOLOGICAL SCIENCE. b. July 21, 1889, LaCrosse, Wis. s. Michael and Mary (Weista) K. Edn.: Student Tchrs. Coll., La Crosse, Wis., 1916-18; B.S., 1927, M.S., 1929, Ill.; Ph.D., Univ. of Mich., 1943. m. Bernice LaVerne Rohrer Gregory of Springfield, Ill., June 23, 1934. d. John W. and Blanch Rohrer. Exp.: Ath. Dir., State Nor. Schl., Superior, Wis., 1918-20; Supvr., Phys. Edn., Health and Rec., East Chicago, 1920-22; Ath. Dir., Pillsbury Acad., Owatonna, Minn., 1922-25; Instr., Phys. Welfare Dept., Univ. of Ill., 1925-29; Office of Supt. of Pub. Instrn., State of Ill., 1929-36; Dept. of Edn., Chmn. of Dept. of Health and Phys Edn., State Tchrs. Coll., Hyannis, Mass., 1939-43; Hd. of Major Dept. of Health and Phys. Edn., Tex. Coll. of A. and I., Kingsville, Tex., 1943-46; Prof. and Hd. Dept., Hyg., Univ. of S. C., Columbia, S. C., 1946—. Hon. Pos.: State of Ill., Repr. Mem. of Assembly, A.P.E.A., 1929-36; Secy.-Treas., Ill. State Phys. Edn. Assn., 1929-36; Edni. Com. and Chmn., Rec. Com., Ill. State Big Brothers Assn., 1929-36; Amer. Pub. Health

Assn., S. C. State Chmn. on Planning in Health Edn.; Sou. States Work Conf., Mem. of S. C. Comm. on Tchr. Trng. in Health Edn. Mem.: S. C. Assn. of Health, Phys. Edn. and Rec.; S. C. Pub. Health Assn.; Amer. Pub. Health Assn.; Soc. of State Directors of Health and Phys. Edn.; A.P.E.A., Fellow; A.A.U.P.; Phi Delta Kappa; Sigma Delta Sigma; Sigma Delta Psi; Phi Epsilon Kappa; Delta Theta Epsilon. Rsch.: Spec. Inter-Amer. Affairs Project; Chmn., Health and Nutrition Com., U. S. Office of Edn., 1944. Contbr. to: Edni. Jours.; Rsch. Quart., Amer. Phys. Edn. Assn.; "Youth Conservation," S. C. Clubwoman. Ph.D. Dissertation: The Relation of Intelligence to the Learning of Fundamental Muscular Skills. Travel: U. S.; Mex.; Can. Hobbies: Recreation Concerts and Opera. Listed in: Who's Who in Amer.; etc.

KULWICH, Roman (Ph.D.), Supvry. Chemist, Market Quality Rsch. Div., Agric. Mktng. Serv., U. S. Dept. of Agric., Beltsville, Md. Home Add.: 9537 Rhode Island Ave., Coll. Park, Md. BIOCHEMISTRY. b. N. Y., N. Y., Oct. 18, 1925. s. Lucian and Helen (Blazynski) K. Edn.: B.S.A., Univ. of Fla., 1949; Ph.D., ibid., 1951. m. Lucile Warnock, Dec. 17, 1948. c.: Mark; Paul; Carol. Exp.: Animal Husbandry, Animal Husbandry Rsch. Div., Agric. Rsch. Serv., U. S. Dept. of Agric., Beltsville, Md., 1951-57; Biochemist, Market Quality Rsch. Div., ibid., 1957-60; Supvry. Chemist, ibid., 1960—. Mem.: Am. Chem. Soc.; Am. Soc. of Animal Sci.; Inst. Food Technols.; A.A.A.S.; Reciprocal Meat Conf.; Am. Instit. of Nutrition; Alpha Zeta; Sigma Xi. Contbr. to: Food Tech.; Jour. of Animal Sci.; Jour. of Nutrition; Nucleonics; Proc. Soc. Exptl. Biol. Med.; Arch. Biochem. Biophys.; Sci.; Nature. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Research on Market Quality Factors of Livestock, Meat, and Animal Fibers; Gamma Radiation of Livestock Products; Biochemical and Nutritional Research with Farm Animals Utilizing Radioactive Tracers.

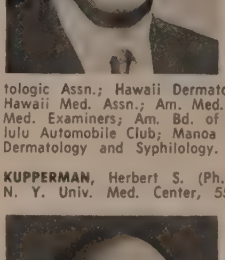
KUN, Ernest (M.D.), Assoc. Prof. of Exptl. Pharmacol. and Biochem., Univ. of Calif., Coll. of Med., San Francisco, Calif. Home Add.: 8 Helens Lane, Mill Valley, Calif. ENZYME-BIOCHEMISTRY. b. Sopron, Hungary, Oct. 22, 1919. s. Ernest (dec.) and Louise (Fruhwirth, dec.) K. Edn.: M.D., Univ. of Budapest, Hungary, 1943. Exp.: Instr., Univ. of Chicago, Chicago, Ill., 1946-49; Asst. Prof., Tulane Univ., New Orleans, La., 1949-52; Rsch. Fellow and Asst. Prof., Univ. of Wis., Madison, Wis., 1953-56; Assoc. Prof., Pharmacol. and Biochem., Univ. of Calif., San Francisco, Calif., 1956—. Hon. Pos.: Established Investigator of the Amer. Heart Assn., N. Y.; Fellow, Am. Assn. Adv. of Sci. Mem.: Am. Soc. Biol. Chem.; Am. Chem. Soc.; Am. Soc. Pharmacol.; Soc. Exptl. Biol. and Med.; Am. Assn. Adv. of Sci.; Sigma Xi. Contbr. to: Jour. Biol. Chem.; Biochem. and Biophys. Acta; Nature; Jour. of Organic Chem.; Biochem. Pharmacol.; Proc. Exptl. Biol. and Med. Areas of Rsch.: Biochemistry of Enzymes.

KUNZ, Kaiser Schoen (Ph.D.), Rsch. Prof. in Elect. Engrng., New Mex. Sta. Univ., Univ. Park, New Mex. Home Add.: 2047 Crescent Dr., Las Cruces, N. Mex. ELECTROMAGNETIC THEORY AND APPLIED MATHEMATICS. b. New Middletown, Ind., Oct. 16, 1915. s. Albert S. and Opal L. (Heckelman) K. Edn.: A.B., Ind. Univ., 1936; Ph.D., Univ. of Cincinnati, 1939; A.M., ibid., 1937. m. Ruth B. Horrigan, June, 1944. c.: Karl Stephen; Peter Stuart; Kevin Michael. Exp.: Instr., Math., Univ. of Cin., Cin., Ohio, 1939-42; Instr., Harvard Univ., 1942-45; Rsch. Assoc., Harvard Univ., Cambridge, Mass., 1945-46; Rsch. Fellow, Harvard Univ., Cambridge, Mass., 1946-47; Lectr., Appl. Math., ibid., 1947-49; Assoc. Prof., Case Inst. of Tech., Cleveland, Ohio, 1949-51; Asst. to Dir. Rsch., Schlumberger Well Surveying Corp., Ridgefield, Conn., 1951-60; Rsch. Prof., N. Mex. Sta Univ., 1960—. Mem.: Phi Beta Kappa; Sigma Xi; Eta Kappa Nu; Sigma Pi Sigma; Inst. of Radio Engrs.; Am. Phys. Soc.; Am. Math. Soc.; Am. Assn. for the Adv. of Sci. Author: Numerical Analysis, 1957. Contbr. to: Jour. of Appl. Phys.; Proc. of I.R.E.; Nuovo Cimento; Math. Tables and Aids to Computation; Geophys.; Jour. Petrol. Tech.; Proc. Computation Seminar. Areas of Rsch.: Electromagnetic Theory and Antennas; Numerical Analysis; Geophysical Instrumentation; Applied Mathematics; Masers.

KUO, Peter Te (D.Sc.), Assoc. Prof. of Med., Univ. of Pa., Philadelphia 4, Pa. Home Add.: 32 Dartmouth Rd., Cynwyd, Pa. INTERNAL MEDICINE AND CARDIOLOGY. b. Foochow, Fukien, China, Mar. 21, 1916. s. Yu Ching and So-Cheng (Liu) K. Edn.: B.S., St. John's Univ., 1936; M.D., ibid., 1939; M.Sc., Univ. of Pa., 1949; D.Sc., ibid., 1950. m. Nancy N. Huang, Dec. 25, 1949. c.: Laurence; Katharine. Exp.: Asst. to Asst. Prof., St. John's Univ. Med. Schl., 1940-46; Instr. to Assoc. Prof. of Med., Schl. of Med., Univ. of Pa., 1950—. Mem.: A.M.A.; Pa. Med. Assn.; Am. Fed. Clin. Res.; Am. Soc. for Study of Arteriosclerosis; A.A.A.S.; Fellow, Gerontological Soc.; Am. Coll. of Physicians. Contbr. to: Am. Heart Jour.; Am. Jour. Med. Sci.; Trans. of Am. Assn. Physicians; Am. Internal Med.; Circulation, Am. Jour. Med.; Jour. Clin. Invest.; Jour. Am. Med. Assn.; Jour. Am. Diet. Assn.; Jour. Thor. Surg.; Jour. Pediatrics; Med. Clin. North Am. Areas of Rsch.: Atherosclerosis, Diet, and Lipid Metabolism.

KURASHIGE, Wilfred Hitoshi (M.D.), 181 So. Kukui St., Honolulu 13, Hawaii. Home Add.: 2466 Manoa Rd., Honolulu 14, Hawaii. DERMATOLOGY & SYPHILOLOGY. b. Holualoa, Kona, Hawaii, July 7, 1911. s. Mitsuzo and Mura (Yamamoto) K. Edn.: B.A., Univ. of Hawaii, 1934; M.D., Northwestern Univ. Med. Schl., 1939; Cert. in Derm. and Syphilology, N. Y. Univ. Post-Grad. Med. Schl., 1953. m. Daisy Lum, 1941. c.: Elise; Christine. Exp.: Physician, Hutchinson Sugar Plantation Co., Naalehu, Hawaii, 1943-50; Vice-Pres. and Dir., Hawaii Warehouse Co., Honolulu, Hawaii, 1958—. Hon. Pos.: Secy., Hawaii Dermatology Soc.; Med. Staff of Kuakini Hosp., St. Francis Hosp. and Queen's Hosp. of Honolulu, Hawaii. Mem.: Am. Acad. of Dermatol. and Syphilol.; Internatl. Soc. for Tropical Dermatol.; Pacific Dermatologic Assn.; Hawaii Dermatol. Soc.; Honolulu Co. Med. Soc.; Hawaii Med. Assn.; Am. Med. Assn.; Diplomate of Natl. Bd. of Med. Examiners; Am. Bd. of Dermatology and Syphilol.; Honolulu Automobile Club; Manoa Community Assn. Areas of Rsch.: Dermatology and Syphilology.

KUPPERMAN, Herbert S. (Ph.D., M.D.), Assoc. Prof. of Med., N. Y. Univ. Med. Center, 550 First Ave., N. Y. 16, N. Y. Home Add.: 176 Wyoming Ave., Maplewood, N. J. ENDOCRINOLOGY. b. Newark, N. J., Apr. 12, 1915. s. Isaac and Fanny (Weckstein) K. Edn.: B.A., Univ. of Wis., 1936; M.A., ibid., 1937; Ph.D., ibid., 1940; M.D., Univ. of Ga. Med. Schl., 1945. m. Molly Kleven, Feb. 10, 1942. c.: Spencer; Brandeis; David. Exp.: Rsch. Asst., Dept. of Zool., Univ. of Wis., 1936-40; Rsch. Fellow, ibid., 1940-42; Rsch. Fellow, Univ. of Ga. Med. Schl., Dept. of Exptl. Med., 1942-46; Sr. Rsch. Fellow, Natl. Rsch. Coun., Dept. of Endocrinology, ibid., 1946-47; Rsch. Assoc., ibid., 1947; Rsch. Assoc., N. Y. Univ., Med. Center, 1947-53; Adj. Asst. Prof. of Med., ibid., 1953-56; Assoc. Prof. of Med., N. Y. Univ. Medical Center, 1956—; Endocrinologist, Meth. Hosp., Brooklyn, N. Y.; Presby. Hosp., Newark, N. J.; Univ. Hosp., N. Y. C.; Irvington House, N. Y.; Clara Maass Mem. Hosp., Newark, N. J.; Kingsbridge Vets. Hosp., Bronx, N. Y.; Knickerbocker Hosp., N. Y. C.; Lincoln Hosp., Bronx, N. Y.; St. Barnabas Med. Center, Newark, N. J.; The Mountainside Hosp., Montclair, N. J.; N. Y. Infirmary; Booth Mem. Hosp., Flushing, N. Y.; French Hosp., N. Y. C.; Consult., Lutheran Med. Ctr., Brooklyn, N. Y. Hon. Pos.: Mem., Edit. Bd., Internatl. Fertility Jour.; Clin. Pharm. and Therap.; Jour. Clin. Endocrinol. and Metab.; Mem., Publtn. Comm., Psychosomatics. Mem.: Pharm. Comm., Univ. Hos.; Mem., Bellevue Hosp. Comm. on Drugs and Formulary; Mem., Med. and Scientific Comm., Margaret Sanger Rsch. Bur.; Mem., Biol. Rsch. Comm. of Planned Parenthood Fedn. of Am. Mem.: Am. Soc for the Study of Sterility; Am. Fedn for Clin Rsch.; A.M.A.; Am. Assn. Adv. Sci.; Am. Therapeutic Soc.; Harvey Soc.; Am. Assn. of Clin. Chem.; Am. Soc. Zool.; N. Y. Acad. of Sci. (Fellow); Internatl. Fertility Assn.; Am. Acad. Obstetrics and Gynecology (Fellow); Soc. Exptl. Biol. and Med.; Am. Eugenics Soc.; Acad. of Med. Northern N. J.; Am. Acad. of Psychosomatic Med.; Assoc. Mem., Am. Coll. of Physicians; Soc. for Scientific Study of Sex; and many others. Contbr. to: Jour. Pharm. Exptl. Ther.; Endocrinology; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Phys.; Science; South. Med. and Surg.; Am. Jour. Syphi-



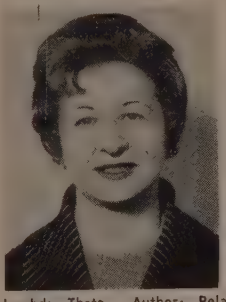
Gonor., and Ven. Dis.; Anatomical Record; Jour. Med. Assn. Ga.; Am. Jour. Obs. and Gyn.; J.A.M.A.; Fed. Proc.; Jour. Clin. Endocrinol. and Metab.; Archives of Internal Med.; Acta Endocrinologocia; Jour. of Allergy; Antibiotics Annual; N. Y. Acad. Sci., Annals; J.A.D.A.; Jour. Am. Geriatric Soc.; Jour. Dental Med.; Trans. N. Y. Acad. Sci.; etc. Gen. Int.: Recd. Billings Award for Scientific Exhibit at Meeting, A.M.A., N.Y.C., June, 1957. Areas of Rsch.: Endocrinology, Clinical and Experimental.

KURNICK, Allen Abraham (Ph.D.), Prof. and Hd., Dept. of Poultry Sci., Univ. of Ariz., Tucson, Ariz. Home Add.: 4441 E. 18th St., Tucson, Ariz. BIOCHEMISTRY AND NUTRITION. b. Kaunas, Lithuania, Mar. 15, 1921. s. Harry and Rose (Narver) K. Edn.: B.S., Calif. St. Poly. Coll., 1953; M.S., Tex. A. and M. Coll., 1955; Ph.D., ibid., 1957. m. Nita Binder, Sept. 6, 1942. c.: Eileen Ruth. Exp.: Asst. Prof., Univ. of Ariz., 1957-59; Assoc. Prof., ibid., 1959-60; Prof., ibid., 1960—. Hon. Pos.: Predoctoral Rsch. Fellow, Am. Cancer Inst., 1955-57. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Inst. of Nutrition; Poultry Sci. Assn.; Sigma Xi. Contbr. to: Poultry Sci.; Jour. of Nutrition; Proc. of Soc. Experimental Biol. and Med.; Soil Sci. Serv. Rec.: U. S. Air Force, 1943-46. Areas of Rsch.: Metabolism and Nutrition of Trace Mineral Elements: Interrelationships of Nutrition and Environmental Stress.

KURZWEG, Hermann Herbert (Ph.D.), Dir. of Rsch., NASA, Advanced Rsch. and Technology, 1520 H St., N. W., Washington, D. C. Home Add.: 731 Quaint Acres Drive, Silver Spring, Md. HYPERSONIC FLOW; BALLISTICS. b. Dresden, Saxonia, Germany, Jan. 1, 1908. s. Paul Otto and Bertha (Friede) K. Edn.: Ph.D., Univ. of Leipzig, 1933. m. Erna Michaelis, Apr. 21, 1934. c.: Ulrich; Diemut; Lutz. Exp.: Asst. Instr., Univ. of Leipzig, 1933; Mem. of Sci. Staff, Optical Works, Zeiss, Tena, 1934-36; Chief Aerodynamic Rsch. Lab., Rocket Center, Peenemuende, 1937-43; Deputy Dir., Inst. for Aerodynamics and Ballistics, Kochel, 1944-45; Consult., Naval Ordn. Lab., White Oak, Md., 1946-51; Assoc. Tech. Dir., Naval Ordnance Lab., ibid., 1952-60; Dir. of Rsch., NASA, Washington, D. C., 1960—. Hon. Pos.: Chmn., Bureau of Ordnance Comm. on Aeroballistics; Chmn., AdHoc Panel on Aeronautical Problems, DOD; Vice-Chmn., Fluid Dynamics Panel, AGARD. Mem.: Philosophical Soc. of Wash.; Inst. of Aeronautical and Space Scis.; Wash. Acad. of Scis. Contbr. to: Annalen der Physik; I.A.S.; AGARD Books, History of German Guided Missile Development, and Selected Topics on Ballistitcs; Royal Aeronautical Soc. Areas of Rsch.: Fluid Dynamics; Ballistics.

KUSHNER, Daniel Stephen (M.D.), Dean and Prof., Med., Chicago Med. Schl., Chicago, Ill. Home Add.: 780 Rosewood, Winnetka, Ill. INTERNAL MEDICINE. b. Philadelphia, Pa., July 24, 1922. s. Louis A. and Anna (Valin) K. Edn.: A.B., Univ. of Pa., 1943; M.D., ibid., 1946. m. Gail Robbins, July 20, 1951. c.: Deborah June; Louis Arthur; Daniel Stephen, Jr.; David Edward; Sara Lynn. Exp.: Prof. of Med. and Assoc. Dean, Cook Co. Grad. Schl. of Med., Chicago, Ill., 1959-62; Asst. Prof. of Med., Northwestern Univ. Med. Schl., 1960-62; Assoc. Prof. of Med., ibid., 1962—; Dir. of Med. Edn., Cook Co. Hosp., Chicago 12, Ill., 1961-62; Dean and Prof., Chicago Med. Schl., 1962—. Hon. Pos.: Coun. Rep., Coun. on Med. Edn. and Hosp., Residency Rev. Comm. in Internal Med., Am. Med. Assn. Mem.: A.A.A.S.; Fellow, New York Acad. of Med.; N. Y. Acad. of Sci.; Am. Fed. for Clin. Rsch.; Central Soc. for Clin. Rsch.; Am. Med. Assn.; Am. Trudeau Soc.; Fellow, Am. Coll. of Physicians; Am. Heart Assn.; Sigma Xi; Alpha Omega Alpha. Author: Clinical Pathological Conferences of Cook County Hospital, Vol. 1, 1954. Contbr. to: Jour. Clin. Invest.; Medicine; Am. Jour. Med.; Metabolism; Nature; Jour. Lab. and Clin. Med.; Jour. Clin. Endocrinol. and Metabolism; Am. Rev. Tuberc.; Jour. Invest. Dermat.; Circulation; Am. Jour. Clin. Nutrition; Ann. Int. Med. Serv. Rec.: U. S. Army, 1947-49. Areas of Rsch.: Medical Edn., Renal Disease.

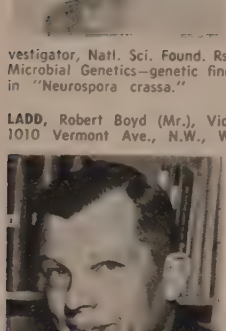
KUSHNER, Rose Estrin (Ph.D.), Visiting Prof., City Univ. of N. Y., 138th St. and Amsterdam Ave., New York, N. Y. Home Add.: 10 Client Rd., Great Neck, L. I., N. Y. PSYCHOLOGY. b. Buffalo, N. Y., July 31, 1907. d. Morris Estrin and Minnie (Yampolski) E. Edn.: B.S., Buffalo State Tchrs. Coll., 1933; M.A., Tchrs. Coll., Columbia Univ., 1941; Ph.D., ibid., 1946. m. Charles G. Kushner, 1937. Exp.: Lectr., Brooklyn Coll., 1944-45; Rsch. Assoc., Inst. of Psychol. Rsch., Tchrs. Coll., Columbia Univ., 1948-61; Instr. to Asst. Prof., City Univ. of N. Y., 1947-56; Visiting Prof., ibid., 1956—; Visiting Prof., Univ. of Fla., summer sessions, 1950, 51, 52. Mem.: Am. Psychol. Assn.; Gerontological Soc.; Am. Assn. for the Adv. of Sci.; Eastern Psychol. Assn.; N. Y. State Psychol. Assn.; Kappa Delta Pi; Pi Lambda Theta. Author: Relationship Between Content of An Adult Intelligence Test and Intelligence Test Score as A Function of Age, 1947; Supplementary Guide to Revised Stanford-Binet Test, co-author, 1944; Learning to Use Hearing Aids, co-author, 1945. Contbr. to: Rev. of Edn. Rsch. Areas of Rsch.: Psychology of Aging; Intellectual Changes With Age.



LACKEY, Oren Franklin (Mr.), Hd. Sci. Dept., Biology Tchr., 2521 Walnut, Mattoon Sr. H. S., Mattoon, Ill. Home Add.: 121 South 34th St., Mattoon, Ill. BIOLOGY, ECOLOGY. b. Kinmundy, Ill., Apr. 27, 1915. s. Earl Franklin (dec.) and Mary Etta (Thomason) L. Edn.: B.Ed., Eastern Ill. Univ., 1937; M.S., Univ. of Ill., 1947; Attended: Ind. Univ.; Tulane Univ.; Univ. of Sou. Calif. Exp.: Tchr., Green Moss Schl., Clark Co., Ill., 1937-38; Tchr., Dist. 100, Mattoon, Ill., 1938-41; Tchr., C.U. Dist. No. 2, ibid., 1948; Co-op. Tchr., Eastern Ill. Univ., 1948–; Hd. Sci. Dept., Biol. Tchr., Mattoon Sr. H. S., Mattoon, Ill., 1949–. Mem.: A.A.A.S.; N.A.B.T.; Ill. Acad. of Sci.; Gamma Theta Chapt. of Beta Beta Beta; Am. Legion. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Investigations Concerning the Intertidal Zonation of the Macroscopic Benthic Biota of the Gulf of Nicoya in Costa Rica.

LACY, Ann Matthews (Ph.D.), Asst. Prof., Dept. Biol. Sci., Goucher Coll., Towson, Baltimore 4, Md. Home Add.: 261 Nahanton St., Newton Center 59, Mass. GENETICS. b. Boston, Mass., May 29, 1932. d. Clive Woodbury and Mona (Matthews) L. Edn.: B.A., Wellesley Coll., 1953; M.S., Yale Univ., 1956; Ph.D., ibid., 1959. Exp.: Genetics Rsch. Asst., Dept. of Genetics, Carn. Inst. of Wash., Cold Spring Harbor, L. I., N. Y., 1953-54; Instr., Dept. of Biol. Sci., Goucher Coll., Towson, Baltimore, Md., 1959-61; Asst. Prof., ibid., 1961–. Mem.: Genetics Soc. of Am.; Botanical Soc. of Am.; A.A.A.S.; A.A.U.P.; Sigma Xi. Contbr. to: Proc. Natl. Acad. Sci.; Carnegie Inst. of Wash. Yearbook. Gen. Int.: Natl. Sci. Found. Pre Doc. Fellow, 1954-56, Yale; Natl. Inst. of Health Pre Doc. Fellow, Yale, 1956-59; Sr. Investigator, Natl. Sci. Found. Rsch. Grant, 1960–. Areas of Rsch.: Microbial Genetics—genetic fine structure, especially the Td locus in "Neurospora crassa."

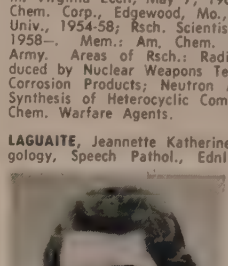
LADD, Robert Boyd (Mr.), Vice Pres., Surveys and Rsch. Corp., 1010 Vermont Ave., N.W., Washington, D. C., and Staff Dir., Maritime Evaluation Committee, Advisory to Secy. of Commerce. Home Add.: 11110 Rokeby Ave., Garrett Park, Md. STATISTICS; OPERATIONS RESEARCH; TRANSPORTATION and ECONOMIC DEVELOPMENT. b. Bishop, Texas, March 16, 1915. s. Arlington R. and Pauline A. (Schostag) L. Edn.: B.A., Tex. Coll. of Arts and Industries, 1935; M.A., ibid., 1939. m. Mary Ellen Jameson, Sept. 20, 1942. c.: Margaret Ellen; Robert Jameson. Exp.: Statistician, Chf. of Transport Econ., U. S. Army Trans. Corps, 1943-49; Statistician, U. S. Exec. Office of the Pres., Bur. of the Budget, 1949-53; Operations Analyst, Rsch. Faculty, Operations Rsch. Office, Johns Hopkins Univ., 1953-55; Consultant in Statistics and Rsch. Methods, Private Practice, 1950-55; Rsch. Mgr. for Operations Rsch. and Stat., Southwest Rsch. Inst., 1955-58; Chmn. of Rsch. Group, Johns Hopkins Univ., 1958-61. Hon. Pos.: Task Force on Transportation Policy and Programs (for Secy. of Commerce), 1961; Staff Dir., Maritime Evaluation Committee, 1961-62; V. Chmn., Curriculum Study Comm. for Montgomery Co., 1960-61; Bd. of Trustees, Cedar Lane Unitarian Ch., 1960–; Montgomery Co. Libr. Bd., 1950-55; Coun. of Am. Stat. Assn., 1957-58; Advisor, Stat. Methods Matters to Fed. Maritime Bd., Civil Serv. Comm., Census Bur.; Guest Lectr., St. Mary's Univ., Internatl. Relations Inst. Mem.: Am. Stat. Assn.; Operations Rsch. Soc. of Am.; The Inst. of Mgmt. Scis.; Regional Sci. Assn.; Natl. Defense Trans. Assn.; Internatl. Cargo Handling Coordination Assn.; Alpha Chi. Author: Material on Character of St. Louis and the Surrounding Area, 1954. Editor and Sr. Author: The Southwest Resources Handbook, 1957, 1958. Co-author: Report of Conference on Transportation Research, NAS-NRC Pubn. 840, 1961; Economics of Postal Services; Business Use, 1954. Contbr. to: Internatl. Statistical Inst., 1961; Western Bus. Rev.; Jour. Machine Acctng.; Proc., Railway Systems and Procedures Assn.; Proc., Conf. on Field Procedures; Sample Surveys of Current Interest. Listed in: Am. Men of Sci.; Who's Who in the South and Southwest. Areas of Rsch.: Transportation and logistics, mgmt. systems, resources development, rsch. organization and methods.



LADERMAN, Jack (Ph.D.), Mathematician, Office of Naval Rsch N. Y. Branch Office, 2630 Kingsbridge Terrace, Bronx 63, N. Y. Adj. Assoc. Prof., Math., N. Y. Univ., N. Y. MATHEMATICAL STATISTICS. b. N. Y., N. Y., Jan. 6, 1914. s. Joseph and Fanni (Freeman) L. Edn.: B.S., Coll. of City of N. Y., 1934; M.A. Columbia Univ., 1935; Ph.D., ibid., 1953. m. Marion Frances Shupnik, June 8, 1947. c.: Julian David. Exp.: Statistician Federal Communications Commn., 1937; Analyst, Bureau of Rsch and Statistics, N. Y. State Dept. of Labor, 1938; Mathematician Computation Lab., Natl. Bur. of Standards, 1939-40; Statistician Chem. Warfare Serv., War Dept., 1940-46; Mathematician, Computation Lab., Natl. Bur. of Standards, 1946-49; Rsch. Scientist Columbia Univ., 1949-51; Mathematician, Logistics Branch, Office of Naval Rsch., Wash., D. C., 1951-54; Office of Naval Rsch., N. Y. Br. Office, 1954–. Mem.: Am. Math. Soc.; Inst. of Math. Statistics; Am. Statistical Assn.; A.A.A.S.; Biometric Soc.; Sigma Xi. Contbr. to: Annals Math. Statistics; Jour. Math. and Phys.; Jour. Am. Statistical Assn.; Math. Tables and other Aids to Computation. Special Int.: Math. Statistics; Probability; Logistics; Math Computation.

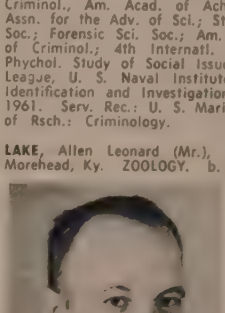
LAGOMARSINO, Raymond John (Mr.), Rsch. Scientist, Isotopes Inc., 123 Woodland Ave., Westwood, N. J. Home Add.: 41 River Edge Rd., River Edge, N. J. RADIOCHEMISTRY. b. Union City, N. J., Dec. 20, 1930. s. Ernest and Mary (Torre) L. Edn.: B.S., Fairleigh Dickinson Univ., 1952; M.S., Seton Hall Univ., 1962 m. Virginia Eccli, May 7, 1960. Exp.: Rsch. Asst., U. S. Army Chem. Corp., Edgewood, Mo., 1952-54; Rsch. Asst., Seton Hall Univ., 1954-58; Rsch. Scientist, Isotopes, Inc., Westwood, N. J. 1958–. Mem.: Am. Chem. Soc.; A.A.A.S. Serv. Rec.: U. S. Army. Areas of Rsch.: Radiochem. Analyses of Nuclides Produced by Nuclear Weapons Testing; Analyses of Nuclear Reactor Corrosion Products; Neutron Activation Analysis; Reactions and Synthesis of Heterocyclic Compounds; Pharm. and Toxicology of Chem. Warfare Agents.

LAGUAITE, Jeannette Katherine (Ph.D.), Prof., Dept. of Otolaryngology, Speech Pathol., Edni. Dir., Speech and Hearing Ctr., Tulane Univ. Med. Schl., New Orleans, La. Home Add.: 140 Bonnabel Blvd., Metairie, La. SPEECH PATHOLOGY. b. New Orleans, La., June 20, 1912. d. John B. and Alma (Berkele) L. Edn.: B.A., Tulane Univ., 1937; M.A., ibid., 1940; Ph.D., La. St. Univ., 1952. Exp.: Tchr., N. O. Publ. Schls., New Orleans, La., 1930-47; Speech Cor., ibid., 1947-52; Edni. Dir., Tulane Univ. Med. Schl., Speech and Hearing Ctr., 1952–. Hon. Pos.: Pres., La. Speech and Hearing Assn. Mem.: Am. Speech and Hearing Assn., Fellow; Am. Assn. for Cleft Palate Rehabilitation; Sou. Speech Assn.; A.A.A.S.; A.A.U.P.; Delta Kappa Gamma; Quota Internatl. Contbr. to: Pediatrics; La. St. Med. Jour.; Publ. Health Reports; Sou. Speech Jour. Areas of Rsch.: Voice Disorders and Esophageal Speech; Language Disorders in Children.



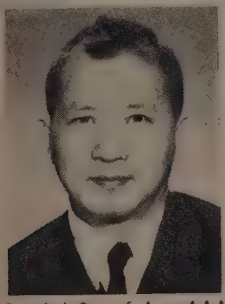
LAITINEN, Wayne Andrew (Mr.), Founder, Secy., Am. Assn. of Criminol., Box 5, Hanover, Mass. Home Add.: 894 Main St., Hanover, Mass. CRIMINOLOGY. b. Quincy, Mass., Nov. 12, 1932. s. T. Andrew and Rose A. (Dolan) L. Edn.: A.B., Harvard Coll., 1954; Ed.M., Mass. Sta. Coll. at Bridgewater, 1959. m. Loreen Bettencourt, Sept. 5, 1955. c.: Loreen Marie. Exp.: Secy., Am. Assn. of Criminol., 1953–; Secy., Am. Acad. of Registered Criminols., 1958–. Hon. Pos.: Natl. Adv. Coun. in Criminol., Am. Acad. of Achievement. Mem.: Am. and Brit. Assn. for the Adv. of Sci.; Sta. Academies of Sci.; Medico-Legal Soc.; Forensic Sci. Soc.; Am. Soc. of Criminol.; Internatl. Soc. of Criminol.; 4th Internatl. Criminol. Congress; Soc. for the Phychol. Study of Social Issues; N.S.T.A.; N.E.A.; Marine Corps League, U. S. Naval Institute. Author: Elements of Criminal Identification and Investigation, 1953; Elements of Criminology, 1961. Serv. Rec.: U. S. Marine Corps Reserve, 1951-59. Areas of Rsch.: Criminology.

LAKE, Allen Leonard (Mr.), Asst. Prof., Morehead Sta. Coll., Morehead, Ky. ZOOLOGY. b. Jamestown, N. Y., Sept. 17, 1924. s. Carl Gustav Leonard and Alma (Seastrom) L. Edn.: B.S., Edinboro Sta. Coll., 1949; Ed.M., Univ. of Buffalo, 1950. m. Betty Phillips, May 29, 1948. c.: Ann Lea; Aleson Leonard; Allen Lee; Mary Beth; Alma Lou. Exp.: Hd. Sci. Dept., Lees Jr. Coll., Jackson, Ky., 1950-57; Asst. Prof., Morehead Sta. Coll., 1957–. Mem.: Am. Assn. for the Adv. of Sci.; Ky. Acad. of Sci.; Natl. Assn. of Biol. Tchrs.; Am. Assn. of Univ. Profs.; Am. Inst. of Biol. Scis.; Phi Sigma Pi; Mu Kappa Gamma; Morehead Men's Club. Author: The Metric System in the World of Today, 1959. Contbr. to: Trans. of the Ky. Acad. of Sci.; The Am. Biol. Tchr. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: SCUBA Operations for Ecological, Geological Purposes.



LAJTHA, Abel Louis (Ph.D.), Assoc. Rsch. Scientist, N. Y. St. Rsch. Inst. for Neurochem. and Drug Addiction, Ward's Island, N. Y. 35, N. Y. Home Add.: 2395 Palisade Ave., N. Y. 63, N. Y. NEUROCHEMISTRY, BIOCHEMISTRY. b. Budapest, Hungary, Sept. 22. 1922. s. Laszlo and Rose (Hollos) L. Edn.: Ph.D., Univ. of Budapest, 1945. m. Marie Hanson, Nov. 25, 1953. c.: Terry Anne; Kathryn Jean. Exp.: Asst. Prof., Univ. of Budapest, Hungary, 1945-47; Rsch. Assoc., Stazione Zoologica, Napies, Italy, 1947; Rsch. Assoc., Royal Instn., London, England, 1947-48; Asst. Prof., Inst. for Muscle Rsch., Woods Hole, Mass., 1948-50; Asst. Prof., Columbia Univ. Coll. of Physicians and Surgeons, 1950—; Assoc. Rsch. Scientist, N. Y. St. Psychiatric Inst., N.Y.C., 1950-61. Mem.: Am. Soc. Biological Chem.; Am. Acad. Neurol.; A.A.A.S.; Biochem. Soc.; Sigma Xi. Contbr. to: Jour. Neurochem.; Arch. Biochem.; Physiol. Rev.; Jour. Biol. Chem.; Nature. Areas of Rsch.: Neurochem.; Protein Metabolism of the Brain; The Brain Barrier System.

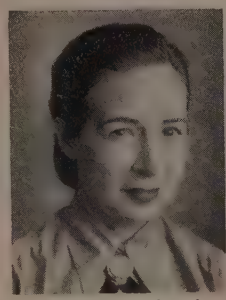
LAM, Shue-Lock (Ph.D.), Asst. Prof., Purdue Univ., Lafayette, Ind. Home Add.: Hang Yick Lumber Co., 467 Lockhart Rd., Hong Kong. PLANT PHYSIOLOGY AND PLANT BREEDING. b. Haina Island, Kwangtung, China, Nov. 19, 1914. s. Tung-Yung and Chan (Yee-Lun) L. Edn.: B.S., Lingman Univ., Canton, China, 1944; M.S., Okla. St. Univ., 1955; Ph.D., Univ. of Ill., 1958. m. Chiu Mo-Ching, May 27, 1944. c.: Chi-Ping; Chi-King; Chi-Chung; Chi-Wo. Exp.: Dir. of Plant Production Div., Lingnan Univ., China, 1944-46; Dir. of Tech. Dept., Garden and Forest Administration, Nanking City, 1946-48; Specialist, Joint Commission on Rural Reconstruction, China, 1949; Instr., Purdue Univ., Lafayette, 1958-60; Asst. Prof., ibid., 1960—. Mem.: Phi Sigma Biol. Soc.; Gamma Sigma Delta; Am. Soc. Hort. Sci.; Botanical Soc. of Am.; A.A.A.S. Contbr. to: Sci.; Proceedings of Am. Soc. for Horticultural Sci.; Am. Jour. of Botany. Gen. Int.: Induction of Fiowering in Sweet Potato. Areas of Rsch.: Plant Physiology, Physiology of Flowering in Horticultural Crops.



LAMB, Donald R. (Ph.D.), Prof. of Civil Engrng., Univ. of Wyo., Laramie, Wyo. Home Add.: Box 3226 Univ. Sta., Laramie, Wyo. CIVIL ENGINEERING, TRANSPORTATION AND MATERIALS. b. Yuma, Colo., May 6, 1923. s. Aaron Fredrick (dec.) and Lois (Hall) L. Edn.: A.B., Hastings Coll., 1947; B.S., Univ. of Wyo., 1951; M.S., ibid., 1953; C.E., ibid., 1956; Ph.D., Purdue Univ., 1962. m. Orla V. Gillespie, June 1943. c.: Dona M.; Linda L.; Frederick James. Exp.: Supt. of Schls., Dalton Publ. Schls., Dalton, Neb., 1946-47; Athletic Dir., Madrid Consolidated Schls., Madrid, Neb., 1947-49; Inst. Asst. and Assoc. Prof., Univ. of Wyo., 1951-61; Prof. of Civil Engrng., ibid., 1962—. Mem.: Am. Soc. of Civil Engrng.; Natl. Soc. of Professional Engrs.; Am. Soc. of Engrng. Edn.; Wyo. Soc. of Prof. Engrs.; Sigma Xi; Sigma Tau; Phi Kappa Phi; Tau Beta Phi; Omicron Delta Kappa. Contbr. to: Proc. Highway Rsch. Bd.; Proc. Am. Soc. for Testing Materials; Jour. of Sedimentary Petrology; Jour. of Am. Soc. of Engrng. Edn. Serv. Rec.: U. S. Army Air Force, 1943-45. Areas of Rsch.: Plain Concrete, Bituminous Concrete, Aggregate for Concretes and Soil Stabilization; Application of Radioisotopes in the Study of Bituminous Materials and Soils.

LAMBERT, W(illiam) C(lark) Breckenridge (Ph.D.), Assoc. Porf., Polit. Sci., Univ. of Omaha, Omaha 1, Nebr. Home Add.: 3520 Woolworth Ave., Omaha 5, Nebr. POLITICAL SCIENCE. b. St. Louis, Mo., Nov. 7, 1918. s. Arthur W., Jr. and Lamiza Anne B. (Breckenridge) L. Edn.: B.S.B.A., Wash. Univ., 1941; A.M., ibid., 1942; Ph.D., ibid., 1950. m. Mary Ellen Saxon of Popular Bluff, Mo., July 29, 1950. d. Cecil E. and Mary M. Saxon. c.: Margaret L.; J. Laird; Peter B.; J. Bartlett; Geoffrey M.; Mary S. Exp.: Export Bus., 1942-48; Assoc. Prof. and Act. Chmn., Knox Coll., 1948-49; Heermans Fellow, Wash. Univ., 1949-50; Asst. Prof., Univ. of Md., Heidelberg, Ger., 1950-52; Ford Found. Assoc. Prof., So. State Coll., 1952-57; Assoc. Prof., Univ. of Omaha, 1957—. Summer Appointments: Marshall Coll., 1957; Vanderbilt Univ., 1956; Univ. of Ark., 1955; Grantee, Duke Univ., 1957. Hon. Pos.: Ark. State Fulbright Comm., 1952, '53, '55; Bd. of Govs., Ark. Comm. of the A.A.U.N., 1955-57; Vice Pres., Magnolia Explorers Club, 1956-57; Pres., So. State Coll. Chapt. of A.A.U.P., 1954; Exec. Commn., Diocesan Canterbury Assn. of the Episcopal Diocese of Nebr., 1959—; Chmn., Dept. of Campus Ministry, Omaha Area Council of Churches, 1961. Mem.: Am. Acad. Polit. and Soc. Sci.; A.A.U.P.; Am. Polit. Sci. Assn.; Am. Soc. Internatl Law; Midwest Conf. of Polit. Scientists; Sigma Alpha Epsilon; Omicron Delta Gamma; Pi Delta Phi; Pi Gamma Mu; Masons. Ph.D. Dissertation: The Conscientious Objector Before the Law and the Courts of the United States. War Rec.: U.S.N.R., W.W. II. Travel: Europe; Can. Hobbies: Photography; Fishing; Swimming; Ice Skating; Singing Reading; Travel. Listed in: A.M.S.; W. W. in Am. Edn.

LAMBOU, Madeline (Mrs.), Gomila, Chemist, Utilization Rsch. and Devl. Div., 1100 Robert E. Lee Blvd., New Orleans 19, La. SEED AND ROOT METABOLISM. b. New Orleans, La., July 29, 1908. d. John G. and Christine (Marti) Gomila. Edn.: A.B., Newcomb Coll., 1928; M.S., Tulane Univ., 1929. m. Paul O. Lambou, July 31, 1937. c.: Richard Paul. Exp.: Asst. City Chemist, New Orleans, La., 1929-42; Asst. Scientific Aide, U.S.D.A., Southern Regional Rsch. Lab., ibid., 1942-43; Jr. Chemist, ibid., 1943-45; Chemist, ibid., 1945-59; Rsch. Analyst., ibid., 1960—. Mem.: Am. Chem. Soc.; Am. Soc. of Plant Physiol.; Am. Oil Chemists Soc.; Sigma Xi; New Orleans Br., R.E.S.A.; Fellow, Am. Inst. of Chemists; Inst. of Food Technologists; Natl. League of Am. Pen Women; Tulane Univ. Alumni. Contbr. to: Oil and Soap; Am. Oil Chemists' Soc. Jour.; Sci.; Plant Physiol.; Cotton Gin and Oil Mill Press; Oil Mill Gazetteer; Food Rsch., Food Technol., and Analytical Chem.; Science. Special Int.: Grignard Intermediates; Cannabis Sativa; Thiocyanogen Numbers; Seed Storage, Viability, Metabolism and Inhibitors of Biol. Activity; Storage and Processing of Roots; Sweet Potatoes, chromatography of sugars.



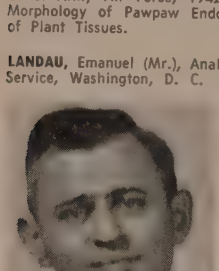
LAMMERS, Helen Norwood (Mrs.), Biol. Sci. Tchr., 256 Clifton St., S.E. Atlanta, Ga. Home Add.: 125 Wilton Dr., Decatur, Ga. BIOLOGICAL SCIENCE. b. Logan, Utah, Dec. 8, 1900. d. Chalmers Colin and Mary (Greenleaf) Norwood. Edn.: A.A., Synodical Coll., 1917; A.B., Central Coll., 1920; Grad. work, Univ. of Mo., Emory Univ., Harvard Univ. and Marine Biological Lab., Woods Hole, Mass. m. Claude John Lammers, June 22, 1927. c.: William. Exp.: Biol., Synodical Coll., 1920-21; Biol., Howard Payne Coll.; Asst. Curator, Brooklyn Children's Museum, 1923-24; Instr. in Biol., Agnes Scott Coll., 1928-31; Instr., Biol., Sci., Atlanta H. S., 1942—. Hon. Pos.: Chmn., Science Edn. Div., Ga. Acad. of Sci. Mem.: N.A.B.T.; A.I.B.S.; A.A.A.S.; Fellow, Ga. Acad. of Sci.; Atlanta Science Club; Phi Sigma; League Women Voters.

LAMPE, Lois (Ph.D.), Asst. Prof. of Botany, Ohio State Univ., Columbus 10, Ohio. Home Add.: 1528 Meadow Rd., Columbus 12, Ohio. MORPHOLOGY; CYTOLOGY; GENETICS OF VASCULAR PLANTS. b. Washington Court House, Ohio., Mar. 29, 1896. d. Frederick Christian and Gertrude Leslie (Hays) Lampe. Edn.: A.B., B.S., Ohio State Univ., 1919; M.S., ibid., 1922; Ph.D., ibid., 1927. Exp.: Asst., Bot., Ohio State Univ., 1920-23; Instr., Bot., ibid., 1923-24; Fellow, Boyce Thompson Institute for Plant Rsch., 1924-26; Instr., Bot., Ohio State Univ., 1926-40; Asst. Prof. of Botany, ibid., 1940—. Hon. Pos.: Chmn., Com. on Arrangements for Natl. Convention, Sigma Delta Epsilon, and Mem. of Coun., A.A.A.S., Columbus Meetings, 1939; Natl. Pres., Sigma Delta Epsilon, 1940; Mem. of Coun., A.A.A.S., Phila., Pa., 1940; Secy., Plant Inst., Ohio State Univ., 1940-49; Secy.-Treas., Ohio State Chapt., Sigma Xi, 1947-52; Chmn. of Registration, Secy. of Com. on Arrangements and Local Repr., Am. Bryol. Soc., for Columbus Meetings of Am. Inst. of Biol. Scis., 1950; Program Chmn., Botanical Colloquium, Ohio State Univ., Spring, 1959. Mem.: A.A.A.S., Fellow; Bot. Soc. of Am.; Genetics Soc. of Am.; Am. Genetic Assn.; Fellow, Ohio Acad. of Sci.; Sigma Xi; Phi Upsilon Omicron; Sigma Delta Epsilon; Faculty Women's Club of the Ohio St. Univ., Pres.; Natl. Soc. of Arts and Letters. Contbr. to: Botanical Gazette; Sci.; Ohio Jour. of Sci. Ph.D. Dissertation: Microchemical and Morphological Study of the Developing Endosperm of Maize. Bot. Gaz. 91: 337-376. Pl. 1-3, Figs. 10-16. 23 Je 1931. Areas of Rsch.: Form, Structure and Heritable Variation of Vascular Plants, Fossil and Living.

LAMPTON, Robert K. (Ph.D.), Prof. of Biol. and Hd. of Dept. of Biol., West Ga. Coll., Carrollton, Ga. Home Add.: Carrollton, Ga. BOTANY. b. Zanesville, Ohio, Jan. 30, 1911. s. Clarence H. and Edith M. (Smith) L. Edn.: B.S., Univ. of Toledo, 1933; M.A., Univ. of Mich., 1935; Ph.D., ibid., 1953. m. Katharine Walbridge, Sept., 1943. Exp.: Asst. Prof. Biol., Upsala Coll., 1955-59; Asst. Prof. Biol., Fairleigh Dickinson

Univ., 1959-62; Prof. and Hd. of Biol. Dept., West Ga. Coll., 1962—. Mem.: Botanical Soc. of Am.; Torrey Botanical Club; Am. Fern Soc.; Internatl. Soc. of Plant Morphologists; Am. Brylogical Soc.; Sigma Xi; Sci. Rsch. Club; Univ. of Mich.; Rotary Club. Author: Developmental and Experimental Morphology of the Ovule and Seed of Asimina triloba Dunal, 1953. Contbr. to: Bull. of the Torrey Botanical Club; Ohio Jour. of Sci. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Experimental Morphology of Pawpaw Endosperm. Ferns and Mosses. Culture of Plant Tissues.

LANDAU, Emanuel (Mr.), Analytical Statistican, U. S. Pub. Health Service, Washington, D. C. Home Add.: 5906 Green Tree Rd., Bethesda 14, Md. DEMOGRAPHY.



b. N. Y., N. Y., Nov. 28, 1919. s. Meyer and Annie (Heller) L. Edn.: A.B., Coll. of the City of N. Y., 1939. m. Davetta M. Goldberg, Sept. 8, 1948. c.: Melanie Susan; Elizabeth Rae. Exp.: Economist, O.P.A., Wash., D. C., 1946-47; Chief, Family Statistics Sect., U. S. Bur. of the Census, ibid., 1948-56; Consultant, Calif. State Dept. of Pub. Health, Berkeley, Calif., 1957-59; Chief, Biometry Sect., Div. of Air Pollution, U. S. Pub. Health Serv., 1959—. Mem.: Am. Statistical Assn.; Royal Soc. of Health; Am. Pub. Health Assn.; Econometrics Soc; Population Assn. of Am. Contbrng. Author: Applications of Demography; The Population Situation in the U. S. in 1975, 1957. Contbr. to: Am. Sociol. Rev.; Pub. Health Reports; Am. Review of Respiratory Dis. War Rec.: U. S. Army, 1942-45. Areas of Rsch.: Population Estimates and Projections; Economic Mobilization.

LANDAUER, Kenneth Stewart (M.D.), Vice-Pres., Med. Affairs, Natl. Cystic Fibrosis Rsch. Found., 521 Fifth Ave., New York 17, N. Y. Home Add.: 193 Franklin Turnpike, Ramsey, N. J. MED. ADMINISTRATION, MED. SPECIALTY, PEDIATRICS, ALLERGY.

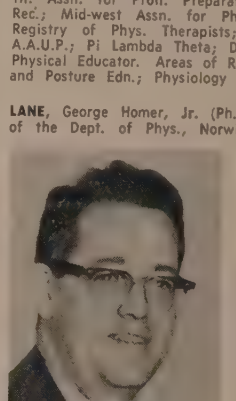
b. Grand Rapids, Mich., Oct. 29, 1908. s. Charles W. and Beryl (Bullock) L. Edn.: A.B., Wayne Univ., 1930; M.D., Johns Hopkins Med. Schl., 1934. m. Mary Murray, July 3, 1935. c.: Gretchen; Thomas; Linda; Mimi. Exp.: Dir., Cardiac Bureau, N. Y. State Health Dept., 1943-45; Dir., N. Y. State Rehabilitation Hosp., W. Haverstraw, N. Y., 1945-46; Dir. of Rehab. and Resp. Ctrs. and Asst. Med. Dir., Natl. Found., New York, N. Y., 1946-60; Vice-Pres. for Med. Affairs, Natl. Cystic Fibrosis Rsch. Found., ibid., 1960—. Mem.: Am. Acad. of Pediatrics; N. Y. Acad. of Sci.; Am. Acad. of Allergy; A.M.A.; Am. Publ. Health Assn.; Med. Soc. of the Co. of N. Y.; A.A.A.S. Areas of Rsch.: Med. Admin., Grant Programs for Med. and Sci. Rsch. and Edn. and Med. Care Programs.

LANDMANN, Heinz Richard (M.D.), Active Staff, St. Vincent Hosp., Santa Fe, N. M.; Consulting Physician, Los Alamos Med. Ctr., Los Alamos, N. M. Home Add.: Camino Rancheros, Santa Fe, N. Mex. INTERNAL AND PSYCHOSOMATIC MEDICINE. b. Bad Duerkheim, Germany, Jan. 15, 1908. s. Simon and Emilie (Mayer) L. Edn.: B.S., Lessing Gymnasium, Frankfurt, Germany, 1927; M.D., Johann Wolfgang Goethe Univ., 1932; Sc.D., Univ. of Berne, Switzerland, 1934. m. 1st, Gertrude Beekman Stern, 1936; 2nd m., Theodora Mary Way, 1958. c.: Robert S. Exp.: Intern, Urbankrankenhaus, Berlin, Germany, 1932-33; Res., Univ. Hosp., Berne, Switzerland, 1933-35; Active Staff, Mt. Sinai, St. Elizabeth Hosps., New York, N. Y., 1935-47; Tchng. Staff, Menninger Schl. of Psychiatry, Topeka, Kans., 1947-50; Active Staff, St. Vincent Hosp., Santa Fe, N. M., 1950—; Consulting Physician, Los Alamos, N. M., 1950—. Hon. Pos.: Chmn., UJA, 1952-53; Chmn., Professional Advisory Comm. of N. M. Assn. on Mental Health, 1957-58. Mem.: Fellow, Am. Coll. of Physicians; N. M. Soc. of Internal Med.; Internatl. Soc. of Internal Med.; N. Y. Acad. of Sci.; Am. Bd. of Internal Med.; N. M. St. and Santa Fe Co. Med. Soc.; Am. Soc. of Clin. Hypnosis; Salia; Kiwanis; Mason. Contbr. to: Am. Jour. Dig. Dis.; Am. Pract.; Rocky Mtn. Med. Jour.; Schw. Med. Wchnschr.; Med. Welt.; Univ. Press, Berne. Serv. Rec.: U. S. Army, 1941-46. Areas of Rsch.: Internal and Psychosomatic Medicine.

LANE, Charles Elmer (Ph.D.), Chmn., Dept. of Chem., Univ. of Sou. Miss., Sta. A, Box 43, Hattiesburg, Miss. Home Add.: 417 N. 37th Ave., Hattiesburg, Miss. PHYSICAL CHEMISTRY. b. Quincy, Ill., Jan. 20, 1905. s. C. E. and Helen Margaret (Rose) L. Edn.: B.S., Chicago Univ., 1926; Ph.D., ibid., 1933. m. Margaret Ellen Kerwin, Aug. 11, 1928. c.: Charles E., Exp.: Asst. Chem., Univ. of Chicago, 1927-29; Asst. Prof., P and Chem., Memphis St. Univ., 1929-40; Assoc. Prof., Miss. Coll., 1940-41; Dir., Ground Schl., Pine Bluff Schl. Aviati U. S. Army Air Corps Training Detachment, Pine Bluff, Ar 1941-44; Chmn., Dept. of Chem., Am. Univ., 1944-46; Ass Prof., Bradley Univ., 1946-48; Prof., Univ. of Sou. Miss., 1948 Hon. Pos.: Nuclear Advisory Board to Governor of Miss.; Chm Mobile-Pensacola A.C.S.; Pres., Miss. Acad. of Sci.; Chmn., Mi Sect., A.C.S. Mem.: Sigma Xi; Miss. Acad. of Sci.; Miss. Se of A.C.S.; Delta Chi; Order of C.; Rotary. Contbr. to: Jour. A.C.S. Areas of Rsch.: Photochem.; Photochemical Reaction between Chlorine and Benzene in the Gaseous Phase.

LANE, Elizabeth Caroline (Ph.D.), Prof. of Physical Ed Northern Ill. Univ., Dekalb, Ill. Home Add.: 214 Knollwo Dr. PHYSICAL EDUCATION; PHY ICAL THERAPY. b. Baltimore, M Jan. 23, 1912. d. David a Helene (Siesinger) L. Edn.: B. Ithaca Coll., 1936; M.A., N. Univ., 1938; Stanford Univ., Phy ical Therapy, 1947; Ph.D., N. Univ., 1957. Exp.: Hd. Physic Edn. Dept., Fairfax Hall, Wayne boro, Va., 1939-40; Hd. Physic Edn. Dept., Averett Coll., Danvill Va., 1940-42; Hd. Phys. Ed Dept., S. Seminary, Buena Vist Va., 1942-45; Hd. Dept. of Phy Therapy, Kernan Hospital, Bal more, Md., 1947-49; N. Y. Sta Rehab. Hosp., W. Haverstraw N. Y., 1949-50; Hunter Coll., Ne York, 1950-51; Sarah Lawren Coll., Bronxville, N. Y., 1951-5 Asst. Prof., Phys. Edn., Northe Ill. Univ., 1954-56; Assoc. Prof., ibid., 1957-61; Prof., ibi 1961—. Mem.: Am. Coll. of Sports Medicine; A.A.A.S.; Ar Assn. Health, Phys. Edn. and Rec.; Mid-West Assn. Healt Phys. Edn. and Rec.; Ill. Assn. Health, Phys. Edn. and Rec Ill. Assn. for Profl. Preparation in Health, Phys. Edn. ar Rec.; Mid-west Assn. for Phys. Edn. of Coll. Women; Am Registry of Phys. Therapists; Am. Assn. of Phys. Therapy A.A.U.P.; Pi Lambda Theta; Delta Psi Kappa. Contbr. to: Th Physical Educator. Areas of Rsch.: Kinesiology; Body Mechanic and Posture Edn.; Physiology of Activity.

LANE, George Homer, Jr. (Ph.D), Assoc. Prof. and Acting He of the Dept. of Phys., Norwich Univ., Northfield, Vt. Hom Add.: 74 So. Main St., Northfiel Vt. ATOMIC COLLISIONS. b. Mi ford, N. H., Feb. 19, 1924. Rev. G. Homer and Susan E (Chase) L. Edn.: B.A., Amhers Coll., 1947; M.S., Yale Univ 1949; Ph.D., Univ. of Conn., 196 m. Charlotte Louise Lillibridge June 19, 1948. c.: Louise Lill bridge; Cynthia Chase. Exp. Instr., Branch, Univ. of Conn Hartford, Conn., 1949-51; Instr Franklin and Marshall, Lancaster Pa., 1954-57; Asst. Prof., ibid 1957-60; Asst. Prof., Norwic Univ., 1960-61; Assoc. Prof., ibid 1961—; Acting Hd., Phys. Dept ibid., 1962—. Mem.: Am. Phys Soc.; Am. Assn. Phys. Tchrs.; Sig ma Xi; Alpha Delta Phi. Contbr to: Analyt. Chem.; Phys. Rev. Phys. Rev. 120. Serv. Rec.: U. S. Army Air Force, 1943-45 Areas of Rsch.: Atomic Collisions.



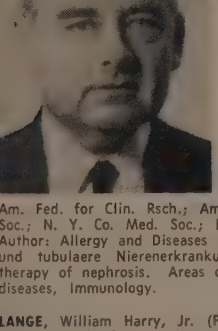
LANFORD, Oscar E(rasmus), (Ph.D.), Pres., State Univ. Coll, Fredonia, N. Y. Home Add.: 134 Central Ave., Fredonia, N. Y CHEMISTRY (INORGANIC AND PHYSICAL). b. Louisa Cnty., Va., Dec. 19, 1914. s. Oscar E. and Ruth (Miller) L. Edn.: B.S., Va. Military Inst., 1934; M.A., Columbia Univ., 1937; Ph.D., ibid., 1939. m. Caroline Clapp Sherman, Aug. 24, 1937. c.: Oscar E., III; Caroline Aldrich; Henry Sherman; William Armistead; Virginia B. Exp.: Chemist, Gold Dust Corp., Indianapolis, Ind., 1934-36; Tchng. Asst., Chem., Columbia Univ., 1935-37; Instr., Chem., ibid., 1937-40; Prof. Chem., Chmn., Dept., St. Univ. of N. Y. at Albany, 1940-52; Dean of Coll., ibid., 1952-61; Pres., State Univ. Coll., Fredonia, N. Y., 1961—. Hon. Pos.: Past Chmn. Eastern N. Y. Sect., Am. Chem. Soc. Mem.: A.A.A.S.; N. Y. State Tchrs. Assn.; N.E.A.; Sigma Xi; Phi Lambda Upsilon. Author: Textbook in General Chemistry, 1955; Co-author: Laboratory Manual for General Chemistry,

956. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem. reas of Rsch.: Coordination Compounds; Phase Rule; Chemistry f Iron and Phosphates; Isotope Concentration.

ANG, Alvin Leonard (Mr.), Prof. of Soil Fertility, 232 Davenort Hall, Univ. of Ill., Urbana, Ill. Home Add.: 609 Burkwood ourt East, Urbana, Ill. AGRONOMY; SOIL MANAGEMENT. b. illsboro, Ind., Sept. 7, 1896. s. Lewis and Isabelle (Cole) L. dn.: B.S., Univ. of Ill., 1920; M.S., Cornell Univ., 1929 m. Vanda Eleanor Williams, Sept. 3, 1921. c.: Eleanor; Chapin. xp.: Instr. to Prof., Univ. of Ill., 1920—. Hon. Pos.: Chmn., Natl. Joint Comm. on Fertilizer Applications, 1950; Chmn., Sub omm. on Fertilization of Corn, 1951-57; Bd. of Dirs., Univ. of Il. Athletic Assn., 1954-57; Budget Finance Comm., Soil Sci. oc. of Am., 1950-56; Chmn., ibid., 1955-56. Mem.: Am. Soc. f Agron.; Internatl. Soil Sci. Soc.; Soil Sci. Soc. of Fla.; Ill. cad. of Sci.; Beta Theta Pi; Gamma Sigma Delta and others. uthor: You Can Grow More Corn, 1953. War Rec.: W.W. I. reas of Rsch.: Hybrid Corn Response to Different Productive evels and Systems of Soil Management; Fertilizer Placement tudies; Soil Test Correlations with Field Response of Crops; Natural and Potential Productivity of Illinois Soils as Measured y Field Experiments.

ANGDELL, Robert Dana (M.D.), Assoc. Prof., Schl. of Med., niv. of N. C., Chapel Hill, N. C. Home Add.: 11 William ircle, Chapel Hill, N. C. PHYSICIAN, PATHOLOGY. b. Pomona, alif., Mar. 14, 1924. s. Walter Irving and Florence (Reichenach) L. Edn.: M.D., George Washington Univ., 1948. m. Alice ritt, 1948. c.: Robert Dana, Jr.; Sara Ellen. Exp.: Intern, lenry Ford Hosp., Detroit, Mich., 1948-49; Fellow, Dept. of Pathology, Univ. of N. C., 1949-51; Instr., ibid., 1951-56; Asst. Prof., Schl. of Med., ibid., 1956-59; Assoc. Prof., ibid., 1959—. Mem.: Am. Med. Assn.; Am. Soc. of Exp. Path.: Am. Assn. of Path. and Bact.; Am. Assn. of Blood Banks; Am. Soc. of Clin. Path.; A.A.A.S.; Coll. of Am. Path.; Sigma Xi; Sigma Nu. Contbr. to: Jour. A.M.A.; Archives of Path.; Jour. Lab. and Clin. Med.; Am. Jour. Physiol.; Proc. Soc. Exp. Biol. and Med.; Thromb et. Diath. Haemorr.; Blood. Serv. Rec.: U. S. Army, 1944, 1955-56. Areas of Rsch.: General Path., Hematopathology, Coagulation and Hemostasis.

LANGE, Kurt (M.D.), Prof. of Med.; Assoc. Prof. of Pediatrics; Chief, Renal Serv. and Lab., N. Y. Med. Coll., N. Y. 29, N. Y.



Home Add.: 519 East 86 St., N. Y. 28, N. Y. INTERNAL MEDICINE, KIDNEY DISEASES, IMMUNOLOGY. b. Berlin, Germany, Oct. 31, 1906. s. Georg and Pauline (Neumann) L. Edn.: M.D., Berlin Univ., Schl. of Med., 1930. m. Helen Marcus, 1936. c.: Peter; Monica. Exp.: Instr., Univ. of Berlin, Germany, 1931-33; Instr. in Med., N. Y. Med Coll., 1940-46; Asst. Prof., Med., ibid., 1946-56; Assoc. Prof. of Med., Assoc. Prof. of Pediatrics, ibid., 1956-62; Prof., of Med., ibid., 1962—. Mem.: Fellow, Am. Coll. of Physicians; Fellow, A.M.A.; Fellow, Am. Coll. of Cardiology; Fellow, N. Y. Acad. of Scis.; Mem., Soc. for Expmtl. Biol. and Med.; Soc. for Expmtl. Pathol.; Am. Fed. for Clin. Rsch.; Am. and N. Y. Heart Assn.; Harvey Soc.; N. Y. Co. Med. Soc.; Bar Harbor Yacht Club. Contbrng. Author: Allergy and Diseases of the Kidney, 1960; Glomerulaere und tubulaere Nierenerkrankungen, 1962. Gen. Int.: Steroid therapy of nephrosis. Areas of Rsch.: Kidney diseases, Vascular diseases, Immunology.

LANGE, William Harry, Jr. (Ph.D.), Prof. of Entomol. and Entomologist, Calif. Agric. Expt. Station, Davis, Calif. Home Add.: 713 E. 7th St., Davis, Calif. ENTOMOLOGY. b. San Francisco, Calif., Sept. 2, 1912. s. W. H. and Anna Lee (Willimon) L. Edn.: B.S., Univ. of Calif., 1933; M.S., ibid., 1934; Ph.D., ibid., 1941. m. Pauline Schulthess, Jan. 30, 1937. c.: Marilyn; Diana; Becky. Exp.: Scientific Aide, U. S. Bureau of Entomol., 1934-35; Tchng. Asst., Univ. of Calif., 1935-36; Faculty Mem. to Prof. of Entomol., ibid., 1936—. Mem.: Calif. Acad. of Sci.; A.A.A.S.; Entomol. Soc. of Am.; Sigma Xi; Entomol. Soc. of Can.; Pacific Coast Entomol. Soc.; Am. Malacol. Union; Kappa Delta Rho; Alpha Zeta; Commonwealth Club. Contbr. to: Jour. of Econ. Entomol.; Wasmann Jour. of Biol.; Jour.

South Calif. Acad. Sci.; Pan-Pacific Entomologist; Can. Entomologist. Areas of Rsch.: Systematics of Lepidoptera; Economic Entomology (Vegetable and Field Crops Insects); Soil Insects; Pacific Entomology Malacology.

LANGERBECK, Sister Mary Therese, B.V.M., Chmn., Dept. of Physics, Mundelein Coll., Chicago 26, Ill. ASTROPHYSICS. b. Chicago, Ill., July 20, 1902. d. Werner and Marie E. (Chiquet) L. Edn.: B.A., Northwestern Univ., 1924; M.A., Physics, Univ. of Mich., 1930; M.A., Astronomy, ibid., 1946; Ph.D., Georgetown Univ., 1948. Exp.: Chmn., Physics Dept., Clarke Coll., 1930-36; Chmn., Physics Dept., Mundelein Coll., 1936-44, 1948—. Hon. Pos.: Fund Raising Committee for Sigma Delta Epsilon. Mem.: Am. Physical Soc.; Am. Astronomical Soc.; Am. Assn. of Physics Tchrs.; Sisters of Charity of the Blessed Virgin Mary; Sigma Delta Epsilon. Contbr. to: Am. Jour. of Physics; Nature; Sci. Counselor; Schl. Sci. and Math.; Sky and Telescope. Gen. Int.: Rsch. Grants from Atomic Energy Comm. and Rsch. Corp. Areas of Rsch.: The Nature and Condition of Interstellar Material Responsible for Exceptionally Broad Absorption Bands.

LANGHAAR, John Williamson (Mr.), Sr. Process Engr., DuPont Co., Wilmington, Del. Home Add.: R.D. 2, Kennett Square, Pa. CHEMICAL PROCESS DESIGN AND EVALUATION. b. Hartford, Conn., Apr. 3, 1913. s. Louis and Elizabeth (Williamson) L. Edn.: B.S., Lehigh Univ., 1933. m. Dorothy Weseman, 1937. c.: Margaret Anita; Linda Sue. Exp.: Ind. Engr., DuPont Co., N. J., Ohio, Mass., 1934-41; Area Engr., DuPont Co., Ill., Ind., Ala., 1941-45; Planning Engr., DuPont Co., Wilmington, Del., 1945-51; Sr. Process Engr., ibid., 1951—. Mem.: A.A.A.S.; A.S.A.; A.I.Ch.E.; Pi Mu Epsilon; Tau Beta Pi; Phi Beta Kappa. Contbr. to: Chemical Engrng. Areas of Rsch.: Chemical Process Econs.; Cooling Towers and Ponds; Handling and Shipping Radioactive Materials.

LANGHAM, Cecil Chester (Ph.D.), Hd. of Organic Indexing Dept., Chemical Abstracts, 1524 Doone Rd., Columbus 21, Ohio. ORGANIC CHEMISTRY. b. July 9, 1903, Elsie, Mich. s. Ernest A. and Lillie A. (Sours) L. Edn.: B.S., Mich. State Coll., 1932; M.S., ibid., 1934; Ph.D., ibid., 1946; Grad. Schl., Univ. of Wis., summers, 1939-40. m. Iretha Caroline Reed of Owosso, Mich., Dec. 22, 1934. d. Alanson S. and Sarah E. Reed. c.: Mary Jane. Exp.: Grad. Asst. Analytical Chem., Mich. St. Coll., 1932-34; Instr. Chem., ibid., 1934-47; Asst. Prof., 1947; Chem. Abstracts, 1947-50; Assoc. Ed., 1950—. Mem.: A.C.S.; A.A.A.S.; Sigma Xi; Alpha Chi Sigma; Mason. Contbr. to: Jour. of Org. Chem.; Am. Documentation. Ph.D. Dissertation: The Reaction of Ethylene Oxide with Various Alkylmagnesium Chloride Solutions. Travel: N. Am. Hobbies: Music; Reading. Listed in: A.M.S. Grignard Reaction.

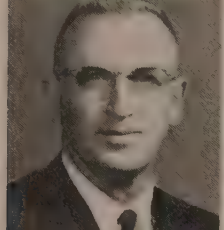
LANGMAN, Ida Kaplan (Mrs.), Rsch. Fellow, Univ. of Pa., Philadelphia 4, Pa. Home Add.: 248 Harvey St., Philadelphia 44, Pa. TAXONOMIC BOTANY, MEXICAN BOTANICAL BIBLIOGRAPHY. b. Borzna, Russia, Feb. 7, 1904. d. Hyman and Dora (Shidlovsky) Kaplan. Edn.: B.S., Univ. of Pa., 1930; M.S., ibid., 1947. m. Oscar Langman, 1928. Exp.: Tchr., Bd. of Edn., Philadelphia, Pa., 1922-56. Mem.: A.A.A.S.; Am. Soc. of Plant Taxonomists; Philadelphia Botanical Club; Sociedad Botanica de Mexico. Contbr. to: Asa Gray Bull.; Bartonia, Mo. Botanical Garden Bull.; Revista de la Sociedad Mexicana de Historia Natural; Memorias de la Academia Nacional de Ciencias de Mexico; Taxonomic Index; Revista Interamericana de Bibliografia. Areas of Rsch.: Mexican Botanical Bibliography.

LANGSTON, Mildred Johnson, (Mrs.), Academic Dean, Katharine Gibbs Schl., 230 Park Ave., N. Y. 17, N. Y. Home Add.: Riverlands, Rumson, N. J. ECONOMICS. b. Paterson, N. J., Mar. 3, 1902. d. John R. and Amelia (McCollom) Johnson. Edn.: B.S., Simmons Coll., 1924; M.A., Columbia Univ., 1927. m. Loyd H. Langston, 1937. Exp.: Instr., Simmons Coll., 1924-26, 1927-28; Asst. Prof., L. I. Univ., 1928-38; Academic Dean, Katharine Gibbs Schl., 1938—. Mem.: Am. Econ. Assn.; A.A.A.S. Author: Vocational and Professional Monographs, 1959. Areas of Rsch.: Econs.; Bus. Administration.

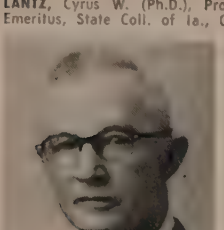
LANGWAY, Chester Charles, Jr., (Mr.), Resc. Glaciologist, U. S. Army Cold Regions Rsch. and Engrng. Lab., Hanover, N. H. Home Add.: Lyme Rd., Lyme, N. H. GEOPHYSICAL RESEARCH (GLACIOLOGY). b. Worcester, Mass., Aug. 15, 1929. s. Chester Charles, Sr. and Agnes H. (McLush) L. Edn.: B.A., Boston Univ., 1955; M.A., ibid., 1956; Ph.D. cand., Univ. of Mich., 1961. m. Rosemary H. Vovesny, Sept., 1959. c.: Nancy Joanna; Mary Elizabeth. Exp.: Rsch. Glaciologist, U. S. Army Snow Ice and Permafrost Rsch. Establishment, Wilmette, Ill. ,1956-59; Rsch. Assoc., Univ. of Mich. Rsch. Inst., Ann Arbor, Mich., 1959-61; Rsch. Glaciologist, U. S. Army Cold Regions Rsch. and Engrng. Lab., Hanover, N. H., 1961—. Mem.: Geological Soc. of Am.; Am. Geophysical Union; British Glaciological Soc.; Sigma Xi; A.A.A.S. Contbr. to: Jour. of Glaciology; Proceedings Symposium de Chamonix; Proc. Mich. Acad. Sci.; Bull. Geological Soc. of Am.; Proc. Army Sci. Conf., West Point, N. Y. Serv. Rec.: A.U.S., 1946-48, U.S.A.F., 1948-52. Areas of Rsch.: Lab. and Field investigation related to the fundamental properties of snow and ice.

LANSCHE, Arnold Marshall (Mr.), Rsch. Chemist, Bur. of Mines, College Park, Md. Home Add.: 3515 N. Washington Blvd., Apt. 207, Arlington 1, Va. CHEMISTRY; ECONOMICS. b. Wash., D. C., May 9, 1916. s. Walter and Anna (Marshall) L. Edn.: B.S., Randolph-Macon Coll., 1942. m. Elizabeth Jean Slagle, May 7, 1949. Exp.: Staff Chemist, Spencer Chem. Co., Pittsburg, Kan., 1943-44; Staff Chemist, Carbide and Carbon Chemicals Corp., Oak Ridge, Tenn., 1944-49; Staff Chem., Sandia Corp., Albuquerque, N. Mex., 1949-55; Staff Chem., The Parker Co., Albuquerque, N. M., 1955; Gen. Servs. Admin., Wash., D. C., 1955-56; Physical Scientist, Dept. of Interior, Bur. of Mines, 1956-60; Rsch. Chemist, 1960—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Astronautical Soc.; Natl. Investigations Comm. on Aerial Phenomena; Lambda Chi Alpha; Chi Beta Phi. Contbr. to: The State Geologists Jour.; Engrng. and Mining Jour.; Bur. of Mines Minerals Yearbook. Areas of Rsch.: Nickel-Cadmium Batteries; Lead Acid Batteries; Silica Gel.; Economics of Cadmium Metal; Extraction of Cadmium from Cadmium-Zinc Amalgam.

LANSFORD, Raymond W. (Ed.D.), Prof., Bus. Mgmt., Asst. to the Dean, Univ. of Mo., Columbia, Mo. Home Add.: 1206 W. Rollins Road, Columbia, Mo. MARKETING WITH A MAJOR IN RETAILING. b. Linn, Mo., Sept. 25, 1920. s. Frank A. and Annie L. (Miller) L. Edn.: B.S., Southwest Mo. State Coll., 1947; M.S., Northwestern Univ., Ill., 1948; Ed.D., N. Y. Univ., 1954. m. Beuna A. Ridenhour, May 25, 1945. Exp.: Instr., Joplin Jr. Coll., 1948-49; Prof., Cent. Mo. State Coll., 1949-57; Prof. of Mktng., Univ. of Mo., 1957—. Mem.: Pi Omega Pi; Delta Pi Epsilon; Phi Delta Kappa; Am. Mktng. Assn.; Natl. and State Real Estate Assn.; Kappa Sigma Kappa; Alpha Kappa Psi; Mason; Kiwanis. War Rec.: U. S. Army Air Force, World War II.



LANTZ, Cyrus W. (Ph.D.), Prof. of Biol., Head, Dept. of Sci., Emeritus, State Coll. of Ia., Cedar Falls, Ia. Home Add.: 1116 Franklin St., Cedar Falls, Ia. PLANT PHYSIOLOGY AND SCIENCE EDUCATION. b. Brooklyn, Ill., June 27, 1889. s. Thomas A. and Clara J. (Horney) L. Edn.: Diploma, Western Ill. Univ., 1909; A.B., Univ. of Ill., 1913; A.M., ibid., 1914; Ph.D., ibid., 1925. m. Myra Armstrong, July 29, 1919. Exp.: Instr., Publ. Schl., La Harpe, Ill., 1909-11; Instr., Pub. Schls., Harvey, Ill., 1915-17; Asst. Prof. of Botany, Univ. of Nev., 1917-21; Prof. of Biol., State Coll. of Ia., 1921-48; Head, Dept. of Sci., ibid., 1948-57; Prof. Emeritus, ibid., 1957—. Hon. Pos.: Pres., Ia. Acad. of Sci.; Pres., Rotary Club of Cedar Falls, Ia. Mem.: A.A.A.S. Fellow; Botanical Soc. of Am.; Ia. Acad. of Sci., Fellow; Natl. Assn. of Biol. Tchrs.; Sigma Xi; Phi Kappa Phi; Kappa Delta Pi; Beta Beta Beta. Contbr. to: Am. Jour. of Botany; Proc. of the Ia. Acad. of Sci. Serv. Rec.: U. S. Army, 1918-19. Areas of Rsch.: Plant Physiol. (Respiration); Sci. Tchng. in Colls.; Conservation Edn.



LANZA, Vincent Leonard (Ph.D.), Dir., Rsch. and Devel. Di Raychem Corp., Oakside at Northside, Redwood City, Ca Home Add.: 2 Odell Place, Atl ton, Calif. RADIATION CHEM TRY OF POLYMERS. b. NewYo City, N. Y., Mar. 26, 1922. Frank and Helen (DeStefano) Edn.: B.A., N. Y. Univ., 194 M.S., ibid., 1948; Ph.D., ibi 1952. m. Lucille Rosalie, A 25, 1953. c.: Vincent Dougl Andrew Scott; Elise Marie. Ex Instr., N. Y. Univ., 19 52; Mem. of Tech. Staff, B Telephone Labs., Murray H N. J., 1952-59; Dir., Rsch. and D Div., Raychem Corp., Redwo City, Calif., 1959—. Mem.: A Chem. Soc.; A.A.A.S.; Phi Lamb Upsilon; Sigma Xi; Alpha Lamb Upsilon; Am. Legion. Contbr. t Jour. of Polymer Sci.; Mode Plastics, Wire and Wire Produc Areas of Rsch.: Radiation Che istry of Polymers; Stabilization of Olefin Polymers.

Serv. Rec.: A.U.S., 1942-45.

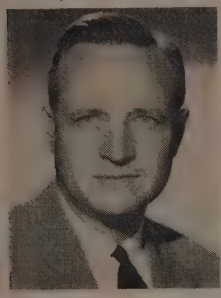
LAPIDUS, Paul Waldemar (M.D.), Physician, 1133 Park Av N. Y. 28, N. Y. Home Add.: 245 Rumsey Rd., Yonkers, N. ORTHOPEDIC AND TRAUMAT SURGERY. b. Russia, Dec. 2 1893. s. Dr. Vladimir B. a Rosalia I. (Hoffscheider) L. Edn M.D., St. Univ. of Odessa Me Schl., 1916; M.D., N. Y. Sta Univ., 1926. m. Edith Ston 1935. c.: Andrew Stone; Pa Vladimir. Exp.: Resident Surgeo Hosp. for Joint Diseases, N. City, 1923-25; Visiting Orthoped Surgeon, ibid., 1926—, Hosp. f Ruptured and Crippled, N. Y. 1926-34, Trinity Hosp., Brookly N. Y., 1929-34, N. Y. Polyclin Hosp., N. Y. C., 1940—, Flow Fifth Ave. Hosp., N. Y. C., 1944- Metropolitan Hosp., N. Y. C., 19 —; Clin. Prof. of Orthoped Surgery, N. Y. Polyclinic Me Schl., 1944—; Instr. of Anatom N. Y. Med. Coll., 1944—; Asst. Clin. Prof. of Orthepedic Surg ibid., 1944—; Lectr. in Orthopedic Surgery, Columbia Univ. Physicians and Surgeons, 1954—; Chf. of Foot Serv., Hosp. f Joint Diseases, N. Y. C., 1952—; Consultant, Orthopedic Surg ibid., 1960—; Orthopedic Surgeon, Chf. of Foot Serv., N. Hotel Health Ctr., 1950—; Consultant Orthopedist, Workman Circle, N. Y. C., 1960—. Mem.: Am. Coll. of Surgeons; Am Acad. Orthopedic Surgeons; A.M.A.; A.A.O.S.; Am. Soc. Physical Anthropologists; Am. Anthropological Assn.; A.A.A.S Serv. Rec.: Capt. in Med. Corps, Russian Army, W.W.I. Areas Rsch.: Study of foot disorders. Devised several operations f correction of foot deformities.

La RIVERS, Ira II (Ph.D., F.A.Z.), Chmn., Biol. Dept., Dir. Museu of Biol., Univ. of Nevada, Reno. Home Add.: New Dog Valle Rd., Verdi, Nev. ENTOMOLOG COLD-BLOODED VERTEBRATES. San Francisco, Calif., May 1, 191 s. Ira and Yvonne (Groulx) Edn.: B.S., Univ. of Nev., 193 (Biology); P.G., N. C. State Coll 1938 (Zoology); Ph.D., Univ. Calif., 1948 (Entomology). Marian Byrd Ballinger, 1951. c. Ira John, III. Exp.: Entomo Dept., N. C. State Coll., 1937-38 Biol. Dept., Univ. of Nev., 193 42; Entomol. and Parasitol. Dept Univ. of Calif., 1947-48; Biol Dept., Univ. of Nev., 1948—; Nev Fish and Game Comm., 1949 Pacific Sci. Bd. (Marshall Islands) 1950; U. S. Forest Serv., 1952 1954, 1955; U. S. Fish and Wildl Serv., 1953. Consultant to: Natl Lexicographic Bd., Winston Encyc. Handbook of Biol. (Natl. Sci. Council), Parents' Mag. Encyc. Reinhold Encyc. of Biol., Univ. of Nev. Desert Rsch. Inst., Cit of San Francisco, etc. Mem.: Am. Entomol. Soc.; Entomol Soc. Washington; Am. Inst. Biol. Sci.; Western Soc. Naturalists Sou. Calif. Acad. Sci.; Calif. Acad. Sci.; Paleontol. Soc.; Soc Vertebrate Paleon.; Soc. Systematic Zool.; Coleopterists' Soc. Ecological Soc.; Fellow, Acad. of Zoology of India; Sigma Xi Phi Kappa Phi. Author: Lab. Exercises in Beginning Zoology 1955; Gen. Zool. Lab. Exercises, 1960; Fishes of Nevada, 1962 Amg.ysus of the U. S., 1951; Amgrysus of Mexico, 1953. Contbr to: Proc. Ent. Soc. Washington; Pan-Pacific Entomologist; Bull Sou. Calif. Acad. Sci.; Entomological News; Washmann Jour Biol.; Univ. Kans. Sci. Bull.; Univ. Calif. Entomological Series Jour. Paleon.; Am. Midland Naturalist; Proc. U. S. Natl Museum; Reinhold Encyc. of Biol.; Handbook of Biol.; Aquatic Insects of Calif.; Pacific Sci. Bd. Atoll Bull. Listed in: Who's Who in the West; W.W. in Edn.; A.M.S.; Who Knows—and What Naturalists' Directory; Directory of Zoological Taxonomists; Natl Social Directory. War Rec.: U. S. Navy, 1942-46; Pacific Theatre

malariology, Epidemiology, rodent control. Areas of Rsch.: Fishes and Fisheries of Nevada; Amphibians and Reptiles of Nevada; Electrophoretic blood protein patterns in thermal endemic Nevada fishes and insects; Fossil fishes and amphibians; Tenebrionidae, Formicidae and Algae of Nevada; Naucoridae of the Western Hemisphere, especially the genus Ambrysus; Limnology of desiccating inland waters.

LARABEE, Lottie B. (Ph.D.), Box 3, Garden City, N. Y. Rsch. in Coll. and Univ. Admin., COLLEGE AND UNIVERSITY ADMINISTRATION. b. Sprague, Nebr. d. Arthur Henry L. and Anna (Bartels) L. Edn.: Ph.D., N. Y. Univ., 1955. Exp.: Prin. of Grades, Beatrice, Nebr.; Faculty Mem., Albion, Idaho State Normal Schl.; Faculty Mem., Sou. State Tchrs. Coll., S. Dak.; Faculty Mem., Lock Haven State Tchrs. Coll., Pa.; Dir. of Own Schl. in Chicago; Rsch. in Coll. and Univ. Admin., 1955—. Hon. Pos.: Natl. Editor, Sigma Alpha Iota. Mem.: A.A.A.S.; Sigma Alpha Iota; Kappa Delta Pi. Author: Administrators Who Subvert Learning, Their Residence and Education; Administrative Denial of Academic Freedom or Tenure to University Staffs related to Background of Administrators. Area of Rsch.: Relationships of background of university and college administrators to administrative policies.

LARMORE, Lewis (Ph.D.), Chf. Scientist, Lockheed-California Co., Burbank, Calif. Home Add.: 18212 Lassen St., Northridge, Calif. OPTICS, ASTROPHYSICS. b. Anderson, Ind., July 29, 1915. s. Forest and Lettie (Lowman) L. Edn.: B.A., Ind., Univ., 1937; M.A., ibid., 1938; M.A., ibid., 1939; Ph.D., Univ. of Calif., 1952. m. Mary E. Russell, June, 1939. c.: Thomas Russell; Marilou Larmore. Exp.: Hd., Physics Div., Ariz. State Univ., Tempe, Ariz., 1947-49; Visit. Prof. Phys., Univ. of Calif., Los Angeles, Calif., 1949-51; Physicist, Rand Corp., Santa Monica, Calif., 1951-54; Hd., Exp. Physics Dept., Lockheed Missiles and Space Co., Van Nuys, Calif., 1954-56; Corp. Rsch. Advisor, Lockheed Aircraft Corp., Burbank, Calif., 1957-59; Chf. Scientist, Lockheed-Calif. Co., Burbank, Calif., 1959—. Mem.: Am. Astronomical Soc.; Optical Soc. of Am.; Sigma Xi; Soc. of Photo-Optical Instrumentation Engrs.; Inst. of Navigation; Am. Astronautical Soc.; Sigma Alpha Epsilon. Author: Introduction to Photographic Principles, 1959. Contbr. to: Astrophysical Jour.; Jour. of the Optical Soc. of Am.; Applied Optics; Proc. of IRE; Jour. of Aero-Space Sci. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Solar Physics; Infrared Radiation; Atmospheric Optics; Photography; Radio Wave Propagation.



LARSON, Harry (Colonel) AUS, Ret., Consulting Engr., 725 Cooper Bldg., 1009 Seventeenth St., Denver 2, Colo. CIVIL ENGINEERING. b. Grundy Co., Ill., Mar. 2, 1895. s. Ole H. and Anna B. (Anderson) L. (both dec.). Edn.: B.S., Iowa State Univ., 1924; M.S.E., Univ. of Mich., 1930; Cert., Command and Gen. Staff Coll., 1940; Cert., Engr. Schl., U. S. Army, 1945. m. Lura Myatt Nicholas, June 21, 1959. Exp.: U. S. Army, Inf., 1917-19; Corps of Engrs., 1924-55; Consulting Engr., Colo. and Ohio, 1957; Lectr., Ohio, 1957-58; Consulting Engr., Colo., 1958-59; Dir. of Pub. Works and Engrng., Ill., 1959-60; Consulting Engr., Colo., 1960-61; Supt. and City Engr., Colo., 1961-62; Consulting Engr., Denver, Colo., 1962—. Mem.: Am. Soc. of Civil Engrs.; Am. Geophys. Union; Am. Soc. for Testing and Materials; Scabbard and Blade; Iota Alpha. Author: Airports and Airways, 1929; Broadcrested Wiers with Aprons Sloping Upstream and Downstream, 1930; Rainfall and Run-Off of the Mississippi River Basin, 1933; Hydro-Electric Project on Peshtigo River, 1932; Report on Hydro-Electric Project near Crivitz, Wisconsin, 1932. Co-Contbr. to: Report on Allegheny, Beaver and Monongahela Rivers on the Ohio River.; Preliminary Examination for Flood Control on the Potomac River and Tributaries, 1935; Design Analysis Whitney Point Reservoir Project, Otselic River, N. Y.; Design Analysis Arkport Dam and Reservior, Canisteo River, N. Y. Serv. Rec.: (See positions above). Gen. Int.: Licensed as a Professional Engr. in Iowa, Colo. and Ohio; Occupation Ribbon (Germany), Am. Defense Ribbon, Am. Theater Ribbon, E.A.M.E. Theater Ribbon with Four Bronze Battle Stars, Bronze Serv. Arrowhead, Six Overseas Serv. Bars, Victory Medals for W. W. I and W. W. II. Areas of Rsch.: Hydrology; Fluid Mechanics; and Engineering Economics.

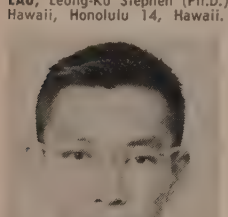
LARSON, John Agustus (M.D.), Psychiatrist-Dir., Central S. D. Mental Health Ctr., Huron, S. D. Home Add.: 15th and Kansas, Huron, S. D. PSYCHIATRY. b. Shelborne, Nova Scotia, Can., Dec. 11, 1892. s. Lars and Lucina (Mack) L. Edn.: A.B., Boston Univ., 1914; Ph.D., Univ. of Calif., 1920; M.D., Rush Med. Coll., 1928. m. Margaret S. Taylor, Aug. 9, 1922. c.: Bill. Exp.: Asst. Biol., Boston Univ., 1914-15; Instr., Univ. of Sou. Calif., 1915-16; Asst. Instr. and Instr., Univ. of Calif., 1916-20; Rsch., Criminol., Berkeley Police Dept., Berkeley, Calif., 1920-23; Rsch. Psychologist, St. of Ill., 1923-27; Med. Hse. Officer, Johns Hopkins Univ. Hosp., 1927-28; Asst. Res., in Psychiat., ibid., 1928-29; Instr. in Psychiat., Johns Hopkins Med. Schl., 1928-29; Psychiatrist, Iowa Psychopathic Hosp., 1929-30; Assoc. in Psychiat., Univ. of Ia. Med. Schl., 1929-30; Asst. Clin. Prof. in Psychiat., Rush Med. Coll., 1930-36; Asst. St. Criminol., St. of Ill., 1930-36; Supvr., Psychiat. Fellows, Mandel Clinics, Univ. of Chicago, 1932-36; Neurol., Cent. Free Dispensary, Chicago, Ill., 1931-36; Asst. Dir., Psychopathic Clinic, City of Detroit, 1936; Chf. Psychiatrist, N. M. St. Hosp., 1946-47; Supt., Ariz. St. Hosp., Phoenix, Ariz., 1947-49; Supt., Logansport St. Hosp., Logansport, Ind., 1949; Clin. Dir. and Dir. of Rsch., Wabash Valley Sanitarium Hosp., Lafayette, Ind., 1955-57; Supt., Maximum Security Hosp., Nashville, Tenn., Prison Psychiatrist, Tenn. St. Prison, Nashville, Tenn., 1957-62; Psychiatrist, Dir., Central S. D. Mental Hlth. Ctr., Huron, S. D. Mem.: Alpha Omega Alpha; A.M.A.; Am. Psychiatric Assn.; Am. Orthopsychiatric Assn.; Johns Hopkins Med. and Surgical Assn. Author: Larson Single Fingerprint System, 1923. Contbr. to: Am. Jour. Psychiat.; Jour. Mich. Med. Soc.; Proc. Am. Prison Assn. Gen. Int.: Rsch. on Validity of Lie Detector, Univ. of Chicago, 1931.

LARSON, Joseph Stanley (Mr.), Head, Conservation Edn. Div., Natural Resources Inst., Univ. of Md., Box 1510, St. Office Bldg., Annapolis, Md. Home Add.: Rt. 1, Box 173, Bayberry Hill, Crownsville, Md. WILDLIFE BIOLOGY, FORESTRY, CONSERVATION EDUCATION. b. Stoneham, Mass., June 23, 1933. s. Gustav A. and Marian (Kelly) L. Edn.: B.S., Univ. of Mass., 1956; M.S., ibid., 1958. m. Wendy Nichols, Nov. 23, 1958. c.: Marion Elizabeth. Exp.: Exec. Secy., Wildlife Conservation, Inc., Boston, Mass., 1958-59; St. Ornithologist, Asst. to the Dir., Mass. Div. of Fisheries and Game, Boston, Mass., 1959-61; Hd., Conservation Edn. Div., Natural Resources Inst., Univ. of Md., 1961—. Mem.: Sigma Xi; The Wildlife Soc.; The Soc. of Am. Foresters; The Conservation Edn. Assn. Contbr. to: Trans. of the N. Am. Wildlife Conf.; Chesapeake Sci.; Jour. of Mammalogy. Serv. Rec.: U.S.A.R., 1951—. Areas of Rsch.: Wildlife Biol., Forestry, Conservation Edn.

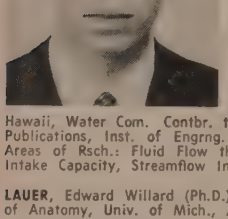
LASSLO, Dr. Andrew, Prof. and Chmn. of the Dept. of Pharmaceutical and Medicinal Chem., Univ. of Tenn. Coll. of Pharmacy, Memphis 3, Tenn. MEDICINAL AND PHARMACEUTICAL CHEMISTRY. b. Mukacevo, Czechoslovakia, Aug. 24, 1922. s. Vojtech Laszlo and Terezie (Heskovicova) L. Edn.: M.Sc., Univ. of Ill., 1948; Ph.D., ibid., 1952; M.S.L.S., ibid., 1961. m. Wilma E. Reynolds, July 9, 1955. Exp.: Grad. Asst., Univ. of Ill., Chicago, Ill., 1947-51; Univ. Fellowship, ibid., 1951-52; Rsch. Chemist, Monsanto Chem. Co., St. Louis, Mo., 1952-54; Asst. Prof. of Medicinal Chem., Dept. of Pharmacology, Emory Univ., 1954-60; Prof. and Chmn. of Dept. of Pharmaceutical and Medicinal Chem., Univ. of Tenn. Coll. of Pharmacy, 1960—; U. S. Army Reserve (MSC): 1st Lt., 1953-57; Captain, 1957-62. Mem.: Am. Chem. Soc., Senior Mem.; Am. Soc. for Pharmacology and Exptl. Therapeutics; Am. Pharmaceutical Assn.; Am. Libr. Assn., Life Mem.; A.A.U.P.; Rho Chi; Sigma Xi; Beta Phi Mu. Contbr. to: Jour. Organic Chem.; Jour. Am. Pharmac. Assn., Scientific Edition; Jour., A.C.S.; Nature; Jour. of Pharmacology and Exptl. Therapeutics; Archives Internationales de Pharmacodynamie et de Therapie; Jour. of Medicinal and Pharmaceutical Chem.; Proc. Soc. Exptl. Biol. and Med.; Bull. Med. Libr. Assn.; Modern Hosp.; U. S. Patent. Areas of Rsch.: Synthesis and study of compounds with pharamacodynamic potentialities; exploration of relationships between the molecular constitution of synthetic entities and their biochemical response; processing and coordination of scientific and technical information.

LATIMER, Paul Henry (Ph.D.), Assoc. Prof. of Physics, Auburn Univ., Auburn, Ala. Home Add.: 510 Forest Park Circle, Auburn, Ala. BIOPHYSICS, LIGHT. b. New Orleans, La., Nov. 25, 1925. s. Claiborne Green (dec.) and Frieda (Hildebrandt) L. Edn.: B.S., Northwestern Univ., 1949; M.S., Univ. of Ill., 1950; Ph.D., ibid., 1956. m. Margaret Kinard, Aug. 16, 1952. c.: Margaret; Marianne; Susan. Exp.: Instr. in Physics, Coll. of Wm. and Mary, 1950-51; Atomic Energy Comm. Predoctoral Fellow, Univ. of Ill., 1951-53; Rsch. Asst., Dept. of Botany, ibid., 1953-56; Rsch. Fellow, Dept. of Plant Biol., Carnegie Inst. of Washington, 1956-57; Asst. Prof. of Physics, Vanderbilt Univ., 1957-62; Assoc. Prof. of Physics, Auburn Univ., 1962—. Mem.: Biophys. Soc.; Optical Soc. of Am.; Am. Physical Soc.; Am. Assn. of Physical Tchrs.; Am. Soc. of Plant Physiologists; Am. Assn. for Adv. of Sci.; A.A.U.P.; Kappa Alpha. Contbr. to: Jour. of the Optical Soc. of Am.; Archives of Biochem. and Biophys.; Science; Plant Phys.; Rsch. in Photosynthesis; Proc. of the First Natl. Biophys. Conf.; Plant and Cell Physiol.; Circulation Rsch.; Oral Surgery; Oral Med.; Oral Pathol. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Light Scattering, Fluorescence.

LAU, Leung-Ku Stephen (Ph.D.), Assoc. Prof. of Engrng., Univ. of Hawaii, Honolulu 14, Hawaii. Home Add.: 3853 Mariposa Dr., Honolulu 16, Hawaii. HYDRAULIC AND SANITARY ENGINEERING, SURFACE AND GROUND WATER HYDROLOGY. b. China, Sept. 9, 1929. s. P. K. and S. Y. (Feng) L. Edn.: B.S., Univ. of Calif., Berkeley, 1953; M.S., ibid., 1955; Ph.D., ibid., 1959. m. Virginia May Lew, 1959. c.: Ronald Duk-Sing. Exp.: Tchng. Asst., Univ. of Calif., Berkeley, 1953-54; Grad. Rsch. Engr., ibid., 1952-53; 1954-59; Asst. Prof. of Engrng., Univ. of Hawaii, 1959-62; Assoc. Prof. of Engrng., ibid., 1962—. Hon. Pos.: Vice Pres., Hawaii Water Pollution Control Assn. Mem.: Am. Soc. of Civil Engrs.; Am. Geophys. Union; Hawaii Acad. of Sci.; Chi Epsilon; Tau Beta Pi; Sigma Xi; Conservation Coun. for Hawaii, Water Com. Contbr. to: Jour. of Geophys. Rsch.; Rsch. Publications, Inst. of Engrng. Rsch., Univ. of Calif., Berkeley. Areas of Rsch.: Fluid Flow through Porous Media, Soil Water-Intake Capacity, Streamflow Into Tidal Estuaries.

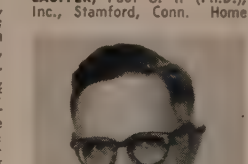


LAUER, Edward Willard (Ph.D.), Assoc. Prof. of Anatomy, Dept. of Anatomy, Univ. of Mich., Ann Arbor, Mich. ANATOMY. b. Petersburg, Mich., Nov. 27, 1902. s. Emanuel and Bertha (Morse) L. Edn.: B.S., Adrian Coll., 1923; A.M., Univ. of Mich., 1942; Ph.D., ibid., 1944. m. Lucile Koehn of Adrian, Mich., June 19, 1926. d. Mr. and Mrs. John W. Koehn. c.: Sally Ann Magnan. Exp.: Tchr., Petersburg Pub. Schl., Petersburg, Mich., 1924-31; Monroe Co. Pub. Schl., Mich., 1933-41; Tchng. Fellow, Dept. of Anat., Univ. of Mich., 1941-43; Inst., ibid., 1943-50; Asst. Prof., ibid., 1950-62; Assoc. Prof., ibid., 1962—. Mem.: A.A.A.S.; Am. Assn. of Anat.; Am. Acad. of Neurol.; Am. Assn. Univ. Prof.; Mich. Acad. of Sci., Arts and Letters; Phi Sigma; Sigma Xi; Phi Kappa Phi; Sigma Alpha Epsilon; Masons. Contbr. to: Jour. of Comp. Anat. Ph.D. Dissertation: The Nuclear Pattern and Fiber Connections of Certain Basal Telencephalic Centers in the Macaque. Travel: U. S.; Can.; Europe.



LAUER, Byron Elmer (Ph.D.), Prof. of Chemical Engrng., Univ. of Colo., Boulder, Colo. Home Add.: 546 14th St., Boulder, Colo. CHEMICAL ENGINEERING. b. Glencoe, Okla., Apr. 14, 1907. s. George Louis and Frieda (Mahlo) L. Edn.: B.S., Ore. St. Univ., 1927; M.S., Univ. of Minn., 1929; Ph.D., ibid., 1931. m. Opal Lewis, Oct. 3, 1931. c.: Andrea. Exp.: Rsch. Engr., Northern Paper Mills, Green Bay, Wis., 1931-34; Rsch. Engr., Crown Zellerbach Corp., Camas, Wash., 1934-35; Asst. Prof., N. C. St. Coll., 1935-37; Assoc. Prof., ibid., 1937-40; Prof., ibid., 1940-46; Prof., Head, Chemical Engrng. Dept., Univ. of Colo., 1946—. Hon. Pos.: Trustee, The Cosmos Inst., Bd. of Dirs., The Cooperative Rsch. Inst.; Bd. of Governors, Internatl. Sci. Foundation. Mem.: Tech. Assn. of the Pulp and Paper Industry; A.C.S.; Am. Inst .of Chemical Engrs.; A.A.U.P.; Am. Soc. for Engrng. Edn.; Alpha Kappa Pi; Sigma Xi; Phi Lambda Upsilon; Gamma Alpha; Gamma Sigma Epsilon; Sigma Tau; Alpha Chi Sigma. Author: Chemical Engineering Techniques, 1952. Contbr. to: Chemical Engrng. Progress; Tappi; Paper Trade Jour. Industrial and Engrng. Chem.; Chemical and Engrng. News; Jour. of Physical Chem.; Schl. and Soc.; Oil and Gas Jour.; Jour. Coll. Placement; The Engr's Bull. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Pulp and Paper, Fluidized Solids, Multiphase Transport, Oil Shale Retorting.

LAUFFER, Paul G. I. (Ph.D.), Rsch. Chemist, Chesebrough-Pond's Inc., Stamford, Conn. Home Add.: 9 Ashley Rd., Hastings-on-Hudson, N. Y. COSMETIC CHEMISTRY. b. Farmersville, Ohio, Oct. 9, 1900. s. Franklin Edward and Emma E. (Klingeman) L. Edn.: B.S., Wash. and Jefferson Coll., 1921; M.S., ibid., 1923; M.A., Columbia Univ., 1924; Ph.D., ibid., 1926. m. Jean Robertson, August 30, 1929. c.: Elizabeth L. Biester; John R. Exp.: Chf. Chem., Pinaud, Inc., New York, N. Y., 1927-33; Chief Chem., The George W. Luft Co., N. Y., N. Y., 1933-57; Dir. of Rsch., Northam Warren Corp., Stamford, Conn., 1957-62; Rsch. Chemist Chesebrough-Pond's, Inc., Stamford, Conn., 1962—. Hon. Pos.: Mayor, Hastings-on-Hudson, N. Y., 1949-51. Mem.: A.C.S.; Soc. of Cosmetic Chemists; Am. Soc. of Perfumers; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Am. Perfumer; Drug and Cosmetic Industry; Jour. of Soc. of Cosmetic Chemists. Areas of Rsch.: Cosmetic Chemistry, Chemistry of Perfumes, Olfaction.



LAURENCE, William Leonard (D.Sc.), Sci. Editor, The New York Times, N. Y. 36, N. Y. Home Add.: One Gracie Sq., N. Y. 28, N. Y. POPULARIZATION AND INTERPRETATION OF SCIENCE FOR THE LAYMAN. b. Lithuania, Mar. 7, 1888. s. Lipman and Sara (Preuss) Siew. Edn.: Harvard, 1908-11; 1914-15; LL.B., Boston Univ. Law Schl., 1925. Hon. Deg.: Sc.D., Boston Univ., 1946; Sc.D., Stevens Inst. of Tech., 1951; L.H.D., Grinnell Coll., 1951; L.H.D., Yeshiva Univ., 1957. m. Florence Davidow, Dec. 19, 1931. Exp.: Chf. Sci. Reporter, N. Y. Times, N. Y., N. Y., 1930-56; Sci. Editor, ibid., 1956—. Hon. Pos.: Spec. Writer, Atomic Bomb Proj., War Dept., 1945; Official Pool correspt. on use of Atomic Bomb over Japan, 1945. Mem.: Subcom. on Publicity, Div., Med. Scis., Natl. Acad. Scis., 1940-45; Consult., Surg.-Gen., U. S. Army, 1944-45. Mem.: (Fellow) Amer. Inst. of the City of N. Y.; Harvard Club; Players Club; Overseas Press Club; Dutch Treat Club; Natl. Press Club; Sigma Delta Chi. Author: Dawn Over Zero, 1946; The Hell Bomb, 1951; Men and Atoms, 1959. Contbr. to: Sci. War Record: A.E.F., 1918-19; Gen. Int.: Pulitzer Prize, 1937, 1946; A.A.A.S.-Westinghouse Award, 1946; Univ. of Mo. Medal, 1947; Lasker, George Polk, Page One Awards, 1950; Grady Gold Medal, Amer. Chem. Soc., 1958; Certificates of Meritorious Serv., Manhattan Engr. Dist. (Atomic Project) and Surg.-Gen., U. S. Army, 1946.

LAURILA, Simo H. (Ph.D.), Prof., Ohio Sta. Univ., Columbus, Ohio. Home Add.: 406 Park Blvd., Worthington, Ohio. GEODETIC SCIENCE. b. Kangasala, Finland, Jan. 15, 1920. s. Hannes and Fanny (Heikkila) L. Edn.: B.Sc., Finland's Inst. of Tech., 1946; M.Sc., ibid., 1948; Ph.D., ibid., 1953. m. Mary Kouki, 1946. c.: Helena; Marketta; Kristiina; Taina; Paula. Exp.: Rschr., Photogrammetric Br., H.Q. Staff, Finnish Def. Forces, Helsinki, Finland, 1948-53; Geodesist, Finnish Geod. Inst., ibid., 1953; Rsch. Assoc., Ohio Sta. Univ., Columbus, Ohio, 1953-59; Assoc. Prof., ibid., 1956-59, 1960-62; Prof., ibid., 1962—. Scientific Ed., Finnish Broad, Helsinki, Finland, 1960. Mem.: Am. Geophys. Union; Am. Soc. of Photogramm. Author: On The Air Leveling and Decca Position Fixing, 1953; Electronic Surveying and Mapping, 1960. Contbr. to: Photogramm. Engrng.; Photogrammetria; Bulletin Ge'ode'sique; Maanmittaus; Schweizerische Zeitschrift fur Vermessung Kulturtechnik und Photogramm. Serv. Rec.: Finnish Army, 1940-44, Captain. Areas of Rsch.: Electronic Surveying and Mapping Applications.

LAW, Ralph Douglas (Ph.D.), Assoc. Prof., Refinery Engrng., Univ. of Wyo., Laramie, Wyo. Home Add.: 1415 Custer, Apt. 5, Laramie, Wyo. ORGANIC REACTIONS. b. Escanaba, Mich., Mar.

1, 1901. s. William Henry and Della May (Sayles) L. Edn.: B.A., N. D. Tchrs. Coll., 1932; Ph.D., Univ. of Colo., 1952. m. Florence Dieterich, June, 1923. c.: Florence E.; William J. Exp.: Asst. Chem., N. D. Regulatory Dept., Bismark, N. D., 1932-37; Mgr., Villard Hotel, Dickinson, N. D., 1937-45; Instr., Colo. Univ., 1945-52; Assoc. Prof., Univ. of Wyo., 1952—. Mem.: A.C.S.; A.I.Ch.E.; Sigma Xi; Sigma Tau; Lions Internatl. Contbr. to: Petroleum Refiner. Areas of Rsch.: Black Petroleum Crude Oils; Primary Coal Tars.

LAWRASON, F. Douglas (M.D.), Exec. Dir., Med. Rsch., Merck Sharp & Dohme Rsch. Labs., West Point, Pa. Home Add.: 233 Winsor Lane, Haverford, Pa. INTERNAL MEDICINE. b. St. Paul, Minn., July 30, 1919. s. J. F. and Clara (Mueller) L. Edn.: B.A., Univ. of Minn., 1941; M.A., ibid., 1944; M.D., ibid., 1944. m. Elaine Jean Wilson, Mar. 18, 1944. c.: Peter Douglas; Jock Duncan; Susan Elaine. Exp.: Instr. in Anatomy, Univ. of Minn., 1941-43; Intern, Resident, Fellowship, Yale Schl. of Medicine, 1944-49; Instr., Asst. Prof., ibid., 1949-53; Professional Assoc., Natl. Rsch. Coun., Wash., D. C., 1950-53; Asst. Prof., Asst. Dean, Univ. N. C. Schl. of Medicine, 1953-55; Provost & Dean, Univ. of Ark. Med. Ctr., 1955-61; Exec. Dir., Med. Rsch., Merck Sharp & Dohme Rsch. Labs., West Point, Pa., 1961—. Mem.: N. Y. Acad. of Scis.; A.A.A.S.; Am. Museum of Natural Hist.; Sigma Xi; Beta Theta Pi; Phi Chi. Serv. Rec.: U.S.N.R., 1946-47.

LAWRENCE, James Donald, Jr. (Ph.D.), Assoc. Prof. of Physics, William and Mary Coll., Williamsburg, Va. Home Add.: 206 John Pinckney Lane, Williamsburg, Va. PHYSICS. b. Portsmouth, Va., April 6, 1933 . s. James D. and Virginia (Rowlett) L. Edn.: B.S., Va. Milit. Inst., 1955; M.A., Univ. of Va., 1958; Ph.D., ibid., 1961. m. Sue Ann Champney, Aug. 24, 1955. Exp.: Instr., Va. Milit. Inst., 1955-56; Asst. Prof. to Assoc. Prof., Dept. of Physics, College of William and Mary, 1960—. Mem.: Am. Phys. Soc.; Sigma Xi; Sigma Pi Sigma. Contbr. to: Va. Jour. of Sci.; Jour. of Atmospheric and Terrestial Physics. Serv. Rec.: U. S. Army Reserves, 1955—. Areas of Rsch.: Ionospheric Physics.

LAWRENCE, Robert W. (Ph.D.), Mgr., Explosives Devel., Hercules Powder Co., Wilmington, Del. Home Add.: 2 Wood Rd., Wilmington 6, Del. PHYSICAL CHEMISTRY AND EXPLOSIVES. b. New York City, N. Y., May 12, 1904. s. Frank L. and Mary R. (Lunt) L. Edn.: B.S., Univ. of Calif., 1925; Ph.D., ibid., 1929. m. Eleanor Thompson, July 18, 1930. c.: Mary Winifred; Laura; William T. Exp.: Rsch. Chemist, Hercules Powder Co., Kenvil, N. J. and Wilmington, Del., 1929-34; Supvr. of Rsch., ibid., Wilmington, Del., 1934-51; Mgr. Expl. Dev., ibid., 1952—. Mem.: Am. Chem. Soc.; A.A.A.S.; Soc. Expl. Geophysicists; Inst. of Mining Engrs.; Sigma Xi; Phi Lambda Upsilon; Wilmington Bd. of Edn. Contbr. to: Jour. Am. Chem. Soc.; Geophysics. Serv. Rec.: ORC, 1926-35. Areas of Rsch.: Magnetochemistry; Pigments, Chemistry of Explosives, Mechanism of Detonation, Design, Properties and Use of Explosives.

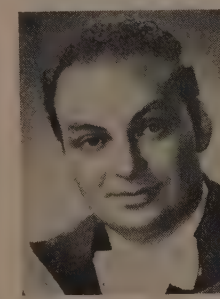
LAWRENCE, Ronald Melvin (M.D.), Electroencephalographer, 7535 Laurel Canyon Blvd., N. Hollywood, Calif. Home Add.: 8040 Okean Terr., Los Angeles 46, Calif. ELECTROENCEPHALOGRAPHY, ELECTRO-MYOGRAPHY AND NEUROPHYSIOLOGY. b. Flushing, N. Y., Mar. 24, 1926. s. Joseph Herbert and Adele (Levine) L. Edn.: B.A., N. Y. Univ., 1947; M.S., ibid., 1949; D.O., Coll. of Osteopathic Med. and Surg., 1953; M.D., Calif. Coll. of Med., 1962. m. Eleanor M. Brody, Aug. 19, 1951. c.: Michele Robin; Lesli Renee. Exp.: Rsch. Assoc., Rockefeller Fdtn. Inter. Health Division, Rockefeller Inst., 1947-48; Med. Tech., Flushing Hosp., 1948-49; Intern, Maywood Hosp., Calif., 1953-54; Co-Dir., Laurel Canyon Med. Clinic and Hosp., N. Hollywood, Calif., 1954—; Chf. Electroencephalographer to 45 Southern Calif. Hosps., 1955—. Mem.: Am. Coll. of Neuropsychiatrists; Am. Med. Assn.; Calif. Med. Assn.; Am. Assn. for the Adv. of Sci.; N. Y. Acad. Scis.; Am. Rocket Soc.; Lambda Omicron Gamma; Phi Sigma Alpha; Optimists. Contbr. to: Jour. Physiology; Jour. Am. Osteo. Assn.; Geriatrics; Trans., N. Y. Acad. Sci. Serv. Rec.: U. S. Army, 1946-47. Areas of Rsch.: Effects of Low Temperatures on Unicellular Organisms; Learning Responses in Amoeba Proteus; Rsch. in Myrmecology; Electroencephal. and the Law; Electroencephal. Hyper-ventilation Response; Skull Trauma and Electroencephal.; Epilepsy; Long-term Heparin Therapy; Tranquilizer Effects on Electroencephalographs.

LAWRENCE, Willis Grant (D.Sc.), Chmn., Dept. of Ceramic Rsch., St. Univ. of N. Y. Coll. of Ceramics at Alfred Univ., Alfred, N. Y. Home Add.: Box 977, Alfred, N. Y. CERAMICS. b. Springwater, N. Y., Dec. 17, 1916. s. William A. and Viola (Shaver) L. Edn.: B.S., Alfred Univ., 1939; D.Sc., M.I.T., 1942. m. Marjorie Eiss, 1941. c.: Linda Kay. Exp.: Asst. Metallurgist, Am. Brakeshoe Co., Mahwah, N. J., 1942-47; Prof., Coll. of Ceramics, Alfred Univ., 1947—. Hon. Pos.: Chmn., Basic Sci. Div., Am. Ceramic Soc. Mem.: Am. Ceramic Soc., Fellow; Keramos. Contbr. to: Jour. of Am. Ceramic Soc. Areas of Rsch.: High Temperature Materials; Clay-Water Systems; Ceramic Materials Related to Metal Casting.

LAWS, Leonard Stewart (Ed.D.), Chmn., Nat. Sci. Div., Southwestern Coll., Winfield, Kans. Home Add.: 311 Houston St., Winfield, Kans. MATHEMATICS, STATISTICS. b. Pocasset, Okla., Dec. 29, 1917. s. Samuel M. and Ruth (Woolley) L. Edn.: A.B., Williamette Univ., 1939; A.M., Stanford Univ., 1941; Ed.D., Mich. State Univ., 1953. m. Janet Owen, Aug. 29, 1943. c.: Gregory; Kenneth; David; Rebecca. Exp.: Tchng. Asst., Stanford Univ., 1939-41; Tchng. Asst., Univ. of Minn., 1941-42; Instr. of Math. and Mechanics, ibid., 1942-46; Asst. Prof. of Math. and Mechanics, ibid., 1946-52; Grad. Asst., Mich. State Univ., 1947-48; 1952-53; Dean and Registrar and Prof. of Math., Southwestern Coll., 1953-55; Chmn., Nat. Sci. Div., Prof. of Math., ibid., 1955—. Mem.: A.A.U.P.; A.A.A.S.; A.M.S.; Life Mem., N.E.A.; Math. Assn. of Am.; A.S.Q.C.; Pi Gamma Mu. Contbr. to: Jour. Engrng. Edn.; Jour. Tchr. Edn.; Am. Math. Monthly. Gen. Int.: N.S.F. Fellow, Stanford Univ., 1961-62. Areas of Rsch.: Industrial Reliability; Statistics.

LAWSON, Daniel David (Mr.), Scientist, Jet Propulsion Lab., 4800 Oak Grove, Pasadena, Calif. Home Add.: 3681 Leilani Way, Altadena, Calif. ORGANIC CHEMISTRY. b. Tucson, Ariz., Jan. 13, 1929. s. John and Virginia (Duncan) L. Edn.: B.S., Univ. of Sou. Calif., 1957; M.S., ibid., 1959. m. Margaret Schaeffer, Aug. 18, 1957. c.: Dale; Monica. Exp.: Chemist, Hastings Fdtn., Altadena, Calif., 1960-61; Scientist, Jet Propulsion Lab., Pasadena, Calif., 1961—. Mem.: Am. Chem. Soc.; Polymer Sect., Chem. Soc., London; A.A.A.S.; Soc. of Applied Spectroscopy; Am. Oil Chemists; Sigma Xi. Contbr. to: Jour. Chem. Edn.; Jour. Organic Chemistry; Chem. Reviews. Serv. Rec.: U. S. Army, 1950-52.

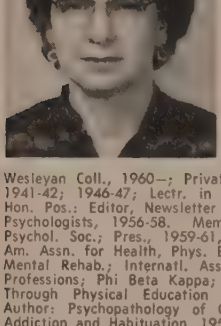
LAX, Louis Carl (Ph.D.), Asst. Scientist, Med. Dept., Brookhaven Natl. Lab., Upton, L. I., N. Y. PHYSIOLOGY, MEDICINE. b. Toronto, Can., Apr. 25, 1930. s. Hyman and Rose (Lax) L. Edn.: B.A., Univ. of Toronto, 1952; M.A., ibid., 1953; M.D., ibid., 1957; Ph.D., ibid., 1962. m. Evelyn Richman, June 15, 1958. Exp.: Asst. Physiol., Banting and Best, Dept. of Med. Rsch., Toronto, Can., 1952-57; Rsch. Fellow, Clin. Invest., Sunnybrook Vets. Admin. Hosp., Toronto, Can., 1957-61; Med. Assoc., Brookhaven Natl. Lab., Upton, L. I., N. Y., 1961-62; Asst. Scientist, ibid., 1962—. Mem.: Biophysical Soc.; A.A.A.S.; Canadian Physiological Soc. Areas of Rsch.: Transfer Rates of Mineral Elements and Metabolic Constituents in Human and Animal Subjects; Statistical Analysis of Data by Means of Electronic Digital Computers; Use of Tracers to Study Na and K Metabolism in Clinical Hypertension.



LAWSON, Andrew Werner, Jr. (Ph.D.), Prof. of Physics, Chmn., Dept. of Physics, Univ. of Calif., Riverside, Calif. Home Add.: 6101 Howarden Dr., Riverside, Calif. SOLID STATE PHYSICS,

HIGH PRESSURE PHENOMENA, MICROWAVE RADAR. b. San Francisco, Calif., Mar. 3, 1917. s. A. Werner and Teresa (Harrison) L. Edn.: A.B., Columbia Univ., 1936; Ph.D., ibid., 1940. m. Mary Ann Wyman, Apr. 7, 1945. c.: Andrew Cowper; Ann McDoel; Katharine Kerr. Exp.: Instr., Physics, Univ. of Pa., 1940-41; Asst. Prof., ibid., 1941-44; Staff Mem., Radiation Lab., M.I.T., 1944-46; Asst. Prof., Univ. of Chicago, 1946-47; Assoc. Prof., ibid., 1947-50; Prof., ibid., 1950 ; Chmn., Dept. of Physics, ibid., 1950-56; Assoc. Dir., Inst. of Metals, ibid., 1952-56; Mem., Block Found. Bd., ibid., 1956-58; Prof., Chmn. Dept. of Physics, Univ. of Calif., Riverside, 1961—. Mem.: Fellow, Am. Phys. Soc.; Delta Upsilon; Sigma Xi; Phi Beta Kappa; Am. Geophys. Union; Soc. Automotive Engrs., 1959—. Contbr. to: Phys. Rev.; Rev. of Scientific Instruments; Jour. of Chem. Physics; Physics Today. Gen. Int.: Presidential Cert. of Merit, 1947. Areas of Rsch.: Properties of AgBr.; High Pressure Techniques; Semimetals, polymers.

LAYMAN, Emma McCloy (Ph.D.), Hd., Dept. of Psychol., Iowa Wesleyan Coll., Mt. Pleasant, Iowa. Home Add.: 104 W. 2nd St., Mt. Pleasant, Iowa. PSYCHOLOGY. b. Danville, Va., Feb. 25, 1910. d. Charles Harold and Anna Florence (Fisher) McCloy. Edn.: A.B., Oberlin Coll., 1930; M.A., N. Y. Univ., 1931; Ph.D., Univ. of Iowa, 1937. m. James W. Layman, Dec. 12, 1936. Exp.: Psychol. Examiner, Univ. of Ia. Hosps., 1934-35; 1937; Psychologist, Mich. Children's Inst., Ann Arbor, Mich., 1935-36; Supver. of Psychol. Services, Iowa Bd. of Social Welfare, 1937-41; Assoc. Prof. of Psychol., Woman's Coll. of N. C., 1947-52; Supvry. Clin. Psychologist, Brooke Army Hosp., 1952-54; Chf. Psychologist and Assoc. Dir. of Dept. of Psychiatry, Children's Hosp. of D. C., 1954-60; Hd., Dept. of Psychol., Iowa Wesleyan Coll., 1960—; Private Prac., Consult. Psychologist, Ia., 1941-42; 1946-47; Lectr. in Soc. Work, Howard Univ., 1957—. Hon. Pos.: Editor, Newsletter of the Internatl. Coun. of Women Psychologists, 1956-58. Mem.: Am. Psychol. Assn.; Inter-Am. Psychol. Soc.; Pres., 1959-61; Internatl. Coun. of Psychologists; Am. Assn. for Health, Phys. Edn. and Rec.; Assn. for Phys. and Mental Rehab.; Internatl. Assn. for Child Psychiatry and Allied Professions; Phi Beta Kappa; Sigma Xi. Author: Mental Health Through Physical Education and Recreation, 1955. Contbrng. Author: Psychopathology of Communication, 1958; Problems of Addiction and Habituation, 1959; Child Rsch. in Psychopharmacology; Sci. and Med. of Exercise and Sports. Contbr. to: Jour. of Psychol.; Am. Jour. of Ment. Deficiency; Phys. Educator; Jour. of the Assn. for Health, Phys. Edn. and Rec.; Rsch. Quart.; Clin. Proc. of Children's Hosp. War Rec.: U. S. Naval Res., 1943-46. Areas of Rsch.: Psychosomatic Problems in Children, Brain Damage in Children, Personality Dynamics.



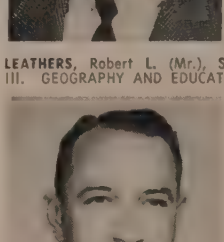
LAYTON, William Isaac (Ph.D.), Prof. of Mathematics and Head of Dept., Stephen F. Austin State Coll., Nacogdoches, Tex. MATHEMATICS. b. Cameron, Mo., Sept. 26, 1913. s. Joseph Evening and Mary (Leighton) L. Edn.: B.S., Univ. of S. C., 1934; M.S., ibid., 1935; Ph.D., Geo. Peabody Coll., 1948. m. Eva James Wade of Nashville, Tenn., Mar. 28, 1941. d. Mr. and Mrs. Alex Corson Wade. c.: Mary Eliz.; Gay Wade. Exp.: Asst. in Math., Univ. of S. C., 1934-35; Hd. of Math. Dept., Greer High Schl., S. C., 1935-36; Asst. in Math., Univ. of Chicago, 1936-37; Instr. in Math., Rome High Schl., 1937-39; Hd. of Math. Dept., Albany Sr. High Schl., 1939-40; Tchng. Fellow in Math., George Peabody Coll., 1940-41; Instr. in Math. and Engrng., Dir. of Aviation Cadet Trng. Program, Amarillo Jr. Coll., 1941-42; Hd. of Math. Dept., Amarillo Jr. Coll., 1942-46; Instr. Engrng., Sci. and Mgt., War Trng. Courses Engrng. Drawing offered in Amarillo thru Tex. Tech. Coll., 1942-45; Prof. of Math., Hd. of Dept., Austin Peay State Coll., 1946-48; Assoc. Prof. of Math., Ala. Poly. Inst., 1948-49; Dean of Instrn., State Tchrs. Coll., Frostburg, Md., 1949-50; Prof. of Math. and Hd. of Dept., Stephen F. Austin St. Coll., Nacogdoches, Tex., 1950—. Hon. Pos.: Tex. Acad. of Sci.—Natl. Sci. Fdtn. Lectr. in Math., Spring, 1960; Pres., Tex. Sect., Math. Assn. of Am. Mem.: Quarterback Club of Nacogdoches; Nacogdoches Co. C. of C.; Hon. Assoc., Danforth Fdtn.; Phi Beta Kappa; Math. Assn. of Am.; Natl. Coun. of Tchrs. of Math.; Am. Math. Soc.; Am. Assn. of Univ. Profs.; Tex. Assn. of Coll. Tchrs.; Texas State Tchrs. Assn.; National Edn. Assn.; Phi Delta Kappa; Kappa Phi Kappa; Gamma Alpha. Author: An Analysis of Certification Requirements for Tchrs. of Math., 1949; College Arithmetic, 1959. Co-author: College Algebra, 1956; Mathematics of Finance, 1958. Contbr. to: The Math. Tchr. Ph.D. Dissertation: See Above. Hobbies: Agri.; Music. Listed in: W. W. in Texas; A.M.S.; W. W. in the S. and S.W.; Contemporary Authors; W. W. in Am. Edn. Special Int.: Geometry and the Tchng. of Math.

LEACH, Herbert Weldon (Mr.), Test Engr., Bell Helicopter Corp., Ft. Worth, Tex. Home Add.: 521 Hurstview Dr., Hurst, Tex. b. Jarrell, Tex., June 9, 1912. s. Herbert Jackson and Eunice (Sellers) L. Edn.: B.A., A. and M. Coll. of Tex., 1934; M.S., ibid., 1938. m. Catherine Flanary, Aug. 23, 1936. c.: Priscilla Jean; Terry Ray. Exp.: Tchr., Sabine Pass Pub. Schls., Sabine Pass, Tex., 1935; Assoc. Prof. Engr., John Tarleton Coll., 1936-43; Prof. Engrng., Tarleton State Coll., 1946-53; Test Engr., Bell Helicopter Corp., Ft. Worth, Tex., 1953—. Mem.: Am. Helicopter Soc.; Am. Inst. Elect. Engrs.; Natl. Soc. of Prof. Engrs; Tex. Soc. of Prof. Engrs.; Tau Beta Pi; Hurst C. of C. Co-author: Elem Problems in Engrng., 1951; The Slide Rule, 1953; Workbook Slide Rule and Elem. Problems in Engrng., 1952; Engineering The Profession and Elementary Problem Analysis, 1960. Wa Rec.: U. S. Army, 1943-46. Listed in: W. W. in Am. Edn.; W. W in Engrng. Areas of Rsch.: Flight Test Instrumentation on Hel copters.

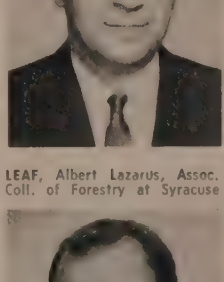
LAZAR, Allan William (M.D.), Instr. in Pathology, Univ. of Ch cago, Chicago, Ill. Home Add.: 6816 S. Ridgeland Ave., Chicag 49, Ill. PATHOLOGY. b. Brool lyn, N. Y., June 11, 1931. Benjamin B. and Sylvia (Berk witz) L. Edn.: B.S., Univ. Scranton, 1953; M.D., Jefferso Med. Coll. of Phila., 1957. m 1st, Peggy Waite (dec.). c.: Je nifer; Julie; Deena; David. m 2nd, Diane Childress, 1962. Exp Instr., Univ. of Chicago, Ill., 196 —. Mem.: Sigma Xi; Coll. of An Pathologists; A.A.A.S.; Phi Bet Pi; Kappa Beta Phi. Contbr. t Am. Med. Assn. Arch. of Pathol Gastroenterology; Proc. of An Assn. of Cancer Rsch. Areas Rsch.: Research in natural r sistance of animals to transplante and chemically induced tumors.

LEACH, Thomas R., Lab Asst., Physical Sci., Curtis H. S., State Island, N. Y. Home Add.: 1654 Manor Rd., Staten Island 1 N. Y. PHYSICS TEACHING. Staten Island, N. Y., March 2 1939. s. John T. and Anna M (Popovice) L. Edn.: Assoc. Arts, Staten Island Comm. Coll 1958; B.S., City Coll. of N. Y 1961. Exp.: Lab. Asst., Physic Sci., Curtis H. S., Staten Islan N. Y., 1961—. Mem.: Am. Assn of Physics Tchrs.; Physics Club N. Y.; A.A.A.S.; Archeological So of Wagner Coll.

LEATHERS, Robert L. (Mr.), Sci. Tchr., Pub. Schls., E. Auror Ill. GEOGRAPHY AND EDUCATION. b. Cisne, Ill., Jan. 16, 192 s. Pearl and Lillie (Brown) Edn.: B.S., Sou. Ill. Univ., 194 S.M., Univ. of Chicago, 1947. Bonita Walter, Jan. 2, 1942. c Sharon Lee; Connie Sue. Exp Asst. Prof., Fla. St. Univ., 194 53; Exec., McGowan Elec. Suppl Co., Talahassee, Fla., 1954-5 Exec., Alston Elec. Supply Co Pensacola, Fla., 1956-57; Sup and Prin., H. S., Cisne, Ill., 195 58; Supt. and Prin., Pub. Schls Coulterville, Ill., 1958-59; Sc Tchr., East Aurora, Ill., Pub Schls., 1959—; Tchr., Summe Schl. at Mooseheart (Child Cit operated by Loyal Order of Moose 1960-61. Mem.: Natl. Edn. Assn Ill. Edn. Assn.; Loyal Order Moose. War Rec.: U. S. Arm W. W. II.



LEAF, Albert Lazarus, Assoc. Prof. of Silviculture, State Uni Coll. of Forestry at Syracuse Univ., Syracuse 10, N. Y. Hon Add.: 403 Radcliffe Rd., Syr cuse 14, N. Y. N. Y. FORES SOIL SCIENCE. b. Seattle, Wash May 16, 1928. s. Aron and Dor Marie L. Edn.: B.S.F., Univ. Wash., Coll. of Forestry, 195 M.F., ibid., 1952; Ph.D., (So Sci.), Univ. of Wis., 1957. m. Wi ma Lorraine Parker, June 1 1952. c.: Melody Anne; Daw Marie; Douglas Parker. Exp Rsch. Forestry Aide, Div. of Floo Control Surveys, Pacific Northwes Forest and Range Expt. Sta., U. Forest Serv., 1951; Jr. Rsch. Fo ester, Univ. of Wash., 1951-5 Rsch. Asst. in Soils, Univ. of Wis 1952-57; Instr. in Silviculture, S Univ. Coll. of Forestry at Syracu Univ., 1957-58; Asst. Prof., ibi 1958-62; Assoc. Prof., ibi 1962—. Hon. Pos.: Vice-Chmn. of Forestry Comm., Coun. Fertilizer Application, 1958-60; Chmn., ibid., 1960-62; Trea



rracuse Chapter, Sigma Xi, 1961-63. Mem.: Phi Sigma; Soc. Am. Foresters; Soil Science Soc. of Am.; Am. Soc. Agron.; n. Geophysical Union; Am. Assn. Adv. of Sci.; Wis. Acad. Sci., rts and Letters; Xi Sigma Pi; P.T.A. Co-Author: Forest Fertiliation, 1957. Contbr. to: Soil Sci.; Forest Sci.; Soil Sci. Soc. Am. Proc.; Jour. of Forestry; Ecology; Forestry Chronicle anada); Potash Rev.; Weeds; Proc. of IX Internatl. Bot. Congress, h Internatl. Soil Sci. Congress, 5th World Forestry Congress, 8th Congress of the Internatl. Union of Forest Rsch. Organizaons; 9th Annual Sou. Forestry Symposium. Serv. Rec.: U. S. avy, 1945-46. Gen. Int.: Fulbright Grantee, Schl. of Forestry, niv. of Helsinki, 1954-55. Areas of Rsch.: Forest Soils and ree Nutrition; Soil and Foliar Diagnosis of Nutrient Deficiencies; orest Fertilization; Forest Nursery Mgmt.; Forest Soil Chemistry.

eBEL, Clarence J. (Mr.), Vice Pres., Audio Devices, Inc., 444 adison Ave., N. Y. 22, N. Y.; Chf. Engr., Audio Instrument Co., Inc., 135 W. 14th St., N. Y. 11, N. Y. Home Add.: 70 E. 10th St., N. Y. 3, N. Y. AUDIO ENGINEERING. b. N. Y. City, Dec. 16, 1905. s. Leopold and Emilie (Muller) L. Edn.: B.S., Mass. Inst. of Technol., 1926; M.S., ibid., 1927. Exp.: Vice-Pres., Audio Devices, Inc., N. Y. City, 1940—; Chf. Engr., Maico Co., Inc., 1942-45; Proj. Engr., Cambridge Instrument Co., Ossining, N. Y., 1945-46; Pres., Chf. Engr., Audio Instrument Co., Inc., N. Y. C., 1947—. Hon. Pos.: Pres., Secy., A.E.S. Mem.: Acoust. Soc. of Am.; A.I.E.E.; A.E.S.; Radio Club of Am.; S.M.P.T.E.; Hon. Mem., Audio Engrng. Soc. Author: Fundamentals of Magnetic Recording, 1951; How to Make Good Tape Recordings, 1956. Contbr. to: Jour. Acoust. Soc. of Am.; Jour. A.E.S.; Electronics; Electronic Ind. Gen. Int.: Audio Engrng. Soc. Award, 1949. Areas of Rsch.: Disc Recording, Tape Recording, Electronic Measuring Instrument Design, Audio Measurement Methods, Recording Standards and Standardizing Work of Last 25 Years.

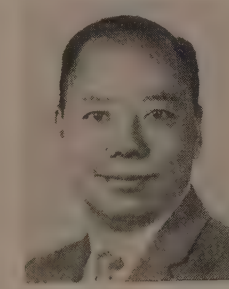
LECZNAR, Francis Joseph (Ph.D.), Rsch. Assoc., Physics Department, The Pa. State Univ., University Park, Pa. Home Add.: 120 W. Ridge Ave., State College, Pa. PHYSICS, MINERAL ENGINEERING. b. Lancut, Poland, Mar. 19, 1897. s. Joseph and Anna (Dudek) L. Edn.: M.Ph., Jan Kazimierz Univ., Lwow, 1930; M.Sc., Politechnic Inst., Lwow, 1945; Ph.D., Jagiellonski Univ., Krakow, 1950. m. Kinga Leszczynska, 1922. c.: Tadeusz Witold; Sophia Laura. Exp.: Prof., Gimnaziums and Liceums, Tarnobrzeg, Krakow, 1924-39; Prof., State Coll., Krakow, 1940-44; Sr. Rsch. Assoc., Lectr., Mining Acad., ibid., 1945-52; Asst. Prof. and Head, Chair, Politechnic Inst., Wroclaw, 1951-52; Asst. Rsch. Prof., Politechnic Inst., Krakow, 1954-57; Rsch. Assoc., Pa. State Univ., Pa., 1958—. Mem.: Sigma Xi; Am. Assn. Adv. Sci. Author: Benefication of Lean Limonite Sands, 1952; Equipment Used in Mineral Preparation, Vol. I-V, 1952-55; Problem of Capillaries in Impermeable Concrete, 1957. Contbr. to: Cement, Wapno, Gips; Hutnik. State Scientific Edition; Acta Technica Academiae Scient. Hungariae; Jour. of Scientific and Indus. Rsch.; Am. Concrete Inst. Serv. Rec.: Polish Army, 1920-21. Areas of Rsch.: Physics, Mineral Engineering; Beneficiation of Low Grade Minerals; Thickening of Powdery Material, Especially Cement Pastes, Mortars, Concrete; Theory and Application of Equipment in Ore Dressing.

LeDOUX, John Carver (Mr.), Supvr., Nuclear Engrng., O.C.D., Pentagon, Wash. Home Add.: 7715 New Castle Drive, Annandale, Va. NUCLEAR PHYSICS (Especially RADIATION SHIELDING. b. Portland, Ore., May 18, 1924. s. John Francis and Edith Lillian (Carver) LeD. Edn.: B.S., U. S. Naval Academy, 1947; B.C.E., Rensselaer Poly. Inst., 1951; M.S., U. S. Navy Post Grad. Schl., 1958. m. Elizabeth A. Eicher, May 8, 1948. c.: John N.; Jeffrey; Janelle; James; Judy; Jean. Exp.: Line Officer at Sea, 1947-50; Project Engr., NAS, Alameda, Calif., 1951-53; Staff Civil Engr., NSC, Norfolk, Va., 1953-54; Pub. Works Officer, CAD, Williamsburg, Va., 1954-55; Dir., Nuclear Div., NCEL, Port Hueneme, Calif., 1957-60; Exec. Off. and Dir. of Academic Dept., CECOS, 1960-62; Supvr., Nuclear Engrng., O.C.D., Wash., D. C., 1962—. Mem.: A.N.S.; S.A.M.E.; R.E.S.A.; Sigma Xi; Tau Beta Pi; Chi Epsilon; K. of C. Co-Author: Dispersion of Soluble Radioactive Materials, 1958; Hazards Associated with the Marine Application of a Fused Floride Reactor, 1957; Analysis of the Critical Shielding Volume for Buried Shelters, 1960. Contbr. to: Nuc. Sci. Engr.; The Milit. Engr.; Tech. Notes of The Royal Engrs. Jour.; U. S. Naval Civil Engrng. Lab. Serv. Rec.: U. S. Navy, 1943—. Gen. Int.: Awarded S.A.M.E. Toulmin Medal for Best Article Published for Year in Milit. Engr. Jour., 1960. Areas of Rsch.: Radiation Shielding; Presently engaged in Gamma Rays Streaming Through Ducts by Albedo Method.

LEE, Carleton Lafayette (Ph.D.), Prof. of Philos. and Chmn., Area of Humanities, Cent. Sta. Coll., Wilberforce, Ohio. Home Add.: 11 Fisher Ave., White Plains, N. Y. SOCIOLOGY OF RELIGION. b. Clayton, N. C., March 30, 1913. s. Frank Joshua (dec.) and Aurelia (Hill) L. Edn.: A.B., Talladega Coll., 1933; M.A., Univ. of Chicago, 1935; D.B., Chicago Theol. Seminary, 1937; Ph.D., Univ. of Chicago, 1951. m. Maggie A. Latta, Dec. 28, 1961. c.: Carleton. Exp.: Dir. of Rel., Dorchester Acad., McIntosh, Ga., 1935-37; Hi-Y Secty., Y.M.C.A., So. Area, Atlanta, Ga., 1939-44; Dean, Morris Brown Coll., Atlanta, Ga., 1944-45; Chaplain, Tuskegee Inst., Ala., 1947-55; Prof., Philos. and Rel., Tougaloo, Miss., 1955-57; Prof. of Philos. and Rel., Dir. of Religious Acts., Chmn., Humanities Area, Cent. Sta. Coll., 1957—. Hon. Pos.: Mem. and Past Pres., Natl. Assn. of Coll. and Univ. Chaplains. Mem.: Coll. Lang. Assn.; Soc. for Religion in Higher Edn.; Alpha Phi Alpha; Alpha Phi Gamma; Phi Alpha Theta. Contbr. to: Jour. of Religion; Jour. of Religious Thought; Jour. of Human Relations. Areas of Rsch.: Race Relations, Sociology of Religion, Ethics and Society, Philosophy and Literature.

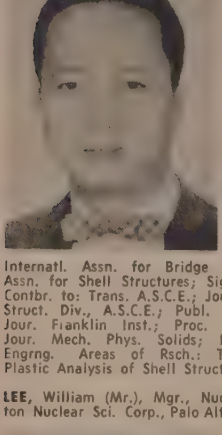
LEE, Claudius (Mr.), Prof. of Elec. Engrng., Va. Poly. Inst., Box 157, Blacksburg, Va. ELECTRICAL ENGINEERING AND HOROLOGY. b. May 30, 1872, Culpeper, Va. s. John and Florence M. (Jeffries) L. Edn.: B.S. in E.E., 1896, Va. Polytech. Inst.; M.E., ibid., 1907. m. Rissie Otey of Bedford Co., Va., Oct. 14, 1902. d. Thos. Benton and Susan Rader O. Exp.: Lab. Mechanician, Va. Poly. Inst., 1893-96; Asst. in Elec. Engrng., ibid., 1896-98; Asst. Prof. to Prof., ibid., 1915—. Hon. Pos.: Chmn., Student Branch Conf., Dist. No. 4, Am. Inst. of E.E.; Counselor, V.P.I. Student Branch of A.I.E.E., Fel.; A.I.E.E.; Am. Phys. Soc.; Illuminating Engr. Soc.; Sr. Mem. Inst. Radio Engrs.; Natl. Soc. of Prof. Engrs.; Am. Soc. of Engrng. Edn.; Va. Acad. of Sci.; Va. Edn. Assn.; Mem. Horological Assn. of Va.; Honorary Mem., New River Guild of Watchmakers and Jewelers; Tau Beta Pi; Phi Kappa Phi; Eta Kappa Nu; Mason; O.E.S.; Am. Legion; Red Cross. Author: Instruction Books, Ord. Dept., U. S. Army (Dealing with Motorization of Mobile Artillery, 1917-19). Contbr. to: Elect. World; Extension Engrng. Bulletin, V. P. I. War Rec.: Capt., Ordnance Dept., U. S. Army, 1917-19. Special Int.: Laboratory Testing Machinery and Instruments, Horological Devices, Developing Inventions.

LEE, Hun (Mr.), Rsch. Assoc., Inst. of Med. Scis., Presbyterian Med. Ctr., San Francisco, Calif. Home Add.: 3047 Phillips Ct., Richmond, Calif. CYTOCHEMISTRY. b. China, Sept. 17, 1917. s. Pei-Yang and Ping-Nan (Tsen) L. Edn.: B.A., Univ. of Tex., 1949; M.A., ibid., 1950. m. Juana S. Tankhoan, 1958. c.: Evan T. Exp.: Rsch. Assoc., Inst. of Pathol., Western Reserve Univ., 1956-57; Rsch. Assoc., Stanford Univ. Med. Schl., 1958-59; Rsch. Assoc., Inst. of Med. Scis., Presbyterian Med. Ctr., 1960—. Mem.: New York Academy of Sciences; A.A.A.S.; Calif. Acad. of Scis.; Sigma Xi. Contbr. to: Cancer Rsch.; Jour. of Natl. Inst. of Cancer; Proc. of the Am. Assn. for Cancer Rsch.; Jour. of Comparative and Physiological Psychol.; Nature. Areas of Rsch.: Cancer Immunol.; Cancer Chemotherapy; Radiation Effect on Bone Marrow.



LEE, Julia Southard (Ph.D.), Prof., N. M. St. Univ., Box 152, University Park, N. M. Home Add.: 2225 Turrentine Dr., Las Cruces, N. M. ORGANIC CHEMISTRY. b. Southard, Mo., Sept. 9, 1897. d. Darius T. and Anna B. (Cockrum) Southard. Edn.: B.S., Univ. of Mo., 1926; M.S., Kans. St. Univ., 1930; Ph.D., Univ. of Chicago, 1936. m. Edward Clark Lee (dec.), 1937. Exp.: Instr., Purdue Univ., 1934-37; Assoc. Prof., Ia. St. Univ., 1939-45; Assoc., Prof., Wash. St. Univ., 1946-50; Prof., N. M. St. Univ., 1953—. Mem.: Am. Assn. of Textile Chemists and Colorists; A.C.S.; Am. Home Econs. Assn.; N. M. Edn. Assn.; Iota Sigma Pi; Sigma Delta Epsilon; Kappa Mu Sigma; Sigma Xi; A.A.A.U.W.; A.A.U.P. Author: Elementary Textiles, 1953. Contbr. to: Textiles Rsch. Jour. Areas of Rsch.: Service Qualities of Cotton and Wool.

LEE, Seng-Lip (Ph.D.), Prof. of Civil Engrng., Northwestern Univ., Evanston, Ill. Home Add.: 3328 Harrison St., Evanston, Ill.



STRUCTURAL ENGINEERING AND MECHANICS. b. Fukien, China, Mar. 21, 1925. s. Oen-Seng and Kim-Loan (Kheng) L. Edn.: B.S., Mapua Inst. of Technol., Manila, Philippines, 1950; M.S.E., Univ. of Mich., 1951; Ph.D., Univ. of Calif., 1953. m. Margaret Blymeir, June 13, 1956. Exp.: Engr., Kho Santiago Co., Ltd., Manila, Philippines, 1950; Engr., Jackson and Moreland, Boston, Mass., 1951; Engr., Kaiser Engrs., Oakland, Calif., 1952; Job Engr., Bechtel Corp., San Francisco, Calif., 1953-55; Asst. Prof., Northwestern Univ., 1955-57; Assoc. Prof., ibid., 1958-60; Prof., ibid., 1960—. Mem.: A.S.C.E.; Am. Concrete Inst.; A.S.E.E.; Natl. Soc. of Professional Engrs.; Internatl. Assn. for Bridge and Structural Engrng.; Internatl. Assn. for Shell Structures; Sigma Xi; Chi Epsilon; Tau Beta Pi. Contbr. to: Trans. A.S.C.E.; Jour. Engr. Mech. Div., A.S.C.E.; Jour. Struct. Div., A.S.C.E.; Publ. Int. Assn. Bridge Struct. Engrng.; Jour. Franklin Inst.; Proc. Inst. Civil Engrs.; Struct. Engr.; Jour. Mech. Phys. Solids; Internatl. Jour. Mech. Sci.; Civil Engrng. Areas of Rsch.: Theory of Structures, Elastic and Plastic Analysis of Shell Structures; Stability of Structures.

LEE, William (Mr.), Mgr., Nuclear Systems and Products, Hazelton Nuclear Sci. Corp., Palo Alto, Calif. Home Add.: 2482 B Whitney Dr., Mountain View, Calif.

NUCLEAR CHEMISTRY-INSTRUMENTATION. b. Neponset, Calif., Nov. 15, 1925. s. Chung Hing and Hong Hang (Jew) L. Edn.: A.B., Univ. of Calif., Berkeley, Calif., 1946. Exp.: Chf. Chem., Terven Products Co., Calif., 1946-47; Rsch. Chem., Curtis and Tompkins, Ltd., Calif., 1948-50; Radiochem., U.S.-N.R.D.L., 1951-59; Sr. Nucletr Scientist, Edgerton, Germeshausen & Grier, Inc., Calif., 1960-62; Scientific Exec., Hazleton Nuclear Science Corp., 1962—. Mem.: A.C.S.; Am. Assn. Adv. of Sci.; Contbr. to: Arch. of Biochem. and Biophysics; Annals of Surgery; Analytical Chem. Areas of Rsch.: Application of Digital and Ultra High Speed Instrumentation to Nuclear Measurements; Non-Destructive Analysis, Nuclear Spectroscopy and Radiochemistry.

LEEDY, Haldon Arthur (Ph.D.), Exec. Vice Pres., Dir., Armour Rsch. Fdn., Ill. Inst. of Technol., Chicago, Ill. Home Add.: 330 Blackstone Ave., LaGrange, Ill. PHYSICS. b. Fremont, Ohio, Apr. 15, 1910. s. Arthur Earl and Alta Mae (Stull) L. Edn.: B.A., North Central Coll., 1933; M.A., Univ. of Ill., 1935; Ph.D., ibid., 1938. m. Margaret Rayner, Aug. 17, 1940. c.: Marilyn; Haldon; Barbara. Exp.: Physicist, Armour Rsch. Fdn., Chicago, Ill., 1938-44; Chmn., Physics Dept., ibid., 1944-48; Dir., ibid., 1948—; Exec. Vice-Pres., ibid., 1953—. Hon. Pos.: Pres., Midwestern Air Pollution Prevention Assn.; Chmn., Ad Hoc Comm. on Role of Patents in Rsch., Natl. Acad. of Scis. Mem.: I.R.E., Fellow; A.I.E.E., Fellow; Acoustical Soc. of Am., Fellow; Sigma Xi; Sigma Pi; Tau Beta Pi; Univ. Club of Chicago; Univ. Club of N. Y.; Cosmos Club, Wash. Areas of Rsch.: Physics in Area of Sound and Vibration Measurements, Acoustics, etc.

LEFFORGE, Roxy (Miss), Prof., Psychol. and Sociol., Huntington Coll., Huntington, Ind. Home Add.: 1945 Fruit St., Huntington, Ind.

PSYCHOLOGY AND SOCIOLOGY. b. North Manchester, Ind., Oct. 27, 1888. d. Littleton and Mary Emma (Jordan) L. Edn.: A.B., Ind. St. Tchrs. Coll., Terre Haute, Ind., 1924; M.A., Boston Univ., 1925; M.R.E., ibid., 1926; D.R.E., ibid., 1933. Exp.: Tchr., Chester Township Schls., Elementary Grades, 1906-09 and H. S., Wabash Co., Ind., 1909-12; Tchr., Clear Creek and Polk Twp. H. S., Huntington Co., Ind., 1913-16; Instr., Psychology, Huntington Coll., 1917-18; Hd., Dept. Edn. and Religious Edn., Hwa Nan Coll. for Women, Foochow, China, 1918-35; Gen. Secy., Relig. Edn., Meth. Ch., China, 1935-40; Prof. Harris Trng. Schl. & Union Theol. Sem., Manila, Philippines, 1941; Civilian in Internment Camps, Philippines, 1941-45; Director, Bethel Girls' High Schl., Manila, 1945-46; Executive Dean, Head, Philippine Christian Colleges, ibid., 1946-52; Pres., Wesleyan Coll., Cabanatuan City, Philippines, 1952-54; Prof., Psychology and Sociology, Huntington Coll., 1954—. Mem.: Natl. Soc. of Coll. Tchrs. of Education (Life Mem.); Natl. Soc. for the Study of Edn. (Life Mem.); Acad. Polit. and Soc. Scis.; In Acad. of Soc. Scis.; Delta Kappa Gamma. Author: What Religious Education, 1934; Fifty Stories with Worship Valu 1934; 1946. D.R.E. Dissertation: A Program of Christi Education for China Today. Gen. Int.: Founder, Bethel Girl H. S., Manila; Recd. Distinguished Alumnae Award from In State Tchrs. Coll., 1958. Listed in: W. W. of Am. Wome W. W. of Am. Educators.

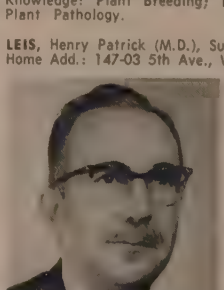
LeFEBVRE, Eugene Allen (Mr.), Rsch. Assoc., Univ. of Minn Minneapolis, Minn. Home Add.: 3889 Bellaire Ave., White Be Lake 10, Minn.

ORNITHOLOGY ECOLOGY. b. St. Paul, Minn Oct. 18, 1929. s. Clarence Josep and Lucille Christine (Willy) Edn.: B.S., Univ. of Minn., 195 M.S., ibid., 1958. m. Joyc Heckenlaible, 1954. Exp.: Bio Aide, Minn. Dept. of Conserv tion, St. Paul, Minn.; 1952; Tc ng. Asst., Univ. of Minn., 195 60; Rsch. Fellow, ibid., 1960-6 Res. Assoc., ibid., 1961—. Mem A.A.A.S.; Ecol. Soc.; Am. Aca of Arts and Scis.; Am. Ornitho Union; Coopers Ornithol. Clu British Trust for Ornithol.; Wil life Soc.; Wilderness Soc.; Natu Conservancy. Contbr. to: Auk Wilson Bull. Serv. Rec.: 1954-5 Areas of Rsch.: Vertebrate Ecol Studies in Avian Physiol. and Eco

LEHMAN, William Francis (Ph.D.), Asst. Agronomist, Univ. Calif., El Centro, Calif. Home Add.: Rt. 1, Box 121, El Centr

Calif. AGRONOMY AND GENETICS b. Montgomery, Minn., Apr. 2 1926. s. William E. and Mary (Washa) L. Edn.: B.S., Wartbu Coll., 1950; M.Sc., Univ. of Minn 1956; Ph.D., ibid., 1956. Betty H. Drysdale, Aug. 5, 195 c.: William D.; Barbara H. Exp Tchr., Gillett Grove, Iowa, 195 51; Grad. Asst., Univ. of Minn 1952-55; Jr. Agronomist, Univ. Calif., El Centro, Calif., 1956-58 Asst. Agronomist, ibid., 1958 Mem.: Am. Soc. of Agron.; A.A A.S.; Gamma Sigma Delta; Sigm Xi; Am. Genetic Assn. Contbr. t Agron. Jour.; Phytopathol.; Ecol Entomol. Serv. Rec.: U. S. Army 1944-46. Areas of Rsch.: Breed ing, Genetics and Mgmt. of A falfa and Soybeans. Specialize Knowledge: Plant Breeding; Plant Genetics; Crop Management Plant Pathology.

LEIS, Henry Patrick (M.D.), Surg., 2 E. 55th St., N. Y. 22, N. Y Home Add.: 147-03 5th Ave., Whitestone, N. Y.

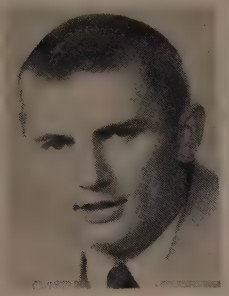


BREAST CANCER b. Saranac Lake, N. Y., Aug. 1 1914. s. Henry P., Sr. and Mar A. (Disco) L. Edn.: B.S., Fordha Univ., 1936; M.D., N. Y. Med Coll., 1941. m. Winogene Ba nette, Jan. 8, 1944. c.: Patrick Thomas. Exp.: Assoc. Clin. Pro of Surg. and Chief Breast Surg N. Y. Med. Coll., 1960—; Attend ing Surg., Flower and Fifth Ave Hosps., 1960—; Attending Visi Surg., Metroplitan and Coler Me morial Hosp., N. Y., N. Y., 196 —. Mem.: Am. Coll. of Surgs. Internatl. N. Y. Acad. of Sci N. Y. Counc. of Surg.; N. Y Acad. of Med.; Am. Med. Assn. Pan-Am. Med. Assn.; Natl. Soc for Med. Rsch.; A.A.A.S.; Soc Med. Jurisprudence; Am. Assn Univ. Prof.; World Med. Assn. Am. Geriatrics Soc.; Assn. Military Surg., U. S.; Phi Chi; Helmut Club. Contbr. to: Surg.; Jour. Intern. Coll. Surgs.; Jour. Am Geriatric Soc.; Jour. Ala. Med. Soc. Serv. Rec.: U. S. Army W.W. II. Areas of Rsch.: Breast Cancer.

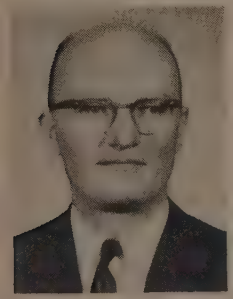
LEFLER, Ralph W. (Mr.), Assoc. Prof., Physics and Edn., Dept Physics, Purdue Univ., Lafayette, Ind. Home Add.: 115 W. Stadium Ave., W. Lafayette, Ind. SCIENCE TEACHER TRAINING; PHYSICS b. Huntington Co., Ind., Aug. 9, 1902. s. Ora and Nettie (Stout) L. Edn.: A.B., Ind. Univ., 1926; A.M., ibid., 1927 m. Elinor Atherton, Nov., 1927. c.: Margaret; Richard; Elizabeth. Exp.: Elementary Schl., Huntington Co., Ind., 1920-23; Grad. Asst., Physics Dept., Ind. Univ., 1926-27; Istr., Physics LaSalle-Peru H. S. and LaSalle-Peru-Oglesby Jr. Coll., 1927-43; Physics Instr., Purdue Univ., to Assoc. Prof. of Physics and Edn., ibid., 1943 ; Advisor, Physics, Cheng Kung Univ., Tainan, Taiwan, on leave from Purdue, 1957-59; Visiting Staff Consultant Am. Inst. of Physics, N.Y.C. while on leave from Purdue Univ. 1961-63. Mem.: Fellow, A.A.A.S.; Fellow, Ind. Acad. Scis.; Natl. Sci. Tchrs. Assn.; Am. Assn. Physics Tchrs.; Natl. Assn. Rsch. Sci. Tchng.; Central Assn. Sci. and Math. Tchrs. Co-Author Physics Problems, 1961. Contbrng. Author: School Facilities fo

Science Instruction, 1954. Contbr. to: A.A.A.S.; Cooperative Comm., Tchng. Sci. and Math.; Schl. Sci. and Math.; Bull. Natl. Assn. Secondary-Schl. Principals; Am. Jour. Physics; High Schl. Jour.; Welch Physics and Chem. Digest; Am. Schl. and Univ.; Coordinator for Preparation of Joint Report by N.S.T.A. and A.A.A.S. Cooperative Comm. on "Science Course Content and Teaching Apparatus Used in the Schools and Colleges of the United States," Submitted to Ministers of Edn. of Devastated Countries of United Nations through U. S. Dept. State.

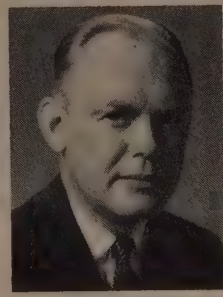
LEISSA, Arthur William (Ph.D.), Assoc. Prof., Dept. of Engrng. Mechanics, The Ohio State Univ., Columbus, Ohio. Home Add.: 821 Harley Dr., Columbus 2, Ohio. THEORETICAL MECHANICS (ELASTICITY AND VIBRATIONS). b. Wilmington, Dela., Nov. 16, 1931. s. Arthur M. and Marcella (Smith) L. Edn.: B.M.E., Ohio State Univ., 1954; M.Sc., ibid., 1954; Ph.D., ibid., 1958. m. Jo Ann Sayles, 1953. c.: Celia Lynn; Bradley Glenn. Exp.: Engr., Sperry Gyroscope Co., Great Neck, N. Y., 1954-55; Rsch. Assoc., Ohio State Univ. Rsch. Fdtn., Columbus, Ohio, 1955-56; Instr., Engr. Mech. Dept., Ohio State Univ., 1956-58; Faculty Assoc., Boeing Airplane Co., Seattle, Wash., summer, 1957; Asst. Prof., Engr. Mech. Dept., Ohio State Univ., 1958-61; Consultant, North Am. Aviation, Inc., Columbus, Ohio, 1958—; Assoc. Prof., Engrng. Mech. Dept., Ohio State Univ., 1961—. Hon. Pos.: Chmn., Univ. Symposium on Math. Mem.: Am. Soc. of Mech. Engrs.; Am. Soc. for Engrng. Edn.; Inst. of the Aero/Space Sciences; Am. Assn. Univ. Profs.; Sigma Xi; Phi Eta Sigma. Contbr. to: Wire and Wire Products; The Math. Tchr.; Jour. of Applied Mechanics; Jour. of the Aero-Space Sciences. Areas of Rsch.: Plates and Shells; Mixed Boundary Value Problems in the Mathematical Theory of Elasticity; Vibrations of Continuous Media; Approximate Methods for the Solution of Boundary Value, Eigenvalue, and Initial value problems.



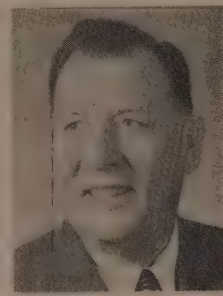
LEITH, Carlton James (Ph.D.), Assoc. Prof., N. C. St. Coll., Raleigh, N. C. Home Add.: 328 Meredith St., Raleigh, N. C. GEOLOGY. b. Madison, Wis., Sept. 24, 1919. s. Benjamin D. and Edna (Elkinton) L. Edn.: B.A., Univ. of Wis., 1940; M.A., ibid., 1941; Ph.D., Univ. of Calif., 1947. m. Marian Pollensky, June, 1941. c.: Carol Jean; Ronnie Sue. Exp.: Asst. Mineral Economist, U. S. Bur. of Mines, San Francisco, Calif., 1942-43; Geologist, Standard Oil Co. of Tex., Houston, Tex., 1946; Asst. Prof., Ind. Univ., Bloomington, Ind., 1947-49; Geologist, U. S. Corps of Engrs., San Francisco, Calif., 1949-51; Geologist, Standard Oil Co. of Calif., Los Angeles, Calif., and Bakersfield, Calif., 1951-60; Proj. Engr., Asst. Chf. Rsch. Engr., Holmes and Narver, Inc., Los Angeles, Calif., 1960-61; Assoc. Prof., N. C. St. Coll., Raleigh, N. C., 1961—. Mem.: Geological Soc. of Am.; Am. Assn. of Petroleum Geologists; Soc. of Econ. Paleontologists and Mineralogists; Am. Geophysical Union; A.A.A.S.; Sigma Xi; Phi Kappa Phi; Sigma Nu. Author: California Division of Mines Bulletin 147, 1949. Contbr. to: Science; Geological Soc. of Am. Bull.; Jour. of Sedimentary Petrology; Oil and Gas Jour. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Engineering Geology; Petroleum Exploration, Mineral Exploration.



LeMAITRE, Georges Edouard (Dr.), Prof. of French, Stanford Univ., Stanford, Calif. Home Add.: 576 Tennyson Ave., Palo Alto, Calif. MODERN FRENCH HISTORY, LITERATURE AND ART. b. Algiers, Nov. 26, 1898. s. Georges Emile and Clemence (Vadam) L. Edn.: Bachelier es-Lettres, Univ. of Algiers, 1916; Student, Ecole Normale Superieure, Paris, 1918-21; Agrege de l'Universite, Paris, 1921; Docteur es-Lettres, Sorbonne, 1931. m. Wynifred Eaves, 1937 (divorced). Exp.: Lectr., Fr. Inst. of London, 1925-27; Lectr., Dalhousie Univ., Halifax, N. S., 1927-28; Lectr., Univ. of Wis., 1928-29; Asst. Prof., McGill Univ., Montreal, Can., 1929-31; Assoc. Prof., ibid., 1931-38; Prof. of Romanic Languages, Stanford Univ., 1939—. Mem.: A.A.A.S.; Am. Acad. Polit. and Social Scis.; Authors' Club, London. Author: Four French Novelists, 1938; From Cubism to Surrealism, 1941; Beaumarchais, 1949. Serv. Rec.: French Army, 1921-23. Areas of Rsch.: Contemporary French Political Problems; Modern French History; Contemporary French Literature and Art.



LEMOINE, Albert Napoleon, Jr. (M.D.), Prof. and Chmn., Dept. Ophthalmology, Univ. of Kan. Schl. of Med., 39th at Rainbow, Kansas City, Kan. Home Add.: 9254 High Dr., Leawood, Kan. PHYSICIAN-OPHTHALMOLOGIST. b. Nelson, Neb., Apr. 13, 1918. s. Albert N. and Myrle (Koken) L. Edn.: B.A., Univ. of Kan., 1939; M.D., Wash. Univ. Schl. of Med., 1943. m. Jane Sanford, Dec., 1940. c.: Albert N, III; David S.; Linda Jean. Exp.: Intern, K. C. Gen. Hosp., Kans. City, Mo., 1943-44; Resident, Mass. Eye and Ear Infirmary, Boston, Mass., 1944-45; Tchng. Rsch. Fellow, ibid., 1945-46; Prof. and Chmn. Dept. Ophthalmology, Univ. of Kan. Schl. of Med., Kansas City, Kans., 1950—. Mem.: Sigma Xi; A.A.A.S.; Phi Gamma Delta; Rotary.



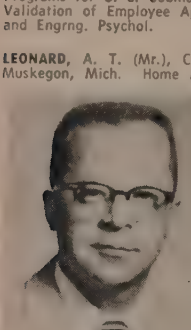
LENNON, Thomas Erwin (Mr.), Supt., Dodson Schls., Dodson, Tex. BIOLOGY. b. Miller Grove, Tex., July 28, 1902. s. Charles E. and Maude (Payne) L. Edn.: B.S., Southwestern State Coll., Okla., 1932; M.A., Western State Coll. of Colo., 1938. m. Loren McGuire, Aug. 10, 1930. c.: Jack; Barbara; Joe. Exp.: Supt., Ozark H. S., Granite, Okla., 1933-39; Co-Supt., Greer Co. Okla., Mangum, Okla., 1939-45; Supt., Dodson Schls., Dodson, Tex., 1946—. Hon. Pos.: Mem., Tex. Sci. Curriculum Studies, Austin, Tex.; Appointed Moon watch Sta. Leader, Dodson, Tex. by Smithsonian Astrophys. Obs., Cambridge, Mass. Mem.: Natl. Acad. of Scis.; Am. Geophys. Union; Tex. Acad. of Sci.; Natl. Sci. Tchrs. Assn.; Mason; Lions Club; Dodson Men's Club. Author: From Empire to County, 1938. Gen. Int.: Founder of the Dodson Sci. Museum. Areas of Rsch.: Science Curriculum in High Schools.

LE NOBLE, William J. (Ph.D.), Asst. Prof. of Chem., St. Univ. of N. Y., Long Island Center, Stony Brook, N. Y. Home Add.: 36 Crescent Drive, Huntington, N. Y. ORGANIC CHEMISTRY. b. Rotterdam, Holland, July 19, 1928. s. Wilhelmus and Anna (Hofstede) L. Edn.: Ph.D., Univ. of Chicago, 1957. m. Helene Ellis, Dec. 17, 1954. Exp.: Rsch. Chemist, Rohm and Haas Co., Phila., Pa., 1957; Instr., Rosary Coll., 1958; Post-Doctoral Fellow, Purdue Univ., 1958-59; Asst. Prof. of Chem., St. Univ. of N. Y., 1960—. Mem.: Am. Chem. Soc.; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem. Serv. Rec.: U. S. Army, 1951-53. Areas of Rsch.: Chemical Reactions under High Pressure; Decarboxylation Reactions.

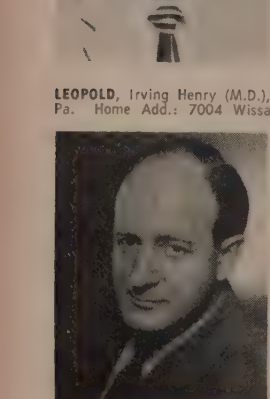
LENNOX, William Robert, Assoc. Prof., Engrng. Math. and Psychol., Los Angeles City Coll., Los Angeles, Calif. Home Add.: 345 Linda Vista Ave., Pasadena, Calif. RESEARCH METHODOLOGY AND STATISTICS RELATED TO ENGINEERING AND PSYCHOLOGY. b. St. Louis, Mo., Feb. 9, 1912. s. Robert and Agnes (McGlynn) L. Edn.: B.S., U. S. Naval Acad., 1934; M.A., Univ. of Sou. Calif., 1953. Hon. Deg.: M.W.L., Univ. of Wyo., 1950; Certified Psychologist, Calif., 1958. m. Jeannette Smalley of Muscatine, Ia., June 26, 1949. d. Bud and Elsie Smalley. c.: Susan Agnes; William Smalley; Andrew Malcolm. Exp.: Welding Engr., N. Y. Shipbuilding Corp., 1935; Comdr., C.C.C. Camps, 1936-38; For. Staff Engr., Stand. Oil, 1939-40; Sub. Comdr. and Officer-in-Chg., Anti-Submarine Warfare Trng., 1941-45; For. Staff Engr., Stand. Oil, 1946-48; Mgr., Electra, Netherland Antilles, 1948-49; Comdr. Submarines, 1949-53; Engrng. Instr., Pasadena City Coll., 1953-54; Los Angeles City Coll., 1954-61; Asst. Prof., Los Angeles St. Coll., Los Angeles, Calif., 1960—; Assoc. Prof., Los Angeles City Coll., 1962—. Mem.: A.P.A.; A.A.U.P.; A.S.E.E.; C.S.P.A.; E.A.A.; A.E.; Psi Chi; Phi Delta Kappa; A.C.S.M.; U.S.N.I. Areas of Rsch.: Selection

Programs for U. S. Submarine Service, and U. S. Naval Reserve; Validation of Employee Aptitude Survey; Human Factors Engrng. and Engrng. Psychol.

LEONARD, A. T. (Mr.), Consulting Psychologist, 1067 Pine St., Muskegon, Mich. Home Add.: 302 Third St., North Muskegon, Mich. PSYCHOLOGY. b. Mich., Oct. 21, 1917. s. Archie G. (dec.) and Mabel G. (Cook) L. Edn.: B.S., Detroit Inst. of Tech., 1942; M.A., Wayne St. Univ., 1947; Ph.D., candidate, Mich. St. Univ., 1949. m. Anne B. Bosma, 1958. c.: Karen; Charles. Exp.: Chf. Psych., Grand Rapids Child Guid. Clinic, Grand Rapids, Mich., 1948-58; Consulting Psychol., Self Employed, Muskegon, Mich., 1958 —. Hon. Pos.: Chmn., Bd. of Dirs., Lincoln Foundation. Mem.: Am. Psychol. Assn.; Mich. Psychol. Assn.; A.A.A.S.; Mich. Med. Soc.; Soc. for Projective Tech. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Psychotherapy, Applied (Industrial) Psychology, Psychodiagnosis.



LEOPOLD, Irving Henry (M.D.), 1711 Rittenhouse Square, Phila. 3, Pa. Home Add.: 7004 Wissahickon Ave., Phila. 19, Pa. OPHTHALMOLOGY. b. Phila., Pa., Apr. 19, 1915. s. Abraham and Dora (Schlow) L. Edn.: B.S., Pa. St. Univ., 1934; M.D., Univ. of Pa., 1938; D.Sc., ibid., 1943. m. Eunice Robinson, June 24, 1937. c.: John; Ellen. Exp.: Instr., Univ. of Pa. Med. Schl., 1941-46; Faculty Mem. in Chg. of Physiol., Home Study Course, Am. Acad. of Ophthalmology and Otolaryngol., 1945-59; Assoc., Univ. of Pa. Med. Schl., 1946-54; Lectr., Schl. of Edn., ibid., 1946-49; Assoc. in Ophthalmology, Grad. Schl. of Med., ibid., 1946-48; Clin. Asst., Wills Eye Hosp., 1946-47; Asst. Surgeon, ibid., 1947-49; Asst. Prof., Grad. Schl. of Med., Univ. of Pa., 1948-51; Dir. of Rsch., Wills Eye Hosp., 1949—; Sr. Asst. Surgeon, ibid., 1950-52; Assoc. Editor, Archives of Ophthalmol., 1950-53; Assoc. Prof., Grad. Schl. of Med., Univ. of Pa., 1951-55; Sr. Attending Ophthalmologist, Albert Einstein Med. Center, Northern Div., 1951-59; Contributing Editor, Survey of Ophthalmology, 1951-58; Attending Surgeon, Wills Eye Hosp., 1952—; Faculty Mem. in Chg. of Biochem., Maine Course in Ophthalmology, 1954 —; Prof. and Dept. Chmn., Grad. Schl. of Med., Univ. of Pa., 1955—; Chief, Dept. of Ophthalmology, St. Joseph's Hospital, 1955-59; Chmn., Dept. of Opthalmology, Albert Einstein Medical Center, 1956-59; Editorial Board, Jour. of Diabetes, 1956—; Editor-in-Chief, Survey of Ophthalmology, 1958-62; Consulting Ophthalmologist, St. Joseph's Hosp., 1959—; Center-Wide Consultant in Ophthalmol., Albert Einstein Med. Ctr., 1959—; Consultant Home Study Courses, Am. Acad. of Ophthalmol. and Otolaryngol., 1959—; Consulting Editor, E.E.N.T. Digest, 1959—; Med. Dir., Wills Eye Hosp., 1961—. Hon. Pos.: Trustee, Assn. for Rsch. Consult. Field Invstng. Comm.; Consult., Surg. Gen., U.S.P.H.; Chmn., Pharmacol. Comm., U. S. Pharmacopeia. Mem.: Am. Ophthalmol. Soc.; Sigma Xi; Alpha Omega Alpha; Philmont Country Club; Franklin Inst.; Phila. Art Alliance; Pa. Acad. of Fine Arts.; Am. Acad. of Ophthalmology and Otolaryngology; Assn. for Rsch. in Ophthalmology. Contbr. to: A.M.A. Archives of Ophthalmology; Am. Jour. of Med. Scis.; Am. Jour. of Ophthalmol.; Survey of Ophthalmol.; Proceedings of the Soc. for Exptl. Biology and Med.; Trans. Am. Ophthalmol. Soc. Gen. Int.: Zentmayer Award in Ophthalmology, 1945, 1949; Award of Merit, Am. Acad. of Ophthalmology and Otolaryngology, 1955; Edward Lorenzo Holmes Citation and Award, 1957; Friedenwald Medal, Assn. for Rsch. in Ophthalmology, 1960. Areas of Rsch.: Ocular Pharmacology, Physiology, Microbiology.

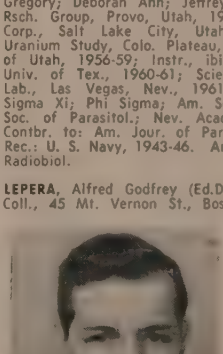


LEOPOLD, Jerome S. (M.D.), Pediatrician, 26 East 63rd St., New York 21, N. Y. Home Add.: 21 E. 52nd St., N. Y., N. Y. PEDIATRICS. b. Chicago, Ill., Aug. 18, 1881. s. Sam and Clara (Lowman) L. Edn.: B.A., Harvard Univ., 1903; M.D., ibid., 1906. Exp.: Mem. House Staff, Mt. Sinai Hosp., N.Y.C., 1906-07; Attending Pediatrician, A. Jacobi Div., Children Lenox Hill Hosp., N. Y., 1914; Dir. of Pediatrics, ibid., 1946-47; Consulting Pediatrician, N.Y.C., 1947—; Consulting Ped., Misericordia Hosp., N.Y.C., 1955—. Hon. Pos.: Former Clin. Prof. of Pediatrics, Univ. Coll. of Med., N. Y. Mem.: Acad. of Med.; N. Y. State Med. Soc.; Am Med. Assn.; Am. Acad. of Pediatrics; A.A.A.S.; Alumni Assn. of Lenox Hill Hosp.; Harvard Med. Soc. Contbrng. Author: System of Pediatrics, 1926. Contbr. to: Sixty Articles in Med. Jours. Gen. Int.: Received Lenox Hill Hosp. Medal of Distinguished Service, 1957; First Lenox Hill Hosp. Alumni Assn. Merit Award for Outstanding Service, 1962; Honored with opening of Jerome S. Leopold Med. Libr., Lenox Hill Hosp., 1962. Areas of Rsch.: Pediatrics.

LEOPOLD, Louis (Mr.), Aerospace Technologist, Electronics Rsc Engr., Natl. Aeronautics and Space Admin., Manned Spacecra Ctr., Houston, Tex.; Grp. Ldr. Chg. of Antennas and Microwa Systs. for Proj. Apollo Space V hicles. Home Add.: 8001 La Por Freeway, Houston 12, Tex. ELE TRICAL ENGINEERING; COMMUN CATIONS AND ELECTRONICS; ME ICAL ELECTRONICS. b. Bosto Mass., Mar. 8, 1918. s. Nath and Mary (Meyers) L. Edn.: B.S Univ. of Mich., 1941; Grad. Harvard-M.I.T. Radar Schl., 194 B.S., Ill. Inst. of Tech., 195 Grad. Study, Electrophysiolog Univ. of Chicago Med. Schl., 194 51. m. Wilma Erika Miron, De 27, 1947. c.: Robert Louis. Exp Electrical Engr., Kaiser-Fraz Corp., Willow Run, Mich., 194 49; Electronics Develop. Engr Magnecord, Inc., Chicago, Il 1952-53; Sr. Electronics Project Engr. and Grp. Ldr., Motorol Inc., Chicago, Ill., 1953-59; Electronics Aeronautical Rsch. Engr Project Mercury (Man in Space Program) Natl. Aeronautics a Space Administration, Langley Field, Va., 1959-60; NASA Rep for Project Mercury at McDonnell Aircraft Corp., St. Louis, Mo 1960-61; Head of Antennas and Microwave Systems, Proje Apollo (Manned Landing on Moon), 1961—. Hon. Pos.: Organiz and Chmn., Chicago Chapt. on Med. Electronics, Inst. of Rad Engrs.; Chmn., Ways and Means Comm., Chicago Sect., I.R.E Chmn., Papers Committee, Chicago Chapt. Med. Electronics; Bu Mgr. of SCANFAX, Jour. of Chicago Sect., I.R.E.; Secy. of Chicag Chapt. on Antennas and Propagation, I.R.E.; Mem. of Liaiso Comm. Between Med. Electronics of I.R.E. and the Coun. Med. Physics of the Am. Med. Assn.; Mem. of Exec. Comm Chicago Sect., I.R.E. Mem.: Inst. of Radio Engrs.; A.A.A.S Ill. State Acad. of Scis.; Internatl. Med. Electronics Assn Quadrangle Club; Univ. of Mich. Union. Contbr. to: SCANFA Serv. Rec.: Capt., U. S. Army Air Force, W.W. II; U. S. A Force Reserves, 1946—. Gen. Int.: In 1950 at Univ. of Mic Med. Schl., Imbedded Subminiature Radio Receiver in Chest Dog, Stimulated the Dog's Vagus Nerve by Radio Transmission Stop the Heart from Beating, then Revived It by Removing th Radio Signal; In 1958-59 Designed Antennas Used to Contr Automobile Traffic by Radio Transmission in Washington, D. C Responsible for Engrng. of Communications, Telemetry, Instr mentation and Electronics on Board the Project Mercury Man-i Space Capsules of the NASA, 1959-61; Responsible for Engrn of Antennas and Microwave Systems on Board the Project Apol Manned Lunar Spacecraft, 1961—. Areas of Rsch.: Electroni Engrng. and Physiol. (Medicine); Electro-Magnetic Propagation Outer Space; Chem. and Plastics Associated with Electronic Design of Antennas; Telemetry Transmission from Outer Spa Vehicles.

LEPAK, Joseph Werneth (Ph.D.), Scientist, South Western Radiolog cal Health Lab., U.S.P.H.S., Las Vegas, Nev. Home Add.: 330 Navajo Way, Las Vegas, Nev. MICROBIOLOGY. b. Pocatell Ida., Mar. 6, 1924. s. Joseph and Teresa (Werneth) L. Edn B.S., Seattle Univ., 1951; M.S., Univ. of Utah, 1955; Ph.D ibid., 1960. m. Gloria Tappero, Sept. 3, 1955. c.: Michae Gregory; Deborah Ann; Jeffrey; Brian. Exp.: Chemist, Stanfo Rsch. Group, Provo, Utah, 1954-55; Chemist, Kennecott Copp Corp., Salt Lake City, Utah, 1955-56; Biologist, U.S.P.H.S Uranium Study, Colo. Plateau, summer, 1954; Grad. Asst., Uni of Utah, 1956-59; Instr., ibid., 1959-60; Post-Doctoral Fellow Univ. of Tex., 1960-61; Scientist, U.S.P.H.S., Radiation Healt Lab., Las Vegas, Nev., 1961—. Mem.: Health Physics Soc Sigma Xi; Phi Sigma; Am. Soc. of Trop. Med. and Hyg.; Am Soc. of Parasitol.; Nev. Acad. of Sci.; Sigma Alpha Epsilo Contbr. to: Am. Jour. of Parasitol.; Utah Acad. of Sci. Ser Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Microbiol., Immunol Radiobiol.

LEPERA, Alfred Godfrey (Ed.D.), Prof. of Edn., Calvin Coolidg Coll., 45 Mt. Vernon St., Boston, Mass.; Instr., Brookline Pu Schls., Brookline, Mass. Hom Add.: 33 Grenville Rd., Wate town, Mass. SOCIAL GERONTO OGY; MENTAL RETARDATIO PSYCHOLOGY. b. Wate town, Mass., Aug. 10, 1921 George and Katherine (Levato) Edn.: B.A., Tufts Univ., 195 M.Ed., ibid., 1951. Hon. Deg Ed.D., Calvin Coolidge Coll., 195 m. Alfreda Natalie Graves, Fe 13, 1949. c.: Alfred Elmor Priscilla Anne. Exp.: Instr., Ma den, Mass., Pub. Schl., 1951-52 Instr., Newton, Mass., Pub. Schl 1952-54; Instr., Nashua, N. H Pub. Schl., 1955-59; Instr., Broo line, Mass., Pub. Schl., 1959- Prof. of Edn., Staley Coll., 195 58; Exec. Dir., Nokes Found., 19 —; Prof. of Edn., Calvin Coolidg Coll., 1955—. Hon. Pos.: Pres., Middlesex Co. Better Govt. Assn Acting Chmn., Calvin Coolidge Coll. Alumni Assn. Mem.: A Assn. Adv. Sci.; Natl. Edn. Soc.; Natl. Soc. for the Study Edn.; Am. Personnel and Guid. Assn.; Assn. for Higher Ed A.A.U.P.; Am. Gerontol. Soc.; Natl. Psychiatric Reform Ins

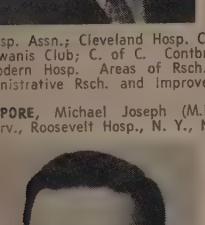


. for Study of Social Problems; Natl. Vocl. Assn. Serv. Rec.: S. Army Signal Corps, W.W. II. Areas of Rsch.: Social Geron- ogy and Social Psychol.

PINOT, Arthur August (Mr.), Supt., Lakewood Hosp., Lakewood, o. Home Add.: 1085 Parkside Dr., Lakewood 7, Ohio. HOSPITAL ADMINISTRATION, MEDICAL RESEARCH, OPERATIONS RESEARCH, AND PUBLIC HEALTH. b. Evansville, Ind., July 28, 1923. s. George (dec.) and Caroline (Beckerle) L. Edn.: M.B.A., Univ. of Chicago, 1950; B.S., ibid., 1947. m. Mae Lee Dow, Aug., 1948. c.: Jody Belle. Exp.: Administrative Resident, Aultman Hosp., Canton, Ohio, 1949-50; Asst. Supt., St. Luke's Hospital, Cleveland, Ohio, 1950-54; Administrator, Roswell Park Meml. Inst., Buffalo, N. Y., 1954-61; Supt., Lakewood Hosp., Lakewood, Ohio, 1961—. Mem.: Am. Coll. of Hosp. Administrators, Fellow; A.H.A.; A.A.A.S.; Am. Pub. Health Assn.; Assn. Am. Med. Coll.; Univ. Chicago Hosp. Admin. Alumni; Ohio

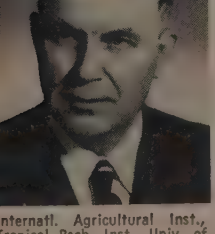
sp. Assn.; Cleveland Hosp. Coun.; Acad. of Med. of Cleveland; wanis Club; C. of C. Contbr. to: Hosps.; Jour. of Am. Hosp.; dern Hosp. Areas of Rsch.: Operations Rsch., including Administrative Rsch. and Improvement; Medical Rsch.

PORE, Michael Joseph (M.D.), Dir., Upjohn Gastrointestinal rv., Roosevelt Hosp., N. Y., N. Y. Home Add.: 80 N. Woodland St., Englewood, N. J. INTERNAL MEDICINE, GASTROENTEROLOGY. b. N. Y., N. Y., May 8, 1910. s. Joseph and Filomena (Meluccì) (dec.) L. Edn.: B.S., N. Y. Univ., 1929; M.S., Univ. of Rochester, 1931; M.D., ibid., Schl. of Med., 1934. m. Ardean Clough Everett, Sept. 18, 1937. c.: Frederick Everett. Exp.: Rsch. Fellow in Physiology, Univ. of Rochester Schl. of Med., 1930-31; Internship and Res. in Med., Duke Univ. Hosp., Durham, N. C., 1934-37; Am. Coll. of Physicians, Rsch. Fellow, Yale Med. Schl., 1935-36; Asst. Clin. Prof. of Med., Columbia Univ., Coll. of Phys. and Surgs., 1937—; Dir., Upjohn Gastrointestinal Service, Roosevelt Hosp., N. Y., N. Y.,



962—. Hon. Pos.: Pres., N. Y. Gastroenterological Assn. Mem.: ellow, Am. Coll. of Physicians; Fellow, N. Y. Acad. of Med.; ellow, N. Y. Acad. of Scis.; Am. Gastroenterological Assn.; . Y. Gastroenterological Assn.; Assn. of Med. Soc.; A.A.A.S.; oc. for Med. Jurisprudence; Diplomate, Am. Bd. of Internal ed.; Sigma Xi; Alpha Omega Alpha; Military Order of Foreign ars of the U. S. Contbr. to: Gastroenterology; Archives of nternal Med.; Am. Jour. of Med.; Am. Jour. of Physiol.; Annals f Internal Med. Serv. Rec.: U. S. Army, W.W. II., Lt. Col., Chf. f Med. Serv. 148th General Hosp., Western Pacific Base Comand (Saipan). Gen. Int.: Awarded the Army Commendation edal. Areas of Rsch.: Gastroenterology, Field of Special Interest, Malabsorption Disorders.

EPPIK, Elmar Emil (Dr. Natural Scis.), Rsch. Scientist, U. S. ept. of Agri., Ia. St. Univ., Ames, Ia. Home Add.: 509 Grand Ave., Ames, Ia. BOTANIST, PLANT PATHOLOGIST, ECOLOGIST. Edn.: Dr. of Natural Scis., Federal Tech. Univ. of Switzerland, Zurich, Switzerland, 1929. m. Lilly Hanson, 1930. c.: Virve; Marya; Avo; Ilo. Exp.: Fellow, Rockefeller Fdn., Switzerland, Italy, N. Africa, 1926-29; Prof., Univ. of Tartu, Estonia, 1930-44; Prof., U. S. Army Agriculture and Technical Schl., Germany, 1945-46; Prof., St. Horticult. Coll., Weihenstephan, Germany, 1946-50; Prof., Augustana Coll., 1950-55; Rsch. Scientist, Hormel Inst., Univ. of Minn., 1955-57; Rsch. Scientist, U.S.D.A., Ia. State Univ., 1957—. Hon. Pos.: Expert for Plant Protection of the League of Nations, Geneva, Switzerland, 1938 Delegate, Rome, Italy; Guest Investigator,



nternatl. Agricultural Inst., Tropical Rsch. Inst., Univ. of El Salvador, San Salvador, Central Am. Mem.: Soc. Zool. Bot. Fennica "Vanamo" Helsinki, Finand (corresp. mem.); Deutsche Gesellsch. f. angew. Entomologie, Germany; A.A.A.S.; Mycol. Soc. of Am.; Torrey Bot. Club; Am. Assn. of Plant Taxon.; Am. Ecol. Soc.; Sigma Xi; Soc. Lit Est. n Am.; Bee Rsch. Assn.; Soc. for the Study of Evolution; owa Academy of Sci.; Intern. Assn. for Plant Taxonomy; Am. Phytopath. Soc. Author: Diseases of Potatoes, Their Identification and Control, 1933; Merulius-rot of Hauses, Its Identification and Control, 1933; Diseases of Field Crops, 1935; Grasses and Legume Plants, Their Distribution and Use, 1938; Fungicides and Insecticides, 1942. Contbr. to: Annales Soc. Rebus. Nat. Invest. Tartuensis (editor, 1936-44); Zeitschr. f. Pflanzenkr. und Pflanzenshutz; Anzeiger f. Schadlinsbekampfung; Taxon.; Communic Inst. Trop.; Acta Biotheoretica; Arch. Soc. Zool. Bot. "Vanamo" Fennicae; Agricult. Chemicals; Am. Bee Jour.; Mycologia; Am. Naturalist; Am. Jour. of Botany; Evolution; Ann. Soc. Lit Est. in Am.; The Jour. of Nutrition; Am. Rose Annual; Lloydia; Plant Dis. Reporter; FAO Plant Protection Bull.; Advancing Frontiers of Plant Scis. Areas of Rsch.: Phylogeny of Rust Fungi (Uredinales); Diseases of Introduced Plants; Evolutionary Relationship Between Plants and Insects and Plants and Soils.

LERMAN, Jacob (M.D.), Physician, Mass. Gen. Hosp., 370 Commonwealth Ave., Boston 15, Mass. Home Add.: 86 Arlington Rd., Chestnut Hill, Mass. ENDOCRINOLOGY. b. Russia, Mar. 4, 1902. s. David and Ida. (Alter) L. Edn.: A.B., Harvard Coll., 1923; M.D., Harvard Med. Schl., 1927. m. Jeanne Rosenbaum (dec.), 1934. c.: Martin; Stephen; Roger. Exp.: Instr. in Med., Harvard Med. Schl., 1939-49; Clin. Assoc. in Med., ibid., 1949-61; Asst. Clin. Prof. Med., ibid., 1961; Asst. Physician, Mass. Gen. Hosp., Boston, Mass., 1938-46; Assoc. Physician, ibid., 1946-57; Physician, ibid., 1957—. Mem.: Soc. for Clin. Investigation; The Endocrine Soc.; Am. Thyroid Assn.; Phi Delta Epsilon. Contbr. to: Jour. Clin. Invest.; Jour. Endocrinol. and Metab. Areas of Rsch.: Thyroid Diseases; Cholesterol Metabolism; Hormone Antibodies and Their Function.

LESSOR, Arthur Eugene, Jr. (Ph.D.), Sr. Chemist, I.B.M. Corp., Kingston, N. Y. Home Add.: Clover St., W. Hurley, N. Y. CRYSTALLOGRAPHY, X-RAY DIFFRACTION. b. Schenectady, N. Y., Apr. 2, 1925. s. Arthur E., Sr. and Helen K. (Flansburg) L. Edn.: B.S., Union Coll., 1949; Ph.D., Ind. Univ., 1955. m. Edith D. Schroeder, Nov. 20, 1955. c.: Ralph Arthur; Karen Jean. Exp.: Asst. Prof., Univ. of Cincinnati, 1955-56; Anal. Chemist, Gen. Elec. Co., Schenectady, N. Y., 1956-59; Chemist, I.B.M. Corp., Kingston, N. Y., 1959—. Mem.: A.C.S.; A.A.A.S.; Am. Cryst. Assn.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Acta Crystallographica; Physical Rev. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Analytical Chem.; X-Ray Crystallography; Structure and Properties of Thin Films; Vacuum Evaporation Techniques; Thin Film Electronic Circuitry.

LETAW, Harry, Jr. (Ph.D.), Dir. of Advanced Programs, Electronics Div., Martin Co., Baltimore, Md. Home Add.: 6 River Road, Ben Oaks, Severna Park, Md. CHEMICAL PHYSICS. b. Miami, Fla., Aug. 7, 1926. s. Harry, Sr. and Ninda Louise (Cook) L. Edn.: B.S., Univ. of Fla., 1949; M.S., ibid., 1951; Ph.D., ibid., 1952. m. Joyce Winston Brown, June 4, 1947. c.: Anne Winston; Kaye Lynn; John Robert; Mary Jane; Amelia Elizabeth; James Brown. Exp.: Rsch. Asst. Prof., Univ. of Ill., 1952-55; Sr. Research Staff Mem., Raytheon Co., Waltham, Mass., 1955-61; Dir., Advanced Programs, Electronics Div., Martin Co., Baltimore, Md., 1961—. Mem.: Am. Physical Soc.; I.R.E.; A.F.C.E.A.; N.S.I.A.; Am. Rocket Soc.; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi; Delta Phi Alpha; Gamma Sigma Epsilon; Phi Sigma; Delta Tau Delta. Contbr. to: Physical Rev.; Jour. Chem. Physics; Jour. Physical Chem.; Rev. of Sci. Instr.; Jour. Chem. Phys. Solids; Jour. Applied Phys.; I.R.E. Trans. Serv. Rec.: U. S. Army, 1944-47. Areas of Rsch.: Solid State Physics; Molecular Chem.; Weapons Systems; Electrochem.; Space Systems.

LEUNG, Philip Min-Bun (Mr.), Rsch. Asst., Dept. of Nutrition, Food Sci. and Technology, M.I.T., Cambridge, Mass. Home Add.: 331 Harvard St., Cambridge, Mass. FOOD CHEMISTRY AND NUTRITIONAL BIOCHEMISTRY. b. Canton, China, July 31, 1935. s. Shiu-Tsze and Yu-Woon (Chu) L. Edn.: B.Sc., Provincial Coll., 1956; M.Sc., McGill Univ., 1959. Exp.: Rsch. Asst., Dept. of Agric. Chem., McGill Univ., 1957-59; Rsch. Asst., Dept. of Nutrition, Food Sci. and Technology, M.I.T., 1959—. Mem.: Sigma Xi; Phi Lambda Upsilon; Inst. of Food Technologist; Chem. Inst. of Canada. Areas of Rsch.: Food Chemistry and Nutritional Biochemistry.

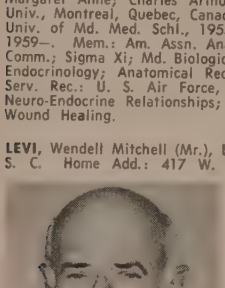
LEUTGOEB, Rosalia Aloisia (Ph.D.), Chmn., Chem. Dept., Northland Coll., Ashland, Wis. Home Add.: R. 1, Box 11, Maple Lane, Ashland, Wis. ELECTRO-ORGANIC CHEMISTRY. b. Vienna, Austria, Apr. 2, 1901. d. Ferdinand Schmid and Hermina (Dopler) Schmid. Edn.: B.S., Marquette Univ., 1935; M.S., ibid., 1936; Ph.D., ibid., 1938. m. John Leutgoeb, Aug., 1920. c.: John Leutgoeb. Exp.: Instr., St. Ambrose Coll., 1940-42; Rsch. Red Star Yeast Co., Milwaukee, Wis., 1942-44; Rsch. Chem., U. S. Govt. Labs., Akron, Ohio, 1944-45; Assoc. Prof., Mundelein Coll., 1945-49; Rsch. Chem., Froedert Grain and Malting Co., Milwaukee, Wis., 1950-52; Prof., Northland Coll., 1953. Mem.: A.C.S.; A.A.A.S.; Midwestern Assn. of Chem. Tchrs. in Lib. Arts Colls.; Sigma Gamma Chi; A.A.U.W. Contbr. to: Jour. A.C.S. Areas of Rsch.; Glucuronic Acid, Dried Yeast, Synthetic Rubber, Oxidation Mechanism.

LEVENSON, Carl (M.D.), Chief and Sr. Attending Physician, Dept. of Physical Med., Albert Einstein Med. Center, Phila., Pa.; Med. Dir., Moss Rehab. Hosp., Phila., Pa.; Instr., Grad. Schl. of Med., Univ. of Pa., Phila., Pa. Home Add.: Elkins Court Apt., Elkins

Ave. and Whitewood, Elkins Park, Pa. MEDICINE; SPECIALTY OF PHYSICAL MEDICINE AND REHABILITATION WITH PARTICULAR INTEREST IN ARTHRITIS AND RHEUMATIC DISEASES. b. N.Y.C., N. Y., Sept. 21, 1905. s. Aaron and Sarah Sonia (Asheron) L. Edn.: A.B., Cornell Univ., 1927; M.D., Long Island Coll. of Med., 1931. m. Mollie Pearl, Aug. 23, 1930. c.: Donald S. Exp.: Adjunct, Phys Med., Mt. Sinai Hosp, 1934-39; Asst., Dept. of Therapeutics, N. Y. Univ. Schl. of Med., 1936-38; Consult., Phys. Med. and Rehab. Office of Surgeon Gen., U. S. Army, 1946-50; Consult., Phys. Med. and Rehab., V. A., Pa., Del., N. J., 1946-50; Assoc. Dept. of Phys. Med., Grad. Schl. of Med., Univ. of Pa., 1947-50; Instr., ibid., 1960—; Fellow, Dept. of Phys. Med. and Rehab., Hosp., Univ. of Pa., 1958-60. Hon. Pos.: Consult. in Physiatrics, Arthritis and Rheumatism Found., Eastern Pa. Chapt., Philadelphia; Secy., Exec. Com., Med. Bd., Natl. Fdn., Philadelphia Chapt. Mem.: Am. Acad. Phys. Med. and Rehab.; Am. Rheumatism Assn.; Am. Med Assn.; Pa. Med. Soc.; Cty. Med. Soc.; Am. Cong. Phys. Med.; Am. Soc. Phys. Med.; Pa. Acad. of Phys. Med.; Am. Assn. for the Adv. of Sci.; Internatl. Soc. of Med. Hydrology; Phi Delta Epsilon. Contbr. to: Arch. Phys. Ther.; X-ray, Radium; Am. Jour. Med. Soc.; Med. Clinics No. Am.; Radiology; Arch. Phys. Med. Serv. Rec.: U. S. Army Med. Corps, 1942-46. Areas of Rsch.: Physiology of Fever (especially in fever used therapeutically); Physical Medicine in Arthritis; Evaluation of Results in Rehabilitation.

LEVEQUE, Theodore Francois (Ph.D.), Assoc. Prof., Anatomy, Univ. of Md., Schl. of Med., Baltimore, Md. Home Add.: 5921 Robindale Rd., Catonsville 28, Md. ANATOMY. b. Lewiston, Maine, June 30, 1921. s. Emile J. and Regina (Lajoie) L. Edn.: B.A., Univ. of Denver, 1949; M.S., ibid., 1950; Ph.D., Univ. of Colo. Med. Schl., 1954. m. Jeanne Donaldson, Apr. 11, 1947. c.: Margaret Anne; Charles Arthur. Exp.: Lectr., Histology, McGill Univ., Montreal, Quebec, Canada, 1954-55; Asst. Prof.,, Anatomy, Univ. of Md. Med. Schl., 1955-59; Assoc. Prof., Anatomy, ibid., 1959—. Mem.: Am. Assn. Anatomists; A.A.A.S.; Biological Stain Comm.; Sigma Xi; Md. Biological Soc.; Nu Sigma Nu. Contbr. to: Endocrinology; Anatomical Record; Zeitscheift fur Zellforschung. Serv. Rec.: U. S. Air Force, Capt., 1942-46. Areas of Rsch.: Neuro-Endocrine Relationships; Neurosecretion; Connective Tissue; Wound Healing.

LEVI, Wendell Mitchell (Mr.), Lawyer, 102½ N. Main St., Sumter, S. C. Home Add.: 417 W. Calhoun St., Sumter, S. C. ALL SCIENTIFIC FIELDS WHICH CROSS-SECTION THE PIGEON—ANATOMY, PHYSIOLOGY, GENETICS, BEHAVIOR, DISEASES AND PARASITES, AND NUTRITION. b. Sumter, S. C., Sept. 28, 1891. s. Mitchell and Estella (D'Ancona) L. Edn.: A.B., Coll. of Charleston, 1912; Ph.B., Univ. of Chicago, 1915; J.D., Univ. of Chicago Law Schl., 1915. m. Bertha Cecil London, June 20, 1921. c.: Estella D'Ancona L. Kirchheimer; Patricia London L. Barnett; Wendell Mitchell, Jr., M.D. Exp.: Pres., Palmetto Pigeon Plant, 1923-56; Chmn. of the Bd., ibid., 1956—. Hon. Pos.: Pres., Natl. Pigeon Assn., 1931-33; Pres., Am. Carneau Assn., 1942; Commander, Dept. of S. C. V.F.W., 1948-49; Pres., S. C. Camellia Soc., 1954. Mem.: Am. Genetic Assn.; World's Poultry Sci. Assn.; Poultry Sci. Assn.; Hon. Life Mem., Coll. of Charleston Alumni Assn.; Am. Assn. for the Adv. of Sci.; Kiwanis; Am. Legion; V.F.W. Author: Pigeon Raising, 1934, 1943, 1958; The Pigeon, 1941, 1946, 1951, 1957; Making Pigeons Pay, 1946, 1947, 1950, 1951, 1955. Editor: Question and Answer Dept., Am. Pigeon Jour., 1927—. Contbr. to: Am. Camellia Soc. Yearbook; The Camellia Bull.; Carolina Camellia Bull. Serv. Rec.: U. S. Army, 1917-18. Gen. Int.: Recipient of First Hall of Fame Award, Natl. Pigeon Assn., 1958.



LEVIN, Joseph David (Mr.), Rsch. Microbiologist, E. R. Squibb and Sons, New Brunswick, N. J. Home Add.: 244 Benner St., Highland Park, N. J. ANALYTICAL MICROBIOLOGY; MICROBIOLOGICAL ASSAY. b. N.Y.C., N. Y., Feb. 7, 1918. s. Irving and Anna (Brener) L. Edn.: B.S., Queens Coll., 1941. m. Carol S. Silverman, Aug. 31, 1947. c.: Jonathan T.; Susanna I. Exp.: Tech. Aide, E. R. Squibb and Sons, 1947-50; Rsch. Asst., ibid., 1950-53; Rsch. Asst., Supvr., ibid., 1953-59; Rsch. Scientist, Microbiologist, ibid., 1959—. Mem.: Am. Assn. Adv. Sci.; Am. Soc. Microbiol.; Am. Soc. Prof. Biol.; Jewish War Vets. of U.S.A. Contbr. to: Antibiotics Annual; Antibiotics and Chemotherapy. Serv. Rec.: U. S. Army, 1941-45. Gen. Int.: Co-developer of PAGANO-LEVIN Culture Medium, diagnostic aid for moniliasis. Areas of Rsch.: Analytical Microbiology; Microbiological Assay of Antibiotics and Related Fields.

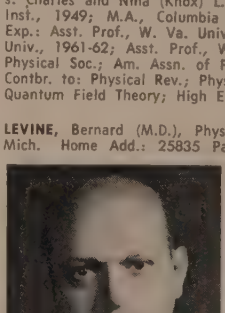
LEVIN, Lawrence Meyer (Ph.D.), Editor-in-Chf., The Book of Popular Science, Grolier Inc., 575 Lexington Ave., N. Y., N. Y. Home Add.: 25 Hutchinson Blvd., Mt. Vernon, N. Y. SCIENCE WRITING. b. Boston, Mass., Mar. 7, 1898. s. Zarah and Emily (Coken) L. Edn.: A.B., Harvard Univ., 1917; Ph.D., Columbia Univ., 1936. m. Ada Mandelstam, 1936. c.: Barbara Ann. Exp.: Free-lance Writing, Boston, Mass., 1926-28; Instr., Columbia Univ., 1928-36; Editor, Grolier Inc., N.Y.C., 1937—. Mem.: A.A.A.S.; Natl. Sci. Tchr. Assn. Author: Political Doctrine of Montesquieu's Esprit des Louis, 1936. Areas of Rsch.: History of Sci.

LEVIN, Simon (Mr.), Human Factors Sr. Engr., The Martin Co Baltimore, Md. Home Add.: 601 N. Charles St., Baltimore Md. HUMAN ENGINEERING. Brooklyn, N. Y., July 20, 192 s. Harry and Sonia (Yoshelofsk L. Edn.: Assoc. Deg., N. J. S Tchrs. Coll., 1941; B.S., Rutge Univ., 1948; M.S., Univ. of Pari Magna Cum Laude, 1950. Exp Rsch. Scientist, Lenox Hill Hosp N.Y.C., 1952-55; N. Y. Univ. Fa ulty, Coll. of Engrng., N.Y.C 1955-58; Human Engr., Courtne and Co., Philadelphia, 1958-59 Human Factors Engr., The Marti Co., 1959-60; Human Factors S Engr., ibid., 1960—. Mem.: Hu man Factors Soc. of Am.; Opera tions Rsch. Soc. of Am.; N. Y Acad. of Scis.; A.A.A.S.; Am Civil Liberty Union; Am. Ve Comm. Contbr. to: Artificial Limb Am. Coun. of Science. Serv. Rec.

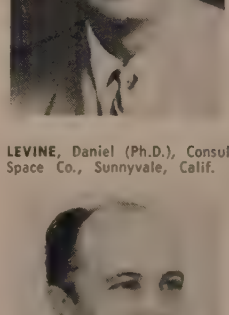
U.S.A.F., 1942-45. Gen. Int.: Authored summary report on opera tor requirements, training and trainers for Air Force school o Titan missile system; Developed personnel and equipment check lists and other rsch. instruments for an Air Force Co. checkou of the Mace missile system at Cape Canaverel; Performed task function and link analyses of maintenance checkout equipmen for this same weapon system; Developed a technique for task equipment analysis, and applied it to the development of Launch Console in a major missile system developing panel lay out; Supvr. of four other Human Factors Engineers in the de velopment of training equipment for an Air Force schl., per forming task and malfunction analysis of all the systems an subsystems to be simulated. Areas of Rsch.: Cancer Research Studies in the Psychosomatic Medicine; Systems Research i Air Traffic Control and Weapon Systems.

LEVINE, Arnold David (Ph.D.), Asst. Prof. of Physics, W. Va Univ., Morgantown, W. Va. Home Add.: 800 Prentis, Detroit 1 Mich. THEORETICAL PHYSICS. b. Brooklyn, N. Y., Oct. 24, 1925 s. Charles and Nina (Knox) L. Edn.: B.E.E., Brooklyn Polytech Inst., 1949; M.A., Columbia Univ., 1951; Ph.D., ibid., 1958 Exp.: Asst. Prof., W. Va. Univ., 1958-61; Asst. Prof., Wayne St Univ., 1961-62; Asst. Prof., W. Va. Univ., 1962—. Mem.: Am Physical Soc.; Am. Assn. of Physics Tchrs.; A.A.A.S.; Sigma Xi Contbr. to: Physical Rev.; Physical Rev. Letters. Areas of Rsch. Quantum Field Theory; High Energy Physics.

LEVINE, Bernard (M.D.), Physician, 25101 Coolidge, Oak Park Mich. Home Add.: 25835 Parkwood, Huntington Woods, Mich OBSTETRICS-GYNECOLOGY. b. De troit, Mich., Aug. 18, 1922. s Benjamin and Rose (Cooper) L Edn.: B.A., Univ. of Mich., 1943 M.D., Wayne St. Univ., 1950. m Estelle Kugler, 1947. c.: Elliott Leslie; Howard; Marcelle; Carole Brian. Exp.: Obstetrician and Gynecologist, Oak Park, Mich. 1953—. Hon. Pos.: Bd. of Trus tees, Mich. Cancer Found. Mem.: Am. Coll. of Obs. and Gyn.; Mich Obs. and Gyn. Soc.; Am. Soc. of Abdominal Surgeons; Phi Delta Epsilon. Contbr. to: Jour. of Obstetrics and Gynecology; Jour of Am. Bd. of Obs.-Gyn.; Jour. of Mich. St. Med. Soc.; Medical Times. Serv. Rec.: U.S.N.R., 1942 46. Areas of Rsch.: Cell Biology; Mechanisms of Carcinogenesis.



LEVINE, Daniel (Ph.D.), Consult. Scientist, Lockheed Missile and Space Co., Sunnyvale, Calif. Home Add.: 1043 Enderley Way, Sunnyvale, Calif. AIRBORNE RADAR AND PHOTOGRAPHIC SURVEILLANCE AND MAPPING; INSTRUMENTATION FOR DATA REDUCTION AND MAP-MAKING. b. N. Y., N. Y., July 21, 1920. s. Samuel and Ida (Halpern) L. Edn.: B.S., Univ. of Mich., 1941; M.S., ibid., 1942; M.Sc., Ohio St. Univ., 1948; Ph.D., ibid., 1955. m. Lee Rosanoff, Feb. 10, 1957. c.: Beth; Susan; David; Deborah. Exp.: Electronics Engr., Aircraft Radiation Lab., Wright-Patterson A.F.B., Ohio, 1946-51; Br. Tech. Consult., Search Radar Br., Aerial Reconnaissance Lab., ibid., 1953-54; Sr. Engr., Goodyear Aircraft Corp., Akron, Ohio, and Phoenix, Ariz., 1954-56; Consulting Engr., Phoenix, Ariz., 1956-61; Consulting

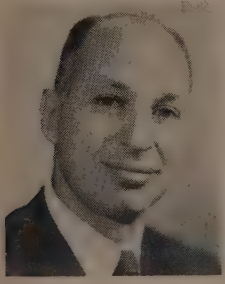


Scientist, Lockheed Missile and Space Co., Sunnyvale, Calif., 1961—. Mem.: Am. Astronautical Soc.; Sigma Xi; Inst. of Radio Engrs.; Am. Soc. of Pohtogramm.; Optical Soc. of Am.; Eta Kappa

Nu; Phi Kappa Phi; Phi Eta Sigma. Author: Radargrammetry, 1960. Contbr. to: Proc., I.R.E.; I.R.E. Trans. on Automatic Control; A.I.E.E. Communications and Electronics; I.R.E. Trans. on Aeronautical and Navigatnl. Electronics; Electronic Indus.; Jour. Soc. of Motion Picture and Television Engrs.; Jour. of Optical Soc. of Am.; Electronics. Serv. Rec.: U. S. Air Force, 1942-46; 1951-53; U. S. Air Force Reserve, 1946-51, 1953—. Areas of Rsch.: System design of aerial reconnaissance and mapping equipments, radar simulation for ground trainers and for guidance systems, antenna pattern and scanning theory, receiver dynamic compression characteristics, cathode-ray tube performance and testing, camera focus and exposure problems for finite conjugate distances, mathematical cartography, and instrumentation for photographic and radar stereo analysis.

LEVINE, Max (Ph.D.) (Retired), Dir., Bur. of Labs., Territorial Dept. of Health, Box 3378, Honolulu, Hawaii. Home Add.: 348 Hind Drive, Honolulu, Territory of Hawaii. b. Poland, Apr. 4, 1889. s. Julius and Rebecca (Mogelefky) L. Edn.: S.B., Mass. Inst. of Tech., 1912; Ph.D., St. Univ. of Ia., 1922. Hon. Deg.: Sc.D., Univ. of Hawaii, 1960. m. Adele Dine of Lawrence, Mass., 1911. c.: Norman Dine; Eugene B.; S. Edgar; Melvin L.; Thelma L. Exp.: Rsch. Asst., Mass. Inst. Tech., 1912-13; Bacteriologist, U.S.P.H.S., 1914; Instr., Ia. St. Coll., 1913-14; Asst. Prof., ibid., 1914-19; Assoc. Prof., ibid., 1919-24; Prof., ibid., 1924-47; Prof. in Charge of Dept., 1933-45; Rsch. Prof., Ia. Engrng. Exp. Sta., 1915-47; Chf., Bur. of Labs., Terr. Dept. Health, Honolulu, 1957-60; Rsch. Assoc., Univ. of Hawaii, 1948—. Mem.: A.A.A.S.; Inst. Food Tech.; Sigma Xi; Phi Kappa Phi; Mason. Author: Bacteriology Lab. Technique Compilation of Culture Med. for Cultivation of Microorganisms, 1st ed., 1927, 2nd ed., 1933, 3rd ed., 1953. Contbr. to: Jour. Am. Pub. Health; and many others. Ph.D. Dissertation: E coli and Allied Bacilli. War Record: W.W. I, Lieutenant and Captain, Sanitary Corps; W. W. II, Major, Lt. Colonel, and Colonel, Sanitary Corps. Hobby: Music. Listed in: W. W. in Am.; Who Knows—and What; A.M.S.; World Biog. Areas of Rsch.: Food and Sanitary Bacteriology; Antibiotics; Public Health; Bacteriology Intestinal Microbiology.

LEVINE, Sol (Mr.), Engrng. Mgr., The Martin Co., Baltimore, Md. Home Add.: 549 Brook Rd., Baltimore 4, Md. ELECTRICAL ENGINEERING. b. Bentleyville, Pa., Nov. 16, 1914. s. Sam and Bessie (Slesinger) L. Edn.: B.S., Waynesburg Coll., 1938; M.S., N. Y. Univ., 1948. m. Betty Broad, June 21, 1941. c.: Richard E.; James R. Exp.: Physicist, Signal Corps Labs., Ft. Monmouth, N. Y., 1942-43; Sr. Project Engr., Bendix Corp., Brooklyn, N. Y., Norwood, Mass., 1943-46; Chf. Engr., Edo Corp., N.Y.C., 1946-56; Chf. Engr., Sterling Precision Co., N.Y.C., 1956-57; Engrng. Dept. Mgr., The Martin Co., 1957-62; Engrng. Mgr., ibid., 1962—. Mem.: Assoc. Fellow, Inst. of the Aero-Space Scis.; Sr. Mem., Inst. of Radio Engrs.; Am. Rocket Soc. Author: Your Future in Electronic Engineering, 1960.



LEVINE, Sumner Norton (Ph.D.), Prof. of Engrng., Chmn. of Dept. Materials Scis., St. Univ. of N. Y., Stony Brook, L. I., N. Y. Home Add.: Univ. Dr., Setauket, L. I., N. Y. MATERIALS ENGINEERING, SEMICONDUCTORS, SOLID STATE ELECTRONICS, BIO-CHEMISTRY. b. Boston, Mass., Sept. 5, 1923. s. Frank and Lillian (Gold) L. Edn.: B.S., Brown Univ., 1946; Ph.D., Univ. of Wis., 1949. m. Caroline Gassner, Nov., 1952. c.: Joanne. Exp.: Tchng. Asst., Brown Univ., Providence, R. I., 1944-46; Tchng. and Rsch. Asst., Univ. of Wis., Madison, Wis., 1946-48; Instr., Univ. of Chicago, Ill., 1949-50; Sr. Rsch. Fellow, Columbia Univ., N. Y., 1950-54; Dir. of Rsch., U. S. Veterans Admin., East Orange, N. J., 1954-56; Sr. Scientist, Westinghouse Atomic Power, Pittsburgh, Pa., 1956; Dir. of Chem. Phys. and Metal Labs., Am. Machine and Foundry, Greenwich, Conn., 1956-58; Grad. Lectr. in Math., Univ. of Conn., Ext. Div., Greenwich, Conn., 1956-57; Sec. Hd., Solid State, Radio Corp. of Am., N. Y., 1958-61; Grad. Lectr., City Univ. of N. Y., 1959-60; Prof. and Chmn., Materials Sci., St. Univ. of N. Y., L. I., N. Y., 1961—; Editor in Chf., Dover Monographs in Sci. and Engrng., N. Y., 1961—; Editor, New Techniques for Energy Conversion, 1961. Mem.: Am. Physical Soc.; Institute of Radio Engrs.; Am. Chem. Soc.; Electrochemical Soc.; N. Y. Acad. of Sci.; Am. Soc. for Metals; Sigma Xi; Ind. Rsch. Soc. of Am. Contbr. to: Jour. Am. Chem. Soc.; Proc. of I.T.R.; Arch. Biochem. and Biophys.; Jour. Biol. Chem.; Próc. Am. Cancer Soc. Areas of Rsch.: Semiconductors, Thin Films, Integrated Electronics, Theory of Solids, Physical Mechanisms in Biology.

LEVINSON, Boris M. (Ph.D.), Prof., Grad. Schl. of Edn., Yeshiva Univ., 110 W. 57th St., N. Y. 19, N. Y. CLINICAL PSYCHOLOGY. b. Kalvarijah, Lithuania, July 1, 1907. s. Moses and Rose (Lev) L. Edn.: B.S., Coll. City of N. Y., 1937; M.S., ibid., 1938; Diplomate in Clinical Psychol., A.B.E.-P.P. Ph.D., N. Y. Univ., 1947. m. Ruth Berkowitz, June 16, 1934. c.: Martin; David. Exp.: Psychologist and later Chf. Psychologist, Adult. Guidance Service, Bd. of Edn., N.Y.C., 1937-40; Consulting Psychologist, 1938—; Clinical Psychologist, Veterans Rehabilitation and Mental Hygiene Clinics, Jewish Hosp. of Brooklyn, 1944-48; Supvng. Clin. Psychol., Psychol. Ctr., Yeshiva Univ., 1951-53; Asst. Prof., ibid., 1952; Assoc. Prof., ibid., 1954; Prof., ibid., 1956—; Chf. Psychologist, ibid., 1953—; Acting Dir., ibid., 1956; Dir., 1957; Lectr., City Coll., 1947-53; Lectr., Hunter Coll., 1949-59; Chief Psychologist, Jewish Memorial Hosp., 1957-59. Mem.: Fellow, Am. Psychol. Assn.; A.A.A.S.; Soc. for Projectile Techniques; Full Mem., N. Y. Soc. of Clin. Psychologists; Am. Group Psychotherapy Assn.; Eastern Psychological Assn.; N. Y. State Psychological Assn.; Inter-American Soc. in Psychol., A.A.U.P.; Phi Delta Kappa; Psi Chi. Contbr. to: Vivo Annual of Jewish Soc. Sci.; Jour. of Gerontol.; Jewish Social Studies; Psychiatric Quart. Supplement; Jour. of Edn. Psychol.; Jewish Parent, Am. Psychologist; Jour. of Genetic Psychol.; Jour. of Clinical Psychol.; Psychol. Reports; Genetic Psychol. Monog.; Jewish Edn.; Mental Hygiene; Hachinuch; Sheviley Hachinuch; Psychological Record; Yeshiva Edn. Special Int.: Psychotherapy; Treatment of Exceptional Children. Ph.D. Dissertation: A Comparative Study of Certain Homeless and Unattached Domiciled Men. Hobby: Astronomy. Listed in: W. W. in Am. Edn.; W. W. in World Jewry; A.M.S.; Jews in the World of Sci.; W. W. N. Y.

LEVIS, Curt Albert (Ph.D.), Assoc. Prof. and Dir. of Antenna Lab., Ohio State University, Columbus, Ohio. Home Add.: 957 Palmer Road, Columbus, Ohio. ELECTROMAGNETICS, ANTENNAS, COMMUNICATIONS. b. Berlin, Germany, Apr. 16, 1926. s. Leopold and Irene (Becker) L. Edn.: B.S. in E.E., Case Inst. of Techn., 1949; A.M. in App. Phys., Harvard Univ., 1950; Ph.D. in E.E., Ohio Sta. Univ., 1956. m. Katharine Slaven, June 22, 1958. c.: Alan Patrick. Exp.: Engr., Radio Stan., WSRS, Cleveland Hgts., Ohio, 1947-49; Rsch. Assoc. Antenna Lab., Ohio Sta. Univ., 1950-56; Assoc. Supvr., ibid., 1956-61; Dir., ibid., 1961—. Mem.: Sr. Mem., Inst. of Radio Engrs.; Zeta Psi; Sigma Xi; Eta Kappa Nu; Tau Beta Pi; Pi Mu Epsilon; Am. Youth Hostels. Contributor to: Procs. Institute of Radio Engineers; Trans. of Professional Group on Antennas and Propagation; I.R.E. Wescon Rec. Service Record.: U. S. Navy, 1944-46. Gen. Int.: Gerard Swope Fellow, General Elect. Edn'l. Fdtn., 1949-50. Areas of Rsch.: Antennas, Direction-Finding Systems, Electromagnetic Theory.

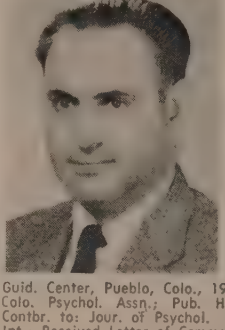
LEVY, Arthur G(ustavus) (Mr.), Consulting Engr., 621 West Bldg., Houston 2, Tex. Home Add.: 4313 Rossmoyne Blvd., Houston 6, Tex. TECHNOLOGY OF PETROLEUM AND NATURAL GAS: DRILLING, PRODUCTION AND RESERVOIR VALUATION. b. Rutland, Vt., June 26, 1893. s. Joseph and Gertrude (Peck) L. Edn.: Ph.B., Univ. of Vt., 1916. m. Gisella R. Schwarz, July 14, 1919. c.: Gertrude Lisette Levy Barnstone. Exp.: Driller, Foreman, Supt., Oil Fields, 1919-27; Supvr. of Geophysical Exploration, Drilling Engr., Chf. Petro. Engr., La.-Ark.-E. Tex. Texaco, 1928-37; Chf. Engr., Fohs Oil Co., Tex., 1938-46; Pvt. Consulting Practice, Houston, Tex., 1947—. Hon. Pos.: Chmn., Southwestern Dist., Am. Petro. Inst., 1937-38; Mem., Houston Engrs. Council, 1949-51. Mem.: S.P.E. of A.I.M.E.; A.A.-P.G.; A.A.A.S.; T.A.S.; N.S.P.E.; TSPE; Am. Petro. Inst.; Houston Club; Houston Engrng. and Scientific Soc. Contbr. to: Statistics of Oil and Gas Development and Production; Petroleum World; Oil and Gas Jour. Serv. Rec.: Vt. Natl. Guard, 1914-16; U. S. Army, 1917-19. Gen. Int.: Registered Profl. Engr. in Tex. and La. Areas of Rsch.: Technology of Oil and Gas Drilling and Production; Blowout Prevention and Control.

LEVY, Barnet M. (D.D.S.), Prof. of Pathol., The Univ. of Tex. Dental Branch, P. O. Box 20068, Houston 25, Tex. Home Add.: 3813 Durness, Houston, Tex. ORAL PATHOLOGY. b. Scranton, Pa., Jan. 13, 1917. s. J. J. and Sophia (Strauss) L. Edn.: A.B., Univ. of Pa., 1938; D.D.S., Univ. of Pa. Dental Schl., 1942; M.S., Bacteriology and Pathology, Med. Coll. of Va., 1944. m. Sylvia Salwen, 1940. Exp.: Instr. in Bacteriol., Pathol. and Clin. Dentistry, Med. Coll. of Va., 1942-44; Asst. Prof. of Bacteriol. and Pathol., Wash. Univ. Schl. of Dentistry, 1944-47; Assoc. in Pathol., Wash. Univ. Med. Schl., Wash. Univ., 1944-47; Assoc. Prof. of Pathol. and Chmn., Dept. of Pathol., ibid., 1947-49; Assoc. in Pathol., ibid., 1947-49; Prof. of Dentistry, Dir. of Rsch. and Postgraduate Studies, Columbia Univ. Schl. of Dental and Oral Surgery of the Faculty of Med., 1949-57; Mem., The Faculty of Med., Columbia Univ., 1954-56; Prof. of Pathol., Univ. of Tex. Dental Branch, 1957—. Hon. Pos.: Diplomate, Am. Bd. of Oral Pathol., Chmn., Dental Study Section, Natl. Institutes of Health; Comm. on Dentistry, Natl. Rsch. Coun.; Advisory Comm. for Dentistry, Internatl. Exchange of Persons; Sr. Consultant in Pathol. and Sr. Consultant in Oral Pathol., Rsch. Tumor Registry, M. D. Anderson Hosp. Mem.: Fellow, Am. Acad. of Oral Pathol.; Fellow, Am. Assn. for Adv. Sci.; Soc. Exptl. Pathol.; Soc. Exptl. Biol. and Med.; Histochemical Soc.; Am. Dental Assn.; Am. Assn. for Cancer Rsch.; Radiation Rsch. Soc.; Am. Public Health Assn.; Sigma Xi; Omicron Kappa Upsilon. Co-Author: Textbook of Oral Pathology, 1958. Contbr. to: Jour. of Dental Rsch.; Am. Jour. of Orthodontics and Oral Surgery; Jour. of Pharmacol. and Exptl. Therapeutics; Jour. of the Am. Dental Assn.; Am. Jour. of Tropical Med.; Procs. for the Soc. of Exptl. Biol. and Med.; Oral Surgery; Oral Med. and Oral Pathol.; Jour. of the Natl. Cancer Inst.; Cancer Rsch. Areas of Rsch.: Exptl. Oral Pathology, Tumorigenesis, Exptl. Bone Pathology, Problems of Calcification.

LEVY, Jerome (Ph.D.), Dir., Staff Develop. Project, Western Inter-State Comm. for Higher Edn., Fleming Law Bldg., Univ. of Colo., Boulder, Colo. Home Add.: 740 S. 46th St., Boulder, Colo. CLINICAL PSYCHOLOGY; COMMUNITY MENTAL HEALTH; PROFESSIONAL TRAINING OF MENTAL HEALTH DISCIPLINES. b. Brooklyn, N. Y., Dec. 14, 1925. s. Moe Louis and Minnie (Sharfstein) L. Edn.: B.A., Univ. of N. Mex., 1951; M.A., Univ. of Denver, 1953; Ph.D., ibid., 1956. m. Clara Elizabeth Cory, July 3, 1958. c.: Diane M.; Sheri. Exp.: Rsch. Asst., Univ. of Colo. Med. Center, 1954-56; Instr., U. S. Armed Forces Inst., Denver, Colo., 1956; Instr., Univ. of Denver, 1957; Chief of Psychol. Services, Colo. St., Dept. Public Health, Denver, Colo., 1956-59; Chief Psychologist, Div. of Mental Health, Tex. St. Dept. of Public Health, Austin, Tex., 1959-61; Dir., Staff Development Project, Western Interstate Comm. for Higher Edn., Univ. of Colo., 1961—. Hon. Pos.: Chmn., Pub. Relations Com., Tex. Psychol. Assn., 1960-61; Mem., Bd. of Dirs., Colo. Psychol. Assn., 1958-59. Mem.: Tex. Psychol. Assn.; Rocky Mountain Psychol. Assn.; Southwestern Psychol. Assn.; Am. Psychol. Assn.; Am. Assn. Adv. of Sci.; Psi Chi; Alpha Kappa Delta. Author: Reducing the Language Complexity of the Study of Values: A Revision, 1956. Contbr. to: Jour. of Ednl. Psychol.; The Am. Psychologist. Serv. Rec.: U. S. Navy, 1943-44. Areas of Rsch.: Clinical Psychology; Community Mental Health; Value Orientation as Dimensions of Personality.

LEVY, David Mordecai (M.D.), Psychiatrist, 47 E. 77th St., N. Y. 21, N. Y. Home Add.: 993 5th Ave., N. Y. 28, N. Y. CHILD PSYCHIATRY, RESEARCH. b. Scranton, Pa., Apr. 27, 1892. s. Benno C. and Sarah (Breakstone) L. Edn.: A.B., Harvard Univ., 1911; M.D., Univ. of Chicago, Rush Med. Schl., 1918. m. Adele Rosenwald, June 2, 1927. Exp.: Trng. and Supvng. Analyst, Psychoanalytic Clinic for Trng. and Rsch., Columbia Univ., 1944; Clin. Prof. of Psychiatry, Dept. of Psychiatry, ibid., 1944-57; Clin. Prof. of Psychiatry, Yale Univ., 1947-51; Prof. Lectr., St. Univ. of N. Y., Downtown Med. Ctr., 1959-60; Lectr., Dept. of Psychiatry, Columbia Univ., 1957—. Hon. Pos.: Thos. W. Salmon Mem. Lectr., 1946; Am. Psychiatric Assn. Academic Lectr., 1952; Samuel W. Hamilton Award Lectr., 1954; Sandor Radio Lectr., 1961. Mem.: Fellow, N. Y. Acad. of Med.; Fellow, N. Y. Acad. of Scis.; Foundi Mem., Assn. for Psychoanalytic and Psychosomatic Med.; Foun ing Mem., Am. Orthopsychiatric Assn.; Am. Psychiatric Ass Am. Acad. of Child Psychiatry; Am. Med. Assn.; Am. Assn. Ad Sci.; Am. Neurol. Assn.; Am. Psychol. Assn.; Am. Psychoanaly Assn.; Am. Psychopathol. Assn.; Am. Psychosomatic Soc. Autho Sibling Rivalry, 1937; Maternal Overprotection, 1943; Ne Fields of Psychiatry, 1947; Behavioral Analysis, 1958; T Demonstration Clinic, 1959. Contbr. to: Psychosomatic Med Arch. Neurol. and Psychiat.; Am. Jour. of Orthopsychiat Psychiat.; Am. Jour. of Psychiat.; Child Study Mag. Are of Rsch.: Psychodynamics; Child psychiatry; Rsch. in Spe Needs in animals and children; Relational behavior.

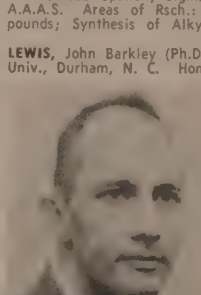
LEVY, Leo (Ph.D.), Chf. Psychologist-Administrator, Pueblo Gui Center, 151 Central Main St., Pueblo, Colo. Home Add.: 5 Dundee Ave., Pueblo, Colo. CLI ICAL PSYCHOLOGY. b. Brookly N. Y., July 11, 1928. s. Samu and Gussie (Krantz) L. Edn B.S., City Coll. of N. Y., 195 M.A., ibid., 1951; Ph.D., Univ. Wash., 1958. m. Annika Amee June, 1957. c.: Stephanie. Exp Clinical Psychol., Intern, Iow Psychopathic Hosp., Iowa City, Ia 1951-52; Rsch. Fellow, Univ. Wash., Seattle, Wash., 1952-5 Rsch. Asst. Human Rsch., Un No. 1, Ft. Knox, Ky., 1953-5 Voc. Counsellor, Univ. of Wash Seattle, Wash., 1955-56; Ext. I str., Univ. of Wash., 1957-5 Trainee, U. S. V.A. M.H.C., Seattl Wash., 1956-58; Instr., Univ. Mich., Ann Arbor, Mich., 195 60; Chf. Psychol. Admin., Pueb Guid. Center, Pueblo, Colo., 1960—. Mem.: Am. Psychol. Assn Colo. Psychol. Assn.; Pub. Health Assn.; A.A.A.S.; Sigma X Contbr. to: Jour. of Psychol. Serv. Rec.: A.U.S., 1953-55. Ge Int.: Received Letter of Commendation for Service to U. S. Army Areas of Rsch.: Psychodiagnostics; Psychotherapy; Communit Mental Health; Rehabilitation of Chronically Psychiatrically Patients.



LEWIS, Beverley West (Mr.), Aero space Technologist, N.A.S.A. Langley Rsch. Ctr., Langley Station, Hampton, Va. Home Add. 33 Fox Grove Dr., Hampton, Va. PHYSICAL CHEMISTRY. b. Norfolk, Va., June 23, 1921. s. Judd W. and Adelaide (Sykes L. Edn.: B.S., Coll. of William and Mary, 1946; M.S., Univ of Md., 1951. m. Gladys Toxey, June 17, 1949. c.: Sally A Exp.: Chemist, Johns Hopkins Univ., 1943; Rsch. Asst., Metal lurgical Lab., Univ. of Chicago, 1945-46; Instr. of Chem., Col of William and Mary, Va. Polytechnic Inst., 1947-48; Rsch. Fel low, Univ. of Md., 1949-51; Physical Chemist, U. S. Bureau o Mines, College Park, Md., 1951-54; Physical Chemist, U. S. Naval Powder Factory, Indian Head, Md., 1954-57; Aerospace Tech nologist, U. S. Aeronautics Space Administration, Langley Field Va., 1957—. Mem.: A.C.S.; A.A.A.S.; Phi Beta Kappa. Contbr to: Jour. of Physical Chem. Serv. Rec.: U. S. Army, 1943, 1944 46. Gen. Int.: Superior Accomplishment Award in Propellan Rsch., U. S. Naval Powder Factory, Indian Head, Md., 1957 Areas of Rsch.: Reaction Kinetics of Solutions; Oxidation Kinetic of Metals, Propellant Thermodynamics and Formulation; Propertie of Materials in Aerospace Environments.

LEWIS, Claude Irenius (Ph.D.), Chemist, Texaco, Inc., Port Arthu Research Center, Port Arthur, Tex. Home Add.: 6685 Val St Groves, Tex. ORGANIC CHEMISTRY. b. Stanley, N. C., Apr 21, 1935. s. George A. and Katie (Thornburg) L. Edn.: B.S Duke Univ., 1957; M.S., Va. Poly. Inst., 1959; Ph.D., ibid 1962 (cand.). m. Margaret Lail, Sept., 1956. c.: Laurie Leigh Exp.: Chemist, Texaco, Inc., Pt. Arthur, Tex., 1961—. Mem. Phi Lambda Upsilon; Sigma Xi; Phi Kappa Phi; Am. Chem. Soc., A.A.A.S. Areas of Rsch.: Synthesis of Polycylic Aromatic Com pounds; Synthesis of Alkyl Benzenes.

LEWIS, John Barkley (Ph.D.), Assoc. Prof. of Elec. Engrng., Duke Univ., Durham, N. C. Home Add.: 411 N. Gregson St., Durham N. C. ELECTRICAL ENGINEERING; AUTOMATIC CONTROL SYSTEMS. b. Poughkeepsie, N. Y., May 28, 1922. s. Stanley H. and Adeline (Barkley) L. Edn.: B.S., Duke Univ., 1944; B.S.E.E., ibid., 1947; M.S., Univ. of Tenn., 1951; Ph.D., Purdue Univ., 1961. m. Elizabeth Lasley, Sept. 1944. c.: Catherine; Christopher. Exp.: Instr., Duke Univ., Durham, N. C., 1947-48; Instr. and Asst. Prof., Univ. of Tenn., Knoxville, Tenn., 1948-55; Rsch. Engr., Mass. Inst. Tech., Lincoln Lab., Lexington, Mass., 1955-56; Dev. Engr., General Electric Co., Schenectady, N. Y., 1956-59; Instr., Purdue Univ., W. Lafayette, Ind., 1959-61; Assoc. Prof., Duke Univ., Durham, N. C., 1961—. Mem.: Phi Beta Kappa; Sigma Xi; Tau Beta Pi. Contbr. to: Trans. Am. Inst. of Elec. Engrs.; Trans. of I.R.E.; Control Engrng. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Nonlinear Feedback Control Systems; Digital and Analog Computers in Control Systems.



LEWIS, Cornelius Crawford (Ph.D.), Hd. Dept. of Ag., Prof. of Agronomy, Grambling Coll., Grambling, La. Home Add.: Grambling, La. AGRONOMY: SPECIALTY-SOIL FERTILITY AND RADIATION. b. Appomattox, Va., May 24, 1921. s. Mace R. and Martha J. (Patterson) L. Edn.: B.S., Va. State Coll., 1942; M.S., Mich. State Coll., 1945; Ph.D., Univ. of Mass., 1948. m. Martina Hall, Sept., 1949. Exp.: Prof. Agron., Ft. Valley State Coll., Ft. Valley, Ga., 1947-48; Hd. Dept. of Agr., W. Va. State Coll., Institute, W. Va., 1948-49; Prof. Agron., Maryland State Coll., Princess Anne, Md., 1949-51; Soils Spec., U.S.D.A. Liberia, W. Africa, 1951-54; Prof. Agron., A. & T. Coll., Greensboro, N. C., 1954-56; Hd. Dept. of Agr., Grambling Coll., La., 1956—. Mem.: Am. Soc. of Agron.; Internatl. Soc. Soil Sci.; A.A.A.S.; Am. Soc. of Plant Physiol.; A.S.U.P.; Sigma Xi; Phi Beta Sigma. Serv. Rec.: A.U.S., 1942-43. Areas of Rsch.: Relative Capacity of Plants to Absorb Potassium Ions from Orthoclase Feldspar; Plant Introduction, Fertilizer, Spaing, Variety Testing as related to soils and climate of Liberia, W. Africa; Gamma Radiation involving soil and plant studies in Ohio.

LEWIS, Lena Armstrong (Ph.D.), Staff Mem., Rsch. Div., Cleveland Clinic, Cleveland 6, Ohio. Home Add.: 386 South Belvoir Blvd., South Euclid, Ohio. PHYSIOLOGY.

b. Lancaster, Pa., July 12, 1910. d. John Wythe and Lena (Armstrong) L. Edn.: B.A., Lindenwood Coll., 1931; M.A., Ohio State Univ., 1938; Ph.D., ibid., 1940. Hon. Deg.: LL.D., Lindenwood Coll., 1952. Exp.: Technician, Lancaster Gen. Hosp., Lancaster, Pa., 1932-36; Rsch. Asst., Ohio State Univ., Columbus, Ohio, 1936-40; Rsch. Assoc., ibid., 1940-41; Fellow, Cleveland Clinic, Cleveland, Ohio, 1941-43; Staff Mem., ibid., 1943—. Mem.: Am. Physiol. Soc.; Sigma Xi; Coun. for Arteriosclerosis; American Heart Soc.; Endocrine Soc. Author: Electrophoresis in Physiology, 1961. Contbr. to: Am. Jour. of Physiol.; Circulation; Jour. Clinical Endocrinology. Areas of Rsch.: Research in cardiovascular physiology with special interest in the relation of changes in blood lipids to atherosclerosis. Studies on changes in plasma lipoproteins and proteins resulting from changes in central nervous system and endocrine activity.

LEWIS, Walter Wallace (D.Sc.), Prof. Emer., Elec. Engrng., Union Coll., 1675 Wendell Ave., Schenectady 8, N. Y. ELECTRICAL ENGINEERING. b. Oct. 4, 1881, Denver, Colo. s. John and Ada (Whigham) L. Edn.: B.S., Univ. of Colo., 1907; E.E., ibid., 1923; M.S., Union Coll., 1923; Sc.D., Univ. of Colo., 1936. m. Olive Carpenter of Stephentown, N. Y., June 14, 1924. d. George H. and Mary Carpenter. c.: Eleanor R. and Caroline O. Exp.: Testing Dept., Gen. Elec. Co., 1907-09; Transformer Dept., ibid., 1909-13; Asst. to Works, Elec. Engr., ibid., 1914-16; Power and Mining Engrng. Dept., ibid., 1917-20; Lighting Engrng. Dept., ibid., 1920-21; Central Sta. Engrng. Dept., ibid., 1922-46; Prof. of Elec. Engrng., Union Coll., 1946-56; In Chg. of Lightning Rsch. on Transmission Lines, 1925-46, Gen. Elec. Co. Hon. Pos.: Chmn., A.S.A. Com. on Code for Protection Against Lightning; Fellow, Amer. Inst. of Electrical Engrs. Mem.: Internatl. Conference on Large High Tension Electrical Systems; Tau Beta Pi; Sigma Xi. Author: Transmission Line Engrng., 1928; Protection of Transmission Systems Against Lightning, 1950; Basic Electric Circuit Theory, 1958; About 60 Papers in Technical Journals. Contbr. to: Elec. Engrng., Elec. World; Elec. Light and Power; Gen. Elec. Rev. War Record: 1st Lt., Ordnance Dept., U. S. Army, 1918. Travel: Japan; China; England; France; Italy; Germany; Belgium; Brazil; Argentina. Gen. Int.: Lightning Rsch. on Transmission Lines, 1925-46; Influenced Design of Transmission Lines and Apparatus Connected to Them. Hobbies: Choral Singing; Genealogy; Photography. Listed in: Who's Who in Engrng.; Who's Who in the East; Who Knows—and What; Who's Who in Am. Edn. Special Int.: Effects of Lightning on Transmission Systems and Buildings; Grounding of Systems; Protection of Systems and Buildings.

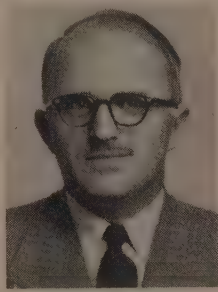
LEYENDECKER, Philip Jordon (Ph.D.), Dean, Dir. of Agric. and Home Econs., N. M. St. Univ., University Park, N. M. Home Add.: 509 El Prado, Las Cruces, N. M. PLANT PATHOLOGY AND PLANT TAXONOMY. b. Albuquerque, N. M., July 8, 1914. s. Philip J. Sr. and Elsie (Tousche) L. Edn.: B.S., N.M. St. Univ., 1938; M.S., Ia. St. Univ., 1939; Ph.D., ibid., 1948. m. Hivana Stroope, Mar. 14, 1937. c.: Albert Jordon; William Eugene; Philip Gerald; Karen Lee. Exp.: Tchng. Asst., Ia. St. Univ., 1938-41; Asst. Prof., N. M. St. Univ., 1945-48; Assoc. Prof., ibid., 1949-54; Prof., Head, Agric. Serv. Dept., ibid., 1954-58; Asst. Dean, Agric. and Home Econs., ibid., 1958-59; Dean and Dir., Agric. and Home Econs., ibid., 1960—. Mem.: A.A.A.S.; Phytopathological Soc.; Torrey Botannical Club; Ia. Acad. of Sci.; Sigma Alpha Epsilon; Alpha Zeta; Tri-Beta; Sigma Xi; Alpha Tau Alpha; Lions Club; P.T.A.; Scouts; R.O.A. Contbr. to: Phytopathol.; Bull. of Torrey Botannical Club; Plant Disease Reporter; Tech. Bulls., N. M. Expt. Sta. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Phytopathological and Taxonomic Rsch. with Special Emphasis on Soil Borne Diseases and Southwestern Flora.

L'HEUREUX, Maurice Victor (Ph.D.), Prof., Dept. of Biochem., Stritch Schl. of Med., Loyola Univ., 706 S. Wolcott Ave., Chicago 12, Ill. Home Add.: 304 W. Kenilworth Ave., Villa Park, Ill. BIOCHEMISTRY. b. Lewiston, Me., May 23, 1914. s. Victor Charles and Atala (Gagnon) L. Edn.: B.S., Holy Cross Coll., 1936; M.S., ibid., 1937; Ph.D., Yale Univ., 1944. m. Patricia Marie-Anne St. Pierre, Jan. 31, 1946. c.: Victor C.; Pierre F.; David M.; Paul J.; Claude E. Exp.: Control Chemist, Stokely Bros. Van Camp, Inc., Indianapolis, Ind., 1940-41; Assoc., Dept. of Biochem., Stritch Schl. of Med., Loyola Univ., 1946-49; Asst. Prof., ibid., 1949-54; Assoc. Prof., ibid., 1954-59; Prof., ibid., 1959—. Mem.: A.C.S.; Am. Soc. of Biol. Chemist; A.A.A.S.; Sigma Xi; Phi Beta Pi. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Chemistry and Physiological Aspects of the Parathyroid Hormone.

LIBACKYJ, Anfir (Mr.), Rsch. Fellow, Polytechnic Inst. of Brooklyn, 333 Jay St., Brooklyn, N. Y. Home Add.: 84-22, 107 Ave., Ozone Park 17, N. Y. PHYSICAL CHEMISTRY. b. Mosuriwci, Ukraine, Sept. 8, 1926. s. Rev. Serhij and Katheryna (Slowinskyj) L. Edn.: Dipl., Liege Univ., 1954. Exp.: Rsch. Asst., Liege Univ., Liege, Belgium, 1954-55; Chemist, American Viscose Corp., Marcus Hook, Pa., 1956-58; Rsch. Fellow, Poly. Inst. of Brooklyn, N. Y., 1959—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Phi Lambda Upsilon. Areas of Rsch.: Colloid Chemistry, Small Angle X-Ray Scattering; Thermodynamics.

LINDAU, Jules W., III (Mr.), Mech. Engr., Sou. Plastics Co., 408 Pendleton St., Columbia, S. C. Home Add.: 445 Saluda Ave., Columbia, S. C. MECHANICAL ENGINEERING. b. Greensboro, N. C., Aug. 20, 1909. s. Jules W., Jr. and Betty (Tashman) L. Edn.: M.E., Rensselaer Polytechnic Inst., 1931. m. Beatrice Perl, Nov. 28, 1930. c.: Betty Dene; Jules W. IV; Susan T.; Bertha L. Exp.: Draftsman, Western Elec. Co., Kearny, N. J., 1930; Lab. Asst., Publ. Serv., N. J., 1931; Serv. Mgr., I.B.M., Columbia, S. C., 1932-37; Pres., Capital City Photocopy Co., Columbia, S. C., 1937—; Mech. Engr., Pres., Sou. Plastics Co., Columbia, S. C., 1939—; Vice-Pres., Palmetto Radio Corp., Columbia, S. C., 1946—; Prof., Univ. S. C., 1942—. Hon. Pos.: Mem., Richland County Commn. for Tech. Edn.; Pres., Family Serv. Assn.; Vice Pres., Soc. Plastic Engrs. Mem.: A.S.M.E.; A.A.A.S.; Illuminating Engrng. Soc.; LeConte Sci. Soc.; C. of C.; A.S.E.E.; Chmn., Bd. of Trustees, Plastic Inst. of Am.; Brit. Plastic Inst.; Tau Beta Pi. Areas of Rsch.: Macromolecular Materials, High Polymer Manufacture and Processing, Solid State.

LICHTENWALTER, Myrl Carl (Mr.), Inst. Biol., William H. Wells H. S., 936 North Ashland Ave., Chicago 22, Ill. Home Add.: 5061 North St. Louis Ave., Chicago 25, Ill. BIOLOGY, VOCABULARY RESEARCH. b. Clarksburg, Ill., Oct. 11, 1900. s. William Henry L. and Daisy M. (Workman) L. Edn.: A.B., Univ. of Mich., 1923; M.A., Univ. of Southern Calif., 1929. m. Esther Falk, Dec. 1, 1922. c.: Mrs. Ruth J. Lucas; Mrs. Myrl Annette Den Besten. Exp.: Tchr., Gallup, New Mex. H. S., Gallup, N. Mex., 1923-27; Prin., Grade-H. S., Fulton, Ind., 1927-29; Prin., Grade Schl., Kokomo, Ind., 1929-31; Tchr., Township H. S., Centralia, Ill., 1931-35; Tchr., Chicago Public Schls,. Chicago, Ill., 1935-62; Writer, Chicago Curriculum Bureau, Chicago, Ill., 1958; Writer, Biological Scis. Curriculum, Study, A.I.B.S., 1960; Inst. Biol., William H. Wells H. S., North Ashland, Chicago, Ill., 1961—. Hon. Pos.: Chmn., Ill. Biol. Curriculum Comm.; Aims and Objectives Comm., Tchng. Biol., Chicago, Ill.; Past Pres., Chicago Biol. Round Table; First Pres., Natl. Assn. of Biol. Tchrs. Mem.: A.A.A.S.; Natl. Assn. of Biol. Tchrs.; Central Assn. of Sci. and Math. Tchrs.; Natl. Sci. Tchrs. Assn.; Royal Arch Mason. Contbr. to: Sci. Tchr.; Schl. Sci. and Math.; Am. Biol. Tchr.; A.A.A.S.; N. Mex. State Tchrs. Assn.; Natl. Assn. of Biol. Tchrs. Areas of Rsch.: Science Curriculum especially the Secondary Schl. area, with emphasis on Biol. and its Vocabulary; Mem. Natl. Comm. Standards for Degrees for Teaching Biol.



LIEBER, Eugene (Ph.D.), Prof., Chmn., Dept. of Chem., Roosevelt Univ., Chicago 5, Ill. CHEMISTRY. b. Philadelphia, Pa., July 15, 1907. s. Samuel and Rose (Diamond) L. Edn.: B.S., Towne Scientific Schl., Univ. of Pa., 1930; M.S., Polytechnic Inst. of Brooklyn, 1934; Ph.D., ibid., 1937. Exp.: Rsch. Chemist, Standard Oil Co., N. J., 1930-45; Technical Dir., Nox-Rust Chemical Corp., Chicago, Ill., 1945-57; Sr. Rsch. Chemist, Basic Rsch. Lab., Armour & Co., Chicago, Ill., 1947-48; Instr. of Chem., Polytechnic Inst. of Brooklyn, 1937-45; Assoc. Prof. of Chem., Ill. Inst. of Technol., 1948-51; Consultant to Chem., U. S. Naval Ordnance Test Station, China Lake, Calif., 1949-51; Consultant to Olin Industries, Western Cartridge Co., E. Alton, Ill., 1949-

51; Consultant, Armour Rsch. Foundation, Chicago, Ill., 1948-51; Head, Inorganic Chem. Branch, U. S. Naval Ordnance Test Station, China Lake, Calif., 1951-52; Head, Chem. Div., Rsch. Dept., ibid., 1952-53; Assoc. Prof. of Chem., Purdue Univ., 1953-55; Assoc. Prof. of Chem., DePaul Univ., 1955; Prof. of Chem., ibid., 1957-59; Chmn., Dept., Chem., Prof., Roosevelt Univ., 1959—. Mem.: A.C.S.; Soc. of Applied Spectroscopy; Am. Inst. of Chemists, Fellow; A.A.A.S.; Chemical Soc. of London, Fellow; Soc. of Chemical Industry, London; Ill. St. Acad. of Sci.; Catalysis Club of Chicago; Chicago Chemists Club; A.A.U.P.; Phi Lambda Upsilon; Pi Mu Epsilon; Sigma Xi; Tau Beta Pi; Alpha Chi Sigma. Contbr. to: Ind. Eng. Chem.; Jour. A.C.S.; Jour. Organic Chem.; Chem. Rev.; Anal. Chem.; Advances in Catalysis; Current Sci.; Jour. Sci. Ind. Rsch.; Canadian Jour. of Chem.; Org. Syn.; Spectrochimica Acta; Chem. and Ind.; Trans. Ill. Acad. of Sci.; Inorg. Chem. Gen. Int.: Patriotic Civilian Service Award, Certificate of Appreciation for Patriotic Civilian Service, 1962. Areas of Rsch.: Nitrogen chemistry, oxides, heterocycles, explosives.

LIELMEZS, Janis (Mr.), Asst. Prof., Chem. Engrng. Dept. and Rsch. Engr., Inst. of Mineral Rsch., Mich. Coll. of Mining and Tech., Houghton, Mich. Home Address: 1407 College Avenue, Houghton, Mich. CLASSICAL AND IRREVERSIBLE THERMODYNAMICS. b. District of Riga, Latvia, June 1, 1926. s. Janis and Amalija (Berzins) L. Edn.: B.S., Univ. of Denver, 1954; M.S., Northwestern Univ., 1956. Exp.: Rsch. Asst., Northwestern Univ. Evanston, Ill., 1955-56; Rsch. Engr., SIPRE, Corps of Engrs., Wilmette, Ill., 1956; Rsch. Asst., Princeton Univ., N. J. 1956-57; Engr. and Consult., Shell Dev. Co., Emeryville, Calif., 1957-59; Private Consulting Engr., 1959-60; Rsch. Engr., Mich. Coll. of Mining and Tech., Houghton, Mich., 1961—; Asst. Prof., ibid., 1962—. Mem.: Am. Chemical Soc.; The N. Y. Acad. of Sci.; Assn. of Highway Rsch. Bd.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon; Latvian Academic Student Fraternity "Talavia." Co-Author: Shell Development Company Technical Publications. Areas of Rsch.: Phase transformations; Magnetism and phase transformations; Clay-Water Systems, Fluid Flow in Porous Media; Studies of Ice Lens Growth. Teaching: Rate Kinetics and Thermodynamics.

LIEN, Jesse Rudolph (Mr.), Vice-Pres. and Gen. Mgr., Sylvania Electronic Systems-West, P. O. Box 188, Mtn. View, Calif. Home Add.: 696 Giralda Dr., Los Altos, Calif. PHYSICS. b. Portland, Ore., Nov. 15, 1917. s. Rudolph C. and Maude A. (Glazner) L. Edn.: B.A., Reed Coll., 1937; M.A., Boston Univ., 1953. m. Wilma M. Richard, Aug. 9, 1941. c.: Gregory R.; Kevin J. Exp.: Communications Engr., Northwestern Elec. Co., Portland, Ore., 1941-42; Proj. Engr., M.I.T. Radiation Lab., Cambridge, Mass., 1942-45; Rsch. Engr., Naval Rsch. Lab., Wash., D. C., 1945-46; Asst. Lab. Mgr, AF Cambridge Rsch. Center, Bedford, Mass., 1946-53; Sect. Hd., Electronic Defense Lab., Mtn. View, Calif., 1953-54; Engrng. Mgr., Electronic Systems Br., Elec. Defense Labs., ibid., 1954-57; Dir., Sylvania Electronic Defense Lab., ibid., 1957-61; Vice-Pres. and Gen. Mgr., Sylvania Elec. Systems-West, ibid., 1961—. Hon. Pos.: Mem. of Sci. Advisory Panel; Natl. Security Agency; Chmn. of Systems Panel of Dept. of Defense Advisory Group on Elec. Warfare; Mem., Army Signal Corps Rsch. and Development Adv. Coun. Mem.: Sci. Rsch. Soc. of Am.; Am. Rocket Soc.; Am. Astronautical Soc.; A.A.A.S.; Operations Rsch. Soc. of Am.; Am. Mgmt. Assn.; Assn. of the U. S. Army. Contbr. to: Phys. Rev.; 1 Chapt., Ionosphere Research of Rocket-Borne Instruments, 1954; Vol. 3, M.I.T. Radiation Lab. Series. Areas of Rsch.: Ionosphere Investigations and Electronic Systems.

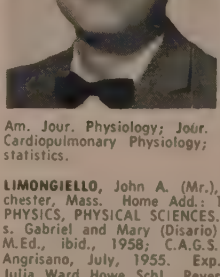
LIEPINS, Raimond (Ph.D.), Rsch. Chemist, Rsch. Center, The B. F. Goodrich Co., Brecksville, Ohio. Home Add.: 7623 Brecksville Rd., Independence, Ohio. ORGANIC AND POLYMERS CHEMISTRY. b. Plavinas, Latvia, May 19, 1930. s. Otto and Zelma (Muiasko) L. Edn.: B.A., Sou. Ill. Univ., 1954; M.S., Univ. of Minn., 1956; Ph.D., Kan. St. Univ., 1960. m. Leila Zayas, 1961. Exp.: Rsch. Chem., B. F. Goodrich Co., Brecksville, Ohio, 1960—. Mem.: A.C.S.; A.A.A.S.; The Natl. Geographic Soc.; Phi Lambda Upsilon. Contbr. to: Jour. of Org. Chem. Areas of Rsch.: Reactive Polymers; Organic Reaction Mechanisms.

LIER, Frank George (Ph.D.), Assoc. Prof. of Botany, Dept. of Botany, Columbia Univ., N. Y. 27, N. Y. Home Add.: 23 Hickory Hill Rd., Tappan, N. Y. PLANT ANATOMY AND MORPHOLOGY. b. N.Y.C., Feb. 19, 1913. s. Frank and Anna (Leitl) L. Edn.: A.B., Columbia Coll., 1935; M.A., Columbia Univ., 1937; Ph.D., ibid., 1950. m. Ethel Moritz, Dec. 23, 1937. Exp.: Tchr. of Sci., Pub. Schls., Bronxville, N. Y., 1936-42; Lctr., Asst. Prof., Columbia Univ., 1946—. Hon. Pos.: Recording Secy., Torrey Botanical Club. Mem.: Botanical Soc. of Am.; N. Y. Acad. of Sci.; A.A.A.S.; Sigma Xi. Contbr. to: Am. Jour. of Botany, Bull. of the Torrey Botanical Club. Serv. Rec.: U.S.A.F., 1942-46. Areas of Rsch.: Three Dimensional Shapes of Cells, Cell Division, Cell Wall Structure.

LIETZKE, Milton Henry (Ph.D.), Grp. Ldr., Physical Chem., Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 344 East Drive, Oak Ridge, Tenn. PHYSICAL CHEMISTRY. b. Syracuse, N. Y., Nov. 23, 1920. s. Henry Robert and Emma (Gutknecht) L. Edn.: B.A., Colgate Univ., 1942; M.S., Univ. of Wis., 1944; Ph.D., ibid., 1949. m. Marjorie Padrutt, May, 1943. c.: Kathryn Anne; Milton H., Jr.; Carol Lynn. Exp.: Grad. Asst. and Instr., Univ. of Wis., Madison, Wis., 1942-49; Analytical Supvr., Tenn. Eastman Corp., Oak Ridge, Tenn., 1944-47; Chemist, Grp. Ldr., Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1949—. Hon. Pos.: Program Chmn., A.C.S., East Tenn. Sect. Mem.: Phi Beta Kappa; Sigma Xi; Delta Phi Alpha; Alpha Chi Sigma. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Science; Industrial and Engrng. Chem.; Jour. Chem. Edn.; Jour. Electrochem. Areas of Rsch.: Thermodynamics; Application of High Speed Computer Techniques to Chemistry; Kinetics; Corrosion; Electrochemistry.

LIGHT, Israel (Ed.D.), Special Projects Officer, U.S.P.H.S., Wash., D. C. Home Add.: 6101 16th St., N.W., Wash. 11, D. C. PUBLIC HEALTH, MEDICINE, SANITARY ENGINEERING. b. N.Y.C., N. Y., Mar. 8, 1915. s. Jacob and Zelda (Hershkovitz) L. Edn.: A.B., Univ. of Cincinnati, 1937; Ed.B., ibid., 1938; Ed.M., ibid., 1942; Ed.D., Columbia Univ., 1949. m. Hilda Siegel, Dec. 25, 1943. Exp.: Instr. in Pub. Schls., Cincinnati, Ohio, 1937-41; Consult., U. N. Atomic Energy Secretariat, Security Council, 1948-49; Rsch. Assoc., Am. Council of Learned Societies, 1950; Rsch. Assoc., Am. Polit. Sci. Assn., 1950; Asst. Chf., Special Publications Bur., Labor Statistics, U. S. Dept. of Labor, 1951-53; Information Officer, Med. Sci. Writer, and Manpower Specialist, U.S.P.H.S., 1954—. Hon. Pos.: Mem., Natl. Bd. Judges, Natl. Sci. Tchrs. Assn. Sci. Tchr. Achievement Recognition Program, 1957-60; Mem., Bd. of Dirs., Mid-Atlantic States Chapt., Am. Med. Writers Assn. Mem.: Am. Assn. Adv. Sci.; Am. Pub. Health Assn.; Natl. Sci. Tchrs. Assn.; Am. Med. Writers Assn.; Natl. Assn. of Sci. Writers; Soc. of Tech. Writers and Publishers; Disabled Am. Vets.; Tau Kappa Alpha. Co-Author: Sanitary Engineering Manpower, 1959; The Challenge of Atomic Energy, 1948. Author: International Bibliography on Atomic Energy, 1948; The Social Sciences in Public Jr. Colleges, 1949. Contbr. to: Journalism Quart.; Sci. Tchr.; Social Edn.; Quarterly Rev. of Soc. Tech. Writers and Publishers; Civil Engrng.; Jour. of Edn'l. Sociol.; Am. Engr.; Jour. Chem. Documentation. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Interpretation to Public of Technical-Scientific Research, especially in Medicine-Biology-Health Fields; Professional Education and Curriculum Construction.

LIM, Thomas Pyung-Kee (M.D.), Staff Physiologist, The Lovelace Foundation, 4800 Gibson Blvd., S.E., Albuquerque, N. M. Home Add.: 1113 Dakota S.E., Albuquerque, N. M. MEDICAL PHYSIOLOGY. b. Seoul, Korea, June 1, 1924. s. Byung-OK and Kee-Nam (Ohr) L. Edn.: M.D., Severance Union Med. Coll., Seoul, Korea, 1948; M.S., Northwestern Univ. Med. Schl., Chicago, 1951; Ph.D., ibid., 1953. m. Kimberly Sung-Hai, June 20, 1955. c.: Diane Yung-Jin; Margaret Hyo-Jin. Exp.: Tchng. Asst., Severance Union Med. Coll., 1948-49; Fel., Northwestern Univ. Med. Schl., 1950-53; Rsch. Assoc., Stanford Univ. Med. Schl., 1953-54; Rsch. Assoc., Northwestern Univ., 1954-56; Staff Physiologist, Lovelace Foundation, 1956—. Mem.: A.A.A.S.; Am. Physiological Soc.; Am. Fed. Clinical Rsch.; Sigma Xi. Contbr. to: Am. Jour. Physiology; Jour. Appl. Physiology. Areas of Rsch.: Cardiopulmonary Physiology; Body Temperature Regulation; Biostatistics.



LIMONGIELLO, John A. (Mr.), Sci. Tchr., McCall Jr. High, Winchester, Mass. Home Add.: 151 Suffolk Ave., Revere 51, Mass. PHYSICS, PHYSICAL SCIENCES. b. Boston, Mass., Mar. 29, 1931. s. Gabriel and Mary (Disario) L. Edn.: B.S., State Coll., 1953; M.Ed., ibid., 1958; C.A.G.S., Boston Univ., 1963. m. Jean Angrisano, July, 1955. Exp.: Sci. Supv. and 6th Gr. Tchr., Julia Ward Howe Schl., Revere, Mass., 1955-59; Sci. and Math. Tchr., Bedford H. S., Bedford, Mass., 1959-60; Sci. Tchr., McCall Jr. H. S., Winchester, Mass., 1960—. Hon. Pos.: Sci. Specialist, J. W. Howe Schl., Mass. Mem.: Am. Assn. for Adv. of Sci.; Natl. Sci. Tchrs. Assn.; Central Assn. of Sci. and Math. Tchrs.; Kappa Delta Phi; Phi Delta Kappa. Serv. Rec.: Electronics Specialist, U. S. Army, Korean War. Areas of Rsch.: Develop-

ent of New Science Curriculums for Jr. High Schls. in Winchester, Mass.; Special Training as a Sci. Specialist and Consultant at Boston Univ.

IMING, Roy A. (Mr.), Engrng. Supvr., N. Am. Aviation, Inc., nternatl. Airport, Los Angeles, Calif. Home Add.: 27118 Latigo Shore Dr., Malibu, Calif. COMPUTER-ORIENTED AEROSPACE DESIGN MATHEMATICS. b. Ohio, Oct. 1, 1909. s. Clark and Cecile Edith (Patton) L. Edn.: A.B. (cum summa laude), Ohio State Univ., 1929. m. Betta Louise Grove, 1940. Exp.: Local Supv., Clinton Co., Wilmington, Ohio, 1929-41; Special Lectr.-Engrng. Math., Univ. of Sou. Calif., 1943-44; Hd. of Engrng.-Lofting Math., Supvr. of Engrng., N. Am. Aviation, Inc., Los Angeles, Calif., 1941—. Hon. Pos.: Chmn., Scholarship NAA, 1962-63; Pres., Malibu Cove Colony. Mem.: Inst. of Aerospace Sci., Assoc. Fellow; Am. Soc. for Engrng. Edn.; A.A.A.S.; Phi Beta Kappa; Phi Alpha Theta. Author: Practical Analytic Geome-

ry with Applications to Aircraft, 1944; Mathematical Technique of Lofting, 1943. Contbr. to: Aero Digest; Aeronautical Engrng. London; Int. of Aerospace Sci. Areas of Rsch.: Originated Automatic Computer Programming Concepts Applied to Design Intent and Numerical Control Applications.

IN, Tung H. (D.Sc.), Prof. of Engrng., Univ. of Calif., Los Angeles, Calif. ENGINEERING. b. Chunking, China, May 26, 1911. s. Yao-Ching and Yueh (Kuo) L. Edn.: B.S., Tangshan Coll., 1933; S.M., Mass. Inst. of Tech.; D.Sc., Univ. of Mich. m. Susan Chiang of Checkiang, China, Mar. 19, 1939. d. Jee-Chiao and Liu Chiang. c.: Rita; Robert; James Lin. Exp.: 1937-39, Prof. of Aero. Engrng., Tsing Hwa Univ., China; 1940-45, Project Engr. and Chf. Engr. of Chinese Airplane Factory; 1946-48, Office of Chinese Tech. Mission in England; 1949-55, Assoc. Prof., Prof. of Aeronautical Engrng., Univ. of Detroit, 1955-56; Prof. Engrng., Univ. of Calif., Los Angeles, 1956—. Hon. Pos.: Reviewer of Applied Mech. Rev. Mem.: I.Ae.Sc.; A.S.E.S.; A.S.E.E.; Phi Tau Phi; A.F.R.Ae.S. Contbr. to: Number of Papers Published in Jour. of Inst. of Aero. Sci.; Procs. of U. S. Cong. of Applied Mechanics. Travel: France; England; Switzerland; Italy. Hobby: Chess. Special Int.: Structures, Elastic Stability, Acceleration Measurement, Plasticity.

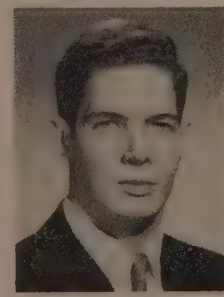
LINCICOME, David Richard (Ph.D.), Prof. of Zoology, Howard Univ., Wash., D. C. PARASITOLOGY. b. Champaign, Ill., Jan. 17, 1914. s. David R. and Olive Iola (Casper) L. Edn.: B.S. and M.S., Univ. of Ill., 1937; Ph.D., Tulane Univ., 1941. m. Dorothy Van Cleave, Sept. 1, 1941 (dec. Oct. 28, 1952). m. Dr. Margaret A. Stirewalt, Dec., 1953. c.: David Van Cleave; Judith Ann. Exp.: Scholar in Zool., Univ. of Ill., 1936-37; Asst. in Trop. Med., Tulane Med. Schl., 1937-41; Instr. in Zool., Univ. of Ky., 1941-46; Asst. Prof. of Zool., ibid., 1946-47; Asst. Prof. of Parasitol., Univ. of Wis., 1947-49; Rsch. Parasitologist, E. I. du Pont de Nemours & Co., 1949-54; Guest Scientist, Naval Med. Rsch. Inst., Bethesda, Md., 1954-61; Asst. Prof. Zool., Howard Univ., Wash., D. C., 1955-58; Assoc. Prof., Howard Univ., 1958-62; Prof., ibid., 1962—; Asst. Port Medical Inspector, N.O.P.E., 1943-45; Comm. Officer, 222nd Mal. Sur. Unit in Okinawa Camp, 1945; Comm. Officer, 14th Med. Lab. in Occupation of Korea, 1945; Lt. Col., Medical Service Corps, U. S. Army Reserve. Mem.: Am. Assn. for Adv. Sci., (Elec. Fellow, 1955); Am. Soc. Tropical Med.; Am. Soc. Parasitologists; Am. Micros. Soc.; Midwestern Conf. of Parasitologists (Sec., 1949); Phi Beta Kappa; Sigma Xi (Pres., Howard Univ. Chapt., 1960-61); Fellow, Royal Soc. of Tropical Med. and Hygiene (London); Helminthological Soc. of Wash.; Soc. of Systematic Zoologists; Soc. Protozoologists; Am. Soc. of Zoolgists; Am. Soc. Naturalists; Japan Soc. Parasitol.; German Soc. of Parasitol.; British Soc. for Parasitol.; Conf. of Biol. Editors; N. Y. Acad. Sci. (Elect. Fellow, 1957).; Am. Physiol. Soc.; Am. Soc. Cell Biol.; Inst. Biol. (London). Contbr. to: Exptl. Parasitol.; Jour. of Parasitol.; Am. Jour. Tropical Med. and Hygiene; Trans., Royal Soc. of Tropical Med. and Hygiene; U. S. Armed Forces Med. Jour.; New Orleans Med. and Surg. Jour.; Southern Med. Jour.; Ky. Med. Jour.; etc. Gen. Int.: Chmn., Editorial Bd., Jour. Exptl. Parasitology, 1951—; Editor of 6th Edition of Craig and Faust's Clinical Parasitology; Editor, Internatl. Rev. of Trop. Med. Special Int.: Taxonomy of the Acanthocephala and Nematoda, Cestoda; Epidemiology of Tropical and Parasitic Diseases; Diagnosis of Parasitic Diseases; Treatment and Control of Parasitic Diseases of Man and Domestic Animals; Physiology and Biochem. of Parasitism.

LINCOLN, Bert Hartzell (Dr.), Chemist-Patent Adviser, Prof. and Head of Chem. Dept. at Sou. St. Coll., Magnolia, Ark. b. 1900, Van Buren, Ark. Edn.: Univ. of Ark., B.S. Degree, and three yrs. grad. study at the Univ. of Colo. Hon. Doctor of Chem. from Acad. Arts and Science, 1937. s. Chas. Albert and Colia (Epps) L. m. Sara Alice (Blackburn). c.: Gilbert H.; Sara Ann; John Charles. Exp.: Instr., Univ. of Ark. and Univ. of Colo.; Asst. St. Bacteriol., of St. of Colo., Dept. of Sanitary Engrng., 1924; Chemical Rsch. Supvr., Continental Oil Co., 1926-30; Asst. to Mfg. Mgr., ibid., 1930-33; Admitted to Patent Office Bar in 1933; Chf. Chemist, Continental Oil Co., 1933-48; Continental Patent Adviser, 1948-57; Prof. and Hd., Chem. Dept., Sou. State Coll.,1958—; Asst. Secy., The Lubrizol Devel. Corp., 1935-51;

Petroleum Administr. for War awarded a Distinguished War Service (1946); Petroleum chemistry in general but primarily in gasoline, wax, lubricating oil and additives for lubricants. Reserve Officer, Chem. Warfare Serv., 1926-41; Elder, Presby. Ch. Mem.: Am. Chem. Soc.; Fellow, Am. Inst. of Chem.; Alpha Chi Sigma; A.A.A.S.; Sigma Xi; Kappa Alpha; Alpha Phi Epsilon; Knights of Pythias; Mason; Fellow, Royal Soc. of Arts (England); Fellow, Am. Inst. of Chemists; Mem., Toluene Tech. Com.; Natl. Roster of Scientific and Specialized Personnel, 5-261-016, Alternate; Tech. Adv. Com.; Advisory Sub-Committee, 100-Octane Aviation Gasoline, 1941-45; Has 108 U. S. Patents as Inventor or Co-inventor and 56 patents in Foreign Countries as Inventor or Co-inventor; Contributor to the Sci. of Petrol., 1938; Publs.: "Fundamentall Chem. and Physical Forces in Lubrication," 1935; "Practical Selection of Improved Lubricants," 1935; "X-ray Diffraction Studies of Lubricants," 1936; Mem., A.P.I. Com. on Book, "Physical Constants of Hydrocarbons"; "Uses of Fats, Fatty Oils, and Derivatives in the Petroleum Industry," 1940; "Oxidation of Petroleum Lubricants," 1941; "Changes Occurring in Oils and Engines from Uses," 1942; "Determination of Salts in Crude Oil," 1942; "Radio Sulfur Tracer Study of Sulfurized Lubrication Addition Agents," 1943.

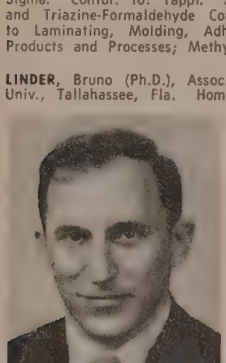
LINCOLN, Edward Andrews (Ed.D.), Consulting Psychol., Thompson St., Halifax, Mass. EDUCATIONAL MEASUREMENT AND PSYCHOLOGY. b. Raynham, Mass., Oct. 3, 1889. s. Minot J. and Helen (Andrews) L. m. Bertha S. Hayes of Pen-Yan, N. Y., June 28, 1921. c.: Anne; Jean. Edn.: Bridgewater, Mass., St. Nor. Schl., 1907-11; A.B., Harvard Univ., 1913; A.M., Harvard, 1916; Ed.D., Harvard Univ., 1924. Exp.: H. S. Tchr., Middletown, Conn., 1913-14; H. S. Tchr., Natick, Mass., 1914-15; Asst. in Edn., Harvard Grad. Schl. of Edn., 1920-22; Instr. in Edn., ibid., 1922-24; Asst. Prof. of Edn., ibid., 1924-35; Lectr. in Edn., Univ. of Calif., 1934; Consulting Psychol., Halifax, Mass., 1935—; Psychologist, Cambridge Somerville Youth Study, 1937-39; Civilian Psychologist, U. S. A., 1941-43; Psychologist, Harvard Law Schl., 1942-45. Mem.: A.A.A.S.; Am. Edn. Rsch. Assn.; N.S.S.E.; Phi Delta Kappa; Phi Gamma Mu; Kappa Delta Phi (Natl. Treas.); Am. Psychol. Assn.; Am. Personnel and Guid. Assn.; World Federation for Mental Health; N.E.A.; Internatl. Reading Assn. Contbr. to: Jour. of Edn. Psychol.; Jour. Edn. Rsch.; Schl. and Jour. Edn. Psychol.; Jour. Edn. Rsch.; Schl. and Soc.; Jour. Edn. Exp., etc. Author: Beginnings in Edn. Measurement, 1924; Sex Differences in the Growth of Am. Schl. Children, 1927; Testing and the Uses of Test Results, 1935. Rsch. of Gen. Int.: Sex Differences; Ability Grouping. War Record: Psychol. Serv.; 1st Lt. Listed in: W. W. in Mass.; W. W. in Am. Edn.; A.M.S.

LINDBERG, Donald A. B. (M.D.), Instr. in Pathol., Dir., Diagnostic Microbiol. Lab., Univ. of Mo., Columbia, Mo. Home Add.: 500 Rollins, Columbia, Mo. EXPERIMENTAL INFECTIOUS DISEASE, AUTOMATIC DATA PROCESS UTILIZATION IN THE HOSPITAL LABORATORY. b. N.Y.C., Sept. 21, 1933. s. Harry Bror and Frances Seeley (Little) L. Edn.: A.B., Amherst Coll., 1954; M.D., Columbia Univ., 1958. m. Mary Musick, June 8, 1957. Exp.: Intern in Pathol., Columbia-Presbyterian Med. Ctr., N.Y.C., 1958-59; Asst. Resident, ibid., 1959-60; Resident in Pathol., Univ. of Mo., 1960-61; Instr. in Pathol., ibid., 1961—. Mem.: Phi Beta Kappa; Sigma Xi; A.A.A.S.; Internatl. Acad. of Pathol.; Am. Soc. of Clin. Pathologists; Sou. Med. Assn.; Am. Soc. for Microbiol.; Am. Soc. for Exptl. Pathol.; Phi Gamma Delta; Omega Alpha Pi. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Anatomical Rec.; Sou. Med. Jour.; Mo. Med.; Fed. Proc.; Am. Jour. of Pathol. Areas of Rsch.: Silicone Embolization and Various Complications of Human Open-Heart Surgery; Exptl. Procedures for Determining Antibiotic Resistance and Sensitivity of Bacteria; Exptl. Endotoxemia and Shwartzman Equivalents; Evaluation of Existing and Redesigned Data Processing Systems in Hospital Service and Rsch. Labs.



LINDENFELSER, Richard (Mr.), Technical Dir., Am. Cyanamid Bldg. Products Div., 5 Bay St. Rd., Cambridge 38, Mass. Home Add.: 47 Emerson Rd., Winchester, Mass. POLYMERS AND THEIR APPLICATIONS IN LAMINATING, MOLDING, FIBERS AND CASTING. b. Langhorne, Pa., June 20, 1916. s. Joseph W. and Clara B. (Goheen) L. Edn.: B.S., Harvard Univ., 1938. m. Ruth Beecher, Jan. 11, 1941. c.: Peter W. Exp.: Chemist, Am. Cyanamid Co., Rsch. Div., Stamford, Conn., 1939-53; Grp. Ldr., ibid., 1953-55; Mgr. of Plastics Rsch., ibid., 1955-57; Mgr. of Fibers Rsch., ibid., 1957-59; Dir. of Fibers Rsch., Fibers Div., ibid., 1959-61; Tech. Dir., Am. Cyanamid Co., Bldg. Products Div., Cambridge, Mass., 1961—. Hon. Pos.: Resin Advisory Comm., Technical Assn. Pulp and Paper Inst. Mem.: A.C.S.; A.A.A.S.; Soc. of the Plastics Industry; Harvard Chemists Assn.; Alpha Chi Sigma. Contbr. to: Tappi. Areas of Rsch.: Urea-Formaldehyde and Triazine-Formaldehyde Condensations and Their Application to Laminating, Molding, Adhesives and Paper; Acrylic Fiber Products and Processes; Methyl Methacrylate Sheet Casting.

LINDER, Bruno (Ph.D.), Assoc. Prof., Dept. of Chem., Fla. St. Univ., Tallahassee, Fla. Home Add.: 2805 Sterling Dr., Tallahassee, Fla. CHEMICAL PHYSICS AND NUCLEAR CHEMISTRY. b. Poland, Sept. 3, 1924. s. Elias and Fanny (Kleinman) L. Edn.: B.S., Upsala Coll., 1948; M.S., Ohio Univ., 1950; Ph.D., Univ. of Calif. at L. A., 1955. m. Cecelia Fahn, Feb. 14, 1953. c.: William Howard; Diane Terry; Richard Alan; Nancy Margaret. Exp.: Rsch. Assoc., Univ. of Wis., Naval Rsch. Lab., Madison, Wis., 1955-57; Rsch. Participant, Oak Ridge Nat. Lab., Oak Ridge, Tenn., summers, 1958, '59, '61; Asst. Prof., Fla. St. Univ., 1957-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: Secy.-Treas., Tallahassee Subsection, Am. Chem. Soc. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Sigma Xi; Phi Lambda Upsilon; Phi Mu Alpha. Contbr. to: Jour. of Chem. Phys.; Phys. Rev.; Nuclear Phys.; Chem. and Engrng. News. Areas of Rsch.: Intermolecular Forces; Theory of Dielectrics; Solutions; Nuclear Reactions.

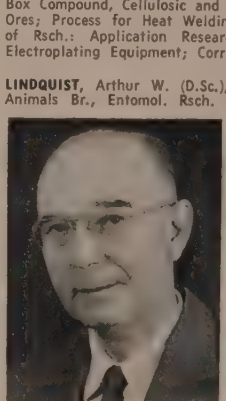


LINDER, Forrest Edward (Ph.D.), Dir., Natl. Ctr. for Health Statistics, Pub. Health Serv., Wash., D. C. Home Add.: 2122 Calif. St., N.W., Wash. 8, D. C. PUBLIC HEALTH STATISTICS; DEMOGRAPHY. b. Waltham, Mass., Nov. 21, 1906. s. Gustaf F. and Lillian Alice (Domville) L. Edn.: A.B., Ia. St. Univ., 1930; M.A., ibid., 1931; Ph.D. ibid., 1932. m. Gretchen Otto, Dec. 21, 1931. c.: Gordon Forrest; Louise Alma. Exp.: Statn., Found. for Neuro-Endocrine Rsch., Worcester, Mass., 1932-35; Statl. Analyst, U. S. Bur. of the Census, Suitland, Md., 1935-41; Deputy Chf., Natl. Office of Vital Stats., ibid., 1941-46; Chf., Demographic and Social Stats. Br., Stat. Office, United Nations, N. Y., N. Y., 1947-56; Dir., U. S. Natl. Health Survey, Pub. Health Serv., Wash., D. C., 1956-60; Dir., Natl. Ctr. for Health Stats., Pub. Health Serv., 1960—. Hon. Pos.: Mem. of World Health Organ. Expert Comm. on Health Statistics.; Mem. of the Am. Pub. Health Assn. Techn. Develop. Bd.; Mem. of the Pan Am.. Health Organ. Advisory Comm. on Stats. Mem.: Am. Statl. Assn.; Am. Pub. Health Assn.; Am. Pop. Assn.; Inter-Am. Statl. Inst.; Biometrics Soc.; Cosmos Club; Internatl. Union for Scient. Study of Population; Sigma Xi. Author: Manual de Estadistical Vital, 1942; Co-Author, Vital Statistics Rates in the U. S., 1900-40, 1943. Contbr. to: Sci.; Pub. Health Rep.; Am. Jour. of Pub. Health; Jour. of the Inter-Am. Statl. Inst., Estadistica; Internatl. Statl. Inst. Rev. Serv. Rec.: Comdr., U. S. Navy, 1944-46. Gen. Int.: Mem. of the WHO Expert Adv. Panel on Health Stats.; U. S. Repr. to the United Nations World Health Organ. Seminar on the Use of Vital and Health Stats. for Genetic and Rad. Studies, Geneva, Switzerland, 1960; Advisor to the U. S. Delegation to the Internatl. Statl. Inst. 30th Session held in Stockholm, 1957. Areas of Rsch.: Public Health Statistics and Demography.

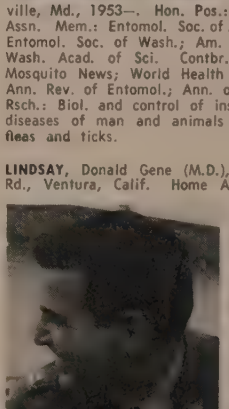
LINDER, Seymour Martin (Ph.D.), Project Ldr., Organic Chemicals, F.M.C. Corporation, P. O. Box 1616, Baltimore 3, Md. Home Add.: 1902 Tadcaster Rd., Baltimore 28, Md. ORGANIC CHEMISTRY. b. N. Y., N. Y., Dec. 17, 1925. s. Hyman and Sadie (Starkman) L. Edn.: B.S., City Coll. of N. Y., 1946; M.S., Poly. Inst. of Brooklyn, 1949; Ph.D., ibid., 1953. m. Elis Meyers, 1955. c.: Bonnie Jean; Karen Sue. Exp.: Jr. Chem., Hoffman-La Roche, Nutley, N. J., 1946-51; Rsch. Fellow, Poly. Inst. of Brooklyn, 1951-53; Project Ldr., Becco Chem. Div., F.M.C. Corp., Buffalo, N. Y., 1953-58; Project Ldr., Chemicals and Plastics Div., ibid., Baltimore, Md., 1958—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Md. Acad. Sci.; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc. Jour. Org. Chem. Areas of Rsch.: Medicinal Chemistry; Chemistry of Hydrogen Peroxide and Peroxy Acids; Expoxidation and Hydroxylation Reactions; Epoxy Resins.

LINDH, Gunnar Carl Teodor (Mr.), Mgr., Plastics Div., The Udylite Corp., Detroit 11, Mich. Home Add.: 784 Rivard Blvd., Grosse Pointe 30, Mich. CHEMISTRY AND CHEMICAL ENGINEERING RUBBER AND PLASTICS. b. Stockholm, Sweden, Dec. 8, 1898. s. Carl A. R. and Hulda (Edholm) L. Edn.: Chem. Engrng., Coll. of Tech., Stockholm, Sweden, 1920. m. Victoria Seni, 1925. c.: Karin L. Bodycombe; Ileana L. Ingraham. Exp.: Asst. Prof. Anal. Chem., Govt. Material Testing Inst., Dresden, Germany, 1921-24; Rsch. Chem., Ford Motor Co., Detroit, Mich., 1925-28; Gen. Mgr., Canadian Battery Container Corp., Windsor, Ontario, Canada, Chief Chem., Swedish Crucible Steel Corp., Detroit, Mich., 1929-34; Chief Chem., Tech. Dir., Detroit Macoid Corp., 1934-36; Rsch. Chem., Cook Paint and Varnish Co., Kan. City, Mo., 1936-37; Chem. and Exptl. Engr., Motor Products Corp., Detroit, Mich., 1938-41; Chem. Engr., Mgr., Plastics Div., The Udylite Corp., 1942—. Mem.: N.A.C.E.; A.A.A.S.; Am. Chem. Soc.; Soc. of the Plastics Ind.; Soc. of Plastics Engrs.; Am. Electroplaters Soc.; Sewage and Ind. Wastes Assn.; Engrng. Soc. of Detroit; Am. Acad. of Polit. and Social Sci.; Plastics Pioneers Assn. Contbrng. Author: Electro Plating Engineering Handbook, 1955. Contbr. to: S.P.E. Jour.; Plating. Serv. Rec.: Reg. Army Serv. in Sweden, June 1920 to June 1921. Gen. Int.: Developed Storage Battery Box Compound, Cellulosic and Other Plastic Coatings; Method for Ores; Process for Heat Welding Thermoplastics with Air. Areas of Rsch.: Application Research of Plastics and Coatings for Electroplating Equipment; Corrosion Resistant Tank Linings.

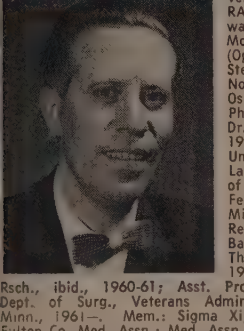
LINDQUIST, Arthur W. (D.Sc.), Chf., Insects Affecting Man and Animals Br., Entomol. Rsch. Div., Agricl. Rsch. Serv., U.S.D.A., Plant Indus. Sta., Beltsville, Md. Home Add.: 624 Northampton Dr., Silver Spring, Md. BIOLOGY AND CONTROL OF INSECTS AFFECTING MAN AND LIVESTOCK. b. Lindsborg, Kan., Mar. 17, 1903. s. David N. and Hannah (Lindell) L. Edn.: M.S., Kan. St. Coll., 1931; Hon. Deg.: D.Sc., Bethany Coll., 1953. m. Juanita Orr, Aug. 5, 1928. c.: Donald A.; Roger W. Exp.: Staff Mem., Bur. Entomol. and Plant Quarantine, U.S.D.A., Uvalde, Tex., 1931-38; In Chg. of Lab., Bur. Entomol. and Plant Quarantine, U.S.D.A., Nice, Calif., 1938-42; Staff Mem., ibid., Orlando, Fla., 1942-46; In Chg. of Lab., ibid., Corvallis, Ore., 1946-53; Chf. of Br., M. & A., Entomol. Rsch. Div., U.S.D.A., Beltsville, Md., 1953—. Hon. Pos.: Past Pres., Am. Mosquito Control Assn. Mem.: Entomol. Soc. of Am.; Sigma Xi; Kan. Entomol. Soc.; Entomol. Soc. of Wash.; Am. Mosquito Control Assn.; A.A.A.S.; Wash. Acad. of Sci. Contbr. to: Jour. Econ. Entomol.; Sci.; Mosquito News; World Health Organization Tech. Report Series; Ann. Rev. of Entomol.; Ann. of Entomol. Soc. of Am. Areas of Rsch.: Biol. and control of insects that are pests or vectors of diseases of man and animals such as mosquitoes, flies, gnats, fleas and ticks.



LINDSAY, Donald Gene (M.D.), Dermatologist, 3003 Loma Vista Rd., Ventura, Calif. Home Add.: 2117 Hillcrest Dr., Ventura, Calif. MEDICINE AND EXPERIMENTAL BIOLOGY, DERMATOLOGY. b. Kokomo, Ind., Mar. 27, 1922. s. Clifford G. and Velma (Ramsey) L. Edn.: B.S., Univ. of Ill., 1945; M.D., ibid., 1947. m. Kathryn Smith, 1945. c.: Jan; Diane; James. Exp.: Clin. Instr., U.C.-L.A. Coll. of Med., 1958-60; Clin. Instr., U.S.C. Coll. of Med., 1961—. Hon. Pos.: Mem., Am. Bd. of Dermatol.; Pres., Foundation for Rsch. in Aging. Mem.: Am. Acad. of Dermatol.; Los Angeles Co. Dermatologic Soc.; Pacific Dermatologic Soc.; N. Am. Clin. Dermatologic Soc.; Fellow, Am. Geriatrics Soc. of the Am. Gerontological Soc.; Alpha Omega Alpha. Contbr. to: Armed Forces Med. Jour.; Archives of Dermatology. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Basic Sci. and Clinical Rsch. in Dermatology and the Field of Geriatrics.



LINDSETH, Esten Opland (M.D.), Asst. Prof. of Surg., Univ. of Minn.; Full-time Staff, Dept. of Surg., V. A. Hosp., Minneapolis 17, Minn. Home Add.: 1766 Malvern St., St. Paul 13, Minn. THORACIC SURGERY. b. Narvik, Norway, Feb. 18, 1917. s. Elias Mondrad and Borghild Aminda (Opland) L. Edn.: Baccalaureate, Steinkjer Landsgymnas, Steinkjer, Norway, 1936; Bas. Sc., Univ. of Oslo, 1939; M.D., ibid., 1949; Ph.D., Univ. of Minn., 1960. m. Dr. Gunnbjorg Aagot Aurebeck, 1951. Exp.: Sr. Med. Fellow, Univ. of Minn., Div. G., 1955-56; Lab. Asst., Dept. Physiology, Univ. of Minn., 1956-58; USPHS Rsch. Fellow, Dept. Physiol., Univ. of Minn., 1957-58; Sr. Thoracic Surg. Resident, Univ. of Md. Hosp., Baltimore, Md., 1959-60; Assoc., Thoracic Surgery, Emory Univ., 1960-61; Dir., Thoracic Surg. Rsch., ibid., 1960-61; Asst. Prof. of Surg., Univ. of Minn., Dept. of Surg., Veterans Admin. Hospital Staff, Minneapolis, Minn., 1961—. Mem.: Sigma Xi; A.A.A.S.; N. Y. Heart Assn.; Fulton Co. Med. Assn.; Med. Assn. of Ga.; A.M.A.; Diplomate, Am. Bd. of Surgery, 1959; Diplomate, Am. Bd. of Thoracic Surgery, 1960. Contbr. to: Circulation; Univ. of Minn. Med. Bull. Serv. Rec.: Royal Norwegian Air Force. Areas of Rsch.: Circulation and Hemodynamics.



LINDSEY, Jacob Washington (Retired), 3814 Ong St., Amarillo, Tex. HIGH SCHOOL SCIENCES. b. Ripley, Miss., Feb. 2, 1894. s. Lindsey Samuel and Nannie Elizabeth (Stewart) L. Edn.: B.S., Univ. of Miss., 1924; M.A., ibid., 1941. m. Cleo Norris, July 14, 1928. c.: James Norris. Exp.: Tchr., So. McComb Elem. Schl., McComb, Miss., 1924-25; Tchr., H. S. Math., Myrtle H. S, Myrtle, Miss., 1925-26; Tchr., H. S. Sci., New Albany H. S., New Albany, Miss., 1926-28; Teacher, H. S., Math., and Prin., Myrtle H. S., Myrtle, Miss., 1928-33; Tchr., H. S. Math. and Chem., Hernando H. S., Hernando, Miss., 1933-34; Tchr., Math. and Sci., High Schls., Miss., 1934-46; Tchr., H. S. Math., Amarillo, Tex., 1946-59; Retired except for substitute Tchng., ibid., 1959— Hon. Pos.: Pres., Union Co. (Miss.) Tchrs. Assn., 1928-33; Pres., Lowndes Co. (Miss.) Tchrs. Assn., 1934-39; Pres., Marshall Co. (Miss.) Tchrs. Assn., 1943-44. Mem.: Central Assn. of Sci. and Math. Tchrs.; A.A.A.S.; Tex. Coun. of Tchrs. of Math.; Natl. Coun. of Tchrs. of Math.; Am. Legion; Great Books; Y.M.C.A. Contbr. to: Schl. Sci. and Math. Serv. Rec.: U. S. Army, 1918-19. Gen. Int.: Winner, Natl. Judging Contest, sponsored by Poultry Tribune, Mount Morris, Ill., 1958.

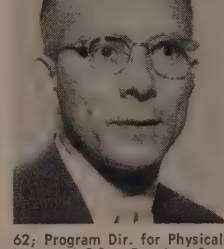
LINDSTROM, Everett H. (M.D.), Physician and Surgeon, 635 N. Ewing St., Helena, Mont. SURGERY. b. Sweden, Feb. 2, 1903. s. Erik E. and Lovisa (Larson) L. Edn.: B.S., Univ. of Minn., 1924; M.D., ibid., 1928. m. Nan Johnson, 1929. c.: Verla Nan L. Love; Eric E. Exp.: Med. Dir., Western Life Ins. Co., Helena, Mont., 1929—; Mem. Bd. of Dirs., ibid., 1934—; Mem. Hawkins-Lindstrom Clinic, Helena, Mont., 1940—; Pres., City-County Bd. of Health, Mont., 1947—; Pres., Mont. Pub. Health League, 1958—. Hon. Pos.: Secy.-Treas., Mont. M. A., 1953-56; Pres., ibid., 1961-62. Mem.: A.-M.A.; A.C.S.; Internatl. Coll. Surgeons; World M. A.; Am. Soc. Abd. Surgeons; Assn. Life Inst. Med. Dir.; Am. Life Convention; A.A.A.S.; Mont. Club; Am. Legion; V.F.W. Contbr. to: Mont. Health. Serv. Rec.: Major MC (S.W.P. Area), 1942-45.

LINN, Marion Joanne Lovell (M.D.), Asst. Prof. Anesthesiology, Vanderbilt Univ. Hosp., Nashville 5, Tenn. Home Add.: 6532 Jocelyn Hollow Rd., Nashville 5, Tenn. ANESTHESIOLOGY. b. Centerville, Tenn., Mar. 24, 1926. d. Joe W. and Annie Louise (Stephenson) Lovell. Edn.: B.A., Tusculum Coll., 1946; M.D., Vanderbilt Univ. Schl. of Med., 1950. m. Robert Joseph Linn, Aug., 1949. c.: Mary Louise; Joseph Lovell; Margaret Ruth; David Robert. Exp.: Internship, Baltimore City Hosp., Baltimore, Md., 1950-51; Anes. Residency, Vanderbilt Univ. Hosp., Nashville, Tenn., 1951-53; Anes. Residency, Geo. Wash. Univ. Hosp., Wash., D. C., 1953; Visiting Anesthesiologist, Vanderbilt Univ. Hosp., 1955—. Mem.: Nashville Anes. Soc.; Tenn. Anes. Soc.; Nashville and Davidson Co. Acad. of Med.; Tenn. Med. Soc.; A.A.A.S.; N. Y. Acad. Sci.; A.S.A. Areas of Rsch.: Anesthesiology.

LINN, Betty Louise Newlin (Mrs.), Home Economist in Rsch., The Quaker Oats Co., 617 West Main St., Barrington, Ill. Home Add.: 903 Cookane Ave., Elgin, Ill. FOOD RESEARCH. b. Hutsonville, Ill., July 24, 1932. d. Randall and Alice P. (Young) Newlin. Edn.: B.S., Eastern Ill. Univ., 1954. m. Archie Ray Linn, July 21, 1956. Exp.: Staff, Alden's Textile Lab., Chicago, Ill., 1954-55; Home Economist in Food Rsch., The Quaker Oats Co., Barrington, Ill., 1955—. Mem.: Chicago Home Econs. in Bus.; Ill. Home Econs. Assn.; Am. Home Econs. Assn.; Kappa Pi; Elgin Community Theatre. Contbr. to: Co-ed Magazine. Areas of Rsch.: Food Rsch., Development of Ready Mixes and Frozen Foods.

LINN, Robert Joseph (M.D.), Physician, 2119 Hayes St., Nashville 5, Tenn. Home Add.: 6532 Jocelyn Hollow Rd., Nashville 5, Tenn. RADIOLOGY. b. Birmingham, Ala., July 11, 1926. s. Jesse Edwards and Mary Alif (Mulvehill) L. Edn.: B.A., Vanderbilt Univ., 1946; M.D., ibid., 1950. m. Marion Joanne Lovell, Aug., 1949. c.: Mary Louise; Joseph Lovell; Margaret Ruth; David Robert. Exp.: Internship, Johns Hopkins Hosp., Baltimore, Md., 1950-51; Med. Residency, Vanderbilt Univ. Hosp. and Thayer V. A. Hosp., Nashville, Tenn., 1951-53; Radiology Residency, Vanderbilt Univ. Hosp., Nashville, Tenn., 1955-58; Jr. Partner, Ingram Ham. and Linn, Nashville, Tenn., 1959—. Hon. Pos.: Pres., A.O.A., 1949-50; Founders Medalist, Vand. Univ. Med. Schl., 1950. Mem.: Nashville and Davidson Co. Acad. Med.; Tenn. Med. Soc.; A.A.A.S.; Am. Coll. of Radiology; Radiological Soc. of Nashville; Northern Nut Growers Assn.; Kappa Alpha. Serv. Rec.: U.S.N.R., 1953-54. Areas of Rsch.: Radiology-Silviculture.

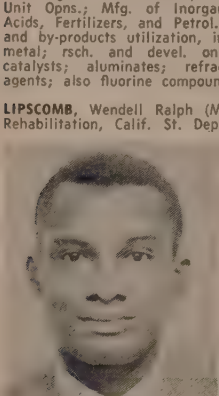
LINNELL, Robert Hartley (Ph.D.), Chem. Prog., Natl. Sci. Fdn., Washington 25, D. C. Home Add.: R.F.D. #3, Box 187A, Gaithersburg, Md. PHYSICAL CHEMISTRY. b. Kalkaska, Mich., Aug. 15, 1922. s. Earl D. and Constance Ruth (Hartley) L. Edn.: B.S., Univ. of N. H., 1944; M.S., ibid., 1948; Ph.D., Univ. of Rochester, 1950. m. Myrle E. Talbot, June 17, 1950. c.: Charlene; Lloyd; Randa; Dean. Exp.: Instr., Univ. of N. H., 1942-44, 1946-47; Tchng. Fellow, Univ. of Rochester, 1947-50; Asst. Prof. of Chem., Am. Univ. of Beirut, Lebanon, 1950-52; Assoc. Prof. of Chem., Chmn., Chem. Dept., ibid., 1952-54; Vice Pres. and Tech. Dir., Titanium Zirconium Co., Flemington, N. J., 1955-58; Prof. of Chem., Univ. of Vt., 1958-61; Lab. Dir., and Sr. Chemist, Scott Rsch. Labs., Perkasie, Pa., 1961-62; Program Dir. for Physical Chem., N.S.F., Wash., D. C., 1962—. Mem.: A.C.S.; Faraday Soc.; A.A.A.S.; Am. Leather Chemists Assn.; Sigma Xi; Phi Kappa Phi. Contbr. to: Jour. A.C.S.; Jour. Phys. Chem.; Jour. Chem. Phys.; Jour. Inorg. and Nuclear Chem.; Tobacco Sci. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Photochem. Including Ultraviolet, Infrared, Fluorescence and Phosphorescence Spectroscopy; Free Radical Reactions, Autoxidation Mechanisms, Hydrogen-Bonding; Zirconium and Aluminum Chem.; Air Pollution Chem.



LINVILLE, Thomas Merriam (Mr.), Mgr., Rsch. Operations Dept., Gen. Elec. Co., P. O. Box 1088, Schenectady, N. Y. Home Add.: 1147 Wendell Ave., Schenectady 8, N. Y. ENERGY CONVERSION, ELEMENTS AND SYSTEMS: FEED-BACK CONTROL SYSTEMS DEVICES AND CIRCUITRY. b. Wash., D. C., Mar. 3, 1904. s. Thomas and Clara Elizabeth (Merriam) L. Edn.: E.E., Univ. of Va., 1926; A.M.P., Harvard Univ., 1950. m. Eleanor Priest, 1939. c.: Eleanor; Thomas Priest; Edward Dwight. Exp.: Staff Asst. to Mgr. Engrng., Gen. Elec. Co., Schenectady, N. Y., 1947-52; Mgr., Exec. Develop. Dept., ibid., 1952-53; Mgr., Rsch. Operations Dept., ibid., 1953—. Hon. Pos.: Dir., Am. Inst. of Electrical Engrs.; Chmn., Schenectady City Planning Comm.; Chmn., Schenectady Co. Health Coun.; Vice-Pres., Dir., C. of C.; Chmn., Develop. Coun. for Sci., Rensselaer Polytechnic Inst.; Mem., Governors Advisory Coun. for Advancement Rsch. and Develop., N. Y. St.; Pres., N. Y. St. Citizens Committee for Pub. Schls., Inc.; Pres., N. Y. St. Soc. Professional Engrs. Mem.: Am. Inst. of Elec. Engrs., Fellow; A.A.A.S., Fellow; Am. Soc. Mech. Engrs., Fellow; Inst. Radio Engrs.; Am. Radio Relay League; Raven Soc. of Univ. of Va.; Delta Upsilon; Theta Tau; Rotary; Mohawk Golf Club; Cornell Club of N.Y.C. Contbr. to: Trans. of A.I.E.E.; Am. Engr. Serv. Rec.: U. S. Navy, 1942-45. Gen. Int.: Chas. A. Coffin Award; U. S. Navy Certificate of Commendation; Engr.-of-the-Year Award. Areas of Rsch.: Electrical Engrng.: Energy Conversion Devices, Systems, Control Devices and Circuitry; Engrng. Edn.; Rsch. Administration.

LIPPMAN, Alfred, Jr. (Mr.), Gen. Dir., Alumina Rsch. Div., Reynolds Metal Co., Bauxite, Ark. Home Add.: 501 N. Main St., Benton, Ark. CHEMICAL ENGINEERING AND MANAGEMENT OF PLANT OPERATIONS AND OF RESEARCH AND DEVELOPMENT. b. New Orleans, La., Mar. 13, 1908. s. Alfred and Belle (Levy) L. Edn.: B.Eng., Tulane Univ., 1929. m. Dorothy Kahn, Oct. 28, 1934 (dec.). m. 2nd Janice Trum, Aug. 22, 1953. c.: Alfred Sol; Darryl Rock; Tanya Maureen. m. 3rd Carol Saunders McMullen, Nov 20, 1959. Exp.: Rsch. Chemist, Bay Chemical Co., Weeks, La., 1929-31; Sales Rep., Chem. Rubber Co., Cleveland, Ohio, 1931-34; Asst. Assayer U. S. Mint, New Orleans, La., 1932-33; Bay Chem. Co., Weeks, La., Chf. Chemist, 1934-37; Asst. Supt., ibid., 1938-39; Mgr., ibid., 1939-51; Gen. Mgr. of Commonwealth Engrng. Co., Dayton, Ohio, 1951-53; Plant Mgr., Godchaux Sugars, Inc., Reserve, La., 1953-56; Tech. Staff Asst., Reynolds Metals Co., Richmond, Va., 1956-58; Gen. Dir., Alumina Rsch. Div., Reynolds Metals Co., Bauxite, Ark., 1958–. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Eng.; Am. Ceramic Soc.; Sigma Alpha Mu; Tau Beta Pi. Contbr. to: Chem. Engrng.; Indus. and Engrng. Chem.; Proc. of La. Engrng. Soc. Special Int.: Mgmt. of Production, Rsch. and Devel.; Most Chem. Engrng. Unit Opns.; Mfg. of Inorganic Chem., esp. Salts, Phosphates, Acids, Fertilizers, and Petrol. Cracking Catalysts; Sugar refining and by-products utilization, including bagasse; mfg. alumina for metal; rsch. and devel. on various aluminas for desiccants, catalysts; aluminates; refractories and ceramics; reinforcing agents; also fluorine compounds; numerous patents.

LIPSCOMB, Wendell Ralph (M.D.), Chf., Rsch: Div. of Alcoholic Rehabilitation, Calif. St. Dept. of Publ. Health, 2151 Berkeley Way, Berkeley, Calif. Home Add.: 291 Western Drive, Pt. Richmond, Calif. EPIDEMIOLOGY (PH), MEDICAL SOCIOLOGY. b. Berkeley, Calif., June 9, 1920. s.: Ira H., Sr. and Eva Mae (Hooks) L. Edn.: B.A., San Diego St. Coll., 1947; M.D., Univ. of Calif. Med. Schl., 1951; M.P.H., Univ. of Mich., 1953. Exp.: Rsch. Asst., San Diego Zoological Museum, San Diego, Calif., 1939-41; Flying Instr., Part-Time Instr. in Anatomy, Tuskegee Inst., 1942-45; Tchng. Asst., Biol. and Physiol., San Diego St. Coll., 1945-46; Biol. Instr., ibid., 1946-47; Intern, Permanente Foundation Hospital, Oakland, Calif., 1951-52; Supvr., Alcoholism Study Proj., Bur. of Chronic Diseases, St. of Calif. Dept. of Publ. Health, Berkeley, Calif., 1955-57; Chf., Study and Investigation Sect., Div. of Alcoholic Rehabilitation, ibid., 1957-59; Asst. Chf., Div. of Alcoholic Rehabilitation, ibid., 1959 –. Mem.: A.A.A.S.; Publ. Health Scholastic Honor Frat.; Delta Omega; Am. Publ. Health Assn. Pacific Sociological Soc. Contbr. to: Q.J.S.A.; Jour. of Chronic Diseases; Calif's. Health; Ohio's Health; J.A.P.H.A.; Jour. of Pacific Sociological Soc.; A.M.A. Arch. of Internal Medicine; Calif. Medicine; Soc., Culture, and Drinking Patterns. Serv. Rec.: Air Corps, 1941-46; U. S. Air Force, 1953-55. Areas of Rsch.: Alcoholism, Cirrhosis Morbidity and Mortality; Methods in Multidisciplinary Team-Rsch. on Socio-Med. Problems.



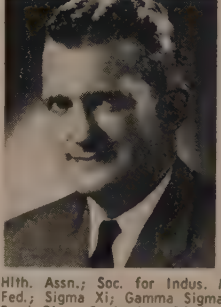
LISANKE, Robert John, Sr. (Mr.), Rsch. Chemist, Socony Mobil Oil Co., Paulsboro, N. J. Home Add.: 187 Esplanade Ave., Pitman, N. J. ORGANIC CHEMISTRY. b. N. Y. C., June 7, 1932. s. Clement Joseph and Anne Mary (Campbell) L. Edn.: B.S., Fordham Univ., 1954; M.S., Univ. of Notre Dame, 1956. m. Patricia A. Traum, 1957. c.: Robert John, Jr., Joseph Michael; Michael Gerard. Exp.: Control Chemist, Chas. Pfizer and Co., N. Y. C., 1950-54; Chemist, Union Carbide Plastics Co., Boundbrook, N. J., 1955, Summer; Chemist, Silicones Div., ibid., Tonawanda, N. Y., 1956-59; Rsch. Chemist, Hooker Chem. Corp., Grand Island, N. Y., 1959-60; Rsch. Chemist, Socony Mobil Oil Co., Paulsboro, N. J., 1960–. Mem.: A.C.S.; A.A.A.S.; Soc. of Automotive Engrs.; Natl. Rifle Assn. Areas of Rsch.: Organic and Organometallic Chem.; Plastics and Silicones; Steroids; Synthetic Detergents; Electronic Computers; Instrumentation; Astronomy.

LISANTI, Vincent Frank (D.M.D.), Dir., Inst. of Stomatological Rsch., Sias Rsch. Labs., Brookline, Mass. Home Add.: 12 Elba St., Brookline 46, Mass. RESEARCH ADMINISTRATION AND COORDINATION, HISTOCHEMISTRY, ENZYMOLOGY. b. Rochester, N. Y., June 23, 1918. s. John S. and Jane (Vetromile) L. Edn.: Univ. of Rochester, 1938; D.M.D., Tufts Univ. Schl. of Dental Med., 1942. m. Ermada A. Federico, 1942. c.: John Leonard; Linda Maria. Exp.: Rsch. Assoc., Tufts Univ. Schl. of Dental Med., 1948-54; Assoc. Prof. Rsch., ibid., 1954-60; Dir., Inst. Stomatological Res., Sias Rsch. Labs., Brookline, Mass., 1958–. Hon. Pos.: Dir., Rsch. Training, Tufts Univ. Schl. of Dental Med.; Consultant, Abbie Frances Lawton Found., Office of Naval Rsch.; Pres., Boston Sect., I.A.D.R. Mem.: A.A.A.S.; Am. Soc. Microbiol.; Am. Soc. Cell Biol.; N. Y. Acad. of Sci.; Int. Assn. Dent. Res.; Hist. Soc.; Boston Bacteriol. Club; Am. Dent. Assn.; A.A.M.; Sigma Xi; O.K.U. Contbr. to: Jour. Dent. Res.; Scient. Ann. N. Y. Acad. Sci.; Biochemica et Biophisica Acta; Oral Surg.-Oral Med.-Oral Pathol.; Ross. Trim. Odont.; Jour. Bacteriol. Lancet; Proc. Soc. Exptl. Biol. and Med.; Fed. Prod.; Jour. Am. Coll. Dent.; Proc. Ann. Res. and Sci. Devel.; Conf. Prop. Assn. Jour. Soc. Cos. Chem. Serv. Rec.: U. S Army, 1942-46. Areas of Rsch.: Phys. Measurements; Histochem.; Hydrolytic Enzyme Histopathology; Enzyme Production and Inhibition; Saliva Metabolism; Dental Caries; Periodontal Disease.

LISTER, Bruce Alcott (Mr.), Jell-O Rsch. Mgr., Gen. Foods Corp., 250 North St., White Plains, N. Y. Home Add.: 1976 Oakmere Dr., Baldwin, L. I., N. Y. CHEMICAL ENGINEER. b. Brooklyn, N. Y., Dec. 23, 1922. s. James A. and Georgana M. (Hunt) L. Edn.: Lafayette Coll., 1940-41; B.S., Columbia Univ., 1943; M.S., ibid., 1947; Postgrad., Bowdoin Coll., 1944; Mass. Inst. Tech., 1944-45, '52. Exp.: Jr., Plant Tester, Consolidated Edison Co., N. Y., 1941; Lab. Asst., Gen. Foods, Hoboken, N. J., 1943; Chem. Engr., ibid., 1943, '44, '46; Assoc. Chem. Engr., ibid., 1947-48; Proj. Ldr., ibid., 1948-50; Sect. Hd., ibid., 1950-53; Asst. Lab. Dir., ibid., 1953-55; Lab. Dir., ibid., 1955-57; Lab. Mgr., Jell-O Div. Labs., Tarrytown, N. Y., 1957-58; Rsch. Mgr., ibid., (Gen. Foods), 1959—. Mem.: Am. Inst. Chem. Engrs; Am. Chem. Soc.; Inst. Food Technologists; N. Y. Inst. Food Technologists; A.A.A.S.; Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon. Serv. Rec.: U.S.N.R., Lt. (j.g.), 1944-46. Areas of Rsch.: Food, Research—Product and Process Improvement and New Product Development.

LIT, Alfred (Ph.D.), Prof. of Psychol., Sou. Ill. Univ., Carbondale, Ill. Home Add.: 603 Emerald Lane, Carbondale, Ill. EXPERIMENTAL PSYCHOLOGY. b. N. Y. N. Y., Nov. 24, 1914. s. Oscar Zachary and Elsie (Jaro) L. Edn.: B.S., Columbia Univ., 1938; M.A., ibid., 1943; Ph.D., ibid., 1947; m. Imogene Speegle, Jan., 1941. Exp.: Assoc. Prof., Columbia Univ., N. Y., 1946-56; Rsch. Psychologist, Univ. of Mich., Ann Arbor, Mich., 1956-59; Hd., Human Factors Staff, Bendix Systems Div., Ann Arbor, Mich., 1959-61; Prof., Sou. Ill. Univ., Carbondale, Ill., 1961. Hon. Pos.: Past Pres., N. Y. Optometric Assn.; Mem., Armed Forces Natl. Rsch. Coun. Comm. on Vision, 1961; Recipient, Rsch. Grant in Aid from Am. Acad. of Optometry, 1949. Mem.: Am. Psychol. Assn.; Midwestern Psychol. Assn.; Psychonomic Soc., A.A.A.S.; Am. Acad. of Optometry; Optical Soc. of Am.; Human Factors Soc.; Sigma Xi. Contbr. to: Am. Jour. of Psychol., Jour. of Exptl. Psychol.; Am. Jour. of Optometry; Jour. of Optical Soc. of Am. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Vision; Perception; Systems Research.

LITCHFIELD, John Hyland (Ph.D.), Asst. Chf., Biosciences Rsch., Battelle Meml. Inst., 505 King Ave., Columbus 1, Ohio. Home Add.: 138 Broadmeadows Blvd., Columbus 14, Ohio. FOOD TECHNOLOGY, MICROBIOLOGY. b. Scituate, Mass., Feb. 13, 1929. s. Frank A. and Alma (Hyland) L. Edn.: S.B., Mass. Inst. of Tech., 1950; M.S., Univ. of Ill., 1954; Ph.D., ibid., 1956. Exp.: Chief Chemist, Searle Food Corp., Hollywood, Fla., 1950-51; Rsch. Food Technologist, Swift and Co., Chicago, 1956-57; Asst. Prof., Food Engrng., Ill. Inst. of Tech., Chicago, 1957-60; Sr. Food Technologist and Project Ldr., Biosciences Rsch., Battelle Meml. Inst., 1960-62; Asst. Chf., ibid., 1962 –. Mem.: Am. Chemical Soc.; Am. Soc. for Microbiol.; Assn. of Vitamin Chemists; Inst. of Food Technologists; A.A.A.S.; Am. Publ. Hlth. Assn.; Soc. for Indus. Microbiol.; Water Pollution Control Fed.; Sigma Xi; Gamma Sigma Delta; Gamma Alpha. Co-Author, Food Plant Sanitation, 1962. Contbr. to: Applied Microbiology; Canadian Jour. of Microbiol.; Food Rsch.; Jour. of Am. Dietetic Assn.; Developments in Industl. Microbiol.; Encyc. Britannica. Serv. Rec.: U. S. Army. Areas of Rsch.: Food Processing and Preservation, Food and Sanitary Microbiology; Enteric Microbiol.; Evaluation of Antimicrobial Agents, Microbial Biochemistry, Large Scale Cultivation of Microorganisms, Nutritional Evaluation of Food Processing Methods.



LITSKY, Warren (Ph.D.), Commonwealth Prof. of Microbiol., Dir., Inst. of Agricl. and Industrial Microbiol., Univ. of Mass., Amherst, Mass. Home Add.: 74 Taylor St., Amherst, Mass. APPLIED MICROBIOLOGY. b. Worcester, Mass., June 10, 1924. s. Joseph and Esther (Kreplick) L. Edn.: A.B., Clark Univ., 1945; M.S., Univ. of Mass., 1948; Ph.D., Mich. St. Univ., 1951. Exp.: Lctr. in Bacteriol., Clark Univ., 1944; Asst. in Dairy Industry, Univ. of Mass., 1945; Pub. Health Bacteriologist, Kellogg Foundation, 1946; Tchng. Fellow in Bacteriol., Univ of Mass., 1946-48; Water Dept. Chemist and Microbiologist, City of Fitchburg, Mass., 1948-

8; Rsch. Fellow, Mich. St. Univ., 1948-51; Instr. in Microbiol., bid., 1951; Asst. Rsch. Prof., Univ. of Mass., 1951-53; Assoc. sch. Prof., ibid., 1953-56; Rsch. Prof., ibid., 1956-61; Commonealth Prof., ibid., 1961—; Dir. of the Inst. of Agricl. and ndustrial Microbiol., ibid., 1962—; Special Consultant, U.S. .H.S., 1961—; Mem. of Editorial Bd., Applied Microbiol. Hon. os.: Comm. on Needs and Application, I.A.M.F.S., 1956-61; omm. on Microbiol. of Surfaces, A.P.H.A., 1959—; Chmn., ibid., 960-62; Rsch. Coun., Univ. of Mass.; Advisory Bd., Conn. Valley ect., A.S.M., 1958—. Mem.: Am. Soc. for Microbiol.; Am. Pub. lealth Assn., Fellow; Soc. of Industrial Microbiol.; A.A.A.S., ellow; Royal Soc. of Health, Fellow; N. Y. Acad. of Sci.; Interatl. Assn. of Milk and Food Sanitarians; Sigma Xi; Phi Tau Sigma. Gen. Int.: Sayer Prize in Bacteriol.; U. S. Jr. C. of C. Distinguished Serv. Award; B'nai B'rith Man of the Year Award. Areas of Rsch.: Commercial Scale Milk Pasteurization; Microbiol. of Frozen Foods; Food Products and Dairy; Index Organisms for Quality Control of Food and Water; Vapor Disinfection.

LITE, Theodore (D.D.S.), Dentist, 1 Hanson Pl., Brooklyn 17, N. Y. Home Add.: 1801 Ave. N., Brooklyn 30, N. Y. PERIODONTIA AND ORAL MEDICINE. b. Bronx, N. Y., Apr. 23, 1923. s. Jack Barney and Matildia (Reing) L. Edn.: B.S., Univ. of Ill., 1944; D.D.S., ibid., 1945. Exp.: Instr., Peridontia and Oral Med., N. Y. Univ., 1948-50; Asst. Clinical Asst. Prof., Periodontia and Oral Med., ibid., 1959—; Lectr. in Dental Health Edn. and Preventive Dentistry, St. of N. J., Dept. of Health, Bur. of Dentistry, 1958—; Attending in Periodontia and Oral Med., Dental Dept., N. Y. Polyclinic Hosp. and Med. Schl., 1948—. Hon. Pos.: Chmn., Dental Health Edn.; Oral Hygiene Comm. of Greater N. Y.; Past Pres., N. Y. Sect., Am. Acad. of Dental Med. Mem.: 2nd District Dental Soc.; A.D.A.; Am. Assn. of Pub. Health; A.A.A.S.; Am. Acad. Dental Med.; Am. Acad. Periodontology; Am. Acad. Oral Pathology; Sci. Rsch. Soc. Am.; N. Y. Acad. of Sci.; Univ. of Ill. Alumni Assn.; N. Y. U. Alumni Assn.; Alpha Omega. Co-Author: Textbook of Peridontia, 1950; The Practice of Periodontia, 1960. Contbr. to: Jour. of Periodontia; N. Y. St. Dental Jour.; N. Y. Jour. Dentistry; Eastern Dental Jour.; Am. Acad. of Dental Med. Jour.; Jour. of Dental Rsch.; Oral Surgery; Oral Med. and Oral Pathlogy. Serv. Rec.: U. S. Navy Dental Corps. Areas of Rsch.: Clinical Histopathology in Diseases of the Mouth.

LITTLE, Delmas Carroll (Mr.), Field Repr., Test Mgmt. Br., R. & D. Directorate, Army Missile Command, Redstone Arsenal, Ala. (Stationed at Newport Beach, Calif.) Home Add.: 1511 Cliff Dr., Newport Bch., Calif. PHYSICS, INSTRUMENTATION. b. Bradford, Ohio, Mar. 16, 1907. s. Kenneth and Cora Alice (McCune) L. Edn.: B.A., Univ. of Louisville, 1950. m. Gladys Caldwell, Feb. 3, 1955. Exp.: Asst. Foreman, Signal Repair Shop, Ft. Knox, Ky., 1943-45; Chf., Instrumentation, Army Med. Rsch. Lab., Ft. Knox, Ky., 1945-55; Instr., Physics Dept., Univ. of Louisville, 1952-54; Project Mgr., Warheads, White Sands Missile Range, N. M., 1955-60; Chf., Instrumentation Sect., ABMA WSMR Firing Sect., ibid., 1960-61; Field Repr., Test Mgmt. Br., R. & D. Directorate, Army Missile Command, 1962—. Hon. Pos.: Tech. Vice-Pres., Instrument Soc. of Am., 1953-54; First Vice-Pres., I.S.A., 1954-55. Mem.: Am. Inst. of Physics; A.A.A.S.; Instrument Soc. of Am.; Theta Nu Epsilon; Delta Phi Alpha. Areas of Rsch.: Instrumentation.

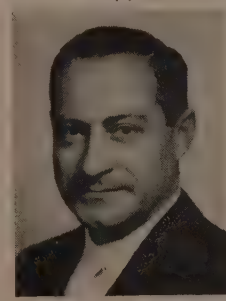
LITTLE, James Kenneth (Ph.D.), Prof. of Ednl. Psychol., Univ. of Wis., Madison, Wis. Home Add.: 1009 Tumalo Trail, Madison 5, Wis. PSYCHOLOGY. b. Alden, Kan., Sept. 1, 1906. s. J. M. and Minnie (Marshall) L. Edn.: A.B., Sterling Coll., 1928; M.S., Kan. St. Coll., 1931; Ph.D., Ohio St. Univ., 1934. Hon. Deg.: LL.D., Sterling Coll., 1951. m. Faye Nelson, June 14, 1930. c.: Kenneth; Philip; Constance. Exp.: Asst. Prof., Univ. of Wis., 1934-39; Assoc. Prof., ibid., 1939-46; Prof., ibid., 1946—; Vice-Pres., Student Affairs, ibid., 1951-57; Deputy U. S. Commissioner of Edn., Wash., D. C., 1954-55; Dir., Survey of Fed. Programs in Higher Edn., Wash., D. C., 1960-61. Hon. Pos.: Pres., Assn. for Higher Edn. Mem.: Am. Psychological Assn.; A.A.A.S.; Am. Ednl. Rsch. Assn.; Natl. Soc. for Coll. Tchrs. of Edn.; Assn. for Higher Edn.; Rotary Club. Author: Decisions of Youth About Education Beyond High School, 1958; College Plans and Experiences of High School Graduates, 1960. Contbr. to: Ency. of Ednl. Rsch.: Jour. of Higher Edn.; The Ednl. Rec.; Jour. of Med. Edn.; Jour. of Engrng. Edn.; Jour. of Exptl. Edn.; Coll. and Univ. Areas of Rsch.: Ednl. Psychol.; Higher Education.

LITTLE, Larry Lester (Mr.), Owner, Domecon Services, 1884 Placentia St., Costa Mesa, Calif. Home Add.: 2574 Carnegie Ave., Costa Mesa, Calif. ELECTRICAL, SOLID STATE CONTROL OF INDUSTRIAL PROCESSES. b. Kanab, Utah, May 21, 1924. s. Lester F. and Madge (Cram) L. Edn.: B.S., Purdue Univ., 1947. m. Beverly Seeds, July 7, 1951. c.: Eric; Mark Stephen; Alan Denis. Exp.: Instr. Psychology, Syracuse Univ., 1948-49; Rsch. Engr. and Chief Rsch. Engr., Western Precipitation Div., Joy Mfg. Co., Los Angeles, Calif., 1950-58; Owner, Domecon Services, Costa Mesa, Calif., 1959—. Mem.: A.A.A.S.; A.I.E.E.; Alpha Phi Omega; Psi Chi; Purdue Independent Assn. Contbr. to: Combustion, Blast Furnace and Steel Plant and Power Engrng. Magazines. Serv. Rec.: Ensign, U. S. Navy, 1944-46. Gen. Int.: Delivered Papers Before A.I.E.E. Winter General Meetings, 1958, 1959. Areas of Rsch.: Industrial Process Control.

LITTLE, Ruby Rice (Mrs.), Histologist, Human Nutrition Rsch. Div., U.S.D.A., Beltsville, Md. Home Add.: 924 20th St., S., Arlington 2, Va. HISTOLOGICAL, MICROSCOPIC, HISTOCHEMICAL STUDIES OF PLANT AND ANIMAL TISSUES USED AS FOODS. b. Knoxville, Tenn., July 23, 1907. d. Marcellus Moss and Ibbie Jane (Weaver) Rice. Edn.: B.A., Univ. of Tenn., 1932; M.S., ibid., 1934. m. Elbert Luther Little, Jr., Aug. 14, 1943. c.: Gordon Rice; Melvin Weaver; Alice Conner. Exp.: Asst., Cornell Univ., 1936-40; Plant Physiologist, U.S.D.A., Beltsville, Md., 1941-44; Botanist, Cinchona Mission, Foreign Econ. Admin., Bogota, Colombia, 1944-45; Histologist, Human Nutr. Rsch. Div., U.S.D.A., Beltsville, Md., 1949—. Mem.: Botanical Soc. of Am.; Botanical Soc. of Wash.; Tenn. Acad. of Sci.; A.A.A.S.; Am. Home Econs. Assn.; Inst. of Food Technologists; Phi Kappa Phi; Sigma Xi; Sigma Delta Epsilon. Author: Histology of Barks of Cinchona and Some Related Genera Occurring in Colombia, 1945. Co-Author: Plant-Growth Regulators, 1943. Contbr. to: Stain Technol.; Cereal Chem.; Food Rsch. Areas of Rsch.: Botany, Mycology, Plant Histology, Histology and Histochem. of Plant and Animal Tissues Used as Food, as Affected by or Related to Preparation and Palatability.

LITTLEFORD, Robert A(nthony) (Ph.D.), Chf., Rsch. Grants Sec., Rsch. and Training Grants Branch, Div. of Water Supply and Pollution Control, Pub. Health Serv., Wash. 25, D. C. Home Add.: 4806 Indian Lane, College Park, Md. ZOOLOGY-MARINE BIOLOGY AND FISHERIES. b. Wash., D. C., July 16, 1910. s. William A. and Mary E. (Carr) L. Edn.: B.S., Univ. of Md., 1933; M.S., ibid., 1934; Ph.D., ibid., 1938. m. Genevieve Everett, Apr. 30, 1938. c.: Angela; Michael; Elaine; Eugene; John; Joyce; Thomas; Kathleen. Exp.: Assoc. Zoologist, Chesapeake Biological Lab., Solomons, Md., 1937-39; Instr. in Biol., Marquette Univ., Milwaukee, Wis., 1939-42; Instr. in Zoology, Univ of Md., College Park, Md., 1942-45; Asst. to Assoc. Prof., ibid., 1945-48; Dir., Seafood Processing Lab., ibid., Crisfield, Md., 1954-58; Dir., Biol. Div., Ward's Natl. Sci. Establishment, Inc., Rochester, N. Y., 1958-61; Chf., Rsch. Grants Sec., Div. of Water Supply and Pollution Control, Pub. Health Serv., Wash., D. C., 1961—. Hon. Pos.: Chmn., Technological Scientific Adv. Comm., Atlantic States Marine Fisheries Comm., 1957-58. Mem.: A.A.A.S.; Ecol. Soc. of Am.; Limnology and Oceanography; Natl. Shellfisheries; Am Soc. of Ichthyologists and Herpetologists; Soc. of Systematic Zoology; Biol. Soc. of Wash.; Sigma Xi. Contbr. to: Science; Nature; Biological Bull.; Ecology; Anatomical Record; Copeia; Am. Naturalist; Herpetologica; Am. Biol. Tchr.; Natural Sci. Bull.; Seafood Proc. Lab., Univ. of Md.; Applied Microbiolgy; Md. Fisheries. Areas of Rsch.: Embryology, Development and Distribution of Coelenterata, Fishery Biology, Fishery Technology; Ecology of Reptiles.

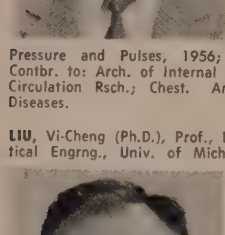
LITTMAN, Maxwell Leonard (M.D.), Mycologist and Bacteriologist, Mt. Sinai Hosp., N.Y.C. MICROBIOLOGY. b. Dec. 16, 1914, Jersey City, N. J. s. Ida and Edward Littman. Edn.: B.S., 1936, M.S., 1937, Cornell Univ.; Ph.D., Rutgers Univ., 1939; M.D., Tulane Univ., Med. Schl., 1950. m. Mildred Geist of Conn., June 30, 1940. d. David and Anna Geist. c.: Charles Edward; Robert Jacob; Michael Geist. Exp.: Instr. of Bacteriol., Tulane Univ., 1945-47; Intern, Walter Reed Army Hosp., 1950-51; Asst. Prof. of Bacteriol., N. Y. Med. Coll., 1951-52; Rsch. Assoc., Microbiol., Mt. Sinai Hosp., N. Y., 1953—; Sci. Dir., Endo. Labs., Richmond Hill, N. Y., 1960-61; Rsch. Prof. of Microbiol., St. John's Univ., 1958—; Adj. Assoc. Prof. of Med., N. Y. Univ. Schl. of Med., 1961—; Sr. Rsch. Scientist and Chf., Mycologist Dept. of Health, N.Y.C., 1961—. Hon. Pos.: Councilor, A.S.M., N.Y.C.; Pres., Med. Mycol. Soc., of N. Y.; Chmn, Mycol. Div., N. Y. Acad. of Sci. . Mem.: N. Y. Acad. of Med., Fellow; Am. Fed. Clin. Rsch.; Pub. Health Assn.; Soc. Exptl. Biol.; Soc. Trop. Med.; Mycol. Soc.; Torrey Botanical Club; Int. Soc. Mycol.; Int.



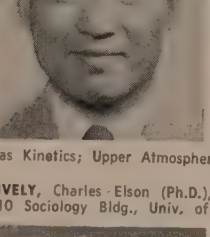
Soc. Trop. Dermat.; Int. Acad. Path.; A.M.A.; A.A.A.S. Gen. Int.: Borden Award, 1950. Serv. Rec.: U. S. Army, Bacteriologist, 1941-46; Lt. Col., M.S.C.; Capt., M.C. Areas of Rsch.: Metabolism Pathogenic Fungi; Microculture and Culture Techniques; Virulence Studies; Epidemiol. Cryptococcosis; Fungal Endophthalmitis; Therapy Mycotic Disease; Anti-Cancer Compounds on Fungi; Enteric Bacteriol.; Stream Pollution.

LIU, Steve Chi Kong (M.D.), Dir., Cardiopulmonary Lab., Los Angeles Co., Harbor Gen. Hosp., Torrance, Calif. Home Add.: 26807 Grayslake Rd., Palos Verdes Estates, Calif. INTERNAL MEDICINE; CARDIOLOGY AND PHYSIOLOGY. b. Canton, China, Aug. 16, 1920. s. Tuck Fan and Hai Tao (Chao) L. Edn.: Chung Ching Univ., Kumning, China, 1940; Attended Natl. Central Univ., 1942; M.D., Schl. of Med., ibid., 1947. m. Milly Liang, Nov. 18, 1951. c.: Patricia Kay; Richard David. Exp.: Instr. of Clin. Med., Chicago Med. Schl., 1953-58; Asst. Prof., U.C.L.A., 1959-62; Assoc. Prof. of Med., ibid., 1962—; Chf. Cardiologist, Los Angeles Co. Harbor Gen. Hosp., Torrance, Calif., 1958—. Hon. Pos.: Bd. of Dirs., Long Beach Heart Assn. Mem.: Am. Coll. of Cardiol., Fellow; Western Soc. of Clin. Rsch. Author: Cardiac Pressure and Pulses, 1956; Intracardiac Phenomenona, 1958. Contbr. to: Arch. of Internal Med.; Am. Heart Jour.; Circulation; Circulation Rsch.; Chest. Areas of Rsch.: Physiol. and Heart Diseases.

LIU, Vi-Cheng (Ph.D.), Prof., Dept. of Aeronautical and Astronautical Engrng., Univ. of Mich., Ann Arbor, Mich. Home Add.: 2104 Vinewood Blvd., Ann Arbor, Mich. GAS DYNAMICS AND GEOPHYSICS. b. China, Sept. 1, 1917. s. Be-Ching and Shu-Fong (Keng) L. (both dec.). Edn.: Chiao-Tung Univ., China, 1940; M.S., Univ. of Mich., 1947; Ph.D., ibid., 1951. m. Hsi-Yen Wang, Mar. 1, 1947. Exp.: Rsch. Assoc., Univ. of Mich., 1948-50; Rsch. Engr. ibid., 1950-59; Prof., ibid., 1959—. Mem.: Inst. of Aerospace Sci., Assoc. Fellow; Am. Phys. Soc.; Am. Geophys. Union; Sigma Xi. Contbr. to: Jour. of Applied Physics; Jour. of Chem. Physics; Quart. Jour. of Mechanics and Applied Math.; Jour. of Aeronautical Scis.; Jour. of Fluid Mechanics; Zeit fur Angew Math. and Mech. Areas of Rsch.: Rarefield Gas Dynamics; Gas Kinetics; Upper Atmosphere Physics.



LIVELY, Charles Elson (Ph.D.), Emeritus Prof. of Rural Sociol., 110 Sociology Bldg., Univ. of Mo., Columbia, Mo., Home Add.: 1414 Anthony, Columbia, Mo. SOCIOLOGY (PARTICULARLY RURAL SOCIOLOGY). b. Marshall Co., W. Va., Sept. 29, 1890. s. Milton Alexander and Suzannah Jane (Riggs) L. Edn.: A.B., Univ. of Neb., 1917; A.M., ibid., 1918; Ph.D., Univ. of Minn., 1931. m. Ethel Dell Johnston, Sept. 21, 1918. Exp.: Farm Laborer, 1905-09; Country Schl. Tchr., 1909-10; Schl. Supt., Shickley, 1913-14; Supt. of Schls., Grafton, Neb., 1914-15; Supt. of Schls., Madison, Neb., 1918-19; Instr. in Sociol., Univ. of Minn., 1919-21; Assoc. Prof., ibid., 1930-31; Asst. Prof., Ohio St. Univ., 1921-31; Assoc. Prof., ibid., 1931-36; Prof., ibid., 1936-38; Rsch. Analyst, F.E.R.A., 1934; Supvr. of Rural Rsch., F.E.R.A. and W.P.A. in Ohio, 1934-38; ibid., Mo., 1938-39; Prof. and Chmn., Dept. of Rural Sociol., Univ. of Mo., 1938—; Dir., Inst. for Rsch. in Social Sci., ibid., 1951-56. Hon. Pos.: Pres., Am. Rural Sociol. Soc., 1942-43; Editorial Bd., 1935-40, and Book Rev. Editor, 1952-54, Jour. Rural Sociol.; Fellow, A.A.A.S.; Secy., Adv. Coun. on Human Relations, A.A.A.S., 1939-44; Am. Delegate to Internatl. Population Congress, Paris, France, 1937; Rsch. Advisory Com., Health Inf. Found., 1950-52; Consultant, Puerto Rican Agri. Expt. Station, 1953; Chmn., Mo. State Com. for Study of Problems of Med. Service for the Indigent. Mem.: Fellow, Am. Sociol. Soc.; Am. Rural Sociol. Soc.; Vice-Pres., Midwest Sociol. Soc., 1941; Population Assn. of Am.; International Union for the Study of Population Problems; Phi Delta Kappa; Alpha Pi Zeta; Alpha Kappa Delta; Gamma Sigma Delta. Author: Readings in Rural Sociol., 1933. Co-Author: Rural Migration in the U. S., 1939; "Conservation Education in American Colleges," Ronald Press, 1957. Contbr. to: Rural Sociol.; Am. Jour. Sociol.; Social Forces; etc. Gen. Int.: Received the Gamma Sigma Delta Award of Merit, 1957; Sc Johnson Award in Public Health, 1961. Special Int.: Soci Aspects of Health and Med. Services; Migration of Populatio Regionalism and Homogenous Areas; Sociol. Rsch. Methods.



LIVINGOOD, John Jacob (Ph.D.), Sr. Physicist, Argonne Natl. La Argonne, Ill. Home Add.: 836 South County Line Rd., Hinsda Ill. PARTICLE ACCELERATORS. Cincinnati, Ohio, Mar. 7, 190 s. Charles J. and Lily Lytle (Fost L. Edn.: B.A., Princeton Uni 1925; M.A., ibid., 1927; Ph.D ibid., 1929. m. Carolyn Zipf, 193 c.: Charles Albert; John Micha Exp.: Instr., Physics Dept., Princ ton Univ., N. J., 1929-32; Rsc Assoc., Radiation Lab., Univ. Calif., Berkeley, 1932-38; Facul Instr., Phy. Dept., Harvard Univ 1938-42; Rsch. Assoc. and Proje Ldr., Radio Rsch. Lab., ibi 1942-45; Assoc. Dir., Rsch. Di Collins Radio Co., 1945-52; Asso Dir., Phy. Div., Argonne Na Lab., Argonne, Ill., 1952-56; Di Particle Accelerator Div., ibi 1956-58; Sr. Physicist, ibid., 19 —. Mem.: Physical Soc.; A.A A.S.; Am. Nuclear Soc.; Phi Beta Kappa; Sigma Psi; Gamm Alpha; R.E.S.A. Co-Author: Experimental Atomic Physics, 193 Author: Principles of Cyclic Particle Accelerators, 1961. Contb to: Physical Review; Reviews of Modern Physics; Jour. Am. Chem Soc.; Science; Arch. of Ophthalmology. Areas of Rsch.: Zeema Effect in Optical Spectra; Induced Radioactivity; Radar Jammin Transmitters; Particle Accelerators.

LIVINGSTON, Ernest M. (Ph.D.), Prof. of Chem., Brooklyn Coll Brooklyn 10, N. Y. Home Add.: 67-12 Yellowstone Blvd Forest Hills 75, N. Y. PHYSICAL AND ANALYTICAL CHEMISTRY b. Cassel, Germany, Sept. 21, 1902. s. William Smith an Therese C. A. (Biermann) L. Edn.: B.S., N. Y. Univ., 1925 M.S., ibid., 1926; Ph.D., ibid., 1931. m. Florence Kempne Mar., 1932. c.: Richard E.; Robert W. Exp.: Fellow, N. Y Univ., 1925-26; Fellow, Brooklyn Coll., 1929—; Prof., ibid 1958—. Mem.: A.C.S.; A.A.A.S.; N. Y. Acad. of Scis.; Metropol tan Microchemical Soc.; Iota Alpha; Sigma Xi. Contbr. to Jour. of Physical Chem.; Jour. of Biological Chem.; Chemist Analyst; Microchemical Jour.; Microchimica Acta. Areas o Rsch.: Analytical and Physical Chem.

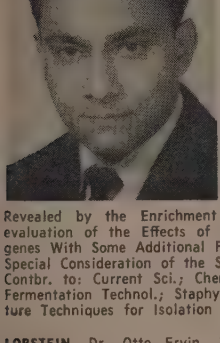
LIVINGSTON, Robert Teviot (Mr.), Prof. of Industrial Engrng. Columbia Univ., N. Y., N. Y. Home Add.: 69 Highridge Ave. Ridgefield, Connecticut and 88 Morningside Dr., N. Y., N. Y. SPECIFICALLY ORGANIZATION AND MANAGEMENT (INDUSTRIA ENGINEERING). b. Indianapolis, Ind., July 7, 1896. Edn.: M.E. Rensselaer Polytechnical Inst., 1917. m. Geraldine Gray, Dec 3, 1922. c.: Robert Gerald; Peter Robert. Exp.: Prof., Colum bia Univ., 1921—; Dir. of Rsch., L. I. Lighting Co., N. Y., N. Y. 1933-58; Consulting Editor, McGraw Hill Publishing Co.,, N. Y. N. Y., 1948-51. Hon. Pos.: V.-Pres., Am. Inst. of Indust. Engrs. Vice Pres., Soc. for the Advancement of Mgmt.; Metropolita Exec. Comm., A.S.M.E. Mem.: A.A.A.S.; Adult Edn. Assn. of the U.S.A.; Am. Inst. of Ind. Engrng.; Am. Inst. of Mgmt.; Am Soc. for Engrng. Edn.; Am. Soc. of Mechanical Engrng.; Am Soc. of Training Dirs.; Am. Soc. of Quality Control.; Am. Statistical Assn.; Coun. for Internatl. Progress in Mgmt.; Inst. of Mgmt. Scis.; Natl. Mgmt. Coun. of the U.S.A.; Natl. Planning Assn.; Soc. of Applied Anthropol.; Alpha Pi Mu; Sigma Xi; Waccabuc Country Club; Col. U. Club. Author: The Engineering of Organization and Management, 1949; Proceedings for Utility Management Workshops, 1952, 1953, 1954, 1955. Co-author: Human Relations in Industrial Research, 1957; You and Management, 1958; The Manager's Job, 1960. Contbr. to: Publ. Utilities Fortnightly; Jour. of the Am. Soc. of Training Dirs.; Trans. of A.S.M.E.; Columbia Engrng. Quart.; Columbia Industrial Reports; Cogwheel; Human Relations; Personnel; Bull. of the Edison Electric Inst.; Bull. of the Taylor Soc.; Mechanical Engrng.; Power Plant Engrng.; Electric World. Serv. Rec.: U. S. Navy, W. W. I. Gen. Int.: Freedoms Foundation Award, 1951. Areas of Rsch.: Fundamentals of Organization and Mgmt.; Methodol. of Problem Statement and Solution; The Relations Between the Social Scis. and Engrng.; The Status of Rsch. in Industrial Group Behavior; Rsch. in Sequential Decisioning.

LOBB, John (Ph.D.), Prof. of Economics and Sociol., Mt. Holyoke Coll., South Hadley, Mass. Home Add.: 25 Silver St., South Hadley, Mass. SOCIOLOGY-ANTHROPOLOGY. b. Oshkosh, Wis., Sept. 17, 1905. s. Nathaniel and Marjorie (Simonds) L. Edn.: B.A., Yale Univ., 1930; Ph.D., ibid., 1934. m. Nancy Wilson, Dec. 20, 1937. c.: Linda Wilson. Exp.: Faculty, Mt. Holyoke Coll., 1934—. Hon. Pos.: Past V.-Pres., Adult Edn. Assn. of Mass.; Bd. of Dirs., Fam. Serv. Soc. Mem.: Phi Beta Kappa; A.A.A.S.; Amer. Sociology Assn.; Eastern Sociology Soc.; Amer. Anthropol. Assn.; Natl. Coun. on Fam. Relations; Zeta Psi. Author: "The Frontier in South Africa"; "Studies in the Science

of Society, 1937. Contbr. to: Prof. Journals. War Record: O.W.I., W. W. II. Areas of Rsch.: Family; Juvenile Delinquency; South Africa.

LOBENE, Ralph Rufino (D.D.S.), Asst. Prof., Coll. of Physicians and Surgs. of San Francisco, Calif. Office Add.: 344 14th St., San Francisco 3, Calif. Home Add.: 6 Locksley Ave., San Francisco 22, Calif. DENTISTRY—SUB SPECIALTY PERIODONTOLOGY RESEARCH-ANALYTICAL CHEMISTRY. b. Rochester, N. Y., March 30, 1924. s. Cesedio Joseph and Loretta (Marinetti) L. Edn.: B.S., Univ. of Rochester, 1944; D.D.S., Univ. of Buffalo, 1949; M.S., Tufts Univ., 1962. m. Lucille Tubiolo, July 1, 1950. Exp.: Rsch. Assoc., Manhattan Project, Univ. of Rochester, 1944-45; Rsch. Chemist, Merck and Co., Rahway, N. J., 1945-46; Clin. Instr. in Dental Rsch. and Dentistry, Univ. of Rochester, 1953-62; Asst. Dental Surgeon, Strong Memorial Hosp., ibid., 1953-62; Priv. Practice, Rochester, N. Y., 1953-59; Rsch. Assoc., Eastman Dental Disp., N. Y., 1958-62; Asst. Prof., Periodontol., Coll. of Physicians and Surgeons of San Francisco, 1962—. Hon. Pos.: Chmn., Rochester Section, Internatl. Assn. for Dental Rsch. Mem.: Am. Soc. Periodonists; Fellow, Internatl. Coll. of Dentists; Am. Acad. Dental Med.; Fellow, A.A.A.S.; Am. Dental Assn.; N. Y St. Dental Soc.; Am. Inst. Dental Med.; Int. Assn. for Dental Rsch.; Federation Dentaire Internatl.; Pierre Fuchard Acad.; Psi Xi Phi; Sigma Xi. Contbr. to: Jour. Dental Rsch. Serv. Rec.: U. S. Army, 1951-53. Areas of Rsch.: Dentistry; Research Analytical Chemistry; Chemical Composition of Tooth Structure; Clinical Research and Trials of Anti Caries Agents.

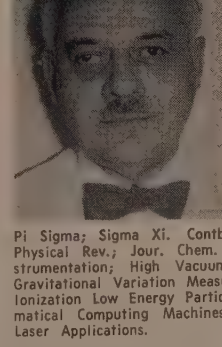
LOBO, Francis Xavier (Ph.D.), Assoc. Prof., Marywood Coll., Scranton 10, Pa. Home Add.: 815 Newton Rd., Scranton 4, Pa. PURE AND APPLIED MICROBIOLOGY. b. Aden, Arabia, Oct. 8, 1925. s. Anthony M. and Rita (Rodrigues) L. Edn.: B.Sc., Bombay Univ., India, 1947; M.Sc., ibid., 1950; Ph.D., Institutum Divi Thomae, Cincinnati, Ohio, 1959. m. Annette Davis, Oct. 29, 1960. c.: Anthony Laurence. Exp.: Demonstrator in Microbiol., St. Xavier Coll., Bombay, India, 1947-50; Technician-Bacteriologist, Worli Gen. Hosp., Bombay, India, 1950-51; Rsch. Microbiologist-Chemist, Chemo-Pharma, Bombay, India, 1951-57; Instr., Marywood Coll., 1960-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Soc. of Microbiologists; Pa. Catholic Roundtable of Sci. Author: Microorganisms of the Intestinal Tract as Revealed by the Enrichment Culture Technique, 1950; A Re-evaluation of the Effects of Brain Extract on Micrococcus Pyogenes With Some Additional Fractionation Studies, Together With Special Consideration of the S 80/81 Group of Organisms, 1959. Contbr. to: Current Sci.; Chem. Age of India. Areas of Rsch.: Fermentation Technol.; Staphylococcic Infections; Enrichment Culture Techniques for Isolation of Intestinal Flora.



LOBSTEIN, Dr. Otto Ervin, Lobstein Biochem. Lab., 911 Pico Blvd., Santa Monica, Calif. Home Add.: 512 Arbramar Avenue, Pacific Palisades, Calif. BIOCHEMISTRY, CLINICAL BIO-ANALYSIS, BACTERIOLOGY. b. Czechoslovakia, Apr. 12, 1922. s. Robert and Fritzi (Adler) L. Edn.: Diploma, City of London Coll., 1939; B.S., Univ. of London, 1945; Ph.D., Northwestern Univ., 1952. m. Miriam T. Goldberg, April 11, 1952. c.: Dennis David; Harvey Roy. Exp.: Asst. Rsch. Chem., Messrs. Howards & Sons, Ltd., Ilford, England, 1942-46; Chem., Rsch., Aberdeen Proving Grounds, U. S. Army Ordnance, 1946-47; Biochem., Elgin State Hosp., 1947-48; Instr. in Chem., Schl. of Nursing, Northwestern Univ., 1949-52; Fellow in Surgery, ibid., 1949-52; Fellow in Biochem., ibid., 1950-52; Rsch. Assoc., Univ. of So. Calif., 1952-53; Co-Owner, Chem.-Tech. Labs., Beverly Hills, Calif., 1952-62; Visiting Rsch. Prof., Dept. of Chem., Univ. of Redlands, 1959—. Hon. Pos.: Treas., Jewish Comm. of Pacific Palisades, Men's Club, 1955-58; Pres., ibid., 1958-59; Vice-Pres., ibid., 1960-61; Treas., Hi-Fi Associates Investment Club, 1956-61; Secy.-Treas., Rsch. Fdtn. for Diseases of the Eye, 1959—. Mem.: Fellow, Am. Assn. Adv. Sci.; Fellow, Am. Inst. of Chems.; Fellow, Am. Assn. Clin. Chems.; Am. Chem. Soc.; Am. Assn. Bioanalysts; Assn. of Vit. Chems.; So. Calif. Soc. for Appld. Spectry.; Soc. Am. Bacts.; N. Y. Acad. of Scis.; Inst. Food Tech.; Animal Care Panel; Natl. Assn. for Med. Rsch.; Sigma Xi; Natl. Congr. of Parents and Tchrs.; Life Mem., Beverly Hills Health Club; Northwestern Univ. Alumni Assn. Contbr. to: Jour. of Gastroentology; Am. Jour. Digestive Diseases; Quar. Bull. of Northwestern Univ. Med. Schl.; J.A.M.A.; The Chemist; New England Jour. of Med.; Annals of Int. Med. Areas of Rsch.: Biochemistry of Peptic Ulcer from the Enzyme Point of View—in particular the role of Lysozyme. Expansion of the role of Lysozyme to General Carcinomatosis, especially the treatment with Lysozyme of Experimental Lymphosarcoma; The Biochemistry of the Crystalline Lense of the Eye in Normals and in Cataracts.

LOCALIO, S. Arthur (M.D.), 63 East 66th St., N. Y. 21, N. Y. GENERAL SURGERY. b. N. Y., N. Y., Oct. 4, 1911. s. Joseph and Carmela (Franco) L. Edn.: A.B., Cornell Univ., 1933; M.D., Univ. of Rochester Schl. of Med., 1936; Med. D.Sc., Columbia Univ., 1942. m. Ruth Adkins, July 14, 1945. c.: William Hale; Susan Emily; Arthur Russell; David Charles. Exp.: Instr. in Surgery, N. Y. Univ. Post-Grad. Med. Schl., 1945-48; Asst. Prof. of Surgery, 1948-50; Assoc. Prof. of Surgery, ibid., 1950-53; Prof. of Surgery, 1953—. Mem.: Am. Bd. of Surgery; Am. Assn. for the Surgery of Trauma; N. Y. Surgical Soc.; Am. Gastroenterological Soc.; Am. Coll. of Surgeons; A.M.A.; N. Y. Acad. of Med.; N. Y. Acad. of Scis.; N. Y. Gastroenterological Soc.; N. Y. Cancer Soc.; N. Y. Co. Med. Soc.; N. Y. St. Med. Soc.; Soc. for Surgery of Alimentary Tract; Sigma Xi; Sociedad Colombiana de Cirujanos. Contbr. to: Jour. Biol. Chem.; Proc. Soc. Exptl. Biol. and Med.; Jour. Clin. Investigation; Arch. Int. Med.; N. Y. St. Jour. of Med.; Jour. A.M.A.; Surg., Gynec. and Obst.; Ann. of Surg.; Bull. N. Y. Acad. of Med.; Am. Practitioner; Arch. Surg.; Surgical Forum; Am. Jour. of Surg.; Jour. Am. Geriatrics Soc.; Surg. Clinics of N. Am.; Mo. Med.; Am. Jour. Surg. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Wound Healing, Gastro-intestinal Tract Surgery.

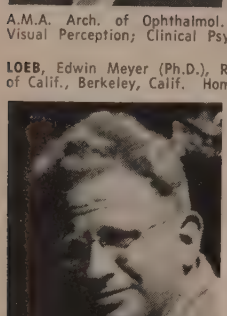
LOCKENVITZ, Arthur Ernst (Mr.), Prof. of Physics, Univ. of Tex., Austin, Tex., Dir. Milit. Physics Rsch. Lab., Austin, Tex. Home Add.: 112 Skyline Dr., Austin, Tex. PHYSICS, THERMODYNAMICS, KINETIC GAS THEORY AND STATISTICAL MECHANICS, AIR-TO-AIR FIRE CONTROL, ANALOG COMPUTERS. b. Bloomington, Ill., Jan. 7, 1902. s. Ernst and Katie (Gutekunst) L. Edn.: B.S., Ill. Wesleyan Univ., 1925; M.A., Ind. Univ., 1926. m. Margaretha Brandt, Sept. 7, 1930. c.: Brigitta L. Morris. Exp.: Engr., Western Elect. Co., Chicago, Ill., 1926-27; Instr., Univ. of Tex., 1939-45; Asst. Prof., ibid., 1945-52; Prof., ibid., 1952—; Staff Mem., War Rsch. Lab., O.S.R.D., Austin, Tex., 1942-45; Dir., Milit. Physics Rsch. Lab., Austin, Tex., 1945—. Mem.: Am. Physical Soc.; Am. Assn. of Physics Tchrs.; Sigma Pi Sigma; Sigma Xi. Contbr. to: Rev. Sci. Inst.; Geophysics; Physical Rev.; Jour. Chem. Phys. Areas of Rsch.: X-Ray Instrumentation; High Vacuum Techniques, Pumps and Gauges; Gravitational Variation Measurements; Alpha Particle Ionization; Ionization Low Energy Particles; Properties of Selenium; Mathematical Computing Machines; Military Air-to-Air Fire Control; Laser Applications.



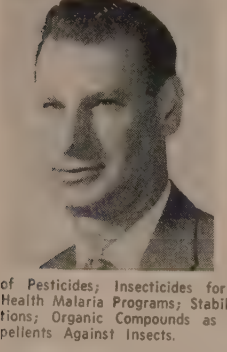
LOCKHART, James Arthur (Ph.D.), Assoc. Plant Physiologist, Dept. of Plant Physiology, Univ. of Hawaii, Honolulu 14, Hawaii. Home Add.: 3069 Kaholoa Dr., Honolulu, Hawaii. PLANT PHYSIOLOGY. b. Grand Rapids, Mich., June 7, 1926. s. Arthur J. and Ruth L. (Eyles) L. Edn.: B.S., Mich. State Coll., 1949; M.S., ibid., 1952; Ph.D., Univ. of Calif., 1954. m. Donna M. Batson, 1948. c.: Thomas A.; Joan E. Exp.: Plant Physiologist, Camp Detrick, Frederick, Md., 1950-51; N.S.F. Postdoctoral Fellow, Univ. of Pa., 1954-55; Rsch. Fellow, Calif. Inst. of Tech., Pasadena, Calif., 1955-60; Assoc. Plant Physiologist, Univ. of Hawaii, 1960—. Mem.: Am. Soc. of Plant Physiologists; Botanical Soc. of Am. Growth Soc.; A.A.A.S.; Scandinavian Soc. for Plant Physiology; Sigma Xi. Contbr. to: Encyclopedia of Plant Physiology, Vol. 16, 1961; Photoperiodism and Related Phenomena, 1959; Plant Growth Regulation, 1961; Plant Physiology; Am. Jour. of Botany; Physiologia Plantarum; Planta; Botanical Gazette. Serv. Rec.: U. S. Army, 1944-46, 1950-51. Areas of Rsch.: Mechanism of Action of Environmental Factors on Plant Growth; Physiology of Hormone Action; Growth Kinetics; Photoperiodism.

LODGE, Ann (Ph.D.), U.S.P.H.S., Rsch. Fellow, Sect. on Neuropsychology, Lab. of Psychol., Natl. Inst. of Mental Health, Bethesda 14, Md. Home Add.: Persimmon Tree Rd., Bethesda 14, Md. PSYCHOLOGY. b. Cleveland, Ohio, July 22, 1931. d. George Townsend and Edith (Bennett) L. Edn.: A.B., Wilkes Coll., 1955; Ph.D., Duke Univ., 1960. Exp.: Clinical Psychol. Trainee, McGuire V.A. Hosp., Richmond, Va., 1956; Intern in Med. Psychol., Duke Univ. Med. Ctr., 1957-58; Rsch. Asst., ibid., 1958-59; Staff Psychologist, Durham Child Guidance Clinic, Durham, N. C., 1959-60; U.S.P.H.S. Rsch. Fellow, Natl. Inst. of Mental Health, Bethesda, Md., 1960—. Mem.: Am. Psychological Assn.; A.A.A.S.; Internatl. Coun. of Psychologists; Sigma Xi. Contbr. to: Psychoanalytic Review; Jour. of Consulting Psychol.; A.M.A. Arch. of Ophthalmol. Areas of Rsch.: Neuropsychol.; Visual Perception; Clinical Psychol.

LOEB, Edwin Meyer (Ph.D.), Rsch. Assoc., Dept. of Geog., Univ. of Calif., Berkeley, Calif. Home Add.: 1565 La Vereda, Berkeley, Calif. ETHNOGEOGRAPHY. b. Mar. 15, 1894, N.Y.C. s. Albert and Rose (Guggenheim) L. Edn.: Collegiate Schl., N.Y.C.; Ph.D., Yale Sheff., 1917; Yale Grad. Schl., Ph.D., 1922. m. Ella Marie Karr of Los Angeles, Calif., 1942. d. Cleta Blossom and Wendell Karr. c.: Timmy; Peter; Barbara. Exp.: Lectr., Univ. of Calif., 1922-50; Guggenheim Fellow, 1928-29; Visiting Prof., Univ. of Vienna, Austria, 1958-59; Rsch. Assoc., Univ. of Calif., Berkeley, Calif., 1962—. Mem.: Fellow, Am. Anthropol. Assn.; Fellow, Royal Anthropol. Assn., Great Britain and Ireland. Author: Peoples of Sumatra, Vienna, 1935. Contbr. to: Sci. Jours. War Record: O.S.S. E. Indies Sect. Areas of Rsch.: Peoples of Indonesia, Polynesia, Indians of Calif. and the Southwest and South Africa.



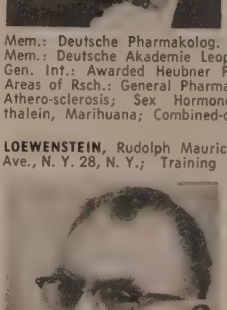
LOEFFLER, Erwin Stanley (Ph.D.), Mgr., Ag. Chem. Dept., Shell Tech. Serv. Lab., Union, N. J. Home Add.: 67 Woodbine Circle, New Providence, N. J. AGRICULTURAL CHEMISTRY, INSECTICIDAL CHEMISTRY, INSECT TOXICOLOGY. b. Denver, Colo., Aug. 3, 1913. s. Leo and Frieda (Huppert) L. Edn.: B.A., Univ. of Calif., 1938; Ph.D., ibid., 1943. m. Martha Rubin, 1943. c.: David Alan; Michael Gene. Exp.: Chemist, U. S. Navy, Bur. of Ships, Mare Island, Calif., 1944-45; Chemist, Sr. Technologist, Shell Chemical Co., N. Y., N. Y., 1949-59; Mgr., Ag. Chem. Dept., ibid., Union, N. J., 1959—. Mem.: A.C.S.; A.A.A.S.; Entomological Soc. of Am.; Sigma Xi. Contbr. to: Jour. of Econ. Entomol.; Ag. and Food Chem.; A.A.A.S. Publication. Areas of Rsch.: Agric. Chem. with Emphasis on Rsch. on Formulation of Pesticides; Insecticides for Control of Mosquito for World Health Malaria Programs; Stabilization of Solid Pesticide Formulations; Organic Compounds as Knockdown Agent, Toxicants, Repellents Against Insects.



LOEVINGER, Lee (Mr.), Asst. Attorney General Dept. of Justice, Washington 25, D. C. Home Add.: 5669 Bent Branch Rd., Wash. 16, D. C. JURIMETRICS. b. St. Paul, Minn., Apr. 24, 1913. s. Gustavus and Millie (Strouse) L. Edn.: B.A., Univ. of Minn., 1933; LL.B., ibid., 1936. m. Ruth Howe, 1950. c.: Barbara; Eric; Peter. Exp.: Assoc., Watson, Ess, Groner, Barnett and Whittaker, Kans. City, Mo., 1936-37; Trial Attorney and Regional Attorney, Natl. Labor Relations Bd., 1937-41; Attorney, Anti-trust Div., U. S. Dept. of Justice, 1941-46; Partner in Larson, Loevinger, Lindquist and Fraser, Minneapolis, Minn., 1946-60; Assoc. Justice, Minn. Supreme Court, 1960-61; Asst. Attorney General, Dept. of Justice, Wash., D. C., 1962—. Mem.: Minn. and Am. Bar Assn.; Am. Judicature Soc.; Fed. Bar Assn.; Phi Beta Kappa; Sigma Xi; Delta Sigma Rho; Sigma Delta Chi; Phi Delta Gamma; Tau Kappa Alpha. Author: The Law of Free Enterprise, 1949; An Introduction to Legal Logic, 1952. Contbr. to: Basic Data on Atomic Development Problems in Minn., editor and Contbr.; Wash. Univ. Law Quart.; A Rev. of General Semantics; Minn. Law Rev.; Iowa Law Rev.; Antitrust Bull.; Minn. Reg. Nurse; Numerous other Professional Periodicals. Serv. Rec.: U. S. Navy, 1942-45.

LOEWE, (Walter) Siegfried (M.D.), Rsch. Prof. Emer., Dept. Pharmacology, Univ. of Utah Coll. of Med. Home Add.: 315 11th East St., Salt Lake Cit Utah. PHARMACOLOGY. b. Fuer i. B., Germany, Aug. 19, 188 s. August and Clothilde (Blume thal) L. Edn.: M.D., Strassbu Univ., 1908. m. Ida Adelhe Witte, Nov. 27, 1919. c.: Herma Ludwig; Susanne R. Puttuck; Je L. Exp.: Dir., Chem. Lab., Ps chiatric Clinic, Univ. of Leipzi 1910-12; Asst. Prof., Dept. Pharmacol., Univ. of Goettinge 1912-17; Assoc. Prof., ibid., 191 19; Prof. and Hd. Dept. of Pha macol., Univ. of Dorpat, 1920-2 Dir. of Labs., City Hosps., Man heim, 1928-34; Rsch. Prof., Dep of Pharmacol., Univ. of Utah Co of Med., 1946—. Hon. Pos.: Ho Prof. of Pharmacol., Univ. Heidelberg, 1929-34, 1948—. Ho Mem.: Deutsche Pharmakolog. Ges.; Deutsche Ges. f. Endocrino Mem.: Deutsche Akademie Leopoldina; and various Am. Societie Gen. Int.: Awarded Heubner Plakette, Deutsche Pharmakol. Ge Areas of Rsch.: General Pharmacology; Theory of Narcosis; Expe Athero-sclerosis; Sex Hormones; Autonomic Drugs; Phenolp thalein, Marihuana; Combined-drug Action (isobolography).

LOEWENSTEIN, Rudolph Maurice (M.D.), Physician, 1100 Madiso Ave., N. Y. 28, N. Y.; Training Analyst and Instr., N. Y. Psychoa alytic Inst., N. Y., N. Y. Home Add 1148 Fifth Ave., N. Y. 28, N. PSYCHOANALYSIS. b. Lodz, Po land, Jan. 17, 1898. s. Mauric and Charlotte (Taube) L. Edn M.D., Univ. of Berlin, 1923; M.D Univ. of Paris, 1935. m. Elisa beth Rozetta Geleerd, July 1 1946. c.: Dominique-Therese Elisabeth - Charlotte; Marie - Fra coise; Richard Joseph. Exp.: Asst Berlin Psychoanalytic Inst., Berli 1923-25; Asst., Clinique Psych atrique de la Faculte de Medecine Univ. of Paris, 1925-39; Trainin and Analyst and Lecturer, Pari Psychoanalytic Institute, 1925 40; Training Analyst and Lec turer, N. Y. Psychoanalytic Inst 1943— Hon. Pos.: Former Pres. N. Y. Psychoanalytic Inst., 195 51; Am. Psychoanalytic Assn., 1957-58; N. Y. Psycho analytic Soc., 1959-61. Mem.: Am. Psychoanalytic Assn.; Inter natl. Psychoanal. Assn.; Fed. of Am. Scientists; Am. Med. Assn Med. Soc. of State and Co. of N. Y.; Life Fellow, Internatl. Inst of Arts and Letters. Author: Christians and Jews: A Psycho analytic Study, 1951; Psychoanalyse de l'Antisemitisme, 1952 Editor, Drives, Affects, Behavior, 1953. Contbr. to: Internatl Jour. of Psycho-Analysis; Jour. of The Am. Psychoanal. Assn.; The Psychoanal. Quart.; The Psychoanalytic Study of the Child Revue Francaise de Psychanalyse; L'Evolution Psychiatrique; Am Jour. of Psychiatry; Imago; Internatl. Zeitschrift fur Psycho analyse. Serv. Red.: French Army, Medecin de Bataillon), Croi de Guerre, 1939-40. Areas of Rsch.: Psychoanalytic Theor of the Ego and Superego; Application of Psychoanalysis t Social and Hist. Problems; Tchng. of Psychoanalytic Technique and Methodology.



LOEWNER, Charles (Ph.D.), Prof., Dept. of Math., Stanford Univ. Stanford, Calif. Home Add.: 511 Benvenue Ave., Los Altos, Calif MATHEMATICS. b. Lany, Bohemia. s. Sigmund and Johanna (Kraus) L. Edn.: Ph.D., German Univ. in Prague, 1917. m. (dec.) c.: Marian; Paul. Exp.: Asst. in German Inst. of Tech. in Prague 1917-22; Prinadoxent at Univ. in Berlin, Ger., 1922-28; Asst Prof. at Univ., Cologne, Ger., 1928-30; Prof. at German Univ. o Prague, 1930-39; Lectr. and Asst. Prof., Univ. of Louisville 1939-43; Rsch. Assoc. at Brown Univ., 1943-45; Prof., Syracuse Univ., 1945-51; Prof., Stanford Univ., 1951—. Mem.: Am Mathematical Soc.; Mathematical Assn. of Am.; Am. Assn. fo the Adv. of Sci. Contbrng. Author: Frank-Mises, Differential— und Integralgleichuegen der Physik. Contbr. to: Mathematische Zeitschrift; Mathematische Annalen; Annals of Mathematics; Jour. of Mathematics and Mechanics; Pacific Jour.; Jour. d'Analyse Mathematique. Areas of Rsch.: Pure and Applied Mathematics.

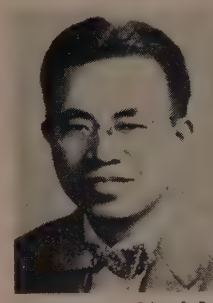
LOFLIN, Zeke Lowe, Jr. (Ph.D.), Head, Math. Dept., Univ. of Southwestern La., Lafayette, La. Home Add.: 1004 W. University Ave., Lafayette, La. MATHEMATICS, PETROLEUM ENGINEERING b. McComb, Miss., Nov. 11, 1909. s. Z. L., Sr. and Ada Ester (Simpson) L. Edn.: B.S., La. State Univ., 1932; M.S., ibid., 1933; Ph.D., Columbia Univ., 1949. m. Hazel McElhanon, Oct. 22, 1943. c.: Susan Louise; Thomas George. Exp.: Prof. of Math., Southwest Jr. Coll., 1932-36; Instr., La. State Univ., 1936-40; Head, Math. Dept., Univ. of Southwestern La., 1940— Hon. Pos.: Chmn., La. Miss. Sect., Math. Assn. of Am.; Pres., Lafayette Sect., La. Engrng. Soc. Mem.: Phi Kappa Phi; Phi Eta Sigma; Am. Math. Soc.; Math. Assn. of Am.; A.S.E.E.; Theta Xi; Pi Mu Epsilon; Kappa Mu Epsilon. Contbr. to: Math. Tchr. Areas of Rsch.: Boundary Value Problems; Petroleum Reservoir Engrng.

LOGAN, Ida-Marie C. (Mrs.), Chf. Ref. Librn., Utah St. Univ., Logan, Utah; Assoc. Prof., ibid., Logan, Utah . Home Add.: 130 East Center St., Logan, Utah. LITERATURE OF THE SCIENCES; RETRIEVAL OF SCIENTIFIC INFORMATION. b. Logan, Utah, Dec. 10. d. Samuel E. Clark and Ida (Anderson) C. Edn.: B.S., U.S.-A.C., 1938; M.S., Utah St. Univ., 1956; M.A.L.S., Univ. of Denver, 1960. m. Stanley H. Logan (dec.), Sept. 8, 1939. Exp.: Grad. Asst., Cornell Univ., 1941-44; Ref. Librn., Utah St. Univ., 1947—; Asst. Prof., ibid., 1957-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Vice-Pres., Faculty Assn.; Mem., Faculty Senate. Mem.: A.A.A.S.; Phi Kappa Phi; Delta Kappa Gamma; A.A.U.W.; U.L.A.; M.P.L.A.; Pi Gamma Mu; Alpha Chi Omega; Logan Literary Club; Logan Knife and Fork Club (Bd. Dir.); Faculty League; Northern Utah Safety Coun. (Bd. Dir.). Author: A Statistical Method for Evaluating Serial Holdings. Contbr. to: Utah Historical Quarterly. Gen. Int.: Recipient of Jasper Award Given by Bibliographical Center for Rsch., Denver, Colo., For Outstanding Librarianship and Bibliographical Rsch. Author of "A Bibliography of Theses and Dissertations Concerning Utah or the Mormons Written Outside the State of Utah; A Statistical Method for Evaluating Serial Holdings, 1961. Areas of Rsch.: Bibliographical Rsch. and Retrieval of Scientific Information.

LoGRIPPO, Gerald A. (M.D.), Physician-in-Chg., Div. Microbiology, Henry Ford Hosp., Detroit, Mich. Home Add.: 36 Ridge Rd., Pleasant Ridge, Mich. VIRUS DISEASES OF MAN. b. Norristown, Pa., Aug. 15, 1910. s. Felix and Marie (Vallerio) L. Edn.: A.B., Johns Hopkins Univ., 1933; M.S., Univ. of Pa, 1935; M.D., Med. Coll. of Va., 1939. m. Dr. Annie Belle Bradley, June 1, 1940. c.: Frank; Marion; Agnes. Exp.: Rsch. Fellowship, Mich. St. Health Dept. Lab., Lansing, Mich., 1940-41; Rsch. Fellowship, N. Y. Univ. Coll. Med., Bellevue Med. Center, 1946-47; Rsch. Assoc., Dept. Med., ibid., 1947-51; Physician-in-Chg., Div. Microbiol., Henry Ford Hosp., Detroit, 1951—. Hon. Pos.: Vice-Chmn., Internatl. Symposium on "The Dynamics of Virus and Rickettsial Infections"; Secy., Internatl. Symposium, "Hepatitis Frontiers"; Secy., Internatl. Symposium, "Mechanisms of Hypersensitivity." Mem.: Fellow, Am. Acad. Microbiol.; Internatl. Soc. Pediatrics; Internatl. Soc. Blood Transfusion; Soc. Am. Bact.; Am. Soc. Exptl. Pathology; N. Y. Acad. Scis.; Am. Assn. Immunol.; Am. Pub. Health Assn.; Am. Fed. Clin Rsch.; Phi Chi; Sigma Xi. Co-editor: Hepatitis Frontiers, 1956; Mechanisms of Hypersensitivity, 1959. Contbr. to: Jour. A.M.A.; Jour. Bact.; Jour. Immunol.; Am. Jour. Pub. Health; Lab. Invest.; Gastroenterol.; Jour. Bone and Joint Surg.; Arch. Surg.; Henry Ford Hosp. Med. Bull.; N. Y. Acad. Sci.; Soc. Exptl. Biol. and Med.; Jour. Lab. and Clinical Med. Serv. Rec.: U. S. Army, 1941-46, Lt. Col., M.C. Gen. Int.: Pediatrics; Infectious Diseases; Diagnostic Microbiology. Areas of Rsch.: Exptl. and Clin. Chemotherapy and Chemoprophylaxis of Virus Diseases; Chem. Sterilization of Biological Materials; Viz., Human Plasma and Whole Blood; Tissues for Homotransplantation; Inactivated Virus Vaccines; Methodology for Laboratory Diagnosis of Virus Diseases.

LOH, Hwei-Ya Chang (M.D., Ph.D.), Pathologist, St. Margaret Hosp., Hammond, Ind.; Pathologist, Parkview Hosp., Plymouth, Ind. Home Add.: 212 Cleveland St., Gary, Ind. ANATOMICAL PATHOLOGY AND CLINICAL PATHOLOGY. b. China, Aug. 2, 1920. d. Y. C. and W. Y. (Hsu) C. Edn.: M.D., Yale in China Med. Schl., 1944; M.S., Univ. of Utah, 1952; Ph.D., Boston Univ., 1956. m. W. P. Loh, June, 1950. c.: Terry; Gary; Judy. Exp.: Instr. in Pathol., Ind. Univ. Schl. of Med., Indianapolis, Ind., 1954-55; Asst. Pathologist, Quincy City Hosp., Mass., 1955-56; Pathologist, Meth. Hosp., Gary, Ind., 1956-61; Pathologist, Parkview Hosp., Plymouth and Starke Meml. Hosp., Knox, Ind., 1961—. Hon. Pos.: Diplomate, Am. Bd. of Pathology. Mem.: Sigma Xi; Coll. of Am. Pathol.; Am. Med. Assn. Contbr. to: Anatomical Record; Cancer Rsch.; Am. Jour. of Pathol.; Proc. Soc. Exp. Biol. and Md.; Fed. Proc.; Obs. and Gynec.; Lab Investigation. Areas of Rsch.: Surgical Pathology and Cytology.

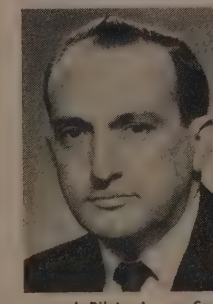
LOH, Wei-Ping (M.D., Ph.D.), Chf. Pathologist, Methodist Hosp., Gary, Ind. Home Add.: 212 Cleveland St., Gary, Ind. CLINICAL PATHOLOGY, ANATOMICAL PATHOLOGY, HEMATOLOGY, INTERNAL MEDICINE AND PUBLIC HEALTH. b. China, Mar. 26, 1921. s. Ching-Shan and Te-I (Chang) L. Edn.: M.D., Natl. Med. Coll. of Shanghai, China, 1946; M.P.H., Univ. of Mich., 1950; Ph.D., Boston Univ., 1954. m. Hwei-Ya Chang, June, 1950. c.: Terry; Gary; Judy. Exp.: Instr. in Pathology, Ind. Univ. and Asst. Pathol., Indianapolis Gen. Hosp., Indianapolis, Ind., 1954-55; Asst. Pathologist, Quincy City Hosp., Mass., 1955-56; Pathologist, Meth. Hosp., Gary, Ind., 1956-61; Asst. Prof. of Pathol., Chicago Med. Schl., Ill., 1960—; Dir. of Labs., and Chf. Pathologist, Meth. Hosp., Gary, Ind., 1961—. Hon. Pos.: Diplomate, Am. Bd. of Pathology; Certified in Internal Med.; Royal Coll. of Physicians (Canada); Chmn., Dept. of Pathol., Methodist Hosp., Gary, Ind. Mem.: Fellow, Am. Soc. of Clin. Pathol.; Am. Pub. Health Assn.; A.A.A.S.; Royal Soc. of Tropical Med. and Hygiene; Am. Med. Assn.; Am. Coll. of Physicians; Coll. of Am. Pathol.; Sigma Xi; Delta Omega; Am. Fed. of Clin. Rsch.; Internatl. Acad. of Pathol.; Ind. St. Med. Assn. Author: What I Have Seen and Heard in America, 1961. Contbr. to: Chinese Med. Jour.; Boston Med. Quarterly; N. Eng. Jour. Med.; A.M.A. Arch. Int. Med.; Jour. of Ind. St. Med. Assn.; Am. Jour. of Med. Tech.; Am. Jour. of Clin. Pathol.; Obst. and Gynec. Areas of Rsch.: Pathology, Microbiology and Antibiotics, Hematology and Radioisotopes.



LOKENSGARD, Rudolph L. (Ed.D.), Math. Dept., St. Coll., Winona, Minn. MATHEMATICS. b. Sept. 11, 1902, Madison, Minn. s. Ole Lokensgard and Anna Romtvedt (Lokensgard). Edn.: Public Schl., Hanley Falls, Minn.; B.A., St. Olaf Coll., Northfield, Minn., 1924; M.S., Univ. of Iowa, Iowa City, Ia., 1932; (grad. work Univ. of Minn., Minneapolis, Minn., 1932-33); Ed.D., Columbia Univ., N. Y., 1939. m. Borghild Larsen, Mauston, Wis., Aug. 13, 1935. d. Lars and Lena Larsen. c.: Solveig; Haakon Erik. Exp.: H. Schl. Prin., Flaxton, N. D., 1924-25; H. S. Prin., Harmony, Minn., 1925-26; H. S. Math. Tchr., Proctor, Minn., 1926-31; Math. Instr., St. Tchrs. Coll., Mankato, Minn., 1934-35; Asst. Prof. of Math. and Ed., St. Coll., Brookings, S. D., 1937-38; Asst. Prof. of Math. Edn., P. K. Yonge Schl., Univ. of Fla., Gainesville, Fla., 1940-41; Vis. Lectr. in Edn., Ohio Univ., Athens, Ohio, summer, 1941; Dean of Men, Concordia Coll., Moorhead, Minn., 1941-42; Math., S.T.C., Whitewater, Wis., 1946; Dept. of Math., W. State Coll., Winona, Minn., 1946—. Mem.: A.A.U.P.; Phi Delta Kappa; Kappa Delta Pi; Natl. Edn. Assn.; Minn. Edn. Assn.; Natl. Coun. of Tchrs. of Math.; Math. Assn. of Am.; Lutheran Brotherhood. Ed.D. Dissertation: The Development of a Background Course of Math. for the Prospective Teacher of Arithmetic in the Grades. War Record: Lt. (S.), U.S.N.R., March, 1943—; U. S. Naval V-12 Unit, Univ. of N. M., Albuquerque, N. M.; NROTC, Stanford Univ., Calif., Lt. Comdr., Oct., 1945. Released to Inactive Duty, Jan., 1946. Listed in: Am. Young Men, Vol. III, 1938-39.

LOMBARD, John Warren (Mr.), Tchr., Hingham H. S., Hingham, Mass. Home Add.: 94 Wessagussett Rd., N. Weymouth, Mass. CHEMISTRY, INORGANIC. b. Boston, Mass., Mar. 11, 1938. s. John C. and Helen C. (Warren) L. Edn.: B.S., State Coll., Bridgewater, Mass., 1959; M.A., Harvard Univ., 1963; M.Ed., Rutgers Univ., 1961. Exp.: Professional Asst., Edn. Testing Serv., Princeton, N. J., 1959-60; Test Specialist in Sci., ibid., 1960-61; Tchr., H. S., Hingham, Mass., 1961—. Mem.: A.A.A.S.; Natl. Sci. Tchrs. Assn.; Math. Tchrs. Assn.; N.E.A.; Sigma Alpha Epsilon; F.O.E. Author: Objective Tests for Teaching of Health, 1961. Gen. Int.: N.S.F. Fellowship to Harvard Univ., 1962-63. Areas of Rsch.: Test Construction in Sci.; Effectiveness of Tchng. Machines in Math. and Sci.

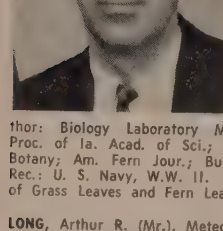
LOMBARDO, Michael E. (Ph.D.), Rsch. Dir., High Tor Found., Inc., Palisades, N. Y. Home Add.: 20 Terrace Ave., Nanuet, N. Y. BIOCHEMISTRY. b. New Rochelle, N. Y., May 3, 1924. s. Erasmus B. and Ida (Longo) L. Edn.: A.B., Columbia Coll., 1948; M.S., Fordham Univ., 1951; Ph.D., ibid., 1953. m. Ann Abbamonte, June, 1949. c.: Cathy Ann; Michael Gerard. Exp: Assoc. Biochem., Columbia Univ., Coll. of P. and S., N. Y., 1953-60; Rsch Director, Permachem. Corp., West Palm Beach, Fla., 1960-61; Rsch. Director, High Tor Found., Inc., 1961—. Mem.: Am. Soc. of Biol. Chemists, Inc.; The Biochem., London; The N. Y. Acad. of Scis.; The Am. Assn. for the Adv. of Sci.; Phi Lambda Upsilon; Sigma Xi; Natl. Rifle Assn. of Am.; Westchester Co. Police Revolver and Rifle League, Inc.; Aircraft Owners and Pilots Assn. Contbr. to: Jour. of Biol. Chem.; Procs. Soc. of Exptl. Biol. and Med.; Fed. Procs.; Exptl. Med. and



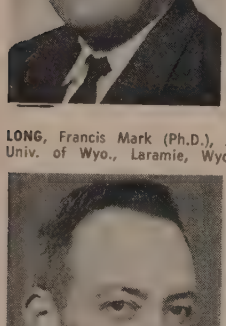
Surg.; Jour. of Urol.; Jour. of Clin. Endocrinol. and Metabol.; Endocrinol. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Nucleic Acids in Normal and Neoplastic Growth; Endocrinology, The Biosynthesis of Steroid Hormones in the Human; Microbiology, The Development of Bactericides and Fungicides and Studies on the Elucidation on Their Mode of Action.

LOMMASSON, Robert C. (Ph.D.), Assoc. Prof. of Botany, Univ. of Neb., Bessey Hall 212, Lincoln 8, Neb. Home Add.: 2640 S. 13th St., Lincoln 2, Neb. BOTANY, PLANT MORPHOLOGY, TISSUE ORGANIZATION OF LEAVES. b. Topeka, Kans., Jan. 4, 1917. s. Charles C. and Mary Estella (Darby) L. Edn.: A.B., Univ. of Kans., 1938; M.A., ibid., 1940; Ph.D, Univ. of Ia., 1948. m. Helen Chamberlain, Nov. 25, 1943. c.: Beth; Paul; Timothy; Carol. Exp.: Instr., Univ. of Ia., 1946-48; Asst. Prof., Univ. of Neb., 1948-58; Assoc. Prof., ibid., 1958—. Hon. Pos.: Pres., Am. Fern Soc. Mem.: Internatl. Soc. of Plant Morphologists; Internatl. Phycological Soc.; Phycological Soc. of Am.; Botannical Soc. of Am.; Ia. Acad. of Sci.; Neb. Acad. of Sci.; Natl. Assn. of Biol. Tchrs.; Phi Sigma; Sigma Xi. Author: Biology Laboratory Manual, 1954, 1956. Contbr. to: Proc. of Ia. Acad. of Sci.; Phytomorphol.; Recent Advances in Botany; Am. Fern Jour.; Butler Univ. Botanical Studies. Serv. Rec.: U. S. Navy, W.W. II. Areas of Rsch.: Tissue Organization of Grass Leaves and Fern Leaves; Growth of Chara.

LONG, Arthur R. (Mr.), Meteorolt. in Chg., Weather Bur. Office, Montgomery, Ala. Home Add.: 1106 E. Audubon Rd., Montgomery, Ala. METEOROLOGY AND CLIMATOLOGY. b. Leesburg, Ga., Oct. 23, 1901. s. William Henry and Mary (Warthen) L. Edn.: B.S., Memphis St. Univ., 1937; B.A., Huntingdon Coll., 1957. m. Frances Taylor, Apr. 4, 1926. c.: William Riley; Arthur Rhodes; Francis Taylor; Mary Lou. Exp.: Meteorolt. in Chg. and St. Climatolt., Weather Bur. Office, 1918—. Mem.: Am. Meteorol. Soc.; Am. Assn. for the Adv. of Sci.; Am. Geophys. Union; Ala. Acad. of Sci.; Rotary Club. Contbr. to: Monthly Weather Rev.; Natl. Weekly Weather and Crop. Bull.; Jour. of the Ala. Acad. of Sci.; Engrng. Jour.; Am. Meteorol. Soc. Bull. Areas of Rsch.: Meteorology and Climatology.

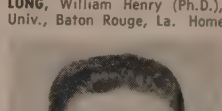


LONG, Francis Mark (Ph.D.), Assoc. Prof. of Electrical Engrng., Univ. of Wyo., Laramie, Wyo. Home Add.: 1512½ Rainbow, Laramie, Wyo. ELECTRICAL ENGINEERING, BIO-MEDICAL ELECTRONICS. b. Iowa City, Ia., Nov. 10, 1929. s. Frank B. and Hilda B. (Rohret) L. Edn.: B.S., St. Univ. of Ia., 1953; M.S., ibid., 1956; Ph.D., Ia. St. Univ., 1961. Exp.: Engr., Douglas Aircraft Co., Santa Monica, Calif., 1953; Engr., Collins Radio Co., Cedar Rapids, Ia., 1955; Grad. Asst., St. Univ. of Ia., 1955-56; Engr., U.S.N.A.-M.T.C., Pt. Mugu, Calif., 1956; Instr., Univ. of Wyo., 1956-58; Engr., Good-All Elec. Co., Ogalla-la, Neb., 1957; Instr., Ia. St. Univ., 1958-60; Assoc. Prof., Univ. of Wyo., 1960—. Hon. Pos.: Chmn., YET, Rocky Mtn. Sect., A.S.E.E. Mem.: Inst. of Radio Engrs.; Am. Soc. for Engrng. Edn.; Eta Kappa Nu; Tau Beta Pi; Omicron Delta Kappa; Theta Tau; Sigma Xi. Contbr. to: Ia. Acad. of Sci.; Internatl. I.R.E. Convention. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Bio-Medical Electronics; Electronics and Communications Theory.



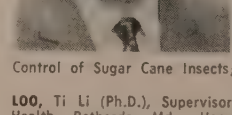
LONDON, S. J. (M.D.), Vice-Pres. and Med. Dir., M. R. Thompson, Inc., 711 Fifth Ave., N. Y. 22, N. Y. Home Add.: 80-30 247th St., Bellerose, N. Y. MEDICINE. b. N.Y.C., Oct. 15, 1917. s. Morris and Ida (Cantor) L. Edn.: B.A., Univ. of Louisville, 1937; M.D., ibid., 1941. m. Estelle Steinfield, Feb. 19, 1943. c.: Nancy; Robert Keith. Exp.: Intern, Coney Island Hosp., 1941-43; Residency, Sea View Hosp., Staten Island, N. Y., 1946-47; Residency, Halloran V. A. Hosp., ibid., 1947-48; Consultant in Internal Med., Am. Fire Ins. Group, 1950-53; Staff, N.Y.C. Bd. of Health Nutrition Clinic, 1950-53; Adjunct in Medicine, Beth-El Hosp., Brooklyn, 1951-53; Asst. in Med., Coney Island Hosp., 1951-53; Rsch. Assoc., Messinger Rsch. Lab., ibid., 1951-53; Asst. in Med., Receiving Hosp., Detroit, Mich., 1953-5 Medical Director, The Purdue Frederick Company, N. Y., 195 61; Vice-Pres., ibid., 1959-61; Vice-Pres. and Med. Dir., M. Thompson, Inc., N.Y.C., 1961—; Lectr. and Asst. Attending, N. Polyclinic Hosp., 1959—. Mem.: Dipl., Am. Bd. of Internal Med A.A.A.S.; A.M.A.; Med. Soc. of N. Y.; Am. Diabetes Assn Gerontological Soc.; Am. Assn. of Med. Writers; Am. Assn. fo the History of Med.; Gerontol. Soc.; Assn. of Milit. Surgeons Am. Musical Soc.; Am. Geriatric Assn.; Phi Delta Epsilon Contbr. to: N. Y. St. Jour. of Med.; Quart. Bull. of Sea Vie Hosp.; Am. Jour. of Med. Sci. Serv. Rec.: A.U.S. (1st Lt.-Capt. 1943-46. Areas of Rsch.: Metabolism; Hepatic and Pancreati Diseases, Clinical Pharmacology; Medical Musicology.

LONG, William Henry (Ph.D.), Assoc. Prof. of Entomol., La. S Univ., Baton Rouge, La. Home Add.: 315 Wylie Dr., Baton Rouge La. ENTOMOLOGY. b. Decatur Ala., Sept. 20, 1928. s. William Henry, Jr. and Sara Lapsley (Liston) L. Edn.: B.A., Univ. o Tenn., 1952; M.S., N. C. St. Coll. 1954; Ph.D., Ia. St. Coll., 1957 m. Janice Helon Rogers, Sept. 11 1953. c.: Janice Faye. Exp. Asst. Entomologist, La. St. Univ. 1957-59; Assoc. Prof., ibid., 195 —. Mem.: Phi Kappa Phi; Sigma Xi; Gamma Sigma Delta; Entomological Soc. of Am.; A.A.A.S. Internatl. Soc. Sugar Cane Technologists. Contbr. to: Jour. o Econ. Entomol.; Sugar Bull.; Suga Jour.; Proc. Internatl. Cong. of Sugar Cane Technologists; Jour. of the Elisha Mitchell Scientific Soc. Serv. Rec.: U.S.A.F., 1946-49. Areas of Rsch.: Biol. and Control of Sugar Cane Insects; Econ. Entomol.



LOO, Ti Li (Ph.D.), Supervisory Rsch. Biochemist, Natl. Inst. of Health, Bethesda, Md. Home Add.: 11224 Bybee St., Silver Spring, Md. BIOCHEMICAL PHARMACOLOGY. b. Changsha, China, Jan. 7, 1918. s. Dr. Adrian and Mrs. Diane (Lee) L. Edn.: B.Sc., Tsing Hua Univ., China, 1940; Ph.D., Oxford Univ., England, 1947. m. Marie Lee, June, 1951. c.: Michael DeLee; Agnes Diane Maria. Exp.: Rsch. Asst., Oxford Univ., Oxford, England, 1947; Rsch. Fellow, Univ. of Md., College Park, Md., 1947-50; Rsch. Assoc., Christ Hosp. Inst. of Med. Rsch., Cincinnati, Ohio, 1951-54; Supervisory Rsch. Biochemist, Natl. Inst. of Health, Bethesda, Md., 1954—. Mem.: Am. Chem. Soc.; Chem. Soc., London; A.A.A.S.; Am. Assn. Cancer Rsch.; Alpha Chi Sigma. Author: Organic Electronic Spectral Data, 1961. Contbr. to: Jour. A.C.S.; Jour. Org. Chem.; Sci.; Proc. Soc. J.N.C.I.; Biochem. Pharmacol.; Jour. Pharmacol. Exptl. Therap. Areas of Rsch.: Chemical Structure and Biological Activities; Chemotherapy; Medicinal Chemistry.

LOOSLI, Clayton G. (M.D.), Dean, Univ. of Sou. Calif. Schl. of Med., 2025 Zonal Ave., Los Angeles 33, Calif. Home Add.: 410 Arroyo Dr., S. Pasadena, Calif. PULMONARY DISEASES, ACUTE AND CHRONIC. b. Marysville, Idaho, Mar. 18, 1905. s. Dimond M. and Hattie (Salisbury) L. Edn.: B.S., Univ. of Ida., 1930; M.S., ibid., 1931; Ph.D., Univ. of Chicago, 1934; M.D., ibid., 1937. m. Jean R. Pedersen, Sept. 15, 1933 c. Alvin R.; Edward S. Exp.: J. H. Koessler Fellow, Med., Univ. of Chicago, 1935-36; Douglas Smith Fellow, Med., ibid., 1936-37; Instr., Med., ibid., 1940-42; Asst. Prof., Med., ibid., 1942-43; Assoc. Prof., Med., ibid., 1946-49; Prof. Chf., Sect. of Preventive Med., ibid., 1949-58; Dean, Univ. of Sou. Calif. Schl. of Med., 1958—. Hon. Pos.: Past Pres., Central Soc. of Clinical Rsch. Mem.: Am. Assn. Anatomy; Am. Soc. Experimental Pathol.; Soc. for Exptl. Biol. and Med.; Am. Soc. for Clin. Invest.; A.A.A.S.; Am. Med. Assn.; Sigma Xi; Alpha Omega Alpha. Contbr. to: Jour. Exptl. Med.; Jour. of Infectious Diseases; Am. Jour. of Hygiene; Jour. Lab. and Clin. Med.; Jour. Am. Med. Assn.; Proc. Soc. Exptl. Biol. and Med.; Sci.; Am. Jour. Pub. Health. War Record: U. S. Army, 1943-46. Gen. Int.: Expert on Epidemiology and Control of Infectious Diseases. Areas of Rsch.: Structure of Mammalian Lungs, Epidemiology, Pathogenesis, Pathology and Immunology of Viral, Bacteriological and Fungus Infections of Lungs.



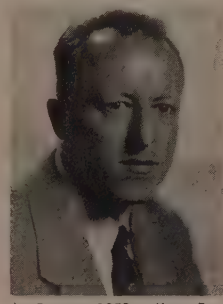
LOO, Yen Hoong (Ph.D.), Rsch. Biochemist, Eli Lilly and Co., Indianapolis, Ind. BIOCHEMISTRY. b. Honolulu, Hawaii, Dec. 19, 1914. d. Loo Goon and Luke (Sun) L. Edn.: B.A., Barnard Coll., 1937; M.A., Univ. of Mich., 1938; Ph.D., ibid., 1943. Exp.: Postdoctorate Fellow, Univ. of Tex., 1943-44; Rsch. Asst., Univ. of Ill., 1944-51; Biochemist, Natl. Heart Inst., 1951-52; Rsch. Biochemist, Eli Lilly and Co., Indianapolis, Ind., 1952—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Am. Soc. Biological Chemists. Contbr. to: Jour. Bacteriol.; Arch. Biochem.; Jour. Biol. Chem.; Jour. Am. Chem. Soc. Special Int.: Natural Products; Biochem. of Micro Organisms.

LOOSLI, John Kasper (Ph.D.), Prof., Animal Nutrition, Cornell Univ., Ithaca, N. Y. Home Add.: 1027 Hanshaw Rd., Ithaca, N. Y. ANIMAL NUTRITION. b. Clarkston, Utah, May 16, 1909. s. George and Anna (Dahle) L. Edn.: B.S., Utah State Univ. 1931; M.S., Colo. State Univ., 1932; Ph.D., Cornell Univ., 1938. m. Reha Johnson, July 6, 1936. c.: Ellen; John Andrew; Anna. Exp.: Instr., Agri., Br. Agril. Coll., Cedar City, Utah, 1933-35; Asst. Animal Nutrition, Cornell Univ., 1935-38; Agt., Fur Animal Nutrition, Fish and Wildlife Serv., 1938-39; Asst. Prof., Animal Nutrition, Cornell Univ., 1939-42; Assoc. Prof., Animal Nutrition, ibid., 1942-45; Prof., ibid., 1945—; Visiting Prof., Univ. of Philippines, 1953-54; Fulbright Lectr., Australia, 1960. Hon. Pos.: Pres., Am. Soc. of Animal Sci., 1960; Editor, Jour. Animal Sci., 1954-56. Mem.: Am. Chem. Soc.; Am. Inst. Nutrition; Am. Assn. for the Adv. of Sci.; Am. Dairy Sci. Assn.; Am. Soc. Animal Production; Soc. Experimental Biol. and Med.; British Soc. Animal Production; N. Y. Acad. Sci.; Sigma Xi; Phi Kappa Phi; Alpha Zeta; Rotary. Co-author: Animal Nutrition, 1956, 1962. Contbr. to: Jour. of Nutrition; Jour. of Animal Sci.; Agri. and Food Chem.; Jour. of Dairy Sci. Gen. Int.: Am. Feed Mftrs. Award, 1950; Borden Award in Dairy Production, 1951; Morrison Award, 1958. Areas of Rsch.: Animal Nutrition; Fat Metabolism; Vitamin and Mineral Nutrition; Composition and Value of Feeds.

LOPEZ, Albert Francis (Mr.), Hd., Intelligence Systems Dept., HRB-Singer, Inc., State Coll., Pa. Home Add.: 502 E. Foster Ave., State Coll., Pa. ELECTRONIC WARFARE AND TECHNICAL INTELLIGENCE. b. E. Boston, Mass., Dec. 3, 1920. s. Thomas and Filomena (Incrovato) L. Edn.: B.S.E.E., Northeastern Univ., 1943. m. Rachel C. Moore, 1944. c.: Albert, Jr.; April; William; Mark. Exp.: Instr. in E.E., Pa. St. Univ., State Coll., Pa., 1947-52; Consultant, E.E., Avco Corp., Williamsport, Pa., 1950; Sr. Engr., HRB-Singer, Inc., State Coll., Pa., 1952-57; Staff Engr., ibid., 1957-59; Dept. Hd., ibid., 1960—. Hon. Pos.: Vice-Chmn., I.R.E., Central Pa. Sect.; Chmn., A.I.E.E. Centre County Subsect. Mem.: Inst. of Radio Engrs.; Am. Inst. of Elec. Engrs.; Am. Rocket Soc.; Fellow, British Interplanetary Soc.; A.A.A.S.; Natl. Soc. of Prof. Engrs.; Ind. Order of Odd Fellows; Eta Kappa Nu; Tau Beta Pi. Serv. Rec.: U.S.A. Areas of Rsch.: Electronic Countermeasures; Technical Intelligence; Data Processing and Long Range Intercept Problems.

LOPEZ, Anthony (Ph.D.), Prof. of Food Technol., Va. Poly. Inst., Blacksburg, Va. Home Add.: McBryde Village, Blacksburg, Va. FOOD TECHNOLOGY. b. Chile, May 13, 1919. s. Antonio and Flora (Matas) L. Edn.: B.S., Catholic Univ. of Chile, 1942; Ph.D., Univ. of Mass., 1947. m. Mary Fellers, Sept. 27, 1947. c.: Martha Anne; Anthony Paul; Michael John. Exp.: Chemist, S. A. Organa, Santiago, Chile, 1942-45; Tech. Dir., Industria de Productos Alimenticios Ipal, ibid., 1948-52; Assoc. Prof. of Food Technol., Univ. of Ga., 1952-54; Prof. of Food Technol., Va. Poly. Inst., 1954—. Mem.: Inst. of Food Technol.; Am. Chem. Soc.; Soc. of Nutrition of Chile; Phi Tau Sigma; Phi Kappa Phi; Sigma Xi. Author: Canning and Curing of Fishery Products, 1955. Contbr. to: Food Technology; Food Rsch.; Jour. of Milk and Food Technol. Areas of Rsch.: Composition and Nutritive Value of Fruits, Vegetables, and Fish; Freezing of Eggs; Fruit and Vegetable Processing.

LORCH, Edgar Raymond (Ph.D.), Prof. of Math., Columbia Univ., New York, N. Y. Home Add.: 938 Riverside Drive, New York 32, N. Y. MATHEMATICIAN. b. Switzerland, July 22, 1907. s. Henry John and Marthe (Racine) L. Edn.: A.B., Columbia Coll., 1928; Ph.D., Columbia Univ., 1933. m. 2nd, Maristella de Panizza, Mar. 25, 1956. c.: Lavinia Edgarda; Donatella Livia. m. 1st, Else B. Petersen, July 31, 1937 (div.). c.: (by 1st wife) Edwin Duncan; Madeleine Louise; Ingrid Jacqueline. Exp.: Asst. in Math., Columbia Univ., 1928-30; Instr. in Math., ibid., 1931-33, 1935-41; Asst. Prof. of Math., ibid., 1941-44; Assoc. Prof. of Math., 1944-48; Prof. and Exec. Officer of Barnard Coll. Sect., 1948—; Chmn., Comm. on Instrn., Barnard Coll., 1961; Fulbright Lectr., France, 1958; Visit. Lectr.; Coll. de France, 1958. Hon. Pos.: Editor, Bull. of the Am. Math. Soc., 1944-49; Chmn., Com. on Nominations, Am. Math. Soc., 1956. Mem.: Societe Mathematique de France; Oesterreichische Mathematische Gesellschaft; Am. Math. Soc.; Math. Assn. of Am.; Sigma Xi; Phi Beta Kappa; Pi Mu Epsilon. Author: Theory of Functions, 1940; Spectral Theory, 1962. Contbr. to: Math. Jours. in the U. S., Canada, France, Italy, Germany and other countries. War Record: Rsch. Mathematician, N.D.R.C., 1943-45; Scientific Advisor, Chf. of Staff, U. S. Army, 1948-49. Gen. Int.: Fulbright Lectr., Italy, 1953-54; Visit. Prof., Carnegie Inst. of Technol., 1949; Visit. Prof., Stanford Univ., 1963; Visit. Prof., Univ. of Rome and Univ. of Florence, 1953-54; Visiting Mathematician, Math. Assn. of Am., 1961-63. Areas of Rsch.: Linear Spaces; Topological Algebra; Theory of Integration; Theory of Convex Bodies.



LOTT, James Robert (Ph.D.), Prof., No. Tex. St. Univ., Box 5135, Denton, Tex. Home Add.: 1106 Edinburgh Lane, Denton, Tex. PHYSIOLOGY. b. Houston, Tex., Jan. 16, 1924. s. Charles V. Contella and Carmen (Craig) Rhodes. Edn.: B.A., Univ. of Tex., 1949; M.A., ibid., 1951; Ph.D., ibid., 1956. m. Opal Estelle Sowell, July 29, 1942. c.: Linda Annette; James Robert, Jr. Exp.: Med. Bacteriolt., Brackenridge Hosp., Austin, Tex., 1955; Lectr., Zool., Tex. Univ., 1955-56; Rsch. Scientist, Radiobiol. Lab., Balcones Rsch. Ctr., Austin, Tex., 1955-56; Instr., Emory Univ. Med. Schl., Emory, Ga., 1956-57; Assoc. Prof., N. Tex. State Univ., 1957-62; Prof., ibid., 1962—. Honorary Pos.: Vice-Pres., Sigma Xi Club, N. Tex. St. Univ. Mem.: Am. Assn. for Adv. Sci.; Tex. Acad. of Sci.; Sigma Xi; Gen. Physiol. Soc.; Rad. Rsch. Soc.; Biophys. Soc.; Phi Sigma. Contbr. to: Rad Rsch.; Fed. Procs.; Am. Jour. Bot.; Plant Physiol.; Tex. Acad. Jour.; U.S.A.F. Reports. Serv. Rec.: U. S. Navy, 1942-45. Gen. Int.: Sr. Investr. Atomic Energy Comm. Rsch. Contract Concerning Effects of X-Irradiation on the Nervous System; U. S. Rep. to I.A.E.A. Symposium in Vienna, Austria, 1962. Areas of Rsch.: Neurophysiology; Radiobiology; Gerontology; Endocrinology; Effects of Irradiation on the Nervous System (Spinal Cord and Isolated Nerves); Effects of Aging on Tissue Metabolism; Corticosteroid Output During Stress Conditions; Ion Flux in Nerve Fibers; Water and Ion Transport in Root Systems.

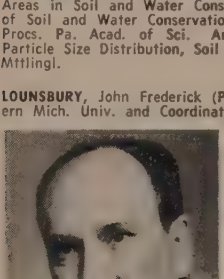
LORE, James Irvin, III (Ed.D.), Supvry. Psychologist, and Dir. of Speech Pathol. and Audiol. Sect., St. Elizabeths Hosp., Wash. 20, D. C. Home Add.: 10410 Drumm Ave., Kensington, Md. SPEECH PATHOLOGY. b. Carrollton, Ohio. Mar. 19, 1922. s. James Irvin and Florine Edna (Breed) L. Edn.: A.B., Washburn Municipal Univ., 1943; M.A., Western Res. Univ., 1947; M.Ed., Univ. of Mo., 1948; Ed.D., ibid., 1952. m. Christiane Delanney of Paris, France, Mar. 9, 1946. d. Louis and Denise Delanney. c.: James Irvin, IV; Michelle. Exp.: Asst. Therapist, Cleveland Hearing and Speech Ctr., West. Res. Univ., 1947; Assoc. Therapist, Cleveland Hearing and Speech Ctr., ibid., 1947; Instr., Univ. of Mo., 1947-49; Speech Correctionist, Columbia Pub. Schl., Mo., 1949-51; Instr., Univ. of Mo., Summer, 1949, 1950; Supvr. Edn. of Exceptional Children, St. Dept. of Pub. Instrn., Dover, Del., 1951-53; Lectr., Univ. of Del., 1951-53; Prof. of Edn., Chmn. of Dept. of Edn., Gallaudet Coll., Wash. 2, D. C., 1953-55; Dir., Workshop in the Edn. of Exceptl. Children, Univ. of Wyo., Summer, 1954; Supvr. of Speech Sect., Audiology and Speech Ctr., Walter Reed Army Hosp., Wash. 12, D. C., 1955-60; Supvry.

Psychologist and Dir. of Speech Pathol. and Audiology Sect., 1960—; Professional Lecturer in Speech, Am. Univ., 1960—; Lecturer, Univ. of Md., 1956-58; Speech Pathologist, Wash. Hospital Center, 1957-61. Hon. Pos.: Consultant in Speech Pathology and Audiology, U. S. Naval Hosp., Bethesda, Md.; Consultant in Speech, Bd. of Examining Chaplains, Diocese of Wash., Protestant Episcopal Ch. Mem.: Pi Gamma Mu; Psi Chi; Phi Delta Kappa; Sigma Alpha Eta; Am. Speech and Hearing Assn. (Advanced Clinical Certificate in Speech); Phi Alpha Delta; N.E.A.; Sigma Phi Epsilon; Mason; Am. Psychol. Assn.; Fellow, Am. Assn. for the Adv. of Sci.; Coun. for Exceptl. Children; Order of Founders and Patriots of Am. Contbr. to: Schl. and Comm.; Del. Schl. Jour.; Volta Rev. Author: Lore Analysis of Articulatory Maturation. Ed.D. Dissertation: A Comparison of the First Year of Oral and Silent Reading Achievement of Functional Articulatory Deviates with That of Normal Speakers. War Rec.: Lt. (j.g.) U.S. Naval Reserve; Participated in the invasion of Normandy and Held Administrative Post in the Occupation of Germany. Travel: Western Europe; Mex.; West Indies. Hobbies: Genealogical Rsch.; Edn. Officer in Naval Reserve. Listed in: W. W. in the S. and S.W.; W. W. in the East; W. W. in Am. Edn.; Am. Men of Sci. Areas of Rsch.: Psychogenesis of Speech Pathologies, Rehabilitation of Aphasia, Etiology and Treatment of Stuttering.

LOUGHRY, Frank Glade (Ph.D.), State Soil Scientist, Soil Conservation Serv., U.S.D.A., Harrisburg, Pa. Home Add.: 1105 Enterline Court, Harrisburg, Pa. SOIL SCIENCE SOIL CONSERVATION. b. Marion Center, Pa., April 16, 1910. s. James Norman and Ella Mary (Pollock) L. Edn.: B.S., Pa. St. Coll., 1931; M.S., Ohio St. Univ., 1934; Ph.D., Pa. St. Univ., 1960. m. Margery Ann Ash, 1944. Exp.: Asst. Agronomy, Ohio Agri. Expt. Sta., Wooster, Ohio, 1931-33; Soil Scientist, Asst. Regional Soil Scientist, U.S.D.A., Northeastern U. S., 1934—. Hon. Pos.: Former Chmn., Keystone Chap., Soil Conservation Soc. of Am. Mem.: Fellow, A.A.A.S.; Am. Soc. of Agronomy; Internatl. Soil Sci. Soc.; Pa. Acad. of Sci.; Soil Conservation Soc. of Am.; Soil Sci. Soc. of Am.; Sigma Xi; Gamma Sigma Delta; Comm. Assn. Author:

Soil Survey of Clarion County, Pa., 1955; Pennsylvania Problem Areas in Soil and Water Conservation, 1955. Contbr. to: Jour. of Soil and Water Conservation; Procs. Intrnatl. Soil Sci. Soc.; Procs. Pa. Acad. of Sci. Areas of Rsch.: Soil Classification, Particle Size Distribution, Soil Aeration; the Development of Soil Mttlingl.

LOUNSBURY, John Frederick (Ph.D.), Hd., Geography Dept., Eastern Mich. Univ. and Coordinator, Special Instructional Programs, Ypsilanti, Mich. ECONOMIC GEOGRAPHY, INDUSTRIAL AND URBAN GEOGRAPHY, LATIN AMERICA. b. Perham, Minn., Oct. 26, 1918. s. Charles Edwin and Maude (Knight) L. Edn.: B.S., Univ. of Ill., 1942; M.S., Univ. of Ill., 1946; Ph.D., Northwestern Univ., 1951. m. Dorothea F. Eggers, Oct. 3, 1943. c.: John F., Jr.; Craig Lawrence; James Gordon. Exp.: Asst. Dir., Rural Land Classification, Program of Puerto Rico, Puerto Rico, 1949-51; Chmn., Dept. of Earth Sci., Antioch Coll., Yellow Springs, Ohio, 1951-61; Consultant and Rsch. Analyst, Dayton Metropolitan Comm. Studies, Inc., 1957-60; Hd., Geography Dept. and Coordinator Special Instructional Programs, Eastern Mich. Univ., Ypsilanti, Mich., 1961—. Hon. Pos.: Exec. Vice-Pres., Ohio Acad. of Sci., 1958-59; Exec. Coun., Assn. of Am. Geographers, 1961-64; Chmn., Earth Scis. Comm., Natl. Coun. for Geographic Edn.; Chmn., Liberal Edn. Comm., Assn. of Am. Gographers; Regional Coordinator, Natl. Coun. for Geographic Edn. Mem.: Assn. of Am. Geographers; Natl. Coun. for Geographic Edn.; Am. Geographical Soc.; Natl. Planning Assn.; Mich. Acad. of Sci.; Ohio Acad. of Sci.; A.A.A.S.; Mich. Soc. of Planning Officials; Delta Kappa Epsilon; Sigma Xi. Author: Workbook in Weather and Climate, 1960; Workbook in Earth Sciences, 1961. Contbrng. Author: Symposium on the Geography of Puerto Rico, 1953; Metropolitan Challenge, 1960. Contbr. to: Geographical Review; Jour. of Geography; Ill. Acad. of Sci.; Cahiers de L'Information Geographique; Internatl. Geographical Union. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Industrial and Area Development; Caribbean America.



LOVE, Chaille Mosely (Ph.D.), Prof. of Life Scis., Sacramento St. Co.., 6000 J St. Sacramento 19, Calif. Home Add.: 1069 46th St., Sacramento 19, Calif. PHYSIOLOGY. b. Farmersville, La., Dec. 8, 1911. s. Royal Lee and Lottie (Mosely) L. Edn.: A.B., N.W. St. Coll., 1932; M.A., Stanford Univ., 1948; Ph.D., Ore. St. Univ., 1953. m. Barbara Kelley, 1945. c.: James Edward; Constance Lee; David Allen; Christopher Martin. Exp.: Lectr., Univ. of Calif., 1945-46; Prof., Sacramento St. Coll., 1948—. Hon. Pos.: Chmn., Scholarship Comm., SSC; Acting Div. Chm Sci. and Math., SS, 1960; Faculty Coun. Repr.; Supvr. Lab. Te Mem.: A.A.A.S.; A.A.U.P.; Western Soc. of Naturalists; B.P Elks; Toastmasters Internatl. Serv. Rec.: U.S.N.R., 1942- Areas of Rsch.: Physiology; Mammalian; Cellular; Biophysi Anatomy, Histology, Pharmacology; Science Teaching.

LOVE, Robert (M.D.), Prof. of Pathol., Jefferson Med. Coll., Phi delphia, Pa. Home Add.: 1309 Morris Rd., Wynnewood, EXPERIMENTAL PATHOLOGY. Glasgow, Scotland, Apr. 27, 19 s. Robert and Mary Glen (Mack vail) L. Edn.: M.B., Ch.B., Ur of Glasgow, Scotland, 1944; M. ibid., 1950. m. Sheila M. Watt, Jan. 3, 1945. c.: Carol Angus R.; Duncan R. Exp.: thologist, Virus Rsch., Lede Labs., Pearl River, N. Y., 19 55; Pathologist, Natl. Cancer In Bethesda, Md., 1955-60; Prof. Pathol., Jefferson Med. Coll., 19 . Mem.: Am. Assn. Can Rsch.; Am. Soc. Exptl. Patho N. Y. Acad. of Sci.; Interna Soc. Cell Biol.; Sigma Xi. Cont to: Cancer Rsch.; Jour. Natl. C cer Inst.; Nature; Exptl. C Rsch.; Jour. Histochem. Cytocher Am. Jour. Pathol.; Arch. of

thol.; Pathologie et Biologie; Jour. Cell Biol.; Proc. Soc. Exp Biol. and Med.; Stain Technol.; Tex. Reports Biol. and Me Proc. Royal Soc., London; Jour. Exptl. Med. Serv. Rec.: Brit Royal Army Med. Corps, 1946-48. Areas of Rsch.: Cytochem. Ribonucleo-proteins in Relation to Cell Division; Virus Infecti Anti-Mitotic Agents and Antimetabolites; Function of Nucleop teins of Nucleolus; Pathol. of Poliomyeliits; Cytopathol. of C sackie, Polyoma, Herpes, etc.

LOVE, Theodore Arceola (Ph.D.), Chmn., Dept. of Math., F Univ., Nashville, Tenn. MATHEMATICS. b. Columbus, Ga., M 25, 1909. s. Miledge and Ma (Lockhart) L. Edn.: A.B., Tal dega Coll., 1929; M.A., Univ. Mich., 1932; Ph.D., N. Y. Uni 1951. m. Mabel Robinson, A 27, 1943. Exp.: Dir. of Acade Dept., Instr. in Math. and S Sou. Normal Schl., Brewton, Al 1929-34; Instr. in Math., L H. S., St. Tchrs. Coll., Montgo ery, Ala., 1934-38; Prin., ibi 1938-42; Prof. of Math. and Ed ibid., 1946-51; Prof. of Ma and Hd. of Dept., Tenn. A. & St. Univ., Nashville, Tenn., 19 56; Chmn., Dept. of Math., F Univ., 1956—. Mem.: Phi De Kappa; Beta Kappa Chi; Kap Delta Pi; Am. Math. Soc.; Ome Psi Phi. War Record: Capt., Co of Engrs., W.W. II, 1942-

Special Int.: Statistics; Problem Solving.

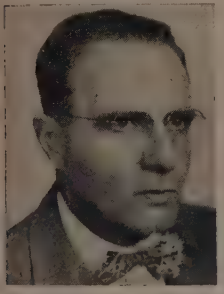
LOVEJOY, Earl Mark (Mr.), Natl. Sci. Found. Fellow, Un of Ariz., Tucson, Ariz. Home Add.: 4400 Fairview Rd., Re Nev. GEOLOGY—STRUCTURAL GEOLOGY AND GEOMORPHOLOG b. N.Y.C., Oct. 8, 1925. s. Earl M. and Florence (Reidenbach) Edn.: B.S., Rutgers Univ., 1949; M.S., Colo. Schl. of Mines, 19 m. Marguerite Klenck, June 13, 1949. c.: Eric Christopher; Ma Timothy; Wendy Susan; Karen Patrice. Exp.: Engrng. Geologi U. S. Army Corps of Engrs., Riverdale, N. D., 1951; Engrn Geologist, U. S. Dept. of St., Alpine, Tex., 1951-53; Geologi Atomic Energy Comm., Douglas, Wyo., 1953; Geologist-Observ Atomic Energy Comm., Grand Junction, Colo., 1953-55; Geologi Consultant, Reno, Nev., 1955-56; Geologist-Engr., Isbell Con Co., Reno, Nev., 1956; Geologist, U. S. Dept. of Interior, Re Nev., 1956-62; Natl. Sci. Found. Fellow, Univ. of Ariz., 1962 Mem.: Geological Soc. of Am.; Seismological Soc. of Am.; A Geophysical Union; A.A.A.S.; Geological Soc. of Nev. Conti to. Bull. Geol. Soc. of Am:; Jour. Geophys. Rsch. Serv. Re U. S. Navy, 1944-46. Areas of Rsch.: Structural Geol.; Ge morphology; Ore Deposits.

LOVENSTEIN, Meno Lehman (Ph.D.), Prof. of Econ., Ohio Sta Univ., Columbus, Ohio. Home Add.: 703 E. Dominion Blv Columbus, Ohio. COMPARATIVE ECONOMIC SYSTEMS, ECONOM PLANNING AND ECONOMICS OF NATIONAL SECURITY. b. Du ham, N. C., Jan. 4, 1909. s. Benjamin and Rebecca (Gree berg) L. Edn.: B.A., Univ. of Richmond, 1930; M.A., Columb Univ., 1931; Ph.D., Johns Hopkins Univ., 1938. m. Beatri Bender, May 18, 1950. c.: Jonathan Mitchell; Douglas Bend Exp.: Asst. Prof., Rockford Coll., 1938-42; Faculty, Industri Coll. of Armed Forces, 1944-46; Prof., Ohio State Univ., 1946- Hon. Pos.: Vice Pres., Ohio Acad. of Sci.; Advisory Bd., Oh Coun. on Econ. Edn. Mem.: Am. Econ. Assn.; A.A.A.S. Autho American Opinion of Soviet Russia, 1938; These, A Volun of Poems, 1940; Economics and Educational Administratio 1958; Capitalism, Communism, Socialism, 1962. Serv. Rec U. S. Army, 1942-46. Areas of Rsch.: Comparative Econ Econs. of Natl. Security; Econ. Edn.

LOVING, Frank A. (Mr.), Sr. Rsch. Engr., Du Pont Co., Eastern Lab., Gibbstown, N. J. Home Add.: 111 N. Lincoln Ave., Wenonah, N. J. HIGH EXPLOSIVES RESEARCH. b. Sherman, Tex., Mar. 15, 1920. s. Dr. F. A. and Mrs. Frances C. (French) L. Edn.: B.S., Tex. A. & M. Coll., 1941. m. Terry Ann Vinson, Dec. 31, 1946. c.: C. Vinson; Nancy Lee; Margaret Lucille. Exp.: Sr. Rsch. Engr., Chemist, DuPont Co., Eastern Lab., Gibbstown, N. J., 1941 —. Mem.: A.C.S.; A.A.A.S.; Soc. of Exploration Geophysicists. Contbr. to: I. & E. Chem. Serv. Rec.: A.U.S., 1942-46. Areas of Rsch.: Formulation and Testing of High Explosives; Design and Construction of Blast Resistant Structures for Explosion Protection; Field Operations in High Explosives.

LOW, Ward C. (Ph.D.), Vice-Pres., Rsch. Div., L.F.E. Electronics, 1079 Commonwealth Ave., Boston 15, Mass. Home Add.: 38 Ballard St., Newton Centre 59, Mass. UPPER ATMOSPHERE PHYSICS, MANAGEMENT SCIENCE, GENERAL SYSTEMS RESEARCH. b. Afton, Wyo., May 11, 1922. s. Osborne, Jr. and Mary (V. Call) L. Edn.: B.S., Univ. of Wyo., 1943; Ph.D., Boston Univ., 1955. m. Helen Averett, Mar. 22, 1943. c.: David; Robert; James; Bruce. Exp.: Scientific Staff, Inst. for Defense Analysis, Wash., D. C., 1958-60; Sr. Staff Specialist, Sylvania Electronic Systems, Waltham, Mass., 1960-61; Advanced Planning Staff, Mitre Corp., Bedford, Mass., 1961; Tech. Dir., L.F.E. Electronics, Boston, Mass., 1961-62; Vice-Pres., Rsch. Div., ibid., 1962—. Mem.: Am. Physical Soc.; A.A.A.S.; Soc. for General Systems Rsch.; Am. Rocket Soc.; I.R.E.; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi. Contbr. to: Astronautics. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Upper Atmosphere Physics, Heat Transfer; Long-Range Technological Planning; Mgmt. Sci.; Gen. Systems Rsch.

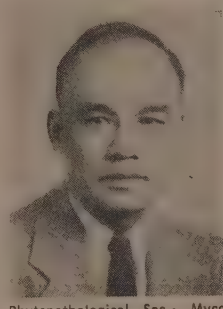
LOWBEER, Leo (M.D.), Pathol.-in-Chf., Dir. of Lab., Hillcrest Med. Ctr., Tulsa 20, Okla.; Consultant Pathologist, Fd. Aviation Agency; Co-Dir., Poison Control Ctr., Hillcrest Med. Ctr., Tulsa, Okla. b. May 30, 1901, Vienna, Austria. s. Alfred Loew-Beer and Paula (Sobotka) L. Edn.: M.D., Univ. of Vienna Schl. of Med., Austria, 1927. m. Gertrude Neuhut of Vienna, Austria, Sept. 28, 1940. c.: Carol Ann. Exp.: First Asst. to Prof., Jakob Erdheim, Dept. of Pathol., Vienna Municipal Hosp., Vienna, Austria, 1927-32; Res., Dept. of Med., Prof. C. V. Noorden, ibid., 1932-33; Sr. Res., Dept. of Med., Prof. Muller-Deham, Geriatrics Div., ibid., 1933-37; Chf. Pathol., Dir. Lab., Hillcrest Meml. Hosp., Tulsa, Okla., 1939—; Visiting Lectr., Dept. Pathol., Univ. of Okla. Med. Schl. Mem.: Past Pres., Okla. Assn. of Pathol.; Assoc. Mem., S.E.B.M.; Diplomate, Am. Bd. of Pathol. and Am. Bd. of Forensic Pathol.; Fellow, Coll. of Am. Pathologists; Fellow, Am. Soc. of Clinical Pathologists; Am. Assn. of Pathologists and Bacteriologists; Internatl Acad. of Pathol.; Okla. State Med. Assn.; Am. Med. Assn.; Am. Assn. Adv. Sci.; Am. Acad. of Forensic Med. Author: Med. Papers on Pathol. of Bone Diseases, Brucellosis and Other Subjects. Travel: Europe; S. Am. Gen. Int.: Original Work on Pathol. Anat. and Histol. of Brucellosis, Particularly Brucellotic Osteomyelitis. Hobbies: Photography; Skiing; Tennis; Piano. Listed in: A.M.S.; W. W. in the S.W.



LOWE, Richard I., Jr. (Mr.), Asst. to Pres., Doble Engrng. Co., Belmont 78, Mass. Home Add.: 95 Partridge Lane, Belmont 78, Mass. ELECTRICAL ENGINEERING. b. Roswell, N. M., Dec. 16, 1924. s. Richard I., Sr. and Pearl (Mountcastle) L. Edn.: B.S., N. M. State Univ., 1950; M.B.A., Harvard Univ., 1962. m. Jeanette Yarnell, Dec. 6, 1945. c.: Celia Lynne. Exp.: Electrical Engr., El Paso Electric Co., El Paso, Tex., 1950-51; Elec. Operations Engr., Pearl Harbor Naval Shipyard, Pearl Harbor, 1951-53; Supvr. of Planning Div., Cerro de Pasco Corp., La Oroya, Peru, 1953-60; Asst. to Pres., Doble Engrng. Co., Belmont, Mass., 1961—. Mem.: A.I.E.E.; A.G.U.; Sigma Tau; A.F. and A.M.; Jr. C. of C. Serv. Rec.: U.S.A.F., 1943-45. Areas of Rsch.: Electrical Power Engrng.; Hydrol.; Bus. Adm.

LOWELL, Winfield (Mr.), Chf. Chemist, Northern Chem. Industries, Inc., Searsport, Me. Home Add.: P. O. Box 71, Stockton Springs, Me. INORGANIC CHEMISTRY. b. Farmingdale, Me., Jan. 19, 1907. s. John Wilbur and Lillian May (Small) L. Edn.: B.A., Univ. of Me., 1929. m. Mary Ann Stakes, 1930. Exp.: Chemist, Sagadahoc Fertilizer Co., Inc., Bowdoinham, Me., 1934-54; Chf. Chemist, Northern Chem. Industries, Inc., Searsport, Me., 1954—. Mem.: Am. Chem. Soc.; A.A.A.S.; The Chemurgic Coun.; The Louis Bromfield Malabar Farm Found.; Phi Eta Kappa; A. F. & A. M.; Brunswick, Me., Humane Soc.; Me. Fed. of Humane Socs. Areas of Rsch.: Inorganic Analysis.

LU, Kuo-Chin (Ph.D.), Microbiologist, F.S., U. S. Dept. of Agriculture, Forestry Science Lab., Jefferson Way., Corvallis, Ore. Home Add.: 150 North 35th St., Corvallis, Ore. MICROBIOLOGY, PLANT PATHOLOGY AND BIOCHEMISTRY. b. Singapore, Malaya, Dec. 26, 1917. s. Yuen-Sun (dec.) and Shun-Heng (Yang) L. Edn.: B.S., Univ. of Nanking, China, 1937; Ph.D., Oregon State Univ., 1953. m. Shih-Dzung Chen, Dec., 1958. Exp.: Instr., Dept. of Microbiology, Ore. State Univ., Corvallis, Ore., 1953-57; Asst. Soil Microbiologist, Dept. of Agronomy, Cornell Univ., Ithaca, N. Y., 1957-59; Pl. Pathologist, U. S. Army Chem. Corps, Biological Lab., Ft. Detrick, Frederick, Md., 1959; Microbiologist, F.S., U. S. Dept. of Agric., Forestry Sci. Lab., Corvallis, Ore., 1959—. Mem.: Soc. of Am. Microbiologists; Am. Phytopathological Soc.; Mycol. Soc. of Am.; A.A.A.S.; Sigma Xi; Phi Sigma. Contbr. to: Soil Sci. Soc. of Am. Proceedings; Plant and Soil, Nature (London); Jour. of Food and Agric. Chem.; Jour. of Forestry Arch. fur Mikrobiologie. Serv. Rec.: A.A.F., W.W. II. Areas of Rsch.: Relationship of Soil Microorganisms and plant pathogens. Soil microflora. Nitrogen transformation in forest soils.

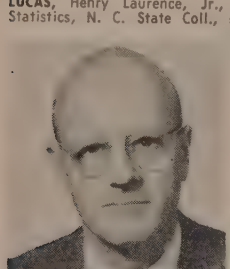


LUBKIN, Samuel (Ph.D.), Director of Research, Digital Electronics, Inc., Westbury, New York. Home Add.: 222-03 Garland Dr., Bayside, N. Y. DIGITAL COMPUTERS. b. Gomel, Russia, May 1, 1906. s. Hyman and Hannah (Rochlin) L. Edn.: B.S., Cooper Union Inst. of Tech., 1927; M.S., Univ. of Chicago, 1928; Ph.D., N. Y. Univ., 1939. Hon. Deg.: E.E., Cooper Union, 1944. m. Frances Rosen, June 14, 1930. c.: Yale Jay; Annice Ytta. Exp.: Tester, Test Supvr., Engr., Otis Elevator Co., Yonkers and N. Y., N. Y., 1928-39; Dir., Inspection Lab., Signal Corps, Phila., Pa., 1940-46; Engr. in Chg., Computing Machines, Ballistics Rsch. Lab., Aberdeen Proving Ground, Md., 1946-47; Engr. in Chg., Digital Computer Sect., Reeves Instrument Co., N. Y., N. Y., 1947-48; Consult. on Electronic Computers, Natl. Bur. of Standards, Wash., D. C., 1948-49; Pres., Chmn. of Bd. and Tech. Dir., Electronic Computer Corp., Brooklyn, N. Y., 1949-52; Dir., Electronic Computer Div., Underwood Corp., L. I. City, N. Y., 1952-56; Sr. Scientist and Adjunct Prof. of Math., N. Y. Univ., 1956-57; Mgr. of Digital Dev., Electronics Div., Curtiss-Wright Corp., Carlstadt, N. J., 1957-59; Staff Consult., Missile Systems Div., Republic Aircraft Corp., Mineola, N. Y., 1959-62; Director of Research, Digital Electronics, Inc., 1962 —. Hon. Pos.: Chmn., New York Chapt., Prof. Group on Elec. Computers, I.R.E., 1960-61; Mem., Admin. Comm., ibid., 1960-63. Fellow: Inst. of Radio Engrs.; A.A.A.S. Mem.: Assn. for Computing Machinery; Am. Ord. Assn.; Tau Beta Pi. Contbr. to: Jour. of Rsch. of Natl. Bur. of Standards; Electronics. Gen. Int.: Holder of 37 U. S. Patents and 5 Foreign Patents. Areas of Rsch.: Applied Mathematics, Instrumentation, Electronic Computers.

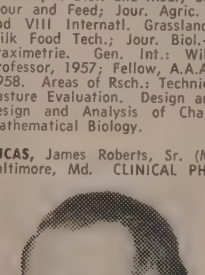
LUBOWE, Irwin Irville (M.D.), Assoc. Prof., Dermatol., N. Y. Med. Coll., Met. Hosp. Ctr., N. Y. C. Assoc. Dermatologist, Met. Hosp.; Asst. Dermatologist, Flower-Fifth Ave. Hosp., N. Y. C. Home Add.: 15 Reimer Rd., Scarsdale, N. Y. DERMATOLOGY: PHARMACOLOGY AND CLINICAL EVALUATION. b. N. Y. C., Jan. 13, 1905. s. Harry and Fanny (Goldstein) L. Edn.: B.A., City Coll., N. Y., 1926; M.D., N. Y. Med. Coll., 1930. m. Ruth Katz, Dec. 22, 1945. c.: Stephen; Mark. Exp.: Instr., Dermat., Skin and Cancer Unit, N. Y. Univ. Med. Coll., 1946-54; Asst. Prof., N. Y. Med. Coll., 1950-60; Assoc.-Dermatol., Met. Hosp., N. Y. C., 1950—; Assoc. Prof. Dermatol., N. Y. Med. Coll., 1961—. Hon. Pos.: Editorial Bd., Clin. Med.; Drug and Allied Med.; Med. Digest (India). Mem.: N. Y. Acad. of Sci.; Acad. of Dermatol.; Am. Coll. of Allergists; Am. Chem. Soc.; Phi Delta Epsilon; Am. Med. Writers Assn.; Bronx Dermatol. Soc. Author:

Tell Me The Truth, Doctor, 1942; New Hope for Your Hair, 1960; Cosmetics and the Skin, 1963; New Hope for Your Skin, 1963. Editor: "Hair Growth and Hair Regeneration", N. Y. Acad. Sci., Jan., 1959. Contbr. to: Arch. of Dermatol.; Clin. Med.; Jour. of Cosmetic Chemists; Jour. A.M.A.; N. Y. St. Jour. of Med. Serv. Rec.: U. S. Army Med. Corps, 1942-46. Areas of Rsch.: Research Dermatology; Cosmetic Dermatology; Evaluation of New Drugs.

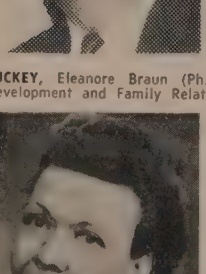
LUCAS, Henry Laurence, Jr., (Ph.D.), Prof., Dept. Exprimental Statistics, N. C. State Coll., Raleigh, N. C. Home Add.: 2612 St. Mary's St., Raleigh, N. C. STATISTICS AND TECHNIQUES OF ANIMAL EXPERIMENTATION. b. Pasadena, Calif., Jan. 8, 1916. s. Henry Laurence and Lilla Alice (La Spada) L. Edn.: B.S., Calif., 1937; Ph.D., Cornell Univ., 1943. m. Jane Murray, Jan. 20, 1945. c.: William; Carole; Robert; Barbara; Janet. Exp.: Supvr., Advanced Registry Cow Testing, Calif., 1938; Asst. Animal Nutrition, U.S.D.A., Davis, Calif., 1938-39; Fellowship in Agric., Cornell Univ., 1939-40; Dairy Cattle Feed Investigator, Cornell Univ., 1940-43; Rsch. Assoc., Animal Nutrition, ibid., 1943-44; Instr., Anical Physiology, ibid., 1944; Rsch. Assoc., Poultry Nutrition, ibid., 1944-45; Assoc. Prof., Exptl. Statistics, N. C. State Coll., 1946-48; Prof., Exptl. Statistics, ibid., 1948—. Hon. Pos.: Mem., Regional Advisory Bd., Biometrics Soc.; Pres., N. C. Chapter, Am. Stat. Soc., 1947-48, Program Comm., Eastern North Am. Region Biometrics Soc., 1950-52; Program Comm., Biometrics Sect., Am. Stat. Assn., 1952; Regional Comm., Biometrics Soc., 1951-52; Pres., Eastern N. Am. Region, Biometrics Soc., 1962; Natl. Rsch. Coun. Comm. on Feed Composition, 1946-58. Mem.: Am. Stat. Assn.; Biometrics Soc.; Am. Dairy Sci. Assn.; A.A.A.S.; Am. Soc. Animal Production; Am. Soc. Range Mgmt.; Sigma Xi; Phi Kappa Phi; Alpha Zeta; Gamma Sigma Delta; Gamma Alpha. Contbr. to: Biometrics; Jour. Dairy Sci.; Jour. Animal Sci.; Biometrika; Poultry Sci.; Proc. Soc. Exptl. Biol. and Med.; Sci.; Agron. Jour.; Exp.: Sta. Bulls.; Flour and Feed; Jour. Agric. Sci.; Rsch. and Farming; Proc. VI and VIII Internatl. Grassland Cong.; Agric. and Food Chem.; Milk Food Tech.; Jour. Biol.-Chem.; Crops and Soil; Biometrie-Praximetrie. Gen. Int.: William Neal Reynolds Distinguished Professor, 1957; Fellow, A.A.A.S., 1956; Fellow, Am. Stat. Assn., 1958. Areas of Rsch.: Techniques of Animal Experimentation and Pasture Evaluation. Design and Analysis of Animal Experiments; Design and Analysis of Change-over Trials; Animal Nutrition; Mathematical Biology.



LUCAS, James Roberts, Sr. (Mr.), Rsch. Mgr., 300 Hilton Ave., Baltimore, Md. CLINICAL PHARMACOLOGY. b. Remsen, N. Y., June 2, 1904. s. Chauncey D. and Nancy (Price) L. Edn.: A.B., Harvard Univ., 1927; S.B., ibid., 1927; M.S., N. Y. Univ., 1935. m. Phyllis G. Driver, Sept. 3, 1932. c.: James R., Jr. Exp.: Physical Bacteriologist, Rockefeller Inst., 1931-36; Rsch. Attache, Winthrop Labs., 1936-51; Rsch. Mgr., ibid., 1961—. Mem.: Soc. Am. Bact.; A.A.A.S.; Soc. Med. Rsch.; Mason, 32°. Contbr. to: Jour. Bact.; Science; Jour. Clin. Invest.; and others. Areas of Rsch.: Biophysical Bacteriology; Clin. Invest. of Drugs.

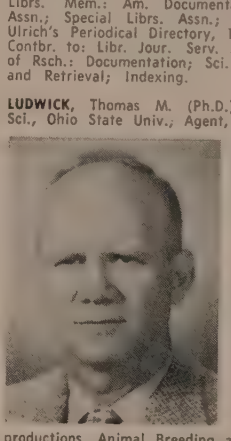


LUCKEY, Eleanore Braun (Ph.D.), Prof., Head, Dept. of Child Development and Family Relations, Univ. of Conn., Storrs, Conn. Home Add.: Agronomy Rd., Storrs, Conn. PSYCHOLOGY OF FAMILY RELATIONSHIPS. b. La Junta, Colo., Feb., 1915. d. Clarence E. and Atha C. (Brown) Braun. Edn.: A.B., Colo. State Coll., 1937; M.A., ibid., 1942; Ph.D., Univ. of Minn., 1959. m. Robert E. Luckey (dec.), 1937. c.: R. David; Michael; Robert. Exp.: Instr., Univ. of Minn., 1953-58; Asst. Prof. and Sr. Marriage Counselor, St. Univ. of Ia., 1958-61; Prof., Head, Dept. of Child Development and Family Relations, Univ. of Conn., 1961—. Hon. Pos.: Exec. Bd., Natl. Coun. on Family Relations and Tri St. Coun. on Family Relations; Assoc. Editor, Marriage and Family Living. Mem.: Am. Psychological Assn.; Am. Assn. of Marriage Couns.; Am. Personnel and Guidance Assn.; Pi Kappa Delta; Pi Lambda Theta; Psi Chi. Contbr. to: Jour. of Consulting Psychol.; Jour. of Counseling Psychol.; Sociometry; Social Forces; Marriage and Family Living. Areas of Rsch.: Marital Adjustment and Its Relation to Perception of Self, Spouse, Parents and Ideal. Areas of Specialized Knowledge: Marriage and Family Counseling; Parent-Child Relationships.



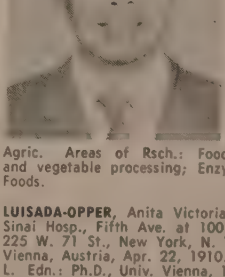
LUCKER, Jay K. (Mr.), Asst. Librn. for Sci. and Technol., Assoc. Prof., Princeton Univ. Libr., Princeton, N. J. Home Add.: 1 East Stanworth Dr., Princeton, N. J. SCIENCE LIBARIANSHIP. b. N. Y. C., Feb. 23, 1930. s. Jerome and Ella (Schwartz) L. Edn.: B.A., Brooklyn Coll., 1951; M.S., Columbia Univ., 1952. m. Marjorie Stern, Aug. 17, 1952. c.: Amy; Nancy. Exp.: Asst. Chf., Acquisition Br., N. Y. Publ. Libr., 1954-56; First Asst. Sci. and Technol. Div., ibid., 1957-59; Chf., Dept. of Sci. and Technol., Assoc. Prof., Princeton Univ., 1959—. Hon. Pos.: Chmn., Subject Specialists Sect., Assn. of Coll. and Rsch. Librs. Mem.: Am. Documentation Inst.; A.A.U.P.; Am. Lib. Assn.; Special Librs. Assn.; Phi Beta Kappa. Assoc. Editor, Ulrich's Periodical Directory, 1959; Bibliographic Index, 1958—. Contbr. to: Libr. Jour. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Documentation; Sci. Information; Information Storage and Retrieval; Indexing.

LUDWICK, Thomas M. (Ph.D.), Prof., Animal Sci. and Dairy Sci., Ohio State Univ., Agent, U. S. Dept. of Agric., Columbus, Ohio. Home Add.: 8071 Sawmill Rd., Dublin, Ohio. ANIMAL BREEDING, PHYSIOLOGY, REPRODUCTION AND MILK SECRETION. b. Cox's Creek, Ky., Aug. 2, 1916. s. A. T. and Mary Belle (Evans) L. Edn.: B.S., Eastern Ky. Tchrs. Coll., 1936; M.S., Univ. of Ky., 1939; Ph.D., Univ. of Minn., 1941; M. S., Univ. of Chicago, 1942. Exp.: Asst. Prof., Univ. of Ky., Lexington, Ky., 1946-48; Prof., Ohio State Univ., 1948—. Mem.: Sigma Xi; Gamma Sigma Delta; Soc. Animal Prod.; Am. Dairy Sci. Assn. Contbr. to: Jour. Dairy Sci.; Jour. Animal Sci.; Jour. Fertility and Sterility; Jour. Expmtl. Biol. and Med. Serv. Rec.: U. S. Air Corps, 1941-46. Areas of Rsch.: Physiology of Reproductions, Animal Breeding and Genetics, Physiology of Lactation; Artificial Insemination.



LUDWIG, George Harry (Ph.D.), Head, Fields and Particles Instrumentation Sect., N.A.S.A., Goddard Space Flight Ctr., Greenbelt, Md. Home Add.: 9710 Lorain Ave., Silver Spring, Md. SPACE RESEARCH AND INSTRUMENTATION. b. Sharon, Ia., Nov. 13, 1927. s. George McKinley and Alice G. (Heim) L. Edn.: B.A., St. Univ. of Ia., 1956; M.S., ibid., 1959; Ph.D., ibid., 1960. m. Rosalie F. Vickers, July 21, 1950. c.: Barbara Rose; Sharon Lee; George Vickers; Kathy Ann. Exp.: Rsch. Asst., St. Univ. of Ia., 1956-58; Rsch. Assoc., ibid., 1960; Head, Fields and Particles Instrumentation Sect., N.A.S.A., Goddard Space Flight Ctr., Greenbelt, Md., 1960—. Mem.: A.G.U.; I.R.E.; Natl. Geographic Soc.; Philosophical Soc. of Wash.; Sigma Xi; Phi Eta Sigma; Phi Beta Kappa. Contbr. to: Rev. of Scientific Instruments; Jour. of Geophysical Rsch.; Proc. of I.R.E. Serv. Rec.: U.S.A.F., 1946-52. Gen. Int.: Rsch. Fellow, U .S. Steel Fdn., 1958-60; Project Scientist for the Orbiting Geophysical Observatory. Areas of Rsch.: Fields and Particles Space Instrumentation; Van Allen Radiation Belts; Primary Cosmic Radiation.

LUH, Bor Shiun (Ph.D.), Asst. Food Technologist, and Lecturer in Food Sci. and Tech., Univ. of Calif., Davis, Calif. Home Add.: 1215 Eureka Ave., Davis, Calif. FOOD SCIENCE AND TECHNOLOGY; CHEMISTRY; BIOCHEMISTRY. b. Shanghai, China, Jan. 13, 1916. s. T. F. and K. Y. (Chen) L. Edn.: B.S., Chiao Tung Univ., China, 1938; M.S., Univ. of Calif., 1948; Ph.D., ibid., 1952. m. Bai Tsain Liu, Nov., 1940. c.: Janet Shirley. Exp.: Jr. Specialist, Univ. of Calif., Davis, Calif., 1952-56; Jr. Food Technologist, ibid., 1956-57; Asst. Food Technol., ibid., 1957—. Mem.: Am. Chem. Soc.; A.A.A.S.; Inst. of Food Technologists; Sigma Xi. Contbr. to: Food Technology; Food Rsch.; Arch. of Biochemistry and Biophysics; Proc. Am. Soc. for Horticultural Sci.; Fruchtsaft-Industrie; Calif. Agric. Areas of Rsch.: Food Chemistry; Technology of Fruit and vegetable processing; Enzyme Chemistry; Nutritive values of Foods.



LUISADA-OPPER, Anita Victoria (Ph.D.), Rsch. Assoc., Chem., Mt. Sinai Hosp., Fifth Ave. at 100 St., N. Y. C., N. Y. Home Add.: 225 W. 71 St., New York, N. Y. BIOCHEMISTRY; PROTEINS. b. Vienna, Austria, Apr. 22, 1910. d. Emilio C. and Elsa C. (Tiring) L. Edn.: Ph.D., Univ. Vienna, 1934; M.Ph., ibid., 1935; D. Chem., Univ. Genova, 1936. m. Curtis W. Opper, 1940. c.: Peggy L. Exp.: Jedlersdorfer Kraftfutter und Kunsdtduenfer-fabrik, 1936-38; Hospital de l'Hotel Dieu, Paris, 1939-40; Polyxor Chem. Co., New Haven, Conn., 1940-42; Va. Carolina Chem. Corp., Carteret,

N. J., 1942-48; Mount Sinai Hosp., New York City, 1950—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci. Contbr. to: Biochemische Zeitschrift; U. S. Patent; Nature; Am. Jour. Clin. Pathol.; Revue des Fermentations et des industries Alimentaires; Proc. Soc. Expmtl. Biol. and Med.; Archives Biochem. and Biophysics; Jour. Biol. Chem. Areas of Rsch.: Development and Spinning of Protein Fibers Made from Peanuts and Zein (with Virginia Carolina Chem.); Clinical Chemistry; Rsch. on Metabolism of Thermophilic Bacteria; Rsch. on Proteins, Especially Azoproteins.

LUKE, Clinton Lemar (Mr.), Instr., Physical Sci., Bakersfield Coll., Bakersfield, Calif. Home Add.: 2804 Baylor St., Bakersfield, Calif. PHYSICS-CHEMISTRY EDUCATION. b. Rexburg, Idaho, Mar. 1, 1925. s. Clinton Lemar and Emma (Smith) L. Edn.: B.A., Univ. of Calif., 1946; M.A., Fresno State Coll., 1962. m. Marjorie Millar, Mar., 1954. c.: Clinton Lemar, Jr.; Diane Ruth; Kathryn; Gregg Randall; Kirk David. Exp.: Tchr., Twin Falls H. S., Twin Falls, Idaho, 1954-56; Instr., Bakersfield Coll., Bakersfield, Calif., 1956—. Hon. Pos.: Pres., C.T.A. Chapter Bakersfield Coll.; Assoc. Membership, Am. Museum of Natl. Hist. Mem.: A. A. A. S.; A. A. P. T.; A.A.U.P.; Comm. Theatre Bd. Serv. Rec.: U.S.M.C.R., 1943-61. Areas of Rsch.: Science Edn.; Secondary and Jr. Coll. Edn.; Magneto-

chemistry-Susceptibilities of Rare Earths.

LUKES, George Donald (Mr.), Tech. Asst., The Pres's. Sci. Advisory Comm., The White House, Wash. 25, D. C. Home Add.: 3524 Woodbine St., Chevy Chase 15, Md. METEOROLOGY; ATMOSPHERIC PHYSICS. b. Chicago, Ill., Nov. 28, 1915. s. Louis (dec.) and Ida (Zaloudek) L. Edn.: B.S., Univ. of Chicago, 1936. m. Claudia Ezzell, Apr. 14, 1944. c.: George D., Jr.; Mary Eileen. Exp.: Rsch. Asst. in Meteorol., M.I.T., 1937-39; Agent, U. S. Weather Bur., 1938-39; Rsch. Meteorol., Rsch. Phys., Asst. to Chf. Scientist, Signal Corps Labs., Ft. Monmouth, N. J., 1939-52; Sci. Admin., Office of Secy. of Defense, Wash., D. C., 1952-59; Exec. Secy., Defense Sci. Bd. and Secy., Rsch. and Engrng. Policy Coun., ibid., 1956-59; Tech. Asst. to Special Asst. to Pres. for Sci. and Technol., The White House, Wash., D. C., 1959—. Hon. Pos.: Chmn., Arctic Ionospheric Adv. Comm., Dept. of Defense, 1948-52; Army Mem., Arctic Tropospheric Adv. Comm., 1948-51; Signal Corps Mem., Exec. Coun. for the Cent. Radio Propagation Lab., Natl. Bur. of Stands., 1946-51; Army Mem., Panel on Antennas and Propagation, Comm. on Electron., Rsch. and Devel. Bd., O.S.D., 1949-52; Comm. II U. S. Natl. Comm. of U.R.S.I., 1949-51; Army Mem., U. S. Study Groups for the Internatl. Radio Consultative Comm., 1949-50; Mem., Div. of Phys. Scis., Natl. Rsch. Coun., 1953 . Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; A.A.A.S.; Phi Beta Kappa; Trustee, United Cerebral Palsy Assn. of Monmouth Co., N. J.; Pres., Rollingwood Citizens Assn., 1958-59. Co-Author: Introduction to the Utilization of Solar Energy, 1962. Contbr. to: Consolidated Summary Tech. Report, Office of Scientific Rsch. and Devel. Areas of Rsch.: Atmospheric Acoustics; Propagation Physics; Radio Sci.; Applied Meteorol.

LUKJANOW-KOZLOWSKI, Vladimir (M.D.), Psychiatrist, Wayne County Gen. Hosp., Eloise, Mich. Home Add.: 8254 Hazelton, Dearborn, Mich. GENERAL PSYCHIATRY, SOCIAL PSYCHIATRY, RESEARCH. b. Leningrad, Russia, May 31, 1918. s. Vladimir and Maria (Kozlowski) L. Edn.: M.D., Warsaw Univ. Med. Schl., Warsaw, Poland, 1944; M.D. and Sc.D., Hamburg Univ. Med. Schl., 1948. m. Christine Prediger, Sept. 21, 1948. c.: Barbara; Beatrice; Renata. Exp.: Chf. Med. Officer, Internatl. Refugee Organization, Luebeck, Ger., 1948-49; Internship S. Chicago Comm. Hosp., Chicago, Ill., 1950-51; Alton State Hosp., Alton, Ill., Neurol. and Psychiatry, 1951-54; Res. Psych., Wayne Co. Gen. Hosp., Eloise, Mich., 1954-57; Staff Psychiatrist, Wayne Co. Gen. Hosp., Eloise, Mich., 1957—. Mem.: Gerontological Soc.; Am. Psychiatric Assn.; Mich. Soc. of Neurology and Psychiatry; Natl. Med. Assn.; Polish Med. Alliance; N. Y. Acad. of Sci.; A.A.A.S.; World Med. Assn.; Philosophical Soc. of Detroit; Natl. Rehab. Assn.; Am. Ord. Assn.; Internatl. Inst. of Metropolitan Detroit; Polish-Am. Congress, Mich. Author: "Therapeutische Erfahrungen mit Pencillin," 1948. Contbr. to: Jour. Am. Psychiatric Assn.; Med. Times; Bull. of the Natl. Med. Assn.; Jour. of the Am. Geriatrics Soc.; Jour. of the Mich. St. Med. Soc. Serv. Rec.: Polish Armed Forces under British Command, 1944-46. Gen. Int.: Experimentations with Penicillin and Sulfonamides; Diplomate, Am. Bd. of Neurology and Psychiatry. Decorations: Poland, "Virtuti Militari"; French, "Croix de Guerre"; British, "Distinguished Service Medal" , , etc., and for peace accomplished; Poland, "Golden Cross of Merit." Areas of Rsch.: Rsch. in Chemotherapy, Social Psychiatry, Psychiatry, Vocl. Rehab. of Mentally Ill.

LUM, Paul Poy (Mr.), Partner, Wor Chung Co., 317 N.W. 4th Ave., Portland, Ore. POLITICAL SCIENCE, PUBLIC ADMINISTRATION. b. Canton, China, Feb. 10, 1923. s. Hing and Jun (Lai) L. Edn.: B.A., Univ. of Ore., 1945. Exp.: Grad. Asst., Univ. of Wash., Seattle, Wash., 1945-46; Partner, Wor Chung Co., Portland, Ore., 1946—. Mem.: Am. Political Sci. Assn.; A.A.A.S.; Am. Soc. Pub. Admin.; Exec. Comm., Portland Chinese Benevolent Assn. Contbr. to: Am. Jour. of Sociology; Family. Areas of Rsch.: Political Science; Public Administration; Comparative Historical Genealogy Between China and Europe. Listed in: Who Knows—and What.

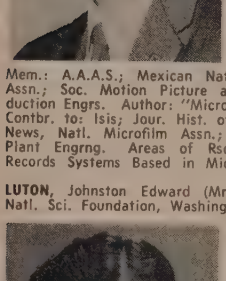
LUND, Iver Alois (Mr.), Atmospheric Physicist, Air Force Cambridge Rsch. Labs., L. G. Hanscom Field, Bedford, Mass. Home Add.: 26 Cedar Ave., Arlington 74, Mass. METEOROLOGY. b. Zenith, N. D., Aug. 22, 1918. s. Christ and Christine (Loken) L. Edn.: B.A., Dickinson State Tchrs. Coll., 1941; M.S., Calif. Inst. of Technol., 1943. m. Minnie Rieger, Aug. 31, 1942. c.: James; Allan; Margaret; David. Exp.: Meteorologist, Am. Inst. of Aerological Rsch., Pasadena, Calif., 1948-51; Tchr., H. S., San Bernardino, Calif., 1949-51; Physicist, A.F.C.R.L., Bedford, Mass., 1951—. Mem.: A.G.U.; Am. Meteorol. Soc. Contbr. to: Air Force Surveys in Geophysics; Bull. of Am. Meteorological Soc.; Jour. of Meteorol.; Jour. of Geophysical Rsch. Serv. Rec.: U.S.A.F., 1942-46. Areas of Rsch.: Statistical Prediction with the Aid of Electronic Computers.

LUNDBERG, George Andrew (Ph.D.), Prof. Emeritus of Sociol., Univ. of Wash., Seattle, Wash. Home Add.: 5046 22nd Ave., N.E., Seattle 5, Wash. SOCIOLOGY, METHODS AND THEORY. b. Fairdale, N. D., Oct. 3, 1895. s. Anders J. and Britta (Johnson) L. Edn.: B.A., Univ. of N. D., 1920; M.A., Univ. of Wis., 1923; Ph.D., Univ. of Minn., 1925. Hon. Deg.: LL.D., Univ. of N. D., 1958. m. Sylvia Kjeldstad, Aug. 4, 1956. c.: George Andrew, Jr. Exp.: Asst. Prof., Univ. of Wash., 1925-27; Assoc. Prof., Univ. of Pittsburgh, 1927-29; Rsch. Dir., Columbia Univ., 1930-34; Prof., Bennington Coll., 1934-45; Prof., Hd., Dept. of Sociol., Univ. of Wash., 1945—. Hon. Pos.: Pres., Am. Sociol. Assn.; Pres., Sociol. Rsch. Assn. Mem.: Inst. of Mathl. Statistics; Econometric Soc.; Psychometric Soc.; Alpha Kappa Delta. Author: Social Research, 1929; Foundations of Sociol., 1939; Can Science Save Us?, 1947; Sociology, 1954. Contbr. to: Am. Sociological Rev.; Am. Jour. of Sociol.; Soc. Forces; Jour. of Am. Statistical Assn.; Polit. Sci. Quarterly; Sociometry. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Quantitative Methods in the Social Scis.; Sociological Theory; Minority Problems.

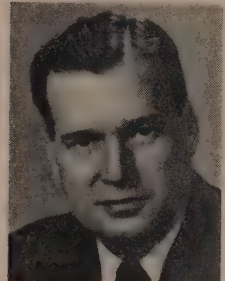
LUNDQUIST, Gustav Edward (Col.), Head and Prof., Dept. of Physics, U. S. Air Force Acad., Colo. Home Add.: Quarters #120, U. S. Air Force Acad., Colo. NUCLEAR ENGINEERING. b. Chicago, Ill., Nov. 19, 1919. s. Gust H. and Nina M. L. Edn.: A.A., Wright Jr. Coll., 1939; B.S., Univ. of Ill., 1948; M.S., N. C. State Coll., 1952. m. Mary T. Parrish, Dec. 20, 1945. c.: Eric Greer; Beverly Elizabeth; Donna Spotswood. Exp.: Chf., Weapons Ordnance Development Br., Div. of Military Application, Atomic Energy Comm., Wash., D. C., 1952-55; Dir., U.S.A.F. Offi. of Engrng., Liason, London, England, 1955-58; Deputy Dir., Air Weapons Directorate, Air Rsch. and Devel. Command, Wash., D. C., 1958-60; Prof., Head, Dept. of Physics, U. S. Air Force Acad., Colo., 1961 —. Serv. Rec.: See Positions. Areas of Rsch.: Nuclear Reactor Shielding.

LUTHER, Frederic, (Mr.), Managing Partner, The Frederic Luther Co., Indianapolis 20, Ind. Home Add.: 4515 Marcy Lane, Indianapolis 5, Ind. PHOTOGRAPH ENGINEERING. b. Phoenix, N. Y. s. Leslie L. and Bertha (Kind) L. m. Dorothy Madden Hobson. Exp.: Survey Archeologist, Mexican Govt., 1934-35; Edntl. Dir., Dayton Natural History Museum, Ohio, 1935-37; Curator-Photographer, Rockefeller Lab. of Anthropology, Santa Fe, N. Mex., 1937-38; N. Y. Mgr. Microfilm and Applied Photography Dept., Marks and Fuller, Inc., Rochester, N. Y., 1938-41; Mgr. Motion Picture Prod. and Distribution, Microfilm, and Lecture Bur., Western Electric Co., N. Y. C., 1941-51; Sr. Partner, Microfilm Sales and Serv., The Frederic Luther Co., Indianapolis, 1951—. Hon. Pos.: Pres., Natl. Microfilm Assn., 1960-61. Mem.: A.A.A.S.; Mexican Natl. Acad. of Sci.; Natl. Microfilm Assn.; Soc. Motion Picture and Television Engrs.; Soc. Reproduction Engrs. Author: "Microfilm, A History, 1839-1900," 1959. Contbr. to: Isis; Jour. Hist. of Sci. Soc.; Proc. and Natl. Micro-News, Natl. Microfilm Assn.; Am. Documentation; Libr. Jour.; Plant Engrng. Areas of Rsch.: High Reduction Photography; Records Systems Based in Microfilm.

LUTON, Johnston Edward (Mr.), Asst. Dir. for Administration, Natl. Sci. Foundation, Washington, D. C. Home Add.: 8 Belfield Rd., Alexandria, Va. PUBLIC ADMINISTRATION. b. Corinth, Miss., Sept. 9, 1910. s. Johnston Edward and Olga (Schoolar) L. Edn.: A.B., Union Univ., 1932. m. Mary Jane Harper, Aug. 31, 1935. Exp.: Asst. Gen. Secy. for Administration, Natl. Coun. of Churches, N. Y. C., 1953-57; Asst. Dir. for Administration, Natl. Sci. Foundation, Washington, D. C., 1957-61. Mem.: Soc. for the Advancement of Mgmt.; A.A.A.S.; Sigma Alpha Epsilon. Serv. Rec.: U. S. Navy, 1943-46.



LUTWAK, Leo (M.D.), (Ph.D.), Sr. Investigator, N.I.A.M.D., Natl. Inst. Health, Bethesda, Md. Home Add.: 3610 Spruell Dr., Silver Spring, Md. MEDICINE: ENDOCRINOLOGY; BIOCHEMISTRY. b. New York, N. Y., Mar. 27, 1928. s. Herman and Charlotte (Safirstein) L. Edn.: B.S., Coll. of City of N. Y., 1945; M.S., Univ. of Wis., 1946; Ph.D., Univ. of Mich., 1950; M.D., Yale Univ., 1956. m. Cecile Kroshinsky, Dec., 1950. c.: Mark Steven; Diane Ellen; Paul Jonathan. Exp.: Biochemist, Brookhaven Natl. Lab., Upton, N. Y., 1950-52; Rsch. Assoc., Yale Univ., New Haven, Conn., 1952-56; Clinical Investigator, Natl. Inst. of Health, Bethesda, Md., 1957—. Mem.: Am. Chem. Soc.; A.A.A.S.; Am. Fed. for Clin. Rsch.; Endocrine Soc.; N. Y. Acad. of Sci.; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Analytical Chem.; Jour. Biol. Chem.; Jour. Clin. Endocrinol. Metab.; Clinical Rsch.; Arch. Biochem. Biophys. Serv. Rec.: Public Health Serv., 1957—. Areas of Rsch.: Analytical Biochemistry; Physiology of Bone; Mineral Metabolism; Human Energy Metabolism.



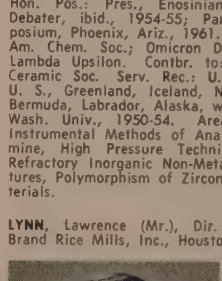
LUTZ, James Fulton (Ph.D.), Prof. of Soils, N. C. State Coll., Raleigh, N. C. Home Add.: 1401 Dixie Trail, Raleigh, N. C. SOIL SCIENCE. b. Newton, N. C., Nov. 23, 1907. s. Jacob A. and Ida (McGill) L. Edn.: B.S., N. C. State Coll., 1929; M.A., Univ. of Mo., 1930; Ph.D., ibid., 1934. Exp.: Asst. Prof., N. C. State Coll., 1931-34; Assoc. Prof., ibid., 1934-41; Prof., ibid., 1941—. Hon. Pos.: Chmn., Soil Physics Sect., Chmn., Terminol. Comm., Soil Sci. Soc. of Am.; Pres., N. C. Soil Sci. Soc.; Secy., Faculty Senate and Gen. Faculty, N. C. State Coll., 1961-62. Mem.: Am. Soc. of Agronomy; Internatl. Soc. of Soil Sci.; A.G.U.; Gamma Alpha; Gamma Sigma Delta; Sigma Xi. Contbrng. Author: Agronomy Monograph, 1952. Contbr. to: Soil Sci.; Soil Sci. Soc. of Am. Proc.; Trans. of 7th Internatl. Congress of Soil Sci. Gen. Int.: Annual Achievement Award, Soil Sci. Soc. of N. C., 1962. Areas of Rsch.: Physico-Chem. Properties of Soil Colloids; Soil Properties Affecting Erodibility of Soils; Soil Structure; Soil Water; Effects of Phosphate on Soil Physical Properties; Soil Physics, Chem., Genesis and Conservation.

LYERLY, Paul, Jr. (Ph.D.), Rsch. Coordinator, Trans-Pecos Area and Supt., Substation 17, Tex. Agric. Expt. Sta., El Paso, Tex. Home Add.: Rt. 1, Box 454, El Paso, Tex. PLANT BREEDING; CROP PRODUCTION. b. Granite Quarry, N. C., Feb. 24, 1918. s. Paul Jacob and Leona (McCombs) L. Edn.: B.S., N. C. St. Coll., 1938; M.S., Ia. Sta. Coll., 1940; Ph.D., ibid., 1942. m. Lucille Ludwig, 1942. c.: Bonnie Kay; Vickie Ann. Exp.: Agronomist, Tex. Agric. Expt. Sta., Substation #17, El Paso, Tex., 1942-44; Cotton Breeder, ibid., 1944-45; Supt., ibid., 1945-58; Rsch. Coordinator, Trans-Pecos Area & Supt., ibid., 1958—. Mem.: Am. Soc. of Agronomy; Am. Soc. of Phytopathol.; Am. Soc. of Plant Physiologists; Weed Soc. of Am.; Sigma Xi; Lions Club. Contbr. to: Agronomy Jour. Areas of Rsch.: Cotton Breeding and Production; Weed Control.

LYLE, Clay (Ph.D.), Adviser in Entomol., Natl. Taiwan Univ., Taipei, Taiwan. ENTOMOLOGY. b. Lux, Miss., Jan. 25, 1894. s. James Madison and Sallie (Hendrix) L. Edn.: B.S., Miss. State Coll., 1917; M.S., ibid., 1931; Ph.D., Iowa State Coll., 1937. m. Annie Laurie McKay of State Coll., Miss., July 7, 1930. d. Prof. and Mrs. A. B. McKay. c.: Sarah Ann. Exp.: Agriculturist, Tate A.H.S., 1917-18; Gen. Insp., State Plant Bd. of Miss., 1921-31; Assoc. Prof., Zool. and Entomol., Miss. State Univ., 1927-31; Hd., Dept. Zool. and Entomol., Miss. State Univ., 1931-51; Entomologist, Miss. Exptl. Sta., 1931-51; Exec. Off., State Plant Bd. of Miss., 1931-51; Ext. Entomol., Miss. State Univ. Ext. Serv., 1943-46; Dean, Schl. of Sci., Miss. State Univ., 1945-51; Dean, Schl. of Agri., ibid., Dir., Agri. Exptl. Sta. and Agri. Ext. Serv., State Coll., Miss., 1951-61; Dir. of Development, Wood Jr. Coll., Mathiston, Miss., 1961; Adviser in Entomol., Natl. Taiwan Univ., 1961—. Hon. Pos.: Pres., Cotton States Entomologists, 1936; Pres., Am. Assn. of Ec. Entomologists, 1946; Pres., Miss. Acad. of Sci., 1953; Chmn., Southern Extension Directors, 1956-57; Pres., Assn. of Sou. Agril. Workers, 1961; Dir., Memphis Br., Federal Reserve Bank of St. Louis, 1960-61; Mem., Natl. Plant Bd., 1941-51; Secy., Southern Plant Bd., 1937-41. Mem.: Fellow, A.A.A.S.; Entomol. Soc. of Am.; Sigma Xi; Alpha Zeta; Phi Kappa Phi; Omicron Delta Kappa; Epsilon Sigma Phi. Ph.D. Dissertation: The Crawfishes of Miss. with Special Reference to the Biol. and Control on Injurious Species. War Rec.: Corps of Engrs., 1918-19. Listed in: A.M.S.; W.W. in Am.; W.W. in the S. and S.W.; W. W. in Methodism; Who Knows—and What; Formerly in Am. Young Men.

LYNCH, Charles Theodore (Ph.D.), Rsch. Materials Engr. and Group Leader, Aeronautical Systems Div., Wright-Patterson Air Force Base, Ohio. Home Add.: 612 Grant St., Fairborn, Ohio. ANALYTICAL CHEMISTRY; INORGANIC CHEMISTRY. b. Lima, Ohio, May 17, 1932. s. John Richard and Helen (Dunn) L. Edn.: A.A., Geo. Wash. Univ., 1953; B.S., ibid., 1955; M.S., Univ. of Ill., 1957; Ph.D., ibid., 1960. m. Betty Ann Korkolis, Feb., 1956. c.: Karen Elaine; Charles T., Jr.; Richard Anthony. Exp.: Clerk-Typist, U. S. Govt., G.S.A., Wash., D.C., summer, 1951; Clerk-Typist, U. S. Govt., GSA, Wash., D. C., 1952; Lab. Tech., Baugh Chemical Co., Baltimore, Md., Summer, 1953; Rsch. Chemist, E. I. duPont de Nemours and Co., Wilmington, Del., summer, 1956; Rsch. Chemist, ibid., Waynesboro, Va., summer, 1958; Grad. Asst., Univ. of Ill., Urbana, Ill., 1955-60; Project Engr., U. S. Air Force, Wright-Patterson A.F.B., Dayton, Ohio, 1960-62; Rsch. Materials Engr. and Gp. Ldr., ibid., (Civilian), 1962—. Hon. Pos.: Pres., Enosinian Debate Soc., 1955; Outstanding Debater, ibid., 1954-55; Panel Mem., U.S.A.F. Materials Symposium, Phoenix, Ariz., 1961. Mem.: A.A.A.S.; Alpha Chi Sigma; Am. Chem. Soc.; Omicron Delta Kappa; Delta Sigma Rho; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Am. Ceramic Soc. Serv. Rec.: U.S.A.F., 1960-62. Gen. Int.: Toured U. S., Greenland, Iceland, Newfoundland, North Africa, Azores, Bermuda, Labrador, Alaska, with Traveling Troubadours of George Wash. Univ., 1950-54. Areas of Rsch.: Gas Chromatography, Instrumental Methods of Analysis, Complexes of N-Methyl Glucamine, High Pressure Techniques and Reactions, Reactions of Refractory Inorganic Non-Metallic Materials at Elevated Temperatures, Polymorphism of Zirconia, Metallography of Very Hard Materials.

LYNN, Lawrence (Mr.), Dir. Rsch. and Comml. Devel., River Brand Rice Mills, Inc., Houston, Texas. Home Add.: 11930 Longleaf Lane, Houston, Texas. ENGINEERING ECONOMICS, PRODUCT AND MARKET DEVELOPMENT. b. N. Y., N. Y., July 29, 1926. s. Henry and Kitty (Cooper) L. Edn.: B.S., Columbia Univ., 1948; M.S., ibid., 1949. m. Renate Hellmann, Aug. 28, 1948. c.: Patricia Karen; Andrew Cooper. Exp.: Rsch. Chem. Engr., Chemical Div., Celanese Corp. of Am., 1949-52; Grp. Ldr., Chem. Econs. Group, Chem. Div., ibid., 1952-53; Sect. Hd., Process Engrng. Sect., Plastics Div., ibid., 1953-54; Mgr., Econ. Planning Dept., Plastics Div., ibid., 1954-55; Asst. Lab. Dir., Engrng. and Coml. Dev. Lab., General Foods Corp., N. Y., 1958-59; Lab. Dir., ibid., 1959-61; Dir. Rsch. and Comml. Devel., River Brand Rice, 1961—. Mem.: Am. Chem. Soc.; Am. Marketing Assn.; Sigma Xi; Phi Lambda Upsilon; Am. Inst. of Chem. Engrs.; Contbr. to: Indus. and Engrng. Chem.; Chem. Engrng.; Modern Plastics; Jour. Marketing; Columbia Engrng. Quart. Serv. Rec.: U. S. Army, 1944-45. Areas of Rsch.: Indus. and Chem. Econs.; Mkt. Planning Techniques; Petrochemicals; Synthetic and Natural Polymers; Food Product Devel.

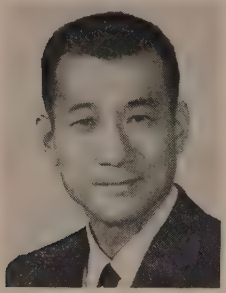


LYONS, W(illiam) James (Ph.D.), Assoc. Rsch. Dir., Textile Rsch. Inst., Princeton, N. J. Home Add.: 160 Patton Ave., Princeton, N. J. HIGH-POLYMER AND TEXTILE PHYSICS; RHEOLOGY. b. Duluth, Minn., July 6, 1904. s. Thomas H. and Pauline E. (Schultz) L. Edn.: Ph.B., Univ. of Chicago, 1930; M.S., St. Louis Univ., 1933; Ph.D., ibid., 1935. m. Polly Kennedy, May 22, 1957. c.: Paul Joseph; Frank Thomas. Exp.: Physicistt, Western Cartridge Co., E. Alton, Ill., 1935-37; Instr., Loyola Univ., New Orleans, La., 1937-40; Physicist, Southern Reg. Rsch. Lab., New Orleans, La., 1940-45; Engr., Radio Corp., Am., Camden, N. J., 1945; Group Leader, Firestone Rsch. Lab., Akron, Ohio, 1945-54; Sect. Chief, Quartermaster R. and E. Command, Natick, Mass., 1954-57; Physicist and Assoc. Rsch. Dir., Textile Rsch. Inst., 1957—. Hon. Pos.: Assoc. Editor, Jour. App. Phys., 1944-54; Secy.-Treas., Div. of High-Polymer Phys., 1943—; Vice-Pres., Natick QM Br., RESA, 1957. Mem.: Am. Phys. Soc., Fellow; Am. Assn. Adv. of Sci., Fellow; Fiber Soc.; Soc. of Rheol.; Textile Rsch. Inst.; Phi Betta Kappa; Sigma Xi. Contbr. to: Jour. App. Phys.; Textile Rsch. Jour.; Phys. Rev.; Scientific Monthly; India Rubber World. Gen. Int.: Developed, in Collaboration, a Method for Measuring Dynamic Properties of Textiles, Which has Found World Wide Adoption. Areas of Rsch.: Plastic Deformation in Solids; Dynamic Properties of Polymers and Textiles; Molecular Theory of Mechanical Properties; Fatigue and Surface Properties of Fibers.

LYTLE, Ernest James (Ph.D.), Design Engr., Mathematician, Martin-Marietta, Orlando, Fla. Home Add.: 2215 Woodcrest Dr., Winter Park, Fla. MATHEMATICS AND STATISTICS. b. East Lake, Fla., June 28, 1913. s. Ernest James and Caroline (Pasteur) L. Edn.: B.S., Univ. of Fla., 1935; M.A., ibid., 1940; Ph.D., ibid., 1956. m. Florence George, Feb. 19, 1941. c.: Ernest; Carol; Stephen. Exp.: Instr., Univ. of Fla., 1946-56; Assoc. Engr., I.B.M. Corp., Poughkeepsie, N. Y., 1956-57; Assoc. Rsch. Prof., Univ. of Fla., 1957-59; Rsch. Staff Mem., Radiation, Inc., Orlando, Fla., 1959-61; Design Engr., Martin-Marietta, Orlando, Fla., 1961—. Mem.: Sigma Xi; Kappa Phi Kappa; Kappa Delta Pi; S.I.A.M.; I.M.S.; Am. Statistical Assn.; Math. Assn. of Am.; Fla. Blue Key. Contbr. to: Symposium on Monte Carlo Methods. Serv. Rec.: U. S. Army, 1941-45, 1950-52. Areas of Rsch.: Design of Experiments; System Reliability; Simulations.

M

MA, Te Hsiu (Ph.D.), Assoc. Prof., Dept. Biol., Emory and Henry Coll., Emory, Va. Home Add.: Box 30, Emory, Va. CYTOGENETICS, (RADIATION BIOLOGY). b. Pao-ti Co., Ho-pei Prov., China, Aug. 24, 1924. s. Yu-lin and Wang-Shih M. Edn.: B.S., Catholic Univ. of Peking China, 1948; M.S., Taiwan Univ., Taiwan, China, 1950; Ph.D., Univ., of Va., 1959. m. Peggy A. Rayburn, June 4, 1960. c.: Lyndon Te. Exp.: Asst. Cytologist, Dept. of Sugarcane Breeding, Taiwan Sugar Exptl. Station, Tai-nan, Taiwan, China, 1950-55; Asst. Prof., Dept. of Biol., Emory and Henry Coll., 1959-62; Assoc. Prof., ibid., 1962–. Mem.: Beta Beta Beta; Assoc. Mem. of Sigma Xi; Am. Genetic Soc.; Am. Assn. for the Adv. of Sci.; Emory Civic Club. Contbr. to: Procs. of the Internatl. Soc. of Sugar Cane Technols., 1950. Areas of Rsch.: Cytogenetics of Sugarcane, Cytogenetics of Corn; Radiation Studies of Corn; Isotope Tracer Research of Oats.



MA, Tsu Sheng, Prof., Chem., Brooklyn Coll. of the City Univ. of New York, Brooklyn 10, N. Y. Home Add.: 90 LaSalle St., New York 27, N. Y. ORGANIC CHEMISTRY; MICROCHEMISTRY. b. Canton, China, Oct. 15, 1911. s. Shao Ching and Sze (Mai) M. Edn.: B.S., National Tsing Hua Univ., Peiping, China, 1931; Ph.D., Univ. of Chicago, 1938. m. Gioh-fang Dju, Aug. 27, 1942. c.: Chopo; Juliana. Exp.: Instr. in charge Microchem. Lab., Univ. of Chicago, 1938-46; Prof., Chem., Natl. Peking Univ., Peiping, China, 1946-49; Sr. Lectr., Microchem., Univ. of Otago, Dunedin, New Zealand, 1949-51; Asst. Prof., Chem., N. Y. Univ., 1951-54; Assoc. Prof., Chem., Brooklyn Coll. of the City Univ. of N. Y., 1954-58; Prof., 1958–. Assoc. Editor, Microchem. Jour., 1957–. Hon. Pos.: Chmn., 1955, Microchem. Symposium, N. Y.; Fulbright Visiting Prof. under the St. Dept's Internatl. Exchange Program, 1961-62. Mem.: Am. Chem. Soc.; British Chem. Soc.; N. Y. Acad. Sci., Fellow; Metro. Microchem. Soc.; A.A.A.S.; A.A.U.P.; Sigma Xi. Author: Organic Functional Group Analysis. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chinese Chem. Soc.; Analytical Chem.; Analyst; Antibioticsand Chemotherapy; Mikrochemie; Mikrochimica Acta; Microchem. Jour. Gen. Int.: Organized Microchemical Labs.; Developed Semimicro Experiments for Teaching Gen. Chem. and Organic Chem. Areas of Rsch.: Micromethods of Chem. Experimentation; Synthetic Drugs; Microchemical Investigation of Natural Products.

MABREY, David Walton (Mr.), Grp. Ldr., Resin Devel. Div., Devoe and Raynolds Co., Louisville, Ky. Home Add.: 3504 Marlin Dr., Jeffersontown, Ky. POLYESTERS AND VINYL POLYMERS. b. New Baden, Ill., May 6, 1914. s. David Pratt and Ada (Yokley) M. Edn.: B.S., Univ. of Tenn., 1939. m. Lillian Grace Rothenberger, 1942. Exp.: Grp. Ldr., Coating Div., Devoe and Raynolds, 1943-45; Grp. Ldr., Resin Dev., Devoe and Raynolds, 1950–; Chemist, Resin Dev. Div., Devoe and Raynolds, 1945-50. Mem.: Am. Oil Chemists Soc.; A.A.A.S.; Am. Chem. Soc. Areas of Rsch.: Ureas, Epoxy Resins, Polyesters and Vinyl Polymers as Related to the Plastics and Coatings Indusrty; Emulsions and Water Reducible Resins.

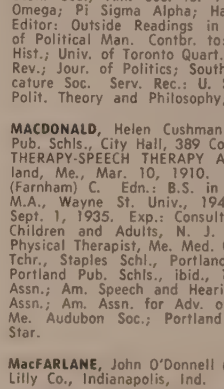
MACAGNO, Matilde Cusminsky (Mrs.), Rsch. Assoc., Iowa Inst of Hydraulic Rsch., Iowa City, Iowa. Home Add.: 608 Grant St., Iowa City, Ia. APPLIED MATHEMATICS. b. La Plata, Argentina. Dec. 15, 1918. d. Adolfo and Catalina (Mogilner) C. Edn.: Profesora de Matematicas y Fisica, Universidad Nacional de La Plata, Argentina, 1940; M.S., St. Univ. of Iowa, 1958. m. Enzo Oscar Macagno, Oct. 14, 1941. c.: Eduardo Roberto; Laura Martha Rosa. Exp.: Tchng. Asst., Coll. of Engrng., Universidad N. de La Plata, La Plata, Argentina, 1939-42; Prof. of Math., Universidad N. de Cuyo, San Juan, Argentina, 1945-55; Prof. of Math., Instituto Nacional del Profesorado Secundario, ibid., 1947-56; Rsch. Assoc., Iowa Inst. of Hydraulic Rsch., 1957–. Mem.: Math. Assn. of Am.; Soc. of Industrial and Applied Math.; Sociedad Cientifica Argentina; Sigma Xi. Contbr. to: Jour. of Ship Rsch.; Internatl. Assn. for Hydraulic Rsch.; David Taylor Model Basin; Gazeta Matematica. Areas of Rsch.: Mathematics Applied to Hydrodynamics.

MacDONALD, Gordon Dixon (Ph.D.), Dir. of Rsch., The Real Estate Bd. of N. Y., Inc., 12 East 41st St., N. Y. 17, N. Y. Home Add.: 38 Clifton Pl., Brooklyn 38, N. Y. ECONOMICS, LAND ECONOMICS. b. Brooklyn, N. Y., May 5, 1909. s. Gordon Dixon and Celine Josephine (Schmitt) MacD. Edn.: B.A., N. Y. Univ., Wash. Sq., 1935; M.A., N. Y. Univ., 1941; Ph.D., ibid., 1952. m. Sheila Mura Gleeson. Exp.: Asst. Disbursement Auditor, Certainteed Product Corp., 1929-42; Instr., Real Estate and Urban Land Econ., N. Y. Univ. Schl. of Commerce, 1946-50; Lectr., Sociol., Hunter Univ., 1950–; Dir. of Rsch., The Real Estate Bd. of N. Y., Inc., N. Y., 1950–. Mem.: Dir. of Anthonia Hall for Blind, Brooklyn; Am. Econ. Assn.; Am. Finance Assn.; Am. Stat. Assn.; Am. Soc. Pub. Admin.; Econ. Club of N. Y.; Econ. Round Table of N. Y.; Am. Legion; Lambda Alpha; Rho Epsilon; Phi Delta Phi; Dir. of Alumni Assn. N. Y. Univ. Schl. of Bus. Author: Office Building Construction Manhattan New York with Supplements, 1953; Apartment Building Construction Manhattan New York 1902-1953 with supplements, 1954, 1961. Contbr. to: Land Econ.; Appraisal Jour.; Skyscraper Mag.; Real Estate Forum. War Record: U. S. Air Force, 1942-46. Areas of Rsch.: Taxes; Migration of Puerto Rican in New York; Trends in Office; Loft and Apartment Building in Manhattan; Housing; Urban Redevelopment.

MACDONALD, H. Malcolm (Ph.D.), Prof. of Govt., Univ. of Tex., Austin, Tex. Home Add.: 3518 Lakeland Dr., Austin 3, Tex. POLITICAL THEORY AND JURISPRUDENCE. b. San Francisco, Calif., May 21, 1914. s. George Childs and Helena (Zaun) M. Edn.: A.B., Univ. of San Francisco, 1935; M.A., Harvard Univ., 1937; Ph.D., ibid., 1939. Exp.: Instr., Univ. of Tex., 1938-41; Visiting Lectr., Univ. of San Francisco, 1939; Instr., U.S.N. Acad., 1945-46; Asst. Prof., Univ. of Tex., 1946-47; Assoc. Prof., ibid., 1947-53; Prof., ibid., 1953–; Chmn. Dept., ibid., 1957–. Mem.: Am. Polit. Sci. Assn.; So. Soc. Sci. Assn.; Fellow, Royal Econ. Soc.; Am. Soc. for Polit. and Legal Philos.; Alpha Tau Omega; Pi Sigma Alpha; Harvard Club of Boston; and others. Editor: Outside Readings in American Govt., A Christian View of Political Man. Contbr. to: Am. Jour. Comp. Law; Jour. Mod. Hist.; Univ. of Toronto Quart.; S. West. Soc. Sci. Quart.; Tex. Law Rev.; Jour. of Politics; Southwestern Law Jour.; Jour. Am. Judicature Soc. Serv. Rec.: U. S. Navy, W.W. II. Areas of Rsch.: Polit. Theory and Philosophy; Jurisprudence.

MACDONALD, Helen Cushman (Mrs.), Speech Therapist, Portland Pub. Schls., City Hall, 389 Congress St., Portland, Me. PHYSICAL THERAPY-SPEECH THERAPY AND SPECIAL EDUCATION. b. Portland, Me., Mar. 10, 1910. d. Edward H. Cushman and Helen (Farnham) C. Edn.: B.S. in Edn., Gorham Normal Schl., 1940; M.A., Wayne St. Univ., 1946. m. Ruthven Albra MacDonald, Sept. 1, 1935. Exp.: Consultant, Special Edn., Soc. for Crippled Children and Adults, N. J. Chapter, Newark, N. J., 1948-51; Physical Therapist, Me. Med. Ctr., Portland, Me., 1951-56; Special Tchr., Staples Schl., Portland, Me., 1956-59; Speech Therapist, Portland Pub. Schls., ibid., 1961–. Mem.: Am. Phys. Therapy Assn.; Am. Speech and Hearing Assn.; Life Mem. of Natl. Edn. Assn.; Am. Assn. for Adv. of Sci.; New England Speech Assn.; Me. Audubon Soc.; Portland Soc. of Natural History; Eastern Star.

MacFARLANE, John O'Donnell (Ph.D.), Techn. Assoc., Biol. Dev., Eli Lilly Co., Indianapolis, Ind. Home Add.: 236 N. Cecil St., Indianapolis, Ind. BACTERIOLOGY AND VIROLOGY (BIOLOGICALS). b. Valparaiso, Ind., Apr. 16, 1920. s. John D. and Mary W. (O'Donnell) M. Edn.: B.S., Purdue Univ., 1941; Ph.D., Univ. of Cincinnati, 1948. m. Joan Nelson, July 25, 1943. c.: Alan; Larry; Mark; Douglas. Exp.: Bacteriologist, Virus Div., E. R. Squibb and Sons, 1942-43; Bacteriologist, Antibiotic Dept., The Upjohn Co., 1943-46; Grad. Asst., Univ. of Cincinnati, 1946-48; Biol. Dev., Eli Lilly Co., Indianapolis, Ind., 1948-58; Asst. Dir., Biol. Dev., 1958-62; Techn. Assoc., Biol. Dev., ibid., 1962–. Mem.: Soc. of Am. Bacteriologists; N. Y. Acad. of Scis.; Ind. Acad. of Sci. Contbr. to: Jour. of Immunol. Proc. Soc. Exptl. Med. and Biol.; Jour. Canadian Pub. Health Assn. Gen. Int.: Associated with Dev. and Production of Poliomyelitis and Vaccine. Areas of Rsch.: Biological Development and Production—Vaccines, Serums, etc.



MACE, Gordon McLeod (Mr.), Vice-Pres., Independent Exploration Co., 1964 West Grey, Houston, Tex. Home Add.: 43 Stillforest Dr., Houston, Tex. GEOPHYSICAL EXPLORATION. b. Denver, Colo., July 15, 1916. s. Gordon M. and Ethel (Prickett) M. Edn.: A.A., Colo. Coll., 1936; B.A., ibid., 1938. m. Tommie Jean Moore, Feb. 7, 1956. c.: Linda Kay; Leean; Stana Lynn;

Penny Lee; Melanie Ann; Laurie Lee. Exp.: Seismologist, Petty Geophysical Engrng. Co., San Antonio, Tex., 1939-42; Seismologist, Rogers Ray Geophysical Co., Houston, Tex., 1942-43; Geophysicist, Natl. Geophysical Co., Dallas, Tex., 1944-46; Vice-Pres., Marine Exploration Co., Houston, Tex., 1946-58; Pres., ibid., 1958-60; Vice-Pres., Bd. of Dirs., Independent Exploration Co., Houston, Tex., 1960—. Mem.: Am. Assn. Petroleum Geologists; Soc. Exploration Geophysicist; Houston Geological Soc.; Houston Geophysical Soc.; Colo. Acad. of Sci.; Wyo. Acad. of Sci.; Phi Gamma Delta; Alpha Kappa Psi; Delta Epsilon; Rivers Oaks Rotary Club; Exec. Club; Breakfast Club. Serv. Rec.: U. S. Army Air Force, 1942-44. Areas of Rsch.: Marine Exploration (Seismol.), for Oil and Gas.

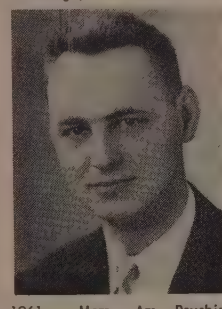
MacFATE, Robert Preston (Ph.D.), Chief of Div. of Labs., Chicago Bd. of Health; Dir. of Labs., Chicago Municipal Contagious Disease Hosp.; Consultant in Med. Chem. and Toxicol., 54 West Hubbard St., Chicago 10, Ill. Home Add.: 323 Northwood Rd., Riverside, Ill. MEDICAL AND PUBLIC HEALTH LABORATORY, TOXICOLOGIC INVESTIGATIONS. b. Duquesne, Pa., July 23, 1902. s. Howard Correal and Lena Anna (Maples) MacF. Edn.: Ch.E., Lehigh Univ., 1925; M.S., Univ. of Ill., Coll. of Med., 1929; Ph.D., ibid., 1931. m. Joan B. Hopkins, Jan. 1, 1927. c.: Robert P., Jr.; Mary Elizabeth. Exp.: Hosp. Chemist, Rsch. and Edncl. Hosps., Chicago, 1925-35; Asst. Dir. of Labs., Univ. of Ill. Hosps., Chicago, 1935-51; Instr. in Physiological Chem., Univ. of Ill. Coll. of Med., 1927-35; Assoc. in Pathol., ibid., 1935-41; Asst. Prof. of Pathol., 1941-54; Assoc. Chief Examiner of the Chicago Subsidiary Bd. of the Natl. Bd. of Med. Examiners, 1941-55; Chief of Div. of Labs., Chicago Bd. of Health, 1950—; Chief of Labs., Municipal Contagious Disease Hosp., Chicago, 1950—; Key Personnel, Med. Div., Chicago Civil Defense Corps, 1950—; Special Consultant to the Clinical Pathol. Sect., Bur. of State Services, Communicable Disease Center, Lab. Branch, U. S. Pub. Health Serv., 1951-55; Certified Clinical Chemist, Am. Bd. of Clin. Chem., 1954—; Instructorial Staff, Clin. Chem. Workshops, Naval Med. Schl., Bethesda, Md., 1954—; Sr. Scientist, U. S. Pub. Health Serv., 1955—; Secy.-Treas., Assn. of Clinical Scientists, 1956— Instructorial Staff, Anglo-Am. Applied Seminar in Clin. Chem., Royal Army Med. Coll., London, England., 1957—. Mem.: A.A.A.S.; Am. Soc. of Clinical Pathologists; Am. Chem. Soc.; Assn. of Clin. Scientists; Am. Pub. Health Assn.; Ill. Pub. Health Assn.; Middle States Pub. Health Assn.; Conf. of State and Provincial Pub. Health Lab. Dirs.; Commissioned Officers Assn., U.S.-P.H.S.; Assn. of Reserve Officers, U.S.P.H.S.; Sigma Xi; Blaney Lodge No. 271, A.F. & A.M.; Ancient Accepted Scottish Rite, Valley of Chicago; Medinah Temple, A.A.O.N.M.S.; Wheaton Chapt. No. 242, R.A.M.; Adoniram Council No. 95, R. & S.M.; St. Bernard Commandery, No. 35, K.T.; West Suburban Shrine Club; Royal Order of Jesters, Chicago Court No. 48; Royal Order of Scotland; Star Craft Club. Author: Outline of Chemistry, 1st ed., 1932, 2nd ed., 1934, 3rd ed., 1944, 4th ed., 1946; Introduction to the Clinical Laboratory, 1961. Co-Author: Clinical Laboratory Diagnosis, 1st ed., 1937, 2nd ed., 1943, 3rd ed., 1946, 4th ed., 1951, 5th ed., 1955, 6th ed., 1961; Symposium on Clinical Hemoglobinometry, 1954; Diagnostico Clinico de Laboratorio, 1956; Trattato di Diagnostica e Tecnica di Laboratorio, 1961. Contbrng. Author: Manual of Procedures for the Applied Seminar on Lipids and the Steroid Hormones, 1959; on Pancreatic Function, 1960; on Thyroid and Parathyroid Function, 1961; Lipids and Steroid Hormones in Clinical Medicine, 1960; Measurements of Pancreatic Function in Clinical Medicine, 1961; Measurements of Thyroid and Parathyroid Function in Clinical Medicine, 1962. Contbr. to: Am. Jour. of Clinical Pathol. Areas of Rsch.: Clinical Laboratory Diagnosis; Clinical Pathology; Laboratory Medicine; Public Health Laboratory; Toxicology.

MACGOWAN, Roger Alan (Mr.), Chief, Scientific Div., Computation Ctr., AOMSA, Redstone Arsenal, Ala. (ORDDW-OCS). Home Add.: 3315 Lookout Dr., S.E., Huntsville, Ala. DIGITAL COMPUTING, ARTIFICIAL INTELLIGENCE. b. Middletown, N. Y., Apr. 6, 1927. s. Horace A. and Elizabeth (Tappan) M. Edn.: A.B., Tusculum Coll., 1949. m. Betty Richardson, May, 1954. c.: Elizabeth Ellen; Virginia Ann; Catherine Ann; Cynthia. Exp.: Chief, Test Data, Processing Sect., Computation Lab., ABMA, Redstone Arsenal, Ala., 1954-60; Chf., Programming Branch, Engrng. Requirements, Co-Ord. Ofc., ABMA, ibid., 1960-61; Chf., Sci. Dig. Comp. Div., ibid., 1961—. Mem.: Am. Assn. for Adv. Sci.; Assn. for Computing Machinery. Author: On the Possibilities of the Existence of Extraterrestrial Intelligence, in Advances in Space Science, 1962. Serv. Rec.: U. S. Army, 1945-46. Areas of Rsch.: Numerical Smoothing Methods, Artificial Intelligence, Extraterrestrial Intelligence, Integrated Social Science, Global Strategy.

MacGINNISS, John (Mr.), Consulting Engr., Salt Lake City, Utah. Home Add.: 1328 South 14 East, Salt Lake City, Utah. EXTRACTIVE METALLURGY. b. Butte, Mont., Dec. 26, 1908. s. John MacG. and Eloise (Sylvester) MacG. Edn.: B.S., Univ. of Calif., 1932; M.S., Fremont Coll., 1935. m. Oscia Kirby, 1953. c.: Michael. Exp.: Physical Metallurgist, Aireon Mfg. Corp., Burbank, Calif., 1942-46; Sr. Metallurgist, Mont. Rsch. Foundation, 1947-51; Chief Metallurgist, Metals Milling Co., Basin, Mont., 1951-55; Chief Engr., Celtor Chemical Corp., Eureka, Calif., 1956-59; Plant Supt., Minerals Engrng. Co., Salt Lake City, 1959-60. Mem.: A.A.A.S.; Am. Inst. of Mining and Metallurgical Engrs.; Mont. Soc. of Engrs.; Am. Chem. Soc.; A.F. & A.M.; Bel Aire Club. Author: Finder's Keeper's, 1960. Areas of Rsch.: Extractive Metallurgy; Metallic Salts.

MACHOL, Robert E. (Ph.D.), Vice-Pres., Conductron Corp., Ann Arbor, Mich. Home Add.: 2865 Whippoorwill Lane, Ann Arbor, Mich. SYSTEM ENGINEERING. b. N.Y.C., Oct. 16, 1917. s. Morris R. and Claudia (Engel) M. Edn.: A.B., Harvard Univ., 1938; M.S., Univ. of Mich., 1953; Ph.D., ibid., 1957. m. Florence Guttman, Sept. 8, 1946. c.: Margot; Kennard. Exp.: Rsch. Engr., Univ. of Mich., 1951-58; Assoc. Prof. and Prof., Elec. Engrng., Purdue Univ., 1958-61; Vice Pres., Systems, Conductor Corp., 1961—. Mem.: The Inst. of Mgmt. Sci.; Operations Rsch. Soc. of Am.; Chmn., Publ. Comm.; Inst. of Radio Engr. (SM); Fellow, A.A.A.S.; Am. Soc. Eng. Edn.; Sigma Xi. Co-Author: System Engrng., 1957. Editor: Information and Decision Processes, 1960. Contbr. to: Operations Rsch.; Mechanical Engrng.; Jour. Phys. Chem.; Jour. Chem. Phys. War Rec.: U. S. Naval Reserve, 1940-45. Areas of Rsch.: Design, Analysis, Synthesis and Evaluation of Large-Scale and Complex Systems.

MacIVER, John (M.D.), Asst. Med. Dir., United States Steel Corp., Pittsburgh, Pa. Home Add.: 106 Mayflower Dr., Pittsburgh 38, Pa. OCCUPATIONAL PSYCHIATRY. b. Irvine, Scotland, Nov. 18, 1923. s. Donald and Robina (Paterson) M. Edn.: M.D., Columbia Univ. Coll. of Phys. and Surg., 1949; M.P.H., Yale Univ. Schl. of Med., 1953. m. Shirley Boulanger, Aug., 1950. c.: John Robertson; Mathew Evan. Exp.: Intern, St. Elizabeths Hosp., Washington, D. C., 1949-50; Sr. Asst. Surg., Pub. Hlth. Serv., 1951-52; Psychiatric Residency, Yale Univ., 1953-55; Dir., Safety and Occupational Health Bur., Metropolitan Life Ins. Co., N.Y.C., 1955-58; Psychiatrist, America Fore Ins. Group, N.Y.C., 1958-60; Asst. Med. Dir., U. S. Steel Corp., Pittsburgh, Pa., 1960—; Asst. Clin. Prof., Psychiat., Univ. of Pgh., 1961—. Mem.: Am. Psychiatric Association; Am. Academy of Occupational Med.; Am. Coll. of Preventive Med.: Diplomate of Two Med. Specialty Bd., Preventive Med. and Psychiatry, 1957-61. Contbr. to: Jour. of Am. Psychiatric Assn. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Occupational Psychiatry; Accident Prevention.

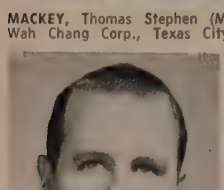


MAC KAY, Colin Francis (Ph.D.), Assoc. Prof. of Chem., Haverford Coll., Haverford, Pa. Home Add.: 118 Manor Ave., Waterbury, Conn. PHYSICAL CHEMISTRY. b. Waterbury, Conn., Sept. 21, 1926. s. Frank P. and Florence (Rotella) M. Edn.: B.S., Univ. of Notre Dame, 1950; Ph.D., Univ. of Chicago, 1956. Exp.: Instr., Haverford Coll., Haverford, Pa., 1956-57; Asst. Prof., ibid., 1957-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Chem. Soc.; Sigma Xi. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Inorg. and Nucl. Chem. Serv. Rec.: U. S. Navy, 1944-45, 1951-52. Areas of Rsch.: Reactions of Atomic Species.

MACKENZIE, Frederick Theodore (Ph.D.), Geologist, Shell Oil Co., Pittsburgh, Pa. Home Add.: 484 Hoodridge Dr., Pittsburgh 34, Pa. GEOLOGY (SEDIMENTOLOGIST). b. Garwood, N. J., Mar. 17, 1934. s. Frederick Edward and Bessie Virginia (Miller) M. Edn.: B.S., Upsala Coll., 1955; M.S., Lehigh Univ., 1959; Ph.D., ibid., 1962. m. Mary Donaldson Lesin, June 4, 1960. Exp.: Tchng. Asst., The Johns Hopkins Univ., Baltimore, Md., 1955-56; Jr. Geologist, Shell Oil Co., Okla. City, Okla., summers, 1956, '58, '59; Rsch. Asst., Lehigh Univ., 1958-62; Geologist, Shell Oil Co., 1962—. Mem.: A.A.A.S.; Natl. Assn. of Geol. Tchrs.; Internatl. Assn. of Sedimentol.; Am. Geophys. Union; Soc. of the Sigma Xi; Sigma Gamma Epsilon; Sigma Pi Sigma. Contbr. to: Jour. of Geol.; Penna. Acad. of Sci. Procs. Serv. Rec.: U. S. Army, 1957-58. Areas of Rsch.: Research in the Geochemistry of Pelagic Sediments, Physical Sedimentation, and Directional Properties of Sediments.

MACKENZIE, Joan T. (Mrs.), Biol. Scis. Programmer, Britannica Ctr., Palo Alto, Calif. Home Add.: 948 Covington Ctr., Los Altos, Calif. PSYCHOANALYSIS; MEDICAL PHYSIOLOGY. b. Attleboro, Mass., Mar. 2, 1926. d. Pierce F. Taylor and Marcy Gilman (Healy) T. Edn.: B.A., Stanford Univ., 1948; M.A., ibid., 1949. m. Robert Philip MacKenzie, Jan. 4, 1954. c.: Emmy Lise. Exp.: Research Physiol., Western Reg. Rsch. Lab., Albany, Calif., 1949-53; Rsch. Therapist, N. Y. Neuropsychiat. Ctr., N. Y., 1958-59; Biol. Scis. Program., Britannica Ctr., 1962—. Mem.: Am. Assn. for Adv. Sci.; Sierra Club. Areas of Rsch.: Learning in Relation to Problems in Psychodynamics and Reconstructive Goals.

MACKEY, Thomas Stephen (Mr.), Gen. Mgr. and Chf. Engr. of Wah Chang Corp., Texas City, Tex. Home Add.: 1210 Sunset Lane, Texas City, Tex. MINERAL AND METALLURGICAL ENGINEERING. b. Hoboken, N. J., July 14, 1930. s. Thomas P. and Delia (Dunlea) M. Edn.: B.S., Manhattan Coll., 1952; M.S., Columbia Univ., 1956. m. Catherine A. Fagan, Apr. 23, 1955. c.: Thos. M.; Karen A.; Doris L.; Susan Marie. Exp.: Technician, Engr. Asst., Wah Chang Corp., Glen Cove, N. Y., 1947-52; Roasting, Leaching Supt., ibid., 1952-55; Grad. Asst., Columbia Univ., 1955-56; Asst. Plant Mgr., ibid., 1955-57; Gen. Mgr. and Chief Engr., Wah Chang Corp., Texas City, Tex., 1957—. Mem.: A.I.M.E.; Am. Chem. Soc.; A.A.A.S.; Am. Phys. Soc.; Soc. of Economic Geologists; Tex. Mfg. Assn.; Sigma Pi Sigma; Sigma Gamma Epsilon; Sigma Xi; Phi Rho Pi; Rotary; B.S.A.; Jr. C. of C.; Jr. Achievement. Contbr. to: Mining Engr.; Jour. of Metals. Gen. Int.: Awarded one of Five Outstanding Young Texans, by Tex. Jr. C. of C., 1959; Awarded Outstanding Jr. Citizen, by Texas City, Tex., C. of C., 1959. Areas of Rsch.: Tungsten, Molybdenum, Columbium, Powders and Ferro Alloys, Extractive Metallurgy of Tin, Molybdenum, Tantalum Columbium and Titanium. Special Knowledge in Research, Development, Construction and Operation of Various Metal Processes.

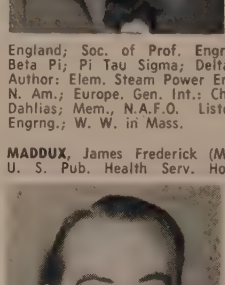


MAC NAMARA, Donal Eoin-Joseph, Dean, N. Y. Inst. of Criminol., 115-117 W. 42nd St., N.Y.C. 36, N. Y. Home Add.: 110 W. 96th St., N. Y., N. Y. CRIMINOLOGY. b. N.Y.C., Aug. 13, 1916. s. Daniel Patrick and Rita F. V. (Chambers) M. Edn.: B.Sc., Columbia, 1939; M.P.A., N. Y. Univ., 1946; Air Command and Staff Coll., 1948; Ph.D., Columbia Univ., 1960. m. Margaret Scott, July 30, 1953. c.: Brian Scott. Exp.: 2nd Lt., U. S. Marine Corps, 1939-40; Major, Corps of Milit. Police, 1942-48; Instr. in Gov., Rutgers Univ., 1948-49; Coordinator, Law Enforcement Program, Univ. of Sou. Calif., 1949-50; Asst. Dir., Delinquency Control Inst., Los Angeles, 1949-50; Chmn., Law Enforcement Inst., N. Y. Univ., 1950-57; Dean, N. Y. Inst. of Criminol., 1955—. Hon. Pos.: Pres., Am. Soc. of Criminol., 1961—; Secy.-Treas., Am. Soc. of Criminology; Vice-Pres., Am. Soc. of Criminol.; Pres., Chmn. of Bd. of Dirs., Am. League to Abolish Capital Punishment; Pres., Am. Acad. of Criminalistics; Dir., Traffic Mgmt. Survey Fund, Inc.; Mgng. Partner, Flath-MacNamara Assoc., Police Consultants; Pres., N. Y. Inst. of Public Serv. Training; Pres., Crime Shows Consultants; Law Enforcement Consultant to the Commonwealth of Puerto Rico; Visiting Prof., Fla. St. Univ., Univ. of Utah and the Univ. of Louisville. Mem.: Fellow, Section Comm., A.A.A.S.; Am. League to Abolish Capital Punishment; Am. Correctional Assn.; Internatl. Assn. of Chiefs of Police; Military Police Assn.; Am. Polit. Sci. Assn.; Am. Soc. of Public Adm.; Am. League for an Undivided Ireland; Internatl. Criminological Soc.; Assn. for the Psychiatric Treatment of Offenders; N.A.A.C.P.; Urban League; Internatl. Assn. of Police Juvenile Officers; Pi Sigma Alpha; Lambda Alpha Epsilon; Property Owners Assn. of Orange Co. Author: The New Jersey Municipal Police Survey, 1958; Policing French North Africa, 1946; The German Police System Under Hitler, 1948; Youth and Crime, 1957. Co-Author: Crime in America, 1960; Encyclopedia Americana (Sections on Criminal Societies, Thug, Prison Labor); World Scope Encyclopedia (Section on Cryptography). Editor: Excerpta Criminologica, 1961

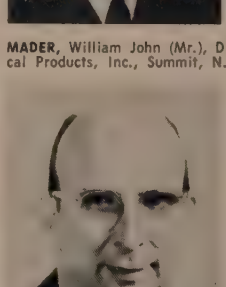
Contbr. to: Jour. of Criminal Law, Criminology and Police Science; Jour. of APTO; Military Police Jour.; Public Administration Rev.; Law and Order; Mayor and Mgr.; Jour. of the Natl. Probation and Parole Assn.; Focus; The Catholic Lawyer; Keisatsugaku Ronshu; Internatl. Criminal Police Rev.; Social Action Jour. of Offender Therapy; Political Sci. Rev.; Administrative Sci. Quarterly. Gen. Int.: Honor Award, Natl. Police Officers Assn. Honor Award, Internatl. Assn. of Women Police; U. S. Delegate Internatl. Criminological Congress; U. S. Delegate, United Nations Congress on Crime and Delinquency, London. Areas of Rsch.: Police Administration; Scientific Criminal Investigation; Theoretical Criminology and Penology; Lie Detection, Administration of Criminal Justice.

MacNAUGHTON, Edgar (Mr.), Emer. Prof. of Mech. Engrng., Tufts Univ., Medford, Mass. Home Add.: Hall Rd., Bristol, N. H. POWER AND DESIGN. b. May 4, 1887, Argyle, N. Y. s. James and Emma (Bain) M. Edn.: M.E., Cornell Univ., 1911. m. Mary A. Ross of Argyle, N. Y., Aug. 30, 1915. d. Theodore and Anna Miller Ross. Exp.: Gen. Elec. Co., 1911-14; Instr., Tufts Coll., 1914-18; Instr., S.A.T.C., Summer, 1914; Assoc. in Mech. Engrng., Univ. of Ill., 1918-19; Asst. Prof. of M.E., Tufts Coll., 1919-23; Prof., 1923—; Prof. Emer., ibid., 1956—; in Chg. of Dept., Summer Work, United Shoe Machinery Co., Boston Elevated Co., Amrad Co., Gen. Elec. Co., Westinghouse Elec. and Mfg. Co.; Past Chmn., Boston Sect., A.S.M.E., and Design Sect., S.P.E.E. Mem.: A.S.M.E.; Am. Soc. of Engrng. Edn.; Eng. Soc. of N. England; Soc. of Prof. Engrs.; Licensed Engr. in Mass.; Tau Beta Pi; Pi Tau Sigma; Delta Upsilon; Sigma Xi; Cornell Club. Author: Elem. Steam Power Engrng., 1923, Revised, 1948. Travel: N. Am.; Europe. Gen. Int.: Church Work. Hobbies: Golf; Raising Dahlias; Mem., N.A.F.O. Listed in: W. W. in N. Eng.; W W. in Engrng.; W. W. in Mass.

MADDUX, James Frederick (M.D.), Deputy Med. Officer in Chg., U. S. Pub. Health Serv. Hosp., Lexington, Ky. PSYCHIATRY. b. Sycomore, Ga., Aug. 17, 1916. s. Creed T. and Ida (Nussell) M. Edn.: M.D., Med. Coll. of Ga., 1941. m. Agnes Griffin, Aug. 27, 1945. c.: James Michael; Frederick Taylor; John Stephen; Mary Bernadette. Exp.: Med. Officer, U. S. Pub. Health Serv., 1942—. Mem.: Am. Med. Assn.; Am. Psychiatric Assn.; Am. Orthopsychiatric Assn.; Am. Pub. Health Assn.; Ky. Psychiatric Assn.; Alpha Omega Alpha. Contbr. to: Am. Jour. of Orthopsychiatry; Am. Jour. of Pub. Health. Serv. Rec.: U. S. Coast Guard, 1943-46. Areas of Rsch.: Psychiatric and Mental Health; Narcotic Addiction.



MADER, William John (Mr.), Dir., Control Div., CIBA Pharmaceutical Products, Inc., Summit, N. J. Home Add.: 1211 Cooper Rd., Scotch Plains, N. J. CHEMISTRY. b. Martins Ferry, Ohio, June 6, 1911. s. John J. and Blanche (Lee) M. Edn.: B.S., Western Res. Univ., 1932; M.S., Ohio St. Univ., 1934. m. Dorothy K. Cummings, Mar. 9, 1942. c.: Judith Eleanor; John William; Margaret Lee. Exp.: Analytical Rsch. Chem., Am. Cyanamid Co., 1934-42; Analytical Rsch. Chf., Merck and Co., 1946-50; Asst. Mgr., Analytical Rsch., ibid., 1950-52; Mgr. Analytical Rsch., ibid., 1952-56; Dir., Analytical Rsch., CIBA Pharmaceutical Products, Inc., 1956-60; Dir., Control Div., ibid., 1960—. Hon. Pos.: Chmn., No. Jersey Sect., Analytical Div., ACS, 1951; Mem., Adv. Bd., Analytical Chem. Mem.: Am. Chem. Soc.; Am. Pharmaceutical Assn.; A.A.A.S.; N. Y. Acad. of Sci. Co-Author: Vol. II Organic Analysis, Techniques of Organic Chemistry, 1960; Pharmaceutical Analysis and Techniques of Organic Chemistry, 1961. Contbr. to: Jour. Am. Chem. Soc.; Analytical Chem.; Jour. Am. Pharmaceutical Assn.; Jour. Assn. of Official Agricultural Chem. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Pharmaceutical Analysis especially Alkaloids Solubility of Organic Compounds.



MADACHY, Joseph Steven (Mr.), Editor-Publisher, Recreational Mathematics Magazine, Box 35, Kent, Ohio. Home Add.: 4055 Lynn Rd., Ravenna, Ohio. CHEMISTRY: COLLOIDAL; RADIOACTIVE WASTE DISPOSAL; RECREATIONAL MATHEMATICS. b. Star Junction, Pa., Mar. 16, 1927. s. Steve Joseph; Ann Helen (Swikey) M. Edn.: B.S., Western Res. Univ., 1955; M.S., ibid., 1959. m. Juliana Rodenbucher, Jan. 26, 1957. c.: Raymond Joseph; Michael John; Robert Mark. Exp.: Analyst, Indust-

Rayon Corp., Cleveland, Ohio, 1947-53; Petroleum Analyst, U. S. Army, Yuma, Ariz. and Devils Lake, N. D., 1950-52; Tchr., Cathedral Latin Schl., Cleveland, Ohio, 1957-59; Editor-Publisher, Recreational Mathematical Magazine, Idaho Falls, Ida., 1959-60; Editor and Publisher, ibid., Kent, Ohio, 1960—. Mem.: Am. Chem. Soc.; Natl. Coun. of Tchrs. of Maths.; Mathl. Assn. of Am.; Am. Assn. for the Adv. Sci. Editor and Publisher: Recreational Mathematics Magazine. Serv. Rec.: U. S. Army, 1945-47; 1949-53. Areas of Rsch.: Colloidal Chemistry (Lubricants); Radioactive Waste Disposal (Zirconium Wastes).

MADEY, Richard (Ph.D.), Chief Staff Scientist Mod. Physics, Scientific Rsch. Staff, Republic Aviation Corp., Farmingdale, L. I., N. Y. Home Add.: 7 Wigtel Lane, Bellport, L. I., N. Y. PHYSICS. b. Brooklyn, N. Y., Feb. 23, 1922. s. Elia D. and Dorothy (Diab) M. Edn.: B.E.E., Rensselaer Polytechnic Inst., 1942; Ph.D., Univ. of Calif. at Berkeley, 1952. m. Mary L. Kirch, Sept. 8, 1951. c.: Doren Louise; Diane Claire; Daryl Jane; Richard Kirk; Ronald Eliot. Exp.: Electrical Engr., Allen B. DuMont Labs., Inc., Passaic, N. J., 1943-44; Physicist, Univ. of Calif. Radiation Lab., Berkeley, Calif., 1947-53; Assoc. Physicist, Brookhaven Natl. Lab., Upton, L. I., N. Y., 1953-56; Scientist, Sr. Scients., Republic Aviation Corp., 1956; Chief Staff Scientist, Mod. Physics, ibid., 1961—. Hon. Pos.: N. Y. Metropolitan Sect. of Am. Nuclear Soc., Bd. of Dirs., 1959-60, Secy., ibid., 1961-62. Mem.: N. Y. Acad. of Scis., Fellow; Sigma Xi; Eta Kappa Nu; Pi Delta Epsilon; Am. Phys. Soc.; Am. Rocket Soc., Sr. Mem.; Am. Nuclear Soc.; Inst. of Radio Engrs., Sr. Mem.; Lambda Chi Alpha. Contbr. to: Physical Rev.; Rev. of Scientific Instruments; Nucleonics; Trans. of the Inst. of Radio Engrs.; Trans. of the Am. Nuclear Soc.; Procs. of the Am. Astronautical Soc. Serv. Rec.: U. S. Naval Res., 1944-46. Gen. Int.: Conn. Alumni Scholarship to Rensselaer Polytech. Inst.; Naval Ordnance Devel. Award; Registered Prof. Engr. in Elect. Engrng. in Calif. Areas of Rsch.: Space Physics; Nuclear Physics; Electronics; Meson Production and Nuclear Reactions; Nuclear Particle Detection; Nuclear Instrumentation; Space Radiation; Adsorption of Gases; Nuclear Reactors; Transistor Circuit Theory; Electron Optics.

MADONICK, Moses Jacques (M.D.), Dir. of Neuropsychiatry, Morrisania Hosp., N.Y.C. Home Add.: 1126 Sherman Ave., Bronx 56, N. Y. NEUROLOGY - PSYCHIATRY. b. Austria, Aug. 11, 1907. s. Benjamin and Rebecca (Mehler) M. Edn.: B.S., N. Y. Univ., 1928; M.B., Univ. of St. Andrews, 1933; Ch.B., ibid., 1933; M.D., ibid., 1933. m. Beatrice Binstock, Mar. 28, 1942. c.: Millie Ann. Exp.: Intern, Morrisania City Hosp., 1933-35; Psychiatric Res., Bellevue Hosp., 1940-41; Neuropsychiatrist, Montefiore Hosp., 1956—; Clin. Prof., Neurology, N. Y. Med. Coll., 1955—; Neuropsychiatrist, Jewish Mem. Hosp., 1956—. Mem.: A.M.A.; Am. Neurol. Assn.; Am. Acad. Neurol.; Am. Psychiatric Assn.; N. Y. Acad. Med.; Am. Coll. Physicians; N. Y. Neurol. Soc.; Diplomate Neurology and Psychiatry. Contbr. to: Arch. Neurology; Jour. Nervous and Mental Disease; Neurology; Am. Jour. Dis. Children; Jour. Lab. and Clin. Med.; Arch. Internal Med. Areas of Rsch.: Cerebrospinal Fluid; Statistical Studies in Neurology; Clinical Neurology.

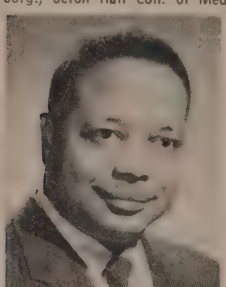
MADIN, Stewart H. (Ph.D.), Dir., Naval Biol. Lab., Naval Supply Center, Oakland 14, Calif. Home Add.: 5 Overhill Court, Orinda, Calif. VETERINARY PATHOLOGY, VIROLOGY, BACTERIOLOGY. b. Sheffield, England, Apr. 13, 1918. s. Albert and Lucy Ann (Harvey) M. Edn.: A.B., Univ. of Calif., 1940; D.V.M., Tex. A. and M. Coll., 1943; Ph.D., Univ. of Calif., 1960. m. Katherine E. Holman, Oct. 3, 1943. c.: Lawrence Paul; Kent Holman; Ian Powell. Exp.: Rsch. Assoc., Exptl. Sta., Univ. of Calif., 1944-48; Veterinarian, ibid., 1948-49; Prin. Pathol., Office of Naval Rsch., Task V, Univ. of Calif., 1949-51; Rsch. Pathol., Naval Biol. Lab., and Lectr. in Bacteriol., Univ. of Calif., 1951-61; Prof. of Public Health and Bacteriol., ibid., 1961—. Hon. Pos.: Consult., U.S.D.A. Natl. Inst. Health. Mem.: Pasteur Soc.; Gamma Alpha; Sigma Psi; N. Y. Acad. of Sci.; Am. Vet. Med. Assn.; U. S. Livestock Sanitary Assn. Contbrng. Author: Diseases of Swine, 1958; Advances in Veterinary Science, 1959. Contbr. to: Sci.; Proc. Soc. Exptl. Biol. and Med.; Jour. Inf. Diseases; Am. Jour. Vet. Rsch.; Jour. of Am. Vet. Med. Assn.; Jour. Immunol. War Record: U. S. Navy, 1944-46. Gen. Int.: Isolation of Previously Unknown Viruses; Establishment of Transmissible Cell Lines from a Variety of Domestic Animals. Areas of Rsch.: Pathogenesis of Viral Diseases; Tissue Culture; Pathology and Exptl. Pathology.

MAGNUSSON, Frederick Swain (Mr.), Chf., Organic Chemical and Drugs Branch, Chemical and Rubber Div., Business and Defense Servs. Adm., Dept. of Commerce, Wash., D. C. Home Add.: 206 Park Hill Pl., Fairfax City, Va. CHEMISTRY. b. Wash., D. C., Nov. 25, 1915. s. Leifur and Sarah (Swain) M. Edn.: B.S., Univ. of Mich., 1937; M.S., Mass. Inst. of Tech., 1940. m. Jean Francis, July, 1943. c.: Eric Francis; Janet. Exp.: Jr. Prof. Asst., Chem. Warfare Serv., Edgewood, Md., 1940-42; Commodity Spec., Office Internatl. Trade, Dept. of Commerce, Wash., D. C., 1942-43; Commodity Spec., Off. Export Supply, ibid., 1946-59; Chf., Chemical Products Sec., ibid., 1949-60; Chf., Org. Chem. and Drugs Br., ibid., 1960—. Mem.: A.C.S.; A.A.A.S.; Fellow, Am. Inst. of Chemists; Phi Sigma Kappa; PTA; Science Comm. Serv. Rec.: A.U.S. Areas of Rsch.: Supply and Requirements; Organic Chemicals.

MAGUIRE, William Peter (Mr.), Service Forester, Calif. Div. of Forestry, P. O. Box M, Camino, Calif. Home Add.: 207 Canal St., Placerville, Calif. SILVICS AND FOREST ECOLOGY. b. San Francisco, Calif., May 28, 1908. s. Peter John and Margaret Agnes (Klare) M. Edn.: B.S., Univ. of Calif., 1930. m. Rita Grace McLaughlin, July 27, 1932. c.: John Joseph; Miriam Teresa. Exp.: Timber Stand Improvement, Supvr. U. S. Forest Serv., Hot Springs, Ark., 1933-35; Sawmill and Logging Supt., U. S. Indian Bur. Ft. Defiance, Ariz., 1931-33; Forest and Range Admin., ibid., Fort Belknap, Mont., 1938-42, Serv. Forester, Calif. Div. Forestry, Placerville, Calif., 1945—. Hon. Pos.: Pres., Calif. Alumni Foresters, 1957. Pres., El Dorado-Amador Forest Forum, S.A.F., 1952. Dir., Calif. Christmas Tree Growers Assn., 1959-64; Chmn., Rsch. Comm., C.C.T.G.A. Mem.: Soc. of Am. Foresters; A.A.A.S.; Ecological Soc. of Am.; Alpha Zeta; Xi Sigma Pi. Author: The California Pine Region Forest Handbook, co-author, 1949. Contbr. to: Forest Sci. and Jour. of Forestry. Areas of Rsch.: Solar Radiation, Surface Temperature and Seedling Survival; Ponderosa Pine Cone Crop Prediction; Harmonizing Unit Area, Stem Area, Diameters and Spacings, for Ponderosa Pine Growth Prediction by Elevations and Forest Sites.

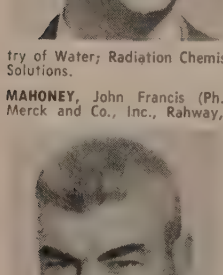
MAHESH, Virendra Bhushan (Ph.D., D.Phil.), Asst. Rsch. Prof., Dept. of Endocrinol., Med. Coll. of Ga., Augusta, Ga. Home Add.: 2622 Providence Court, Augusta, Ga. STEROID BIO-CHEMISTRY, ENDOCRINOLOGY, ORGANIC CHEMISTRY. b. Khanki, Punjab, India, Apr. 25, 1932. s. Narinjan Prasad and Sobagya wati (Bansal) W. Edn.: B.Sc. (Hons.), Patna Univ., India, 1951; M.Sc., Delhi Univ., India, 1953; Ph.D., ibid., 1955; D. Phil., Oxford Univ., 1958. m. Sushila Rani, June 29, 1955. c.: Anita Rani; Vinit Kumar. Exp.: Rsch. Fellow, Consul. of Sci. and Indl. Rsch., Delhi, India, 1954-56; Asam Oil Fellow, Oxford Univ., 1956-58; James Hudson Brown Fellow, Yale Univ., 1958-59; Asst. Rsch. Prof., Med. Coll. of Ga., 1959—. Mem.: The Chem. Soc. (London); The Biochem. Soc. (London); The Endocrine Soc. Contbr. to: Jour. of Endoc. (Eng.); Jour. of Clin. Invest.; Jour. of Biol. Chem.; Jour. of Clin. Endoc. and Metab.; Biochem. Jour. (Eng.); Chem. Soc. (Eng.); Fed. Proc.; Proc. Indian Acad. of Sci.; Jour. Sci. and Indl. Rsch. (India); Nature. Areas of Rsch.: Plant Pigments—Mechanism of Hormone Action—Biosynthesis; Secretion; Metabolism and Excretion of Steroid Hormones and Their Metabolites in Health and Disease.

MAHAN, Kenneth Wells (M.D.), General Surg., Instr. in Clin. Surg., Seton Hall Coll. of Med., Jersey City, N. J. Home Add.: 273 Bergen Ave., Jersey City, N. J. GENERAL SURGERY. b. Wheeling, W. Va., May 21, 1925. s. Samuel and Ellen (Edwards) M. Edn.: B.S., Howard Univ., 1948. M.D., ibid., 1952. m. Costello Foushee, July 4, 1953. c.: Juneau Gloria; Barbara Jean; Janet Linnea; Kenneth Wells, Jr. Exp.: Internship, Jersey City Med. Ctr., Jersey City, N. J., 1952-53; Surg. Res., ibid., 1953-57; Instr. in Clin. Surg., Seton Hall Coll. of Med., 1959—. Mem.: A.M.A.; Cand. Grp., Am. Coll. of Surgeons; St. Med. Soc. of N. J.; Natl. Med. Assn.; Beta Kappa Chi; Chi Delta Mu; Alpha Phi Alpha. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: General Surg.; Interested in Cardiovascular Diseases.



MAHLMAN, Harvey A. (Mr.), Chemist, Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 7006 Downing Dr., Knoxville, Tenn. RADIATION CHEMISTRY AND NEUTRON ACTIVATION. b. LaCrosse, Wis., Aug. 8, 1923. s. Arthur A. and Marie (Putzier) M. Edn.: B.Chem., Univ. of Minn., 1949; B.B.A., ibid., 1949; M.S., Univ. of Tenn., 1956. m. Nancy Taylor, June 30, 1945. c.: Janice Lee; John Arthur. Exp.: Chemist, Clinton Lab., Oak Ridge, Tenn., 1944-46; Rsch. Asst., Knolls Atomic Power Lab., Schenectady, N. Y., 1949-52; Chemist, Oak Ridge Natl. Lab., Chem. Div., 1952—. Mem.: Radiation Rsch. Soc.; Am. Assn. Adv. Sci.; Am. Chem. Soc.; Sigma Xi; Lions; Mason. Contbr. to: Jour. Chem. Phys.; Jour. Am. Chem. Soc.; Jour. Phys. Chem. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Radiation Chemistry of Water; Radiation Chemistry of Concentrated Aqueous Nitrate Solutions.

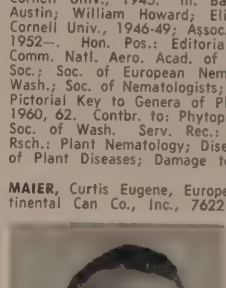
MAHONEY, John Francis (Ph.D.), Mgr., Food and Feed Devel., Merck and Co., Inc., Rahway, N. J. Home Add.: 966 Woodmere Dr., Westfield, N. J. ORGANIC CHEMISTRY; FOOD TECHNOLOGY. b. Lynn, Mass., Oct. 31, 1917. s. John F. and Mary A. (Murray) M. Edn.: S.B., Mass. Inst. of Technol., 1938; Ph.D., ibid., 1941. m. Rita I. Mahoney, July 11, 1945. c.: John; Kathleen; Brian; Barbara. Exp.: Tchng. Fellow, Mass. Inst. of Technol., Cambridge, Mass., 1938-40; Sr. Chemist, Merck and Co., Inc., 1941-45; Hd., Rahway Prodn. Rsch., ibid., 1945-47; Hd., Techn. Serv. Sect., ibid., 1947-51; Mgr., Techn. Serv., ibid., 1951-61; Mgr., Food Devel., ibid., 1961—. Mem.: Am. Chem. Soc.; Inst. of Food Technol.; Am. Assn. for the Adv. of Sci., Fellow; Am. Inst. Chemists, Fellow; Am. Assn. Cereal Chemists; Comm. Chem. Devel. Assn.; Assn. Food and Drug Officials; Animal Nutrn. Rsch. Coun.; Assn. Vit. Chemists; Sigma Xi; Alpha Sigma Chi. Contbr. to: Food Technol.; Feedstuffs; Cereal Sci. Gen. Int.: Mem., Expert Comm. on Food Additives, WHO/FAO. Areas of Rsch.: Food Additives, Food Fortification, Feed Supplementation.



MAHORNER, Howard (M.D.), Dir., Mahorner Clinic, 2030 St. Charles Ave., New Orleans, La. Home Add.: 1730 Palmer Ave., New Orleans, La. GENERAL SURGERY AND VASCULAR SURGERY. b. Mobile, Ala., Feb. 11, 1903. s. Matthias and Catherine (Glennon) M. Edn.: A.B., Springhill Coll., 1921; M.D., Univ. of Pa., 1925; M.S., Surgery, Univ. of Minn., 1928. m. Stella Hebert, June 19, 1935. c.: Marie Elise; Stella Ann; Elizabeth Howard. Exp.: Clin. Prof., Surgery, L.S.U. Med. Schl., New Orleans, La., 1950—; Dir., Mahorner Clinic, 1950—. Hon. Pos.: Founder Mem. of Am. Bd. of Surgery; Pres., Southeastern Surgical Congress, 1958; Pres., Surgeons Travel Club, 1953; Secy., Bd. of Govs., Am. Coll. of Surgs., 1962—; Am. Goiter Assn., Pres., 1960; Consultant to the Surgeon Gen., European Theater, 1960. Mem.: Societe Internationale de Chirurgie, Assoc. Mem. of the Royal Soc. of Med. of England; Mobile Acad. of Sci., Hon. Mem. Am. Surg. Assn.; Sou. Surg. Assn.; Internatl. Cardiovascular Soc.; Phi Chi; Alpha Omega Alpha; Soc. Exptl. Biol. and Med.; La. Club; Boston Club; Lake Shore Club; Dir., New Orleans Opera House Assn.; Citizens Comm. Planning and Zoning City of New Orleans. Contbrng. Author: Thrombo-Angitis Obliterans, 1928; Varicose Veins, 1939; Tumors of the Small Intestine, 1940; Complications in Surgery and Their Management, 1960. Contbr. to: Jour. of the La. St. Med. Soc.; Jour. of the Am. Med. Assn.; New England Jour. of Med.; Trans. of the Societe International de Chirurgie; Surgical Clinics of N. Am.; Am. Surgeon; Surg. Gynecol. and Obsts.; Annals of Surg. Serv. Rec.: U. S. Army Reserves, 1939-43.

MAI, William Frederick (Ph.D.), Prof., Cornell Univ., Ithaca, N. Y. Home Add.: 613 E. Shore Dr., Ithaca, N. Y. PLANT NEMATOLOGY. b. Greenwood, Dela., July 23, 1916. s. William Frederick and Laurana (Owens) M. Edn.: B.S., Univ. of Dela., 1939; Ph.D., Cornell Univ., 1945. m. Barbara Morrell, 1941. c.: Virginia Austin; William Howard; Elizabeth Hardy. Exp.: Asst. Prof., Cornell Univ., 1946-49; Assoc. Prof., ibid., 1949-52; Prof., ibid., 1952—. Hon. Pos.: Editorial Bd., Phytopathology; Nematology; Comm. Natl. Aero. Acad. of Sci. Mem.: Am. Phytopathological Soc.; Soc. of European Nematologists; Helmintological Soc. of Wash.; Soc. of Nematologists; Sigma Xi; Phi Kappa Phi. Author: Pictorial Key to Genera of Plant Parasitic Nematodes, co-author 1960, 62. Contbr. to: Phytopathology; Nematologica; Proc. Helm. Soc. of Wash. Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Plant Nematology; Diseases of Plant Roots; Chem. Control of Plant Diseases; Damage to Plants by Chemicals.

MAIER, Curtis Eugene, European Tech. Dir., Overseas Div., Continental Can Co., Inc., 7622 S. Racine Ave., Chicago 20, Ill. TECHNICAL LIAISON between Chicago Technical Center and European licensees and other companies covering materials, methods and equipment used in manufacture and use of all types of metal, paper, glass, plastic, and composite rigid and flexible containers and closures. b. Allentown, Lehigh Co., Pa., June 10, 1906. s. George R. and Buhleau M. (Trexler). Edn.: Chem. Engr., Lehigh Univ., 1928. m. Rosalia L. Hartung, June 19, 1929. c.: Curtis E., Jr.; Joanne L.; Rosalie H.; Carol E. Exp.: Chem. Engr., Hazel-Atlas Glass Co., Wheeling, W. Va., 1928-31; Asst. Dir. of Rsch., ibid., 1931-35; Dir. of Rsch., ibid., 1935-37; Mgr., Mfg. Rsch. Continental Can Co., Inc., Chicago, Ill., 1937-43; Dir., Container Rsch., ibid., 1943-45; Asst. to Vice-Pres. in Chg. of Rsch. and Engrng., ibid., 1945-49; Gen. Mgr. of Rsch., ibid., 1949-54; Gen. Mgr., Central Rsch. and Engrng., 1954-61; European Tech. Dir., ibid., 1961—. Hon. Pos.: Mem. of Rsch. Comm. of Natl. Assn. of Mftrs.; Chmn., Food Engrng. Coun., Ill. Inst. of Tech., 1952-56; I.R.I. Representative, 1949-61; Mem. of Visiting Comm. for Dept. of Food Tech. of Mass. Inst. of Tech., 1959-60; Mem. of the Adv. Comm. on Food Additives of the Can Manufacturers Inst., Inc.; Mem. of Packaging Closure Group Tech. Subcommittee on Food Additives of the Glass Container Manufacturers Institute, Inc. Mem.: Am. Chem. Soc.; Inst. of Food Tech.; A.A.A.S.; Assoc. Food and Container Inst. Author: A Survey of the German Can Industry During the Second World War, 1945; The Effect of War Developments on the Metal Container of the Future, 1945; Corrosion on Metal Food Containers, 1944; Metal Containers—Protective and Camouflage Coatings, 1944. Contbr. to: The Glass Packer. War Record: Mem. of Tech. Indus. Intelligence Comm. under F.E.A. to Make Survey of German Can Industry, 1945; Mem. of Mission of Econ. Affairs to Give Allied Countries Report on U.S.A. Developments in Mfg. Indus. During W. W. II, 1945. Gen. Int.: Over 100 U. S. and foreign patents.



MAIZELS, Albert Donald (D.D.S.), Dentist, 1712 Rhode Isle Ave., N.W., Wash. 6, D. C. Home Add.: 4815 Linnean Ave., N.W., Wash., D. C. DENTISTRY. b. Wash., D. C., Oct. 15, 1914. s. Aaron Joseph and Rose (Belasco) M. Edn.: B.S., Geo. Wash. Univ., 1936; D.D.S., Georgetown Univ., 1941. m. Alma Francke, Dec. 27, 1942. c.: Dale Leslie; Elliott Ian. Exp.: Res. Dentist, Columbia Hosp., Wash., D. C., 1941-43; Practice of Dentistry, Wash., D. C., 1943—. Mem.: D. C. Dental Soc.; Am. Dental Assn.; Am. Soc. Endodontists; Am. Soc. Variable Star Observers; Royal Soc. of Health; Am. Assn. Adv. Sci.; Alpha Omega; Phi Delta Epsilon. Serv. Rec.: U. S. Army Dental Corps, 1943-46. Gen. Int.: Has Amateur Radio License; Mem., Amateur Astronomers Soc.

MAJOR, Ruth Herzig (Mrs.), Chem. Tchr., Canoga Park H. Schl., Los Angeles, Calif. Home Add.: 1736 N. Sierra Bonita Ave., Hollywood 46, Calif. TEACHING FIELD OF ELEMENTARY CHEMIS

TRY. b. Montclair, N. J., July 31, 1902. d. Louis Lebrecht Herzig and Ruth (Kirk) H. Edn.: B.S., St. Lawrence Univ., 1925; M.S., Univ. of Sou. Calif., 1955. c.: Jacqueline; Harry; Anita; Gwendolyn. Exp.: Tchr., Fulbright Scholar, Jamaica, 1957-58; Tchr., Canoga Park H. Schl., L. A. City Schls., Calif., 1943—. Hon. Pos.: Secy., Calif. Assn. of Chem. Tchr. Mem.: A.A.A.S.; Pi Beta Phi; Iota Sigma Pi; Hollywood Homeowners.

MALETZ, Michael (Mr.), Consulting Mech. Engr., Chief Gear Engr., Vard, Div. of Royal Industries, Pasadena, Calif. Home Add.: 11716 S. Gurley Ave., Downey, Calif. APPLIED MECHANICS. b. Uman, Russia, Jan. 29, 1897. s. Abraham and Esther (Tandytnik) M. Edn.: B.A., Kieff Technical Schl., 1916; B.S., Univ. of Ill., 1926; M.E., ibid., 1942. m. Sophia Ingeroff, Jan. 19, 1918. c.: Edith; Bernice; Leonard. Exp.: Chief Engr., Perfection Gear Co., Harvey, Ill., 1932-36; Diesel Engine Des. Engr., Fairbanks, Morse Co., Beloit, Wis., 1936-39; Anal. Mech. Engr., Kearney and Trecker Corp., Milwaukee, Wis., 1939-51; Res. Structures Engr., Lockheed Aircraft Corp., Burbank, Calif., 1951-53; Design Spec. Rheem Mfg. Co., Aircraft Div., R. and D., Downey, Calif., 1953-54; Tech. Spec. Staff, Chief Engr., Aerojet Gen., Azusa, Calif., 1954-57; Design Specialist, Applied Mechanics Div., Rocketdyne, Canoga Park, Calif., 1957-59; Consulting Mech. Engr., ibid., 1960—. Mem.: A.S.M.E.; A.R.S.; S.E.S.A.; A.A.A.S.; I.A.S.; Pi Mu Epsilon. Contbr. to: ASME Transactions; AGMA Transactions; Appl. Mechanics Rev. Areas of Rsch.: Gears; Geometry and Design; Bearings.

MALIS, Bernard J. (Mr.), Pharmacist, Consult., Schl. Lane House, Phila. 44, Pa. DRUGS AND COSMETICS. b. Phila., Feb. 25, 1923. s. Louis and Jennie (Josselowitz) M. Edn.: B.Sc., Philadelphia Coll. of Pharm. and Sci., 1944; M.S., ibid., 1947. Exp.: Pres., Ogontz Manor Pharmacies, Inc., Philadelphia; Consultant, Haelan Labs., Bowman Gum Corp., 1950-56; Dir., Pharm. and Cosmetics Div., Sav-Fair, Food Fair Stores, Inc., Phila., Pa., 1956-57; Private Consultant, Marketing and Retail Merchandising, Chem., Drug and Cosmetic Prods., Investments, Phila., Pa., 1957—. Hon. Pos.: Chmn., Bd. of Governors; Vice-Pres., North City Retail Druggists Assn., 1952-54; Deputy Admin., Annual Giving Funds Campaign, Phila. Coll. of Pharm. and Sci.; Pres., Literary and Debating Soc. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Natl. Assn. of Retail Druggists; Life Mem., Am. Pharmaceutical Assn.; Rho Pi Phi; Federation Internationale Pharmaceutique (The Hague); Mercantile Literary Assn.; Cheltenham Art Center; Metropolitan Opera Assn.; Hon. Life Mem., Shekinah Lodge. Gen. Int.: Planned, Organized and Developed the First Large-Scale Non-Foods Installations of the Supermarket Industry, including Prescription Units and Fashion Cosmetics Depts. Serv. Rec.: U.S.N.R., 1944-46; Staff Lectr., Medical Corps Schools (Subjects: Pharm., Chem., Pharmacol.). Authored: Training Manuals. Areas of Rsch.: The Chemistry and Syntheses of the Penicillins; Oral Penicillin Therapy; New Protein Precipitation Technics; Analyses of Antibiotics and Steroids, Clinical and Commercial Uses of Chlorophyll and Derivatives.

MAKARI, Jack George (M.D.), Dir. of Rsch., Muhlenberg Hosp., Plainfield, N. J. Home Add.: 17 Steven Terr., S. Plainfield, N. J. INTERNAL MEDICINE, CANCER, IMMUNOLOGY, TROPICAL MEDICINE. b. Enfeh, Lebanon, Dec. 23, 1917. s. George J. and Phelomena (Nehmeh) M. Edn.: B.A., Am. Univ. of Beirut, 1937; M.D., ibid., Schl. of Med., 1941; D.T.M. and H., The Royal Coll. of Surg. of Eng. and the Royal Coll. of Physicians of London, 1946; ScM., Harvard Schl. of Health, 1952. m. Wadad Tamer, Aug. 17, 1955. c.: Grace Phelomena; Doris Angelina; George Jack. Exp.: Jr. and Sr. Intern, Dept. of Med., Am. Univ. of Beirut, 1941-43; Asst. in Bacteriol. and Parasitol., ibid., 1943-44; Instr., ibid., 1944-45; Brit. Council Scholar on a Visit to England, 1945-47; Sr. Physician for Trans-Arabian Pipe Line Co., and Dir. of the Hosp. Lab., 1947-50; World Health Org. Fellow, Lebanon to U.S.A., 1950-51; Fellow in Med., Johns Hopkins Univ. and Hosp., 1952-53; Rsch. Asst. in Med., Johns Hopkins Univ. and Physician, Baltimore City Hosp., 1953-54; Hd., Sect. of Immunol., M. D. Anderson Hosp. and Tumor Inst., Univ. of Tex., 1954-56; Assoc. Prof. of Immunol., Univ. of Tex., 1954-56; Dir. of Rsch., Muhlenberg Hosp., 1957—. Mem.: Am. Pub. Health Assn.; Am. Assn. Adv. Sci.; N. Y. Acad. Sci.; Soc. Am. Bacteriol.; Fellow, Am. Geriatrics Soc.; Fellow, Gerontol. Soc. Contbr. to: Brit. Med. Jour.; Jour. Trop. Med. and Hyg.; Trans. Royal Soc. Trop. Med. and Hyg.; Nature; Am. Jour. Gastroenterol.; Tex. State Jour. of Med.; Jour. Am. Geriatrics Soc.; Jour. Geront.; Am. Jour Pub. Health; Proc. Am. Assn. of Bact. and Path. Gen. Int.: Represented Lebanon in the IV Internatl. Cong. of Trop. Med. and Malaria, Wash., D. C., 1947; Represented Lebanon in the Third Gen. Assembly for World Health Org., Geneva, 1950; Represented Lebanon in Third Regional Meeting for Eastern Mediterranean Reg., World Health Organization, Istanbul, 1950. Areas of Rsch.: Liver Function in Tropical Diseases; Resistance Factor; Antibody Inhibitor; Antibodies to Amino-Acids; Immunologic Methods (blood and skin tests) for detection of Cancer; Nature of Cancer Antigens; Cancer Immunology.

MALLINSON, Jacqueline Buck (Mrs.), Asst. Prof. of Sci., Western Mich. Univ., Kalamazoo, Mich. Home Add.: 535 Kendall Ave., Kalamazoo, Mich. BIOLOGY, CHEMISTRY, SCIENCE EDUCATION. b. Birmingham, Mich., Nov. 30, 1926. d. Charles E. and Herma L. (Reynolds) Buck. Edn.: B.A., Kalamazoo Coll., 1948; M.A., Univ. of Mich., 1951. m. George G. Mallinson, Aug., 1954. c.: Cyrus J.; Virginia A.; Charles E.; Carolyn L. Exp.: Tchng. Asst., Purdue Univ., W. Lafayette, Ind., 1948-49; Instr., Farmington Pub. Schls., Farmington, Mich., 1951-53; Instr., Grosse Pointe Schls., Gross Pointe, Mich., 1953-54; Asst. Prof., Western Mich. Univ., Kalamazoo, Mich., 1955—. Hon. Pos.: Fellow, A.A.A.S.; Treas., Mich. Sci. Tchrs. Assn.; Contributor of Working Paper, Feasibility Study of A.A.A.S.; Asst. Editor, Schl. Sci. and Maths. Mem.: Natl. Assn. for Rsch. in Sci. Tchng.; A.A.A.S.; Mich. Sci. Tchrs. Assn.; Central Assn. of Sci. and Math. Tchrs. Author: General Physical Science, 1961; Activity Book to Accompany General Physical Science, 1962. Contbr. to: Schl. Sci. and Maths.; Science Edn.; Sci. Tchr.; Review of Ednl. Rsch. Areas of Rsch.: Science Curriculum Development; Science Tchr. Training.

MALONE, Earl Littlefield (M.D.), 302 W. Tilden, Roswell, N. Mex. Home Add.: 1601 S. Lea, Roswell, N. Mex. MEDICINE AND SURGERY. b. Austin, Tex., Dec. 9, 1914. s. Rosser L. and Edna (Littlefield) M. Edn.: M.D., Baylor Univ. of Med., 1940. m. Anna Belle Perkins, Jan. 8, 1939. c.: Mrs. Mary Anne Meek; Laura Lynn; Earl L., Jr. Exp.: M.D., Gen. Practice of Med., Roswell, New Mex., 1945-62. Hon. Pos.: Dir., Roswell Chamber of Commerce; Dir., New Mex. Blue Shield; Comm. on Indigent Care, Am. Med. Assn.; Delegate, A.M.A. Mem.: Am. Med. Assn.; Am. Acad. of Gen. Pract.; N. Y. Acad. of Sci.; Am. Heart Assn.; Vice Pres., S.W. Med. Assn.; A.A.A.S.; Sigma Nu; Theta Kappa Psi, Skull and Key; Rotary Internatl. Serv. Rec.: U. S. Air Force, 1942-45. General Int.: Political Action. Listed in W.W. in the West;

MALOOF, Farahe (M.D.), Asst. Physician, Mass. Gen. Hosp., Boston, Mass.; Instr. in Med., Harvard Med. Schl., Boston, Mass.; Sr. Rsch. Assoc., Grad. Dept. of Biochem., Brandeis Univ., Waltham, Mass. Home Add.: 25 Meredith Circle, Milton 86, Mass. INTERNAL MEDICINE; ENDOCRINOLOGY. b. Boston, Mass., Jan. 24, 1921. s. Barakat F. and Mary (Maloof) M. Edn.: A.B., Harvard Univ., 1942; M.D., Tufts Univ. Schl. of Med., 1945. m. Emily Suzanna Puchy, June 28, 1947. c.: Suzanne Maria; Farahe Paul. Exp.: Clin. and Rsch. Fellow, Med., Mass. Gen. Hosp., Boston, Mass., 1948-50; Post-Doctorate Public Health Fellow, ibid., 1949-51; Resident in Med., ibid., 1951-52; Asst. in Med., Harvard Med. Schl. and ibid., 1952—; Instr., 1962—; Sr. Rsch. Assoc. in Grad. Dept. of Biochem., Brandeis Univ., Waltham, Mass., 1958—; Asst. Physician, Mass. Gen. Hosp., 1960—. Mem.: Am. Goiter Assn.; Endocrine Soc.; A.A.A.S.; Assoc., Am. Coll. of Physicians; Diplomate, Am. Bds. Internal Med.; Am. Soc. for Clinical Investigation; Am. Fed. for Clinical Rsch.; A.M.A. Contbr. to: New England Jour. of Med.; Endocrinol.; Jour. Clin. Endocrinol. and Metabolism; Jour.

Biological Chem. Serv. Rec.: U. S. Navy, 1945-48. Areas of Rsch.: Biochemistry of the Thyroid; Effect of Radioactive Iodine Irradiation in the Thyroid.

MALONE, Marvin Herbert (Ph.D.), Assoc. Prof., Pharmacology, Univ. of Conn., Storrs, Conn. Home Add.: Mansfield Apts. 19, Storrs, Conn. PHARMACODYNAMICS OF NATURAL PRODUCTS. b. Fairbury, Nebr., April 2, 1930. s. Herbert August and Elizabeth Florinda (Torrey) M. Edn.: B.S., Univ. of Nebr., 1951; M.S., ibid., 1953; Ph.D., ibid., 1958. m. Shirley R. Cane, Dec., 1952. c.: Carla Margaret; Gayla Christa. Exp.: Grad. Asst., Univ. of Nebr., Lincoln, Nebr., 1951-53 and 1956-58; Rsch. Asst., Squibb Inst. of Med. Rsch., New Brunswick, N. J., 1953-56; Asst. Prof., Univ. of New Mex., Albuquerque, N. Mex., 1958-60; Assoc. Prof., Univ. of Conn., Storrs, Conn., 1960—; Rsch. Specialist, Pharmacy Rsch. Inst., Storrs, Conn., 1960—. Mem.: A.A.A.S.; Sci. Sect., Am. Pharm. Assn.; N. Y. Acad. of Sci.; Am. Soc. of Pharmacognosy; Western Pharmacology Soc.; Am. Inst. of Hist. of Pharm.; Nebr. Acad. of Sci.; Am. Assn. of Colls. of Pharm. Conf. of Tchrs. Biol. Sci.; A.A.U.P.; Sigma Xi; Phi Lambda Upsilon; Rho Chi; Kappa Psi. Co-Editor: The Wormwood Review. Contbr. to: Jour. Pharmacol. Exptl. Therap.; Federat. Proc.; Jour. Pharm. Sci.; Jour. Pharm. Pharmacol.; Lloydia; Acta Physiol. Scand. Areas of Rsch.: Natural drug product screening, evaluation, and assay; pharmacodynamics of agents affecting Autonomic and central nervous systems; biometrics; history of pharmacology; psychopharmaceuticals; dynamics of drug absorption.

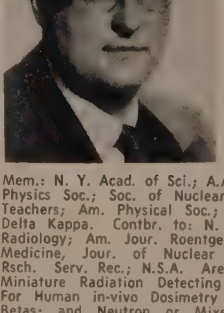
MALOOF, Louis J(oseph) (Ph.D.), Assoc. Prof. of Sociol., Univ. of South Carolina. Home Add.: Box 329 Univ. Sta., Columbia 1, S. C. SOCIOLOGY. b. Rome, Ga., Dec. 25, 1913. s. Charles S. Maloof and Madelle A. (Maloof) Thebit. Edn.: A.B., Univ. of Ga., 1949; M.A., ibid., 1950; Ph.D., Univ. of Fla., 1959. Exp.: Instr., Atlanta Div., Univ. of Ga. (Now Ga. State Coll.), 1951; Med. Rsch. Specialist, U. F. Health Center, Gainesville, Fla., 1952-54; Asst. Prof. of Sociol., Amhurst Coll., 1955-56; Field Representative, Gen. Extension Div. of Fla., 1957-59; Assoc. Prof. of Sociol. and Grad. Faculty Mem., Univ. of Detroit, 1959-60; Natl. Regent, Levantine Clubs of Univ. Men and Women, Gainesville, Fla., 1960-61; Assoc. Prof. of Sociol., Univ. of S. C., Columbia, S. C., 1961—. Hon. Pos.: Chmn., Soc. Sci. Space Age Prog., U. F., 1957; Chmn., Auditing Comm., Sou. Sociological Soc., 1960; Consultant, Am. Arabic Coun., Detroit Internatl. Inst., 1959-60. Mem.: A.A.A.S.; A.A.U.P.; A.A.P. and S.S.; Am. Sociological Assn.; Rural Sociological Soc.; Sou. Sociological Soc.; Phi Beta Kappa; Phi Kappa Phi; Alpha Kappa Delta; Alpha Psi Omega; Phi Delta Epsilon. Author: Tung Lai, 1946; China Crisis, 1949. Co-Author: Sociol Problems, 1955. Editor: Planning Florida's Health Leadership, 1954; Health and the People of Fla., 1954; Florida's Doctors at Mid-Century, 1954; Florida's Hospitals and Nurses, 1954; Medical Education in the University, 1955. Serv. Rec.: U.S.M.C., 1942-46. Gen. Int.: Newspaper Reporter and Editor, Ga., Ala. and La., 1932-42, 1946-47. Areas of Rsch.: Medical Sociology, Arab East and Latin American People and Institutions.

MALPHRUS, Lewis Daniel (Ph.D.), Assoc. Agric. Economist, Clemson Coll., Clemson, S. C. Home Add.: 202 Strawberry Lane, Clemson, S. C. AGRICULTURAL ECONOMICS. b. Ridgeland, S. C., Nov. 19, 1914. s. John Bazil (dec.) and Lillie (Woods) M. (dec.). Edn.: B.S., Clemson Coll., 1938; M.S., Univ. of Tenn., 1940; Ph.D., Purdue Univ., 1954. m. Rosalind Kerns, Apr., 1943. c.: Lewis Daniel, Jr. Exp.: Asst. in Treasurer's Office, Clemson Coll., 1938-39; Asst. Co. Supvr to Regl. Analyst, Rel. Cooperative Specialist, State Health Specialist, Farm Security Admin., 1940-47; Asst. to Assoc. Agric Economist, Clemson Coll., S. C., 1947-. Hon. Pos.: State Faculty Adv., Baptist Student Union; Adv Bd., Y.M.C.A. Mem.: Sigma Xi; A.A.A.S.; Am. Farm Econ. Assn.; Alpha Zeta. Contbr. to: Food Research. Serv. Rec.: AUS, 1942-46. Areas of Rsch.: Research in Marketing Agricultural Products; Livestock and Grain Marketing.

MALZBERG, Benjamin (Ph.D.), Prin. Rsch. Scientist, Rsch. Fdtn. Mental Hyg., Inc., Albany, N. Y. Home Add.: 33 Bancker St., Albany, N. Y. STATISTICAL RESEARCH IN MENTAL DISEASE. b. N.Y.C., Dec. 2, 1893. s. Nathan and Anna (Elson) M. Edn.: B.S., C.C.N.Y., 1915; M.A., Columbia Univ., 1917; Ph.D., ibid., 1934. m. Rose Hershberg, 1935. c.: Judith Ann; Amy Susan; Ruth Ellen. Exp.: Statistician, N. Y. State Dept. Soc. Welfare, Albany, N. Y., 1923-28; Asst. Dir. Stat., N. Y. State Dept. Mental Hyg., Albany, N. Y., 1928-44; Dir., ibid., 1944-56; Prin. Rsch. Scientist, Rsch. Fdtn. for Ment. Hyg., Inc., Albany, N. Y., 1956—. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; N. Y. Acad. of Med.; Amer. Stat. Assn.; Inst. of Mathematical Statistics; Amer. Soc. of Human Genetics; Sigma Xi. Author: Mortality Among Patients With Mental Disease, 1934; Social and Biological Aspects of Mental Disease, 1940; Cohort Studies of Mental Disease in N. Y. State, 1958. Contbr. to: Am. Jour. of Psychiatry; Ment. Hyg.; Psychiatric Quart.; Human Biol. Areas of Rsch.: Statistical Aspects of Ment. Dis.; Ment. Deficiency and Epilepsy.

MALPICA, Jose Mireles (Mr.), Investigador Cientifico, Instituto Politecnico Nacional. Home Add.: Sierra Nevada, No. 225 Mexico 10, D. F., Mex. HIGH VOLTAGE PHENOMENA; ELECTROSTATICS; ELECTRICAL TRANSFORMATIONS. b. Cosautlan, Ver., Mex., Feb. 15, 1905. s. Bernardo Mireles and Zenaida Malpica. Edn.: M.S., Union Coll., 1932. m. Betty Mary Holbrook Diamond. c.: Bernardo; Philip David. Exp.: Lab. Asst., Gen Engrng. Lab., Gen. Elec. Co., Schenectady, N. Y., 1925-32; Development Work, ibid., 1932-42; Dir. of Rsch. Lab., Fabrica Nacional de Polvora, Santa Fe, D.F., Mex., 1943-45; Consulting Work in Phys. and Tchng. in the Escuela Superior de Ingenieria Mecanica y Electrica, 1945—; Investigador Cientifico, Instituto Politecnico Nacional, 1947—. Mem.: Am. Phys. Soc.; A.A.A.S.; Amer. Inst. of Elec. Engrs.; Sociedad Mexicana de Fiscia; Asociacion Mexicana de Ingenieros Mecanicos y Electricistas. Contbr. to: Gen. Elec. Rev.; Elec Engrng.; Rev. Scientific Instruments, Ingenieria Electrica. Gen Int.: Since 1947 have developed the Electrostatic Transformer of Direct Current; Built a 300 kilovolt, D.C. Electrostatic Transformer, using 50 kilovolts in the primaries; Generalized the Concept of Electric Transformation. Special Int.: Electrical Transformations; Applications of the Electrostatic Transformer; Design and Construction of Scientific Instruments.

MALSKY, Stanley Joseph (Ph.D.), Chief, Radiophysics Rsch. Sec., Radiotherapy Serv. Bronx V. A. Hosp., 130 W. Kingsbridge Rd., N. Y. Home Add.: 85-09 167th Street, Jamaica Hills 32, L. I., N. Y. PHYSICS, RADIATION DOSIMETRY, SOLID STATE PHYSICS. b. N. Y., N. Y., July 15, 1925. s. Joseph and Nellie (Karpinski) M. Edn.: B.Sc., N. Y. Univ., 1949; M.A., ibid., 1950; M.Sc., ibid., 1953; Ph.D., ibid., 1960. m. Irmgard Tschirpke, Aug. 10, 1946. c.: Randolph Joseph; Roy William. Exp.: Chief Radiophysics Rsch. Sec., Bronx V. A. Hosp., N. Y., 1954—; Instr., Dept. of Sci. and Math., N. Y. Univ., 1959—; U. S. Dept. of Defense (U.S.N.) Nuclear Physicist, 1950-54; Graduate Fellow and Instr., N. Y. Univ., 1947-50. Hon. Pos.: Non-Resident Rsch. Collaborator, Brookhaven Natl. Lab., Upton L. I. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Am. Scientific Assn.; Health Physics Soc.; Soc. of Nuclear Medicine; Am. Assn. of Physics Teachers; Am. Physical Soc.; Sigma Xi; Sigma Pi Sigma; Phi Delta Kappa. Contbr. to: N. Y. Acad.; Transactions of I.R.E.; Radiology; Am. Jour. Roentgenol. Radium Therapy and Nuclear Medicine, Jour. of Nuclear Medicine; Electronics; Radiation Rsch. Serv. Rec.; N.S.A. Areas of Rsch.: Research Primarily in Miniature Radiation Detecting Systems that Can Be Employed For Human in-vivo Dosimetry with Gamma and X-ray Sources; Betas; and Neutron or Mixed Gamma-Neutrons; Whole Body Animal Irradiation Studies.



MAMANTOV, Ilya Alexander, (Dr.), Rsch. Geolt., Southwest Div., Sun Oil Co., Box 2880, Dallas 21, Tex. Home Add.: 6911 E. Mockingbird Lane, Dallas 14, Tex. GEOLOGY AND TEACHING THE RUSSIAN LANGUAGE. b. Tartu, Estonia, Feb. 17, 1914. s. Alexander and Helen (Pribitkov) M. Edn.: Magister Rerum Naturae, Univ. of Latvia, 1942. m. Alexandra Gravitis, Aug. 7, 1938. c.: Igor; Alexander; Michael. Exp.: Geolt., Geol. Survey of Latvia, 1937-44; Asst. Dir. of Geol. Sur. and Chief of Dept. of Appl. Geol., 1944; Geolt., Univ. of Munich, Germany, 1945; Mgr. of Supplies, Latvian Relief Bureau, Munich, Germany, 1945-49; Engr. Construction Co., U.S.A.F., Frankfurt a/Main, Germany, 1949; Chg. of Prod. Scheduling Dept., Lion Match Co., N. Y., 1950-51; Computer, Donnally Geophys. Co., Dallas, Tex., 1951-52; Asst. Party Chf., ibid., 1952-55; Party Chf., ibid., 1955; Rsch. Geol., Southwest Div., Sun Oil Co., 1955—; Russian Translator for the Am. Geophys. Union, 1959—; Instr. of Beginners and

Scient. Russian for Socony Mobil Oil Co. Field Research Lab., Dallas, Tex., 1960-61; Instr. of Russian at Austin Coll., Sherman, Tex., 1962—; Rsch. Assoc. with the Dallas Seismological Observ. Southern Methodist Univ., Dallas, Tex., 1962—; Hon. Pos.: Chmn. of the Joint Dallas Geol. Soc. and Dallas Geophys. Soc. Pub. Infor. Comm., 1957-58; Chmn. of the Edni. Exhibits Comm. for the 44th Annual A.A.P.G.-S.E.P.M. Meeting, Dallas, Tex., 1959; Co-Chmn., Dallas Geol. Soc. and Dallas Geophys. Soc. Dance Comm., 1961. Mem.: Dallas Geol. Soc.; Dallas Geophys. Soc.; Am. Assn. of Petrol. Geolts.; Am. Geophys. Union; Soc. of Exploration Geophyts.; Permian Basin Sect. of the S.E.P.M.; Ruthenia. Areas of Rsch.: Regional Geology.

MAMMARELLI, Vincent Theodore (Mr.), Staff Engr., Clifton Precision Products Co., Inc., 557 E. Baltimore Pike, Clifton Ht., Pa. Home Add.: 519 Tasker Ave., Norwood, Pa. SYNCHROS AND SERVOMECHANISMS. b. Philadelphia, Pa., June 15, 1928. s. Anthony and Valentina (Serafini) M. m. Mary E. Kennedy, Oct. 6, 1951. c.: Donna Marie; Rosemary; Michael. Exp.: Project Engr., Clifton Precision Products Co., Inc., 1954-57; Chief Engr., ibid., 1957-59; Q. C. Mgr., ibid., 1959-62; Staff Engineer, ibid., 1962—. Mem.: Am. Rocket Soc.; A.A.A.S.; Am. Ordnance Assn.; Civitan; Knights of Columbus. Serv. Rec.: U. S. Navy, 1946-51. Gen. Int.: Worked on the Plant Site Selection and Served as Chief Engr. for the Establishment of the Clifton Precision Product Co.'s Western Div., Colo. Springs, Colo. Areas of Rsch.: Brushless D.C. Motors, Brushless and Explosion-Proof electrical governors and artificial hearts for Human Implantation.

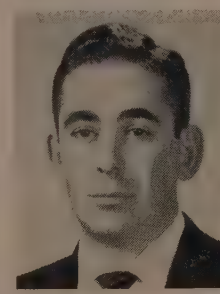
MANCHESTER, Theodore Cornell (Mr.), Retired, 1660 West Arrow Hwy., Upland, Calif. ENZYME, VITAMIN AND BACTERIOLOGICAL RESEARCH. b. Elmira, Calif., June 26, 1883. s. Otis A. and Lydia C. (Oilar) M. Edn.: B.A., Washington State Coll., 1906; B.S., ibid., 1906. m. Grace Richardson, Oct. 2, 1907. c.: Ruth Leona (dec.), Exp.: Chemist, Chief Chemist, Pacific Coast Condensed Milk Co., Kent, Wash., 1907-10; Chief Chemist, Pacific Coast Condensed Milk Co., Berlin, Wisc., 1910-13; Dir., Ark. Industrial Lab., Little Rock, Ark., 1914-16; Zinc Mine Operator, Kingdon Springs, Ark., 1916-17; Chemist, Carnation Milk Co., Mt. Vernon, Wash., 1922-27; Chemist and Bacteriologist, tRsch., Calif. Frui Growers Exchange, Ontario, Calif., 1930-48. Hon. Pos.: Pos.: Chpt. Pres., Calif. Credit Union League. Mem.: Am. Chem. Soc., Emeritus; A.A.A.S. Contbr. to: Jour. Am. Chem. Soc.; Eighth Internatl. Congress of Applied Chem.; Jour. Biol. Chem.; Food Industries; Jour. Assn. Agric. Chemists; Am. Jour. of Digestive Diseases; Food Rsch. Serv. Rec.: Calif. State Guard, 1941-47; Calif. Natl. Guard Reserve, 1950-52. Gen. Int.: First Grad. Chemist to be employed by Pacific Coast Condensed Milk Co.—now Carnation Co. Areas of Rsch.: Proteolytic Enzyme Activity; Control of Microbiological Growth; Protection of Vitamin C during processing of Foods.

MANAGER, William Muir (M.D.), Instr. in Med., Columbia Med. Schl., Asst. Physician in Presbyterian Hosp., N. Y., N. Y. Home Add.: 4 Park Ave., N. Y. 16, MEDICINE (Subspecialization: BIOCHEMISTRY AND PHYSIOLOGY). b. Greenwich, Conn., Aug. 13, 1920. s. Julius and Lilian W. (Weissinger) M. Edn.: B.S., Yale Univ., 1944; M.D., Columbia Med. Schl., 1946; Ph.D., Mayo Found., 1958. Exp.: Intern in Med., Presby. Hosp., N. Y. City, 1946-47; Resident in Med., Presby. Hospital, N. Y. City, 1949-50; Fellow in Internal Med., Mayo Found., Rochester, Minn., 1950-57; Instr. in Med., Columbia Med. Schl., Asst. Physician to Presbyterian Hosp., 1957—, Hon. Pos.: Formerly Vice-Pres., and Pres., Fellow Assn. of the Mayo Found.; Mem. of the Central Advisory Comm. or the Section on Circulation of the Am. Heart Association; Editor, Am. Lecture Series in Endocrindology. Mem.: Diplomate, Am. Board of Internal Medicine; Am. Med. Association; Am. Heart Assn. and Mem. of the Central Advisory Comm. of the Section on Circulation; Med. Soc. of the County of N. Y. and the Med. Soc. of the State of N. Y.; Am. Trudeau Soc.; Assn. of Military Surgeons of the U. S.; N. Y. Acad. of Scis.; A.A.A.S.; Sigma Xi; Fellow, Acad. of Psychosomatic Med.; Am. Physiological Soc.; Am. Chem. Soc.; Div. of Biological Chem.; Am. Sos. of Pharmacol. and Experimental Therapeutics; Fellow, Am. Geriatrics Soc.; Assn. of Am. Med. Colls.; Phi Delta Theta; Nu Sigma Nu; Medical Strollers; West Side Clinical Soc.; Deacon in the Fifth Ave. Presby. Ch.; Mem., Bd. of Governors of St. Albans Schl., Wash., D. C.; Chmn. of Admissions Comm. of Sons of the Revolution, N. Y. C.; Vice-Chmn. of the Bd. of Manger Hotels, Inc. Co-author: Chemical Quantitation of Epinephrine and Norepinephrine in Plasma, 1959. Contbr. to: Circulation; Jour. A.M.A.; Proc. of the Staff Meetings of the Mayo Clinic; Am. Jour. of Physiol.; A.M.A. Archives of Neurology and Psychiatry; Pharmacological Reviews. Serv. Rec.: U.S.N.R., 1947-49. Gen. Int.: Received the Alumni Award of the Mayo Found. in 1955 for Meritorious Rsch. Areas of Rsch.: Quantitation of Epinephrine and Norepinephrine in Plasma-Relationship of Plasma Pressor Amines to Hypertension, Peripheral Circulatory Shock and Mental Disease.

MANDEL, Emanuel Emil (M.D.), Clin. Assoc. Prof. Med., State Univ. of N. Y., Downstate Ctr., 451 Clarkson Ave., Brooklyn, N. Y. Home Add.: 2 Preston Rd., Great Neck, L. I., N. Y. INTERNAL MEDICINE AND CLINICAL PATHOLOGY. b. Vienna, Austria, Sept. 3, 1910. s. Aron and Anna (Friedman) M. Edn.: M.D., Univ. of Vienna, 1934; M.S., Northwestern Univ. Grad. Schl., 1950. m. Alice Weiss, 1941. c.: Susan; Jill; Alan; Philip. Exp.: Assoc. Dir. Med. Edn., Mt. Sinai Hosp., Chicago, Ill., 1957-62; Assoc. Prof. of Med. and Asst. Dean, The Chicago Med. Schl., 1954-62; Attending Physn. in Med., Cook Co. Hosp., Chicago, Dir., Dept. of Med., Jewish Chronic Dis. Hosp., Brooklyn, N. Y., 1962—; Clin. Assoc. Prof. Med., St. Univ. of N. Y., Downstate Ctr., 1962—. Hon. Pos.: Visit. Physn., Kings Co. Hosp., Brooklyn, N. Y., 1962—. Mem.: Endoc. Soc.; Soc. for Exptl. Biol. and Med.; Am. Soc. of Clin. Pathlts.; Am. Coll. of Physns.; Sigma Xi; Am. Physiol. Soc. Author: Workshop on Techniques in Blood Coagulation, 1960; Chapter in Clinical Diag. by Lab. Methods, 1962. Contbr. to: Jour. Am. Med. Assn.; Jour. Lab. and Clin. Med.; Clin. Chem.; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. of Clin. Pathol. Areas of Rsch.: Renal Physiology and Pathology; Hematology; Clinical Chemistry; Liver Diseases.

MANDELARE, John James (Mr.), Dir., Educational Radioisotope Services, 2399 Hosmer Rd., Appleton, N. Y. NUCLEAR CHEMISTRY. b. Lockport, N. Y., July 17, 1938. s. Dominic J. and Anna J. (Paduano) M. Edn.: B.S., Niagara Univ., 1961. Exp.: Dir., Educational Radioisotope Servs., Appleton, N. Y., 1959—; Sci.-Math. Tchr., Newfane Central Schl., Newfane, N. Y., 1961—. Mem.: A.A.A.S.; N. Y. St. Tchrs. Assn.

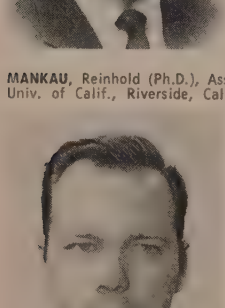
MANDELL, Joseph David (Ph.D.), Microbiologist, Palo Alto Med. Rsch. Found., 860 Bryant St., Palo Alto, Calif. Home Add.: 250 Parkside Dr., Palo Alto, Calif. MICROBIOLOGY, MUTATION AND RADIATION RESISTANCE MECHANISMS. b. New Brunswick, N. J., July 9, 1929. s. Samuel I. and Rose (Klein) M. Edn.: B.S., Rutgers Univ., 1950; M.S., Oklahoma A. and M. Coll., 1951; Ph.D., Calif. Inst. Tech., 1955. m. Marion Bruskin, Aug. 26, 1951. c.: Linnea Dawn; Douglas Evan; Dana Philip. Exp.: Assoc. Rsch., Carnegie Institution of Washington, Dept. Genetics, Cold Spring Harbor, N. Y., 1955-58; Microbiologist, Stanford Rsch. Inst., Menlo Park, Calif., 1958-61; Microbiologist, Palo Alto Med. Rsch. Found., 1961—. Mem.: Soc. Am. Bacteriologists; A.A.A.S.; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi; Beta Iota Lambda (Hon. Biol. Soc.); Delta Phi Alpha (Hon. German Frat.). Contbr. to: Phytopathology; Analytical Biochemistry; Jour. of Bacteriol.; Biochem. and Biophys. Rsch. Communications. Gen. Int.: Fractionation and analysis of macromolecular DNA. Areas of Rsch.: Antiserum Inactivation of Bacteriophages DNA Analysis; Mutation and Mechanism of Resistance to Radiation in Bacteria.



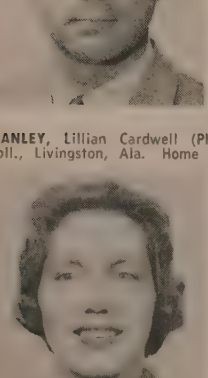
MANDELSON, Joseph (Mr.), Chf., Quality Evaluation Div., Chemical Corps Material Command, Army Chemical Center, Md. Home Add.: 4304 Forest Park Ave., Baltimore 7, Md. MATHEMATICAL STATISTICS. b. New York City, N. Y., Sept. 16, 1912. s. Louis and Rose (Metz) M. Edn.: B.S., City Coll. of N. Y., 1932. m. Minerva Hayne, Nov., 1933. c.: Richard Allen; Jesse Hayne; Rala M. Exp.: Chf., Quality Assurance Branch, Inspection Div., Office of Chf. Chemical Officer, Army Chemical Center, Md., 1947-51; Chf., Plans and Evaluation Office, Dugway Proving Ground, Tooele, Utah, 1951-52; Chf. Quality Evaluation Div., Chemical Corps Materiel Command, Army Chemical Center, Md., 1952—. Mem.: Am. Statistical Assn.; Inst. of Mathl. Statistics; Internatl. Congress on Logic and Methodology of Sci.; A.A.A.S.; R.E.S.A. Co-Author: Statistitcal Procedures for Determining Validity of Suppliers' Attribute Inspection, 1960. Contbr. to: Industrial Quality Control. Areas of Rsch.: Sampling for Destructive Testing, Statistical Engineering, Quality Evaluation and Quality Assurance.

MANGIACOTTI, Matteo (Mr.), Asst. Scient. and Nuclear Counselor of Italian Embassy, Consulate Gen. of Italy, 690 Park Ave., N. Y. 21, N. Y. Home Add.: 35 South Broadway, Irvington on Hudson, N. Y. FIELD THEORY; RELATIVITY AND GRAVITATION; INTERNATIONAL RELATIONS. b. S. Giovanni Rotondo, Italy, Aug. 5, 1911. s. Joseph and Elvira (Formica) M. Edn.: Econ. Sci., Univ. of Bari, Italy, 1942; M.S., Phys., Fordham Univ., 1958. m. Eva Manusso, Jan. 6, 1937. c.: Elvira. Exp.: Attache, Italian Foreign Ministry, Rome, Italy, 1936-46; Scient. Counsel., Consulate Gen. of Italy, N. Y., 1946—. Mem.: Am. Phys. Soc.; Am. Geophys. Union. Areas of Rsch.: Analytical Mechanics; Relativity and Gravitation; International Relations.

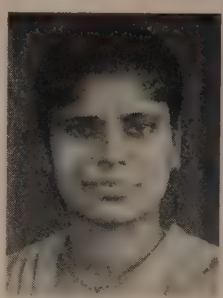
MANKAU, Reinhold (Ph.D.), Asst. Nematologist, Dept. of Nematol., Univ. of Calif., Riverside, Calif. Home Add.: 449 E. Blaine St., Riverside, Calif. NEMATOLOGIST, SOIL MICROBIOLOGY. b. Chicago, Ill., July 22, 1928. s. Gustav H. and Ernestine P. (Fiebig) M. Edn.: B.S., Univ. of Ill., 1952; M.S., ibid., 1953; Ph.D., ibid., 1956. m. Sarojam K. John, June 12, 1954. Exp.: Rsch. Asst., Univ. of Ill., 1953-56; Rsch. Fellow, Indian Agric. Rsch. Inst., New Delhi, India, 1956-58; Asst. Nematol., Univ. of Calif., 1958—. Mem.: Am. Phytopath. Soc.; Am. Mycol. Soc.; Helmint. Soc. Wash.; Indian Phytopath. Soc.; Soc. Nematols.; European Soc. Nematols.; Sigma Xi; A.A.A.S. Contbr. to: Phytopathol.; Nematologica; Mycologia. Areas of Rsch.: Biological Control of Plant Parasitic Nematodes; Soil Microbiol. and Soil Zoology.



MANLEY, Lillian Cardwell (Ph.D.), Assoc. Prof., Livingston St. Coll., Livingston, Ala. Home Add.: 1211 Lake Lane, Demopolis, Ala. BIOLOGY (MAMMALIAN PHYSIOLOGY), CHEMISTRY. b. Birmingham, Ala., Oct. 22, 1932. d. W. W. and Grace (Cameron) Cardwell. Edn.: B.S., Univ. of Ala., 1953; M.S., ibid., 1958; Ph.D., ibid., 1961. m. Richard Shannon Manley, Aug. 1953. c.: Richard Shannon, Jr.; Alyce Hughes. Exp.: Rsch. Asst., Sou. Rsch. Inst., Birmingham, Ala., 1953-54; Asst., Natl. Sci. Fdtn. Inst., University, Ala., 1957, summer; Tchng. Fellow, Univ. of Ala., 1957-58; Sci. Tchr., H. S., Demopolis, Ala., 1958-59; Assoc. Prof., Livingston St. Coll., 1959—. Hon. Pos.: Dir., Natl. Sci. Fdtn. Inst. In Plant and Animal Scis. Mem.: Ala. Acad. of Scis.; Natl. Assn. for the Adv. of Sci.; Assn. of Southeastern Biologists; Alpha Chi Omega; Alpha Lambda Delta; Alpha Epsilon Delta; Mortar Bd.; Phi Beta Kappa; Sigma Xi; A.A.U.W.; Bus. and Prof. Women. Areas of Rsch.: Comparative Physiol. and Histol. of the Thymus Gland.

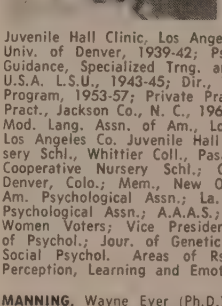


MANKAU, Sarojam Kurrudamannil (Ph.D.), Asst. Prof., Div. of Life Scis., Univ. of Calif., Riverside, Calif. Home Add.: 449 E. Blaine St., Riverside, Calif. PARASITOLOGY. b. Kottayam, Kerala, India, June 5, 1930. Edn.: Women's Christian Coll., Madras, India, 1949; M.S., Univ. of Ill., 1952; Ph.D., ibid., 1956. m. Reinhold Mankau, June 12, 1954. Exp.: Rsch. Asst., Univ. of Ill., 1953-55; Instr., Univ. of Redlands, 1958-59; Asst. Prof., Univ. of Calif., 1960—. Mem.: Am. Soc. of Parasitologists; Sigma Xi. Contbr. to: Parasitol.; Journal Tropical Med. and Hygiene; Trans., Am. Microscopical Soc. Areas of Rsch.: Helminthology.



MANN, Helene Davis Powner (Mrs.), Psychologist, Hollyglade, Rt. 3, Sylva, N. C. CLINICAL PSYCHOLOGY. b. Greensburg, Ind., June 30, 1899. d. Charles Tracy and Olive Rebecca (Davis) Powner. Edn.: Univ. of Ariz., 1917-19; A.B., Univ. of Calif., 1922; M.A., Univ. of So. Calif., 1927. m. Cecil William Mann, 1937. Step-d.: Jennifer Olive. Exp.: Publishers' editor, Charles T. Powner Co., Inc., Regan Publ. Co., Chicago, Ill., 1922-24; Tchr., Foreign Langs., Theodore Roosevelt Jr. High, San Diego Calif., 1924-26; Tchr., Remedial Reading, ibid., 1925-26; Tchr., Psychologist, Gifted and Other Exceptional Children, Benjamin Franklin Schl., Pasadena, Calif., 1926-27; Tchr., Psychologist, Gifted Children, Ulysses S. Grant Schl., Pasadena, Calif., 1927-29; Chf. Psychological Examiner, Los Angeles County Juvenile Hall Clinic, Los Angeles, Calif., 1929-39; Special Lectr., Univ. of Denver, 1939-42; Psychologist, Bureau of Testing and Guidance, Specialized Trng. and Reassignment Unit Psychologist, U.S.A. L.S.U., 1943-45; Dir., Tulane Univ., Reading Improvement Program, 1953-57; Private Practice, New Orleans, 1957-61; Priv. Pract., Jackson Co., N. C., 1961—. Hon. Pos.: Secy., French Sect., Mod. Lang. Assn. of Am., Los Angeles; Public Relations Repr., Los Angeles Co. Juvenile Hall Clinic; Consultant, Broadoaks Nursery Schl., Whittier Coll., Pasadena, Calif.; Consultant, Alhambra Cooperative Nursery Schl.; Consultant, Y.W.C.A. Day Nursery, Denver, Colo.; Mem., New Orleans Rent Advisory Bd. Mem.: Am. Psychological Assn.; La. Psychological Assn.; Southeastern Psychological Assn.; A.A.A.S.; Pi Beta Phi; Psi Chi; League of Women Voters; Vice President, A.A.U.W. Contbr. to: Journal of Psychol.; Jour. of Genetic Psychol.; Jour. of Abnormal and Social Psychol. Areas of Rsch.: Child Psychol., Processes of Perception, Learning and Emotions, Juvenile Delinquency.

MANNING, Wayne Eyer (Ph.D.), Prof. of Botany, Bucknell Univ., Lewisburg, Pa. BOTANY. b. Toledo, Ohio, Apr. 12, 1899. s. Rollo G. and Clara (Smith) M. Edn.: A.B., Oberlin Coll.: 1920; Ph.D., Cornell Univ., 1926. m. Margaret Sheldon, June 11, 1924. d. Rev. and Mrs. Harry D. Sheldon. c.: Alan S.; Grace Clara (dec.). Exp.: Asst. in Bot., Cornell Univ., 1921-24; Instr., ibid., 1924-27; Instr., Univ. Ill., 1927-28; Asst. Prof. of Bot., Smith Coll., 1928-36; Assoc., ibid., 1936-42; Asst., Bucknell Univ., 1945-47; Assoc., ibid., 1947-57; Prof., ibid., 1957—. Hon. Pos.: Chmn., Dept. of Bot., Smith Coll., 1938-41. Mem.: Bot. Soc. of Am.; Torrey Bot. Club; A.A.-A.S.; New England Bot. Club; Pa. Acad. of Sci.; Am. Soc. Plant Taxonomists; Natl. Assn. of Biol. Tchrs.; Sigma Xi. Author: Standley and Steyermark, Flora of Guatemala, Part III, 1952; Contbr. to M. L. Fernald Gray's Manual of Bot., 1950. Contbr. to: Am. Jour. of Bot.; Jour. of Arnold Arboretum; Rhodora; Bull. Torrey Bot. Club; Brittonia; Botaniska Notiser; Ceiba. Ph.D. Dissertation: The Morphology and Anatomy of the Flowers of the Juglandaceae. War Record: Pvt., S.A.T.C., Oberlin Coll., W.W. 1, 1918. Travel: Calif.; Wash. St.; Fla.; Me.; Can.; Mex.; Europe. Hobbies: Collecting Plants; Collecting Postage Stamps; Study of Walnut Family of the World. Listed in: W. W. in Mass.; Who Knows—and What; A.M.S. Special Int.: Taxonomy of Vascular Plants.

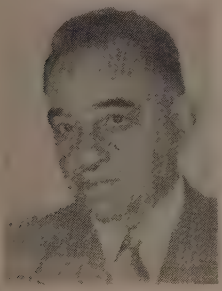


MANNING, Armin William, (Ph.D.), Porf. and Co-Chmn. of Physics Dept., Valparaiso Univ., Valparaiso, Ind. Home Add.: 255 Roselawn Terrace, Valparaiso, Ind. NUCLEAR PHYSICS. b. Milwaukee, Wis., Aug. 22, 1913. s. Herman and Amanda (Steuck) M. Edn.: B.A., Valparaiso Univ., 1936; M.A., Univ. of

Mich., 1939; Ph.D., Fordham Univ., 1958. m. Anita Spannagel, Sept., 1940. c.: Judith; Peter. Exp.: Asst. Prof., Concordia Collegiate Inst., Bronxville, N. Y., 1938-55; Prof., Valparaiso Univ., Valparaiso, Ind., 1955—; Consulting Physicist, Brookhaven Natl. Lab., Summers of 1954, 1955, 1956; Consulting Physicist, U. S. Army Ordnance, Aberdeen, Md., 1957—. Mem.: Am. Geophysical Union; Am. Assn. of Phys. Tchrs.; A.A.A.S.; Ind. Acad. of Sci.; Phi Delta Psi; Civil Defense. Contbr. to: Am. Geophysics Union. Listed in: Am. Men of Sci.; European Register of Scientists. Areas of Rsch.: Radiation Detection, Pulsed Neutron Studies.

MANSFIELD, Maynard Joseph (Ph.D.), Assoc. Prof. of Maths., Wash. and Jefferson Coll., Wash., Pa. Home Add.: 57 Old York, Wash., Pa. MATHEMATICS (POINT SET TOPOLOGY). b. Marietta, Ohio, Jan. 28, 1930. s. Walter O. and Lessie (Ullmann) M. Edn.: B.A., Marietta Coll., 1952; M.S., Purdue Univ., 1954; Ph.D., ibid., 1956. m. Suzanne Goe, June 7, 1953. Exp.: Instr., Purdue Univ., Lafayette, Ind., 1956-57; Asst. Prof., Wash. and Jefferson, 1957-60; Assoc. Prof., ibid., 1960—. Mem.: Am. Math. Soc.; Mathl. Assn. of Am.; Am. Assn. of Univ. Profs.; Phi Beta Kappa; Sigma Xi; Sigma Pi Sigma. Author: Calculus, Co-Author, 1960; Analytic Geometry, Co-Author, 1961; Introduction to Topology, 1963. Contbr. to: Trans. of Am. Mathl. Soc.; Can. Jour. of Maths. Areas of Rsch.: Abstract Topological Spaces.

MANSKER, Joseph Solomon (M.D.), Urologist, 133 East 58th St., N. Y. 22, N. Y. Home Add.: 2075 Wallace Ave., N. Y. 62, N. Y.



UROLOGY. b. Brockton, Mass., Mar. 15, 1907. s. Samuel Baruch and Anna (Danziger) M. Edn.: A.B., West Va. Univ., 1929; M.D., Jeff. Med. Coll. of Philadelphia, 1935. Exp.: Asst. to Hd., Dept. of Chem., W. Va. Univ., 1928-29; Rsch. Asst. Biological Chem. Rsch., N. Y. St. Psychiatry Inst. and Hosp., Columbia Med. Center, 1929-30; Intern, Queens Gen. Hosp., N. Y. City, 1935-36; Intern, Willard Parker Hosp., N. Y. City, 1937; Urologist, 377th Evac. Hosp., N.Y.C., 1948-54; Sr. Clinical Asst. in Urol., Mt. Sinai Hosp., N.Y.C., 1949—; Civilian Consultant, Urologist, 1st U. S. Army Hosp., Ft. Jay, N. Y., 1954; Adjunct Urologist, Harlem Hosp., 1951-54; Adjunct Urologist, Metropolitan Hosp., 1954-58; Urologist, 320th Gen. Hosp., N.Y.C., 1954—; Adjunct Urologist, Queens Hosp. Med. Ctr., 1959—. Hon. Pos.: Vice Pres., W. Va. Univ. Alumni, New York Area. Mem.: W. Va. University Alumni, New York Area.; Phi Beta Kappa; New York Co. and New York State Med. Socs.; Am. Med. Assn.; N. Y. Sect. of the Am. Urological Assn.; Assn. Military Surgeons of U. S.; Reserve Officers Assn. U. S.; N. Y. Acad. of Scis.; A.A.-A.S.; Knights of Pythias; Assn., N. Y. Area, West Va. Univ. Alumni; Fellow, Am. Soc. of Abdominal Surgeons (FASAS); Touchdown Club of N. Y. Serv. Rec.: Lt. Col., Med. Corps, U. S. Reserve Med. Officer, U. S. Army, 1935—; U. S. Army, W.W. II. Gen. Int.: Inventor of a Special Type X-Ray Screen, 1959. Areas of Rsch.: Biological Chem.; X-Ray Screening Device; Urology.

MANUEL, Canuto Guevarra (Sc.D.), Commnr., Natl. Inst. Sci. and Technol., Manila, P.I. ORNITHOLOGY. b. Pasay, Rizal, Philippines, Jan. 19, 1902. s. Ciriaco and Juliana (Guevarra) M. Edn.: B.Agr., Univ. of P. I., 1924; B.S., ibid., 1925; M.S., Univ. of Mich., 1929; Sc.D., ibid., 1932. m. Natividad Hemedes, Jan. 7, 1934. c.: Ernesto; Oscar; Arturo; Enrique; Amado; Erlinda. Exp.: Asst. in Entomol., Univ. of Phil., 1924-28; Asst. Curator of Birds, Univ. of Mich., Ann Arbor, Mich., 1928-29; Hinsdale Fellow, ibid., 1929-30; Rsch. Asst. in Fisheries, ibid., 1930-32; Ornithol., Bur. of Sci., P. I., 1932-39; Tech. Asst. in Fisheries, ibid., 1939-40; Scientist, Natl. Hist. Mus., Dept. of Agri. and Comm., ibid., 1940-42; 1945-47; Chf., Div. of Zool., Natl. Mus., 1947-58; Superv. Scientist, Inst. Sci. and Technol., 1958—; Deputy Commnr., 1958-60; Commnr., 1960—; Natl. Inst. Sci. and Tech., 1958-60. Hon. Pos.: UNESCO Fellow, N. Am., Europe, 1951; ICA Participant, U.S.A. Pto. Rico, Mexico, Japan, 1960; Outstanding Filipino Scientist, 1956; Distinguished Serv. to Filipino Boy Scouts, 1957; Pres., Philippine Assn. for Adv. Sci., 1958; Mem., Natl. Sci. Bd. (P.I.), 1958; Natl. Sci. Dev. Bd. (P.I.), 1960—; UNESCO Natl. Comm. (P.I.), 1959—; Philippine Heraldry Committee, 1960—; Chmn., Bd. of Grants to Inventors (P.I.), 1960—; Fellow, Acad. of Zool. (India) Mem.: Gamma Sigma Delta; Phi Kappa Phi; Sigma Xi; Mich. Acad. of Sci.; Buffalo Soc. of Nat. Sci.; Natl. Rsch. Coun.; Am. Assn. of Museums; Internatl. Coun. of Museums; A.A.A.S.; Lions Club. Author: Album of Philippine Birds, 1936. Special Int.: Systematic and Econ. Studies of Philippine Birds.

MANSOUR, Scott Wills (Mr.), Instr. of Maths., W. Va. Tech. Inst., Montgomery, W. Va. Home Add.: 9 Orchard Ave., Smithers, W. Va. b. Smithers, W. Va., Apr. 11, 1939. s. Alex E. and Muriel (Wills) M. Edn.: B.S.E.: Univ. of Mich., 1960; M.S., ibid, 1961. Exp.: Mathematician, V. A., Wash., D. C., 1960; ibid., 1961; Instr. of Maths., W. Va. Inst. of Tech., 1961—. Mem.: Am. Assn. for the Adv. of Sci.; Tau Beta Pi.

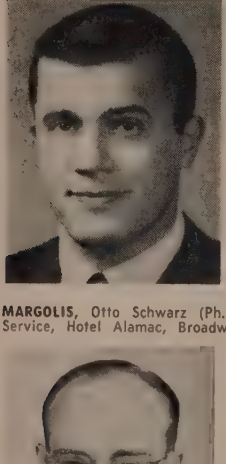
MARBLE, Alexander (M.D.), Asst. Clin. Prof. Med., Harvard Med. Schl.; Physician, Joslin Clinic and New England Deaconess Hosp.; Sr. Assoc., Med., Peter Bent Brigham Hosp., Boston, Mass. Home Add.: 131 Laurel Rd., Chestnut Hill, Mass. INTERNAL MEDICINE; METABOLIC DISEASES; DIABETES MELLITUS. b. Troy, Kan., Feb. 2, 1902. s. Charles, Jr. and Minnie I. (Dittemore) M. Edn.: A.B., Univ. of Kan., 1922; A.M., ibid., 1923; M.D., Harvard Med. Schl., 1927. Hon. Deg.: Award for Distinguished Serv., Univ. of Kan., 1959. m. Beula Frances Becker, Sept. 20, 1930. c.: Mrs. Elizabeth M. Hartwell. Exp.: Intern, Med. Serv., Johns Hopkins Hosp., 1927-28; Resident, Med., Mass. Gen. Hosp., 1928-30; Moseley Travelling Fellow, Harvard Med. Schl., 1931-32; Physician, Joslin Clinic, 1932—. Hon. Pos.: Am. Diabetes Assn., Pres., 1958-59. Mem.: Am. Soc. Clin. Investigation; Assn. Am. Physicians; Am. Coll. Physicians; Endocrine Soc.; Soc. Expmtl. Biol. and Med.; A.A.A.S.; Assn. Military Surgeons; Soc. Med. Consultants to Armed Forces; Alpha Kappa Lambda; Phi Beta Kappa; Sigma Xi; Alpha Omega Alpha. Contbrng. Author: Treatment of Diabetes Mellitus, 1959; Chemistry and Chemotherapy of Diabetes, 1962. Contbr. to: New England Jour. Med.; Jour. Am. Med. Assn.; Diabetes; Am. Jour. Med.; Med. Clinics of N. Am.; Annals N. Y. Acad. Sci. Serv. Rec.: U. S. Army, 1941-46; now Brig. Gen. M.C., U.S.A.R. (Retired). Areas of Rsch.: Diabetes Mellitus and Carbohydrate Metabolism.

MARCUS, Robert Louis (M.D.), Physician, 50 W. 96th St., N. Y. 25, N. Y. PSYCHIATRY. b. Cleveland, Ohio, May 29, 1925. s. Alex and Rhea (Podoll) M. Edn.: M.D., Western Res. Univ. Schl. of Med., 1949. m. Esther Senitzky, Mar. 6, 1955. c.: David Jeffrey; Donna Helene. Exp.: Intern, Michael Reese Hosp., Chicago, Ill., 1949-50; Res. in Psychiatry, Creedmoor State Hosp., Queens Village, N. Y., 1950-52; Res. in Psychiat., High Point Hosp., Port Chester, N. Y., 1952-53; Clin. Asst., Mt. Sinai Hosp., N. Y., 1953-59; Adjunct, Hosp. for Joint Disease, N. Y., 1959—; Staff Psychiatrist, Queens Child Guid. Ctr., N. Y., 1960—; Chf. Psychiat., Wash. Square Consultation Ctr., 1959—; Supversing Psychiatrist and Chief of the Psychopharmacology Dept., Lincoln Inst. for Psychotherapy, 1960—; Consultant in Psychiatry, Hempstead Consultation Serv., 1962—. Mem.: Am. Med. Assn.; Med. Soc. of the St. of N. Y.; Med. Soc. of the Co. of N. Y.; Am. Psychiat. Assn.; N. Y. Soc. for Clin. Psychiat.; Am. Group Psychotherapy Assn.; E. Group Psychotherapy Assn.; N. Y. St. Hosp. Alumni Assn.; Soc. for Gen. Systems Rsch.; Am. Assn. for the Adv. of Sci.; Beta Sigma Rho; Phi Delta Epsilon; Tau Beta Pi. Gen. Int.: Diplomate of the Am. Bd. of Med. Exams.; Diplomate of the Am. Bd. Psychiat. and Neurol. Areas of Interest and Rsch.: Cybernectic Interpretation of Freud's Psychoanalytic Theory; Psychoanalytic Psychotherapy; Group Therapy; Family Treatment and Marital Counselling; Psychopharmacology.

MARCHETTE, Nyven John (Ph.D.), Post-Doc. Fellow, Hooper Fdn., Univ. of Calif., San Francisco, Calif. Home Add.: 615 Yuba St., Richmond, Calif. MICROBIOLOGY. b. Murphys, Calif., June 26, 1928. s. Victor Joseph and Marie Anderson (Hacker) M. Edn.: B.A., Univ. of Calif., 1950; M.A., ibid., 1953; Ph.D., Univ. of Utah, 1960. m. Elaine Vetter, June 11, 1950. c.: David Joseph. Exp.: Bact., Univ. of Utah, Dugway, Utah, 1955-61; Post-Doc. Fellow, Univ. of Calif., 1961—. Mem.:

Sigma Xi; N. Y. Acad. of Scis.; Am. Assn. for the Adv. of Sci.; Am. Soc. for Microbiol.; Animal Dis. Assn.; Calif. Acad. of Scis.; Malayan Natl. Hist. Soc.; Elks. Contbr. to: Jour. of Bacteriol.; Zoonoses Rsch.; Jour. of Parasitol.; Jour. of Infectious Dis.; Sci. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Medical Microbiology and Rickettsiology, Zoonoses, Ecology of Disease Agents.

MARCHELLO, Joseph Maurice (Ph.D.), Assoc. Prof., Univ. of Md., Coll. Park, Md. Home Add.: 2214 Hannon St., Hyattsville, Md.

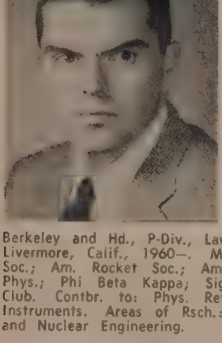


CHEMICAL ENGINEERING. b. E. Moline, Ill., Oct. 6, 1933. s. Anton Joseph and Catherine Margaret (Scavarda) M. Edn.: B.S., Univ. of Ill., 1955; Ph.D., Carnegie Inst. of Tech., 1959. m. Mary Louise Coulson, Jan. 27, 1960. Exp.: Asst. Prof., Okla. St. Univ., Stillwater, Okla., 1959-61; Vice-Pres. ,The Phalanx Corp., ibid., 1961—; Asst. Prof., Univ. of Md., 1961-62; Assoc. Prof., ibid., 1962—. Mem.: Sigma Xi; A.I.Ch.E.; A.C.S.; Am. Assn. for the Adv. of Sci.; A.R.S. Contbr. to: Al.Ch.E. Jour.; Petro. Chem. Engr. Areas of Rsch.: Mass and Heat Transfer, Fluid Mechanics; Electrochemistry of Gases; Thermodynamics.

MARGOLIS, Otto Schwarz (Ph.D.), Pres., Am. Acad. of Funeral Service, Hotel Alamac, Broadway at 71st St., N. Y. 23, N. Y.

b. Constantinople, Turkey, July 12, 1907. s. Herman and Cecile (Schwarz) M. Edn.: A.B., Western Reserve Univ., 1929; M.A., ibid., 1930; Ph.D., N. Y. Univ., 1934. m. Leona Weiss of Cleveland, Ohio, Sept. 9, 1930. d. David and Annie Weiss. c.: James A.; Donald L. Exp.: Grad. Asst., Biol., Western Reserve Univ., 1929-30; Tchng. Fellow, Biol., N. Y. Univ., 1930-34; Instr., Biol., ibid., and Univ. of Newark, 1934-36; Instr., Bacteriology and Pathol., Cleveland Coll. of Mortuary Sci., 1936-39; Instr., Bacteriol. and Pathol., Pittsburgh Inst. of Mortuary Sci., 1939-50; Dean of Students, ibid., 1945-50; Pres., Natl. Assn. of Coll. of Mortuary Sci., 1949-50, 1950-51; Secy.-Treas., ibid., 1952-59; Exec. Secy., ibid., 1959—; Pres., Am. Acad. of Funeral Serv., 1955. Mem.: Fellow, A.A.A.S.; Genetics Soc. of Am.; Human Genetics Soc.; A.A.U.P.; Sigma Xi. Contbr. to: Genetics; Am. Naturalist; Am. Med. Writers Assn. Ph.D. Dissertation: The Effect of the Gene Vestigial on Facet Number in the Bar Series of Drosophila m. Listed in: A.M.S.

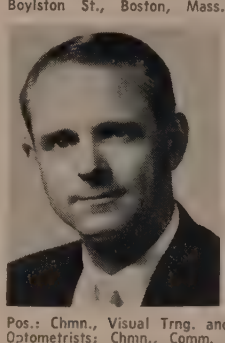
MARK, Hans Michael (Ph.D.), Assoc. Prof. of Nucl. Engrng., Univ. of Calif., Berkeley and Hd., P. Div., Lawrence Rad. Lab., Univ. of Calif., Livermore, Calif. Home Add.: 90 Avenida Drive, Berkeley, Calif. PHYSICS. b. Mannheim, Germany, June 17, 1929. s. Herman F. and Maria (Schramek) M. Edn.: A.B., Univ. of Calif., Berkeley, 1951; Ph.D., Mass. Inst. of Tech., 1954. m. Marion Thorpe, Jan. 28, 1951. c.: Jane H.; James P. Exp.: Grad. Asst. Rsch. (part-time), Mass. Inst. of Techn., Cambridge, Mass., 1951-54; Rsch. Assoc., ibid., 1954-55; Jr. Rsch. Physt., Univ. of Calif., Berkeley, Calif., 1955-56; Physt., Lawrence Rad. Lab., Univ. of Calif., Livermore, Calif., 1956-58; Asst. Prof. of Phys., Mass. Inst. of Techn., Cambridge, Mass., 1958-60; Assoc. Prof. of Nucl. Engrng., Univ. of Calif., Berkeley and Hd., P-Div., Lawrence Rad. Lab., Univ. of Calif., Livermore, Calif., 1960—. Mem.: Am. Phys. Soc.; Am. Nucl. Soc.; Am. Rocket Soc.; Am. Geophys. Union; Am. Inst. of Phys.; Phi Beta Kappa; Sigma Xi; Univ. of Calif. Faculty Club. Contbr. to: Phys. Rev.; Nucl. Phys.; Rev. of Scient. Instruments. Areas of Rsch.: Nuclear Physics, Atomic Physics and Nuclear Engineering.



MARGOLIN, Reuben Joel (Ed.D.), Assoc. Prof., of Social Sci., Dept. of Spec. Progs., Northeastern Univ., Boston, Mass.; Consulting Psychologist to V.A. Hosp., Brocton, Mass.; Lectr. in Edn., Northeastern Univ., Boston, Mass. Home Add.: 28 Halcyon Rd., Newton, Mass. COUNSELING PSYCHOLOGIST; REHABILITATION. b. Cambridge, Mass., May 7, 1918. s. Samuel and Gertrude (Prusin) M. Edn.: A.B., Northeastern Univ., 1940; M.A., Boston Univ., 1942; Ed.D., Tchrs. Coll., Columbia Univ., 1950. m. Ruth Florence Posner, May 29, 1947. c.: Kenneth Norris; Jane Pamela; Andrew Stuart. Exp.: Rehabilitation Dir., Cushing Gen. Hosp., 1945-46; Chf., Corrective Therapy, V.A. Hosp., W. Roxbury, Mass., 1946-48; Group Dynamics Consult., Tchrs. Coll., Columbia Univ., 1950; Chf. Educational Therapy, Cushing V.A. Hosp., 1950-51; Staff Dept. of Edn., 1950—; Rehabilitation Coordinator, 1951-54; Consult., Charles Hayden Goodwill Inn, 1955—; Faculty Mem., Northeastern Univ., 1953—; Counseling Psychol., Dir., Mem.-Employee Program, 1954—; Schl. Mental Health Consultant, 1958—; Assoc. Prof., Northeastern Univ., 1961—. Hon. Pos.: Chmn., Edni. Div. Natl. Conf. Christians and Jews; Chmn., Edni. Comm. and Mem. Adv. Bd., Old Colony Mental Health Assn. Mem.: Acad: Liberal Arts Honor Soc.; Registrar for Medical Rehabilitation Specialists Mass. Psychol. Assn.; Soc. for Psychol. Study of Social Issues; Am. Edn. Rsch. Soc. Author: Case Conferences in Education 1961; Monograph—Member-Employer Program, a New Approach to Rehabilitation of Chronic Mental Patient, 1958. Contbr. to: Jour. of Occupational Therapy and Rehabilitation; Military Surgeon; Jour. of Mental and Physical Rehabil.; Jour. of Bone and Joint Surgery; Archives of Phys. Med.; Jour. of Mental Hyg. Personnel and Guid. Jour.; Am. Rehabilit. Comm. Rehabilit. Rev.; Am. Archives of Rehabilit. Therapy; Jour. of Psy.; Jour. of Geriatrics.

MARK, Jesse Jarue (Ph.D.), Prof. of Biol., Alcorn Coll., Lorman, Miss. PLANT PHYSIOLOGY. b. Applespring, Tex., Sept. 24, 1908; s. Jesse J., Sr. and Lula Mae (Deason) M. Edn.: B.S., Prairie View A. & M. Coll., 1929; M.S., Ia. St. Univ., 1931; Ph.D., ibid., 1935. m. Margaret Ryam, Sept. 2, 1944. c.: Jesse J., III. Exp.: Prof., Ky. St. Coll., 1935-44; Prof., Tenn. A. & I. Coll., 1944-45; Prof., W. Va. St. Coll., 1945-50; Prof., Tex. Coll., 1952-60; Prof., Alcorn Coll., 1960—. Mem.: Beta Kappa Chi; Sigma Xi; A.A.A.S.; A.F. & A.M.; Alpha Phi Alpha; Y.M.C.A.; Community Chest; Red Cross; East. Tex. T.B. Assn. Contbr. to: Ia. Agricl. Exptl. Sta. Rsch. Bull. Areas of Rsch.: Plant Psysiol and Agronomy.

MARK, Marshall Victor (O.D.), Optometrist-Orthoptist-Lectr., 80 Boylston St., Boston, Mass. Home Add.: 205 Kent Street, Brookline, Mass. OPTOMETRY, OCULAR MOTILITY. b. Saugus, Mass., Nov. 13, 1918. s. Abraham Z. and Bessie (Lieberman) M. Edn.: O.D., Mass. College of Optometry, 1942; Grad. Studies, Schl. Optomtry, Columbia Univ., 1946. Hon. Deg.: D.O.S., Beta Sigma Kappa, 1960. m. Ruth Ann Freedman, Dec. 5, 1943. Exp.: Clinician, Orthoptics Clinic, Boston Dispensary, 1951-53; Refractionist, ibid., 1951-53; Refractionist, Mass. Eye and Ear Infirmary, Boston, 1953—; Refractionist, Mass. Memorial Hospitals, Boston, Mass., 1953—; Assoc. Editor, Optometric World, 1955—; Hd., Orthoptics Clinic, Boston Dispensary, 1958—; Faculty, Mass. Coll. of Optometry, 1958—. Hon. Pos.: Chmn., Visual Trng. and Orthoptics Comm., Mass. Soc. of Optometrists; Chmn., Comm. on Admittance, New Eng. Chapt., Am. Acad. of Optometry; Mem., Speakers Bur., Dept. of Edn., Am. Optometry Assoc.; Comm. on Adm., Reg. 1, Am. Acad. of Optom., Comm. on Visual Trng.; Lectr., Post-Grad. Courses, Am. Acad. of Optom., 1958—. Mem.: Fellow, Am. Acad. Optom.; Fellow, Am. Assn. Adv. Sci.; Mass. Soc. Optoms.; Am. Optometric Assn.; Alumni Assn., Mass. Coll. of Optometry; Beta Sigma Kappa; Kiwanis. Contbrng. Author: Clinical Orthoptic Procedure, 1954. Contbr. to: Optometric Weekly; Optical Jour. and Rev. of Optometry; Optometric World; New England Jour. of Optometry; Abstractions: Ophthalmic Lit., Br. Med. Assn.; The Optician; Am. Jour. of Optometry; Archives of Am. Acad. of Optometry; Jour. Am. Optometric Assn. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: In the field of ocular motility and orthoptics designed the following diagnostic and orthoptic units for the Keystone View Co., Meadville, Pa.; The Mark Diplopia Field Test, The Specific Muscle Calisthenics Unit; Helped design a binocular after-image test; Designed series of 2 x 2 colored projection slides demonstrating objective techniques for examining the extrinsic eye muscles.



MARK, William David (Ph.D.), Physicist, Communication Sciences Lab., Air Force Cambridge Rsch. Labs., L. G. Hanscom Field, Bedford, Mass. Home Add.: 141 Grafton St., Chevy Chase 15, Md. APPLIED MECHANICS. b. La Oroya, Peru, June 23, 1934. s. William David and Lauretta Marie (McDonald) M. Edn.: B.M.E., Catholic Univ. of Am., 1956; M.S., Mass. Inst. of Tech., 1958; Ph.D., ibid., 1962. Exp.: Thieblot Aircraft Co., Bethesda, Md., Summers, 1953-57; Assoc. Engr., Appl. Phys. Lab. of Johns Hopkins Univ., Silver Spring, Md., Summer, 1958; Rsch. Asst., Mass. Inst. of Tech., Cambridge, Mass., 1958-61; Physicist, Air Force Cambridge Rsch. Labs., Bedford, Mass., 1961—. Mem.: Am. Soc. of Mech. Engrs.; Institute of Radio Engineers; Am. Assn. for the Adv. of Sci.; Sigma Xi. Co-Author: Introduction to Random Vibration, 1962. Contbr. to: Procs. of the Fourth U. S. Natl. Congress of Applied Mechanics, 1962. Serv. Rec.:

U. S. Air Force, 1961—. Areas of Rsch.: Stochastic Problems in Engineering and Physics; Random Vibrations.

MARKOFF, Marko Kosto (Mr.), Mgr., Technical Serv. Lab., Spencer Kellogg Div. of Textron, Inc., Rsch. Ctr., 4201 Genesee St., P. O. Box 2510, Buffalo 25, N. Y. Home Add.: 182 Farmingdale Rd., Cheektowaga 25, N. Y. OILS, SYNTHETIC VEHICLES FOR PROTECTIVE COATINGS. b. Niagara Falls, N. Y., May 28, 1924. s. Kosto and Dichka (Kovacheva) M. Edn.: B.S., Niagara Univ., 1949. m. Vera Tasseff, Aug., 1949. Exp.: Rsch. Chemist, American Marietta Co., Kankakee, Ill., 1950-51; Chf. Chemist Physical Testing Lab., ibid., 1951-56; Rsch. Chemist, Spencer Kellogg and Sons, Buffalo, N. Y., 1956-61; Mgr. Tech. Serv. Lab., ibid., Div. of Textron, 1961—. Mem.: Am. Chem. Soc.; Federation of Societies for Paint Tech., A.A.A.S. Co-Author: Slurry Grind Technique. Contbr. to: Official Digest; Indl. and Engrng. Chem. Serv. Rec.: A.U.S., 1942-45. Areas of Rsch.: Oils, Vehicles for the Paint and Protective Coatings Industry—From Caulking Compounds to Automotive Enamels to Housepaints.

MARKOWITZ, Meyer Melvin (Ph.D.), Grp. Ldr., Physical Chem. and Thermodynamics, Foote Mineral Co., Rsch. and Development Labs., Route 100, Exton, Pa. Home Add.: 808 Ardmore Ave., Ardmore, Pa. PHYSICAL-INORGANIC CHEMISTRY. b. N.Y.C., Dec. 17, 1927. s. Morris Markowitz (guardian and grandfather) and Tillie (Rosenthal) M. (mother). Edn.: B.A., N. Y. Univ., 1947; Ph.D., Cornell Univ., 1953. m. Barbara Schrier, Sept. 11, 1952. Exp.: Rsch. Chem., Radio Corp. of Am., Lancaster, Pa., 1953-54; Sr. Engrng. Scientist and Assoc. Project Dir., N. Y. Univ., 1954-57; Sr. Rsch. Chem. and Grp. Ldr., Foote Mineral Co., 1957—. Mem.: Sigma Xi; Phi Lambda Upsilon; N. Y. Acad. Sci.; Am. Chem. Soc.; Am. Rocket Soc.; Am. Assn. Adv. Sci. Contbr. to: Jour. Am. Chem. Soc.; Jour. Physical Chem.; Jour. Chem. Edn.; Jour. Organic Chem.; Jour. Chem. and Engrng. Data; Analyt. Chem.; Journal of Inorganic and Nucl. Chemistry; Industrial Rsch. Areas of Rsch.: Inorganic Synthesis, High Temperature Chemistry, Differential Thermal Analysis, Thermogravimetry, Heterogeneous Equilibrium, High Energy Materials.

MARKS, Luther Whitfield, III (Ph.D.), Prof. of Physics, Central St. Coll., Edmond, Okla. Home Add.: Rt. 3, Box 42, Edmond, Okla. PHYSICS. b. Fairfax, Okla., Nov. 2, 1926. s. Luther W. and Alice (McCaulley) M. Edn.: B.S., Central St. Coll., 1949; M.S., Univ. of Okla., 1951; Ph.D., ibid., 1955. m. Willa Mae Larkin, June 10, 1948. c.: Martha Lynne; Randy; Marian Lee; Jonathan Whitfield. Exp.: Grad. and Teaching Assistant, Univ. of Okla., 1949-55; Instr., Central St. Coll., 1955; Asst. Prof., ibid., 1955-56; Assoc. Prof., ibid., 1956-58; Prof., ibid., 1958—. Hon. Pos.: Pres., Assn. of Coll. Tchrs. of Okla. Mem.: Sigma Xi; Am. Assn. of Physics Tchrs.; Okla. Acad. of Sci.; Kiwanis Internatl. Contbr. to: Proc. of Okla. Acad. of Sci.; Physical Rev. Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Electrode Processes.

MARKS, Paul Alan (M.D.), Assoc. Prof. of Med., Coll. of Physicians and Surgeons, Columbia Univ., N. Y. Home Add.: 11 Putnam Rd., Scarsdale, N. Y. INTERNAL MEDICINE, BIOCHEMISTRY AND HEMATOLOGY. b. N. Y. City, Aug. 16, 1926. s. Robert and Sara (Bohorad) M. Edn.: A.B., Columbia Coll., 1945; M.D., Columbia Univ., 1949. m. Joan Rosen, Nov. 28, 1953. c.: Andrew; Elizabeth. Exp.: Asst. Res. Med., Presby. Hosp., N.Y.C., 1951; Fellow in Med., Coll. of P. and S., and Asst. Phys., Presby. Hosp., ibid., 1952-53; Assoc. Clin. Invest. Branch, Enzymol., U. S. Public Health Serv., Bethesda, Md., 1953-55; Instr., Med., Geo. Wash. Univ., Schl. of Med., 1954-55; Assoc. Phys., Presby. Hosp., N. Y., 1955—; Instr., Med., Coll. of P. and S., Columbia Univ., N. Y., 1955-56; Asst. to Assoc. Attend. Phys., Francis Delafield Hosp., N. Y., 1955-58; Assoc. in Med., Columbia Univ., Coll. of P. & S., 1956-57; Asst. Prof., ibid., 1957-61; Visiting Phys., Francis Delafield Hosp., N. Y., 1959—; Assoc. Prof. of Med., Univ. Columbia, 1961—; Commonwealth Fellow, Visit. Scientist, Service de Biochimie Cellulaire, Pasteur Inst., Paris, 1961-62. Mem.: Am. Soc. for Clin. Invest.; Am. Soc. of Biol. Chemists; Soc. of Exptl. Biol. and Med.; Am. Fed. for Clin. Invest.; Endocrine Soc.; Am. Assn. for Cancer Rsch.; Red Blood Cell Club; N. Y. Diabetes Assn.; Harvey Soc.; Enzyme Club; Phi Beta Kappa; Alpha Omega Alpha; Chas. Janeway Prize, 1949. Contbr. to: Jour. of Biol. Chem.: Jour. of Clin. Invest.; Nature; Procs. of Natl. Acad. of Sci. Serv. Rec.: U. S. Navy, 1943-45. Areas of Rsch.: Research in Biochemistry of Blood Cell Metabolism and the Effect of Aging on Red Cells; Genetic Mechanism in Man; Teaching Clinical Biology.

MARKUNAS, Peter Charles (Ph.D.), Dir. of Analytical Rsch., R. J. Reynolds Tob. Co., Winston-Salem, N. C. Home Add.: 740 Austin Lane, Winston-Salem, N. C. ANALYTICAL CHEMISTRY. b. Chicago, Ill., Nov. 5, 1911. s. Peter and Elizabeth (Rakickas) M. Edn.: B.S., Shurtleff Coll., 1934; M.S., Univ. of Ill., 1937; Ph.D., ibid., 1940. m. Gretchen Mae Miller, April, 1941. c.: Charlene Ellen; Patricia Gayle; Marilyn Elizabeth. Exp.: Chemist, Natl. Distillers and Chem. Corp., Cincinnati, Ohio, 1940-41; Rsch. Chemist, Commercial Solvents, Terre Haute, Ind., 1941-51; Dir. Anal. Rsch., R. J. Reynolds Tob. Co., Winston-Salem, N. C., 1951—. Mem.: Sigma Xi; A.A.A.S.; Am. Chem. Soc.; C. of C. Contbr. to: Analytical Chem.; Jour. of Assn. of Official Agrici. Chemists. Areas of Rsch.: Titriemtry of Acids and Bases in Nonaqueous Solvents, Instrumental Methods of Analysis, Development of Methods of Analysis Via Functional Groups.

MARKWARDT, L. J. (Mr.), Consulting Rsch. Engr., 12 Lathrop St., Madison 5, Wis. ENGINEERING RESEARCH IN FOREST PRODUCTS. b. Lansing, Iowa, Nov. 26, 1889. s. Joseph F. and Louisa (Besch) M. Edn.: B.S. in C.E., Univ. of Wis., 1912; Prof. C.E. Deg., ibid., 1922. m. Lula Starks, June 21, 1917. Exp.: Asst. City Engr., Madison, Wis., 1912-13; Asst. Engr., Forest Products Lab., Wis., 1913-14; Instr. in Drawing and Descriptive Geometry, Univ. of Wis., 1914-17; Asst. Chf., Div. of Timber Mechanics, Forest Products Lab., 1917-39; Chf., Div. of Physics and Engrng., ibid., 1939-43; Asst. Dir., U. S. Forest Products Lab., 1944-59; Consulting Rsch. Engr., Madison, 1959—. Hon. Pos.: Chmn., Program, Forest Products Div., Fifth World Forestry Congress, Seattle, 1960; Chmn., ASTM Comm. D-7 on Wood; Chmn., ASA Sectl. Comm. A 14 on Construction, Care and Use of Ladders; Past Pres., Am. Soc. for Testing Materials, 1950-51; Vice-Pres., Internatl. Wood Rsch. Soc., 1960—; Mem., Materials Adv. Bd., Natl. Acad. of Scis., 1952-59. Mem.: A.A.A.S.; Soc. of Am. Foresters; Am. Soc. Civil Engrs.; Hon. Mem., Am. Soc. for Testing Materials; Tau Beta Pi; Sigma Xi; Chi Epsilon; Rotary; Technical Club. Co-Author: Descriptive Geometry, 1919 and subs. rev.; Strength and Related Properties of Woods Grown in the U. S., 1936; The Strength and Related Properties of Redwood, 1932. Author: Comparative Strength Properties of Woods Grown in the U. S., 1930; The Distribution and Mechanical Properties of Alaska Woods, 1931; Wood as an Engineering Material, 1943. Contbr. to: Jour. of Forestry; Civil Engrng. Gen. Int.: Conduct and Administration of research in development of wood as an Engineering Material; Development of Am. Soc. for Testing Materials and Am. Standards Assn. standards and specifications for wood and wood products; Promotion of Interchange of technical information and dvelopment of international standard methods of testing wood and wood products through membership of Conf. of Wood Tech. of Food and Agril. Organization of U. N. Areas of Rsch.: Engineering Research in Improved Utilization of Wood and Wood-base Materials; Building Design and Construction; Design Stresses for Timber.

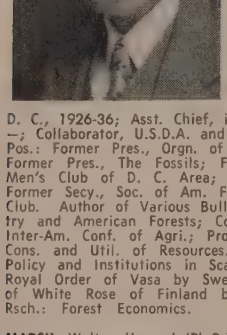
MAROPIS, Nicholas (Mr.), Sr. Physicist, Aeroprojects, Inc., West Chester, Pa. Home Add.: 1207 Gateway Lane, West Chester, Pa. PHYSICS RESEARCH, DESIGN, DEVELOPMENT OF ULTRASONIC SYSTEMS; WELDING, EXTRUSION, METALS TREATMENT. b. Slovan, Pa., May 14, 1923. s. Speros N. and Argero (Skinakis) M. Edn.: B.A., Wash. and Jefferson Coll., 1949. m. Mavis E. Holland, Aug. 6, 1945. c.: Samuel H.; Colin N.; Janice Gail. Exp.: Physicist, U. S. Naval Ord. Lab., Silver Spring, Md., 1950-54; Project Ldr., R. M. Parsons Co., Frederick, Md., 1954-55; Sr. Physicist, Aeroprojects, Inc., 1955—. Mem.: Franklin Inst., A.A.A.S.; Acoustical Soc. of Am. Co-Author: Fundamentals of Ultrasonic Welding, 1959, 1960. Serv. Rec.: U.S.A.F., W.W. II. Areas of Rsch.: Industrial Application of High Power Ultrasonic Energy; Ultrasonic Welding; Ultrasonic Metal and Ceramic Extrusion Equipment; Ultrasonic Liquid Metals Treatment.

MARSH, Frank Lewis (Ph.D.), Dir., GeoScience Rsch. Inst., Berrien Springs, Mich. Home Add.: 216 Hillcrest Dr., Berrien Springs, Mich. PHILOSOPHICAL BIOLOGY, HISTORICAL GEOLOGY. b. Aldeo, Ill., Oct. 18, 1899. s. Wilson V. and Anabel (Kendall) M. Edn.: B.A., B.S., Emmanuel Missionary Coll., 1927-29; M.S., Northwestern Univ., 1935; Ph.D., Univ. of Neb., 1940. m. Alice Garrett, June, 1927. c.: John Kendall; Sylvia Rae. Exp.: Instr. Sci. and Math., Hinsdale Acad., Hinsdale, Ill., 1929-34; Grad. Asst. Zool., Northwestern Univ., Evanston, Ill., 1934-35; Instr. to Asst. Prof. to Assoc. Prof. to Prof., and Hd. of Dept. of Biol., Union Coll., Lincoln, Neb., 1935-50; Prof. of Biol. and Hd. Dept. of Biol., Emmanuel Missionary Coll., Berrien Springs, Mich., 1950-58; Dir., Rocky Mt. Biological Sta., Chambers Lake, Fort Collins, Colo., summer, 1948-49; Dir., GeoScience Rsch. Inst., Berrien Springs, Mich., 1958—. Mem.: Am. Scientific Affiliation; A.A.A.S.; Ecological Soc. of Am.; Geological Soc. of Am.; Soc.

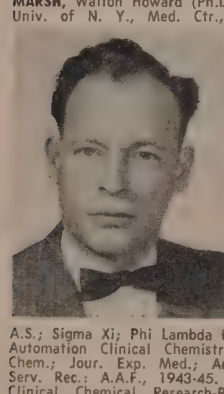
for the Study of Evolution; Sigma Xi. Author: Evolution, Creation, and Science, 1947; Studies in Creationism, 1950; Life, Man, and Time, 1957. Contbr. to: Nature Mag.; Canadian Entomologist; Ecology; Annals of Entomological Soc. of Am.; Psyche; Jour. of N. Y. Entomological Soc.; Botanical Gazette. Area of Rsch.: Philosophical Biology, Historical Geology.

MARSH, Raymond Eugene (Mr.), Retired, Asst. Chief Emer., U. S. Forest Serv., Wash., D. C. Home Add.: 4500 47th St., N.W., Washington 16, D. C. FORESTRY; FOREST ECONOMICS; FOREST POLICY IN U.S.A. AND SCANDINAVIA. b. Westport, N. H., Jan. 27, 1885. s. Walter E. and Jessie H. (Tottingham) M. Edn.: B.S., Dartmouth Coll., 1908; M.F., Yale Forest Schl., 1910. m. Lillian Sutherland, Sept. 6, 1913. c.: James S.; Mrs. Nancy M. McGhee. Exp.: Forest Asst., U. S. Forest Serv., Springerville, Ariz., Alamagordo and Taos, N. M., 1910-12; Dept. Forest Supvr. and Forest Supvr., ibid., Taos, N. M., 1913-17; Forest Supvr., ibid., Flagstaff, Ariz., 1917-19; Asst. Regional Forester, ibid., S.W. Dist., Aubuquerque, N. M., 1920-26; Chf. Div., Forest Econ. and Asst. Chf., ibid., Br. of Rsch., Wash., D. C., 1926-36; Asst. Chief, ibid., 1936-50; Retired, ibid., 1951—; Collaborator, U.S.D.A. and U. S. Forest Serv., 1951—. Hon. Pos.: Former Pres., Orgn. of Profl. Employees, Dept. of Agri.; Former Pres., The Fossils; Former Pres., Retired Forest Serv. Men's Club of D. C. Area; and others. Mem.: Fellow and Former Secy., Soc. of Am. Foresters; Fellow, A.A.A.S.; Cosmos Club. Author of Various Bulletins. Contbr. to: Jour. of Forestry and American Forests; Congressional Reports; Proc. Second Inter-Am. Conf. of Agri.; Proc., U. N. Scientific Conf. on the Cons. and Util. of Resources. Gen. Int.: Authority on Forest Policy and Institutions in Scandinavian Countries; Awarded the Royal Order of Vasa by Swedish Govt., 1958; Awarded Order of White Rose of Finland by Finish Govt., 1959. Areas of Rsch.: Forest Economics.

MARSH, Walton Howard (Ph.D.), Assoc. Prof. Dept. Pathol., State Univ. of N. Y., Med. Ctr., Brooklyn 3, N. Y. Home Add.: 8 Sycamore Rd., Glen Cove, N. Y. BIOCHEMISTRY. b. Bay City, Mich., Mar. 26, 1919. s. Howard Daniel and May Louise (Baker) M. Edn.: B.A., Columbia Coll., 1940; M.S., Brooklyn Poly. Inst., 1943; Ph.D., Western Reserve Univ., 1951. m. Helen Rome, Feb., 1944. c.: Donald Keith; Barbara Leslie. Exp.: Rsch. Asst., Chemotherapy Div., Am. Cyanamid Co., Stamford, Conn., 1945-46; Sr. Instr., Biochemistry Dept., Western Reserve Univ., Cleveland, Ohio, 1951-54; Rsch. Biochemist, Crile V.A. Hosp., Cleveland, Ohio, 1951-54; Assoc. Prof., Dept. of Pathol., St. Univ. of N. Y. Med. Ctr., Brooklyn, N. Y., 1954—. Mem.: Am. Chem. Soc.; Am. Assn. Clin. Chemists; N. Y. Acad. Sci.; A.A.-A.S.; Sigma Xi; Phi Lambda Upsilon; Phi Gamma Delta. Author: Automation Clinical Chemistry, 1962. Contbr. to: Jour. Biol. Chem.; Jour. Exp. Med.; Am. Jour. Clin. Path.; Clin. Chem. Serv. Rec.: A.A.F., 1943-45. Areas of Rsch.: Biochemical and Clinical Chemical Research-Pressor Polypeptides—Panceatic Enzyme Alterations During Degeneration and Regeneration; Nucleetide-Protein Complexes During Regeneration.



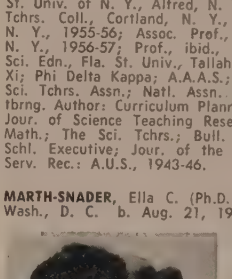
MARSHALL, Franklin Nick (Ph.D.), Pharmacologist, Pitman-Moore Co., Indianapolis, Ind. Home Add.: 6003 W. 25th St., Speedway, Ind. PHARMACOLOGY. b. Chicago, Ill., July 5, 1933. s. John N. and Elizabeth (Hegel) M. Edn.: B.S., State Univ. of Iowa, 1957; M.S., ibid., 1959; Ph.D., ibid., 1961. m. Nancy R. Emmering, Nov. 24, 1955. Exp.: Instr., State Univ. of Iowa., 1961; Pharmacologist, Pitman-Moore Co., Indianapolis, Ind., 1961. Mem.: Sigma Xi; Scientific Rsch. Soc. of Am.; N. Y. Acad. of Sci.; Natl. Assn. Adv. Sci.; Iowa Acad. of Sci.; Gamma Alpha. Contbr. to: Jour. of Pharmacol. and Expmtl. Therapeutics; Anesthesiology; Proc. Soc. for Expmtl. Biol. and Med. Areas of Rsch.: Neuromuscular, Autonomic and Renal Pharmacology; Structure-Activity Relationships.



MARSHALL, Clifford Wallace (Ph.D.), Asst. Prof. Math., Polytech. Inst. of Brooklyn, Brooklyn, N. Y. Home Add.: 264 North Ocean Ave., Patchogue, N. Y. APPLIED MATHEMATICS. b. N. Y. C., Mar. 11, 1928. s. Clifford W. and Virginia (Roe) M. Edn.: B.A., Hofstra Coll., 1949; M.A., Syracuse Univ., 1950; M.S., Poly. Inst. of Brooklyn, 1954; Ph.D., Columbia Univ., 1961. m. Adele Kentoffio, Nov., 1955. Exp.: Staff Mem., Inst. for Defense Analyses, Wash., D. C., 1958-59; Prin. Engr., Republic Aviation Corp., Farmingdale, N. Y., 1959-60; Asst. Prof., Poly. Inst. of Brooklyn, N. Y., 1960—. Mem.: A.A.A.S.; Am. Math. Soc.; Math. Assn. of Am.; Operations Rsch. Soc. of Am.; Soc. for Indus. and Applied Math.; Soc. for General Systems Research. Contbr. to: Operations Research. Areas of Rsch.: Combinatorial Analysis, Graph Theory, Probability and Mathematical Statistics.

MARSHALL, J. Stanley (Ph.D.), Prof. of Sci. Edn., Fla. St. Univ., Tallahassee, Fla. Home Add.: 519 Vinnedge Ride, Tallahassee, Fla. SCIENCE EDUCATION. b. Cheswick, Pa., Jan. 27, 1923. s. Walter and Mildred (Crawford) M. Edn.: B.S., Slippery Rock St. Tchrs. Coll., 1947; M.S., Syracuse Univ., 1950; Ph.D., ibid. 1956. m. Ruth Cratty, June, 1944. c.: David; Sue Ellen; John. Exp.: Tchr., Mynderse Acad., Seneca Falls, N. Y., 1947-52; Instr., St. Univ. of N. Y., Alfred, N. Y., 1952-53; Asst. Prof., St. Univ. Tchrs. Coll., Cortland, N. Y., 1953-55; Instr., Syracuse Univ., N. Y., 1955-56; Assoc. Prof., St. Univ. Tchrs. Coll., Cortland, N. Y., 1956-57; Prof., ibid., 1957-58; Prof. and Hd. Dept. of Sci. Edn., Fla. St. Univ., Tallahassee, Fla., 1958—. Mem.: Sigma Xi; Phi Delta Kappa; A.A.A.S.; Am. Assn. of Phys. Tchrs.; Natl. Sci. Tchrs. Assn.; Natl. Assn. for Rsch. in Sci. Teaching. Contbrng. Author: Curriculum Planning for the Gifted, 1960. Editor: Jour. of Science Teaching Research. Contbr. to: Schl. Sci. and Math.; The Sci. Tchrs.; Bull. of N. Y. St. Sci. Tchrs. Assn.; Schl. Executive; Jour. of the Fla. Edn. Assn.; Fla. Schl. Bull. Serv. Rec.: A.U.S., 1943-46.

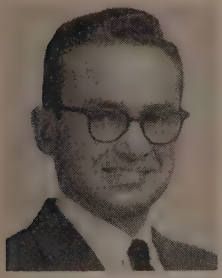
MARTH-SNADER, Ella C. (Ph.D.), Dist. of Columbia Tchrs. Coll., Wash., D. C. b. Aug. 21, 1909, Alton, Ill. d. Louis G. and Elizabeth (Krauskopf) M. Edn.: A.B., Edn., Harris Tchrs. Coll., 1930; M.S., St. Louis Univ., 1935; Ph.D., Math., St. Louis Univ., 1944. m. Daniel W. Snader, July 28, 1956. Exp.: Tchr., St. Louis Pub. Schls., 1930-44; Instr. in Math., Southeast Mo. St. Coll., 1944; Asst. Prof., Math., Harris Tchrs. Coll., 1945-47; Consultant in Arith., St. Louis Pub. Schls., 1945-49; Dean of Women, Harris Tchrs. Coll., 1947-52; Assoc. Prof., 1949-52; Lectr. in Edn., St. Louis Univ., Summers, 1945-47; Prof. of Math., and Chmn. of the Div. of Math. and Business Edn., Dist. of Columbia Tchrs. Coll., Wash., D. C., 1952-56; Dept. Math., Chicago Tchrs. Coll., Chicago, Ill., 1956-57; Asst. Prof., Univ. of Ill., 1957-58; Chicago Tchrs. Coll., 1958-61; Dist. of Columbia Tchrs. Coll., 1961—. Mem.: Central Assn. of Sci. and Math. Tchrs., Bd. of Dirs., 1952-54; A.M.S.; M.A.A.; Natl. Coun. of Tchrs. of Math.; N.E.A.; A.A.A.S.; S.I.A.M.; N.V.G.A.; Am. Personnel and Guidance Assn.; A.A.U.P.; Sigma Xi; Pi Mu Epsilon; Theta Sigma Upsilon; N. Y. Acad. of Sci. Contbr. to: Duke Math. Jour.; Grade Tchrs. Ph.D. Dissertation: Further Properties of Garvin's F-Series. Travel: N. Am.; Central Am. Hobbies: Golf; Music. Listed in: A.M.S.



MARTIN, Albert, Jr. (Ph.D.), Prof. of Biol., 1155 Murrayhill Ave., Pittsburgh 17, Pa. GENETICS AND BIO-PHYSIOLOGY. b. Camden, N. J., Dec. 10, 1916. s. Albert and Mary Louise (Schwartz) M. Edn.: B.S., Univ. of Pittsburgh, 1942; M.S., ibid., 1946; Ph.D., ibid., 1947. m. Phyllis Cook of Sewickley, Pa., Dec. 29, 1939. d. Alice and Henry Cook. c.: Ralph K.; Patricia Ann; Richard A. Exp.: Mount Mercy Coll., 1946-53; Chatham Coll., 1952-53; Editor of the Proc. of the Pa. Acad of Sci., 1953-59; Assoc. Mem. of the Grad. Schl. Faculty, Univ. of Pittsburgh, 1951-54; Microbiologist, Rsch. Biologist, V.A. Neuropsychiatric Hosp., Pittsburgh, Pa., 1953—; Lectr. in Biol., Univ. of Pittsburgh, 1946-54; LCDR, U.S.-N.R., 1951-56; CDR, 1956—; Rsch., Woods Hole, Mass., 1940-42; Tissue Culture, MIB Hosp., Cooperstown, N. Y., 1954; Guest Lectr., Univ. of Pittsburgh and Chatham Coll., 1954—. Hon. Pos.: Pres. Elect of Pa. Acad. of Sci., 1958; Pres., ibid., 1959-60. Mem.: Sigma Xi; Phi Sigma; Kappa Phi Kappa; Am. Genetics Soc.; Rsch. Soc. of Am.; Pa. Acad. of Sci.; Am. Assn. of Univ. Profs.; Human Genetics Soc.; Genetic Soc. of Am.; A.A.A.S.; Am. Assn. Anat.; Am. Soc. for Microbiol. Author: An Introduction to the Genetics of Habrobracon juglandis, 1947. Co-Author: Whom God Has Joined, 1953. Contbr. to: Genetics; The Sci. Counselor; Pa. Acad. of Sci.; Handbook of Biological Data. Ph.D. Dissertation: The Present Dynamics of the Linkage Groups in Habrobracan juglandis Ashmead. War Record: Lt., U. S. Navy Res., 1942-45. Travel: Pacific Islands; Hawaii; Iwo Jima; Saipan; Alaska; Europe. Listed in: A.M.S.; Who Knows—and What; A.A.A.S. Dir. Gen. Int.: A.A.A.S., Fellow, 1959.; Recd. 1959 Darbaker Award for Rsch. in Microbiology, Presented by the Pa. Acad. of Sci.

MARTIN, Clare Stephen (Ph.D.), Prof. Chem., Bowling Green St. Univ., Bowling Green, Ohio. Home Add.: 331 N. Church St., Bowling Green, Ohio. CHEMISTRY. b. Loogootee, Ind., Nov. 30, 1888. s. Harry A. and Laura K. (Brittain) M. Edn.: B.S., Ohio St. Univ., 1911; M.S., ibid., 1920; Ph.D., ibid., 1923. m. Hazel E. Breese, June 14, 1913. c.: Dorothy Phyllis M. Potts. Exp.: Tchr., H. Schls., W. Va. and Ohio, 1911-18; Prof., Chem., Bowling Green St. Univ., 1923-59; Chmn., Dept. Chem., ibid., 1923-53. Mem.: Am. Chem. Soc.; A.A.A.S.; Ohio Acad. Sci.; Alpha Tau Omega; Phi Lambda Upsilon; Sigma Xi. Areas of Rsch.: Analytical Chemistry.

MARTIN, Daniel S. (M.D.), Assoc. Prof. of Surg. and Dir., Surgical Rsch. Labs., Univ. of Miami, Schl of Med., Dept. of Surgery, Jackson Memorial Hosp., 1700 N.W. 10th Ave., Miami 36, Fla. Home Add.: 3939 Leafy Way, Coconut Grove, Miami, Fla. SURGERY AND CANCER RESEARCH. b. Brooklyn, N. Y., Oct. 29, 1921. s. Dr. Jacob and Rose Shapiro. Edn.: Cornell Univ., 1941; M.D., N. Y. Univ. Coll. of Med., 1944. m. Bette Finch, Feb. 15, 1947. c.: Scott; Gail; Dee; Lee Ann. Exp.: Attending in Surgery, Presby. Hosp. and Francis Delafield Hosp., N.Y.C.; Instr. in Surg., Coll. of Pyhsicians and Surgeons, Columbia Univ., 1955-58; Assoc. Prof. of Surgery, and Dir., Surgical Rsch. Labs., Univ. of Miami Schl. of Med., 1958—; Attending in Surgery, Jackson Memorial Hosp., Miami, Fla., 1958—; Consult. in Surg., Vets Hosp., Coral Gables, Fla., 1959—. Mem.: Am. Assn. for Cancer Rsch., Inc., N. Y. Acad. of Scis.; N. Y. Co. Med. Soc.; Am. Med. Assn.; Harvey Soc.; Royal Soc of Med., England. Contbr. to: Science; Jour. Pharm. and Exptl. Ther.; Cancer; Cancer Rsch.; Proc. Soc. Exptl. Biol. and Med.; Jour. Biol. Chem.; Proc. Am. Assn. Cancer Rsch.; Jour. of the Natl. Cancer Inst., and others. Serv. Rec.: U. S. Army, 1946-48. Gen. Int.: Mead Johnson Award for Graduate Trng. in Surgery, 1955; Dazian Fdtn. Fellowship for Med. Rsch., 1951; Damon Runyon Cancer Rsch. Fellow, 1949-50; Diplomate Am. Bd. of Surgery, 1956. Areas of Rsch.: Cancer Rsch. and Gastric Physiology.



MARTIN, Dial Franklin (Ph.D.), Leader, Pink Boilworm Investigations, P.O. Box 1033, Brownsville, Tex. Home Add.: 1154 Camwood Pl., Brownsville, Tex. ENTOMOLOGY. b. Gilmer, Upshur Co., Tex., Apr. 30, 1915. s. Gabe F. and Clyde (Pounds) M. Edn.: B.S., Tex. A. and M. Coll., 1939; M.S., ibid., 1942; Ph.D., Ia. State Coll., 1950. m. Eva Mildred Jones, Feb., 1939. Exp.: Asst. Prof., A. and M. Coll. of Tex., 1939-42; Prof. of Entomol., ibid., 1946-57; Entomologist, U.S.-D.A., A.R.S., Brownsville, Tex., 1957—. Mem.: Sigma Xi; A.A.-A.S.; Tex. Acad. of Sci.; Entomol. Soc. of Am.; Kiwanis Club. Co-Author: Cotton Insect of United States, 1942. Contbr. to: Jour. of Econ. Entomol.; Ia. Jour. of Sci. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Cotton Insect Control.

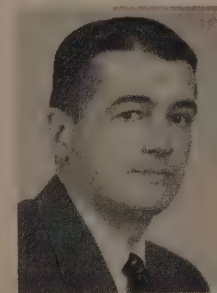
MARTIN, Elmore Atmar, Jr. (Ph.D.), Chf. Psycholt., Prog. Dir., S. C. State Hosp., Columbia, S. C. Home Add.: 2904 Stratford Rd., Columbia, S. C., SOCIAL CLINICAL PSYCHOLOGY (GROUPS, TEAMS, HUMAN RELATIONS, SOCIAL PROCESS, WARD AND INSTITUTION ORGANIZATION AND CHANGE). b. Columbia, S. C., June 6, 1913. s. Elmore Atmar and Emma Catherine (Killian) M. Edn.: A.B., Univ. of S. C., 1934; Ph.D., Univ. of Calif., L. A., 1946. m. Nadine Virginia Robinson, Sept. 25, 1942. c.: Dana Joan; David Elmore; Noelie Jean; M'Lissa K; Susan Carol. Exp.: Tchng. Asst., Univ. of Calif., L. A., Calif., 1938-41; Clin. Psychol., Vet. Adm. Ctr., L. A., Calif., 1945-48; Chf. Psychol., St. Hosp. So., Blackfoot, Idaho, 1948-54; Rsch. Psycholt., Vet. Admin. Hosp., Knoxville, Ia., 1954-56; Chf. Psycholt., S. C. State Hosp., 1956—; Assoc. Prof., Univ. of S. C., 1956—. Hon. Pos.: Dir. of Rsch., Grant on Studies of Group and Ward Devel., Idaho State Hosp. So., 1952-54; Dir. Rsch. Devel. Grant, S. C. St. Hosp., 1957-62. Mem.: Sigma Xi; Pi Gamma Mu; Am. Psychol. Assn.; Am. Grp. Therapy Assn.; Am. Assn. for the Adv. of Sci.; Am. Assn. Univ. Profs.; S. C. Acad. of Sci.; S. C. Psychol. Assn., Pres., 1960. Author: Relation of Age to Productivity in Southern California Industry, 1946; Toward A Theory of Group Development, Co-Author, 1957. Contbr. to: Internatl. Jour. Grp. Psychotherapy. Serv. Rec.: U. S. Navy, 1942-45. Gen. Int.: Hosp., won Am. Psychiat. Assn. Award, 1954. Areas of Rsch.: Groups and Wards as Social Systems for Therapeutic Use; Developing Therapeutic Interdisciplinary Terms; Developing Sociological Prescriptions for Remotivation.

MARTIN, J. Rogers (Mr.), Consulting Engr., P. O. Box 7352, Oklahoma City, Okla. ASPHALTS AND ASPHALT PAVEMENTS. b. Hillsboro, Tex., Feb. 13, 1909. s. R. B. and Lora (Rogers) M. Edn.: B.S., Univ. of Tex., 1935. Hon. Deg.: Prof. Deg., C.E., Okla A. and M. Coll., 1949. m. Arlon Ruth Crowell, Dec. 24, 1935. c.: Charles Rogers; Mary Suzanne. Exp.: Resigned as Chf. Lab. Engr., Dev. Curing Index for Cut-Back Asphalts, Tex. Hwy. Dept., 1935-47; Rsch. Prof., Okla. A. and M. Coll., Stillwater, Okla., 1947-51; Conducted Adult Short Courses in Hwy. Constrn., Collaborated in Dev. of Effective Specific Gravity for Fine Aggregates, Hygroscopic Method for Determining Saturated Surface Dry Point for Fine Aggregate Evaporative Index; Consulting Work in Civil Engrng., Engr. Mgr., Hot Mix Asphaltic Concrete Assn. of Okla., Inc., Oklahoma City, Okla., 1951-61; Consulting Engr., 1961—. Mem.: Sigma Xi; Hwy. Rsch. Bd.; Assn. of Asphalt Paving Tech.; Natl. Soc. of Prof. Engrs.; Okla. Engrs. Club; Chi Epsilon; Rotary. Contbr. to: Roads and Sts., Public Works; Proc. of Asphalt Paving Tech. Special Int.: Asphalt and Asphalt Paving Tech. Co-author: "Design and Construction of Asphalt Pavements," 1958. Special Int.: Asphalt and Asphalt Paving.

MARTIN, Kent Edwin (M.D.), Physician, 6762 Bramble Ave., Cincinnati, Ohio. Home Add.: 4770 Burley Hills Dr., Cincinnati 43, Ohio. MEDICINE. b. New York, N. Y., July 16, 1903. s. Edwin Moore and Jennie (Stewart) M. Edn.: A.B., Univ. of Cincinnati, 1924; M.B., ibid., 1931; M.D., ibid., 1932. m. Rachel Field, Dec. 8, 1933. Exp.: Instr., Xavier Univ., 1925-27; Clinician-Cint., Gen. Hosp., 1933-37; Attending Staff, Bethesda Hosp., 1935-59; Attending Staff, Our Lady of Mercy Hosp., 1946—; Attending Staff, Christ Hosp., 1937—; Dept. Dir., Christ Hosp., 1950-52; Secy.-Treas., Christ Hosp. Staff, 1957-59; Vice Pres., Christ Hosp. Staff, 1959-61; Board Mem., Heart Assn., 1959-61. Hon. Pos.: Pres., Med. and Dental Staff of the Christ Hosp., Cincinnati, Ohio. Mem.: A.M.A.; Ohio State Med. Assn.; Cincinnati Acad. Med.; A.A.A.S.; Am. Heart Assn.; Bd. Trustees T.B. League; Am. Genetics Soc.; Sigma Chi. Serv. Rec.: U.S.N.R., 1942-48. Areas of Rsch.: Clin. Drug Investigation.

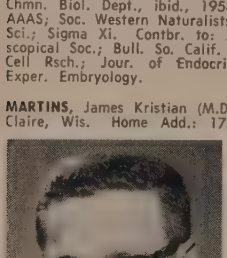
MARTIN, Truman Glen (Ph.D.), Assoc. Prof. of Animal Genets., Dept. of Animal Scis., Purdue Univ., Lafayette, Ind. Home Add.: Box 136, Battle Ground, Ind. GENETICS AND GROWTH. b. Wortham, Tex., May 24, 1928. s. Reuben Mitchell and Mary (Adams) M. Edn.: B.S., A. and M. Coll. of Tex., 1949; M.S., Ia. State Univ., 1951; Ph.D., ibid., 1954. m. Marjorie Folkers, Dec. 22, 1950. c.: Glen Warren; Merri Helen; Paul Michael. Exp.: Grad. Asst., Ia. State Univ., Ames, Ia., 1949-51; Grad. Asst., ibid., 1953-55; Asst. to Assoc. Prof., Purdue Univ., 1955—. Mem.: Am. Assn. of Dairy Sci.; Am. Soc. of Animal Sci.; Biometric Soc.; Sigma Xi; Gamma Sigma Delta. Contbr. to: Jour. of Dairy Sci.; Jour. of Animal Sci. Serv. Rec.: U. S. Army, 1951-53. Areas of Rsch.: Influence of Mating Systems and Selection on Growth, Reproduction, Lactation, and Response to Estrogens; Methods of Measuring Body Composition and Factors Influencing Protein to Fat Ratio in Animals.

MARTIN, William Bradley (M.D.), Private Practice, Internal Med., 507 Med. Arts Bldg., Duluth, Minn. Home Add.: 2711 E. 8th St., Duluth, Minn. INTERNAL MEDICINE; CARDIOLOGY; PHYSIOLOGY OF CARDIOVASCULAR SYSTEM. b. Duluth, Minn., Apr. 12, 1918. s. Edward Thomas and Jane (Ellis) M. Edn.: B.S., Univ. of Minn., 1939; M.B., ibid., 1941; M.D., ibid., 1942; M.S. in Med., ibid., 1949. m. Dorothy Ann Eusterman, Nov. 8, 1949. c.: William, III; Diane; Charlaine; Todd; Quenton; Maureen. Exp.: Ist Asst., Metabolic Sect., Mayo Clinic, Rochester, Minn., 1949; Active Staff, St. Marys and St. Lukes Hosp., Duluth, Minn., 1953-62; Priv. Practice, Internal Med., Duluth, Minn., 1962—. Hon. Pos.: Chmn. Pub. Health and Ref. Comm., St. Louis Co. Med. Soc., 1960—; Fellow, Am. Coll. of Cardiol., 1962; Editor, Co. Bull., 1962; Mem., Econ. Comm., St. Louis County Medical Society, 1958; Board of Directors, Minn. Heart Assn., 1958-60; Program Chmn., Minn. Soc. of Diseases of the Heart and Circulation, 1960. Mem.: Minn. Sta. Med. Soc.; Am. Med. Assn.; Minn. Heart Assn.; Am. Heart Assn.; Minn. Soc. of Dis. of the Heart and Circulation; Minn. Soc. of Internal Med.; Am. Diabetes Assn.; Alumni Assn. of the Mayo Found.; Sigma Xi; Am. Coll. of Phys.; Fellow; Am. Coll. Chest Phys., Fellow; Am. Bd. of Internal Med.; Nu Sigma Nu; Kitchie Gammi Club; Northland Country Club; Certified Subspecialty, Cardio-Vascular Disease, 1961. Contbr.

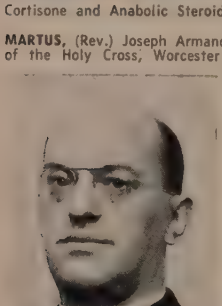


to: Am. Jour. of the Med. Scis.; Minn. Med.; Am. Jour. of Physiol.; Annals of Internal Med.; Procs. of Mayo Clinic; Hosp. Corps Quarterly. Serv. Rec.: U. S. Navy, 1942-46. Gen. Int.: Awarded E. Starr Judd Prize for Thesis in 1949; Robert L. Nelson Memorial Lectureship Award, St. Marys Hosp.

MARTIN, Walter Edwin (Ph.D.), Prof. of Biol., Univ. of Southern Calif., Los Angeles, Calif. Home Add.: 2185 Warmouth St., San Pedro, Calif. PARISITOLOGY, EXPERIMENTAL EMBRYOLOGY. b. DeKalb, Ill., Jan. 14, 1908. s. Walter S. and Tillie (Secora) M. Edn.: B.Ed., Northern Ill. State Univ., 1930; M.S., Purdue Univ., 1932; Ph.D., ibid., 1937. m. Ruth V. Butler, June, 1934. c.: Carol; John; Judith; David. Exp.: Instr., Purdue Univ., Lafayette, Ind., 1934-37; Asst. Prof. to Full Prof., DePauw Univ., Greencastle, Ind., 1937-47; Assoc. Prof. to Prof., Univ. of So. Calif., Los Angeles, Calif., 1947—; Chmn., Zool. Dept., ibid., 1948-54; Chmn. Biol. Dept., ibid., 1954-58. Mem.: Am. Soc. Parisitol.; AAAS; Soc. Western Naturalists; Am. Soc. Zool.; So. Calif. Acad. Sci.; Sigma Xi. Contbr. to: Jour. Parisitol.; Trans. Am. Microscopical Soc.; Bull. So. Calif. Acad. of Sci.; Pacific Sci.; Exper. Cell Rsch.; Jour. of Endocrin. Areas of Rsch.: Parisitology, Exper. Embryology.

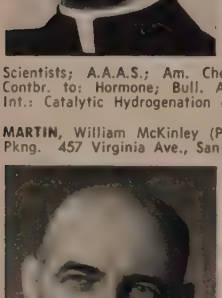


MARTINS, James Kristian (M.D.), Physician, 206 Fifth Ave., Eau Claire, Wis. Home Add.: 1728 Skeels Ave., Eau Claire, Wis. INDUSTRIAL MEDICINE; CLINICAL INVESTIGATION. b. Chicago, Ill., July 14, 1917. s. Harry J. and Alice (Skinner) M. Edn.: A.A., North Park Coll., 1940; B.S., Univ. of Ill., 1942; M.D., ibid., 1944. m. Josette Ann Holt, Dec., 1949. c.: Jac; Jan; Jon; James; Judy. Asst. Plant Phys., Abbott Labs., North Chicago, Ill., 1946-49; Plant Hygienist, John Deere Tractor Works, Waterloo, Ia., 1949-50; Plant Phys., White Machine Works, Eau Claire, Wis., and Gen. Practice of Med., Eau Claire, Wis., 1946—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Am. Acad. of Gen. Practice. Serv. Rec.: U.S.N., 1944-46, 1952-54. Gen. Int.: Ross Award Winner, 1959. Areas of Rsch.: Clinical Investigation in Cortisone and Anabolic Steroids, Skin Diving Medicine.



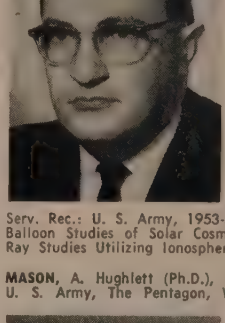
MARTUS, (Rev.) Joseph Armand, S.J., Assoc. Prof. of Chem., Coll. of the Holy Cross, Worcester 10, Mass. ORGANIC CHEMISTRY. b. Boston, Mass., Mar. 12, 1909. s. Henry and Anne (Mischler) M. Edn.: A.B., Boston Coll., 1933; M.A., ibid., 1934; Lic. Phil., Weston Coll., 1934; M.S., Coll. of the Holy Cross, 1936; Ph.D., Clark Univ., 1952. Exp.: Instr. in Chem., Boston Coll., 1936-37; Ordained to Priesthood, Weston Coll., 1940; Instr. in Chem., Cranwell Prep. Schl., 1942-44; Instr. in Chem., Kingston, Jamaica, B.W.I., 1944-47; Instr. in Chem., Coll. of the Holy Cross, Worcester, Mass., 1947-48; Asst. Prof. of Chem., ibid., 1952-56; Assoc. Prof. and Chmn., Dept. of Chem., ibid., 1956—. Hon. Pos.: Chmn., Cent. Sect., New Eng. Assn. of Chem. Tchrs., 1952; Secy., ibid., 1956-61. Mem.: Am. Assn. of Jesuit Scientists; A.A.A.S.; Am. Chem. Soc.; Worcester Engrng. Soc. Contbr. to: Hormone; Bull. Am. Assn. Jesuit Scientists. Spec. Int.: Catalytic Hydrogenation of Amines and Chelation.

MARTIN, William McKinley (Ph.D.), Consultant, Food Processing, Pkng. 457 Virginia Ave., San Mateo, Calif. FOOD TECHNOLOGY; ENGINEERING EQUIPMENT. b. Sylvatus, Va., Sept. 14, 1896. s. Madison Dalton and India Melvina (Alderman) M. Edn.: B.S.A., Univ. of Alberta, 1924; M.Sc., ibid., 1926; Ph.D., Univ. of Minn., 1929. m. Iris Brough, Dec. 27, 1929. c.: Jacquelyn. Exp.: Bursary, Natl. Rsch. Council of Can., 1924-25; Studentship, ibid., 1925-26; Fellowship, ibid., 1926-27; Caleb Dorr Fellow, University of Minn., 1928-29; Assistant Chemist, Mont. State Agric. Exptl. Sta., 1929-30; Asst. Prof., ibid., 1930-31; Assoc. Prof., ibid., 1931-34; Rsch. Chem., Rsch. Dept., Am. Can Co., 1934-38; Group Supvr., ibid., 1938-45; Dir. of Rsch. and Development, James Dole Engrng. Co., San Francisco, Calif., 1945-52; Vice-Pres., ibid., 1952-54; Exec. Vice-Pres., Anderson Foods, Div. of Heublein, Inc., 1955-57; Tech. Consult., 1957—. Mem.: Am. Chem. Soc.; Inst. of Food Technologists; Sigma Xi; Phi Kappa Phi; Phi Tau Sigma; Gamma Alpha. Contbr. to: Jour. Phys. Chem.; Indus. and Engrng. Chem.; Food Engrng; The Canner; Canning Age; Food Packer; Plant Physiol.; Ceareal Chem. Gen. Int.: Invention of the Martin Aseptic Canning System (Food E Award, 1951); Tenderometer and Other Inventions; 40 U. S. Foreign Patents on Apparatus and Machines, mostly in the Fi Processing Field. Special Int.: Food Technol.; Short High Temp ature Sterilization of Foods.



MASCH, Frank Dewey, Jr. (Ph.D.), Asst. Prof. of Civil Engrn Univ. of Tex., Austin 12, Tex. Home Add.: 206 Lola Austin, Tex. HYDRAULIC EN NEERING. b. San Antonio, Te Jan. 23, 1933. s. Frank D., and Rose S. (Lee). M. Edn.: B C.E., Univ. of Tex., 1955; M. C.E., ibid., 1957; Ph.D., Un of Calif., Berkeley, 1962. Bernice H. Schindler, Sept. 1955. c.: Janet Lynn; James Audrey Jean. Exp.: Instr., De of Civil Engrng., Univ. of Te Austin, Tex., 1955-59; Rsch. Eng ibid., 1957-59; Tchng. Assoc., D of Hydraulic and Sanitary Engrn Univ. of Calif., Berkeley, 1959-6 Sci. Faculty Fellow and Asst. Rs Engr., Inst. of Engrng. Rsc ibid., 1960-62; Asst. Prof., De of Civil Engrng., Univ. of Te 1962—. Mem.: Am. Soc. of C. Am. Geophys. Union; Am. S for Engrng. Edn.; Tau Beta Pi; Chi Epsilon; Sigma Xi. Author: Cnoidal Waves-Tables of Functions, 1961. Contbr. Jours. of Hydraulics Div., Waterways and Harbors Div., Mech. and Found. Div., in Procs. of Am. Soc. of Civil Engr Jour. of Geophys. Rsch.; 2nd Indust. Water and Waste Con Proc. Internatl. Conf. on Water Pollution Rsch.; Civil Engri Mag. Gen. Int.: Task Comm. on Erosion of Cohesive Materia Am. Soc. Civil Engrs.; Civil Engrng. Div. Comm., No. Appl. Hydraulics, Am. Soc. Engr. Edn.; Natl. Sci. Fdtn., S Faculty Fellow. Areas of Rsch.: Open Channel Hydrauli Waves and Costal Engineering; Sediment Transport (Cohes Sediments).

MASLEY, Andrew Jerome (Mr.), Hd., Space Physics and Planeta Sciences, Douglas Aircraft Co., 3000 Ocean Park Blvd., San Monica, Calif. Home Add.: 116 Montana Ave., Los Angeles Calif. SPACE PHYSICS. b. Cla ton, Wis., April 2, 1933. s. Geor D. and Mary (Podany) M. Edn B.Physics (with distinction), In of Tech., Univ. of Minn., 195 M.S., Univ. of Minn., 1961. Norma Jean Lubbers, July 1954. Exp.: Engrng. Asst., Un of Minn., 1958-59; Rsch. Ass ibid., 1959-61; Space Physici Douglas Acft. Co., Santa Monic Calif., 1961-62; Hd., Space Physi and Planetary Scics., ibid., 1962 Hon. Pos.: Pres., Am. Inst. Physics, Univ. of Minn. Mem Am. Geophysical Union; Am. Phy cal Soc.; A.A.A.S. Contbr. Jour. of Geophysical Rsch.; Phy cal Rev. Letters; Aerospace Engr Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: High Altitu Balloon Studies of Solar Cosmic Rays and X-Rays; Solar Cosm Ray Studies Utilizing Ionospheric Methods (Riometers).



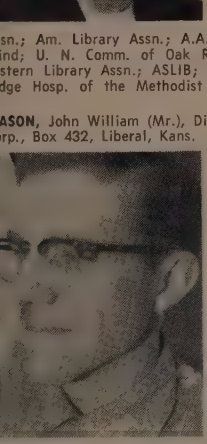
MASON, A. Hughlett (Ph.D.), Physicist, Office of Chief of Sta U. S. Army, The Pentagon, Washington 25, D.C. Home Ad 2407 N. Kenmore St., Arlington Va. b. Harborton, Va., Feb. 1905. s. Alvin T. and Elizabe (Hughlett) M. Edn.: B.S. in C.E Univ. of S. C., 1929; M.S., Uni of Pa., 1931; Ph.D., ibid., 195 m. Mary R. Crow, Sept. 3, 193 Exp.: Physicist, Natl. Bur. Stds 1937-39; Stress Analyst and To sional Vibration Analyst, U. Navy and U. S. Maritime Comm 1939-48; General Physical Scientis Rsch. and Develop. Bd., 1948-5 Physicist on Problems of Structur Mechanics and Ultra Short Wa Length Electromagnetic Radiatio Office of Chf. of Staff, U. S. Arm The Pentagon, 1953—. Mem.: Fe low A.A.A.S.; A.G.U.; Va. Acad. Sci.; Philosophical Soc. of Wash Wash. Soc. of Engrs.; Register Profl. Engr. in the Dist. of Columbia. Author. A Study in t Range of Solution of Orbital Elements of Minor Planet 534, Na sovia, for Short Arcs, by the Method of LaPlace, 1952; Vibratio Characteristics of the Potomac River Bridge, 1951; Polar Momen of Inertia of Circles, 1945; Co-author; Effects of Topography Shock Waves in Air., 1956; 1414 Observations of 1033 Doub and Multiple Stars made with the 18-inch Refracting Telescope the Flower Astronomical Observatory, 1932. Gen. Int.: Develop Interpolative Method of Determining Natural Frequency of To sional Vibration of Diesel Engine Crankshafts; Developed Nom graphic Charts for Solving Kepler's Equation Which Will Do Work of a Table of 314 Million Entries; Torsiograph Engr.

rgest Single Acting Diesel Engine Ever Built in the U. S.; server at Atomic Shots and Launchings of ICBM.

ASON, Clarence Tyler (Ph.D.), Dir., Carver Fdtn., Tuskegee t. and Chmn., Div. of Mat. Sciences, Tuskegee Inst., Ala. me Add.: 1005 Montgomery Rd., Tuskegee Inst., Ala. CHEMIS- Y. b. Chicago, Ill., Apr. 21, 1908. s. Clarence L. and se (Tyler) M. Edn.: B.S., Northwestern Univ., 1931; M.Sc., Gill Univ., 1933; Ph.D., ibid., 1935. m. Lois Lucas, 1936. Clarence; Karen. Exp.: Asst. Prof. of Chem., Dillard iv., New Orleans, La., 1935-39; Hd., Dept. of Sci., 1939- ; Rsch. Dir. to Dir. and Chmn., Div. of Sci., Tuskegee Inst., 44—. Hon. Pos.: Natl. Pres., Natl. Inst. of Sci.; Natl. Pres., ta Kappa Chi; Fellow, Am. Inst. of Chemists. Mem.: Am. em. Soc.; Beta Kappa Chi; Sigma Xi; Alpha Phi Alpha; ma Pi Phi. Contbr. to: Jour. of Am. Chem. Soc.; Phytopathol.; ns. Philos. Soc.; Jour. of Periodontol.; Jour. Negro Edn.; n. Jour. Rsch.; So. Chemist; The Chem. Analyst. Areas Rsch.: Halogenated Ethers, Thioethers.

ASON, Helen Hathcock (Mrs.), Head of Y-12 Techn. Library, k Ridge National Laboratory, Oak Ridge, Tennessee. Home Add.: 404 Villanova Rd., Oak Ridge, Tenn. LIBRARY SCI- ENCE. b. Locust Bayou, Ark., Dec. 1, 1904. d. Edmond Lindsay and Mary Emma (Proffitt) H. Edn.: B.A., Univ. of Ark., 1926; M.L.S., Carnegie Inst. of Tech., 1951. m. R. Coin Mason, June 14, 1926. Exp.: Tchr., Smead Schl., Smead, Ark., 1921-22; Tchr., Miss Fine's Schl., Princeton, N. J., 1928-29; Librn., Med. Schl. Library and Dental Schl. Library, Univ. of Pittsburgh, Pa., 1951-52; Head of Reference and Circulation, Oak Ridge Natl. Lab., Union Carbide Nuclear Co., 1952-62; Head, y-12 Techn. Library, ibid., 1962—. Hon. Pos.: 1st Vice-Pres., Tenn. Div., Am. Assn. of the U. Nations, 1962—. Mem.: Spec. Libraries sn.; Am. Library Assn.; A.A.A.S.; A.A.U.W.; Recording for the ind; U. N. Comm. of Oak Ridge; Tenn. Library Assn.; South- stern Library Assn.; ASLIB; Oak Ridge Civic Music Assn.; Oak dge Hosp. of the Methodist Church.

ASON, John William (Mr.), Dist. Geologist, Pan American Petrol orp., Box 432, Liberal, Kans. Home Add.: 1125 N. Cain, Liberal, Kans. GEOLOGY. b. New Ply- mouth, Idaho, Dec. 2, 1925. s. Ross P. and Minna C. (Johnson) M. Edn.: B.S., Univ. of Wash., Seattle, 1949. m. Betty Jones, Mar. 12, 1951. c.: William Owen; Gweneth Lucille. Exp.: Jr. Geolo- gist, Stanolind Oil & Gas Co., Al- buquerque, N. Mex., 1950-54; Geologist, Stanolind Oil & Gas Co., Tyler, Tex., 1954-55; Area Geologist, Stanolind Oil & Gas Co., Midland, Tex., 1955-56; Dist. Geologist, Pan Am. Petrol. Corp., Wichita, Kans., Okla. City, Oklahoma, Liberal, Kans., 1956—. Mem.: Liberal Geol. Soc.; Geol. Soc. of Am.; Am. Assn. of Petrol. Geologists; Sigma Gamma Epsilon; Rotary. Contbr. to: Bull. of Am. Assn. of Petrol Geologists; Sym- osium; Natural Gases of N. Am. Serv. Rec.: U. S. Army, 1944-46. reas of Rsch.: Stratigraphy; Sedimentary Petrology; Geology and ccurrence of Hydrocarbons.

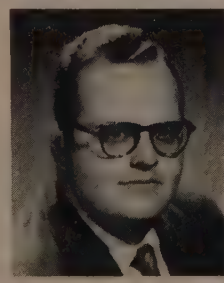


ASSLER, Maury (D.D.S.), Prof. and Hd., Dept. of Pedodontics, niv. of Ill. Coll. of Dentistry, 808 S. Wood St., Chicago 12, Ill. Home Add.: 311 S. Elmwood Ave., Oak Park, Ill. PEDODONTICS. b. N.Y.C., N. Y., Mar. 24, 1912. s. Samuel and Celia (Fabricant) M. Edn.: B.S., N. Y. Univ., 1932; D.D.S., Univ. of Ill., 1939; M.S., ibid., 1941. m. Hilde Wang, Feb. 19, 1947. c.: Mary; Joan. Exp.: Assoc. Prof., Oral Histology, Univ. of Ill., 1939-46; Prof. and Hd., Pedodontics, ibid., 1946—. Hon. Pos.: Past Pres., Am. Acad. Pedo- dontics. Mem.: Sigma Xi; Phi Kappa Phi. Contbr. to: Atlas of the Mouth; Dentistry for Children. Serv. Rec.: U.N.R.R.A., 1945-46. Areas of Rsch.: Growth and De- velopment; Tooth Development; Pulp; Isotopes; Dental Education.

ASON, Martin Alexander (Ing. Dr.), Dean, Schl. of Engrng., eorge Wash. Univ., Wash., D. C. Home Add.: 3621 Raymond t., Chevy Chase, Md. FLUID MECHANICS; SHORELINE PHE- NOMENA. b. Wash., D. C., Apr. 23, 1907. s. Alexander Kemp and Elizabeth (Arenz) M. Edn.: B.S.E., George Wash. Univ., 1931; Ing. Dr., Univ. of Grenoble, France, 1938. m. Winnifred Meade, 1932. c.: Ann W.; M. Everard. Exp.: Engr., Natl. Bur. of Stands., Wash., D. C., 1924-40; Chf. Engr., Beach Erosion Bd., Wash., D. C., 1940-51; Dean, George Wash. Univ., 1951—. Mem.: A.S.M.E.; A.S.C.E.; A.S.E.E.; Wash. Acad. of Scis.; A.G.U.; Wash. Soc. of Engrs.; Sigma Xi; Sigma Tau. Contbr. to: Trans. of A.S.M.E.; Proc. of A.S.C.E.; Jour. of A.S.E.E. Gen. Int.: John R. Freeman Scholar; Out- standing Engr., Wash. Acad. of Sci.; Exceptional Serv. Award, from the Dept. of War. Areas of Rsch.: Ocean Waves, Beaches and Shoreline, Processes; Fluid Mechanics, River and Harbor Improvement.

MASTER, Arthur M. (M.D.), Consultant Cardiologist, The Mount Sinai Hosp., 125 E. 72nd St., New York 21, N. Y. Home Add. 885 Park Ave., N. Y. 21, N. Y. MEDICINE. b. N.Y.C., Dec. 1, 1895. s. Isaac and Anna (Kirsch- ner) M. Edn.: B.S., Coll. of the City of N. Y., 1916; M.D., Cornell Univ. Med. Coll., 1921. m. Hilda Altschul, May 21, 1930. c. Edith L.; Arthur M., Jr.; Camilla Rosen- feld. Exp.: Consultant Cardiolo- gist, The Mount Sinai Hosp., N. Y., N. Y., 1957—; Consultant Cardiolo- gist, The Englewood Hosp., Engle- wood, N. J., 1954—; Consultant in Cardiovascular Disease, U. S. Marine Hosp., Staten Island, N. Y., 1948—. Mem.: A.M.A.; N. Y. Pathol. Soc.; N. Y. Acad. of Med.; A.A.A.S.; A.H.A.; Soc. Exper. Biol. and Med.; N. Y. Co. Med. Soc.; N. Y. State Med. Soc.; Am. Coll. of Physicians; N. Y. Heart Assn.; Am. Coll. of Cardiology; Am. Geriatrics Soc.; Am. Coll. of Chest Phys.; Am. Fed. for Clin. Rsch.; Industrial Med. Assn.; Am. Publ. Health Assn. Author: The Electrocardiogram and X-Ray Configu- ration of the Heart, 1939, 42; Normal Blood Pressure and Hyper- tension: New Definitions, 1952; Cardiac Emergencies and Heart Failure, Prevention and Treatment, 1952, 55; Visual Aids in Cardiologic Diagnosis and Treatment, 1960. Contbr. to: J.A.M.A.; Am. Jour. Cardiology; Diseases of the Chest; Arch. Int. Med.; Am. Heart Jour.; Am. Jour. Medical Science; Proc. Soc. Ex- perimental Biology and Medicine; Jour. Mt. Sinai Hospital; Indust. Med.; Modern Concepts of Cardiovascular Disease; Am. Jour. Roentgenol.; World Wide Abstracts of General Med., etc. Serv. Rec.: U.S.N.R., 1917-18, 1938-42, 1945-46. Gen. Int.: Cornell Univ. Med. Coll. Traveling Fellowship, 1924-25; Hon. Mem. & Consult., Cardiol. Soc. of India, 1950—; Jacobi Mt. Sinai Hosp., N. Y. Gold Medal, 1952; Townsend Harris Hall Award, Coll. of the City of N. Y., 1957; Award and Medal of Honor, Am. Coll. of Chest Physicians, 1960. Areas of Rsch.: The study of the causes and treatment of coronary artery disease, functional tests of the heart (the Master two-step test has found universal application), establishment of "normal" blood pressure and "hy- pertensive" limits, 16-106 years of age, the differential diagnosis of chest pain, height and weight table, 65 thru 94 years of age, the effects of low calorie diets in coronary artery disease and coronary occlusion, fat and cholesterol in coronary disease, anti- coagulation in coronary disease, the role of effort and physically severe occupations in the precipitation of coronary occlusion, electrocardiographic changes in heart muscle disease, pneumonia, hypertension, acute nephritis and other acute diseases.

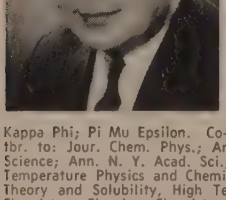
MASTERS, Donald Haynes (D.D.S.), Periodontist, 1616 San Pedro, San Antonio, Tex. Home Add.: 231 Rockhill Dr., San Antonio, Tex. DENTAL SPECIALIST (PERIO- DONTIST) PRACTICE LIMITED TO ORAL DIAGNOSIS AND PERIODONT- ICS. b. Paris, Tex., Nov. 26, 1926. s. Marshall D. and Marian (Dannenman) M. Edn.: D.D.S., Tex. Univ., 1948; Air Force Resi- dency in Periodontics, 1951-52. m. Minnie Lee Bollinger, Dec. 22, 1945. c.: Diane June; David Haynes; Donna Sue; Deborah Lee. Exp.: Priv. Prac. Gen. Dent., Free- port, Tex., 1948-50; Air Force Res., Lackland AFB, Tex., 1951-52; Priv. Practice., Periodontics and Oral Diagnosis, San Antonio, Tex., 1952—. Hon. Pos.: Chmn. for Comm. on Contng. Edn., San An tonio Dist. Dental Soc., 1960-62; Bd. of Dirs. of Rowe Smith Semi- nar. Mem.: San Antonio/Austin Dental Study Club; San Antonio Dist., Tex. Sta. and Am. Dental Socs.; Southwest Soc. of Periodontists; Am. Acad. of Periodontol ogy; Am. Soc. of Periodontology; Am. Acad. of Dental Med.; X Psi Phi; Bd. of Cent. Christian Churches. Contbr. to: San Antonio Dis. Dental Soc. Jour.; Tex. State Dental Jour.; Jour. of Perio- dontol.; Jour. of Southwest Soc. of Periodontists; Editor, Jour Periontology Today. Serv. Rec.: U. S. Air Force, 1950-52. Areas of Rsch.: Periodontal Surgery; Studies in, Dental Pharmacology and Physiology, Iontophoresis, Application of Dog-Faced Baboon to Dental Research, Oral Hygiene for the Periodontal Patient.



MASTERS, William Howell (M.D.), Assoc. Prof., Obstetrics and Gynecol., Dir. Div. of Reprod. Biol., Wash. Univ. Schl. of Med., 630 S. Kingshighway, St. Louis 10, Mo. Home Add.: 34 Oakleigh Lane, Ladue, Mo. GYNECOLOGY AND REPRODUCTIVE BIOLOGY. b. Cleveland, Ohio, Dec. 17, 1915. s. Francis Wynne and Estabrooks (Taylor) M. Edn.: B.S., Hamilton Coll., 1938; M.D., Univ. of Rochester Schl. of Med., 1943. m. Elisabeth Ellis, June 13, 1942. c.: Sarah Worthington; William Howell, III. Exp.: Instr., Wash. Univ. Schl. of Med., 1947-49; Asst. Prof., ibid., 1949-51; Assoc. Prof., ibid., 1951—; Dir., Div. of Reprod. Biol., Dept. of Obstet. and Gynecol., ibid., 1960—. Hon Pos.: Bd. of Dirs., Family and Childrens' Servs., St. Louis; Planned Parenthood Assn.; St. Louis. Mem.: Am. Soc. for the Study of Sterility; Internatl. Fertility Assn.; Endocrine Soc.; N. Y. Acad. of Scis.; Soc. for the Scientific Study of Sex; Alpha Delta Phi; Sigma Xi; Alpha Omega Alpha; Racquet Club of St. Louis. Co-author: Investigation of Sexual Regeneration in Elderly Women, 1949; Conduction Anesthesia, 1949; Androgen Administration in the Postmonopausal Woman; The Female Reproductive System; Sex Steroid Replacement in the Aging Individual, 1956; Orgasm, Anatomy of the Female. Contbr. to: West Jour. Surg.; Fertility and Sterility; Jour. A.M.A.; Jour. Clin. Edn.; Trans. of the Tenth and Eleventh Confs. Serv. Rec.: U. S. Naval Reserve, 1942-43. Areas of Rsch.: Infertility and Reproductive Biology.

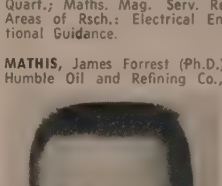
MASTRANGELO, Sebastian V. R. (Ph.D.), Rsch. Assoc., Jackson Lab., Exptl. Station, E. I. duPont & Co., Penns Grove, N. J. Home Add.: 514 Windley Rd., Wilmington 3, Del. PHYSICAL CHEMISTRY. b. N.Y.C., N. Y., July 1, 1925. s. Dominick and Loretta C. (Amend) M. Edn.: B.S., Queens Coll., 1947; M.S., Pa. State Univ., 1948; Ph.D., ibid., 1951. m. Aldona H. Stanisky, Jan. 8, 1949. c.: S. Dominick; Thomas M. Exp.: Phillips Petrol. Fellow, Penn. State Univ., 1946-49; duPont Fellow, ibid., 1949-50; Post Doctoral Fellow, ibid., 1950-51; Chemist, Barrett Div., 1951-52, 1953-56; Phys. Chem. Supvr., Dextran Corp., 1952-53; Rsch. Chem., E. I. duPont & Co., 1956-61; Rsch. Assoc., ibid., Exptl. Station, 1961—. Mem.: Am. Chem. Soc.; Am. Inst. Chem.; A.A.A.S.; Am. Phys. Soc.; Sigma Xi; Phi Lambda Upsilon; Phi Kappa Phi; Pi Mu Epsilon. Co-author: Heat Capacity, 1953. Contbr. to: Jour. Chem. Phys.; Anal. Chem.; Jour. Am. Chem. Soc.; Science; Ann. N. Y. Acad. Sci.; and others Areas of Rsch.: Low Temperature Physics and Chemistry, Calorimetry; Polymer Physics, Theory and Solubility, High Temperature Chemistry, Free Radical Chemistry, Fluorine Chemistry, Physical Adsorption, Purity and Purification Techniques and Refrigeration.

MATHESON, Arthur Ralph (Ph.D.), Mgr., Fuel Operations Div., Gen. Atomic Div., Gen. Dynamics Corp., San Diego, Calif. Home Add.: 347 Glencrest Drive, Solana Beach, Calif. INORGANIC CHEMISTRY. b. Kansas City, Mo., Oct. 7, 1915. s. John Lauri and Elizabeth (Weller) M. Edn.: B.S., Univ. of Ill., 1940; M.S., ibid., 1947; Ph.D., ibid., 1948. m. Lenore Hey, Jan., 1941. c.: Mabelle Elizabeth; Lance Arthur; Lael Lauri; Mark Henry. Exp.: Anal. Chem., Univ. of Ill., 1938-40; Control Chem., Cook Paint and Varnish Co., Kan. City, Mo., 1940; Asst. Instr., Chem., Univ. of Ill., 1946-47; Rsch. Asst., Office Naval Rsch., Contract, Univ. of Ill., 1947-48; Rsch. Chem., Hanford Works, G.E. Co., Richland, Wash., 1948-51; Dir., Tech. Admin. Div., Schenectady Operations Office, US-AEC, Schenectady, N. Y., 1951-54; Mgr., Contract Admin., M. and C. Nuclear, Inc., Attleboro, Mass., 1954-59; Mgr., Reprocessing, Sylvania-Corning Nuclear Corp., Bayside, N. Y., 1959-60; Sales Mgr., Nuclear Fuels Dept., Spencer Chem. Co., Kans. City, Mo., 1960-61; Mgr., Materials Applications, Gen. Atomic Div., Gen. Dynamics Corp., 1961-62; Manager, Fuel Operations Division, 1962—. Hon. Pos.: Chmn., Reactor Materials Comm., Atomic Industrial Forum, 1957-58. Mem.: Am. Nuclear Soc.; Am. Chem. Soc.; Am. Soc. for Metals; A.A.A.S.; Alpha Chi Sigma; Alpha Phi Omega. Serv. Rec.: U. S. Army, 1940-46. Areas of Rsch.: Inorganic Chem. Rsch.; Rare Earths and Thorium; Uranium and Plutonium Separations; Tritium Separation; Specialized Knowledge in Nuclear Fuel Materials; Fuel Element Fabrication; Reprocessing and Transportation of Irradiated Fuel Materials.



MATHIS, Harold Fletcher (Ph.D.), Prof. of Elect. En- Ohio State Univ., Columbus, Ohio. Home Add.: 2905 Ha Rd., Columbus 21, Ohio. ELECTRICAL ENGINEERING. b. W Falls, Tex., July 19, 1916. s. Henry F. and Anne (M. Edn.: B.S., Okla. Univ., 1939; M.S., Tex. A an Coll., 1941; E.E., ibid., 1952; Ph.D., Northwestern, 1953; Okla. Univ., 1955; Ph.D., Western Reserve, 1961. m. Reno, June 6, 1942. c.: Robert; Betty. Exp.: Rsch. Northwestern Univ., Evanston, Ill., 1946-49; Assoc. Prof., Univ. of Okla., Norman, Okla., 1949-54; Rsch. Engr., year, Akron, Ohio, 1954-60; Prof. of E. E., Ohio State 1960—. Mem.: Inst. of Radio Engrs.; Am. Inst. of Engrs.; Am. Soc. of Mech. Engr.; Am. Mathl. Soc.; Phys. Soc.; Am. Stat. Assn.; Phi Eta Sigma; Sigma Eta Kappa Nu; Sigma Xi; Am. Legion. Contbr. to: Proc. Math. Soc.; Jour. of Appl. Phys.; Duke Math. Jour.; and Trans. of Inst. of Radio Engrs.; Electronics; Voc. Quart.; Maths. Mag. Serv. Rec.: U. S. Navy, 1942-46; 195 Areas of Rsch.: Electrical Engineering, Mathematics, and tional Guidance.

MATHIS, James Forrest (Ph.D.), Mgr., Baytown Rsch. and D Humble Oil and Refining Co., Baytown, Tex. Home Add.: Fleetwood, Baytown, Tex. ICAL ENGINEERING. b. D Tex., Sept. 28, 1925. s. F and Mattie (Godbold) M. B.S.Ch.E., Tex. Agric. and Coll., 1946; M.S.Ch.E., Uni Wis., 1951; Ph.D., ibid., m. Frances Ellisor, Sept. 4, c.: Alan; Lisa Lynn. Exp. Chemist, Rsch. Develop., Hu Oil and Refining, 1946-47; Rsch. Chem. Engr., ibid., 194 Rsch. Chem. Engr., ibid., 195 Rsch. Specialist, ibid., 195 Sect. Hd., ibid., 1957-61; ibid., 1961—. Hon. Pos.: Av Comm., AIChE, 1961-62; Guid. Comm., AIChE, 195 Mem.: Am. Institute of Che Engrs.; Am. Chem. Soc.; Petroleum Div.; Am. Assn. for of Sci.; Sigma Xi; Phi Lambda Upsilon; Registered Prof. E Lions Club; Chamber of Commerce. Contbr. to: AIChE Serv. Rec.: U. S. Navy, 1944-45. Areas of Rsch.: Applied K ics and Catalysis.



MATHUR, Krishan Dayal (Ph.D.), Hd., Chem. Dept., Aroostook Tchrs Coll., Presque Isle, Me. Home Add.: 56 Dudley St., Pre Isle, Me. CHEMISTRY. b. Hy bad-Deccan, India, April 22, s. Raja Shiv and Rani Sarjo (M. Edn.: B.S., The Osm Univ., India, 1946; M.S., 1948; M.A., George Washi Univ., 1953; Ph.D., ibid., m. Erica L., Sept., 1956. c.: Rani. Exp.: Adviser, U. N. C on Atomic Radiation, New 1955-56; Lecturer, Inst. of guages and Linguistics, Was ton, D. C., 1953-54; Consul The Twentieth Century Fo Washington, D. C., 1959-60. Pos.: Chmn., Curriculum Co Aroostook State Tchrs. Coll., Mem.: A.A.A.S.; Natl. Edn. A Am. Political Sci. Assn.; Geographical Soc.; Pi Gamma Areas of Rsch.: Atomic En and Outer Space, Peaceful Applications, and Internatl. Coo

MATIJEVIC, Egon (Dr.), Prof. of Chem., Clarkson Coll., Pots N. Y. Home Add.: 94 Market St., Potsdam, N. Y. COLLOID C ISTRY. b. Otocac, Croatia, slavia, Apr. 27, 1922. s. and Stefica (Spiegel) M. Chem. Eng., Univ. of Zagreb, goslavia, 1944; Dr. Chem., 1948; Dr. Habil., ibid., m. Bozica Biscan, 1947. Asst., Docent, Univ. of Za Yugoslavia, 1944-56; Rsch. low, Dept. of Colloid Sci., bridge, England, 1956-57; A Prof. to Prof., Clarkson 1957—. Hon. Pos.: Chair N. Y. Sect. of the Am. Che Soc., 1962; Asst. Editor of tica Chemica Acta, 195 Treas. of the Croatian Chem. 1950-56. Mem.: Am. Chem. Sigma Xi; Am. Assn. of Profs.; Croatian Chem. Soc.; loid-Gesellschaft, Serbian Soc.; Torch Club. Author: Chemistry for Secondary Sch Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Chem.; Trans. of the Faraday Soc.; Discussions of the Far Soc.; Jour. of the Opt. Soc.; Jour. of Colloid Sci.; Kol Zeitschrift; Croatica Chemica Acta; Chem. and Engrng. Jour. of Chem. Edn.; Experimentia. Areas of Rsch.: C Chemistry, Coagulation, Precipitation and Stablization Phenom

ght Scattering; Metal Ion Hydrolysis; Heteropoly Compounds; nized Double Layers; Aerosols.

ATSON, Gustave Albin (Ph.D.), Technical Dir., Minneapolis War emi. Blood Bank, 2304 Park Ave., Minneapolis 4, Minn. Home Add.: 2011 3rd Ave., So., Mpls., 4, Minn. BACTERIOLOGY AND IMMUNOLOGY. b. Rexburg, Idaho, June 24, 1899. s. John E. and Anna Matilda (Kjelin) M. Edn.: A.B., Univ. of Utah, 1927; M.A., Univ. of Kans., 1929; Ph.D., Wash. Univ., 1935. m. Vadna Evie Cude, Oct. 10, 1924. c.: Jean Athalee; Lavon; Gustave Albin, Jr. Exp.: Grad. Asst. Bacteriol., Kans., 1927-29; Instr. of Chem. and Bacteriol., Snow Coll., 1929-30; Asst. Prof. Bacteriol., Univ. of Montana, 1930-32; Bacteriology Tchng. Fellow, Wash. Univ., 1932-34; Assoc. Prof. Bacteriol., Univ. of Montana, 1934-36; Chmn., Health Comm., ibid., 1935-37; Hd. Dept. of Bacteriol., ibid., 1936-37; Asst. Prof. Bacteriol., Univ. of Utah, 1937-43; onsultant, Bacteriologist, Amalgamated Sugar Co., Salt Lake City, tah, 1937-48; Assoc. Prof. Bacteriol., Univ. of Utah, 1943-48; onsultant, Blood Bank, Latter-Day Saints Hosp. and Salt Lake ounty Gen. Hosp., 1945-48; Dir., ibid., 1948-49; Lectr. Dept. of acteriol., Univ. of Utah, 1948-49; Dir., Mpls. War Meml. Blood ank, 1949—; Asst. Prof. Bacteriol., Univ. of Minn., 1950—. on. Pos.: Pres., Sigma Xi, Utah Chapter, 1941-42; Pres., Am. ssn. of Blood Banks, 1947-48; Mem., Bd. Dirs., Am. Assn. of lood Banks, 1948-50; Historian, Am. Assn. of Blood Banks, 950—. Mem.: Soc. of Am. Bacteriols.; Utah Acad. Sci., Arts, nd Letters; Sigma Xi; Am. Assn. of Physical Anthropologists; m. Assn. of Immunologists; Am. Assn. of Blood Banks; A.A.A.S.; m. Acad. of Microbiol.; Am. Soc. of Human Genetics; Internatl. oc. of Hematol.; Internatl. Soc. of Blood Transfusion. Contbr. o: Proc. Soc. Exper. Biol. and Med.; Jour. Immunol.; Am. Jour. hys. Anthropol.; Proc. Utah Acad. of Scis., Arts and Letters; ocky Mtn. Med. Jour.; Proc. of the Blood Bank; Jour.-Lancet; linn. Med.; Blood, the Jour. of Hematol.; Am. Jour. Human enetics; Jour. Exptl. Med. Vox Sanguinis; Ann. Human Genetics, ondon; Am. Anthropologist. Serv. Rec.: U. S. Army, 1941-45, .S.C. Reserve, Retired. Areas of Rsch.: Blood Groups, Blood anking, and Antibiotics.

ATSUSHITA, Sadami (D.Sc.), Prof. Adjoint, Astro-Geophys. Dept., r. Rsch. Staff, High Altitude Observatory, Univ. of Colo, Boulder, Colo. Home Add.: 3984 Fuller Ct., Boulder, Colo. GEOMAGNETISM, AURORAL AND IONOSPHERIC PHYSICS, SPACE SCIENCE. b. Ehime, Japan, Feb. 12, 1920. s. Kiyomi and Taka (Taniguchi) M. Edn.: M.S., Kyoto Univ., 1944; D.Sc., ibid., 1951. m. Kyoko Nakajima, Mar. 23, 1946. c.: Hiromi; Hidemi. Exp.: Asst., Geophysical Inst., Kyoto Univ., Japan, 1945; Lectr., ibid., 1945-59; Rsch. Staff, Physics Dept., Univ. Coll., London, 1954-55; Rsch. Staff, High Altitude Obs., Univ. of Colo., 1955-56; Sr. Rsch. Staff, ibid., 1957-62; Prof., Adjoint, Astro-Geophys. Dept., 1962—. Mem.: American Geophysical Union; IQSY Panel, National Academy Sciences; Scientific Research Society of Am.; ellow, A.A.A.S.; Sigma Xi. Author: Ionispheric Sporadic E, 1962. ontbr. to: Collier's Encycl.; Handbuch der Physik; Jour. of Geo-hysical Rsch.; Jour. Atmospheric and Terrestrial Physics; Proc. hysical Soc.; Nature; Annals de Geophysique; Jour. of Geomag-etism and Geoelectricity; Report of Ionosphere Rsch. in Japan. en. Int.: Discovery of Distributions of Equatorial Es, Ionospheric Motions, Ionospheric and Magnetic Storms, Magnetic Variations. reas of Rsch.: Geophysics and Space Science (Geomagnetism, onospheric Physics, Auroras, etc.).

ATTENHEIMER, Hermann G. W. (Dr.), Assoc. Prof. Biochem., Hd., Tissue and Cell Biol. Lab., Presbyt., St. Luke's Hosps., Chicago, 12, Ill. and Univ. of Ill. Med. Coll., Chicago, Ill. Home Add.: 32 Forestway Dr., Deerfield, Ill. BIOCHEMISTRY AND CLINICAL CHEMISTRY. b. Berlin, Germany, Mar. 29, 1921. s. Emiel and Doris (Beringer) M. Edn.: Dr. Med., Univ. of Gottingen, Ger., 1947; Privat Dozent, Free Univ. of Berlin, Ger., 1955. m. Margaret Schroeder, Oct. 14, 1943. c.: Sabine; Christine; Simone. Exp.: Rsch. Asst., Biochem., Univ. of Berlin, 1949-51; Rsch. Asst., Free Univ. of Berlin, Berlin, Germany, 1951-55; Private Doz., Free Univ. of Berlin, 1955-59; Head, The Tissue and Cell Biol. Laboratory, Presbyt., St. Luke's Hospitals., 1959—. Mem.: A.A.A.S.; Am. Chem. Soc.; Sigma Xi. Author: Mikromethoder Fuer das Klinish Chemische und Biochemische Laboratorium, 1961. Contbr. to: Jour. Lab. and Clin. Med.; Z. Physiol. Chem.; Annal Biochem.; Biophys. and Biochem. Acta.; Enzymol. Biol. Clinic. Areas of Rsch.: Ultra Micro Chemistry of Kidney and Liver.

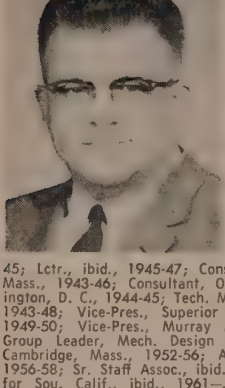
MATTHEWS, Allen Randolph (Ph.D.), Technical Specialist, N. Am. Aviation, Inc., Autonetics Div., 3311 E. LaPalma, Anaheim, Calif. Home Add.: 4533 Gorham Dr., Corona Del Mar, Calif. ELECTRONICS-SPACE TECHNOLOGY. b. Walla Walla, Wash., Aug. 23, 1918. s. Randolph Owen and Agnes (Peterson) M. Edn.: B.S.E.E., Wash. Sta. Inst. of Tech., 1940; Westinghouse Grad. Schl., 1940-41; M.S.E.E., Stanford Univ., 1950; Deg. of Engrng., ibid., 1951; Ph.D., ibid., 1956. m. Janice Virginia Morrill, Sept. 7, 1944. c.: Joan; Julia. Exp.: Application Engr., Westinghouse Electric Corp., Pittsburgh, Pa., 1941-42, 1946-47; Asst. Prof. E.E., U. S. Air Force Inst. of Tech., Dayton, Ohio, 1951-53; Consultant, Systems Engrng. Office, WADC, Dayton, Ohio, 1956-58; Dir. Rsch. and Engrng., Admiral Corp., Chicago, Ill., 1958-59; Program Devel. Mgr., Boeing Co., Seattle, Wash., 1959-60; Mgr., Program Devel., Raytheon Co., Santa Barbara, Calif., 1960-61; Vice-Pres., Rsch. and Program Devel., Tamar Electronic Industs., Inc., Anaheim, Calif., 1961-62; Tech. Specialist, Autonetics Div., NAA Inc., Anaheim, Calif., 1962—. Mem.: Sigma Xi; IRE; ARS; AF Assn.; AFCEA; A.A.A.S.; Tau Beta Pi; Alpha Tau Omega; Rotary. Contbr. to: IRE Procs.; Traveling Wave Tubes, Reliability, Molecular Electronics, Space Tech. Serv. Rec.: U. S. Air Force, 1942-46, 1947-58. Areas of Rsch.: Defense Electronics; Space Systems.

MATTHEWS, Ruth Hastings (Mrs.), Food Spec., Human Nutrn. Rsch. Div., U. S. Dept. of Agric., Beltsville, Md. Home Add.: 1917 Rosemary Hills Dr., Silver Spring, Md. FOOD RESEARCH. b. Cambridge, Md., Feb. 12, 1926. d. Dr. Joseph Walter, Sr. and Mildred D. (Yerkes) H. Edn.: B.S., Univ. of Md., 1946; M.A., Columbia Univ., Tchrs. Coll., 1947. m. Harry Byrd Matthews, Jr., July 28, 1949. c.: Cornelia Anne; John Warren. Exp.: Instr., Food and Nutr., Juniata Coll., Huntingdon, Pa., 1947-49; Instr. Food and Nutr., Univ. of Md., Coll. Park, Md., 1949-50; Food Spec., Human Nutr. Rsch. Div., Agric. Rsch. Serv., Beltsville, Md., 1954—. Hon. Pos.: Chmn., Biblio. Comm., Foods and Nutr. Sect., AHEA; Mem., Program and Sci. Edn. Comm., Sigma Delta Epsilon. Mem.: Instit. of Food Technols.; Am. Assn. for the Adv. of Sci.; Am. Home Econs. Assn.; Sigma Delta Epsilon; Parent Tchrs. Assn.; Cub Scout Den Mother. Contbrng. Author: Quality of Apples for Household Use, 1959. Contbr. to: Jour. of the Am. Dietetic Assn.; Jour. of Home Econs.; Agric. and Food Chem. Areas of Rsch.: Functional Qualities of Different Forms of Milk; Quality of Apples; Intrinsic Shortening Properties of Fats and Oils; Quality and Composition of Baked Products and Desserts in Different Market Forms.

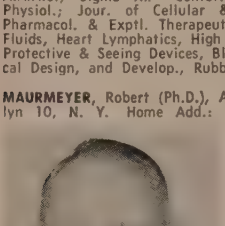
MATZEN, Richard Norman (M.D.), Internist, Caylor Nickel Clinic, Bluffton, Ind. Home Add.: 121 E. South St., Bluffton, Ind. DISEASES OF THE CHEST. b. Plainfield, N. J., July 30, 1928. s. Christian F. and Annie (Anderson) M. Edn.: B.A., Colo. Coll., 1950; M.D., Univ. of Pa., 1954. m. Alice Norton, Jan. 26, 1950. c.: Prudence; Anne; Richard N., Jr. Exp.: Proj. Ldr., Occupational Hlth. Field Hdq., U. S. Pub. Hlth. Serv., Cinn., Ohio, 1955-58; Intern, Presbyt. Hosp., Phila., Pa., 1954-55; Internist, Res., Int. Med., Guthrie Clinic, Sayre, Pa., 1958-60; Caylor Nickel Clinic, 1961—. Hon. Pos.: Dir., Wells Co., Tuberculosis Assn.; Dir. at Large, Ind. Sta. T.B. Assn.; Mem. Comm. on Rehab., Am. Coll. of Chest Physns. Mem.: Am. Assn. for the Adv. of Sci.; Assoc., Am. Coll. of Chest Physns.; Am. Thoracic Soc.; Am. Med. Assn.; Beta Theta Pi; Phi Rho Sigma; Delta Epsilon; Rotary. Contbr. to: Am. Jour. Physiol.; Am. Jour. Applied Physiol.; The Guthrie Clinic Bull. Areas of Rsch.: Pulmonary Function; Air Pollution.

MATZILEVICH, Benjamin (M.D.), Neurologist, 12 W. Central St., Natick, Mass. Home Add.: 27 Florence St., Natick, Mass. CLINICAL INVESTIGATION IN NEUROLOGY. b. Worcester, Mass., Dec. 30, 1919. s. John and Sophia (Romanowsky) M. Edn.: B.S., Bates Coll., 1943; M.D., Tufts Univ., 1946. m. Catherine Gibson, June, 1945. c.: Benjamin, Jr.; John J.; Thomas M.; Catherine; David A. Exp.: Asst. Chief of Neurol., Boston V.A. Hosp., Boston, Mass., 1952-56; Instr. in Neuropathol., Columbia Univ., Phys. and Surg., 1956-57; Instr. in Neurol., Tufts Univ., 1952—; Dir., W. E. Fernald State Schl., Waverley, Mass., 1958—; Instr. in Neuro-Anatomy, Boston Schl. of Physiotherapy, 1952—. Mem.: Alpha Omega Alpha; Mass. Med. Soc.; Am. Acad. of Neurol.; Am. Psychiatric Assn.; Am. League Against Epilepsy; N. E. Soc. of Psychiatry. Contbr. to: Newton-Wellesley Hosp. Bull.; Arch. of Neurol. Serv. Rec.: U. S. Army Med. Corp, 1947-49. Areas of Rsch.: Clinical Investigation in Epilepsy and Mental Retardation.

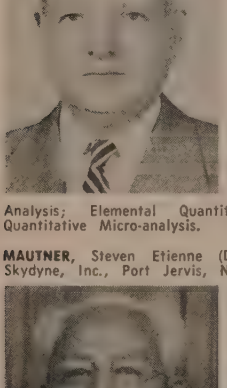
MAURER, Frank W. (Ph.D.), Sr. Staff Assoc., Arthur D. Little, Inc., 1424 4th St., Santa Monica, Calif. Home Add.: 16050 Anoka Dr., Pacific Palisades, Calif. HUMAN PHYSIOLOGY. b. Punxsutawney, Pa., July 11, 1911. s. Albert John and Ivy Pearl (Kratzer) M. Edn.: B.A., Antioch Coll., 1934; Ph.D., Univ. of Rochester, 1938. m. Elizabeth Mourey, Dec. 31, 1936. c.: Frank W., Jr.; John C.; Susan E. Exp.: Tchng. Fellow in Physiol., Univ. of Rochester, 1934-38; Instr. in Pharmacol., Georgetown Med. and Dental Schls., 1938-39; Fellow in Pharmacol., Harvard Med. Schl., 1939-40; Instr. in Human Ecol., Harvard Schl. of Publ. Hlth., 1939-40; Assoc. in Human Ecology, ibid., 1940-42; Consultant, Hercules Powder Co., 1940-41; Rsch. Assoc., Harvard Schl. of Publ. Hlth., 1941-42; Asst. Prof. in Ecol., ibid., 1942-45; Lctr., ibid., 1945-47; Consultant, Polaroid Corp., Cambridge, Mass., 1943-46; Consultant, Office Quartermaster General, Washington, D. C., 1944-45; Tech. Mgr. and Partner, H. L. Bouton, Co., 1943-48; Vice-Pres., Superior Abrasives Co., Weymouth, Mass., 1949-50; Vice-Pres., Murray Mfg. Co., Avon, Mass., 1950-51; Group Leader, Mech. Design & Devel., Arthur D. Little, Inc., Cambridge, Mass., 1952-56; Asst. to Vice-Pres., Engrng., ibid., 1956-58; Sr. Staff Assoc., ibid., 1959-61; Mgr., Corp. Bus. Devel. for Sou. Calif., ibid., 1961—. Mem.: Am. Physiological Soc.; A.A.A.S.; Sigma Xi. Contbr. to: Protoplasma; Am. Jour. of Physiol.; Jour. of Cellular & Comparative Physiol.; Jour. of Pharmacol. & Exptl. Therapeutics. Areas of Rsch.: Extracellular Fluids, Heart Lymphatics, High Altitude Breathing Equipment, Eye Protective & Seeing Devices, Blood Fractionation Eqpmt., Mechanical Design, and Develop., Rubber Molding, Textile Spinning Eqpt.



MAURMEYER, Robert (Ph.D.), Assoc. Prof., Brooklyn Coll., Brooklyn 10, N. Y. Home Add.: 102-27 93rd Ave., Richmond Hill 18, N. Y. MICRUCHEMISTRY. b. Hannover, Germany, Apr. 30, 1902. s. Richard and Hilda (Christmann) M. Edn.: B.S., City Coll. of N. Y., 1928; M.A., Columbia Univ., 1932; Ph.D., N. Y. Univ., 1939. m. Helga Maltan, Aug., 1950. c.: Evelyn. Exp.: Tutor, Brooklyn Coll., 1929-36; Instr., ibid., 1937-47; Asst. Prof., ibid., 1948-58; Assoc. Prof., ibid., 1959—. Mem.: A.A.A.S.; A.C.S.; N. Y. Acad. of Sci.; N. Y. Metropolitan Microchem. Soc.; Sigma Xi. Contbr. to: Jour. of A.C.S.; Ind. and Chem. Engrng.; Jour. of Biol. Chem.; Mikrochemica Acta; Microchem. Jour.; Progress Reports in Quantitative Inorganic Microanalysis. Areas of Rsch.: Microchemical Investigations; Functional Group Analysis; Elemental Quantitative Micro-Analysis; Inorganic Quantitative Micro-analysis.



MAUTNER, Steven Etienne (D.Sc.), Vice-Pres., Chief Engrng., Skydyne, Inc., Port Jervis, N. Y. Home Add.: 170 E. Main St., Port Jervis, N. Y. ULTRASONIC AND MECHANICAL VIBRATION: STRUCTURE, MONOCOQUE SPECIFIC SANDWICH. b. Budapest, Hungary, Mar. 22, 1895. s. Julius and Berth (Kuhn) M. Edn.: B.Sc., Politechnic Inst., Berlin, 1914; D.Sc., Sorbonne Paris, Fr., 1926. m. Julia Stefanek, 1938. c.: Thomas Steven. Exp.: Chf., Design, Pioneer Airplane Factory, Budapest, Hungary, 1917-20; Rsch. Engr., Soc. Des Avions Borel, Fr., 1922-25; Chf., Rsch. Lab., Semi-Rigid Dirigable, Societe Zodiac, Paris, Fr., 1925-26; Techn. Dir., Admin., Invtr. of Artificial Horizon, Societe La Forge Testard, 1926-34; Constrn., Engr., Rep. Compagnie Francaise de Levant of France, Moscow, and U.S.S.R., 1934-36; Techn. Dir., Co-Des. and Bldg., Societe Des Etude et Avions, Paris, Fr., 1936-38; Vice Pres. and Chf. Engr., Skydyne, Inc., 1938—. Mem.: Fellow, I.A.S.; A.S.T.M.; Am. Ord. Assn.; S.E.S.A. Areas of Rsch.: Sandwich Construction and Mechanical Vibration.



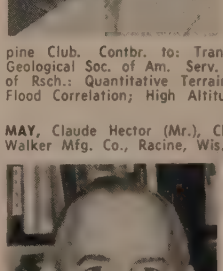
MAX, Abraham Mannes (Ph.D.), Mgr., Chemical and Physics Lab., R.C.A. Victor Record Div., Indpls. 20, Ind. Home Add.: 5640 Guilford Ave., Indpls. 20, Ind. CHEMICAL ENGINEERING (ELECTROCHEMISTRY AND ELECTRODEPOSITION); STATISTICS (DESIGN OF EXPERIMENTS); RHEOLOGY (PROPERTIES OF PLASTICS). b. Sheboygan, Wis., Mar. 7, 1910. s. Mayer and Jennie (Zion) M. Edn.: B.S., Univ. of Wis., 1934; M.S., ibid., 1935; Ph.D., ibid., 1937. m. Alice Seltzer, Aug. 13, 1933. c.: Rachel Beth; David Martin; Arthur Paul. Exp.: Rsch. Asst., Univ. of Wis., 1934-37; Chemist, Ternstedt Div., General Motors, 1937-41; Asst. Prof., Chem. Engr., Univ. of N. Dak., 1941-44; Supvr., Metallizing a Plating Devel., Record Engrng., RCA, Inlpls., Ind., 1944-50; Mg Chem. and Phys. Lab., Engrng., RCA Victor Record Div., ibi 1950—; Lectr., Butler Univ., Purdue Univ., Extn. Hon. Po Editorial Bd., Am. Electroplaters Soc., 1956-60; Publications Con Am. Electroplaters Soc., 1960—; Chmn., Indpls. Sect., Electr chem. Soc., 1959-60; Chmn., Spring Convention, Electroche Soc., 1961. Mem.: Am. Chem. Soc.; A.A.A.S.; Am. Soc. f Testing Materials; Am. Am. Electroplaters Soc.; Am. Soc. f Quality Control; Electrochem. Soc.; Faraday Soc.; Soc. for Rhe ogy; Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon; Phi Eta Sigm Contbr. to: Proc. Am. Electroplaters Soc., 1956; Jour. Audio E grng. Soc.; Metal Finishing Handbook. Areas of Rsch.: Electr forming and Electrodeposition of Metals, Dynamic Properties Plastics.

MAXFIELD, Kathryn E. (Ph.D.), Consulting Psychologist, 116 Pin hurst Ave., N. Y. 33, N. Y. Home Add.: 116 Pinehurst Av N. Y. 33, N. Y. PSYCHOLOGY. b. Binghampton, N. Y., Dec. 2 1895. d. Charles C. and Lillian (Hay) M. Edn.: B.A., Mt. Hol oke Coll., 1918; M.A., Columbia Univ., 1923; Ph.D., ibid., 193 Exp.: Resident Psycholst., Perkins Schl. for the Blind, Watertow Mass., 1919-24; Supvr., Ednl. Rsch., Am. Fdn. for the Blin N. Y., N. Y., 1924-32; Dir., Pers. and Rsch., Perkins Schl. for t Blind, 1932-34; Dir., Arthur Sunshine Home and Nursery Sch for the Blind, 1934-38; Pvt. Consultant, N.Y.C., 1938—; Psych logical Couns., Div. of Counseling and Testing, City Coll., 194 61 (Ret.); Consulting Psychologist, 1961—. Fellow: A.P.A. E.P.A I.C.P.; N.Y.S.P.A.; A.A.A.S.; N. Y. Acad.. Sci. Mem.: A.P.G.A N.Y.P.G.A.; Pi Lambda Theta. Author: The Blind Child and H Reading, 1928. Co-author: Social Maturity Scale for Blind Pr school Children, 1958. Areas of Rsch.: Psychology of the Vis ally Handicapped; Psychological Counseling Coll. Students.

MAXWELL, Frederick Richard, Jr. (Mr.), Prof. (Emeritus) of Ele Engrng., Univ. of Ala., Tuscaloosa, Ala. ELECTRICAL ENGINEE ING. b. Tuscaloosa, Ala., June 15, 1889. s. Frederick and Lu (Cochrane) M. Edn.: B.S., Univ. of Ala., 1911; M.E., ibid., 191 E.E., ibid., 1923. m. Kathleen Searcy of Tuscaloosa, Ala., Ja 30, 1924. d. George and Cammie Searcy. c.: Camille Searc Alfreda Tunstall. Exp.: Jr. Engr., Tuscaloosa Ice and Light C 1912-14; Engr., Tuscaloosa Railway and Utilities Co., 1914-1 Asst. Gen. Mgr., ibid., 1918-20; Assoc. Prof., Univ. of Ala 1920-35; Prof. of Elec. Engrng., ibid., 1935-59; Consulting Engi ibid., 1945-59; Consulting Engr. (Self-employed). Mem.: Ta Beta Pi; Am. Inst. of Elec. Engrs.; Vice-Pres., 1937-39, Di 1939-43; Chi Beta Phi; Phi Gamma Delta. Serv. Rec.: Nav Aviator, 1917-18; 1941-45; Captain, U.S.N.R. (Ret.). Hobbie Aviation; Boating; Fishing and Hunting. Listed in: A.M.S. Spe Int.: Power Machinery.

MAXWELL, James Christie (Ph.D.), Assoc. Prof., Dept. of Geolog Mo. Schl. of Mines, Rolla, Mo. Home Add.: 602 State S Rolla, Mo. GEOMORPHOLOG HYDROGEOLOGY, GEOPHYSICS. Boston, Mass., May 19, 1926. John Francis and Marie Margar (Johnston) M. Edn.: B.A., Harva Univ., 1951; M.A., Boston Univ 1953; Ph.D., Columbia Univ 1961. m. Diana Harding, Ma 3, 1951. c.: James C., Jr.; Ba bara Jean; Bradford Hardin Sherrill Marie. Exp.: Geologis Physical Rsch. Lab., Boston Univ 1951-54; Lectr., Columbia Univ 1954-56; Asst. Prof., Mo. Sch of Mines, 1956-62; Assoc. Prof ibid., 1962—. Mem.: Am. Ge physical Union; Geological Soc. Am.; Am. Soc. of Photogrammetry Am. Soc. of Civil Engrs.; Am Soc. Engrng. Edn.; Sigma X Sigma Gamma Epsilon; Am. A pine Club. Contbr. to: Trans., Am. Geophysical Union; Bul Geological Soc. of Am. Serv. Rec.: U. S. Navy, 1944-46. Area of Rsch.: Quantitative Terrain Analysis; Seismology; Watersh Flood Correlation; High Altitude Glaciology.

MAY, Claude Hector (Mr.), Chf. Engr., Rsch. and Developmen Walker Mfg. Co., Racine, Wis. Home Add.: 315 Four Mile Rd Racine, Wis. INTERNAL COMBU TION ENGINES, AERONAUTIC AUTOMOTIVE DESIGN. b. Johan nesburg, Union of S. Africa, Oc 17, 1904. s. John and Helen (Rouse) M. Edn.: Graduated Roy Air Force Coll. of Aeronautica Engrng., 1940; Registered Prof Engr. m. Edith Lilian Bowmake Dec. 4, 1943. c.: Patrick Barry Dennis Michael; Susan Rosemary Fraser John; Jan Elizabeth. Exp Squadron Ldr., Sr. Engrng Sta Officer, Royal Air Force, Europ Egypt, S. Africa, 1940-46; Di and Chf. Engr., Dawn Mfr. Co Wyebank, S. Africa, 1947-50; Co sultant, Battelle Mem. Inst., C lumbus, Ohio, 1950-55; Pow Plant Engr., Advanced Mercur Ford Mfr. Co., 1956-57; Chf. En gineer, Rsch. and Devel., Walker Mfg. Co., 1957—. Hon. Pos



Chmn., 25 Group, Royal Air Force, Accident Investigation Bd. Mem.: Soc. Automotive Engr.; Am. Soc. Mech. Engrs.; Soc. Plastics Engrs.; Am. Rocket Soc.; Am. Soc. Lub. Engrs.; Am. Soc. Bod. Engrs.; A.A.A.S.; Inst. Aero. Scis.; Inst. Soc. Am.; Inst. Brit. Car. and Auto. Mfgs; Inst Bod. Engr.; Royal Air Force Yacht Club; Royal Air Force Club; Royal Automobile Club; Brit. Automobile Racing Club. Serv. Rec.: Squadron Ldr., Royal Air Force, 1940-46. Areas of Rsch.: Thermodynamics, Aeronautics, V.T.O.L.; Automotive Design; Hydrodynamics.

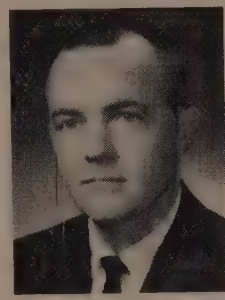
MAY, Samuel Casamere (M.D.), Physician, 188 Tarrydown Rd., Manchester, N. H. Home Add.: 80 Magnolia Rd., Manchester, N. H. GENERAL SURGERY. b. Syracuse, N. Y., Sept. 19, 1920. s. Mark A. and Ruby (Patton) M. Edn.: B.S., Harvard Coll., 1942; M.D., Yale Med. Schl., 1945. m. Thelma Simmons, July 5, 1946. c.: Mark G.; Linda E. Exp.: Asst. in Surgery, Univ. of Ia., Ia. City, Ia., 1952-53; Sr. Surgeon, Elliot Hosp., Manchester, N. H., 1953—. Hon. Pos.: Chmn., Exec. Comm., N. H. Div., Am. Cancer Soc.; Diplomate, Natl. Bd. of Med. Examiners, Am. Bd. of Surg. Mem.: Fellow, Am. Coll. of Surgeons; New England Surg. Soc.; N. Y. Acad. of Scis.; Pan Pacific Surg. Assn.; Am. Geriatrics Soc.; Am. Thoracic Soc.; Am. Assn. for Adv. of Sci.; Assn. of Military Surgeons of U. S.; Alpha Omega Alpha; Sigma Xi. Serv. Rec.: U. S. Air Force, 1946-48.

MAYBERGER, Harold Woodrow (M.D.), Obstetrician-Gynecologist, Med. Arts Bldg., Syosset, L. I., N. Y. Home Add.: Bear Lane, Lattingtown, L. I., N. Y. OBSTETRICIAN-GYNECOLOGIST, NEONATAL PATHOLOGY; FORENSIC OBSTETRICS. b. Astoria, L. I., N. Y., Aug. 28, 1919. s. George Joseph and Grace Ann (Kemp) M. Edn.: B.A., Univ. of Ala., 1941; M.D., L. I. Coll. of Med., 1944. m. Eva Marie Yerkovich, Mar. 10, 1951. c.: Mary Grace; John Peter; James Francis. Exp.: Intern, St. Johns Episcopal Hosp., Brooklyn, N. Y., 1944-45; 1947-48; Resident, Obstetrics, Gynecol., ibid., 1948-51; Rsch. Fellow, Neonatal Pathol., Beth El Hosp., Brooklyn, N. Y., 1951-53; Attending Obstetrician, Gynecologist, Community Hosp., Glen Cove., N. Y., 1958—; Asst. Attending Obst.-Gynecol. Pathologist, ibid., 1957—; Asst. Attending Obst.-Gynecol., St. Johns Epis. Hosp., Brooklyn, N. Y., 1951-59. Mem.: Diplomate, Am. Bd. of Obst. and Gynecol.; Fel., Am. Coll. Surgs.; Fel., Am. Coll. Legal Med.; A.M.A.; Fel., Am. Coll. Obstetricians and Gynecologists; Brooklyn Gynecol. Soc.; Nassau Obst. and Gynecol. Soc.; N. Y. Acad. of Scis.; Soc. for Med. Jurisprudence; A.A.A.S.; Am. Bd. of Legal Med.; Med. Soc. St. of N. Y.; Nassau Co. Med. Soc.; Theta Kappa Psi. Author: Collected papers of the Am. Bd. of Legal Med. titled, Liability for Prenatal Injuries, 1960. Contbr. to: Obstetrics and Gynecology; Am. Jour. of Obst. and Gynecol.; Am. Jour. of Med. Scis.; A.M.A. Archives of Pathology. Serv. Rec.: U. S. Army, W.W. II. Areas of Rsch.: Neonatal Pathology; Obstetrics, Gynecology; Forensic Obstetrics.

MAYER, Joseph (Ph.D.), Visiting Prof. in Sci. and Tech., So. Ill. Univ., Alton, Ill. Home Add.: 929 Chestnut Lane, Oxford, Ohio. HISTORY AND PHILOSOPHY OF SCIENCE AND MATHEMATICS. b. San Antonio, Tex., Feb. 17, 1887. s. Henry and Aurelia (Huyer) M. Edn.: B.A., Southwestern Univ., 1911; M.A., Harvard Univ., 1914; Ph.D., Columbia Univ., 1922. Hon. Deg.: L.L.D., Southwestern Tex., 1929. m. Helen Josephine O'Neill. Exp.: Sr. Staff Mem., Econ. Reconstruction after the War, Brookings Institution, Wash., D. C., 1942-48; Chmn., Dept. of Econ. and Prof. Econ. and Math., Miami Univ., Oxford, Ohio, 1948-58; Prof., Math. and Econ., Western Coll., 1958-61; Visiting Prof. in Sci. and Tech., Sou. Ill. Univ., Alton, Ill., 1961—. Hon. Pos.: Hon. Consultant, Libr. of Congress, 1930-40. Mem.: Fl., Past Vice Pres., A.A.A.S.; Past Pres., Soc. Industrial Engrs.; Pres., Beta Gamma Sigma. Author: Bigger Men in Better Jobs, 1920; Metric vs. English Weights and Measures, 1921; The Seven Seals of Science, 1937; Social Science Principles in the Light of Scientific Method, 1941; Postwar National Income, 1944. Contbr. to: Philos. of Sci.; Scientific Monthly; Science; So. Econ. Jour.; Review of Econ. and Statistics; Jour. of Polit. Econ.; Miami Bus. Review; Schl. Sci. and Math.; Social Sci.; Am. Jour. of Sociology; Am. Philophical Review; Yale Scientific Mag. Areas of Rsch.: History and Philosphy of Science and Mathematics, Programed Learning, The Production Function.

MAYER, Lois M. (Miss), Chmn., Math. Dept., Monrovia H. S., Colo. and Madison Ave., Monrovia, Calif. Home Add.: 635 Prospect Ave., Apt. 15A, S. Pasadena, Calif. APPLICATIONS — PURE MATH. b. Humboldt, Iowa, Mar. 13, 1918. d. Kyle K. and Laura Florence (Nordschow) M. Exp.: Prin., Schl. No. 10, Badger, Iowa, 1937-39; Jr. H. S. Tchr., Ft. Dodge, Iowa, 1941-43; Tchr., West H. S., Waterloo, Iowa, 1943-45; Tchr., H. S., Austin, Minn., 1945-46; Hd., Dept. of Math., Jr. Coll., Sheldon, Iowa, 1946-47; Hd., Dept. of Math., Mt. St. Marys, Los Angeles, 1947-48; Tchr., Hd. Math. Dept., Monrovia H. S., Calif., 1959—. Mem.: A.A.A.S.; Kappa Mu Epsilon; Kappa Delta Pi. Areas of Rsch.: Curriculum Revision.

MAYER, William Dixon (M.D.), Asst Dean and Asst. Prof. of Pathol., Univ. of Mo., Schl. of Med., Columbia, Mo. Home Add.: 1000 Lakeshore Dr., Columbia, Mo. MEDICINE; PATHOLOGY. b. Beaver Falls, Pa., Oct. 5, 1928. s. Emil Leroy and Elizabeth Townsend (Erickson) M. Edn.: B.A., Colgate Univ., 1951; M.D., Univ. of Rochester, 1957. m. Ann Trainer, June 10, 1953. c.: Elizabeth Ann; David Dixon. Exp.: Instr. in Pathol., Univ. of Rochester, Schl. of Med., Rochester, N. Y., 1959-60; Sr. Instr., ibid., 1960-61; Asst. Dean and Asst. Prof., Univ. of Mo., Schl. of Med., 1961—. Hon. Pos.: Chmn., Comm. on Adms., Univ. of Mo., Schl. of Med. Mem.: Internatl. Acad. of Pathol.; Am. Med. Assn.; Assn. of Am. Med. Colls.; Am. Assn. for the Adv. of Sci.; Alpha Omega Alpha; Sigma Xi. Contbr. to: Cancer Rsch.; Sci. Serv. Rec.: U. S. Marine Corps, 1946-48. Gen. Int.: Markle Scholar in Med. Sci., 1962—. Areas of Rsch.: Surgical Pathology; Immunopathology; Medical Education and Administration.



MAYNOR, Hal Wharton, Jr. (D. Eng.), Prof., Dept. of Mech. Engrng., Auburn Univ., Auburn, Ala. Home Add.: 518 Cary Dr., Auburn, Ala. MATERIALS (METALLIC); SCIENCE. b. Nashville, Tenn., Oct. 5, 1917. s. Hal Wharton, Sr. and Ophelia Abbigail (Hill) M. Edn.: B.S., Univ. of Ky., 1944; M.S., ibid., 1947; D. of Eng., ibid., 1954. m. Marjorie Baker, Mar. 16, 1946. c.: Sandra Lee; Susan Lynne; Hal Wharton, III. Exp.: Asst. Prof. Mech. Engr., Ia. State Univ., Ames, Ia., 1947-51; Assoc. Engr., Atomic Rsch. Inst., ibid., 1947-51; Prin. Investr., Univ. of Ky., Lexington, Ky., 1951-54; Metall. Engr., Gen. Elect. Co., Louisville, Ky., 1954-57; Assoc. Prof., Dept. of Mech. Engrng., Univ. of Ky., 1957-59; Prof., Dept. of Mech. Engrng., Auburn Univ., 1959—. Hon. Pos.: Am. Conferee, Second World Metall. Cong., Chicago, 1957. Mem.: Am. Inst. of Met. Engrs.; Am. Soc. for Metals; Am. Soc. for Engrng. Edn.; Alpha Chi Sigma; Ky. Acad. of Sci.; Ala. Acad. of Sci.; Ala. Soc. of Prof. Engrs.; Sigma Xi; Pi Tau Sigma; Tau Beta Pi; Sigma Phi Epsilon; Kiwanis. Contbr. to: Trans. of the Ky. Acad. of Sci.; Jour. of Metals; Corrosion; Wright Air Devel. Ctr. Techn. Report.; Am. Soc. for Testing Materials. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Elevated Temperature, Wear and Fracture Characteristics of Metals.

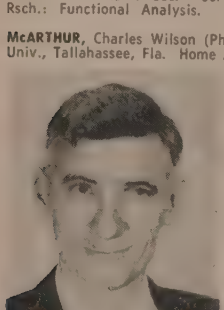
MAZYCK, Harold Eugene, Jr. (Mr.), Asst. Prof. and Educational Counselor, The A. and T. Coll. of N. C., Greensboro, N. C. Home Add.: 2007 Chelsea Lane, Greensboro, N. C. BIOLOGY. b. Charleston, S. C., July 7, 1922. s. Harold E., Sr., and Esther Bankade (Spencer) M. Edn.: B.S., S. C. St. Coll., 1944; M.A., N. Y. Univ., 1948. m. Aurelia A. Chaney, Sept 3, 1959. Exp.: Asst. Dean of Men, Counselor to Men, Placement Dir., Vocational Counselor, Instr. in Edn. and Guidance, Clark Coll., Atlanta, Ga., 1948-52; Asst. Prof. of Guidance and Edn., Prairie View A. and M. Coll., Tex., 1952-59; Coordinator Student Activities, Hampton Inst., 1959-60; Asst. Prof. and Edn'l. Counselor, Guidance Ctr., The A. and T. Coll. of N. C., 1960—. Hon. Pos.: St. Chmn., Personnel and Guidance Sect., Tchrs. St. Assn. of Tex., 1956-59; St. Mbrship. Chmn., Student Personnel Assn. for Tchr. Edn., 1959-60. Mem.: A.A.A.S.; A.A.U.P.; Am. Personnel and Guidance Assn.; National Vocational Guidance Assn.; Natl. Soc. for the Study of Edn.; Alpha Phi Alpha. Ed.: Clark College Placement Directory for Senior Class, 1950. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Occupational Information Specialist.

McAFEE, Jerry (Sc.D.), Vice-Pres., Exec. Technical Advisor, Gulf Oil Corp., P. O. Box 1166, Pittsburgh 30, Pa. Home Add.: 828 12th St., Oakmont, Pa. CHEMICAL ENGINEERING. b. Port Arthur, Tex., Nov. 3, 1916. s. Almer McDuffie and Marguerite Avelette (Calfee) M. Edn.: B.S., Univ. of Tex., 1937; Sc.D., Mass. Inst. of Technol., 1940. m. Geraldine Smith, 1940. c.: Joe R.; William M.; Loretta M.; Thomas R. Exp.: Rsch. Chem. Engr., Universal Oil Products Co., Chicago, Ill., 1940-45; Technical Specialist, Gulf Oil Corp., Port Arthur, Tex., 1945-49; Dir., Chem. Div., Gulf Rsch. and Development Co., Harmarville, Pa., 1950-51; Asst. Dir. of Rsch., ibid., 1951-53; Vice-Pres., Assoc. Dir., of Rsch., ibid., 1954-55; Vice-Pres., Engrng. Mfgrng. Dept., Gulf Oil Corp., Pittsburgh, Pa., 1955-60; Vice Pres., Exec. Technical Advisor, ibid., 1960—. Hon. Pos.: Dir., Am. Inst. of Chem. Engrs.; Vice-Pres., ibid.; Pres., ibid., Mem.: Air Pollution Control Assn.; A.C.S.; A.A.A.S.; Am. Petroleum Inst.; Natl. Rssch. Coun.; Permanent Coun. of World Petroleum Congresses; Soc. of Chemical Industry; Univ. Club; Pittsburgh C. of C.; Oakmont Country Club; Duquesne Club; Harmarville Rehabilitation Center; Boy Scouts of Am.; Jr. Achievement-Southwest Pa. Areas of Rsch.: Petroleum Products and Processes, Including Petrochemicals.

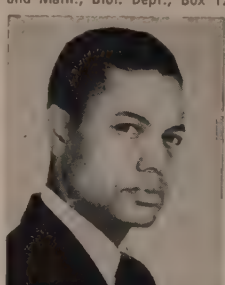
McALLISTER, Cyrus Ray, Pres. and Tech. Dir., McAllister and Assoc., Inc., 203-205 Truman St., N.E., Albuquerque, N. Mex. Home Add.: 1032 Espejo, N.E., Albuquerque, N. Mex. MATHEMATICS AND METEOROLOGY. b. Portland, Ore., Apr. 22, 1922. s. Cyrus Ray, Sr. and Edna Marion (Parks) M. Edn.: B.A., Univ. of Minn., 1948; M.A., Univ. of Ore., 1951. m. Mary Ruth Carter, Sept. 28, 1953. c.: Sharon Louise; Cyrus R., III; Mark Ross. Exp.: Teaching Asst., Univ. of Minn., 1948; Instr., Univ. of Idaho, 1948-50; Tchng. Fellow and Grad. Asst., Univ. of Ore., 1950-52; Analyst, Dept. of Defense, Wash., D. C., 1952; Staff Mem., Mathematician, Project Ldr., Sandia Corp., Alburquerque, N. Mex., 1952-57; Consultant, ibid., 1957; Sr. Rsch. Scientist, Major Project Supervisor, Kaman Aircraft Corp., Nuclear Div., Albuquerque, N. M., 1957-59; Consultant, ibid., Colo. Springs, Colo., 1959-60; Consultant, Hamilton Watch Co., Lancaster, Pa., 1960; Pres. and Tech. Dir., McAllister and Assoc., Inc., 1960—. Hon. Pos.: Member, Joint ASQC-IRE Task Force on Systems Reliability, 1961—. Mem.: Am. Meteorological Soc.; Am. Mathematical Soc.; Soc. for Ind. and Applied Mathematics; Mathematical Assn. of Am.; A.A.A.S.; Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon. Serv. Rec.: U. S. Army Air Corps, 1940-45. Gen. Int.: Arming and Fuzing in Nuclear Weapons Applications. Areas of Rsch.: Conceptual, Feasibility, Analytical and Evaluatory Studies in the Fields of Missile and Weapons Systems Analysis; Reliability; Applied Mathematics; Statistical Decision Theory; Applied Climatology.

McALPIN, John Harris, (Mr.), National Science Foundation Fellow, Columbia, New York, N. Y. Home Add.: 532 W. 111th St., New York, N. Y. MATHEMATICS. b. Natchez, Miss., Dec. 7, 1933. s. Fairell and Ethel (Burris) M. Edn.: B.A., Columbia Univ., 1958; M.S., N. Y. Univ., 1960. Exp.: Asst., Columbia Univ., New York, N. Y., 1960—; Instr., ibid., summer, 1962. Mem.: Am. Math. Soc. Serv. Rec.: AUS, 1954-56. Areas of Rsch.: Functional Analysis.

McARTHUR, Charles Wilson (Ph.D.), Assoc. Prof. of Math., Fla. St. Univ., Tallahassee, Fla. Home Add.: 437 McDaniel St., Tallahassee, Fla. MATHEMATICS (FUNCTIONAL ANALYSIS). b. New Orleans, La., Nov. 4, 1921. s. James Marshall and Ruth Marie (Wilson) M. Edn.: B.S., La. St. Univ., 1947; M.Sc., Brown Univ., 1950; Ph.D., Tulane Univ., 1954. m. Bertha Minnie Moffit, May 16, 1943. c.: Mary Anne; Carol Lynn; Katherine Ellen; Samuel Moffit; Ruth Frances; Charles Marshall. Exp.: Instr., Univ. of Md., 1952-53; Asst. Prof., Auburn Univ., 1953-56; Assoc. Prof., Fla. St. Univ., 1956—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Phi Kappa Phi; Sigma Xi; Pi Mu Epsilon. Contbr. to: Am. Jour. of Math.; Can. Jour. of Math.; Proc. of the Am. Math. Soc.; Am. Rocket Soc. Jour. Serv. Rec.: U.S.A.F., 1943-45. Areas of Rsch.: Functional Analysis, Banach and Hilbert Spaces, Theory of Schauder Bases.



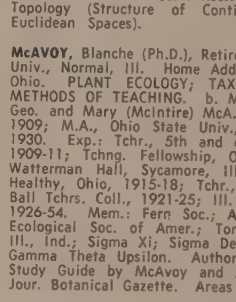
McARTHUR, William Henry (Ph.D.), Prof., Chmn., Div Nat. Sc and Math., Biol. Dept., Box 173, Knoxville Coll., Knoxville, Ten Home Add.: 1013 College, S.W Knoxville, Tenn. PROTOZOOLOG (PARASITIC) b. Selma, Ala., Oc 15, 1922. s. Cazzie Clinton ar Olga (Radcliffe) McA. Edn.: A.B Morehouse Coll., 1947; M.S., A Ianta Univ., 1948; Ph.D., S Univ. of Iowa, 1955. Exp.: I str., Morehouse Coll., 1948-5 Assoc. Prof., Knoxville Col 1951-53; Asst. Zool., State Uni of Iowa, 1954-55; Prof., Knoxvil Coll., 1955—. Mem.: Sigma X N.I.S., Regional Vice Pres., 196 Gamma Alpha; Assn. Mem. of An Physiol. Soc.; Beta Kappa Ch Mem. Exec. Coun. (1957, '58, '6 '61); Beta Kappa Chi V.-Pres Cent. Reg., 1962; Tenn. Acad. Sci A.A.U.P.; A.A.A.S.; Omega P Phi, Basileus, 1957, '58, '5 Contbr. to: Iowa Acad. Sci.; Physiologist, Am. Jour. Physiol. Physiolog. Rev. War Record: U. S. Army, 1943-46. Gen. Int Recipient of two Carnegie Grants; Two Physiological Soc. Grants Four McBride scholarship awards for study. Areas of Rsch. Protozoology; Parasitology; Radiation Biology.



McAULEY, Louis Floyd (Ph.D.), Assoc. Prof., Dept. of Math North Hall, Univ. of Wis., Madison, Wis. Home Add.: 41 Presidential Lane, Madison 5, Wis. MATHEMATICS. b. Traveler Rest, S. C., Aug. 21, 1924. s. Stephen Floyd and Floride (Cox M. Edn.: B.S., Okla. State Univ., 1949; M.S., ibid., 1950 Ph.D., Univ. of N. C., 1954. Exp.: Instr., Univ. of Md., Colleg Park, Md., 1954-56; Instr., Univ. of Wis., Madison, Wis., 1956 57; Asst. Prof., 1957-59; Visiting Assoc. Prof., La. State Univ. 1959-60; Assoc. Prof., Univ. of Wis. and Chmn. Dept. of Math Ext. Div., 1960—. Mem.: Am. Math. Soc.; Math. Assn. of Am. Pi Mu Epsilon; Sigma Xi; Sigma Pi Sigma. Contbr. to: Annal of Math.; Trans. of Am. Math. Soc.; Proc. Am. Math. Soc. Fundamenta Math. Serv. Rec.: A.U.S., 1943-45. Areas of Rsch. Topology (Structure of Continna, Semi-Continuom Collections Euclidean Spaces).

McAVOY, Blanche (Ph.D.), Retired Prof. of Biol., Ill. State Norma Univ., Normal, Ill. Home Add.: 5476 Foley Rd., Cincinnati 38 Ohio. PLANT ECOLOGY; TAXONOMY OF FLOWERING PLANTS METHODS OF TEACHING. b. Mitchell, Ind., Sept. 11, 1885. d Geo. and Mary (McIntire) McA. Edn.: B.A., Univ. of Cincinnati 1909; M.A., Ohio State Univ., 1912; Ph.D., Univ. of Chicago 1930. Exp.: Tchr., 5th and 6th Grades, Kennedy Hgts., Ohio 1909-11; Tchng. Fellowship, Ohio State Univ., 1911-14; Tchr. Watterman Hall, Sycamore, Ill., 1914-15; Tchr., H. S. Mount Healthy, Ohio, 1915-18; Tchr., Wyoming, Ohio, 1918-21; Tchr. Ball Tchrs. Coll., 1921-25; Ill. State Normal Univ., Normal, Ill. 1926-54. Mem.: Fern Soc.; A.A.A.S.; Botanical Soc. of Amer.; Ecological Soc. of Amer.; Torrey Bot. Soc.; Acad. of Sci. in Ill., Ind.; Sigma Xi; Sigma Delta Epsilon; Delta Kappa Gamma; Gamma Theta Upsilon. Author: Study Guide, 1938; Biology, A Study Guide by McAvoy and Moore, 1950. Contbr. to: I.E.A. Jour. Botanical Gazette. Areas of Rsch.: Ecology.

McBRYDE, Felix Webster (Ph.D.), Pres., F. W. McBryde Assocs., Inc., 1312-14 15th St., N.W., Washington 5, D. C. Home Add.: 10100 Falls Rd., Rockville, Md. GEOGRAPHY, REGIONAL PLANNING; INDUSTRIAL DEVELOPMENT. b. Lynchburg, Va., Apr. 23, 1908. s. John McLaren and Flora O'Neal (Webster) McB. Edn.: B.A., Tulane Univ., 1930; Ph.D., Univ. of Calif., m. Frances Van Winkle, July 23, 1934. c.: Richard; Sarah; John McLaren IV. Exp.: Instr., Ohio State Univ., 1937-42; U. S. War Dept., Military Intel., Wash., D. C., Consultant, Sr Geog., 1942-45; Dir., Smithsonian Inst., Inst. Soc. Anthropology, Lima, Peru, 1945-47; Census Bur., U. S. Dept. Commerce, Wash., D. C. and Latin Am., Consultant, 1950 Census of Americas, throughout Latin Am., 1948-56; Chief of Mission, Tech. Advisor, 1st Natl. Census Ecuador, 1949-51; Dir., Regional Planning, Gordon A. Friesen Assoc., Inc., Hosp. Consultants, Wash., D. C. and Costa Rica, 1956-58; Pres., F. W. McBryde Assocs., Inc., Wash. and Latin Am., 1958—; Univ. Tchng., Lectrng. and Rsch., Instr., Prof., 1929—; Prof., Univ. of Md., 1951—, (Consult. Prof. since 1959) Hon. Pos.: Pres., Inter-Am. Coun., Wash., since 1958; Organizing Secy., 1953-58; Hon. Dir., Founder, Ecuad. Inst. Anthrop. and Geog., 1950-52; Organizing Pres., Am. Soc. Prof. Geographers, (now Assn. Am. Geog.). Mem.: A.A.A.S.; Am. Geog. Soc.; Assn. Am. Geog.; Reg. Sci. Assn.; Ecuadorian Inst. Natural Scis.; Mexican Geog. Soc.; Sigma Nu; Phi Beta Cappa. Author: Solola, A Guatemalan Town and Cakchiquel Market Center, 1933; Cultural and Historical Geography of Southwest Guatemala, 1947; Census Atlas Maps of Latin Am.-Central Am., 1955; Greater Antilles, 1956. Co-Author: Equal-Area Projections for World Statistical Maps, 1949; Master Hospital Plan, 8 Vols., Costa Rica, 1957; S.E. Hospital Survey, Washington, D. C., 1958; Guatemala, Hospital Survey, 1959; Census Atlases of Costa Rica,



Salvador, Honduras, 1953-54. Contbr. to: Bull. Am. Soc. rofessional Geographers; Bull. History Med.; Bull. Am. Meterol. oc.; Scientific Monthly; Estadistica; Encyclopaedia Britannica. erv. Rec.: National Guard, 1927-30. Gen. Int.: Discoveries of rigins of Cultivated Plants, Especially Corn and Beans in Cent. m., on Social Science and National Research Council Fellowships; rst Editor and Organizer, Bulletin of the American Society for rofessional Geographers; Devised and Developed Series of Six ew Equal-Area World Projections; Devised New Statistical- eographical Method for Determining Hospital Needs. Areas of sch.: Latin America, Especially Central America; General and istorical Geography, Ethnogeography and Archology; Map rojections; Population Data Applied to Hospital Needs; emography.

cBLAIR, William (Ph.D.), Asst. Prof., Zool., San Diego St. Coll., an Diego, Calif. Home Add.: P. O Box 191, La Mesa, Calif. PHYSIOLOGY AND BIOCHEMISTRY. b. San Diego, Calif., Apr. 19, 1917. s. William and Catherine (Bohannon) M. Edn.: A.B., San Diego St. Coll., 1947; Ph.D., Univ. of Calif. at L. A., 1956. m. Virginia V. McBlair. c.: Nancy Catherine. Exp.: Sometime Rockefeller Rsch. Worker, Scripps Inst. of Oceanography, 1948-52; Instr., Zool., San Diego State Coll., 1948-51; Asst. Prof., Zool., ibid., 1951—. Hon. Pos.: Secy., Local Chapter, A.A.U.P., 1956-57. Mem.: Fellow, San Diego Biomedical Soc.; A.A.A.S.; Am. Inst. of Biol. Scis.; A.A.U.P.; Am. Soc. of Zool.; Phi Sigma Xi; C. of C.; Am. Mus. Natl. Hist.; Alpha Phi Omega. Contbr. to: Biol. Bull.; ASTIA.

h.D. Dissertation: The Uptake of Vanadium in Ciona Intestinalis, innaeus. Travel: Can.; Mex. Hobbies: Tennis; Chess; Reading; usic; Foreign Cars. Areas of Rsch.: Physiology of marine nimals; High altitude physiology.

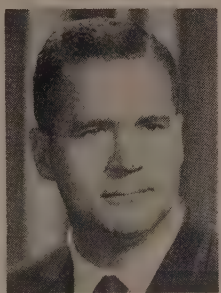
cBURNEY, Lane Fordyce (Ph.D.), Mgr. Central Rsch., Hercules owder Co., Wilmington, Del. Home Add.: 117 Bent Lane, Newark, Del. PHYSICAL ORGANIC CHEMISTRY. b. Pittsburgh, Pa., July 26, 1913. s. Merle F. and Letah E. (Stone) M. Edn.: B.S., Ch.E., Drexel Inst. of Tech., 1936; M.S., Univ. of Penn., 1940; Ph.D., ibid., 1942. m. J. Ruth Stevenson, June, 1940. c.: Marylane B. Exp.: Mgr., Synthetic Chemical Dept., Sharp and Dohme, Philadelphia, Pa., 1936-42; Instr. in Chem., Univ. of Penn., Phila., Pa., 1942-43; Mgr. Central Rsch., Hercules Powder Co., Wilmington, Del., 1943—; Mgr., Basic Res., Cellulose Pioneering Res., Virginia Cellulose Res. Div., Associated Res. Divs., Central Res. Div., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Rsch. Soc. of Am.; Sigma Xi; Phi Kappa Phi. Contbrng.

uthor: Cellulose and Cellulose Derivatives, 1954. Contbr. to: our. of Am. Chem. Soc.; Ind. and Engr. Chem.; Tappi. Areas f Rsch.: Industrial Organic Chemicals, Cellulose and Cellulose erivatives, Polymer Chemistry, Medical Chemistry.

cCAIN, John Lewis (M.D.), Physician, Wilson Clinic, Wilson, . C. Home Add.: 1601 Highland Dr., Wilson, N. C. INTERNAL MEDICINE. b. McCain, N. C., Apr. 11, 1927. s. Paul Pressley and Sadie Lou (MacBrayer) M. Edn.: B.A., Univ. of N. C., 1948; M.D., Univ. of Va., 1952. m. Betty Landon Ray, Nov. 19, 1955. c.: Paul Pressley; Mary Eloise. Exp.: Intern, Phila. Gen. Hosp., Phila., Pa., 1952-53; Res. in Med., N. C. Mem. Hosp., Chapel Hill, N. C., 1953-55; Res. in Med., Med. Coll. of Va., Richmond, Va., 1955-56; Physician, Wilson Clinic, 1956—; Assoc. Clin. Prof. of Med., Univ. of N. C., Schl. of Med., 1961—. Hon. Pos.: Past Pres., Wilson Co. Med. Soc.; Past Pres., Seaboard Med. Soc.; Vice Pres., 4th Dist. Med. Soc.; Bd. of Dirs., N. C. Heart Assn., N. C. Mental Health Assn. (Pres.-Elect, 1962); N. C.

omm. on Nursing and Patient Care; N. C. Ment. Health. Coun.; d. of Dirs., United Med. Rsch. Found. Mem.: Am. Med. Assn.; eaboard Med. Assn.; N. C. Soc. of Int. Med.; Am. Coll. of hysns., Assoc. Mem.; Phi Chi; Jaycees; Deacon, Presby. Ch. erv. Rec.: U. S. Naval Reserve, 1945-46. Areas of Rsch.: nternal Medicine.

McCALL, Jerry Chalmers (Ph.D.), Asst. to the Dir., Marshall Space Flight Ctr., Huntsville, Ala. Home Add.: 525 Trousdale Dr., Huntsville, Ala. MATHEMATICS. b. Oxford, Miss., June 30, 1927. s. E. F. and Mariada (Huffaker) M. Edn.: B.A., Univ. of Miss., 1951; M.A., ibid., 1951; M.S., Univ. of Ill., 1956; Ph.D., ibid., 1959. m. Margaret Denton, Nov. 28, 1952. c.: Betsy; Lynn; Kim. Exp.: Rsch. Assoc., Univ. of Ill., Champaign, Ill., 1953-58; Appl. Sci. Rept., I.B.M., Springfield, Ill., 1957-58; Exec. Vice Pres., Midwest Computer Serv., Inc., Decatur, Ill., 1958-59; Asst. to the Dir., Marshall Space Flight Ctr., Huntsville, Ala., 1960—. Mem.: Sigma Xi; Pi Kappa Pi; Pi Mu Epsilon; Omicron Delta Kappa; Chi Epsilon; Delta Kappa Epsilon. Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Applications of Computers.



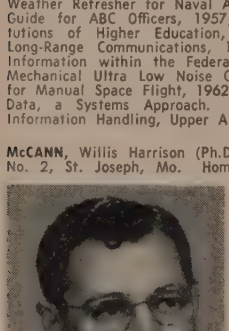
McCALL, Milton Lawrence (M.D.), Prof. and Chmn., Obstetrics and Gynecology, Univ. of Pittsburgh Schl. Med.; Med. Dir. and Chf.-of-Staff, Elizabeth Steel Magee Hosp., Pittsburgh 13, Pa. Home Add.: 316 Halket St., Pittsburgh 13, Pa. MEDICINE; OBSTETRICS AND GYNECOLOGY. b. Peru, Ind., July 10, 1911. s. Samuel Lawrence and Carrie (Haag) McC. Edn.: Attended Univ. of Minn., 1930-33; attended Univ. of Chicago, 1933; attended Northwestern Univ., 1934-35; B.S., Indiana Univ., 1937; M.D., ibid., Schl. of Med., 1939. m. Jane French, Sept. 30, 1944. c.: Frances French; Lawrence French. Exp.: Assoc. Chf., Obstet. and Gyn., Philadelphia Gen. Hosp. and Epis. Hosp., Philadelphia, and Asst. Prof., Obstet. and Gyn., Jefferson Coll., Philadelphia, 1944-53; Priv. Practice, Obstet. and Gyn., Philadelphia, Pa., 1943-53; Prof. and Hd., Dept. Obstet. and Gyn., La. State Univ., New Orleans, and Obstetrician and Gyn.-in-Chief, L.S.U. Unit, Charity Hosp., New Orleans, 1953-59; Prof. and Chmn., Dept. Obstet. and Gyn., Univ. Pgh., Pittsburgh Med. Dir., Chf.-of-Staff, E. S. Magee Hosp., Pgh., 1959—; Consultant Gynecologist, John J. Kane Hosp., Pittsburgh, Consult. Gynecologist, Presbyterian-Woman's Hosp., Pittsburgh, 1959—. Hon. Pos.: Diplomat, Am. Bd. Obstetrics and Gynecology; Dir., Am. Assn. for Infant and Maternal Care; Adv. Editorial Bd., Internatl. Corresponding Soc. Obstetricians and Gyn.; Vice-Pres., Sect. Gynecology and Obstetrics, Pan Am. Med. Assn.; Bd. Dir., Am. Cancer Soc.; Editorial Bd., Quarterly Review, Surgery, Obstetrics and Gynecology; Ala. St. Obstetrical and Gynecological Soc.; Dallas Sou. Clin. Soc.; Southwest Obstetrical and Gynecol. Soc.; Wash. St. Obst. Soc.; Sou. Gynecol. and Obst. Soc.; South Atlantic Assn. of Obstetricians and Gynecologists; Kans. City Gynecol. Soc. Mem.: Fellow, Am. Gynecological Soc.; Soc. for Gynecol. Investigation; Am. Gynecol. Club; Soc. Pelvic Surgeons; Am. Assn. Obstetricians and Gynecologists; Fellow, Am. Coll Surgeons; Founding Mem., Am. Coll. Obstricians and Gynecologists; Fellow, Coll. Physicians of Philadelphia; A.A.A.S.; Am. Med. Assn.; Pa. State Med. Soc.; Allegheny County Med. Soc.; Soc. Biological Rsch.; Alpha Omega Alpha; Nu Sigma Nu; Rotary Internatl. Co-editor: Martius Gynecological Operations, 1957. Contbrng. Author: Complications of Gynecological Surgery, 1960. Author: Functional Gynecologic Surgery, 1960. Contbr. to: Am. Jour. Obstetrics and Gyn.; Obstetrical and Gynecol. Survey; Surgical Clinics of No. Am.; Med. Clinics of No. Am.; Surgical Forum; Clin. Obst. and Gyn.; Obst. and Gyn.; various State Jours.; Sou. Med. Jour.; Audio-Digest of Obstetrics and Gyn.; Quarterly Rev. Obst. and Gyn.; Jour. Am. Med. Assn.; Am. Jour. Med. Scis.; and others. Areas of Rsch.: Clinical Research Studies on Gynecological Cancer; Toxemias of Pregnancy; Development of Surgical Techniques for Gynecological Cancer; Studies of Ovarian Cancer Chemotherapy.

McCALLA, Thomas Mark (Ph.D.), Rsch. Microbiolt., 145 Keim Hall, Univ. of Nebr., Lincoln 3, Nebr. Home Add.: 5825 Meadowbrook Lane, Lincoln, Nebr. SOIL MICROBIOLOGY. b. Corinth, Miss., Nov. 29, 1909. s. Mark H. and Inez (Jones) M. Edn.: B.S., Miss. State Coll., 1934; M.A., Univ. of Mo., 1935; Ph.D., ibid., 1937. m. Virginia Elizabeth Key, May 27, 1932. c.: Thomas; Robert; David; William; Ann. Exp.: Student Asst., Miss. State Coll., Sta. Coll., Miss., 1930-34; Grad. Asst., Univ. of Mo., Columbia, Mo., 1934-37; Instr., Bact., Kans. State Univ., Manhattan, Kans., 1937-41; Bact., U. S. Dept. of Agric., S. C. S. and A. R. S., Lincoln, Nebr., 1941-59; Microbiolt., U. S. Dept. of Agric., Univ. of Nebr., 1959—. Hon. Pos.: Pres., Mo. Valley Chapt., S.A.M., 1955; Chmn., Soil Microbiol. Sect., Soil Sci. Soc. of Am., 1946. Mem.: Soil Sci. Soc. of Am.; Am. Soc. of Agron.; Soc. of Am. Microbiolts.; Sigma Xi; Gamma Sigma Delta. Author: Stubble Mulch Farming, Contbrng. Author, 1961; Soil Microorganisms and Soil Structure, 1961. Contbr. to: Soil Sci. Soc. of Am. Procs.; Agron. Jour. Areas of Rsch.: Isolation, Identification and Study of Action of Phytotoxic Substances from Soil, Plant Residues, and Microorganisms as a

Possible Factor for Reduced Yields with Stubble Mulch Method of Farming.

McCALMONT, Arnold M. (Mr.), Gen. Mgr., Scientific Analysis Corp., 33 Sudbury Rd., Concord, Mass. Home Add.: 7 Beverly Rd., South Acton, Mass. COMMUNICATION, INFORMATION HANDLING AND METEOROLOGY. b. New York, N. Y., June 19, 1929. s. Nathan and Rose (Skovho) M. Edn.: A.A., Chaffey Coll., 1949; B.A., Univ. of Redlands, 1953; M.A., ibid., 1961. m. Rebekah R. Wright, Dec., 1952. c.: James A.; Marc W.; Stephen. Exp.: Grad. Student, and Aeronautical Engrng. Aide, Air Force, Norton Air Force Base, San Bernardino, Calif., 1952-54; Meteorological Officer, U. S. Naval Air Sta., Guantanamo Bay, Cuba, 1954-57; Instr. in Phys., Bakersfield Coll., Calif., 1957-59; Consultant in Areas of Operations Planning, Calif., 1957-61; Chief, Res. Info. Div., AFCRL, 1959-61; Gen. Mgr., Scientific Analysis Corp., Concord, Mass., 1961—. Mem.: Am. Meteorological Soc.; Inst. of Radio Engrs.; A.A.A.S.; Am. Geophys. Union. Author: Microseismic Detection of Tropical Storms, 1955; A Weather Refresher for Naval Aviators, 1956; Radiological Fallout Guide for ABC Officers, 1957; A Publications Guide for Institutions of Higher Education, 1960; Satellites for Commercial Long-Range Communications, 1961; The Exchange of Scientific Information within the Federal Government, 1961; A Miniature Mechanical Ultra Low Noise Commutator, 1961; Communications for Manual Space Flight, 1962; Communication of Meteorological Data, a Systems Approach. Areas of Rsch.: Communications, Information Handling, Upper Air Meteorology.

McCANN, Willis Harrison (Ph.D.), Clin. Psychologist, State Hosp. No. 2, St. Joseph, Mo. Home Add.: 401 S. Noyes Blvd., St. Joseph, Mo. PSYCHO-PATHOLOGY. b. Richmond, Mo., Mar. 16, 1907. s. Willis H., Sr. and Pearl (Nance) McC. Edn.: A.B., Univ. of Mo., 1933; M.A., Cornell Univ., 1936; Ph.D., Ind. Univ., 1940; LL.B., Schl. of Law, Univ. of Kans. City, Mo., 1958. m. Catherine Logan, Aug. 10, 1935. c.: Charles Harding; John Harrison. Exp.: Instr., in Psychol., Univ. of Mo., 1939; Clin. Psychol., State Hosp. No. 3, Nevada, Mo., 1939-40; Visiting Asst. Prof. of Psychol., The Univ. of the Philippines, Manila, P. I., 1941; Clin. Psychol., State Hosp. No. 2, St. Joseph, Mo., 1945-52; Clin. Prof. of Psychol., Univ. of Kans. City., 1950-52; Consulting Psychol. to Top Mgmt., Rohrer, Hibler & Replogle, Milwaukee, Wis., 1952-53; Clin. Psychol., State Hosp. No. 2, St. Joseph, Mo., 1953—. Hon. Pos.: Pres., Buchanan Co. Mental Hyg. Assn., 1950-52. Mem.: Greater Kans. City Psychol. Assn.; Mo. Psychol. Assn.; Fellow, Am. Phychol. Assn.; Diplomate in Clin. Psychol.; Fellow, Am. Assn. Adv. of Sci.; Midwestern Psycholog. Assn.; Order of the Bench and Robe (Law); Mem. of the St. Joseph, Mo. Bar Assn.; Mo. Bar Assn.; Am. Bar Assn.; Scottish Rite Mason; Shriner. Contbr. to: Jour. Consult. Psychol.; Group Psychotherapy; Jour. Crim.-Psychopath. War Record: U. S. Army Air Force, 1941-45. Areas of Rsch.: Group Psychotherapy; Psychopathology; Hypnosis; Forensic Psychology.



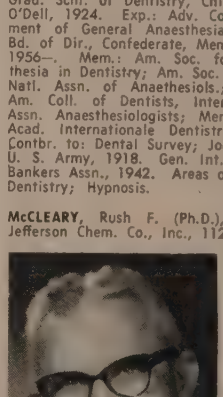
McCARTER, William Blair, Sr. (Mr.), Geologist, 2522 Hazard St., Houston 19, Texas; also P. O. Box 322, Folkston, Ga. Home Add.: 1415 Sul Ross St., Houston 6, Tex. OIL AND GAS EXPLORATION, SURFACE AND SUB-SURFACE GEOLOGICAL MAPPING. b. Charlotte, N. C., Sept. 29, 1899. s. William Warren and Olah Belle (Blair) M. Edn.: A.B., The Univ. of Tex., 1927; M.A., ibid., 1928. m. Edith MacDonald, Feb., 1929. c.: William Blair, Jr.; Alfred Nelson. Exp.: Draftsman, The Tex. Co., Housotn, Tex. and N. Y. City, 1917-24; Asst., Bur. of Econ. Geol., The Univ. of Tex., 1924-27; Geologist, Humble Oil & Refining Co., Houston, Tex., 1927-35; Geologist, Tide Water Associated Oil Co., Lafayette, La., 1935-38; Independent Oil Operator, McCarter & McCarter, Houston, Tex., 1938—. Mem.: N.M. Geological Soc.; Houston Geological Soc.; A.I.M.&M.E.; A.A.A.S.; Tex. St. Professional Engrs.; Am. Assn. of Petroleum Geologists; Sigma Gamma Epsilon; Mason. Contbr. to: Jour. of A.A.P.G.; Jour. of A.I.M.&M.E. Areas of Research: Regional and Local Structural Geology.

McCARRELL, Jane Dinsmore (Ph.D.), Prof. of Biol. and Chm Dept., Hood Coll., Frederick, Md. Home Add.: 1111 Fa Ave., Frederick, Md. HUMAN PHYSIOLOGY. b. Wash., Oct. 22, 1909. d. Robert L. and Elizabeth (McClane) M. B.A., Mount Holyoke Coll., 1932; M.A., Vassar Coll., Ph.D., Radcliffe Coll., 1940. Exp.: Asst. and Instr., Ph Vassar Coll., Poughkeepsie, N. Y., 1932-37; Asst., Ph Harvard Schl. Pub. Hlth., Boston, Mass., 1940-41; Rsch. Mass. Gen. Hosp., Boston, Mass., 1941-45; Asst. Prof., Ph Vassar Coll., Poughkeepsie, N. Y., 1945-46; Assoc. Prof., Hood Coll., 1946-48; Prof., Biol., Chmn., Dept., ibid., 1 Mem.: Am. Physiol. Soc.; Am. Assn. for the Adv. of Sci.; Soc. of Am.; Beta Beta Beta; Frederick Co. TB and Pub Assn., Bd. of Dirs. Contbr. to: Am. Jour. of Physiol.; An Surg.; Jour. of Pharmacol. and Exptl. Therapts. Areas of Cardiovascular, Lymphatic and Respiratory Physiology.

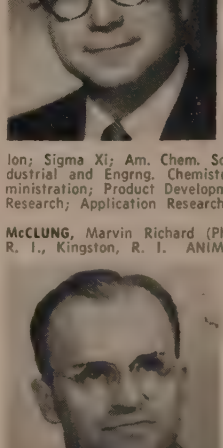
McCARTHY, Thomas Raymond (Mr.), Computer Programmer, les Powder Co., Magna, Utah. Home Add.: 1636 South 5th Salt Lake City, Utah. IBM 7070/7074 and 1401 COM PROGRAMMING FOR ROCKET FIRING DATA REDUCTION Spring Brook, N. Y., Feb. 25, 1939. s. Daniel J. and Ver (Schlatterer) M. Edn.: B.A., Niagara Univ., 1960. Exp.: matician, Hercules Powder Co., Cumberland, Md., 1960-61; grammer, ibid., Bacchus, Utah, 1961 . Mem.: Math of Am.; Am. Rocket Soc.; Niagara Univ. Alumni; Knigh Columbus. Areas of Rsch.: Numerical Solutions to Sci Problems Utilizing Large Scale Digital Computers.

McCARTNEY, James Robert (D.D.S.), Dentist, 106 E. Kings way, Shreveport, La. Home Add.: 803 Ockley Dr., Shrev La. ANAESTHESIOLOGY; PROSTHETIC DENTISTRY. b. M ville, La., Jan. 14, 1897. s. C. C., Sr., and Exer Lee ing) McC. Edn.: Attended Northwestern State Coll., Natchit La., 1916-17; D.D.S., Emory Univ., 1922; Attended Coo Grad. Schl. of Dentistry, Chicago, Ill., 1937. m. Helen O'Dell, 1924. Exp.: Adv. Comm. Rsch., Am. Soc. for Adv ment of General Anaesthesia in Dentistry, 1934. Hon. Bd. of Dir., Confederate, Memorial Med. Center, Shreveport 1956—. Mem.: Am. Soc. for Advancement of General A thesia in Dentistry; Am. Soc. for Clin. Hypnosis; A.A.A.S.; Natl. Assn. of Anaethesiols.; Omicron Kappa Upsilon; F Am. Coll. of Dentists, Internatl. Coll. of Dentists, Inte Assn. Anaesthesiologists; Mem., Royal Soc. of Health; F Acad. Internationale Dentistry; Fellow; Pierre Fouchard Contbr. to: Dental Survey; Jour. La. St. Dental Soc. Serv. U. S. Army, 1918. Gen. Int.: Awarded Master Farmer's b Bankers Assn., 1942. Areas of Rsch.: Anaesthesiology; Pros Dentistry; Hypnosis.

McCLEARY, Rush F. (Ph.D.), Vice-Pres. for Rsch. and Jefferson Chem. Co., Inc., 1121 Walker St., Houston, Tex. Add.: 5019 Loch Lomond Houston, Tex. ORGANIC CH TRY AND RESEARCH ADMINI TION. b. Upper Sandusky, Dec. 10, 1909. s. Elic R. Laura E. (Fox) McC. Edn.: Ohio Northern Univ., 1931; Purdue Univ., 1933; Ph.D., 1937. m. Marovia G. Em Nov. 23, 1937. c.: Laur Judith C.; Leland E.; Nanc John W. Exp.: Chemist, Pigment and Color Corp., port, Del., 1934-35; Chem Rohm and Haas Co., Philade Pa., 1937-40; Chemist, Supvr., Texaco, Inc., Beacon Y., 1940-56; Gen. Mgr., Pres. for Rsch. and Dev., Jeff Chem. Co., Inc., Houston, 1956—. Mem.: Phi Lambda lon; Sigma Xi; Am. Chem. Soc.; Houston Club. Contbr. to dustrial and Engrng. Chemistry. Areas of Rsch.: Research ministration; Product Development Research; Process Develop Research; Application Research.



McCLUNG, Marvin Richard (Ph.D.), Hd., Poultry Dept., Uni R. I., Kingston, R. I. ANIMAL BREEDING AND GENETICS Bamboo, W. Va., Apr. 3, 191 Marvin K. and Pearl (Nutte Edn.: B.S., W. Va. Univ., M.S., Univ. of Md., 1942; Iowa State Univ., 1953. m. belle Coffman, Oct. 16, Exp.: Fellow, Univ. of Md., 42; W. Va. Univ. Ext. Morgantown, W. Va., 194 Agril. Couns., Monongahelia Co., 1945-47; Asst. Prof., of Ark., 1947-50, 1951-52; Edn. Bd. Fellow, Ia. St., 51; Poultry Geneticist, Ark. ers Assn., Fayetteville, Ark., 57; Hd. Poultry Dept., Univ R. I., 1957—. Mem.: Po Sci.; Amer. Poultry Assn.; Soc. Animal Prod.; Genetics of Amer.; Amer. Genetics A World's Poultry Sci.; Alpha Phi Sigma; Sigma Xi; Kiwanis; Phi Kappa Phi. Contbr. Poultry Sci. Special Int.: Poultry Breeding and Popul Genetics.



CLARY, Dan Otho (Ph.D.), Asst. Prof., Southern Ill. Univ., bondale, Ill. Home Add.: RFD 4, Carbondale, Ill. MICRO-OLOGY b. Ft. Towson, Okla., April 24, 1918. s. Joseph o and Bennie (Fawcett) M. Edn.: B.S., Southeastern State l., 1940; Ph.D., Washington Univ., 1951. m. Toccoa Wilson, t., 1942. c.: Susan Kaye; Richard Dan. Exp.: Asst. Instr., shington Univ., St. Louis, Mo., 1946-51; Asst. Prof., So. Univ., Carbondale, Ill., 1951—. Mem.: Am. Soc. for Micro-l.; A.A.A.S.; Ill. Soc. of Bacteriol.; Ill. State Acad. of .; Sigma Xi. Contbr. to: Jour. of Bacteriol.; Annals of Mo. anical Garden; Wallerstein Labs. Communications; Arch. of chemistry and Biophys.; Cytologia, Antonie van Leeuwenhoek. rv. Rec.: USNG, 1940-45. Areas of Rsch.: Yeast Cytology and ysiology.

COLLUM, Howard Pierce (Mr.), Supervisor of Sci., La. Dept. Edn., Baton Rouge, La. Home Add.: 707 Tex. Ave., Ferriday, La. SCIENCE EDUCATION. b. Colfax, La., Jan. 18, 1928. s. William Albert and Sarah Alma (Feazell) McC. Edn.: B.S., Northwestern State Coll., 1949; M.T., Am. Med. Technologists, ibid., 1952; M.A., George Peabody Coll., 1955; Ed.S., ibid., 1958. Exp.: Sci. Tchr. ,Ferriday H. S., La., 1949-50, 1952-56; Supervisor of Schls., Concordia Parish, La., 1956-57; Supervisor of Sci., La. Dept. of Edn., 1957—. Hon. Pos.: Mem. of Advisory Bd. of the Sci. Tchr., N.S.T.A.; Mem. of La. Advisory Comm. on Conservation and Resource-Use Edn.; Mem. of Advisory Comm. in Sci., La. State Dept. of Edn. Mem.: Beta Beta Beta; Kappa Delta Pi; Lambda Delta Lambda; La. Sci. Tchrs.

ssn.; Natl. Sci. Tchrs. Assn.; A.A.A.S.; Natl. Edn. Assn.; La. ad. of Scis.; Master Mason. Author: What Happens to Why?, 58; Some Signposts of a Good Science Program, 1958; Free nd Inexpensive Materials in Science, 1958; A Bibliography of ientific Publications and Scientific Supply Companies, 1958; n Annotated List of Books in Science, 1959; Space and Equip-ent Needed to Provide Science Experiences in the Elementary hool, 1959; Let's Look at Our Facilities for Teaching Science, 60; Equipment and Chemical for Teaching High School Science, 59; Science Films Available from Regional Film Libraries of uisiana, 1960. Contbr. to: La. Schls. Serv. Rec.: U. S. Army, 50-52. Areas of Rsch.: Science Education.

COCONNELL, Duncan (Ph.D.), Prof. (Rsch.), Coll. of Dentistry, hio State Univ., Columbus, Ohio. Home Add.: 2154 Fairfax d., Columbus 21, Ohio. DENTAL AND MEDICAL RESEARCH. Chicago, Ill., Jan. 30, 1909. s. John L. and Anne (Duncan) . Edn.: B.S., Wash. and Lee Univ., 1931; M.S., Cornell Univ., 932; Ph.D., Univ. of Minn., 1937. m. Jane Willis, Sept., 1934. : Mrs. Charlotte Blann; Thomas D.; Mrs. Joanne Moldenhauer. xp.: Lab. Hd., U. S. Bur. Reclamation, Denver, Colo., 1941-7; Chf., Gulf Rsch. and Dev. Co., Pittsburgh, Pa., 1947-50; rof., Ohio State Univ., Columbus, Ohio, 1950—; Asst. Dean of rad. Schl., ibid., 1954-55; Chmn., Dept. of Mineralogy, ibid., 952-56; Rsch. Assoc., Argonne Natl. Lab., 1954-56. Mem.: In-ernatl. Assn. Dental Rsch.; Geol. Soc. Am.; Mineral. Soc. Am.; eochem. Soc.; Canadian, British and French mineralogical socs. .A.A.S.; Ohio Acad. of Sci.; Sigma Xi; Sigma Gamma Epsilon; hi Beta Kappa; Phi Lambda Upsilon; Omicron Kappa Upsilon; amma Sigma Epsilon. Author: Gran' Pappy's Pistol, 1956. ontbr. to: Science; Arch. Oral Biol.; Jour. Dental Rsch.; Min-ralogical Mag., London; Naturwiss.; Am. Mineral.; Bull. Soc. ranc. Mineral.; Jour. Biol. Chem.; Bull. Geol. Soc. Am.; Econ. eol.; Clay Minerals Bull.; Jour. Am. Ceramic Soc.; Bull. Am. ent. Assn.; Clinical Orthopaedics; Zeits. Kristallagr. Areas of tsch.: Known Internationally as an authority on the composi-ion and crystal structure of bone and teeth.

McCOORD, Augusta Barbara (Ph.D.), Asst. Prof. of Pediatrics, Univ. of Rochester Schl. of Med. and Dentistry, 260 Crittenden Blvd., Rochester, N. Y. BIO-CHEMISTRY (VITAMIN A; VITAMIN E; ELECTROLYTES IN BIOLOGICAL FLUIDS; PROTEINS). b. Perinton, N. Y., May 22, 1897. d. Levi G. and Mabel (Gilbert) M. Edn.: A.B., Univ. of Rochester, 1918; Ph.D., ibid., 1938. Exp.: Plant Control and Rsch., Eastman Kodak Co., Rochester, N. Y., 1919-29; Grad. Student and Rsch., Univ. of Rochester, 1929-38; Asst. in Pediatrics, ibid., 1938-42; Assoc. in Pediatrics, ibid., 1942-58; Asst. Prof., Pediatrics, ibid., 1958—. Hon. Pos.: Secy.-Treas., Rochester Regional Soc. of Laboratory Med.; Diplomate of the Am. Bd. of Bio-Analysts, 1960; Mem., The N. Y. Acad. of Scis. Mem.: Am. Chem. Soc.; Soc. for Exptl. Biol. and Med.; Fellow, Am. Assn. for Adv. Sci.; Am. Assn. of Clinical Chemists; A.A.U.P.; Sigma Xi. Contbr. to: Jour. of Nutrition; Proc. of the Soc. for Exptl. Biol. and Med.; Jour. of Biol. Chem.; Jour. of Pediatrics; Jour. of the Am. Med. Assn.; Am. Jour. Diseases of Children; Jour. of Exptl. Med.; Am. Rev. of Tuberculosis; Jour. of Clin. and Lab. Med.; Am. Jour. of Physiol.; Scientific Monthly, and others. Gen. Int.: Recipient, Univ. of Rochester Med. Schl. Alumni Award, 1956. Areas of Rsch.: Biochemistry (Vitamin A; Vitamin E; Proteins; Electrolytes in Biological Fluids; Absorption of Vitamin A in Celiac Disease; Tuberculosis; Cystic Fibrosis of the Pancreas; Celiac Disease; Giardiasis; Catarrhal Jaundice).

McCONNELL, Virginia Fenner (Prof.), Asst. Prof., Newcomb Coll., Tulane Univ., New Orleans, La. Home Add.: 1731 Calhoun St., New Orleans 18, La. CHEMISTRY AND HISTORY OF SCIENCE. b. New Orleans, La., July 22, 1905. d. Charles E. and Virginia (Schriever) F. Edn.: B.A., Newcomb Coll., 1926; M.S., Tulane Univ., 1927. m. Richard B. McConnell, Dec., 1928. c.: Virginia Walker; Charles Fenner, M.D.; Richard Bland, Jr. Exp.: Lab. Instr., Tulane Med. Schl., New Orleans, La., 1927-29; Instr., Newcomb Coll., New Orleans, La., 1945-53; Asst. Prof., ibid., 1953—. Mem.: Am. Chem. Soc.; A.A.A.S.; History of Sci. Soc.; Midwest Junto.; Soc. for the Hist. of Tech.; A.A.U.P.; Phi Beta Kappa. Contbr. to: Jour. of Chem. Edn. Areas of Rsch.: Chemistry of Unsymmetrical Dicarboxylic Acids, History of Organic Chemistry.

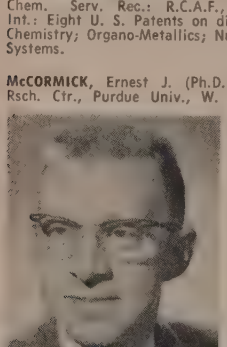
McCORMACK, Betty Rae Schindler (Mrs.), In Care of 14720 Avocado Dr., Leisure City, Fla. BIOLOGICAL SCIENCES; BACTERIOLOGY AND PARASITOLOGY. b. Chicago, Ill., Jan. 20, 1930. d. John Andrew and Bessie Mae (Kerner) Schindler. Edn.: A.B., Stanford Univ., 1951; S.M., The Univ. of Chicago, 1953. Exp.: Lab. Techn., Univ. of Chicago, 1951-53; Rsch. Asst. in Med., ibid., 1954-55; Logan Fellow in Microbiol., ibid., 1955, '56; Asst. in Microbiol., ibid., 1955; Lab. Techn., Interim, Sub-Tropical Expt. Sta., Homestead, Fla., 1957-58; Sr. Lab. Asst., Univ. of Miami, Schl. of Med., Miami, Fla., 1958-59. Mem.: Am. Assn. Adv. Sci. Areas of Rsch.: Feline Pneumonitis Virus.

McCORMACK, Grace (Miss), Bacteriologist, V. A. Hosp., Canandaigua, N. Y. Home Add.: 162 Raleigh St., Rochester 20, N. Y. BACTERIOLOGY. b. Rochester, N.Y., Feb. 16, 1908. d. Walter and Maud (Brimacomb) M. Edn.: A.B., Univ. of Rochester, 1941; M.S., Univ. of Md., 1951. Exp.: Technician, Univ. of Rochester Schl. of Med. and Dentistry, Atomic Energy Commn., Rochester, N. Y., 1942-48; Bacteriologist, Dept. Interior, U. S. Fish and Wildlife Service, Coll. Park, Md., East Boston, Mass., 1948-53; Bacteriologist, Md. St. Dept. Health, Baltimore, Md., 1953-55; Bacteriologist, V. A. Hosp., 1955—. Mem.: Soc. Am. Bacteriologists; Am. Public Health Assn.; Royal Soc. of Health, England; Am. Chem. Soc.; Inst. of Food Technologists; A.A.-A.S.; Am. Soc. of Med. Technologists. Contbr. to: Endocrinol.; Am. Jour. of Obstetrics and Gynecology; Am. Jour. of Public Health; Commercial Fisheries Rev. Gen. Int.: Solidified Fish Eyes and Transformed Them into Ear Rings and Beads of Different Colors; Lectr., Microbiol., Fisheries Technol. Course, Univ. of Md., 1950. Areas of Rsch.: Assays of Gonodotropic Hormone; Microbiology, Studies of Enterococci, Antibiotic Study of Preservation of Crabmeat, Pollution Studies of Clam and Oyster Beds, Comparative Study of Various Media, Cause of Discoloration of Oysters.

McCORMICK, Archie Thomas Edward (Mr.), Human Engrng. Analyst, The Boeing Co., Seattle, Wash. Home Add.: 10344 14th Ave., S., Seattle 88, Washington. LEARNING PROBLEMS OF SCHOOL CHILDREN. b. Comaplix, B. C., June 23, 1911. s. Thomas James and Hazel (Somerville) McC. Edn.: B.A., Eastern Wash. Coll., 1949; M.A., Mexico City Coll., 1951. m. Alma Heflin, July 14, 1942. c.: Thomas James; Kelly Jean. Exp.: Tchr., Folsom Unified Schl. Dist., Prison Rehabilitation Prog., Calif., 1949-50; Tchr., Arcata H. S., Arcata, Calif., 1951-52; Psychologist, Richland Public Schls., Wash., 1953-54; Staff Psychologist, Tacoma Public Schools, 1954-62; Human Engrng. Analyst, The Boeing Company, 1962—. Mem.: Am. Psychol. Assn.; Tacoma Area Psychologists; A.A.A.S.; Coun. for Exceptional Children; Kappa Delta Pi; Alpha Phi Omega. Co-author: Studio Story Method, 1947. Contbr. to: Instr. Mag. Serv. Rec.: R.C.A.F., 1941-43; U.S.A.F., 1943-46; U.S.A.F. Res., 1946—. Gen. Int.: Assisted in Setting Up a Psychol. Dept. and a Program for Mentally Retarded Children, Richland Schls., Wash.; A Founder and Pres. of the Bd. of Dirs., Adastra Schl. for Gifted Children (a Non-Profit Schl. in Seattle, Wash.); Secy.-Treas., Child Devel. Fdtn. Areas of Rsch.: Mentally Retarded Children, Reading and Adjustment Problems of School Children, and Gifted Children; Anthropology in Latin America.

McCORMACK, William Brewster (Ph.D.), Rsch. Assoc., Jackson Lab., E. I. duPont de Nemours and Co., P. O. Box 525, Wilmington 99, Del. Home Add.: 3 Wordsworth Dr., Hyde Park, Wilmington 8, Del. ORGANIC CHEMISTRY. b. Mirror, Alberta, Can., Nov. 20, 1923. s. William Carl and Edith B. (Brewster) McC. Edn.: B.Sc., Univ. of Alberta, 1944; Ph.D., Univ. of Wis., 1948. m. June Alicia Irving, Feb. 9, 1945. c.: Patricia Alice; Greg William. Exp.: Rsch. Chemist, Jackson Lab., E. I. duPont de Nemours and Co., Wilmington, Del., 1948-53; Rsch. Supvr., ibid., 1953-55; Rsch. Assoc., ibid., 1955—. Hon. Pos.: Pres., Coun. for Del. Edn., 1955; Legis. Chmn., Del. State PTA, 1955. Mem.: Am. Chem. Soc.; Chem. Soc., England; Am. Assn. Adv. of Sci.; Sigma Xi; State and Local PTA and Edn'l. Groups. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem. Serv. Rec.: R.C.A.F., Gunnery Officer, 1944-45. Gen. Int.: Eight U. S. Patents on diene-$RPCl_2$; Phosphorus and Fluorine Chemistry; Organo-Metallics; Nucleophilic Processes; Electro-organic Systems.

McCORMICK, Ernest J. (Ph.D.), Prof. of Psychol., Occupational Rsch. Ctr., Purdue Univ., W. Lafayette, Ind. Home Add.: 1315 Sunset Lane, W. Lafayette, Ind. INDUSTRIAL PSYCHOLOGY. b. Indpls., Ind., Aug. 22, 1911. s. Malcolm E. and Bessie (Guthrie) M. Edn.: B.A., Ohio Wesleyan Univ., 1933; M.S., Purdue Univ., 1947; Ph.D., ibid., 1948. m. Emily Stetson, June 13, 1936. c.: Wynne G.; Colleen C.; Jan S. Exp.: Chf., Planning Univ., U. S. Employment, Wash., D. C., 1935-39; Chf., Occupational Analyst, Bur. of the Census, Wash., D. C., 1939-41; Chf., Occupational Stats., Selective Serv., Wash., D. C., 1941-43; Prof., Purdue Univ., 1948—. Hon. Pos.: Mem., Army Scient. Advry. Panel, Vice Chmn., Subpanel on Human Factors; Diplomate in Indust. Psychol., Am. Bd. of Examiners in Profl. Psychol. Mem.: Am. Psychol. Assn., Fellow; Sigma Xi; Midwestern Psychol. Assn.; Alpha Tau Omega. Author: Human Engineering, 1957; Industrial Psychology, Co-Author, 1958. Contbr. to: Jour. of Appl. Psychol.; Personnel Psychol.; Personnel Admin. Serv. Rec.: U. S. Naval Reserve, 1943-47. Areas of Rsch.: Personnel Psychology, Engineering Psychology, Job Analysis.



McCORMICK, William Frederick (M.D.), Asst. Prof. of Pathol., Univ. of Tenn., Memphis, Tenn. Home Add.: 1440 Whitney Ave., Memphis 7, Tenn. PATHOLOGY AND NEUROPATHOLOGY. b. Warren Co., Va., Sept. 9, 1933. s. Jesse Allen and Elizabeth (Hord) McC. Edn.: B.S., Univ. of Chattanooga, 1953; M.D., Univ. of Tenn., 1955; M.S., ibid., 1957. m. Deanne Petersen, July 2, 1954. Exp.: Asst. in Pathol., Univ. of Tenn., 1957-60; Instr. in Pathol., ibid., 1960; Instr. in Neuropathology, Columbia Univ., 1960-61; Asst. Prof. of Pathol., Univ. of Tenn., 1960—. Mem.: Soc. of the Sigma Xi; Am. Assn. for Adv. of Sci.; Am. Soc. for Exptl. Pathol.; Coll. of Am. Pathologists, Am. Assn. of Pathologists and Bacteriologists; Diplomate, Am. Bd. of Pathol.; Sigma Chi. Contbr. to: Am. Jour. of Clin. Pathol.; Blood; Arch. of Pathol.; Proc. of the Soc. for Exptl. Biol. and Med.; Sou. Med. Jour. Areas of Rsch.: Research in the Abnormal Human Hemoglobins (with multiple publications); Neuropathology.

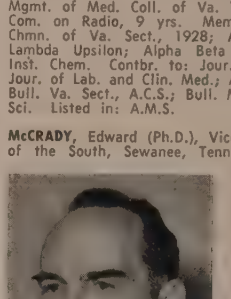
McCOY, Ernest Edwin, Jr. (Mr.), 1349 Springdale Dr., Jackson, Miss. PHYSICS, THERMAL PROPERTIES AND ELASTIC PROPERTIES OF MATERIALS. b. New Augusta, Miss., July 1, 1910. s. Ernest Edwin and Clyde Mary (Bishop) McC. Edn.: B.S., Miss. State Univ., 1932. m. Gladys Imogene Ball, June 4, 1939. c.: Ernest Calvin; Robert Edwin; Mary Esther; Linda Ruth. Exp.: Observer, U. S. Weather Bur., Mobile, Ala., 1941-43; Meteorological Aide, Jackson, Miss.; Boston, Mass.; Recife, Brazil, 1943-46; Physicist, Thermal Rsch., Field Durability Sect., Concrete Div., Waterways Exptl. Sta., Jackson, Miss., 1947—; Sect. Chf., 1953—. Mem.: A.C.S.; Miss. Acad. of Sci.; Am. Meteorological Soc.; Soc. of Am. Milit. Engrs.; Theta Chi; Am. Phys. Soc.; Acoust. Soc. of Am.; Soc. of Rheology. Inventor: Typewriter Sheet End Indicator, 1947; Spray Gun Improvement, 1948. Areas of Rsch.: Thermal and elastic properties; sonic and ultrasonic testing; permeability and pore-water pressure measurements.

McCOY, Raymond Duncan (Ph.D.), Instrument Development En Phillips Petrol. Co., Bartlesville, Okla. Home Add.: 4745 Cor Dr., Bartlesville, Okla. PHYSICAL CHEMISTRY. b. Newberg, O Dec. 30, 1924. s. Ned T. and Grace (Duncan) M. Edn.: B Willamette Univ., 1950; M.A., Univ. of Ore., 1953; Ph.D., ib 1956. m. Barbara Miller, June 24, 1951. c.: Jennifer Ly Suzanne Louise; Nancy Kay. Exp.: Instrument Development En Phillips Petrol. Co., 1955—. Mem.: Sigma Xi; A.C.S.; Blue K Contbr. to: Jour. of Am. Chem. Soc. War Rec.: U. S. Na W. W. II. Areas of Rsch.: Kinetics of Gaseous Thermal Deco position (Azomethane); Development of Process Instrumentat for Automatic Control.

McCRACKAN, Robert Franklin (Mr.), Emeritus, Prof. of Bioche Med. Coll. of Va., 41 Mill Road, Spartanburg, S. C. BIOCHE ISTRY. b. Butler's Post Offi S. C., Apr. 30, 1882. s. Willi Alexander and Frances Ja (Boone) McC. Edn.: B.S., Mi Coll. of S. C., 1903; A.M., lumbia Univ., 1910. m. (1) tolee Gunter (dec.), June 30, 19 of Seivern, S. C. d. Osborne a Delana Gunter; (2) Alice V. Al ander, Sept. 5, 1925, of Ri mond, Va. d. John Robert a Georgiana Alexander. (3) M Margaret W. Brandon, Oct. 1951. d. Robert E. and Rosa Al White. c.: Mary Lee (1st wif Exp.: Prof. Math., Leesville Co S. C., 1903-05; Prof. Math Rhodes Milit. Inst., N. C., 19 06; Bur. of Edn., P. I., 1906-0 Asst. in Chem., Columbia Uni 1910-12; Asst. in Chem., Bellev

Med. Coll., 1912; Instr., Med. Coll. of Va., 1912-15; Asso Prof. of Biochem., 1915-27; Assoc. Prof. of Chem., 1927-5 Instr. in Chem., Spartanburg Jr. Coll., 1957-61; Summer, Pro of Chem., Univ. of Richmond, 1924-27. Hon. Pos.: Secy., Facult Schl. of Med., Med. Coll. of Va., 25 years; Chmn., Com. Mgmt. of Med. Coll. of Va. Y.M.C.A., 26 years; Chmn., A.C. Com. on Radio, 9 yrs. Mem.: Assn. of Citadel Men; A.C.S Chmn. of Va. Sect., 1928; A.A.U.P.; Va. Acad. of Sci.; P Lambda Upsilon; Alpha Beta Gamma. Fellow: A.A.A.S.; Am Inst. Chem. Contbr. to: Jour. of A.C.S.; Jour. of Chem. Edn Jour. of Lab. and Clin. Med.; Archives of Pathol. and Lab. Med Bull. Va. Sect., A.C.S.; Bull. Med. Coll. of Va.; Bull. Va. Aca Sci. Listed in: A.M.S.

McCRADY, Edward (Ph.D.), Vice Chancellor and Pres., The Uni of the South, Sewanee, Tenn. Home Add.: Fulford Hall, S wanee, Tenn. BIOLOGY. b. Ca ton, Miss., Sept. 19, 1906. Edward and Mary (Tucker) Mc Edn.: A.B., Coll. of Charlesto 1927; M.S., Univ. of Pittsburg 1930; Ph.D., Univ. of Pa., 193 Hon. Degrees: LL.D., Coll. Charleston, 1952; LL.D., Univ. Chattanooga, 1958; Sc.D., Sout western at Memphis, 1959. Edith M. Dowling, Aug. 15, 193 c.: Edward; John; James Warin Sarah Heath. Exp.: Rsch. Sc entist, Wistar Inst. of Anat., Uni of Pa., 1930-37; Head, Biol. Dept Univ. of the South, 1937-50; S Biologist, Div. of Biol. and Med Atomic Energy Comm., Oak Ridg Tenn., 1948-49; Chief Biologis Div. Atomic Energy Comm., ibid 1949-51; Pres. and Vice Chance



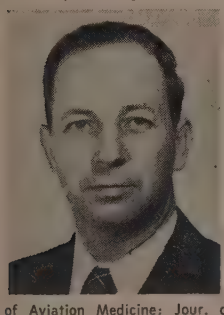
lor, Univ. of the South, 1951—. Hon. Pos.: Pres., Tenn. Acad of Sci., 1944; Fulbright Selection Com., 1956; Mem., Bd. Visitors of Air Univ., 1957-59, Chmn., ibid., 1959; Natl. Sc Fdtn. Faculty Fellowship Com., 1957; Danforth Fdtn. Coun. Seven, 1958—; Mem., Bd. of Advisors, Harvard Inst. for Col and Univ. Administrators, 1958—; Mem., Rhodes Scholarship Se lection Comm., 1957-58. Mem.: Fellow, A.A.A.S.; Am. Geophys Union; Acoustical Soc.; Am. Inst. of Physics; Am. Assn. Anatom ists; Am. Soc. Zoologists; Assn. S. E. Biologists; Victoria Inst of Gr. Britain; Natl. Speleological Soc.; Tenn. Hist. Comm. Sigma Xi; Sigma Pi Sigma; Phi Sigma; Alpha Tau Omega; Omi cron Delta Kappa; Blue Key; Sigma Upsilon. Author: The Em bryology of the Opossum, 1938; Sponsored Research Policy o Colleges and Universities, 1954. Co-author: Religious Perspective in College Teaching, 1952. Contbr. to: Proc. Pa. Acad. Sci. Jour. of Heredity; Jour. Comp. Neur.; Proc. Soc. Expmtl. Biol and Med.; Ann. Otol., Rhin. and Laryng.; Anat. Rec.; Jour Expmtl. Zool.; Trans. Am. Acad. Ophth. and Otolaryng.; Jour Tenn. Acad. Sci.; Am. Geophys. Union; Sewanee Rev.; Jour Morph.; Jour. Comp. Psychol. and others. Areas of Rsch.: Em bryology of the Opossum; Physiology of Hearing; The Age o the Earth and Time of Origin of Matter as Determined by Lead Isotopes; Cave Salamanders; Fossil Jaguars.

McCULLOUGH, Marshall Edward (Mr.), Assoc. Dairy Nutritionist Ga. Expt. Sta., Experiment, Ga. RUMINANT NUTRITION WITH EMPHASIS ON FORAGE EVALUATION AND UTILIZATION. b. Wick W. Va., July 24, 1924. s. Isaac Lawrence and Lacy (Ash) M Edn.: B.S., Berea Coll., 1950; M.S., Univ. of Ky., 1951. Exp Tech. Asst., Univ. of Ky., Lexington, Ky., 1950-57; Asst. Dair

Nut., Ga. Exp. Sta., Experiment, Ga., 1957-58; Assoc. Dairy Nutr., ibid., 1958—. Hon. Pos.: Chmn., So. Sec., A.S.R.M.; Dir. Am. Grassland Coun.; A.D.S.A. Rep. to A.G.C.; Chmn., Southern Pasture and Forage Crops Conf. Mem.: Am. Dairy Sci. Assn.; A.A.A.S.; Am. Soc. Animal Sci.; Am. Soc. of Range Mgmt.; British Soc. Animal Production; Sigma Xi. Contbr. to: Jour. of Dairy Sci.; Jour. of Animal Sci.; Jour. of Range Mgmt.; Agricultural and Food Chem. Serv. Rec.: A.U.S., 1943-45. Gen. Int.: Invitational Paper, 8th Internatl. Grassland Congress, England; Natl. Sci. Fdn. Grant for Travel and Study in Europe, 1960; Certificate of Merit, from the Am. Grassland Coun. Areas of Rsch.: Factors involved in intake, digestibility and utilization of Forages for milk production and growth.

McCULLY, Henry Howard (Ph.D.), Asst. Prof., Biol. Dept., Texas Technological Coll., Lubbock, Texas. Home Add.: 4 Hermosa Place, Menlo Park, Calif. ECOLOGY, ICHTHYOLOGY. b. Idaville, Ind., June 3, 1910. s. J. H. and Leona (Hadley) M. Edn.: A.B., Stanford Univ., 1931; Ph.D., ibid., 1961. m. Isabel Sutcliffe, Mar. 24, 1940. Exp.: Marine Biologist III, Calif. Dept. Fish and Game, Stanford, Calif., 1938-57; Asst., Stanford, 1958-59; Asst. Prof., Biol. Dept., Texas Technological Coll., 1961—. Hon. Pos.: Chmn., 25th Alumni Conf., Stanford Univ.; Bd. of Dirs., Stanford Camp Assn. Mem.: Sigma Xi; A.A.A.S.; A.I.-B.S.; Ecological Soc. of Am.; British Ecological Soc.; Am. Soc. of Zoologists; Am. Soc. of Ichthyologists and Herpetologists; Soc. of Systematic Zoologists; Calif. Acad. of Sci.; Univ. Club of Palo Alto; Stanford Camp Assn. Author: The Comparative Anatomy of the Scales of the Serranid Fishes, 1961. Contbr. to: Calif. Fish and Game. Areas of Rsch.: Identification of Fishes from Their Scales. The Functioning of Fish Scales and Their Parts. Bone, Dentin, and Enamel and the Related Tissues. The Effect of the Environment on the Growth of the Hard Parts of Organisms.

McCUTCHAN, Joseph Wilson (Mr.), Assoc. Prof. of Engrng., Univ. of Calif., Los Angeles 24, Calif. Home Add.: 16642 Moorpark St., Encino, Calif. ENGINEERING. b. Pawnee, Okla., Dec. 24, 1917. s. Joseph E. and Grace (Shanks) M. Edn.: B.S. Ch.E., Univ. of Ark., 1939; M.S., Univ. of Calif., 1950. m. Marie Schafer, Mar. 21, 1942. c.: Joseph G.; Joella; Diane. Exp.: Draftsman, Midwestern Engrng. and Constrn. Co., Tulsa, Okla., 1939-40; Mechanical Engr., Douglas Aircraft Co., Santa Monica, Calif., 1940-46; Assoc. Prof., Univ. of Calif., Los Angeles, Calif., 1946—. Mem.: Sigma Xi; Am. Chem. Soc.; Am. Soc. of Mechanical Engrs.; A.A.-A.S.; A.S.E.E.; Human Factors Soc.; Tau Beta Pi; Pi Mu Epsilon. Contbr. to: Sci.; Advances in Chemistry; Am. Soc. of Heating and Air Conditioning Engrs.; Jour. of Aviation Medicine; Jour. of Applied Physiology. Gen. Int.: Registered Professional Mechanical Engr., No. 1623, St. of Calif.; Industrial Fellowship; Babcock and Wilcox Co.; Rsch. Grant, Office of Saline Water, U. S. Dept. of the Interior. Areas of Rsch.: Saline Water Conversion; Human Tolerance to High Temperature; Engineering Tchng.



McDANIEL, William Earl (Ph.D.), Prof. of Agril. Econ., Univ. of Del., Newark, Del. AGRICULTURAL ECONOMICS (FARM MANAGEMENT AND PRODUCTION ECONOMICS). b. Fresno, Calif., May 30, 1915. s. Jessie Floyd and Emma (Mischler) McD. Edn.: B.S., Univ. of Mo., 1942; M.S., Univ. of Ill., 1943; Ph.D., Univ. of Minn., 1951. m. Frances Mildred Bissett, Dec. 26, 1946. c.: William Earl, II; Michael Anthony. Exp.: Instr., Schl. of Business Administration, Univ. of Minn., 1947-48; Instr., Dept. of Agril. Econ., ibid., 1948-51; Asst. Prof. of Agril. Econ., Univ. of Del., Newark, Del., 1951-53; Assoc. Prof. of Agril. Econ., ibid., 1953-58; Chmn., Dept. of Agril. Econ., ibid., 1957; Prof. of Agril. Econ., ibid., 1958—. Mem.: Am. Econ. Assn.; Am. Soc. of Farm Mgrs. and Rural Appraisers; Gamma Sigma Delta; Alpha Zeta. Contbr. to: Minn. Farm and Home Sci.; Broiler Jour.; Broiler Growing; The Delaware Digest. War Rec.: U. S. Army, 1943-46. Special Int.: Farm Mgmt., Production Econ. and Ag. Policy.

McDONALD, Frank Cobb (Ph.D.), Prof. of Phys., Southern Methodist Univ., Dallas, Tex. ATOMIC PHYSICS. b. March 19, 1898, Warrensburg, Mo. s. Walter and Mary (Violet) McD. Edn.: B.S., Cent. Mo. S.T.C., 1920; M.S., Univ. of Chicago, 1922; Ph.D., ibid., 1926. m. Margaret Heimbach of Coldwater, Mich., 1930. d. Mr. and Mrs. A. L. Heimbach. c.: Marilyn; Frank and Walter. Exp.: Tchr., Prin., H. S., Lebanon, Mo., 1919-21; Asst. Prof., Oberlin Coll., 1926-29; Prof., Southern Meth. Univ., 1929—. Mem.: Am. Phys. Soc.; Am. Assn. of Phys. Tchrs.; A.A.U.P.; A.A.A.S.; Phi Sigma Pi; Gamma Alpha; Sigma Xi; Phi Beta Kappa. Ph.D. Dissertation: Some Hydrocarbon Bands. Listed in: A.M.S.; W. W. in Am. Methodism; W. W. in Am. Edn.; Texan W. W.

McDONALD, Hugh J. (D.Sc.), Prof. and Chmn., Dept. of Biochem., Stritch Schl. of Med., Loyola Univ., 706 S. Wolcott Ave., Chicago 12, Ill. PHYSICAL CHEMISTRY; BIOCHEMISTRY. b. Glen Nevis, Ont., Can., July 27, 1913. s. Roderick J. and Annie Sarah (McDonell) McD. Edn.: B.Sc., McGill Univ., 1935; M.S., Carnegie Inst. of Tech., 1936; D. Sc., ibid., 1939. m. Margaret Bilsland Taylor, Feb. 14, 1942. c.: George Gordon; Jean Margaret; Gail Margaret. Exp.: Mining Advisory Bd. Fellow, Carnegie Inst. of Tech., 1935-36; Tchng. Asst. and Part-time Instr., Carnegie Inst. of Tech., 1936-39; Instr. in Chem., Ill. Inst. of Tech., 1939-41; Asst. Prof. of Chem., ibid., 1941-43; Assoc. Prof., ibid., 1943-46; Prof., ibid., 1946-48; Dir., Corrosion Rsch. Lab., 1944-48; Rsch.. Manhattan Project, Columbia Univ., 1943; Prof. and Chmn., Dept. of Biochem., Stritch Schl. of Med., Loyola Univ., Chicago, Ill., 1948—. Mem.: Fellow, A.A.A.S.; Am. Chem. Soc.; Am. Soc. Biol. Chem.; Soc. Exptl. Biol. Med.; Am. Assn. Clin. Chemists; Chmn., Com. on Edn., 1950-52; Vice-Pres., 1952-53, Pres., 1953-54; Biophys. Soc.; Inst. of Med., Chicago; Chicago Heart Assn.; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Mem., Bd. of Editors, Clinical Chem., 1955-60; Analytical Biochem., ibid., 1960—; Diplomate, Am. Bd. Clin. Chem. War Rec.: Manhattan Propect, Columbia Univ., 1943. Special Int.: Phys. Chem.; Electrophoresis and Chromatography; Lipoproteins; Hypoglycemic Agents. Listed in: W. W. in Am.; A.M.S.; Chem. W. W., etc.

McDONOUGH, Eugene Stowell (Ph.D.), Prof. Bot., 253 N. Pinecrest, Milwaukee, Wis. BIOLOGY. b. Apr. 16, 1905, Abingdon, Ill. s. John and Nora E. (Hankins) McD. Edn.: B.S., Marquette Univ., 1928; M.S., 1931; Ph.D., Ia. State Univ., 1936. m. Marie Wooster of Milwaukee, Wis., Aug. 2, 1930. d. Anson and Margaret Wooster. Exp.: Grad. Asst., Marquette Univ., Bot., 1928-29; Instr. Bot., Mich. State Coll., 1929-30; Instr., Bot., Marquette Univ., 1930-36; Asst. Prof. Bot., 1936-40; Assoc. Prof., 1940-50; Prof., 1950— (on leave of absence Sept., 1958 to Feb., 1960, doing rsch. on fungus diseases under a U.S.P.H. grant at the C.D.C. at Chamblee, Ga.); Fellow, A.A.A.S. Mem.: Am. Bot. Soc.; A.A.A.S.; Mycol. Soc.; Genetic Soc. Am.; Am. Genetics Assn.; Wis. Acad. of Sci., Arts and Letters; Phi Sigma; Human Genetics Soc. of Am.; Am. Phytopath. Soc.; Soc. for the Study of Evolution; Sigma Xi. Contbr. to: Mycologia; Am. Jour. of Bot.; Phytopathology; Jour. of Heredity; Florists' Rev.; Nature; Science; Jour. Lab. and Clin. Med.; Mycopathologia; Am. J. Hyg. Ph.D. Dissertation: Studies on the Cytology and Hostparasite Relations of Sclerospora graminicola. Hobbies: Gardening; Photography. Listed in: A.M.S.; Monthly Supplement to W. W. in Am.; Who Knows—and What; W. W. in Edn.; W. W. in Am. Edn.

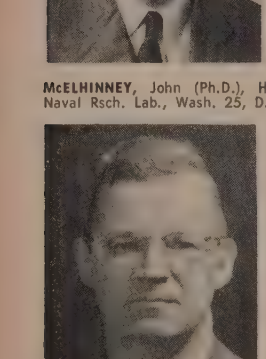
McDOUGALL, John Edward (Mr.), Area Geologist, 1700 Commerce Bldg., New Orleans, La. Home Add.: 815 Conrad St., New Orleans, La. PETROLEUM EXPLORATION GEOLOGIST. b. New Orleans, La., Dec. 19, 1914. s. John M. and Albertha (Racivitch) M. Edn.: B.S., La. St. Univ., 1937; M.S., ibid., 1939. m. Grace E. Prindle, Sept. 30, 1939. c.: John E., Jr.; Sandra Grace (dec.). Exp.: Geophysicist, Div. of Wildlife, St. of La. Dept. of Conservation, New Orleans, La., 1941-45; Exploration Geologist, Atlantic Refining Co., Lake Charles, La., 1945-49; Division Geologist, Danciger-Sou. Production, Baton Rouge, La., 1949-55; Area Geologist, Humble Oil Co., N. Orleans, 1955—. Hon. Pos.: Vice-Pres., Baton Rouge Geological Soc.; Representative, Gulf Coast Assn. of Geological Socs. Mem.: New Orleans Geological Soc.; Am. Assn. of Petroleum Geologists; Soc. of Exploration Geophysicists; La. St. Univ. Geol. Schl. Alumni Assn.; A.A.A.S.; The Petroleum Club of New Orleans; The Dad's Club of Beauregard High; La. St. Univ. Alumni Assn. Author: A Study of Human Leukemia in Louisiana, 1961. Contbr. to: Oil Weekly; Report of La. Dept. of Conservation (Wildlife and Fisherie); Southern Fisherman. Areas of Rsch.: Presently Petroleum Exploration Geol. and Oil and Gas Property Mgmt.

McDONOUGH, Everett Goodrich (Ph.D.), Exec. Vice-Pres., Evans Rsch. and Development Corp., N. Y. 17, N. Y. Home Add.: 109 Kingston Ave., Yonkers, N. Y. ORGANIC CHEMISTRY. b. Birmingham, Ala., Feb. 22, 1905. s. Robert Newton and Sarah Alice (Bass) McD. Edn.: A.B., Howard Coll., 1926; Ph.D., Columbia Univ., 1932. m. Marjorie E. Hudson, Apr. 28, 1932. c.: Everett Goodrich; Robert Hudson; Ann Keith. Exp.: Mem., Faculty, Howard Coll., Birmingham, Ala., 1926-27; Chief Chemist, Marinello Co., N. Y., 1928-33; Asst. Tech. Dir., Inecto, Inc., 1933-40; Gen. Mgr., Ralph L. Evans Assocs., 1941—; Tech. Dir., Sales Affiliates, Inc., 1941-50; Vice-Pres., Evans Chemetics, Inc., 1940-56; Exec. Vice-Pres., ibid., 1956—; Vice-Pres., Evans Rsch. and Dev. Corp., 1946-56; Exec. Vice-Pres., ibid., 1956—. Hon. Pos.: Dir., St. John's Hosp., Yonkers, N. Y.; Dir.,

Halsted Schl. Mem.: Am. Assn. Adv. Sci.; Am. Inst. Chemists; Am. Chem. Soc.; N. Y. Acad. Scis.; Soc. Cosmetic Chemists (Vice Pres., 1948-50, Pres., 1951); Toilet Goods Assn., Scientific Sect.; Sigma Xi; Phi Lambda Upsilon; Lambda Chi Alpha; Yonkers Bd. Edn., Advisory Bd. (Pres., 1945-46). Author: Truth About Cosmetics, 1937. Contbr. to: Drug and Cosmetic Industry; Jour. Soc. Cosmetic Chem.; Proc. Sci. Sect. T.G.A.; Am. Perf. and Ess. Oil Rev. Gen. Int.: Inventor, Cosmetic Depilatories and Permanent Waving Containing Substituted Mercaptans; Medal Award Recipient, Soc. Cosmetic Chemists, 1952. Areas of Rsch.: Mercaptans; Cosmetics; Exothermic Chemicals; Keratin Chemistry; Oxidation; Reduction Heating Compositions; Permanent Waving Compositions and Methods; Odorless Depilatories; Auto-Oxidation of Perfume Aldehydes.

McDOWELL, Robin Scott (Ph.D.), Staff Mem., Los Alamos Scientific Lab., Los Alamos, N. Mex. Home Add.: 801 Seventh St., Los Alamos, N. Mex. INFRARED SPECTROSCOPY, MOLECULAR STRUCTURE. b. Greenwich, Conn., Nov. 14, 1934. s. James Duffil and Aimee Marguerite (Lavers) M. Edn.: B.A., Haverford Coll., 1956; Ph.D., M.I.T., 1960. Exp.: Rsch. Asst., M.I.T., 1956-60; Staff Mem., Los Alamos Scientific Lab., Los Alamos, N. Mex., 1960—. Mem.: A.A.A.S.; Sigma Xi. Contbr. to: Jour. Chem. Phys.; Jour. Molecular Spect.; Spectrochimica Acta. Areas of Rsch.: Spectra of Inorganic Molecules; Force constant Calculations; Far Infrared Spectroscopy.

McELHINNEY, John (Ph.D.), Head, Nuclear Interactions Branch, Naval Rsch. Lab., Wash. 25, D. C. Home Add.: 1505 Dublin Dr., Silver Spring, Md. NUCLEAR PHYSICS. b. Philadelphia, Pa., March 25, 1921. s. Joseph and Mary (Kearney) M. Edn.: B.S., Ursinus Coll., 1942; M.S., Univ. of Ill., 1943; Ph.D., ibid., 1947. m. Geraldine Walters, Dec. 28, 1942. c.: Ruth Elaine; Barbara Jill. Exp.: Physics Asst., Univ. of Ill., 1942-45; Special Rsch. Assoc., ibid., 1947-48; Assoc. Scientist, Los Alamos Scientific Lab., Los Alamos, N. Mex., 1948-49; Physicist, Natl. Bureau of Standards, Wash., D. C., 1949-55; Hd., Nuclear Interactions Branch, Naval Rsch. Lab., Wash., 1955—; Acting Assoc. Supt., Nucleonics Div., ibid., 1958—. Mem.: Am. Physical Soc.; A.A.A.S.; Philosophical Soc. of Wash.; Wash. Acad. of Sci.; Rsch. Soc. of Am.; Naval Rsch. Lab. Toastmasters Club. Contbr. to: Physical Review; Radiation Rsch.; Review of Scientific Instruments; Jour. of Rsch. of NBS; Report of NRL Progress. Areas of Rsch.: Nuclear Physics Rsch. using Betatrons, Synchrotrons, and Electron Linear Accelerators.



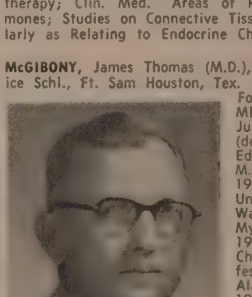
McFADDEN, Harry Webber, Jr. (M.D.), Prof. and Chmn., Dept. of Med. Microbiol., Univ. of Nebraska Coll. of Med., 42nd and Dewey, Omaha, Nebr. Home Add.: 536 Brentwood Rd., Omaha, Nebr. MICROBIOLOGY AND PATHOLOGY. b. Greenwood, Nebr., Dec. 9, 1919. s. H. W. and Alma Edith (Wiedeman) M. Edn.: B.A., Univ. of Neb., 1940; M.D., ibid., Coll. of Med., 1943. m. Patricia Josephine Kerns, Oct., 1945. c.: Harry Edward; Mary Jean. Exp.: Instr. in Path. and Bacti., Univ. of Nebr. Coll. of Med., Omaha, Nebr., 1949-52; Asst. Prof. of Path. and Micro., ibid., 1952-55; Asst. Prof. and Chmn. of Microb., ibid., 1955; Assoc. Prof. and Chmn. to Prof. and Chmn., 1955—. Hon. Pos.: Dir. of Clinics, Omaha Mid-west Clinical Soc.; Delegate to Nebr. State Med. Assn.; Past Pres., Nebr. Assn. of Pathologists. Mem.: Omaha-Douglas Co. Med. Soc.; Neb. State Med. Assn.; Am. Med. Assn.; Nebr. Soc. of Pathol.; Fellow Coll. of Am. Pathol.; Am. Soc. of Clin. Pathol.; Soc. of Am. Microbiol.; Omaha Mid-West Clin. Soc.; A.A.A.S.; Am. Fed. of Clin. Rsch.; Omaha Clin. Club; Assn. Mem. Am. Museum of Natural Hist.; World Med. Assn.; Phi Chi; Alpha Omega Alpha; Sigma Xi; Phi Beta Kappa. Author: A Laboratory Manual for Medical Mycology and Clinical Parasitology, 1954; The Bacteriology of Commercial Poultry Processing, 1954; Terramycin (Oxytetracycline), 1956. Contbr. to: Nebr. St. Med. Jour.; U. S. Quartermaster Reports; Bacteriol. Proc.; A.M.A. Arch. of Internal Med.; Am. Jour. of Ophthalmology; Antibiotics Annual; Internal Arch. of Allergy and Appl. Immunology; Hosp. Topics. Serv. Rec.: AUS, 1945-47. Areas of Rsch.: Medical Microbiology and Pathology.

McFALL, Robert Lloyd (Mr.), Instr., Univ. of Ill., Urbana, Ill. Home Add.: 506 S. Mathews, Urbana, Ill. WATER RESOURCES. b. Pratt, Kans., Oct. 12, 1934. s. Lloyd and Else Mable (Day) McF. Edn.: B.S., Kans. State Univ., 1958; M.S., Univ. of Idaho, 1959. Exp.: Engr., Div. of Water Resources, State of Kans., Topeka, Kans., 1959-60; Instr., Univ. of Ill., 1960—. Mem.: Am. Soc. of Agric. Engrs.; Am. Geophys. Union; Am. Meteorol. Soc.; Natl. Soc. of Prof. Engrs.; Toastmasters Internatl. Serv. Rec.: U. S. Army, 1954-56. Gen. Int.: Developed a method for rapidly and accurately measuring flow over weirs. Areas of Rsch.: Hydrology and Evaporation.

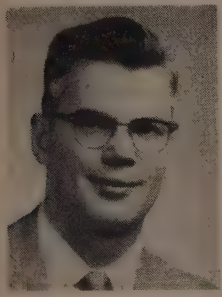
McGAUGH, Maurice Edron (Ph.D.), Prof. and Hd., Dept. of Geog., Central Mich. Univ., Mt. Pleasant, Mich. Home Add.: Kingbrook Farms, Rt. 2, Mt. Pleasant, Mich. GEOGRAPHY. b. Rayville, Mo., June 9, 1906. s. Robert Ezekiel and Olive (Carter) M. Edn.: B.S., Univ. of Kans., 1939; M.A., ibid., 1941; Ph.D., Univ. of Chicago, 1950. m. Ethel Mae Stormont, Nov. 28, 1929. Exp.: Asst. Instr. of Geog. and Geol., Univ. of Kans., 1939-42; Instr. in chg. of Geog. Trng., Army Air Corps Coll. Trng. Detachment, Southwest Mo. State Coll., 1943-44; Instr. in Geog., ASTP Unit, Univ. of Kans., 1944; Asst. Prof., Dept. of Geog., Central Mich. Coll., 1945-51; Assoc. Prof., Dept. of Geog., ibid., 1951-54; Prof., ibid., 1954—; Prof. and Hd. of Dept., ibid., 1956—. Hon. Pos.: Sheldon Fellow, Dept. of Geog., Univ. of Chicago, 1945. Mem.: Assn. of Am. Geogs.; Natl. Coun. of Geog. Tchrs.; Mich. Acad. of Sci.; Mich. Edntl. Assn.; Sigma Xi; Phi Delta Kappa. Author: The Settlement of the Saginaw Basin, Rsch. Paper No. 16, 1950. Areas of Rsch.: Professional specializations in: Geography, as a college tchng. area; Geography of Settlement, a rsch. specialization. Listed in: Dir. of Am. Scholars; A.M.S.; L.A.S.

McGAVACK, Thomas Hodge (M.D.), Assoc. Chf. of Staff, Chf. Intermediate Serv., Veterans Administration Center, Martinsburg, W. Va.; Professorial Lectr., George Washington Univ. Schl. of Med., Wash., D. C. Home Add.: V. A. Center, Martinsburg, W. Va. GERIATRICS—ENDOCRINE AND METABOLIC DISEASES. b. Waterford, Va., Apr. 7, 1898. s. John Thomas and Esther Hodge (Clapham) M. Edn.: A.B., Hampden-Sydney Coll., 1917; M.D., Hahnemann Med. Coll., Philadelphia, Pa., 1923. m. Freda Wicks, May 2, 1930. c.: Mrs. Daphne Enid M. Durant. Exp.: Assoc., Clin. Prof. of Med., Univ. of Calif., 1927-36; Assoc. Prof. of Med., N. Y. Med. Coll., 1936-46; Prof., Clin. Med., ibid., 1946-57; Prof., Lectr. in Med., George Washington Univ., 1957—; Chf., Intermediate Serv., V. A. Center, Martinsburg, W. Va., 1957—; Assoc. Chf. of Staff, ibid., 1961—. Hon. Pos.: Dir., N. Y. Diabetes Assn.; Pres., ibid.; Endocrine Soc.; Coun. Men., ibid.; Dir., Am. Geriatrics Soc.; Pres., ibid.; Pres., W. Va. Diabetes Assn. Mem.: Theta Chi; Sigma Upsilon; Phi Beta Kappa; Alpha Kappa Kappa; Alpha Omego Alpha; Mason, F&AM; Shriner; Knights of the Round Table; Kiwanis Internatl. Author: The Thyroid, 1951; Obesity, Its Cause, Classification and Care, 1957; Britannica Book of the Year, Contbrng. Author, 1957, 1959, 1960. Contbr. to: Jour. of Clin. Endocrinol. and Metabolism; Proc. of Expmtl. Biol. and Med.; Jour. of Am. Chem. Soc.; Jour. of Am. Geriatrics Soc.; New England Jour. of Med.; Am. Jour. of Med. Scis.; Annals Int. Med.; Metabolism; Med. Clin. of N. Am.; Jour. of Clin. Invest.; Am. Heart Jour.; Jour. of Digestive Dis.; Endocrinology; Jour. A.M.A.; Jour. Lab. and Clin. Med.; Jour. Pharmacol. and Exptl. Therapeutics; Arch. of Dermatol. and Syph.; Am. Jour. of Obst. and Gynecol.; Ann. of Allergy; Sci.; Am. Jour. of Surg.; N. Y. St. Jour. of Med.; Jour. Gerontol.; Diabetes; Exptl. Med. and Surg.; W. Va. Jour. of Med.; Arch. Neur. and Psychiat.; Bull., N. Y. Med. Coll.; Gastroenterol.; N. Y. Med. Coll. Bull.; Analyt. Chem.; Antibiotics and Chemotherapy; Clin. Med. Areas of Rsch.: Studies on Steroid Hormones; Studies on Connective Tissue; Geriatric Problems Particularly as Relating to Endocrine Changes.

McGIBONY, James Thomas (M.D.), Commandant Med. Field Service Schl., Ft. Sam Houston, Tex. Home Add.: 416 Dickman Rd., Fort Sam Houston, Tex. MILITARY MEDICINE. b. Greensboro, Ga., July 28, 1910. s. James Thomas (dec.) and Essie (Mullins, dec.) M. Edn.: B.S., Emory Univ., 1930; M.S., ibid., 1931; M.D., ibid., 1935; M.P.H., Johns Hopkins Univ., 1952; M.B.A., George Washington Univ., 1961. m. Myrtis McCommons, Nov. 26, 1936. c.: James Thomas, Jr.; Charles Merritt. Exp.: Chief Professional Servs., Ft. McClellan, Ala. and Ft. Amador, Canal Zone, 1937-41; Asst. Chief, Hosp. Div., Office of Surg., Gen. Dept. Army, 1941-43; Exec. Officer, Finney Gen. Hosp., Thomasville, Ga., 1943-44; Dir., Plans, Supply and Operations Office of the Surg. Gen., 1951-62; Commandant, Med. Field Servs. Schl., Ft. Sam Houston, Tex., 1962—. Mem.: A.A.A.S.; Am. Pub. Health Assn.; Am. Coll. Hosp. Admin.; Am. Coll. of Phys.; Phi Beta Kappa; Kappa Alpha; Alpha Kappa Kappa; Omicron Delta Kappa. Contbr. to: Military Rev.; Military Med. Serv. Rec.: U. S. Army, 1936—. Areas of Rsch.: Military Medicine; Administrative Medicine.



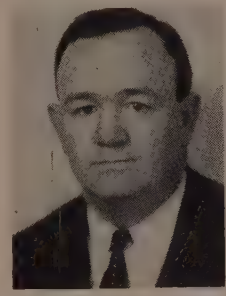
McGEE, Thomas Donald (Ph.D.), Assoc. Prof., Ceramic Engr. Dept., Iowa State Univ., Ames, Iowa. Home Add.: 1114 Stafford Ave., Ames, Iowa. CERAMIC ENGINEERING AND METALLURGY. b. Tripoli, Iowa, June 9, 1925. s. Nacy Waters and Maude (Ridenour) McG. Edn.: B.Sc., M.E., B.Sc., Cer.E., Iowa State Univ., 1948; M.Sc., I.E., ibid., 1958; Ph.D., Cer. E. and Met., ibid., 1961. m. Avis Morse, 1948. c.: Evelyn; Timothy; James; Matthew. Exp.: Rsch. Engr., A. P. Green Fire Brick Co., Mexico, Mo., 1948-53; Rsch. Engr. Supvr., ibid., 1953-56; Asst. Prof., Ia. State Univ., 1956-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Ceramic Soc.; Natl. Inst. of Cer. Engr.; Natl. Soc. for Profl. Engrs.; Iowa Soc. for Profl. Engrs.; Kiwanis Internatl.; Cubmaster, Boy Scouts of Am. Contbr. to: Jour. Am. Ceramic Soc.; The Refractories Inst. Bull. Serv. Rec.: U. S. Naval Reserve, 1944-54. Areas of Rsch.: Refractories, Manager Electron Microscope Laboratory, Ductility of cubic ionic crystals.



McGONNAGLE, Warren J. (Ph.D.), Asst. Dir., Electron. and Elec. Engrng., S.W. Rsch. Inst., P.O. Box 2296, San Antonio 6, Tex. Home Add.: 8519 Dudley Dr., San Antonio, Tex. PHYSICS. b. Newcastle, Nebr., Jan. 3, 1919. s. J. W. and Ethel (Rahn) M. Edn.: A.B., Univ. of Nebr., 1940; M.S., Univ. of Okla., 1942; Ph.D., ibid., 1947. m. June Cleveland, June 5, 1943. c.: James; Robert. Exp.: Instr., Univ. of Okla., 1942-47; Prof., Western Mich. Univ., 1947-50; Assoc. Phys., Argonne Natl. Lab., Argonne, Ill., 1950-61; Asst. Dir., Electron. and Elec. Engrng., S.W. Rsch. Inst., San Antonio, Tex., 1961—. Mem.: Am. Phys. Soc.; Am. Assn. Phys. Tchrs.; Am. Nucl. Soc.; Am. Soc. Testing and Mat.; Soc. Nondestructive Test.; Am. Soc. Metals; Opt. Soc. Tex.; Sigma Xi; Sigma Pi Sigma; Kappa Nu Epsilon. Author: Nondestructive Testing, 1961. Contbr. to: Schl. Sci. and Math.; Nondestructive Test.; Metal Prog.; Proc. Am. Soc. Test. Mat.; Welding Jour.; Metall.; Steel; Nucl. Sci. and Engrng.; Nucleonics; Ultrasonic News; Nucl. Engrng. Hdbk.; Fuel Element Conf.; Electron. Areas of Rsch.: Nondestructive Testing and Physics of Materials.

McGOVERN, John Phillip (M.D.), Physician, 3509 Montrose Blvd., Houston 6, Tex. Home Add.: 2315 Midlane, Houston, Tex. ALLERGY-HYPERSENSITIVITY. b. Wash., D. C., June 2, 1921. s. F. X. (dec.) and Lottie Marie (Brown) McG. Edn.: M.D., Duke Univ., Schl. of Med., 1945; Postgrad. Study, London and Paris, 1949-50. Exp.: Intern in Pediatrics, New Haven General Hosp., Yale Service, 1945-46; Asst. Res. in Pediatrics, Duke Univ., Schl. of Med., 1948-49; Asst. Chf. Res., Children's Hosp., Wash., D. C., 1949-50; Chf. Res., ibid., 1950; Assoc. in Pediatrics, Geo. Wash. Univ. Hosp., 1950-54; Chf., Out-Patient Dept., Children's Hosp., Wash., D. C., 1950-51; Assoc. Attending Staff, ibid., 1951-54; Attending Phyiscian and Chf., Geo. Wash. Univ. Pediatric Div., D. C. Gen. Hosp., 1951-54; Consult., Episcopal Eye, Ear, and Throat Hosp., Wash., D. C., 1952-54, Attending Pediatric, Doctors' Hosp., ibid., 1952-54; Attending Allergy Clinic, Children's Hosp., 1953-54; Chf., Tulane Pediatric Allergy Clinic, Charity Hosp., New Orleans, 1954-55; Visiting Physician, Charity Hosp., 1954-55; Consult. in Pediatrics, Huey Long Charity Hosp., La., 1954-56; Chief, Allergy Serv., Tex. Children's Hosp., Houston, Tex., 1956—; Consult., Lackland A.F.B., Tex., 1959—; Regional Consult., Jewish Natl. Home for Asthmatics, Denver, Colo., 1960—; Regional Consult., Natl. Found. for Asthmatic Children, Sahuaro Schl., Tucson, Ariz., 1960; Asst. in Pediatrics, Yale Univ., Schl. of Med., 1945-46; Assoc. in Pediatrics, Geo. Wash. Univ., Schl. of Med., 1950-51; Asst. Prof. of Pediatrics, ibid., 1951-54; Asst. to the Pres., Rsch. Fdtn., Children's Hosp., Wash., D. C., 1951-52; Assoc. Prof. of Pediatrics, Tulane Univ. Schl. of Med., 1954-56; Clin. Assoc. Prof. of Allergy, Univ. of Tex. Postgrad. Schl. of Med., 1956—; Clin. Assoc. Prof. of Pediatrics, Baylor Univ. Coll. of Med., 1956—; Assoc. Clin. Prof. of Microbiol., ibid., 1957—. Certification and Licensing; Am. Bd. of Med. Examiners, Diplomat, 1946; Licensed, State of Va., 1947; Diplomat, Am. Bd. of Pediatrics, 1952; Licensed, State of La., 1955; Subspecialty, Bd. Certification in Pediatric Allergy, Am. Bd. of Pediatrics, 1956; Licensed, State of Tex., 1956. Hon. Pos.: Assoc. Ed., Clin. Proc. Children's Hosp., Wash., D. C., 1950-54; Editorial Bd., Rev. of Allergy and Applied Immunology, 1960—; Editorial Bd., Annals of Allergy, 1960—; Editorial Bd., Headache, 1961—; White House Conf. on Child Health, Govs. Comm. and Delegate to Conf. for Allergy, Wash., D. C., 1960; Chmn., Allergy Sect., So. Med. Assn., 1962; Mem., Comm., Pediatric Allergy, Am. Coll. of Allergists (Fellow), 1955—; Bd. of Regents, ibid., 1961-64; Vice-Pres., Walter Reed Rsch. Soc., 1952-53; Mem., Audio-Visual Edntl. Comm., Am. Acad. of Allergy (Fellow), 1960; Vice-Pres., Mem. of Bd. of Govs., Am. Assn. for the Study of Headache, 1961—; Assoc. Chmn., 1960 Assembly, Postgrad. Med. Assembly of S. Tex., 1958; Etc. Mem.: C. of C.; Law Enforcement Officers of Tex.; Am. Med. Assn.; Sigma Xi; Natl. Soc. for Med. Rsch.; Am. Acad. of Pediatrics; Cosmos Club, Wash., D. C.; Am. Soc. Rsch. in Nervous and Mental Diseases; Am. Assn. Hist. of Med.; Assn. Am. Med. Colls.; A.A.U.P.; La. St. Med. Soc.; Tex. Med. Soc.; Tex. Pediatric Soc.; Am. Geriatrics Soc.; Am. Assn. of Immunologists; Soc. for Exptl. Biol. and Med.; Royal Soc. of Health; etc. Author: Emotions in Allergy, 1961. Contbr. to: Chicago Med. Soc. Bull.; Mod. Med.; Jour. Am. Med. Assn.; Annals of Allergy; So. Med. Jour.; Tex. State Jour. of Med.; Clin. Proc. of Child. Hosp.; Jour. Allergy; Am. Jour. Diseases Children; Headache; Pediatrics and many others. Gen. Int.: Recd. Bordon Award, 1945.

McGOVERN, Joseph Daniel (Ph.D.), Clinical Psychologist, 3734 McKinley St., N.W., Washington 15, D. C. CLINICAL PSYCHOLOGY. b. Philadelphia, Pa., Sept. 23, 1923. s. Michael Daniel and Catherine (Finnegan) McG. Edn.: M.A., Catholic Univ. of Am., 1949; B.S., St. Joseph's Coll., 1947; Ph.D., Catholic Univ. of Am., 1952. m. Elizabeth L. McGowan, June 28, 1947. c.: Michael; Maureen Ann. Exp.: Psychologist, Vets. Admin., Washington, D. C., 1947-51; Private Practice, Washington, D. C., 1951-52; Psychologist, U. S. Naval Trng. Center, Bainbridge, Md., 1952-53; Private Practice, Washington, D.C., 1953—; Visiting Staff, D. C. Gen. Hosp., 1954—; Asst. Clin. Prof. of Psychol., Georgetown Med. Schl., 1954—; Asst. Prof. of Psychol., Georgetown Nursing Schl., 1955—; Asst. Prof., Dept. of Psychol. and Psychiatry, Catholic Univ. of Am., 1958—. Mem.: Am. Psychol. Assn.; Dist. of Columbia Psychol. Assn.; Eastern Psychol. Assn.; Am. Catholic Psychol. Assn.; Am. Assn. Adv. of Sci.; Certified in State of Md.; Sigma Xi. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: Counseling; Diagnosis of Mental and Emotional Disorders; Psychological Selection Procedures and Research; General Diagnostic and Counseling Practice with Children, Adolescents and Aluits; Group Dynamics and Group Counseling; Teaching; Marital Counseling.



McGREW, Paul Orman (Ph.D.), Prof. of Geol., Univ. of Wyo., Home. Add.: Rt. 1, Box 613, Laramie, Wyo. VERTEBRATE PALEONTOLOGY AND CENOZOIC STRATIGRAPHY. b. Ottumwa, Ia., Aug. 27, 1909. s. Edwin Stanton and Rebecca (Orman) M. Edn.: B.A., Univ. of Neb., 1933; M.A., Univ. of Calif., 1935; Ph.D., Univ. of Chicago, 1942. m. Laura Wenger, 1951. c.: Lynn; Steven; Stanton. Exp.: Curator, Chicago Natural History Museum, Chicago, Ill., 1938-46; Prof., Univ. of Wyo., 1946—. Mem.: Soc. of Vertebrate Paleontol.; Geological Soc. of Am.; Sigma Xi; Theta Xi. Contbr. to: Am. Jour. of Sci.; Proc. Geol. Soc. of Am.; Jour. Paleontol.; Univ. of Calif. Publ.; Bull. Geol. Soc. of Am.; Sci.; Soc. of Paleontol. Publ.; Wyo. Geol. Assn. Guidebk. Areas of Rsch.: Tertiary Mammals; Tertiary Stratigraphy of Wyo.

McGREW, Frank Clifton (Ph.D.), Dir., Rsch. and Devel. Div., Plastics Dept., E. I. du Pont de Nemours & Co., Wilmington 98, Del. Home Add.: 3223 Swarthmore Rd., Wilmington 6, Del. ORGANIC CHEMISTRY. b. Seward, Neb., Jan. 28, 1914. s. A. Clifton and Mabel (Green) M. Edn.: B.S., Univ. of Neb., 1934; M.S., ibid., 1935; Ph.D., Univ. of Ill., 1937. m. Maxine Remaly, Sept. 4, 1935. c.: Mrs. Carol M. Pavilack; Michael; Mary. Exp.: Rsch. Chemist, Chemical Dept., E. I. du Pont de Nemours & Co., Wilmington, Del., 1937-44; Group Ldr., Chemical Dept., ibid., 1944-45; Rsch. Supvr., Chemical Dept., ibid., 1945-49; Asst. Lab. Dir., Chemical Dept., ibid., 1949-50; Asst. Rsch. Dir., Polychemicals Dept., ibid., 1950-58; Dir., Rsch. & Develop., Polychemicals Dept., ibid., 1958-62; Dir., Rsch. and Devel. Div., Plastics Dept., ibid., 1962—. Hon. Pos.: Exec. Comm., Organic Div., Nominating Comm., Organic Div., Coun. Policy Comm., Am.

Chem. Soc.; Bd. of Editors, Jr. Org. Chem.; Soc. of Chem. Indust., Am. Section; Chmn., Subpanel R.O.P. Army Scientific Advisory Panel; Advisory Comm., Organic and Fibrous Mtls., Natl. Bur. of Standards; Chmn., Comm. on Organic Chem., Natl. Rsch. Coun. Mem.: Chem Soc. of London, Fellow; Faraday Soc.; Soc. of Plastic Engrs.; A.A.A.S.; Phi Beta Kappa; Delta Upsilon; Sigma Xi; Phi Lambda Upsilon; Am. Ordnance Assn. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Chem. Edn.; Jour. Soc. of Plastic Engrs. Areas of Rsch.: Broad Experience and Responsibility in the Supvrn., Direction and Organization of Rsch. and Devel. Activities in the Area of Plastics and Chemicals; Studies on Synthesis of New Structures, Reaction Mechanisms, Relationship between Properties of Materials and Molecular Structure, Engrng., Devel. of Processes and Products.

McGUIRE, James Charles (Ph.D.), Mgr., System Utilization Dept., International Electric Corp., P.O. Box 285, Paramus, N. J. Home Add.: 12 Douglas St., Waldwick, N. J. SYSTEM ANALYSIS AND DESIGN WITH EMPHASIS ON PERSONNEL SUBSYSTEM DEVELOPMENT, TEST AND EVALUATION. b. St. Louis, Mo., Aug. 8, 1917. s. John Patrick and Anna Beulah (Erbar) M. Edn.: B.A., Washington Univ., 1949; M.A., ibid., 1953; Ph.D., ibid., 1954. m. Ingrid Elisabeth Getreu, Sept., 1954. Exp.: Rsch. Assoc., Lab. of Aviation Psychol., Ohio State Univ. Rsch. Fdn., Columbus, Ohio, 1953-56; Rsch. Psycholt., Aerospace Med. Lab., Wright-Patterson AFB, 1956-59; Grp. Supvr., Human Factors Engrng. Sect., Boeing Airplane Co., Seattle, Wash., 1959-61; Mgr., Sys. Util. Dept., Internatl. Elect. Corp., 1961—. Mem.: Am. Psychol. Assn.; Midwestern Psychol. Assn.; Soc. of Engrng. Psychol.; Human Factors Soc. of Am.; Operations Rsch. Soc. of Am.; Inst. of Radio Engrs.; A.A.A.S.; Phi Beta Kappa; Sigma Xi; Delta Phi Alpha. Contbr. to: Boeing Airplane Co. Document; WADC Technical Reports. Serv. Rec.: AUS, 1940-46, Lt. Col., USAR. Areas of Rsch.: Personnel Subsystem Development and Testing, to Include: Analysis of Military Weapon System Performance Requirements and Design Constraints Leading to the Allocation of Requirements Between the Personnel Subsystem and the Equipment Subsystems; Establishment of Personnel Subsystem Concept: Development of Personnel Subsystem Products; Personnel Subsystem Test, Evaluation and Refinement.

McILVAINE, Harold (Ph.D.), Prof. of Bot., Sci. Hall, Univ. of Idaho, Moscow, Idaho. BOTANY. b. Dec. 4, 1912, Altoona, Pa. s. Walter and Claire (Miller) McI. Edn.: B.A., 1933, M.Ed., 1934, Ph.D., 1939, Pa. State Univ. m. Mildred Dunkleberger of Harrisburg, Pa., July 25, 1939. d. H. and Josephine Dunkleberger. Exp.: Instr. and Asst. Prof. Bot. and Zool., Undergrad. Centers, Pa. State Univ., 1939-47; Asst. Prof. Bot., Univ. of Idaho, 1947-49, Assoc. Prof. Bot., ibid., 1949-54, Prof. Bot., ibid., 1954 -. Mem.: Pa. Acad. Sci.; Sigma Xi; Psi Chi; Kappa Phi Kappa; Xi Sigma Pi; Phi Delta Kappa; Mason; Rotary. Contbr. to: Jour. Agri. Rsch.; Pa. Acad. Proc. Ph.D. Dissertation: Effect of Radiation on Growth. Serv. Rec.: Pvt., 2nd Lt., 1st Lt., AGD (Clin. Psychol.), U.S.A.A.F., U.S.A. 4th Gen. Hosp. Travel: Philippine Islands. Hobbies: Photography, Psychometrics. Listed in: A.M.S.; W. W. in Am. Special Int.: Plant Anatomy.

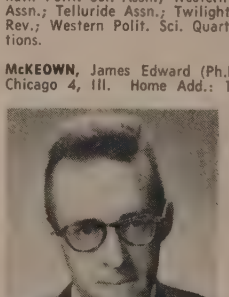
McINTYRE, Harry David (Lt. Col.), USAF, Asst. Chief for Airborne Equipment, Rsch. Requirements Br., Scientific Services, Air Weather Serv., USAF, Scott Air Force Base, Ill. Home Add.: 511 S. Jackson, Belleville, Ill. RADAR METEOROLOGY AND EQUIPMENT. b. Irwin, Pa., Jan. 8, 1922. s. Alex P. and Madelyn (Breon) McI. Edn.: B.S., Sacramento St. Univ., 1954; M.S., Mass. Inst. of Technol., 1955. m. Mildred Culpepper, Oct. 17, 1947. c.: Michael D. Exp.: Staff Weather Briefing Officer, 2105 Weather Gr., USAFE, Wiesbaden, Germany, 1948-51; Chf. Tech. Servs., Hqs. 3rd Weather Gr., Air Defense Command, Colorado Springs, Colo., 1955-57; Asst. To Chief, Radiation Br., Aerial Reconnaissance Lab., Dayton, Ohio, 1958-59; Asst. Chief for Airborne, Rsch. Requirements Br., Scientific Services, Air Weather Serv., USAF Equip., Scott AFB, Ill., 1962—. Mem.: Prof. Mem., Am. Meteorol. Soc.; Am. Geophys. Union; Beta Theta Pi. Contbr. to: Bull. Am. Meteorol. Soc.; USAF Tech. Reports. Serv. Rec.: USAF, Regular AF, 1950—. Areas of Rsch.: Radar Meteorology; Airborne Geophysical Instruments.

McKEE, Bates (Ph.D.), Asst. Prof., Dept. of Geology, Univ. of Washington, Seattle 5, Wash. Home Add.: 16709 41st Ave., N.E., Seattle 55, Wash. GEOLOGY (GENERAL GEOLOGY, MINERALOGY, STRUCTURE). b. Mt. Kisco, N. Y., Jan. 10, 1934. s. Elliott Bates and Katharine (Pillsbury) M. Edn.: B.S., Yale Univ., 1955; Ph.D., Stanford Univ., 1959. m. Sheila Steck, July, 1954. c.: Katharine; Bates, III; Jonathan; Charles. Exp.: Geologist, Oceanic Oil Co., Bakersfield, Calif., 1954; Geologist, U. S. Geological Survey, Denver, Colo., 1956; Geologist, Calif. Dept. Water Resources, Sacramento, Calif., 1957; Asst. Prof., Dept. of Geol., Univ. of Wash., Seattle, Wash., 1958—. Mem.: Geol. Soc. of Am.; Geol. Soc., London; Geol. Vereinigung; Sigma Xi; Mineralogical Soc. of Am; AAAS. Contbr. to: Bull. Geol. Soc. of Am.; Am. Mineralogist; Am. Jour. Sci. Areas of Rsch.: General Geology, Mineralogy of Sedimentary and Metasedimentary Rocks, Structure.

McKEE, Jack Edward (D.Sc.), Prof. of Engrng. in Environmental Health, Calif. Inst. of Technol., Pasadena, Calif. Home Add.: 2026 Oakdale, Pasadena, Calif. SANITARY ENGINEERING. b. Pittsburgh, Pa., Nov. 9, 1914. s. George and Maria (Parsons) M. Edn.: B.S., Carnegie Inst. of Technol., 1936; M.S., Harvard Univ., 1939; D.Sc., ibid., 1941. m. Ruth Yeaton, Dec. 31, 1941. c.: Douglas Edward; Richard Carle; Katherine Alice. Exp.: Partner, Camp, Dresser & McKee, Boston, Mass., 1946-49; Prof., Calif. Inst. of Technol., 1949—. Hon. Pos.: Vice Pres., Pres., Water Pollution Control Fed. Mem.: A.S.C.E.; A.W.W.A.; A.S.E.E.; Am. Public Health Assn; Sigma Xi; Tau Beta Pi; Phi Kappa Phi; Chi Epsilon; Scabbard and Blade; Delta Omega. Contbr. to: Jour. Water Pollution Control Fed.; Product Engrng.; A.S.C.E. Jour. of Professional Practice; Sewage & Industrial Wastes. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Water Quality Criteria; The Disinfection of Sewage; Effects of Oily Substances on the Beneficial Uses of Water; Molecular Filter Membranes; Recharging of Underground Aquifers; The Concentration of Radiocesium by Sewage Sludge.

McKELVEY, Raymond Goss (Mr.), Chmn., Dept. of Polit. Sci., Occidental Coll., Los Angeles 41, Calif. Home Add.: 2275 Roanoke Rd., San Marino, Calif. POLITICAL SCIENCE. b. Los Angeles, June 18, 1906. s. Berry and Etta (Boss) M. Edn.: B.A. Cornell Univ., 1930; M.A., Claremont Grad. Schl., 1931; Grad. Study, Univ. of London, 1930-31; Columbia Univ., 1933-35. m. Margo E. Ringnalda, 1931. c.: Lynne M. Hamilton; Alison Jane. Exp.: Instr., Polit. Sci., Santa Barbara Coll., 1931-33; Asst. Prof., ibid., 1935-37; Instr., Coll. of City of N. Y., 1935; Asst. Prof., Pomona Coll., 1937-39; Prof., Polit. Sci., Occidental Coll., 1939—; Chmn., Dept., ibid., 1936—. Hon. Pos.: Exec. Secy., So. Calif. Council Inter-Am. Affairs, 1943-45; Pres., Pac. S.W. Acad. of Polit. and Social Sci., 1940-42; Vice-Pres., L.A. Town Hall, 1944-45; Pres., Pasadena U. N. Assn., 1947-48; Pres., Calif. Citizens Comm. for Mental Health, 1949-50; Vice-Pres., L. A. Co. Mus. Assn., 1951-52; Mem., Pasadena Libr. Bd., 1956—; Chmn., Posadena Libr. Bd., 1961—; Pres., So. Calif. Polit. Sci. Assn., 1961—; Chmn., Pasadena Council, The Experiment in Internatl. Living, 1961—. Mem.: Am. Acad. of Polit. and Social Sci.; Am. Polit. Sci. Assn.; Internatl. Polit. Sci. Assn.; Western Polit. Sci. Assn; Internatl. Studies Assn.; Telluride Assn.; Twilight Club. Contbr. to: Am. Polit. Sci. Rev.; Western Polit. Sci. Quart. Areas of Rsch.: Internatl. Relations.

McKEOWN, James Edward (Ph.D.), Prof. of Sociol. DePaul Univ., Chicago 4, Ill. Home Add.: 1269 E. 85th St., Chicago 19, Ill. SOCIOLOGY (Rsch in Mental Hlth. and Criminology). b. Detroit, Mich., Sept. 3, 1919. s. Francis Joseph and Grace (Ruddon) M. Edn.: B.A., Wayne State Univ., 1941; M.A., ibid., 1945; Ph.D., Univ. of Chicago, 1949. m. Mary McNamara, Aug. 6, 1955. Exp.: Instr. in Soc. Sci., St. Xavier Coll., Chicago, 1945-48; Asst. Prof. of Sociol., New Mex. Highlands Univ., Las Vegas, N. M., 1948-52; Asst. Prof. of Soc., DePaul Univ., 1952—; Assoc. Prof. of Sociol., ibid., 1955—; Prof. of Sociol., ibid., 1957—; Visiting Prof. of Sociol., Emory Univ., summer, 1952; Smith-Mundt Lectr. in Bolivia, La Paz, Bolivia, 1958. Mem.: Fellow of the Am. Sociological Assn.; Mem. of Am. Assn. for the Adv. of Sci.; Am. Acad. of Political and Soc. Sci.; Ill. Acad. of Criminology; Am. Catholic Sociological Soc.; Pi Gamma Mu; Psi Chi; Phi Sigma Iota; Dorchester Club in Dolton, Ill.; Quadrangle Club. Contbr. to: Jour. of Criminal Law; Criminology, and Police Sci.; Am. Jour. of Sociology; Historia; Am. Catholic Sociological Rev. Areas of Rsch.: Crime Rates, Social Background of Mental Illness, Bolivian Society.



McKEY, Gordon Wells (Mr.), H. S. Instr., Biol., Marblehead H. S., Marblehead, Mass. Home Add.: 296 Essex St., Hamilton, Mass. EMBRYOLOGY AND HISTOLOGY. b. West Newton, Mass., Dec. 28, 1907. s. Joseph and Clara S. (Hall) McK. Edn.: B.S., Boston Univ., 1934; M.A., ibid., Grad. Schl., 1935. m. Eleanor F. Chace, April 19, 1941. Exp.: Boston Univ., Asst. Biol., 1932-37; Whitman H. S., Biol. Instr., 1937-45; Biol. Instr., Watertown H. S., 1945-47; Asst. Prof. Biol., Colby Coll., 1947-52; Biol. Instr., Marblehead H. S., 1952—. Mem.: A.A.A.S.; Mt. Desert Island Biological Lab.; Beta Chi Sigma. Serv. Rec.: U. S. Coast Guard, W. W. II. Areas of Rsch.: Marine Biology; Cultivation of Protozoa.

McKINNEY, Leonard Laurence (Mr.), Asst. Dir., Northern Utilization Rsch. and Dev. Div., Peoria, Ill. Home Add.: 1705 W. Barker Ave., Peoria, Ill. ORGANIC CHEMISTRY. b. Siloam Springs, Ark., May 28, 1908. s. Claude Pascal and Maude (Leonard) M. Edn.: B.S., Univ. of Ark., 1931; M.S., Bradley Univ., 1950. m. Alice

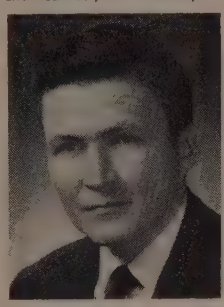
Ann Rodkey, 1941. c.: Heather; Carl; Neil. Exp.: Chemist, Texaco Salt Products Co., Tulsa, Okla., 1931-34; Inspector and Analyst, U. S. Food and Drug Administration, Customs House, New Orleans, 1935-37; Rsch. on Utilization of Soybean Meal, U. S. Soybean Lab., Univ. of Ill., Urbana, Ill., 1937-42; Captain to Lt. Col., U.S.A., 1942-46; Charge, Industrial Protein Unit, Northern Utilization Rsch. and Dev. Div., Agric. Rsch. Serv., Peoria, Ill., 1946-58; Asst. Dir. Northern Utilization Rsch. and Dev. Div., Agric. Rsch. Serv., 1958—. Mem.: Am. Chemical Soc.; A.A.A.S.; Peoria Acad. of Sci.; Ill. State Acad. of Sci.; Alpha Chi Sigma; Sigma Xi; Phi Lambda Upsilon; Alpha Lambda Tau; Armed Forces Chemical Assn.; Masons. Author: Portable Flame Thrower Operations in World War II, 1950; Mechanized Flame Thrower Operations in World War II, 1951. Contbr. to: Jour. of Am. Chemical Soc.; Jour. of Am. Oil Chemists Soc.; Jour. of Agric. and Food Chemistry; Industrial and Engrng Chemistry Jour.; Jour. of Biological Chemistry; Soybean Digest Jour.; Modern Plastics Jour. Areas of Rsch.: Organic and Biochemistry of Amino Acids and Proteins; Synthetic Fibers; Plastics; Foods; Feeds.

McKIBBEN, Eugene George (Ph.D.), Dir., Agric. Engr. Rsch. Div., U. S. Dept. of Agric., Beltsville, Md. Home Add.: 4226 Longfellow St., Hyattsville, Md. AGRICULTURAL ENGINEERING. b. Almyra, Ark., Dec. 17, 1895. s. Frank and Dora (Collins) McK. Edn.: B.S., A.E., Iowa St. Univ., 1922; M.S., Univ. of Calif., 1927; Ph.D., Iowa State Univ., 1936. m. Ethel Marie Morehead, July 27, 1922. c.: Victoria Jean; Dora Frances; Mateal Browning. Exp.: Instr., Asst. Prof., Univ. of Calif., Davis, 1922-28; Assoc. Prof., Prof., Ia. St. Univ., 1928-42; Hd., Dept. of Agric. Engrng., Mich. State Univ., 1942-45; Hd., Dept. of Agric. Engrng., Pineapple Rsch. Inst., Honolulu, Hawaii, 1945-50; Dir., Agric. Engrng. Rsch. Div., U. S. Dept. of Agric., Beltsville, Md., 1950—. Hon. Pos.: Pres., Am. Soc. of Agric. Engrs., 1958-59. Mem.: Am. Soc. of Agric. Engrng.; Am. Soc. of Engr. Edn.; Am. Assn. Adv. Sci.; Royal Swedish Acad. of Agric. and Forestry; Washington, D. C. Engrng. Soc.; Soil Conservation Soc. of Am.; Alpha Gamma Rho; Alpha Zeta; Gamma Sigma Delta; Tau Beta Pi; Phi Kappa Phi; Sigma Xi; Rotary. Contbrng. Author: Tractors and Their Power Units, 1952. Contbr. to: Agric. Engrng.; Jour. Am. Soc. of Agric. Engrs.; Iowa Agric. Expt. Sta. Rsch. Bull. Serv. Rec.: U. S. Army, 1917-19. Gen. Int.: Cyrus Hall McCormick medal, Am. Soc. of Agric. Engrs., 1949. Areas of Rsch.: Farm Power and Machinery.

McLACHLAN, Dan, Jr. (Ph.D.), Prof., Univ. of Denver, Denver 10, Colo. Home Add.: 2101 E. Harvard, Denver 10, Colo. CRYSTALLOGRAPHY: STATISTICAL MECHANICS AND INFORMATION THEORY. b. Areola, Saskatchewan, Can., Dec. 5, 1905. s. Dan and Laura May (Carter) M. Edn.: B.S., Kans. State Univ., 1930; M.S., Penn. State Univ., 1933; Ph.D., ibid., 1936. m. Fredolyn Walker, June, 1934. c.: Edwin Dale; Dan Houston; Wayne Carter. Exp.: Lab. Asst., Sinclair Refining Co., East Chicago, Ill., 1930-31; Rsch. Chemist, Corning Glass Works, Corning, N. Y., 1939-40; Molecular Structure Sect., American Cyanamid, Stanford, Conn., 1940-47; Prof. of Physics and Metallurgy, Univ. of Utah, Salt Lake, Utah, 1947-53; Fundamental Rsch. Scientist, Stanford Rsch. Inst., Menlo, Pa., 1953-61; Prof., Univ. of Denver, Denver, Colo., 1961—. Hon. Pos.: Pres., Am. Crystallographic Assn. Mem.: Am. Crystall. Assn.; Am. Chem. Soc.; Am. Physio. Soc.; Am. Mineralog. Soc.; N. Y. Acad. of Sci. Author: X-Ray Crystal Structure, 1957. Contbr. to: Acta Crystallograph.; Am. Jour. of Phys.; Information and Control; Nature; Jour. of Chem. Edn.; Jour. of Appl. Phys. Serv. Rec.: AUS. Areas of Rsch.: Petroleum Oils, Glass Technology; Molecular Structure; Computing Machines; Theories of Phase Determination in X-Ray Crystallography and Information Theory.

McLARNAN, Charles Walter (Ph.D.), Asst. Prof., Mech. Engrng., The Ohio State Univ., Columbus 10, Ohio. Home Add.: 2581 North Star Rd., Columbus 21, Ohio. MECHANICAL ENGINEERING: KINEMATICS AND DYNAMICS OF MACHINERY. b. Mt. Vernon, Ohio, Mar. 13, 1928. s. John Walter and Cora Marie (Conard) McL. Edn.: B.A., Ohio Wesleyan Univ., 1951; B.M.E., The Ohio State Univ., 1954; M.Sc., ibid., 1955; Ph.D., ibid., 1960. m. Marjorie Roseboom, June 15, 1952. c.: Timothy; Linda; Margaret. Exp.: Summer Consultant, Sandia Corp., Albuquerque, N. Mex., 1954; Summer Consult., Western Elec. Co., Columbus, Ohio, 1961; Summer Consultant, Natl. Cash Register Co., Dayton, Ohio, 1962; Part-time Instr., Capital Univ., 1953-54; Instr. and Asst. Prof., The Ohio State Univ., 1954—. Mem.: Am. Soc. of Mech. Engrs.; Am. Soc. of Engrng. Edn.; Sigma Xi; Tau Beta Pi; Pi Mu Epsilon; Sigma Pi Sigma; Pi Tau Sigma; Texnikoi; Sigma Phi Epsilon. Contbr. to: ASME Trans.; ASEE Mechanics Div. Jour.; Mechanisms Conf. Trans. Serv. Rec.: U. S. Air Force, 1946-47. Areas of Rsch.: Dynamics of Machinery; Kinematic Synthesis.

McLAFFERTY, Fred Warren (Ph.D.), Dir. Eastern Rsch. Lab., The Dow Chemical Co., 875 Waverly St., Framingham, Mass. Home Add.: 29 Longfellow Rd., Wellesley, Mass. MASS SPECTROMETRY, ORGANIC CHEMISTRY. b. Evanston, Ill., May 11, 1923. s. Joel Edward and Margaret (Keifer) M. Edn.: B.S., Univ. of Neb., 1943; M.S., ibid., 1947; Ph.D., Cornell Univ., 1949. m. Elizabeth Curley, Feb. 5, 1948. c.: Sara Louise; Joel Philip; Martha Amy; Samuel Allen; Ann Elizabeth. Exp.: Fellow, St. Univ. of Ia., 1949-50; Rsch. Chemist, Group Ldr., Div. Ldr., The Dow Chemical Co., Midland, Mich., 1950-56; Lab. Dir., The Dow Chemical Co., Framingham, Mass., 1956—. Hon. Pos.: Chmn., Midland Sect., A.C.S.; Councillor, Northeastern Sect., A.C.S.; Secy., Exec. Comm., Natl. Organization of Mass Spectrometry, A.S.T.M. E-14. Mem.: Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Sigma Chi. Author: Mass Spectrometry of Organic Ions, 1962; Tabular Correlations of Mass Spectra, 1962. Contbr. to: Anal. Chem.; Applied Spectroscopy; Jour. of Am. Chem. Soc.; Chem. & Ind. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: Received Combat Infantry Badge; Purple Heart; Bronze Star with 4 Oak Leaf Clusters. Areas of Rsch.: Determination of the Structure of Organic Compounds by Mass Spectrometry; Organic Fluorine Compounds; Instrumental Analysis.



McLAREN, George Williams, Jr. (Ph.D.), Chem. Engr., U. S. Naval Rsch. Lab., Washington 25, D. C. Home Add.: 803 W. Joppa Rd., Baltimore 4, Md. CHEMICAL ENGINEERING. b. Pittsburgh, Pa., July 2, 1921. s. George W. and Evelyn (Hodgson) M. Edn.: B.S., Univ. of Pittsburgh, 1941; M.S., ibid., 1947; Ph.D., ibid., 1950. m. Mildred Cook (dec.), Dec. 1, 1951. 2nd m.: Helen Vehnes, Aug. 4, 1962. c.: Bernice Arlene. Exp.: Chem. Engr., Firestone Tire and Rubber Co., Akron, O., 1941-42; Grad. Stud. Asst., Univ. of Pittsburgh, 1947-48; Instr. of Chem. Engrng., Univ. of Pittsbgh., 1948-50; Chem. Engr., Gen. Aniline and Film Corp., Grasselli, N. J., 1950-52; Sr. Rsch. Chem. Engr., Johnson and Johnson, New Brunswick, N. J., 1952-57; Chem. Engr., U. S. Naval Rsch. Lab., Washington, D. C., 1958—. Mem.: A.I.Ch.E.; A.C.S.; N.S.P.E.; A.A.A.S.; Phi Gamma Delta; Phi Lambda Upsilon. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Aircraft Fuels; Submarine Atmosphere Habitability; Pressure Sensitive Adhesives.

McLAURIN, James Walter (M.D.), Otolaryngologist, 3888 Government St., Baton Rouge 6, La. Home Add.: 2856 Reymond Ave., Baton Rouge 6, La. OTOLOGY. b. Natchez, Miss., July 1, 1910. s. Walter and Annie Whitaker) M. Edn.: M.D., Univ. of Ark. Schl. of Med., 1934. Hon. Deg.: F.A.C.S., Am. Coll. of Surg. m. L. Katharine Kretschmar, Sept. 28, 1935. Exp.: Instr. Otolaryngology, La. St. Univ. Med. Schl., 1946-49; Otto Joachien Prof. of Otolaryngology, Tulane Med. Schl., 1949-58; Med. Dir., Speech and Hearing Clinic., ibid., 1958—. Mem.: Am. Acad. O.O.; Am. Rhinological, Otological and Laryncological Soc.; Am. Otological Soc.; A.C.S.; Delta Tau Delta; Phi Chi; Rotary Club. Author: A Guide to the Care of Adults with Hearing Loss, co-author, 1960. Contbr. to: Laryngoscope; Arch. of Otolaryncology; Annals of Otology; Rhinology and Laryncology. Areas of Rsch.: Use of Grafts in Otological Surg.; Causes of Sensory-Neural Hearing Loss.

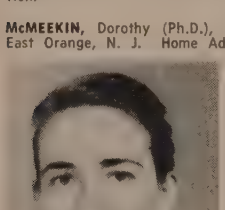
McLEMORE, Ethel Ward (Mrs.), Rsch. Geophysicist, & Mathematician, 11625 Wander Lane, Dallas 30, Tex. GEOPHYSICS, SEISMOLOGY, INTERPRETATIONAL METHODS. b. Sylvarena, Miss., Jan. 22, 1908. d. William Robert and Frances Virginia (Douglas) Ward. Edn.: B.A., William Carey, 1928; M.A., Univ. of N. C., 1929. m. Robert H. McLemore, June, 1935. c.: Mary Frances. Exp.: Hd., Dept. Math., East Miss. Jr. Coll., 1929-30; Instr. Chemistry and Math., Miss. State Coll. for Women, 1930-33; Rsch. Mathematician, Geophysics, Humble Oil and Refining Co., 1933-36; Private Instruction, Adv. Math., 1937-39; Rsch. Geophysicist, United Geophysical Co., 1941-46; Rsch. Geophysicist,

Consulting, 1946—; Tech. of Chemistry and Physics and Consultant in Science and Math., The Hockaday Schl., 1958-60. Mem.: Soc. of Exploration Geophysicists, Am. Geophysical Union; A.A.A.S.; Seismological Soc. of Am.; Tex. Acad. of Sci.; Dallas Geophysical Soc.; Am. Assn. Univ. Women; Sigma Xi; Petroleum Engr. Wives; Am. Inst. Min. and Met. Engr. Auxillary. Contbr. to: Jour. of Geophysics; Quarterly of Applied Mathematics; Southwestern Independent Tchrs. Areas of Rsch.: Methods of Interpretation in Geophysical Analysis, Gravitational and Seismological, Reflection Coefficient, Raleigh Waves, Interval Velocities, etc.; General Analysis of Geophysical Data Probabilities; The System Ferrous Sulphate, Hydrogen Sulphate, Water.

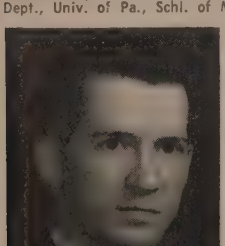
McLEAN, Max C. (Mr.), Scientific Liaison Officer, Office of Naval Rsch., Woods Hole Oceanographic Institution, Woods Hole, Mass.

Home Add.: 54 Lakeview Ave., Falmouth, Mass. PHYSICAL OCEANOGRAPHY, OCEANOGRAPHIC INSTRUMENTATION: OCEANIC CURRENTS: RESEARCH ADMINISTRATION. b. Ogden, Utah, Apr. 20, 1923. s. Levi C. and Clarissa May (Cafferty) M. Edn.: B.S., U. S., Merchant Marine Acad., 1952; B.S., Univ. of Wash., 1954. m. Virginia C. Winfree, Mar. 14, 1948. c.: Patricia Lee; Donna Joy; Karen Jean; Timothy Logan; Pamela Ann; Heather Sue. Exp.: Oceanographic Tech., Woods Hole Oceanographic Institution, Woods Hole, Mass., 1948; Oceanographer, U. S. Navy Hydrographic Office, Suitland, Md., 1948-59; Scientific Liaison Officer, Office of Naval Rsch., Woods Hole Oceanographic Institution, 1959—. Hon. Pos.: U. S. Delegation to I.C.N.A.F. Mem.: Am. Geophysical Union; Am. Soc. of Limnology and Oceanography; Am. Polar Soc.; Scientific Rsch. Soc. of Am.; Rotary Internatl. Contbr. to: Rsch. Revs. Serv. Rec.: U. S. Naval Reserve, 1942; Active Duty, 1943-46. Areas of Rsch.: Physical Oceanography; Navigation and Nautical Astronomy; Seamanship; Oceanographic Instrumentation Development Test and Evaluation.

McMEEKIN, Dorothy (Ph.D.), Asst. Prof., Biology, Upsala Coll., East Orange, N. J. Home Add.: 410 Prospect St., East Orange, N. J. PLANT PATHOLOGY. b. Boston, Mass., Feb. 24, 1932. d. Dr. Thomas L. and Vero (Crockatt) McM. Edn.: A.B., Wilson Coll., 1953; M.A., Wellesley Coll., 1955; Ph.D., Cornell Univ., 1959. Exp.: Asst. Prof. Biol., Upsala Coll., 1959—. Mem.: Am. Phytopathological Soc.; Am. Soc. of Plant Physiologists; Sigma Xi; Phi Kappa Phi. Contbr. to: Phytopathology.



McMICHAEL, Harrison (M.D.), Rsch. Fellow, Asst. Instr., Pathol. Dept., Univ. of Pa., Schl. of Med., Phila., Pa. Home Add.: 524 Meadowbrook Circle, Wayne, Pa. PATHOLOGY. b. Phila., Pa., Aug. 15, 1928. s. Harrison McM. and Mrs. Marjorie (Fell) Seibert. Edn.: A.B., Princeton Univ., 1951; M.D., Univ. of Pa., 1956. m. Jeanne Bretz, May 28, 1957. c.: Ellen Harrison; Suzanne Barry. Exp.: Interne, Hosp. of the Univ. of Pa., 1956-57; Rsch. Fellow, Surgery Dept., ibid., 1957-58; Resident, Pathol. Dept., ibid., 1958-59; Rsch. Fellow, Pathol. Dept., Univ. of Pa., Schl. of Med., 1961—. Mem.: Alpha Omega Alpha; Sigma Xi; A.M.A.; Phila. Co. Med. Soc.; Pa. Medical Soc.; Alpha Mu Pi Omego. Contbr. to: Surgery; Archives of Surgery; Virology; Aerospace Medicine. Serv. Rec.: U.S.A.F., 1959-61. Areas of Rsch.: Virology and Cancer.



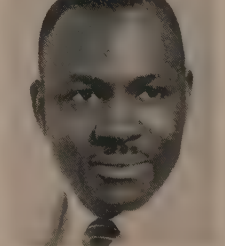
McMILLAN, Brockway (Ph.D.), Asst. Secy., Rsch. and Development, USAF, Washington, D. C. Home Add.: 2524 44th St., N.W., Wash. 7, D. C. MATHEMATICS. b. Minneapolis, Minn., Mar. 30, 1915. s. Franklin R. and Vena (Brockway) M. Edn.: B.S., Mass. Inst. of Tech., 1936; Ph.D., ibid., 1939. m. Audrey Wishard, Sept., 1942. c.: Sarah; Douglas; Gordon. Exp.: Asst. Dir., Systems Engrng., Bell Telephone Labs., Inc., 1955-59; Dir., Military Rsch., ibid., 1959-61; Asst. Secy., Rsch. and Devel., USAF, Wash., D. C., 1961—. Hon. Pos.: Past Pres., Soc. for Indl. and Applied Maths. Mem.: Am. Math. Soc.; Inst. of Math. Statistics; Math. Assoc. of Am.; Soc. for Industrial and Applied Math.; A.A.A.S.; Inst. of Radio Engrs. Contbr. to: Annals of Math. Statistics; Annals of Math.; Proc. Prof. Group on Information Theory; IRE; SIAM Jour.; SIAM Rev.; Bell System Tech. Jour. Serv. Rec.: USNR, 1943-46. Areas of Rsch.: Random processes, electrical networks, information theory.

McMILLAN, Frank M. (Ph.D.), Mgr., Rsch. and Dev., Plastics and Resins Div., Shell Chem. Co., 110 W. 51st St., N. Y. 20, N. Y.

Home Add.: 225 Port Washington Blvd., Port Washington, N. Y. ORGANIC CHEMISTRY, POLYMER CHEMISTRY. b. Illinois, Jan. 14, 1914. s. Will B. and Rose B. (McCurdy) M. Edn.: B.S., Monmouth Coll., 1934; Ph.D., Stanford Univ., 1937. Hon. Deg.: D.Sc., Monmouth Coll., 1961. m. Frances Jean Clay, 1938. c.: Jean Patricia; Carol Ann. Exp.: Chemist, Shell Development Co., Everyville, Calif., 1937-51; Asst. Dept. Hd., ibid., 1951-54; Asst. to Pres., ibid., N. Y., 1954-56; Dept. Hd., ibid., Everyville, Calif., 1956-58; Mgr., Rsch., Shell Chem. Co., N.Y., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; Soc. Chem. Industry; Commil. Chem. Dev. Assn.; Sigma Xi. Author: Introduction to Rubber Technology, 1959. Contbr. to: Jour. Am. Chem. Soc.; Rubber Age; India Rubber World. Areas of Rsch.: Synthetic Rubber, Plastics, Resins, Hydrocarbon Reactions and Derivatives.

McMORRIS, William Arthur (Mr.), Mgr. Distribution Transformer Adv. Prod. Engrng., Gen. Elect. Co., 100 Woodlawn Ave., Pittsfield, Mass. Home Add.: 95 Strong Ave., Pittsfield, Mass. ELECTRICAL ENGINEERING. b. Condon, Ore., June 26, 1906. s. John A. and Laura (Schilling) M. Edn.: B.S., Elect. Eng., Ore. Sta. Univ., 1928. m. Mary Pope, Dec. 7, 1938. c.: Barbara Jean; Karen Marie; Frederick Arthur; Daniel William. Exp.: Student Engr., Gen. Elect. Co., Schenectady, N. Y., 1928-29; Engr., ibid., 1929-53; Mgr., Gen. Elect. Co., 1954—. Hon. Pos.: Past Chmn., Pittsfield Sect., Am. Inst. of Elect. Engrs. Mem.: Am. Assn. for the Adv. of Sci.; Mass. Soc. of Prof. Engrs.; Fellow, Am. Inst. of Elect. Engrs.; Eta Kappa Nu; Sigma Tau; Tau Beta Pi; Scabbard and Blade; Phi Kappa Phi. Contbr. to: Gen. Elect. Rev.; Elect. World; Elect. Engrng. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Field Studies of Lightning and Its Effects upon Electrical Transmission and Distribution Systems; Development of Lightning Arresters, Distribution Cutouts and Power and Distribution Transformers.

McNEILL, Fred Douglas, Jr. (Mr.), Sci. Tchr., P. O. Box 1013, Oxford, N. C. Home Add.: 116 Warren Ave., Oxford, N. C. HEMATOLOGY AND ANIMAL BIOLOGY. b. Durham, N. C., Jan. 15, 1932. s. Fred D., Sr. and Lottie (Hill) M. Edn.: B.S., N. C. Coll. at Durham, 1953; M.S., ibid., 1957. m. Myrtle Jones, Aug. 18, 1956. c.: Sheila Colette; Veta Runnette. Exp.: Sci. Tchr., Coach, Mary Potter H. S., Oxford, N. C., 1957—. Hon Pos.: Vice-Pres., Oxford City Teachers and Granville Co. Tchrs. Assn.; St. Tchrs. Election Comm. Mem.: Am. Tchrs. Assn.; Natl. Sci. Tchrs. Assn.; Am. Inst. of Biological Scis.; A.A.A.S.; N.E.A.; Omega Psi Phi; Granville Citizens League; Future Investors. Serv. Rec.: U. S. Army, 1953-56. Areas of Rsch.: Hematology, Thrombocytes.

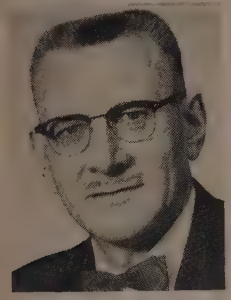


McNEW, George Lee (Ph.D.), Managing Dir., Boyce Thompson Inst., Yonkers, N. Y. Home Add.: 255 Broadway, Hastings-on-Hudson, N. Y. PLANT PATHOLOGY, BOTANY, AGRICULTURAL CHEMISTRY. b. Alamogordo, N. Mex., Aug. 22, 1908. s. William H. and Nettie (Fry) M. Edn.: B.S., N. Mex. State Univ., 1930; M.S., Iowa State Univ., 1931; Ph.D., ibid., 1935. Hon. Deg.: D.Sc., N. Mex. State Univ., 1954. m. Elizabeth Ann Mehlhop, May, 1951. c.: Freda Louise. Exp.: Rsch. Assoc., Iowa Agric. Exptl. Sta., Ames, Ia., 1930-35; Asst. and Assoc. Mem., Rockefeller Inst., Princeton, N. J., 1935-39; Asst. to Assoc. Prof., N. Y. Agric. Sta., Geneva, N. Y., 1939-43; Mgr., Agric. Chem. Rsch., Naugatuck Chem. Div., U. S. Rubber Co., Naugatuck, Conn., 1943-47; Prof. and Hd. Botany Dept., Iowa State Univ., Ames, Iowa, 1947-49; Mgng. Dir., Boyce Thompson Inst., Yonkers, N. Y., 1949—. Mem.: Am. Phytopathol. Soc.

Am. Chem. Soc.; Botanical Soc. of Am.; Am. Soc. of Plant Physiol.; Westchester Chem. Soc.; Torrey Bot. Club; N. Y. Acad. of Sci.; Sigma Xi; Alpha Zeta; Phi Kappa Phi; Gamma Sigma Delta; Rotary. Contbr. to: Anal. Chem.; Botanical Gazette; Iowa State Coll. Jour. of Sci.; Bull. Torrey Botanical Club; Jour. Food and Agric. Chem. Areas of Rsch.: Perasitism of Fungi, Chemical Basis of Pathogenicity in Plant Bacteria, Chemistry of Fungicides, Plant Disease Control.

McNIVEN, Malcolm A. (Ph.D.), Mgr., Advert. Rsch., Advert. Dept., E. I. du Pont de Nemours and Co., Inc., Wilmington 98, Del. Home Add.: 2006 Gravers Lane, N. Graylyn Crest, Wilm. 3, Del. EXPERIMNTAL PSYCHOLOGY. b. Oceanside, N. Y., Dec. 8, 1929. s. William and Hazel (Summers) M. Edn.: A.B., Denison Univ., 1951; M.S., Ohio Univ., 1952; Ph.D., Pa. Sta. Univ., 1955. m. Elaine Vellacott, June 12, 1954. c.: Geoffrey; Susan. Exp.: Rsch. Fellow, Penn. Sta. Univ., Sta. Coll., Pa., 1952-55; Psychology Tchr., Univ. of Md., Coll. Park, Md., 1955-56; Hd., Indust. Testing Serv., Pa. Nta. Univ., Sta. Coll., Pa., 1956-57; Mgr. Advert. Rsch., E. I. lu Pont de Nemours, 1957—. Mem.: Mem. and Fellow, Am. Psychol. Assn.; Am. Assn. for Pub. Opinion Rsch.; Eastern Psychol. Assn.; Am. Assn. for the Adv. of Sci.; Lambda Chi Alpha; Franco-Calliopean Lit. Soc.; Psi Chi. Contbr. to: The Psychological Record. Areas of Rsch.: Human Learning, Motivation and Perception; Attitude Measurement; Mass Communication Studies.

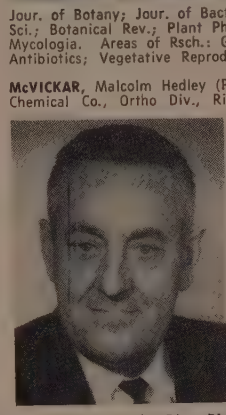
McPHERSON, Virgil Lee-Roy (Ed.D.), Prof. of Psychol. and Edn., Adams St. Coll., Alamosa, Colo. Home Add.: Adams St. Coll., Alamosa, Colo. PSYCHOLOGY: MEASUREMENT AND EVALUATION; STATISTICS APPLIED IN LEARNING AND PERSONALITY RESEARCH; COUNSELING AND GUIDANCE. b. Springfield, Ore., June 8, 1907. s. Seth M. and Stella A. (Calvert) M. Edn.: B.S., Univ. of Ore., 1936; M.A., Stanford Univ., 1940; Ed.D., Univ. of Sou. Calif., 1959. m. Margaret E. Heustis, Oct. 27, 1931. c.: David H.; Phillip F.; V. Douglas. Exp.: Dean of Men, Instr., Soc. Sci., Pomono Junior Coll., 1943-45; Assoc. Prof., Psychol. and Edn., Prof., Psychol and Polit. Sci., Head, Div. Soc. Sci., Dean of Students, Administrative Dean, Chapman Coll., 1945-61; Prof., Psychol. and Edn.. Adams St. Coll., 1961—. Hon. Pos.: St. Chmn., Dept. of Soc. Studies, Ore. St. Tchrs. Assn.; Mem., Calif. Coun. on Tchr. Edn. Mem.: A.A.A.S.; Am. Psychologicol Assn.; Am. Statistical Assn.; Am. Sociological Assn.; Western Psychol. Assn.; Rocky Mtn. Psychol. Assn.; Colo.-Wyo. Chapt., Am. Statistical Assn.; N.S.S.E.; Phi Delta Kappa; Delta Epsilon; Kiwanis; San Luis Valley Mental Health Assn. Serv. Rec.: Ore. Natl. Guard, 1927-1931. Areas of Rsch.: Tchng. of Psychol.; Measurement and Evaluation; Counseling and Guidance; Statistics Applied in Learning and Personality Rsch.



McPHILLIPS, (Sister) Martin Marie, O.P., Chmn., Chem. Dept., St. Helena H. S., Bronx, N. Y. Home Add.: 915 Hutchinson River Parkway, Bronx 65, N. Y. CHEMISTRY. b. Newark, N. J., June 14, 1908. d. Martin and Mary (Hogan) McP. Edn.: B.A., Manhattan Coll., N. Y., 1939; M.Sc., Fordham Univ., 1944. Exp.: Chem. Tchr. and Chmn., Science Dept., Aquinas H. S., Bronx, 1938-45; Tchr., Chem. and Chmn., Science Dept., Cathedral H. S., N.Y.C., 1945-52; Tchr., Chem. and Chmn., Sci. Dept., St. Helena H. S., N. Y., 1952. Hon. Pos.: Mem., Exec. Bd., Catholic Sci. Coun. of Archdiocese of N.Y. and Past Chmn. of its Chem. Comm. Mem.: Natl. Assn. Adv. Sci.; Natl. Sci. Tchrs. Assn. Contbr. to: Scope, N.Y. Cath. Sci. Coun. Gen. Int.: N.S.F. Fellowship, Nuclear Studies at Oak Ridge, Tenn., 1959; Tchng. Fellowship, Sci. Honors Program, Columbia Univ., 1960; Received Commendation from David Lilienthal First Atomic Energy Commission for Interesting High Schl. Students in Peaceful Uses of Atomic Energy; Scroll for Am. Chem. Soc. for Tchng. and Professional Interest in Chemistry; Received Citation from Catholic Sci. Coun. for Effective Sci. Tchng., 1962. Areas of Rsch.: Chemistry.

McVEIGH, Ilda Sabra (Ph.D.), Assoc. Prof. of Biol., Box 1549, Substation B, Vanderbilt Univ., Nashville 5, Tenn. Home Add.: Apt. F-3, Hillsboro Ct., 1405 21st Ave., S., Nashville, Tenn. MICROBIOLOGY, NUTRITION, ANTIBIOTICS. b. Fulton. Mo., Feb. 12, 1905. s. Joseph F. and Emma (Guerrant) M. Edn.: B.S., Univ. of Mo., 1931; A.M., ibid., 1933; Ph.D., ibid., 1937. Exp.: Rsch. Asst., Yale Univ., 1941-42; Instr., Conn. Coll., 1942-43; Rsch. Asst., Yale Univ., 1943-45; Rsch. Asst., N. Y. Botanical Garden, N.Y.C., 1945-48; Assoc. Prof., Vanderbilt Univ., 1948—. Hon. Pos.: Pres., Ky.-Tenn. Branch, Soc. of Am. Bacteriologists. Mem.: A.A.A.S., Fellow; Mycological Soc. of Am.; Sigma Xi; Sigma Delta Epsilon; Phi Theta Kappa. Contbr. to: Botanical Gazette; Stain Technol.; Bull. Torrey Botanical Club; Am. Jour. of Botany; Jour. of Bacteriology; Proc. Natl. Acad. of Sci.; Sci.; Botanical Rev.; Plant Physiology; Archives of Biochemistry; Mycologia. Areas of Rsch.: Growth Factors; Microbial Nutrition; Antibiotics; Vegetative Reproduction.

McVICKAR, Malcolm Hedley (Ph.D.), Natl. Mgr., Agronomy, Calif. Chemical Co., Ortho Div., Richmond, Calif. Home Add.: 1360 Butterfield Rd., San Anselmo, Calif. SOIL SCIENCE (SOIL FERTILITY). b. Sumner, Ill., Sept. 10, 1913. s. William H. and Bertha (Provines) M. Edn.: B.S., Univ. of Ill., 1936; Ph.D., Ohio St. Univ., 1939. m. Gertrude E. Dietsch, 1940. c.: John Thomas. Exp.: Grad. Asst., Ohio St. Univ., 1936-39; Agronomic Advisor, Ohio Seed Improvement Assn., Columbus, Ohio, 1939-42; Asst. Agronomist, Va. Agricultural Expt. Sta., Blacksburg, Va., 1942-43; Assoc. Agronomist, ibid., 1943-45; Agronomist, ibid., 1945-48; Chf. Agronomist, Natl. Fertilizer Assn., Wash., D. C., 1948-54; Chf., Agronomic Edn., Natl. Plant Food Inst., Wash., D. C., 1954-56; Chf. Agronomist, Calif. Chemical Co., Ortho Div., Richmond, Calif., 1956-61; Natl. Mgr., Agronomy, ibid., 1961—. Hon. Pos.: Chmn., Special Committee, Plant Nutrient Div., Soil Sci. Soc. of Am. Mem.: Am. Soc. of Agronomy; Soil Conservation Soc. of Am.; A.A.A.S.; Phi Kappa Phi; Alpha Zeta; Sigma Xi. Author: Approved Practices in Pasture Management, 1956; Using Commercial Fertilizers, 1961. Contbr. to: Soil Sci. Proc.; Agronomy Jour. Gen. Int.: Awarded First Agronomic Serv. Award, Am. Soc. of Agronomy, 1961. Areas of Rsch.: Plant Nutrition; Soil Chemistry; Fertilizer Technology.



MEAD, William J. (Mr.), Tech. Dir., Home Products Internatl. Ltd., Subsid. of Am. Home Prods. Corp., 685 Third Ave., N. Y. 17, N. Y. Home Add.: 48 Lenox Terrace, W. Orange, N. J. CHEMICAL ENGINEERING. b. Columbus, Ohio, Dec. 29, 1927. s. Jasper M. and Olive (Adams) M. Edn.: B.Ch.E., The Ohio St. Univ., 1948; M.S., Stevens Inst. of Tech., 1961; Ch.E., The Ohio St. Univ., 1962. m. Milton Virginia Young, Feb. 14, 1950. c.: David W.; Judith Jean. Exp.: Chem. Engr., Colgate-Palmolive Co., Jersey City, N. J., 1950-51; Chem. Engr., Whitehall Labs., Elkhart, Ind., 1951-56; Asst. Tech. Dir., Home Prods. Internatl. Ltd., N. Y., 1956-58; Tech. Dir., ibid., 1958—. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; A.A.A.S.; Chemists' Club of N. Y. Author-Editor: Encyclopedia of Chemical Process Equipment, 1962. Serv. Rec.: U. S. Army Reserve, 1948—; Act. Duty, 1949-50. Gen. Int.: Registered Profl. Engr. in Ohio, Ind., N. Y.; Ext. Travel in S. Am.; Europe; Far East. Areas of Rsch.: Manufacturing, New Product Development, Packaging and Quality Control of Pharmaceutical and Cosmetic Products and Household Chemical Specialty Items; Equipment Selection and Design; Plant Layout.

MEAD, Albert Raymond (Ph.D.), Prof. and Hd., Dept. of Zoology, Univ. of Ariz., Tucson, Ariz. Home Add.: 401 Sierra Vista Dr., Tucson, Ariz. ZOOLOGY, MALACOLOGY. b. San Jose, Calif., July 17, 1915. s. Lester Albert and Jennie May (Fiske) M. Edn.: B.S., Univ. of Calif., 1938; Ph.D., Cornell Univ., 1942. m. Eleanor Comfort Morrow, Feb. 8, 1942. c.: Ruth Evelyn; James Irving. Exp.: Instr., Army Coll., Accra, Gold Coast BWA, 1944-45; Res. Fellow, Univ. of Calif., 1946; Instr., Univ. of Ariz., 1946-47; Asst. Prof., ibid., 1947-51; Assoc. Prof., ibid., 1951-52; Prof., ibid., 1952-56; Prof. and Hd., Dept. of Zool., ibid., 1956—. Hon. Pos.: Observer for Pac. Sci. Coun. on

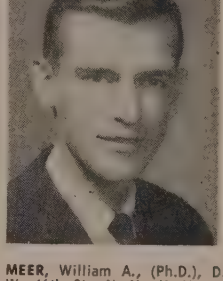
UNESCO Advisory Comm. on Humid Tropics Res., 1961; Delegate to Internatl. Sci. Congresses, Australia, Thailand, Hawaii. Mem.: Fellow, A.A.A.S.; Am. Inst. Biol. Sci.; Am. Malacological Union; Am. Soc. Trop. Med. and Hygiene; Am. Soc. Zoologists; Malacological Soc., London; Soc. Study Evol.; Soc. Systematic Zool.; Alpha Zeta; Tri Beta; Phi Kappa Phi; Phi Sigma; Sigma Xi. Author: The Giant African Snail: A Problem in Economic Malacology, 1961. Contbr. to: Foreign and Domestic Sci. Jours.; Science; Bull. Mus. Comp. Zool., Harvard; Ceylon Forester; Nautilus; Proc. Hawaiian Entomological Soc.; Reader's Digest; Atlantic Monthly. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Economic Malacology, esp. of the Giant African Snail; Molluscan Pathology; Taxonomy, Phylogeny and Distribution of Terrestrial Mollusks, esp. Slugs.

MEADE, George P. (D.Sc.), Retired, Pontchartrain Hotel, New Orleans 40, La. CHEMICAL ENGINEERING, SUGAR REFINING. b. Cumberland, Md., Dec. 26, 1883 s. Rev. Philip Nelson and Sarah (Rannells) M. Edn.: B.S., N. Y. Univ., 1905; Ch.E., ibid., 1921. Hon. Deg.: D.Sc., La. St. Univ., 1954; D.Eng., N. Y. Univ., 1955. m. Eleanore Hussey, 1912. Exp.: Asst. Chemist, Natl. Sugar Refinery, Yonkers, N. Y., summers, 1901-05; Full Time, ibid., 1905-07; Asst. Chemist, Fajardo Sugar Co., Puerto Rico, 1908; Chemist and Asst. Supt., Colonial Sugars Co., Gramercy, La., 1909-13; Supt. and Mgr., Cuban Sugar Refining Co., Cardenas, Cuba and Dir., Cent. Control Lab., Cuban-Am. Sugar Co., 1913-23; Gen. Supt., Colonial Sugars Co., Gramercy, La., 1923-28; Mgr., ibid., 1928-56; Mem. of Bd. of Dirs., Cuban-Am. Sugar Co. (Parent Company of Colonial), 1950-58. Hon. Pos.: Pres., St. James Parish Schl. Bd., 1932-56; Pres., Bone Char Rsch. Project, 1950; Delegate, Internatl. Commn. for Uniform Methods of Sugar Analysis, London, 1936; ibid., Brussels, 1949; Chmn., U. S. Delegation, ibid., Paris, 1954; ibid., Brussels, 1958; Hon. Life Vice-Pres. and Honor Award, 1960; Chmn., U. S. Natl. Committee on Sugar Anal., 1954-58; Chmn., Istrouma Council, Boy Scouts of Am., 1941-47; Vice-Pres., Am. Soc. of Ichthyologists and Herpetologists, 1951-54; Bd. Trustees, La. Pub. Affairs Rsch. Coun., 1957—; Food Tech. Com., Sugar Rsch. Fdtn., 1959—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engineers; International Soc. of Sugar Cane Tech.; Louisiana Engineering Soc.; Phi Beta Kappa; Alpha Chi Sigma; Gramercy-Lutcher Lions Club. Fellow: Institute of Chemists; A.A.A.S.; N. Y. Acad. of Sci. Author: Cane Sugar Handbook; Phosphoric Acid and Phosphates, 1952; (Chap. on Use in Sugar Manufacture and Refining); Assoc. Ed., "Sugar Journal" (New Orleans), 1957—. Contbr. to: Ency. Britannica; About 60 Articles on Sugar Tech., Mfg., Analysis and Refining in Indus. and Engrng. Chem.; Internatl. Sugar Jour.; Sugar; Sugar Jour.; Articles on Harmless Snakes of La.; Jour. of Am. Soc. of Ichs. and Herps.; Herpitological. War Record: Selective Serv. Bd., St. James Parish, 1941-45. Special Int.: Sugar Tech.; Herpetol.

MEADER, Ralph Gibson (Ph.D.), Assoc. Dir. for Grants and Trng., Natl. Cancer Inst., Bethesda 14, Md. Home Add.: 5213 Chandler St., Bethesda 14, Md. NEUROANATOMY-ANATOMY; CANCER RESEARCH GRANT AND TRAINING ADMINISTRATION. b. Eaton Rapids, Mich., Sept. 6, 1904. s. Robert Eugene and Jennie Editha (Gibson) M. Edn.: A.B., Ohio Wesleyan Univ., 1925; A.M., Hamilton Coll., 1927; Ph.D., Yale Univ., 1932. Hon. Degrs.: Sc.D., Ohio Wesleyan Univ., 1958; LL.D., Phila. Coll. of Osteopathy, 1956. m. Olive Myrle Root, June 16, 1928. c.: Mary Batcheller. Exp.: Instr., Biol., Hamilton Coll., 1925-27; Part-time Instr., Biol., Wesleyan Univ., 1928-29; Asst. Prof., Biol., Hamilton Coll., 1927-28; Fellow, Neuroanat. Blossom Fund, Yale Univ., Med. Schl., 1929-31; Instr. to Assoc. Prof., Yale Univ., Med. Schl., New Haven, Conn., 1931-48; Biologist, St. Biol. Surv., N. Y., 1929-30; Mem. Corp. Bermuda Biol. Sta., 1932—; Asst. to Dir., Bd. Sci. Advs., Jane Coffin Childs Mem. Fund Med. Res., 1942-43; Asst. Dir., 1943-48; Chief, Rsch. Grants Br., Natl. Cancer Inst., 1948-60; Assoc. Dir., ibid., 1960—. Hon. Pos.: Exec. Secy. of the Natl. Adv. Cancer Coun., 1947—; Mem. of Clin. Fellowship Comm. of the Am. Cancer Soc. Mem.: Am. Assn. of Anats.; Am. Assn. Cancer Rsch.; Soc. for the Study of Devel. and Growth; Corp. of Bermuda Biol. Statn. for Rsch., Inc.; Phi Beta Kappa; Sigma Xi. Areas of Rsch.: Neuroanatomy-Anatomy; Cancer Research Grants and Training Administration.

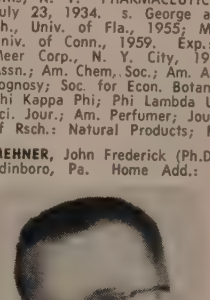
MEEK, Richard Lee (Ph.D.), Dir. of Devel., Tenn. Corp., Box 89, College Park, Ga. Home Add.: 1227 Lanier Blvd., N.E., Atlanta 6, Ga. CHEMICAL ENGINEERING. b. Smyrna, Ga., May 5, 1925. s. James Raymond and Myra (Hemperley) M. Edn.: B.S., Ga. Inst. of Tech., 1947; M.S., ibid., 1950; Ph.D., ibid., 1952. Exp.: Chem. Engr., Phillips Petroleum Co., Phillips, Tex., 1948; Sr. Rsch. Engr., Lion Oil Co., El Dorado, Ark., 1952-55; Hd. Chem. Rsch., Scripto, Inc., Atlanta, Ga., 1955-62. Hon. Pos.: Chm. Atlanta Sect., Am. Inst. of Chem. Engrs., A.I.Ch.E. Mem. A.A.A.S.; Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Ass. Textile Chem. and Colorists; Beta Theta Pi; Alpha Chi Sigma; Sigma Xi; Kappa Kappa Psi. Contbr. to: Industrial Engineering Chem. Serv. Rec.: A.U.S., 1944-45. Areas of Rsch.: Ball P Inks and Writing Instruments, Pilot Plant Developments a Analysis.

MEDREK, Theodore Francis (Ph.D.), Asst. Rsch. Prof., Marsh Hall, Univ. of Mass., Amherst, Mass. Home Add.: 597 All St., Springfield, Mass. MICROBIOLOGY, SEROLOGY. b. Springfield, Mass., Feb. 13, 1931. Walter Alfred and Lucy (Gralinski M. Edn.: B.S., Univ. of Mass 1953; M.S., ibid., 1957; Ph.D Univ. of Cambridge, England 1960. Exp.: Rsch. Assoc., Rockefeller Inst. for Med. Rsch., 1961; Post-doctoral Fellow, Univ. Mass., 1961-62; Asst. Prof., ibid 1962—. Mem.: Am. Soc. Microbiol.; Soc. Appl. Bact.; A.A.A.S Sigma Xi. Contbr. to: Appli Microbiology; Jour. Appl. Bact Jour. Gen. Microbiol. Serv. Rec U. S. Army, 1953-55. Areas Rsch.: Physiology and Serology Lancefield Group D Streptococc Publ. Health Bacteriology; Fo Microbiology.



MEER, William A., (Ph.D.), Dir., Rsch. and Quality Control, 3 W. 46th St., N. Y., N. Y. Home Add.: 68-10 108th St., Fore Hills, N. Y. PHARMACEUTICAL CHEMISTRY. b. Bagdad, Ira July 23, 1934. s. George and Lucy (Shasha) M. Edn.: B.S Ph., Univ. of Fla., 1955; M.S., Columbia Univ., 1957; Ph.D Univ. of Conn., 1959. Exp.: Dir., Rsch. and Quality Contro Meer Corp., N. Y. City, 1959—. Mem.: Am. Pharmaceutic Assn.; Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Soc. of Pharm cognosy; Soc. for Econ. Botany; Sigma Chi; Sigma Xi; Rho Ch Phi Kappa Phi; Phi Lambda Upsilon. Contbr. to: Pharmaceutic Sci. Jour.; Am. Perfumer; Jour. Am. Pharmaceutical Assn. Are of Rsch.: Natural Products; Phyto-Chemistry.

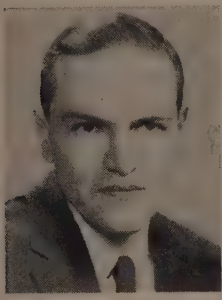
MEHNER, John Frederick (Ph.D.), Assoc. Prof., Edinboro St. Coll Edinboro, Pa. Home Add.: 263 Meadville St., Edinboro, P ZOOLOGY, ORNITHOLOGY. b. Grove City, Pa., July 15, 192 s. Gustav Henry (dec.) and Al (Beighley) M. Edn.: B.S., Gro City Coll., 1942; M.S., Univ. Pittsburgh, 1950; Ph.D., Mich. S Univ., 1958. Exp.: Biol. Tchr Mt. Lebanon Pub. Schls., Pitt burgh, Pa., 1942-59; Assoc. Prof Edinboro St. Coll., 1959—. Mem Am. Ornithologists' Union; Wilso Ornithological Soc.; Ecology So of Am.; Pa. Acad. of Sci.; Nat Assn. of Biol. Tchrs.; Beta Bet Beta; Sigma Xi. Contbr. t Auk; Wilson Bull.; Atlantic Nat ralist; Jack-Pine Warbler. Ser Rec.: U. S. Navy, 1944-46. Area of Rsch.: Life Histories of Pas serine Birds; Effects of Insect cides on Bird Populations.



MEIERS, Joseph I(mmanuel) (M.D.), 601 W. 115th St., N. Y. 25 N. Y. MEDICINE; PSYCHIATRY (PSYCHOTHERAPY AND GROUP PSYCHOTHERAPY). b. Berlin, Ger many, Nov. 25, 1894. s. Bern hard and Elisabeth (Neumann) M Edn.: M.D., Berlin Univ., 1925 m. Annie G. Dix, 1950. Exp. Qualified Psychiatrist, St. of N. Y. 1952—; Physician, Sydenham Hosp., N.Y.C.,; Assoc. Visit., 195 —; Assoc. Visit. Physician, Cit Hosp., Elmhurst, ibid., 1954-61 Supvr. Psychiatrist, A. Adler Ment Hyg. Clinic, ibid., 1954—; au thoriz. f. Psychiatry, N. Y. St Workmen's Compens. Bd., 1962— Mem.: N. Y. Acad. of Scis.; Am Assn. for the Adv. of Sci.; Assn for Adv. Psychotherapy, Fellow Am. Acad. of Psychotherapists Am. Soc. of Grp. Psychotherapy and Psy. Drama, Fellow; Am. Grp Psycho. Ther.; Am. Soc. Adle Psychol.; World Fed. Ment. Health, Assoc. Mem.; Am. Sociometr Assn.; Am. Assn. Soc. Psychiat., Fellow; Kiwanis. Author Origins and Development of Group Psychotherapy, 1946; Con tbrng. Author, Essays in Individual Psychology, 1959. Contbr to: Sociometry Jour.; Group Psychotherapy Jour.; Am. Jour. o Psychotherapy; Jour. of Individual Psychol.; Internatl. Jour. o Sociometry and Sociatry; World Ment. Health, London, Grea Brit. Gen. Int.: Intermediary (Distantial) Psychotherapy. Areas of Rsch.: Sociometrically Oriented Aspects and Techniques o Modern Group Psychotherapies; Group Therapies as Applied t Social Hygiene; Historiography of Med., esp. (Modern) Psychiatry Psychotherapy.

MEINEL, Aden B(aker) (Ph.D.), Prof., Univ. of Ariz., Tucson, Ariz. Home Add.: 6741 Tivani Dr., Tucson, Ariz. ASTROPHYSICS AND GEOPHYSICS. b. Pasadena, Calif., Nov. 25, 1922. s. John G. and Gertrud (Baker) M. Edn.: B.A., Univ. of Calif., 1947; Ph.D., ibid., 1949. m. Marjorie Steele Pettit, Sept., 1944. c.: Carolyn Pettit; Walter Baker; Barbara May; Edward Steele; Elaine Judy; Mary Louise; David Lawrence. Exp.: Instr., to Asst. Prof. to Assoc. Prof., Univ. of Chicago, Yerkes Obs., Chicago, Ill., 1950-55; Dir., Kitt Peak Natl. Obs., Tucson, Ariz., 1955-60; Prof., Univ. of Ariz., Tucson, Ariz., 1960—. Mem.: Am. Acad. of Arts and Scis.; Am. Astron. Soc.; Royal Astron. Soc.; A.A.A.S. Contbrng. Author: Earth as a Planet, 1954; Telescopes, 1960. Contbr. to: Astrophys. Jour.; Pub. Astron. Soc. Pac.; Science. Serv. Rec.: U.S.N.R. Areas of Rsch.: Spectroscopy and Optical Design.

MEINKE, W(illiam) Wayne (Ph.D.), Prof., Dept. of Chem., Univ. of Mich., Ann Arbor, Mich. Home Add.: 2670 Appleway, Ann Arbor, Mich. ACTIVATION ANALYSIS-RADIO CHEMISTRY, AND NUCLEAR CHEMISTRY. b. Elyria, Ohio, June 27, 1924. s. William C. and Marion E. (McRoberts) M. Edn.: B.A., Oberlin Coll., 1947; Ph.D., Univ. of Calif., 1950. m. Marilynn Hayward, July, 1947. c.: Sue Anne; David William. Exp.: Instr., Dept. of Chem., Univ. of Mich., Ann Arbor, Mich., 1950-51; Asst. Prof., Dept. of Chem., ibid., 1951-57; Assoc. Prof., ibid., 1957-62. Hon. Pos.: Chmn., Subcommittee on Radiochemistry of the Committee on Nuclear Sci. of the U. S. Natl. Rsch. Coun. Mem.: A.A.A.S.; A.C.S.; Sigma Xi; Am. Nuclear Soc.; Gamma Alpha; Phi Beta Kappa; Phi Lambda Upsilon; Alpha Chi Sigma. Contbr. to: Analytical Chem.; Nucleonics; Sci.; Talanta, Analytica Chimica Acta; Phys. Rev.; Jour. Am. Chem. Soc.; Jour. Appl. Radiation. and Isotopes; Jour. Inorganic and Nuclear Chem.; Jour. of Chem. Phys.; Nature; Am. Jour. Physics; Chem. Engrng. Progress; Rev. of Sci. Instruments. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Application of Nuclear Techniques to Analysis—Including Activation Analysis; Radiochemical Separations; Nuclear Cross Sections and Decay Schemes.

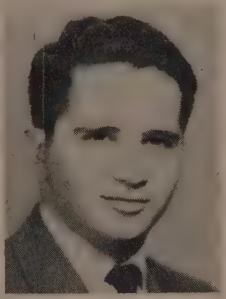


MEINSCHEIN, Warren G. (Ph.D.), Assoc. Chemist, Esso Rsch. and Engrng. Co., Linden, N. J. Home Add.: 642 Glen Ave., Westfield, N. J. ORGANIC GEOCHEMISTRY. b. Slaughters, Ky., Nov. 12, 1920. s. Tim and Carrie (Poole) M. Edn.: B.S., Univ. of Mich., 1948; Ph.D., Univ. of Tex., 1951. m. Mary Williams, Feb. 5, 1944. c.: Sherryl; Warren, Jr.; Tim Allan. Exp.: Rsch. Assoc., Magnolia Field Rsch. Labs., Dallas, Tex., 1951-58; Rsch. Chemist, Esso Rsch. and Engrng. Co., Linden, N. J., 1958-62; Assoc. Chem., ibid., 1962—. Mem.: A.A.A.S.; A.C.S.; Geochem. Society; Phi Lambda Upsilon; Phi Beta Phi. Contbr. to: Phys. Revs.; Rev. of Scientific Instruments; Analytical Chem.; Bull. Assn. Petroleum Geols.; Annals N. Y. Acad. of Scis.; Geochimica et Cosmochimica Acta. Serv. Rec.: U. S. Naval Reserves, 1940-46. Areas of Rsch.: Origin of Petroleum, Evidence for Biological Activity in Parent Body of Meteorites, C_{14} Dating-Methane Proportional Counter; Mass Spectrometric Analysis; Compositions of Naturally Occurring Organic Extracts.

MELBY, James Christian (M.D.), Assoc. Professor, Medicine, Boston Univ., Schl. of Med., Boston, Mass. Home Add.: 65 East Newton St., Boston 18, Mass. INTERNAL MEDICINE - ENCRINOLOGY. b. Duluth, Minn., Feb. 14, 1928. s. Leonard and Frances Marie (Sullivan) M. Edn.: B.S., Univ. of Minn., 1951; M.D., ibid., 1953. m. Mary Elizabeth O'Brien, June 26, 1955. c.: Christian Leonard; Elizabeth Ann; Exp.: Dir., Clin. Chem., Univ. of Minn., Mlps., Minn., 1958-59; Asst. Prof., Univ. of Ark., 1959-61; Assoc. Prof., ibid., 1961-62; Assoc. Prof., Boston Univ. Schl. of Med., 1962—; Hd., Sect. on Endocrinol., Massachusetts Meml. Hosp., Boston Univ. Med Ctr., 1962—. Hon. Pos.: Sr. Coun., Midwest, Am. Fed. Clin. Rsch. Mem.: Alpha Omega Alpha; Am. Soc. for Clin. Investigation; Sigma Xi; Endocrine Soc.; Am. Federation Clinical Research.; Cent. Soc. Clinical Research; Am. Chem. Soc.; Am. Rheumatism Assn.; Natl. Assn. for the Adv. of Sci.; Am. Fed. Clin. Rsch. Contbr. to: Jour. of Clin. Invest.; Jour. of Clin. and Lab. Med.; Annals of Internal Med.; Proc. Soc. Exptl. Med. and Biol.; Metabolism; Jour. Am. Med. Assn.; New England Jour. of Med. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Endocrinology and Metabolism, Biosynthesis of Adrenal Steroid Hormones; Regulation and Inhibition; Biological Activity of Hormones.

MEISSNER, Hans Walter (Ph.D.), Prof., Dept. of Physics, Stevens Institute of Technology, Hoboken, N. J. Home Add.: 438 Grandview Terrace, Leonia, N. J. LOW TEMPERATURE PHYSICS. b. Berlin, Germany, Mar. 19, 1922. s. Walther and Johanna (Galmert) M. Edn.: M.S., Univ. of Munich, Germany, 1948; Ph.D., ibid., 1948. m. Dorothea Kempter, 1947. c.: Walter; Irmgard; Peter. Exp.: Res. Assoc., Bavarian Acad. of Sci., Munich, Germany, 1948-52; Res. Engr., Ill. Inst. of Tech., 1952-53; Asst. Prof., Johns Hopkins Univ., 1953-59; Assoc. Prof., Stevens Inst. of Tech., 1959-62; Prof., ibid., 1962—. Mem.: Fellow, Am. Phys. Soc.; Sigma Xi. Contbr. to: Phys. Rev.; Phys. Rev. Letters; Zeits f. Phys. Zeits f. angew. Phys.; Am. Jour. of Phys. Serv. Rec.: German Army, 1941-45. Areas of Rsch.: Superconductivity.

MELI, Joseph John (Mr.), Project Engr., A.S.D., Dayton, Ohio. Home Add.: 5807 Resik Dr., Dayton, Ohio. MECHANICAL ENGINEERING. b. Brooklyn, N. Y., Dec. 26, 1935. s. Peter and Mary Anna (Sciala) M. Edn.: B.M.E., City Coll. of N. Y., 1958; M.S., Univ. of Dayton, 1963. Exp.: Proj. Engr., Aeronautical Systems Div., Dayton, Ohio, 1958—. Mem.: Am. Rocket Soc.; A.A.-A.S.; Alumni Assn. of City Coll. of N. Y.; Dayton Civic Music Assn.; Dayton Film Soc. Areas of Rsch.: Electronic Countermeasures.



MELICK, Elmer Stanley (Mr.), Mgr., Quality Control Dept., Brush Beryllium Co., Elmore, Ohio. Home Add.: 207 E. Rice St., Elmore, Ohio. ANALYTICAL CHEMISTRY OF BERYLLIUM. b. Utica, Ohio, June 6, 1913. s. Frank and Etta (Conrad) M. Edn.: A.B., Denison Univ., 1934; M.S., Ohio St. Univ., 1940. m. Mary Martin, June 8, 1940. Exp.: Sci. and Math. Tchr., Waverly H. S., Waverly, Ohio, 1935-37; Sci. and Math. Tchr., Orwell H. S., Orwell, Ohio, 1937-40; Chem. Tchr., Portsmouth, Ohio, 1940-41; Chemist, Control Chemist and Asst. Prod. Mgr., Grasselli Dept., DuPont, ibid., 1941-47; Chief Chemist, Mgr., Quality Control, Brush Beryllium Co., 1947—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Ohio Acad. of Sci.; Soc. of App. Spectroscopy; Am. Soc. for Quality Control; Am. Assn. of Commons Clubs; Free and Accepted Masons of Ohio; Kiwanis Club. Co-Author: Beryllium Chapter, Treatise on Analytical Chemistry. Areas of Rsch.: Analytical Chemistry Beryllium.

MELLGREN, Svante (D.Sc.), Staff Consultant, Amco Rsch. and Devel., Carteret, N. J. Home Add.: 34 Jonesdale Ave., Metuchen, N. J. METALLURGICAL THERMODYNAMICS; PROCESS METALLURGY; SOLID STATE PHYSICS; MATHEMATICS. b. Hauge i Dalane, Norway, July 14, 1906. s. Severin and Inga Lina (Haneberg) M. Edn.: M.Sc., Inst. of Tech. of Norway, 1933; D.Sc., Mass. Inst. of Tech., 1947. m. Nora Tonnesen, Mar. 11, 1948. c.: Eric Svante; Douglas Harold. Exp.: Chem., a/s Titania Hauge i Dalane, Norway, 1933-37; Shift Supt., Satmar, Union of South Africa, 1937-40; Rsch. Metallurgist, Anglo. Am. Coop., Rhodesia, S. A., 1940-45; Prof., Metallurgy, Mass. Inst. of Tech., 1946-50; Head of Basic Sci. Dept., Natl. Lead Rsch., S. Amboy, N. J., 1950-57; Staff Consultant, Amco., Rsch. and Devel., 1957—. Mem.: A.I.M.E.; Am. Electro Chem.

Soc.; Faraday Soc.; Am. Men of Sci.; Chem. Soc. Co-Author and Translator: Thermodynamics of Alloys, 1952. Contbr. to: Jour. of Metals; Chem. Soc. Jour.; Jour. for Anal. Chem.; Norwegian Engr. Jour. Areas of Rsch.: Research in Non-Ferrous Metals; Process and Physical Metallurgy; Oxygen Mobility of Oxides; Fused Salt Electrolysis.

MELLARS, Newton William (D.D.S.), 1607 McAllister St., San Francisco, Calif. Home Add.: 180 Almonte Blvd., Mill Valley, Calif. GENERAL PRACTITIONER—DENTISTRY. b. San Francisco, Calif., Mar. 15, 1896. s. Frederick W. and Ella Josephine (Newton) M. Edn.: D.D.S., Coll. of Phys. and Surgeons, 1921. m. De Ambra Herring, June 26, 1954. c.: Patreece L. Exp.: Dental Instr., Coll. Phys. Surgeons, San Francisco, Calif., 1927-32; Lectr. and Instr., Dental Pharmacol., Univ. of Calif., 1941-45; Residence Staff Mem., Dentistry Rsch., Napa Sta. Hosp., Nada Co., Calif., 1945-49; Pvt. Pract., San Francisco, Calif., 1949—. Hon. Pos.: Fellow, Royal Microscopical Soc., London, England; Pres., San Fran. Microscopical Soc. Mem.: Psi Omega; San Fran. Microscopical Soc.; Royal Microscopical Soc. Contbr. to: Am. Jour. Orthodontics and Oral Surgery; Dental Digest. Serv. Rec.: U. S. Army, 1922. Areas of Rsch.: Relationships Between Aging Catabolism in Cellular Membranes and Deterioration of Vascular Eptmiuium Structures to the Point of Lithiasis.

MELLON, Melvin Guy (Ph.D.), Prof. of Analytical Chem., Purdue Univ., Lafayette, Ind. Home Add.: 338 Overlook Dr., W. Lafayette, Ind. CHEMISTRY. b. Conneaut Lake, Pa., Oct. 25, 1893. s. Harry J. and Myrta Ella (Miller) M. Edn.: B.S., Allegheny Coll., 1915; M.S., Ohio St. Univ., 1917; Ph.D., ibid., 1919. Hon. Degrs.: Sc.D., Allegheny Coll., 1940; Sc.D., Mount Union, 1958. m. Catharine Collart, Aug. 30, 1919. c.: Mrs. Frances Catharine Phillips. Exp.: Asst. Prof., Purdue Univ., 1919-25; Assoc. Prof., ibid., 1925-31; Prof., ibid., 1931—. Hon. Pos.: Pres., Ind. Acad. of Sci., 1942; Ind. Chem. Soc., Pres., 1954. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Optical Soc. of Am.; N. Y. Acad. of Scis.; Soc. of App. Spectroscopy; Am. Soc. for Testing Materials; Ind. Acad. of Sci.; Phi Beta Kappa; Sigma Xi; Phi Lambda Upsilon; Phi Sigma; Alpha Chi Rho; Alpha Chi Sigma; Torch Club. Author: Chemical Publications, 1928; Methods of Quantitative Chemical Analysis, 1937; Colorimetry for Chemists, 1945; Analytical Absorption Spectroscopy, 1950; Quantitative Analysis, 1955. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Edn.; Anal. Chem.; Jour. Opt. Soc. Am.; Anal. Chim. Acta. Gen. Int.: Fisher Award in Analytical Chemistry, 1952; Anachem Award, 1953; Patterson Award in Chemical Documentation, 1957. Areas of Rsch.: Spectrophotometry, Colorimetry, Chemical Literature.

MELOCHE, Villiers Willson (Ph.D.), Prof. of Analytical Chem., Dept. of Chem., Univ. of Wis., Madison, Wis. Home Add.: 2146 Fox Ave., Madison, Wis. ANALYTICAL CHEMISTRY, INSTRUMENTATION, HYDRO-CHEMISTRY, CONTRIBUTIONS IN SELENIUM, TELLURIUM, RHENIUM, INDIUM CHEMISTRY. b. Pt. Huron, Mich., Dec. 31, 1895. s. John B. and Mary Ann (White) M. Edn.: B.S., Univ. of Wis., 1921; M.S., ibid., 1923; Ph.D., ibid., 1925. m. Alice V. P. King, 1936. Exp.: Employee, Carnegie, Ill., Steel, 1917; Asst. Prof., Univ. of Wis., 1928-36; Assoc. Prof., ibid., 1936-38; Prof., ibid., 1938—. Hon. Pos.: Chmn., Athletic Bd., Univ. of Wis., 1959—; Chmn., Wis. Sect. A.C.S., 1936; Chem. Consultant, U. S. Forest Products Lab. Mem.: Am. Chem. Soc.; A.A.A.S.; A.A.U.P.; A.S.T.M.; Wis. Acad. of Sci.; Univ. Club, Pres., 1947-49; Pres., Alpha Chi Sigma, 1936-38; Phi Lambda Upsilon; Sigma Xi; Gamma Alpha; Phi Kappa Phi; Univ. Club; Y.M.C.A. Contbr. to: A.C.S. Analytical Chem. War Record: O.S.R.D. and contract Monsanto under Manhattan Project, W.W. II. Gen. Int.: Cooperative work on Lakes and Streams and general consulting in Chem. Areas of Rsch.: Development of Analytical Methods and Instrumentation; Analytical Chemistry; Trace Elements; Hydrochemistry; Rhenium; Selenium; Tellurium, Molybdenun and Tungsten.

MELTZER, Adolph (M.D.), Surg., 44 Cedar St., Worcester, Mass. Home Add.: 15 Southwood Rd., Worcester, Mass. MEDICINE. b. N.Y.C., July 19, 1910. s. Charles Jerome and Sarah (Seid) M. Edn.: B.S., Coll. of City of N. Y., 1930; M.D., Cornell Med. Schl., 1934. m. Paula Dorfman, Sept. 7, 1935. c.: Glenn Adair; Naomi Belle Rubin. Exp.: Assoc., Beth. Israel Hosp., Boston, Mass., 1940—; Surg. in Chief, Doctors Hosp., Worchester, Mass., 1960—. Mem.: Am. Coll. of Surgs.; Am. Med. Assn.; Am. Bd. of Surg.; Daland Soc.; N. Y. Hosp. Alumni; Phi Beta Kappa; Alpha Omega Alpha; Knights of Pythias; Economics Club. Contbr. to: Jour. of Am. Assn.; Am. Jour. of Cancer; N. England Med. Jour.; Am. Jour. of Surg. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Clinical Rsch. in Cancer.

MELTZER, Yale Leon (Mr.), Rsch. Chemist, H. Kohnstamm & Co., Inc., 161 Ave. of the Americas, N. Y. 13, N. Y. Home Add.: 84-23 Manton St., Jamaica 35, Queens, N. Y. CHEMISTRY; POLYMER CHEMISTRY; BIOCHEMISTRY; SCIENTIFIC DOCUMENTATION. b. Brooklyn, N. Y., Nov. 3, 1931. s. Benjamin and Ada F. (Luria) M. Edn.: A.B., Columbia Coll., 1954; Columbia Univ. Schl. of Law, 1954. m. Annette Schoenberg, Aug. 7, 1960. Exp.: Blister Rust Controller, U. S. Dept. of Agric., Priest River, Idaho, 1951; Asst. to Chief Patent Atty. and Chemist, Subs. of Beaunit Mills, Inc., N. Am. Rayon Corp., Elizabethton, Tenn., 1955-57; Rsch. Chemist, N. Y. Med. Coll., N. Y., 1958-59; Rsch. Chemist, H. Kohnstamm & Co., Inc., 1959—. Hon. Pos.: Organizer and Founder of Columbia Univ. Student Affiliate of the Am. Chem. Soc.; Organizer and Founder of Columbia Univ. Undergrad. Chem. Soc. Mem.: Am. Assn. for the Adv. of Sci.; Natl. A.C.S.; N. Y. Sect. of the A.C.S.; Sect. of the A.C.S., Div. Chem. Mktng. and Econs.; Natl. Honor Soc.; Delta Phi Alpha. Contbr. to: Clinical Chem.; Chem. Abstracts; Optics and Spectroscopy. Gen. Int.: Highest Honors in German at Stuyvesant H. S., 1950; Recipient of Scholarships while Attending Columbia Coll.; First Prize Columbia Coll. Persuasive Speaking Contest, 1952; Winner of Columbia Univ. Schl. of Law Moot Court Competition, 1955. Areas of Rsch.: Polymeric Solutions; Carboxymethylcelluloses; Starch Ethers; Alkali Cellulose; All Phases of Viscose Rayon Manufacture; Tire Cord; Phospholipids; Tire Cord; Patent Searches; Translator in Russian and German Scientific, Patent and Other Technical Literature.

MELVIN, Ernest Eugene (Ph.D.), Assoc. Dir., Inst. of Community and Area Devel., Univ. of Ga., Athens, Ga. Home Add.: 275 Milledge Circle, Athens, Ga. URBAN GEOGRAPHY (City Planning). b. Monmouth, Ill., May 15, 1923. s. Glenn I. and Susan Maurine (Perrine) M. Edn.: B.S., Western Ill. Univ., 1947; M.A., Maxwell Grad. Schl. Citizenship and Public Affairs, Syracuse Univ., 1949; Ph.D., Northwestern Univ., 1952. m. Carolyn Harmeister, 1952. c.: Carol Lynn. Exp.: Geographer, Corps Engrs., Armed Forces Far East, 1952-54; Demographer, Evert Kincaid and Assoc., Chicago, 1954-56; Asst. Planner, Plan Dept., Evanston, Ill., 1956-57; Planner IV, Dept. Planning, Chicago, Ill., 1957-59; Acting Dir. of Planning, Dept. Planning, Chicago, 1960-61; Assoc. Dir., Inst. of Community and Area Devel., Univ. of Ga., 1962—. Mem.: Sigma Xi; Am. Inst. Planners; A.A.A.S.; Assn. Am. Geographers; A.F. and A.M. Scottish Rite; Shriners. Fellow: Am. Geographical Soc.; Natl. Council Geographic Edn. Contbr. to: Jour. Geography. Serv. Rec.: Lt., U. S. Naval Reserve. Areas of Rsch.: Urban and Industrial Geography; Area Resource Development.

MELVIN, M. Mittie (Miss), Consultant, 245 E. 62nd St., N.Y.C. 21, N. Y. PHYSICS AND APPLIED MATHEMATICS. b. Horsey, Va., Sept. 30, 1926. d. Ingalls Reed and Myrtle (Johnson) M. Edn.: B.S., Hunter Coll., 1957; M.A., Poly. Inst. of Brooklyn. Exp.: Instr., Math. Dept., Poly. Inst. of Brooklyn, 1957-59; Head of Sci. Dept., Brooklyn Friends, 1958-60; Hd. Sci. Dept., Professional Children's, 1960—; Consultant, N. Y. City, 1959—. Mem.: A.A.A.S.; Central Assn. Sci. and Math. Tchrs., Inc.; Am. Museum of Nat. Hist.; S.A.F.E.; A.D.A.

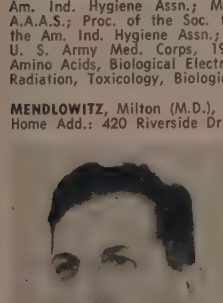
MELVIN, Mael Avramy (Ph.D.), Prof. of Phys., Fla. St. Univ., Tallahassee, Fla. Home Add.: 231 Westridge Dr., Tallahassee, Fla. THEORETICAL PHYSICS, MATHEMATICS. b. Israel, Mar. 27, 1913. s. Abraham Elijah and Norma (Gottfried) M. Edn.: B.S., Univ. of Chicago, 1933; M.S., ibid., 1935; Ph.D., ibid., 1938. m. Sophia Brown, Sept., 1946. c.: Jonathan; Paul. Exp.: Metallurgist, Carnegie, Ill., Steel Corp., Gary, Ind., 1937-38; Asst. and Assoc. Prof., Columbia Univ., 1938-48; Prof., Fla. St. Univ., 1952—. Mem.: Am. Phys. Soc.; Sigma Xi; Phi Beta Kappa; Sigma Pi Sigma. Contbr. to: Zeitschrift fur Kristallographie; Phys. Rev.; Jour. of Chem. Phys.; Philosophy of Sci.; Jour. of Applied Phys.; Trans. Am. Inst. of Chem. Engrs.; Main Currents in Mod. Thought; Proc. 2nd Canadian Math. Congress; Bull. of Am. Math. Soc.; Nature; Am. Jour. of Phys.; Rev. of

Mod. Physics; Jour. of Acoustical Soc. of Am.; Jour. of Math. and Phys. Areas of Rsch.: Elementary Particles and Field Theory; Symmetry Methods; Relativity and Quantum Mechanics; Metal Physics, X-Ray Structure Analysis, Astrophysics.

MENDELSOHN, Mortimer Lester (M.D., Ph.D.), Assoc. Prof. of Radiol., Dept. of Radiol., Univ. of Pa., 3400 Spruce St., Philadelphia 4, Pa. Home Add.: 1104 Mason Ave., Drexel Hill, Pa. BIOPHYSICS, RADIOBIOLOGY, ONCOLOGY AND CYTOPHOTOMETRY. b. N.Y.C., Dec. 1, 1925. s. Dave and Mary (Gottlieb) M. Edn.: M.D., Harvard Med. Schl., 1948; Ph.D., Cambridge Univ., England, 1958. m. Marian Rubin, Dec. 5, 1948. c.: Steven L.; Robert O.; Laura L. Exp.: Special Fellow, Sloan-Kettering Inst., N.Y.C., 1952-53; British Am. Exchange Fellow, Cambridge Univ., Cambridge, Eng., 1955-57; Assoc. Prof., Schl. of Med., Univ. of Pa., 1957—. Mem.: Alpha Omega Alpha; Radiation Rsch. Soc.; Histochemical Soc.; John Morgan Soc.; N. Y. Acad. of Scis.; Am. Assn. for Cancer Rsch.; Phila. Roentgen Ray Soc.; Sigma Xi. Contbr. to: Jour. of the Natl. Cancer Inst.; Jour. of Biophysical and Biochemical Cytology; Sci.; Radiation Rsch.; Cancer; Nature; Am. Jour. of Physiol.; Jour. of Clinical Endocrinol. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Kinetics of the Mitotic Cycle, Tumor Cell Proliferation; Quantitative Cytochemistry and Two-Wavelength Photometry; Autoradiography; Radiation Effects and Renal Physiology.

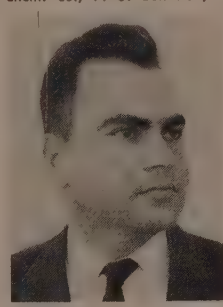
MENDENHALL, Richard Mason (Ph.D.), Biochem., U. S. Pub. Health Serv., Occupational Health Rsch. and Trng. Facility, 1014 Broadway, Cincinnati 2, Ohio. Home Add.: 1815 Wilaray Terr., Cincinnati 30, Ohio. BIOCHEMISTRY. b. Dayton, Ohio, Jan. 13, 1918. s. Alfred Lewis, Sr. and Edna Minter (Pray) M. Edn.: A.B., The Ohio St. Univ., 1940; Ph.D., Univ. of Calif., 1951. m. Donna June McMillan, Jan. 24, 1949. c.: Richard M., Jr. Exp.: Chemist, Pacific Labs., Richmond, Calif., 1951-52; Chf. Biochem., V.A. Hosp., Oakland, Calif., 1952-53; Chief, Clinical Biochem., V.A. Research Hosp., Chicago, Ill., 1953-54; Rsch. Assoc., Union Coll., Schenectady, N. Y., 1954-56; Biochem., U. S. Pub. Health Serv., 1956—. Hon. Pos.: Cutter Labs. Rsch. Fellow, 1950-51. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Am. Ind. Hygiene Assn.; Mt. Wash. Civic Club. Contbr. to: A.A.A.S.; Proc. of the Soc. for Exptl. Biol. and Med.; Jour. of the Am. Ind. Hygiene Assn.; Am. Jour. of Physiol. Serv. Rec.: U. S. Army Med. Corps, 1942-45. Areas of Rsch.: Proteins, Amino Acids, Biological Electrolytes, Biological Effects of Ionizing Radiation, Toxicology, Biological Surfactants, Chemotropism.

MENDLOWITZ, Milton (M.D.), Physician, 2 E. 95th St., N.Y.C. 28. Home Add.: 420 Riverside Dr., N.Y.C. 25. INTERNAL MEDICINE; CIRCULATORY DISEASES; HYPERTENSION. b. N.Y.C., Dec. 30, 1906. s. Benjamin and Emma (Schramm) M. Edn.: B.A., Coll. of City of N. Y., 1928; M.D., Univ. of Mich., 1932. m. Muriel Chertoff, 1940. c.: Judith Ann; Susan Amelia; Benjamin Noah. Exp.: Interne, Pathol. and Bacteriol., The Mt. Sinai Hosp., N. Y. City, 1932-33; Interne Rotating, ibid., 1933-35; Sr. and House Physician, ibid., 1935-36; Fellow in Exp. Pathol., ibid., 1936; Fellow in Physiol., The Michael Reese Hosp., Chicago, Ill., 1937; Fellow in Clin. Rsch., Univ. Coll. Hosp., London, England, 1938; Clin. Asst. and Sr. Clin. Asst. in Charge of Arthritis Clinic, Mt. Sinai Hosp., 1939-42; Sr. Physician, N. Y. Regional Office, V.A. (part-time), 1945-53; Adjunct Physician, Mt. Sinai Hosp., 1946-52; Participant in Post-Grad. Instruction, Columbia Univ., 1946-61; Pvt. Pract., Intern. Med., 1939-42; 1946-61; In Charge of Hypertension Program, Special Therapy Clin., Mt. Sinai Hosp., 1950-61; Physician to N.Y.C. Police Dept., (Inspector), (part-time), 1950-61; In Charge of Circulatory Physiol. Lab., Mt. Sinai Hosp., 1950-61; Rsch. Fellow, Columbia Univ. Div. of Goldwater Memorial Hosp., 1951-56; Assoc. Attending Physician, Mt. Sinai Hosp., 1953-59; Asst. Clin. Prof. of Med. Columbia Univ., 1956-61; Chief of Hypertension Clin., Mt. Sinai Hosp., 1956-61; Attending Physician, ibid., 1959-61; Assoc. Clin. Prof. of Med., Columbia Univ., 1961—. Hon. Pos.: Chmn., Council for High Blood Pressure Rsch., Am. Heart Assn.; Pres., Assoc. Attending Phys., Mt. Sinai Hosp., N. Y.; Mem. Advisory Bd., Council on Circulation, Am. Heart Assn.; Chmn., Subcomm. on Exhibits, Am. Heart Assn.; Chmn., Comm. Hypertension, Am. Coll. of Chest Physicians; Secy., Metropolitan Med. Soc.; Chmn., Comm. on Drug Therapy; Council for High Blood Pressure Rsch., Am. Heart Assn. Mem.: Am. Soc. Clin. Investigation; Am. Physiol. Soc.; Am. Heart Assn.; N. Y. Acad. Sci.; A.M.A.; Fed. Clin. Rsch.; Fellow, A.A.A.S.; Fellow, Am Coll. Phys.; Fellow, Am. Coll. Chest Phys.; Fellow, N. Y. Acad. Med.; Harvey Soc.; Soc. Exp. Biol. and Med.; Internatl. Cardiovasc. Soc.; Metropolitan Med. Soc.; Editorial Bd., Am. Heart Jour. and Heart Bull. sin 1961. Author: The Digital Circulation, 1956; Hypertension, 1961. Contbr. to: Am. Heart Jour.; Jour. of Applied Physiol.; Circulation; Am. Jour. Med.; Am. Jour. Clin. Investigation; Sci., Bull. N. Y. Acad. of Med.; Am. Jour. Physiol.; Arch of Surg., Jour. of Mt. Sinai Hosp.; Jour. of Chronic Diseases. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: The Digital Circulation; Circulatory Physiology and Pathology; Hypertension.

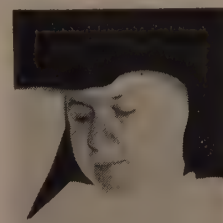


MENKE, William Kenneth (Mr.), Pres., Pittsburgh Chemical Co., Grant Bldg., Pittsburgh 19, Pa. Home Add.: 832 Elm Spring Rd., Pittsburgh 16, Pa. CHEMICALS. b. St. Louis, Mo., Nov. 1, 1911. s. Walter B. and Emily (Priester) M. Edn.: B.S., Washington Univ., 1932; M.S., ibid., 1934. m. Emily Busse, May, 1935. c.: W. Kenneth, Jr.; Richard Bruce; Linda Louise. Exp.: Dir., Monsanto Chem., Monsanto Chemical Co., St. Louis, Mo., 1935 and 1952; Vice Pres., Pittsburgh Coke and Chem. Co., Pittsburgh, Pa., 1952—; Pres., Pittsburgh Chem. Co., Pittsburgh, Pa., 1960—. Hon. Pos.: Dir., A.I.Ch.E.; Dir., M.C.A. Mem.: Am. Chem. Soc.; A.A.A.S.; Societe de Chimie Industrielle, Inc; Soc. Chem. Industry; Alpha Xi Sigma; Sigma Phi Epsilon; Tau Beta Pi; Sigma Xi. Areas of Rsch.: Product and Process Research and Development.

MENN, Julius, J. (Ph.D.), Asst. Dir., Agri. Rsch. Lab., Stauffer Chem. Co., P. O. Box 760, Mountain View, Calif. Home Add.: 4785 Clarendon Dr., San Jose 29, Calif. ENTOMOLOGY, INSECT TOXICOLOGY. b. Free City of Danzig, Feb. 20, 1929. s. David and Regina (Aisenstadt) M. Edn.: B.S., Univ. of Calif., 1953; M.S., ibid., 1954; Ph.D., ibid., 1958. m. Alma R. Zito, Aug. 31, 1952. c.: Leslie Rona; David Vincent; Diana Marie. Exp.: Rsch. Asst., Univ. of Calif., 1953-57; Hd. Entomology Sec., Stauffer Chem. Co., Mountain View, Calif., 1957-61; Asst. Dir., Agric. Rsch. Lab., ibid., 1961—. Hon. Pos.: Chmn., Joe Berg Sci. Fdtn. Mem.: Am. Chem. Soc.; Entomological Soc. of Am.; Soc. of Sigma Xi; A.I.B.S.; A.A.A.S.; Alpha Zeta. Author: Analytical Methods for Pesticides, Plant Growth Regulators, and Related Compounds, Vol. II, Contbrng. Author, 1963. Contbr. to: Jour. Agri. and Food Chem.; Jour. Econ. Entom.; Jour. Insect Pathology.



MENNEMEYER, (Sister), M. Hermias, S.S.N.D. (Schl. Sister, Notre Dame), Dir. of Sci. Dept., St. Alphonsus (Rock) H. S., St. Louis, Mo. Home Add.: 1204 N. Grand Blvd., St. Louis, Mo. ORGANIC CHEMISTRY AND NUCLEAR SCIENCE. b. St. Louis, Missouri, July 12, 1907 d. August H. and Ida (Keisker) M. Edn.: B.S., St. Louis Univ., 1934; M.S., De Paul Univ., 1943. Exp.: Tchr., St. Paul H.S., Highland, Ill., 1934-39; Tchr., Aviston Community H.S., Aviston, Ill., 1939-45; Tchr., Le Clerc Coll., Belleville, Ill., 1945-49; Tchr., Aviston Community H.S., Aviston, Ill., 1949-54; Tchr. and Dir. Sci. Dept., St. Francis Borgia H.S., Washington, Mo., 1954-62; Dirr. of Sci. Dept., St. Alphonsus H. S., 1962—. Hon. Pos.: N.S.T.A. Comm., F.S.A. Adv. Bd. and St. Rep., N.S.T.A. Regl. Conf. Adv. Comm. Mem.: A.A.-A.S.; National Science Teachers Assn.; Am. Chem. Soc.; Missouri Science Teachers Assn.; N.E.A.; St. Louis Conf. of Sci. Tchrs. Contbr. to: Sci. Tchr.; Science; Nuclear Science, Fundamentals and Experiments, 1963. Gen. Int.: Received Top $1,000.00 Sci. Tchr. Achievement Recognition Award, 1960; 1961 Civil Defense Citation for Distinguished Service for the Civil Defense Prog. in Mo.; Received 6 NSF Scholarships, one of which was at Oak Ridge Institute of Nuclear Studies. Areas of Rsch.: Syntheses in the Diphenylmenthane Series; A Study of the Transient Behavior of a Nuclear Reactor by Means of the Kinetics Equations; A Study of the Homogeneuous Isotopic Exchange Reaction Between Phosphorus and Triphenyl Phosphine Radioactive.



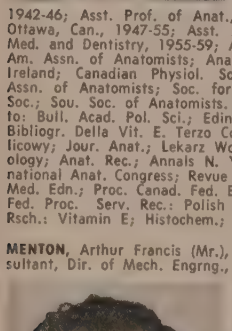
MENNINGER, Roy Wright (M.D.), Staff Psychiat., C. F. Menninger Mem. Hosp., Box 829, Topeka, Kans. Home Add.: 2877 Knollwood Court, Topeka, Kans. PSYCHIATRY. b. Topeka, Kans., Oct. 27, 1926. s. William C. and Catharine (Wright) M. Edn.: A.B., Swarthmore Coll., 1947; M.D., Cornell Univ., 1951. m. Ann Catherine Colwell, June 14, 1951. c.: Heather; Ariel; Bonar; Eric. Exp.: Interne, Med., N. Y. Hosp., N. Y., 1951-52; Psychiat. Res., Boston Sta. Hosp., Boston, Mass., 1952-53; Psychiat. Res., Boston Psychopathic Hosp., Boston, Mass., 1953;

Student, Inst. of Neurol., Queen Sq., London, England, 1955; Psychiat. Res., Boston Psychopathic Hosp., Boston, Mass., 1956; Psychiat. Res., Peter Bent Brigham Hosp., Boston, Mass., 1956-57; Asst. in Med., ibid., 1957-58; Psychiat. Res., Boston Psychopathic Hosp., 1958-59; Jr. Assoc. in Med., Peter Bent Brigham Hosp., Boston, Mass., 1958-60; Assoc. in Med., ibid., 1960-62; Staff Psychiat., C. F. Menninger Mem. Hosp., 1961—. Mem.: Am. Psychiat. Assn.; Am. Grp. Psychothterapy Assn.; Am. Assn. for the Adv. of Sci.; Grp. for the Adv. of Psychiat.; Am. Bd. Psychiat., 1959. Contbr. to: Dis. Nerv. System; Progress Neurol. Psychiat. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Group Psychotherapy; Social Psychiatry.

MENOTTI, Amel Romeo (Ph.D.), Vice-Pres., Scientific Dir., Bristol Labs., Syracuse 1, N. Y. Home Add.: 415 Elm St., Fayetteville, N. Y. SCIENTIFIC ADMINISTRATION, ORGANIC AND BIOCHEMISTRY. b. Carrara, Italy, Oct. 7, 1913. s. David and Mary M. Edn.: B.S., Antioch Coll., 1937; Ph.D., Ohio St. Univ., 1940. m. Mary Pia Menotti, Sept. 4, 1939. c.: David; Marilyn; Robert and Nancy. Exp.: Chem. Asst., C. F. Kettering Fdtn., Antioch Coll., 1934-37; Chemist, Am. Med. Assoc., 1940-43; Vice-Pres.-Scientific Dir., Bristol Lab., 1943—. Mem.: Industry Sub-comm.; Concer Chemotherapy Natl. Serv. Center; Advisory Coun. for the Adv. of Sci. Rsch. and Dev., N. Y. St.; Am. Chemical Soc.; Am. Pharmaceutical Assn.; A.A.A.S.; Gordon Rsch. Confs.; Sigma Psi. Contbr. to: Jour. of the Am. Chem. Soc.; Indusl. and Engrng. Chemistry; The Ohio St. Univ. Press.

MENSCHIK, Zygmunt Jozef Kazimienz (M.D.), Assoc. Prof. of Anatomy, Georgetown Univ. Schl. of Med., 3900 Reservoir Rd., N.W., Washington 7, D. C. Home Add.: 1407 Foxhall Rd., N.W., Washington 7, D. C. ANATOMY. b. Krakow, Poland, Mar. 6, 1914. s. Jan and Marie (Bon) M. Edn.: B.A., Sienkiewicz No. 4 St. Coll. Univ., 1932; M.D., Jagellonian Univ. Schl. of Med., 1938; D.Sc., Univ. of Edinburgh, Polish Schl. of Med., 1944; L.M.C.C., Medical Coun. of Can., Univ. of McGill, 1953. m. Jadwiga Lankosz, June 10, 1950. c.: Margaret Ksawera Clementine; Andrew Jan Klemans. Exp.: Undergrad. Instr., Jagellonian Univ. Schl. of Med., Krakow, Poland, 1935-38; Part Time Rsch. Asst., ibid., 1938-39; Lectr. in Anat. and Embryol., Univ. of Edinburgh, Scotland, 1941-42; Asst. Prof. of Anat. and Embryol., ibid., 1942-46; Asst. Prof. of Anat., Faculty Schl. of Med., Univ. of Ottawa, Can., 1947-55; Asst. Prof., Georgetown Univ., Schls. of Med. and Dentistry, 1955-59; Assoc. Prof., ibid., 1959—. Mem.: Am. Assn. of Anatomists; Anatomical Soc. of Great Britain and Ireland; Canadian Physiol. Soc.; Am. Physiol. Soc.; Canadian Assn. of Anatomists; Soc. for Exptl. Biol. & Med.; Histochem. Soc.; Sou. Soc. of Anatomists. Author: Biologio, 1942. Contbr. to: Bull. Acad. Pol. Sci.; Edinburgh Med. Jour.; Rivista Analit.-Bibliogr. Della Vit. E. Terzo Congreso Internatl.; Poradnik Swietlicowy; Jour. Anat.; Lekarz Wojskowy; Quart. Jour. Exptl. Physiology; Anat. Rec.; Annals N. Y. Acad. Sci.; Abstr. Comm. International Anat. Congress; Revue Canad. Biol.; Stain Technol.; Jour. Med. Edn.; Proc. Canad. Fed. Biol. Soc.; Georgetown Dent. Jour.; Fed. Proc. Serv. Rec.: Polish Armed Forces, 1940-47. Areas of Rsch.: Vitamin E; Histochem.; Embryl.

MENTON, Arthur Francis (Mr.), Systems and Mech., Engrng. Consultant, Dir. of Mech. Engrng., Servo Corp. of Am., 111 New So. Rd., Hicksville, N. Y. Home Add.: 9 Avdon Lane, Huntington, N. Y. MANAGEMENT SCIENCE AND SYSTEMS, MECHANICAL ENGINEERING. b. N.Y.C., Aug. 6, 1932. s. Alexander and Mildred (Sahr) M. Edn.: B.M.E., Coll. of the City of N. Y., 1954; M.M.E., Ibid., 1959; Dr. Engrng. Sci. (Cand.), N. Y. Univ., 1962. m. Judith Kroe, Sept., 1955. c.: Marc Andor. Exp.: Rsch. Asst., Columbia Univ., N. Y., 1953-54; Design and Devel. Engr., Radio Corp. of Am., Moorestown, N. J., 1954-55; Sr. Analytical Engr., Fairchild Engine Div., Deer Park, N. Y., 1955-59; Consultant, AMF, Edo Corp. and Curtiss-Wright, N. Y., 1959-60; Systems and Mech. Engrng. Consultant, Dir. of Mech. Engrng., Servo Corp. of Am., 1960—. Mem.: Adjunct Mem., Mech. Engrng. Dept. of Cooper Union, 1959—; A.A.A.S.; Alpha Mu Epsilon, Past Chmn. Contbr. to: Scientific Publs.; Missiles and Space; Materials in Design Engrng.; Machine Design. Gen. Int.: Most Important Work Involved Major Contributions to the Talos, Minuteman and Polaris Systems. Areas of Rsch.: Order-Disorder Phenomena and Their Effect on Physical and Electrical Properties of Various Materials, Infrared Detector Research; Evaporation of Thin Films and Molecular Electronics, Investigations of Exotic Materials for Structural Applications in Space Environment, Effects of Group Cohesiveness on Performance of Research Laboratory Personnel.



MENZEL, Robert Winston (Ph.D.), Assoc. Prof., Marine Biol., Oceanographic Inst., Fla. Sta. Univ., Tallahassee, Fla. Home Add.: 1605 Kolopakin Nene, Tallahassee, Fla. MARINE BIOLOGY. b. Va., Jan. 29, 1920. s. G. E. and Susie (Gary) M. Edn.: B.S., Coll. of William and Mary, 1940; M.A., ibid., 1943; Ph.D., A. and M. Coll. of Tex., 1954. m. Margaret Young, Apr., 1949. c.: R. W., Jr.; G. P.; Mary Linda. Exp.: Rsch. Asst., Va. Fish. Lab., Yorktown, Va., 1940-42; Asst. Biol., ibid., 1942-46; Biolt., Tex. A. and M. Rsch. Fdtn., Houma, La., 1947-49; Biolt., ibid., Coll. Stan., Tex., 1949-51; Asst. Prof., D. Wild. Mgt., A. and M. Coll., 1952; Instr., Dept. of Biol., ibid., 1953-54; Asst. Prof., Ocean. Inst., Fla. Sta. Univ., 1954-59; Assoc. Prof., ibid., 1959—. Mem.: Fla. Acad. of Sci.; Natl. Shellfish Assn.; Am. Soc. of Zool.; Am. Soc. of Ichth. and Herp.; Am. Fish. Soc.; Assn. Southeast. Biol.; Am. Soc. Limn. and Oceanog.; A.I.B.S.; Phi Sigma; Sigma Xi. Author: Phases of the Biology of Ostrea Equestris Say and Comparison with Crassostrea Virginica (Gmelin)., 1955; The Catfish Fishery of Virginia, 1943; Causes of Depletion of Oysters in St. Vincent Bar, Apalachicola Bay, Florida, 1958; Early Sexual Development and Growth of Oysters in Louisiana, 1951. Contbr. to: Sci.; Trans. Am. Fish. Soc.; Copeia; Bull. Mar. Sci. Gulf and Caribb.; A.S.B. Bull.; Publ. inst. Marine Sci.; Paristol.; Evolution. Areas of Rsch.: Marine Biology, Shell fish Biology; Oyster Ecology; Predators; Clam Biology; Mariculture.

MERANZE, David Raymond (M.D.), Dir. of Lab., 1429 S. 5th St., Phila. 47, Pa. Home Add.: 1031 Lakeside Ave., Phila., Pa. PATHOLOGY AND CLINICAL PATHOLOGY. b. Phila., Pa., Dec. 25, 1900. s. Samuel and Yetta (Rotman) M. Edn.: B.S., Univ. of Pa., 1922; M.D., Jefferson Med. Coll., 1927; M.A., Univ. of Pa., 1930. m. Yetta Kaplan, July 9, 1928. c.: David; Walter. Exp.: Asst., Dept. of Biochem., Jefferson Med. Coll., Phila., Pa., 1922-23; Dir. of Lab.-Pathol., Dir. of Research, A.E.M.C., So. Div., Phila., Pa., 1930—; Prof. of Pathol., Hahnemann Med. Coll., Phila., Pa., 1947—. Mem.: Alpha Omega Alpha; Am. Med. Assn.; Am. Soc. of Clin. Pathol.; Am. Assn. of Pathols. and Bacteriols.; Am. Coll. of Pathol.; Am. Assn. of Sci.; Phila. Physiol. Soc. Contbr. to: Archives of Pathol., Cancer; Jour. of the Albert Einstein Med. Ctr.; Jour. of Tropical Med. and Hygiene; Jour. of Infectious Diseases; Jour. of Oral Surgery; Gastroenterology; Fed. Procs.; Sci.; Bull. World Health Organization; Annals of the N. Y. Acal. of Sci.; Vet. Med.; Jour. Urology. Serv. Rec.: U. S. Army, 1941-45. Gen Int.: Bd. of Dirs. of the Jewish Community Coun. of Greater Phila.; Curriculum Consultant Dobbins Voc. Schl. Areas of Rsch.: Blood Coagulation; Immunological Aspects of Malignancy; Blood Enzymology, Particularly Phosphatase.

MEREDITH, Howard V(oas) (Ph.D.), Prof. of Child Somatology, Iowa Child Welfare Rsch. Sta., Univ. of Ia., Ia. City, Ia. PHYSICAL GROWTH OF CHILD. b. Nov. 5, 1903, Birmingham, Eng. s. Howard and Ada (Barker) M. Edn.: A.A., Graceland Coll., 1929; B.A., Univ. of Ia., 1931; M.A., Ibid., 1932; Ph.D., ibid., 1935. m. Matilda Johnson, of Des Moines, Ia., 1926. d. Charles and Emma Johnson. c.: Leslie Hugh; Mavis Rogene. Exp.: Rsch. Asst., Iowa Child Welfare Rsch. Sta., 1931-35; Rsch. Assoc., Ibid., 1935-39; Asst. Prof., ibid., 1939-42; Assoc. Prof., ibid., 1942-48; Prof., ibid., 1948-49; Prof., Schl. of Health and Phys. Edn., Univ. of Ore., 1949-52; Prof. and Consultant, Iowa Child Welfare Rsch. Sta. and Coll. of Dentistry, Univ. of Ia., 1952-56; Prof., Iowa Child Welfare Rsch. Sta., Univ. of Iowa, 1956—; Exchange Appointment, Harvard, Summer, 1935; Visiting Lectr., Univ. of Sou. Calif., Summer, 1948; Visiting Prof., Univ. of Sou. Calif., 1951; Visiting Prof., State Univ. of Ia., 1952. Fellow: Soc. for Rsch. in Child Development. Mem.: Am. Assn. of Physical Anthropologists; Rsch. Coun. of Am. Assn. for Health, Phys. Edn. and Rec.; A.A.U.P.; Sigma Xi; Phi Epsilon Kappa; Lambda Delta Sigma; Rsch. Club. Author: A Brief Hist. of Character Edn., 1932; The Rhythm of Physical Growth, 1935; The Physical Growth of White Children, A Rev. of Am. Rsch. Prior to 1900, 1936; The Physical Growth of the Young Child, 1939; Physical Growth from Birth to Two Yrs., A Rev. and Synthesis of No. Am. Rsch. on Stature, 1943; Height Weight Interpretation Chart, 1951; A Descriptive Concept of Physical Development, 1957; Methods of

Studying Physical Growth, 1960. Contbr. to: Child Development; Human Biol.; Am. Jour. of Phys. Anthropology; Growth; Am. Jour. Anat.; Jour. Pediatrics; Pediatrics; Am. Jour. of Diseases of Children; Rev. of Edni. Rsch.; Jour. of Dental Rsch.; Am. Jour. of Orthodontics; Angle Orthodontist; Anat. Records; Jour. of Dentistry for Children; Am. Jour. of Pub. Health; Jour. of Schl. Health; Rsch. Quart. of Am. Assn. of Health; Phys. Edn. and Recreation; Jour. of Dental Edn.; Psychol. Bull.; Phys. Educator, Saskatchewan Rec.; Hygeia; Schl. and Soc.; Parents Mag.; Merrill-Palmer Quart.; Annals of N. Y. Acad. Sci.; Yearbook of Phys. Anthropol.; Year Book of Dentistry; Collier's Encycl.; Encycl. Americana. Ph.D. Dissertation: The Rhythm of Physical Growth: A Study of Eighteen Anthropometric Measurements of Iowa City White Males Ranging in Age between Birth and Eighteen Years. Travel: Europe. Listed in: A.M.S.; Who Knows—and What; Who Knows in Midwest; W. W. in Am.

MEREDITH, Flora Marie (Miss), Dir., Office of Placement Services and Prof. Psychology, East Tenn. State Coll., Tenn. Home Add.: East Tennessee State Coll., Johnson City, Tenn. PSYCHOLOGY. b. Hagerstown, Md., July 30, 1902. d. Harry Lionel and Marie (Maisch) M. Edn.: A.B., Trinity Coll., Duke Univ., 1923; M.A., Tchrs. Coll., Columbia, 1939; Advanced Grad. Study, Duke Univ. Exp.: Tchr., English Girls' H. S., Hagerstown, Md., 1923-25; Hd., Eng. Dept., Fort Pierce H. S., Ft. Pierce, Fla., 1925-28; Counselor, Woman's Coll., U.N.C., Greensboro, N. C., 1928-35; Soc. Dir., East Campus, Duke, Summers, 1934-43; Dean of Women, Assoc. Prof. Psy., Hendrix Coll., 1935-43; Personnel Dir., Limestone Coll., 1943-45; Dean of Women, Tusculum Coll., 1945-51; Prof. Psychology, Dir. Placement Services, East Tenn. State Coll., 1951—. Hon. Pos.: Dir., Oakland Park Juvenile Home. Mem.: Phi Beta Kappa; Am. Psychol. Assn.; Am. Personnel and Guidance Assn.; A.A.A.S.; Natl. Instnl. Tchr. Placement Assn.; Sou. Coll. Placement Officers Assn.; Tenn. Edn. Assn; Zeta Tau Alpha; Delta Kappa Gamma; Chi Delta Phi; Kappa Delta Pi; Bus. and Profl. Woman's Club; Monday Club Auxiliary. Gen. Int.: Mem. Hazen Edtn. Conf., 1949-50; Recipient Gen. Edn. Bd. Fellowship, 1938-39. Areas of Rsch.: Counseling; Guidance (Edni.); Mental Health.

MERENDA, Peter Francis (Ph.D.), Assoc. Prof. of Psychol., Univ. of R. I., Kingston, R. I. Home Add.: 258 Negansett Ave., Warwick, R. I. PSYCHOLOGY. b. Everett, Mass., July 18, 1922. s. Frank (dec.) and Sarah (Leno) M. Edn.: B.S., Tufts Coll., 1947; Ed.M., ibid., 1948; C.A.S., Harvard Univ., 1951; Ph.D., Univ. of Wis., 1957. m. Rose Cafasso, Aug. 31, 1946. c.: Anne; Rosemary; Pamela. Exp.: Instr., Univ. of Mass., Ayer, Mass., 1948-49; Dir. of Guid., Southbridge Public Schls., Southbridge, Mass., 1949-50; Rsch. Dir., U. S. Naval Exam Ctr., Great Lakes, Ill., 1950-57; Rsch. Dir., Walter V. Clarke Assoc., E. Providence, R. I., 1957-60; Asst. Prof. of Psychol., Univ. of R. I., 1960-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Chmn., R. I. Assn. Comm on Standard and Legislation; Mem., Adv. Bd., R. I. Occupational Trng. Ctr.; Mem., Bd. of Dir. and Vice-Pres., Warwick R. I. Comm. Guid. Clinic. Mem.: APA; Psych. Soc.; A.E.R.A.; ASA; APGA; NCME; ACPA; NVGA; NSSE; Am. Assn. for the Adv. of Sci.; Phi Delta Kappa; RIPA; EPA; MPA; SEPA; NEPA; FPA; Fellow, A.A.A.S.; R. I. Assn. Comm. on Standard and Legislation. Contbr. to: Jour. of App. Psychol.; Psychol. Reports; Engrng. and Industrial Psychology; Personnel Psychology; Educational Psychol. Measurement; Jour. of Counseling Psychol.; Jour. of Clinical Psychology. Service Rec.: U. S. Navy, 1944-46; Reserve, 1947—. Gen. Int.: Superior Accomplishment Award, from Chief of Naval Personnel for Outstanding Performance and Excellence in Conducting Research for the U. S. Navy Bur. of Naval Personnel. Areas of Rsch.: Psychol. Testing, Personnel Measurement and Evaluation, Test Construction, Personality Assessment, Personnel Selection and Placement.

MERKEN, Henry (Mr.), Grp. Leader, Polymer Rsch. and Devel., Polyvinyl Chemicals, Inc., 26 Howley St., Peabody, Mass. Home Add.: 2 Doane St., Marblehead, Mass. HIGH POLYMER CHEMISTRY, EMULSION POLYMERIZATION, SOLUTION POLYMERIZATION, SUSPENSION POLYMERIZATION. b. Peabody, Mass., Oct. 14, 1929. s. Harry and Anne (Ossoff) M. Edn.: B.S.Ch.E., Northeastern Univ., 1953. m. Elaine Dinerman, June, 1953. c.: Howard Mark; Robert Dennis. Exp.: Co-op Lab., Technician Am. Polymer Corp., Peabody, Mass., 1949-53; Rsch. Engr., Am. Polymer Corp., 1953; Rsch. Engr., Borden Co., Peabody, Mass., 1955-56; Rsch. and Dev. Engr., Polyvinyl Chemicals, Inc., Peabody, Mass., 1956—; Instr., Lowell Techn. Inst., Lowell, Mass., 1959—. Mem.: ACS; Am. Inst. of Chem. Engrs.; AAAS. Contbr. to: Soap and Sanitary Specialties Magazine; Am. Paint Jour. Gen. Int.: First Instr. from industry to present high polymer chemistry course in evening div. of Lowell Tech. Inst. Areas of Rsch.: Emulsion, Suspension, and Solution Polymerization.

MERKER, Harvey M. (D.Sc.), Retired, Dir. of Scientific Relations, Parke, Davis and Co., Detroit 32, Mich. Home Add.: 201 East Kirby, Detroit 2, Mich. CHEMICAL ENGINEERING. b. Detroit, Mich., Feb. 24, 1888. s. Herman and Rosa C. (Walz) M. Edn.: B.S., Univ. of Mich., 1909. Hon Degs.: M.Eng., Univ. of Mich., 1940; D.Sc., Wayne Univ., 1943; D.Eng., Univ. of Mich., 1953. m. Buda O. Martin, June 27, 1911. c.: Marjorie (Mrs. Rudolph H. Sell); Henry. Exp.: Staff, Parke, Davis and Co., Detroit, Mich., 1909—. Hon. Pos.: Commissioner and Past Pres., Detroit Public Library; Director, Jr. Achievement; Dir., Better Business Bureau; Director, Michigan Life Insurance Company; Governor, Rackham Rsch. Fdtn., Mich. Sta. Coll.; Trustee, Alma Coll.; Vice-Pres. and Trustee, Kresege Eye Inst.; Mem., Advisory of Franklin Settlement; Mem., Chem. Advisory Coun., Wayne Sta. Univ., and others; First Citizen of Detroit by the Detroit Common Council Staff of Parke, Davis and Co., 1907-57; Governor and Past Chmn., Univ. of Mich. Memorial Phoenix Project; Trustee and Secy., Cranbrook Inst. of Sci.; Trustee and Vice-Pres., Edwin S. George Fdtn.; Trustee and Past Pres., Detroit Inst. Cancer Rsch.; Dir., Methodist Children's Village Dir., Detroit Sci. Museum Soc.; Vice-Pres., Detroit Chapt. U. N.; Dir., Detroit Coun. of Churches; Dir., World Med. Relief; Dir., and Past Pres., Kresge-Hooker Sci. Libr. Associates. Mem.: Sigma Rho Tau; Fellow, Am. Assn. for the Adv. of Sci.; D.A.C.; Detroit Boat Club; Forest Lake Country Club; Detroit Inst. of Cancer Rsch.; Cranbrook Inst. of Sci.; Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Engrng. Soc of Detroit; Tau Beta Pi (Hon). Author: Centennial History of the Engrng. Coll. of the Univ. of Mich., 1953. Co-author: Pharmaceuticals in Encycl. of Chemical Technology, 1953. Contbr. to: Scientific Papers. Gen. Int.: Chmn., Com. for Obtaining the Hooker Scientific Library for Wayne Univ.; Citation of Honor as Distinguished Mem. of 100 Midwestern Leaders in Science, Engrng. and Industry from Ind. Tech. Coll. for Outstanding Contributions to Mankind, 1958; Patriotic Award of the Detroit Hist. Soc. Guild, 1960.

MERORY, Joseph (Mr.), Pres. of Merory Flavors, Inc., 303 Div. St., Boonton, N. J. Home Add.: 243 Lake Shore Dr., Lake Hiawatha, N. J. FLAVORING FOR FOOD AND BEVERAGES; PRODUCTION OF CORDIALS, LIQUEURS AND FRUIT FLAVORED BRANDIES. b. Bucovina, Austria, Jan. 6, 1895. s. Jacob and Ester (Weidenfeld) M. Edn.: Chem. Engrng., Technology in Vienna, Austria, 1921; Ing. Chim., Inst. Sup. Techn. et Coll., Liege, Belgium, 1927. m. Sarah Leibovich, Aug. 22, 1944. c.: Mrs. Edith Collinsworth. Exp.: Flavor Techn., Fries and Bros., Bloomfield, N. J., 1938-41; ibid., Van Ameringen-Haebler, Elizabeth, N. J., 1941-43; Flavor Techn., Joe Lowe Corp., N. Y., 1944-48; Flavor Techn., Givaudan-Delawana, N. Y., 1948-52; Pres. of Merory Flavors, Inc., 1952—. Mem.: Instit. of Food Technols.; Goelet Lodge No. 918 F. & A.M.; The Knoll Club. Author: Food Flavorings, Composition, Manufacture and Use, 1960. Contbr. to: Harpers Wine and Spirit Gazette; La Revue des Boissons; The Ice Cream Review; Food Engrng. Areas of Rsch.: Method and Apparatus for Production of Alcoholic Beverages by Fractioned Distillation, Austria Patent No. 149188; Fruit Flavors, Products and Methods, U. S. Patent No. 2,865,756.

MERRILL, Bruce Robinson (M.D.), Physician, 22 Peninsula Rd., Belvedere, Calif. PSYCHOANALYSIS. b. San Francisco, Calif., May 22, 1911. s. Charles Washington and Clara (Robinson) M. Edn.: A.B., Univ. of Calif., 1934; M.D., Harvard, 1938. m. Beverly Drum, Mar. 5, 1955. c.: Bruce William. Exp.: Instr., Univ. of Calif., Berkeley, Calif., 1947-49; Instr., Mills Coll., Oakland, Calif., 1948-49; Physician, San Francisco, Calif., 1947-59; Physician, Belvedere, 1959—. Hon. Pos.: Pres., Ment. Hlth. Soc., S. Fran., Calif., 1950-51; Treas., S. F. Psychoanalytic Soc., San Fran., 1956-57; Chmn., Budget Comm., Am. Psychoanalytic Assn., 1956-59. Mem.: Am. Psychoan. Soc.; Am. Psychia. Soc.; Am. Soc. for Rsch. in Psychosomatic Problems; Am. Assn. for the Adv. of Sci.; Am. Acad. of Pol. and Social Sci.; Phi Delta Theta; Psi Chi; Lancet Club; Boylston Med. Soc.; Belvedere Democratic Club; Commonwealth Club; Marin Coun. for Civic Affairs. Contbr. to: Psychoanal. Quarterly; Am. Jour. of Psychiatry. Serv. Rec.: U. S. Navy, 1942-44. Gen. Int.: Amateur Radio Operator, Citrus Rancher.

MERLE, James J. (Mr.), Preparation Mgr., Ayrshire Collieries, 430 Big Four Bldg., Indpls. 25, Ind. Home Add.: 5217 Thornleigh Dr., Indpls. 26, Ind. COAL BENEFICIATION. b. Elkland, Pa., June 8, 1911. s. P. E. and Josephine (Rogers) M. Edn.: B.S., Penn. Sta. Univ., 1933; M.S., Univ. of Wash., Seattle, 1934. m. Gladys I. Tipton, 1942. c.: Sandra; Pamela; Jeanne Exp.: Rsch.

Fellow, Univ. of Wash., Seattle, Wash., 1933-34; Preparation Engr., Island Creek Coal Co., Holden, W. Va., 1934-40; Chief Chemist, Ayrshire Collieries, Indnpls., Ind., 1940-56; Preparation Mgr., ibid., 1956—. Mem.: AIME; ACS; Ill. Mining Inst.; Ind. Preparation Soc.; Sigma Gamma Epsilon. Author: Contbrng., Laboratory Control in Coal; Washing and Drying Plant. Contbr. to: Congress Jour. of Mining; Mining Engrng.; Mechanization. Areas of Rsch.: Coal Chemistry; Coal Preparation.

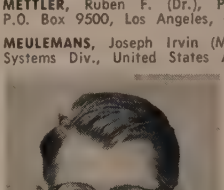
MERRILL, John Ellsworth (Ph.D.), Sr. Staff Engr., Franklin Inst. Labs., Phila. 3, Pa. ASTRONOMY. b. May 10, 1902, Parsonsfield, Me. s. John and Mabel (Buckpitt) M. Edn.: A.B., Boston Univ., 1923; M.S., Case Schl., 1927; M.A., Princeton Univ., 1929; Ph.D., ibid., 1931. m. Esther Mary Ives of Salem, Mass., Sept. 3, 1925. d. Mr. and Mrs. William L. Ives. c.: Laura-May Esther; John Raymond. Exp.: Instr. in Math., Case Schl., 1924-28; Instr. in Math., Princeton, 1929-30; Asst. Prof. of Astron., Univ. of Ill., 1931-32; Curator of Astron., Buffalo Museum of Sci., 1932-36; Rsch. Asst. in Astron., Princeton, 1936-37; Instr. in Astron., Hunter Coll., 1937-38; Asst. Prof., Hunter Coll., 1938-47; Visiting Asst. Prof., Princeton, 1942-45; Assoc. Prof., Hunter Coll., 1947-50; Assoc. Prof. of Astron., Ohio Wesleyan, 1950-51; Prof., ibid., 1951-59; Rsch. Assoc., Princeton Univ. Obs., 1945—; Visit. Prof. of Astron., Univ. of Pa., 1959—. Hon. Pos.: Prof., Augustus Howe Buck Scholar, Boston Univ., 1920-23, Fellow, 1923-24; Thaw Fellow in Astron., Princeton, 1930-31. Mem.: A.A.A.S.; Am. Astron. Soc.; I.A.U. Pres. of Commn. 42, 1961—; N. Y. Acad. of Sci.; Phi Beta Kappa; Sigma Xi; Kappa Phi Alpha. Author: Tables for Solution of Light Curves of Eclipsing Binaries; Nomographs for Solution of Light Curves of Eclipsing Binaries. Co-Author: Determination of the Elements of Eclipsing Binaries. Ph.D. Dissertation: The Eclipsing Variable R T Lacertae. Listed in: A.M.S.; Who Knows—and What; W. W. in the East; W. W. in Am.

MERRITT, Henry Neyron (M.D.), Instr. and Chmn., Dept. of Biol., Northwood H. S., 919 Univ. Blvd., Silver Spring, Md. Home Add.: 9914 Sidney Rd., Silver Spring, Md. BIOLOGIST AND PHYSICIAN. b. Darlington, S. C., Nov. 9, 1919. s. Henry Orme and Lillian (Parrott) M. Edn.: B.S., Clemson Coll., 1941; M.D., Kansas City Univ. of Physicians and Surgeons, 1944; M.Ed., Univ. of S. C., 1953; N.D., Western States Coll., 1955; Hon. Deg.: D.Sc., Western States Coll., 1960. m. Bess Castles, Aug. 22, 1939. c.: Henry Neyron; Jo Ann Merritt. Exp.: Physician and Supvr. of Veteran Program, Hemingway, S. C., 1944-53; Prof. of Physiol., Western States Coll., Portland, Ore., 1952-55; Resident Physician, Blondiau Hosp., W. Columbia, S. C., 1955-57; Instr. and Chmn., Dept. of Biol., Northwood H. S., 1957—. Mem.: Internatl. Assn. of Biological Scientist; Fellow, A.A.A.S.; Am. Assn. of Univ. Prof.; Natl. Biol. Tchr. Assn.; Md. State Tchrs. Assn.; Montgomery County Tchrs. Assn.; Diplomate, In Naturopathic Med.; Internatl. Assn. of Naturopathic Physicians; Md. Med. Assn. of Homeopathic Physicians; Natl. Sci. Tchrs. Assn.; Phi Nu Sigma; Mason Eastern Sta; J. C.'s; Lions; Civitan; Mem. of the Rsch. Fellowship Comm. of the Mont. TB and Heart Assn., Md. Contbr. to: Internatl. Jour. of Naturopathic Med.; Monograph on use of Professional Scientist in Science Edn. in Montgomery County. Areas of Rsch.: Botanical Medicine; H-3 Treatment (Procaine Hydrochloride); Experimental Research in Biological Sciences for Gifted High School Students.

MERZBACHER, Claude Fell, (Ed.D.), Assoc. Prof. Physical Sci., and Counselor, San Diego St. Coll., San Diego, Calif. Home Add.: 6902 Fiftieth St., San Diego, Calif. FACILITATION OF COGNITIVE PROCESSES. b. Philadelphia, Pa., Oct. 29, 1917. s. John Simon and Mary O. (Fell) M. Edn.: B.S. in CHE, Univ. of Pa., 1939; M.A., Claremont Grad. Schl., 1951; Ed.D., U.C.L.A., 1962. m. Helen Gaydos, Nov., 1945. c.: James J.; Jeffrey L. Exp.: Chem. Engr., Allied Chem. and Dye., Phila., Pa., 1939-41; Chemist, E. I. duPont de Nemours Co., 1937-39, Phila., Pa.; Instr., Chem. and Asst. Prof., San Diego St. Coll., 1947-60; Chmn., Dept. Astro., Geol. and Phys. Sci., ibid., 1953-56; Assoc. Prof. and Counselor, ibid., 1961—. Mem.: A.A.A.S.; Am. Chem. Soc.; Fellow, Am. Inst. of Chemists; Alpha Chi Sigma; Phi Delta Kappa; Sigma Alpha Epsilon. Contbr. to: Jour. of Chem. Edn.; Ednl. Admin. and Supvn. Serv. Rec.: U. S. Air Res., Retired. Gen. Int.: Licensed Chem. Engr., Calif.; Certif. Psychologist, ibid. Areas of Rsch.: Applied Statistics; Affect Interrerence with Mathematics Performance; Group Process

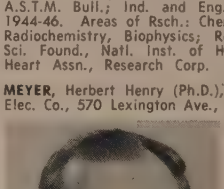
METTLER, Ruben F. (Dr.), Pres., Space Technol. Labs., In P.O. Box 9500, Los Angeles, Calif.

MEULEMANS, Joseph Irvin (Mr.), Electronic Engr., Aeronauti Systems Div., United States Air Force, Wright-Patterson A.F. Ohio. Home Add.: 4361 Moz Ave., Dayton 24, Ohio. ELECT CAL ENGINEERING. b. RR. K kauna, Wis., Oct. 24, 1923. Evarist and Rose (McDaniel) Edn.: B.S. E.E., Univ. of W 1951; M.S., E.E., Air Force In of Tech., Air Univ., 1960. Ex Electrical Engr., Aeronautical S tems Div., United States Air For Wright-Patterson A.F.B., O h i 1951-54; Electronic Engr., ib 1954—. Mem.: Reg. Prof. Eng State of Ohio; A.I.E.E.; A.A.A Contbr. to: Naecon. Serv. Re A.U.S., 1942-45. Areas of Rsc Wind Tunnel Test Facilities, Wa guides and Microwave Tubes.



MEYER, E(dmond) Gerald (Ph.D.), Grad. Dean and Dir. of Rsc N. Mex. Highlands Univ., Las Vegas, N. Mex. Home Add.: 1 Eighth St., Las Vegas, N. Mex. PHYSICAL CHEMISTRY. Albuquerque, N. Mex., Nov. 2, 1919. s. Leopold and Beat (Ilfeld) M. Edn.: B.S., Carnegie Inst. of Tech., 1940; M ibid., 1942; Ph.D., Univ. of N. Mex., 1950. m. Betty Knoblo July 4, 1941. c.: Lee Gordon; Terry Gene; David Gary. Ex Asst. Chemist, U. S. Bur. of Mines, Coll. Park, Md., 1942- Staff Chemist, N. Mex., Schl. of Mines, Socorro, N. Mex., 19 48; Rsch. Fellow, Univ. of N. Mex., Albuquerque, N. M 1948-50; Hd. Sci. Dept., Coll. of St. Joseph, Albuquerque, Mex., 1950-52; Dir. Rsch., Hd. Chem. Dept., Prof. of Che N. Mex. Highlands Univ., 1952-61; Grad. Dean and Dir. of Rsc ibid., 1961—. Mem.: Am. Chem. Soc.; Biophys. Soc.; Sigma Author: Chemistry, A Survey, 1963. Contbr. to: Jour. Am. Che Soc.; Jour. Phys. Chem.; Jour. Chem. Phys.; N. Mex. Schl. Re A.S.T.M. Bull.; Ind. and Eng. Chem. Serv. Rec.: U. S. Na 1944-46. Areas of Rsch.: Chemical Thermodynamics and Kinet Radiochemistry, Biophysics; Research Grants from A.E.C., N Sci. Found., Natl. Inst. of Health, Dept. of Interior; N. M Heart Assn., Research Corp.

MEYER, Herbert Henry (Ph.D.), Consultant, Behavioral Rsch., G Elec. Co., 570 Lexington Ave., N. Y. 22, N.Y. Home Add.: 3 No Rd., Butler's Island, Darien, Co INDUSTRIAL PSYCHOLOGY. b. Wayne, Ind., Oct. 16, 1917. Henry Carl and Anna (Barth) Edn.: B.S., Western Mich. Co 1941; M.S., Univ. of Mich., 19 M.A., ibid., 1947; Ph.D., ib 1949. m. Phyllis Jane Coop July 16, 1942. c.: Marilyn Ja Janet Gail. Exp.: Asst. Ind trial Psychologist, The Detroit E son Co., Detroit, Mich., 1948- Consultant, Industrial Div., P chological Corp., N. Y. C., 19 53; Consultant, Behavioral Rsc Gen. Electric Co., N. Y. 1953— Mem.: A.A.A.S.; A Psychological Assn.; Inst. Mgmt. Scis.; Sigma Xi; Ka Delta Delta Pi; Sigma Delta Contbr. to: Psychological Mo graphs; Jour. of Applied Psychol.; Personnel Psychol.; Jour. Abnormal & Soc. Psychol.; Personnel Jour.; Personnel. Se Rec.: U.S.N.R., 1944-45. Areas of Rsch.: Industrial Leadersh Organization, Personnel Evaluation and Development.



MEYER, Irving (D.M.D.), Oral Surgeon, Oral Pathologist, Maple St., Springfield, Mass. Home Add.: 567 Laurel St., Lo meadow, Mass. ORAL SURGE AND ORAL PATHOLOGY. Springfield, Mass., March 1920. s. Frank and Jen (Weber) M. Edn.: B.S., Univ. Mass., 1941; D.M.D., Tufts Un Schl. of Dental Med., 19 M.Sc., Grad. Schl. of Med., Un of Penn., 1950; D.Sc., ib 1958. m. Charlotte Lois Samps June 1553. c.: Fredric Bru Marc Hillel; James Samps Exp.: Instr., Graduate School Med., Univ. of Pennsylvan Phila., Pa., 1949-51; Ins Tufts Univ., Boston, Mass., 19 57; Asst. Prof., ibid., 1957- Assoc. Prof., ibid., 1961—; C Surgeon, Oral Pathologist, Spr field, Mass., 1961—. Hon. Po Chmn., Israel Bonds of Gre Springfield, 1960-61; Recording Secy., Am. Soc. of Oral

geons, 1958-62; Chmn., Israel Bonds of Greater Springfield, 1960-63; Pres., New England Soc. of Oral Surgs., 1962-64. Mem.: Sigma Xi; N. Y. Acad. Scis.; Am. Soc. Oral Surgns.; Am. Acad. Oral Pathol.; Diplomate, Am. Bd. of Oral Surgery; Omicron Kappa Upsilon; Tau Epsilon Phi; Phi Kappa Phi; Alpha Omega; Sigma Xi. Author: Osteoradionecrosis of the Jaws, 1959; Intraoral Resection of Mandible, 1959. Contbr. to: Jour. of Oral Surgery; Cancer; Jour. of Oral Surg.; Oral Medicine; Oral Pathol. Serv. Rec.: U. S. Army, 1942-57. Areas of Rsch.: Oral Pathology; Radiation of Oral Cavity and Associated Pathology; Oral Malignancy; Oral Surgery.

MEYER, Wolfgang E(berhard), (Mr.), Prof. of Mechanical Engrng., Pa. St. Univ., University Park, Pa. Home Add.: 705 North Holmes St., State College, Pa. MECHANICAL ENGINEERING. b. Berlin, Germany, Aug. 2, 1910. s. Alfred and Martha (Baer) M. Edn.: B.S., Techn. Hochschule Stuttgart, 1933; Dipl. Ing., Techn. Hochschule Hannover, 1935. m. Ann Nachouk, 1946. c.: Henry Carl. Exp.: Lab. Engr., Daimler-Benz, Gaggenan, Germany, 1935-37; Lab. Engr., Am. Bosch Corp., Springfield, Mass., 1938-40; Rsch. Engr., Yale Univ., 1941-43; Asst. Project Engr., Bulova Watch Co., Woodside, L. I., N. Y., 1944-45; Chf. Engr., Rsch. Engrng. Corp., New Haven, Conn., 1945-47; Assoc. Prof. of Engrng. Rsch., Pa. St. Coll., 1947-51; Prof. of Engrng. Rsch., Pa. St. Univ., 1951-57; Prof. of Mechanical Engrng., ibid., 1957—. Hon. Pos.: Chmn., Techn. Coun., Pa. Air Pollution Comm. Mem.: Soc. Automotive Engrs.; Air Pollution Control Assn.; Sigma Xi; Pi Tau Sigma. Contbrng. Author: Encyclopedia of Chemical Technology, 1954; Engineering Know-How in Engine Design, 1958. Contbr. to: Trans. Soc. Automotive Engineers; S.A.E. Journal; Trans. Am. Soc. Mechanical Engineers; Instruments and Automation; Proc. International Congress of Combustion Engines; Motortechn. Zeitschrift. Areas of Rsch.: Lubrication and Combustion in I.C. Engines; Exhaust Emissions; Braking Systems; Tire Friction; Pavement Skid Resistance; Automotive Safety.

MEYER-ARENDT, Jurgen R(ichard), (M.D.), Assoc. Prof., Physics Dept., Utah State Univ., Logan, Utah. Home Add.: 1337 East 9th North, Logan, Utah. OPTICS. b. Berlin, Germany, Oct. 4, 1921. s. Gustav and Ada (Gruenenthal) M. Edn.: M.D., Univ. of Wuerzburg, Germany, 1945; Ph.D., Univ. of Hamburg, Germany, 1952. m. Erica Suck, Oct. 22, 1949. c.: Klaus J.; Susanne M.; Karen E. Exp.: Lecturer, Univ. of Hamburg, Germany, 1948-54; Assoc. Prof., Univ. of Sao Paulo, Ribeirao Preto, Brazil, 1954-55; Assoc. Prof., Ohio State Univ., Columbus, Ohio, 1955-59; Assoc. Prof., Utah State Univ., Logan, Utah, 1960—. Mem.: Am. Physical Soc.; Optical Soc. of Am.; Am. Assn. of Phys. Tchrs.; Sigma Xi. Contbrng. Author: Nondestructive Testing Handbook, 1959. Contbr. to: Jour. Opt. Soc.; Am. Jour. Phys.; Lab. Invest.; Science. Areas of Rsch.: Optics.

MEYER, Helen Unger (Ph.D.), Rsch. Assoc., Dept. of Medical Genetics, Univ. of Wis., Madison, Wis. Home Add.: 914 High St., Madison 15, Wis. GENETICS OF DROSOPHILA. b. Berlin, Germany, May 4, 1908. d. Paul and Margaret Julie (Lichtenstein) Unger. Edn.: Ph.D., Univ. of Berlin, Germany, 1936. m. Walter Egon Meyer (dec.), July, 1938. c.: Evelyn Ruth. Exp.: Fellow, Stazione di Floricoltura, San Remo, Italy, 1936-37; Rsch. and Tchng. Asst., Univ. of Milan, Italy, 1937-38; Sanit. Bacteriologist, Dept. of Health, Providence, R. I., 1947; Rsch. Assoc., Dept. of Zool., Ind. Univ., Bloomington, Ind., 1947-62; Rsch. Assoc., Dept. of Medical Genetics, Univ. of Wis. Mem.: Genetics Soc. of Am.; Am. Soc. of Zoologists; A.A.A.S.; Sigma Xi; Sigma Delta Epsilon; A.A.U.P.; A.A.U.W. Contbr. to: Genetics; Science; Proc. Internatl. Congress of Genetics; Heredity; Zeitschr. f. Indukt. Abstammungs-u. Vererbungslehre; Drosophila Information Service. Areas of Rsch.: Chromosome configurations (chicken, pheasant, blackbird); embryonic gonads of various birds. Rsch. with Drosophila: Radiation effects (ultra-violet and X-rays) on mutation and recombination. Viability mutations. Mutability of various stages of male and female germ cells. Radiation effects on somatic cells of embryos and larval stages.

MEYERS, Thomas J(ohn) (Ph.D.), Dir. Meyers Clinic, 724 South Parkview St., Los Angeles, Calif. Home Add.: 439 Madeline Dr., Pasadena 2, Calif. PSYCHIATRY. b. Winnipeg, Can., May 11, 1903. s. Charles L. and Lizzie (Doran) M. Edn.: D.O., Coll. Osteo. Phys. and Surg., 1929; A.B., Occidental Coll., 1939; M.A., ibid., 1941; Ph.D., Claremont Grad. Schl., 1949. m. Helen Ann Redmond, Jan. 7, 1933. Exp.: Res. Phys., Merrill Sanit., Venice, Calif., 1930-31; Jr. Neuropsy., Los Angeles Co., Osteop. Hosp., 1931-39; Sr. Neuropsy., ibid., 1939-54; Consult., ibid., 1954—; Assoc. Prof., Coll. of Osteop. Phys. and Surgery, 1935-45; Prof., Psychiatry, ibid., 1945-54; Dir., Meyers Clinic, 1942—; Mem. Psychiatrist's Panel, Superior Court of Los Angeles; Chmn., Adv. Bd. for Osteopath Specialists of Am. Osteop. Assn., 1955—. Mem.: Bur. of Prof. Edn.; Am. Osteop. Assn.; Am. Osteop. Bd. of Neurolog. and Psychiatry; Amer. Psychol. Assn.; A.A.A.S.; Calif. State Psychol. Assn.; Sou. Calif. Acad. Sci.; N. Y. Acad. Sci.; Calif. Acad. Sci.; Med. Correct. Assn.; Internatl. Soc. Criminol.; Am. Acad. Forensic Scis.; Am. Assn. on Ment. Def.; Am. Coll. Neuropsy.; Kappa Alpha; C. of C. Contbr. to: Jour. of Am. Osteopathic Assn.; Bull. Am. Coll. of Neuropsy. Instr.; Criminology and Police Sci. Areas of Rsch.: Tchng. of Psychiatry to physicians; Psychotherapy and psychiatric diagnosis.

MEZEY, Kalman C. (M.D.), Dir. Clin. Rsch., Merck Sharp and Dohme Rsch. Labs., Rahway, N. J. Home Add.: 180 East End Ave., N. Y. 28, N. Y. INTERNAL MEDICINE, PHARMACOLOGY. b. Nagyvarad, Hungary, Sept. 18, 1909. s. Adolf and Maria (Heller) M. Edn.: M.D., Med. Schl., Univ. Basel, Switzerland, 1933. m. Elizabeth Jaberg, Aug., 1935. c.: Esteban; Gabriela; Yolanda. Exp.: Prof. and Hd. of Dept., Pharmacol., Med. Schl., Univ. Javeriana, Bogota, Colombia, 1942-59; Dir. of Clin. Rsch., Merck Sharp & Dohme Rsch. Labs., 1959—. Hon. Pos.: Pres., Biol. Soc. Bogota, 1958; Vice-Pres., Cardiol. Soc. of Colombia, 1957. Mem.: Am. Soc. Pharmacol. and Exptl. Ther.; Am. Soc. for Trop. Med. and Hyg.; N. Y. Acad. of Scis.; Royal Spanish Acad. of Scis.; Colombian Acad. of Scis.; German Pharmacol. Soc.; Swiss Soc. for Physiol. and Pharmacol.; Colombian Cardiol. Soc.; Country Club, Bogota; Arkwright Club of N. Y. Contbr. to: Helvetica Medica Acta; Arch. Exptl. Pathol.; Jour. of Pharmacol. and Exptl. Therapeutics; Archives Internatl. de Pharmacodynamie et de Therapie. Areas of Rsch.: Pharmacology of Drugs Acting on the Cardiovascular System.

MIATECH, Gerald James (Maj.) U.S.A.F., Foreign Technol. Div., A.F. Systems Command, Wright-Patterson A.F.B., Ohio. Home Add.: 467 Dundee Circle, Dayton 31, Ohio. GEOPHYSICS. b. Stambaugh, Mich., Dec. 31, 1922. s. Michael S. and Agnes (Smedlund) M. Edn.: B.S., Mich. Coll. of Min. and Tech., 1949; M.S.(R), St. Louis Univ., 1956; Ph.D., Univ. of Wis., 1961. m. Audrey Wickman, Aug. 8, 1945. c.: Patricia L.; Gerald J., Jr.; Philip R. Exp.: Admin. Officer, U. S. Army Air Corps, Central Pacific Theatre, W.W. II, 1941-45; Geophysicist, Geol. Dept., M. A. Hanna Co., Iron River, Mich., 1949-50; Nuclear Physicist and Geophysicist, U. S. Air Force, 1950—. Mem.: A.A.A.S.; Geological Soc. of Am.; Soc. of Exploration Geophysicists; Am. Geophys. Un.; Am. Inst. of Min., Metal. and Petrol. Engrs.; Am. Rocket Soc.; Sigma Xi; Kappa Delta Psi, Alpha Chap., Houghton, Mich. Serv. Rec.: U. S. Army Air Corps, 1941-45, U. S. Air Force, 1950—. Areas of Rsch.: Geophysical Exploration for Minerals; Upper Atmospheric Rsch.; Space Rsch. (Instrumentation, Orbits and Trajectories, Measurements of Physical Parameters); Space Systems Anal.; Geology, Exploration; Nuclear Physics, Atomic Weapons Application.

MICHAELIS, Michael (Mr.), Consultant to the Pres. Spec. Asst. for Sci. and Technol., The White House, Wash., D. C. Home Add.: 3046 Newark St., N.W., Wash. 8, D. C. TECHNICAL ECONOMICS (PHYSICS, ELECTRONICS, NUCLEAR ENERGY, TRANSPORTATION, COMMUNICATIONS, INTERNATIONAL TECHNICAL, ECONOMIC CO-OPERATION AND DEVELOPMENT). b. Berlin, Germany, June 8, 1919. s. Dr. George and Martha (Biuth) M. Edn.: B.Sc., Engrng., Univ. of London, England, 1941. m. Diana Tead, Sept. 11, 1954. c.: David Tead; Ordway Peter. Exp.: Group Leader, Rsch. Labs., Gen. Elect. Co., Ltd., England, 1935-49; Hd., Phys. Div., Radiochem. Center, Atomic Energy Authority, England, 1949-51; Sr. Assoc., Arthur D. Little, Inc., Cambridge, Mass., 1951—; Consultant to the Pres. Spec. Asst. for Sci. and Technol., The White House, 1961—. Hon. Pos.: Vice-Chmn., Internatl. Comm., Atomic Indust. Forum; Mem., U. S. Chamber of Commerce Comms. on Commercial Uses of Atomic Energy and Sci. and Technol. Mem.: Am. Inst. of Elect. Engr.; The Inst. of Radio Engrs.; Am. Nuclear Soc.; Atomic Indust. Forum; Nuclear Energy Writers Assn.; A.A.A.S.; The Instit. of Physics and Phys. Soc.; The Institn. of Elect. Engrs, Britain; Harvard Faculty Club. Contbr. to: Harvard Bus. Rev.; Congressional Rec.: Areas of Rsch.: Internatl. Trade and Business Development; Corporate Strategy Related to Technological Innovation; Nuclear Power; Regional Economic Development; Science and Technology in Public Affairs; Management Consult.

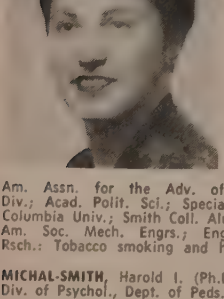
MICHAEL, Ernest Denzil, Jr. (Ph.D.), Assoc. Prof., Univ. of Calif., Santa Barbara, Calif. Home Add.: 1374 Shoreline Dr., Santa Barbara, Calif. EXERCISE PHYSIOLOGY-SPORTS MEDICINE. b.

Lewiston, Me., Jan. 18, 1922. s. Ernest D. and Velma (Jeffries) M. Edn.: B.S., Purdue Univ., 1947; M.S., Univ. of Ill., 1949; Ph.D., ibid., 1952. m. Rebecca Rogers, Sept., 1945. c.: John; Nancy; James. Exp.: Dir. Athletics, Argos H. S., Argos, Ind., 1947-48; Instr., Univ. of Ill., Urbana, Ill., 1949-52; Assoc. Prof., Univ. of Calif., Santa Barbara, Calif., 1952—. Hon. Pos.: Assoc. Editor, Rsch. Quart. Mem.: A.A.H.P.E.R.; Am. Coll. Sports Med.; A.A.A.S.; Rsch. Coun., A.A.H.P.E.R.; Kappa Delta Pi; Phi Epsilon Kappa. Contbr. to: Rsch. Quart.; Jour. Appl. Physiol.; Arch. of Phys. Med. and Rehab.; Jour. Schl. Health; Jour. of Sports Med. and Phys. Fitness; Safety Edn. Serv. Rec.; U.S.M.C., 1942-45. Areas of Rsch.: Exercise Physiology, Cardio-Respiratory Responses to Stress, Therapeutics and Rehab., Exercise for Cardiovascular Patients, Physical Conditioning.

MICHAELS, Gene Earl (Mr.), Rsch. Asst., Dept. Bact., Univ. of Ga., Athens, Ga. Home Add.: P. O. Box 294, N. Liberty, Ind. BACTERIOLOGY AND MYCOLOGY. b. South Bend, Ind., Apr. 18, 1929. s. Richard H. and Edith E. (Folk) M. Edn.: B.S., Univ. of Ga., Athens, Ga., 1958; M.S., ibid., 1961. Exp.: Rsch. Asst., Dept. Bact., Univ. of Ga., Athens, Ga., 1958—; Rsch. Asst., Dept. Plant Path., ibid., 1955-58. Mem.: Mycological Soc. of Am.; Soc. of Am. Bact.; Am. Inst. of Biol. Sci.; A.A.A.S.; Am. Forestry Assn.; Phi Sigma Soc.; Soc. of Sigma Xi. Contbr. to: S.A.B. Bacteriological Proc. Serv. Rec.: U.S.A.F. Gen. Int.: Presented Rsch. Papers at the A.I.B.S. Natl. Meeting, 1960, and the S.A.B. Meeting, 1960. Areas of Rsch.: Taxonomy of the Actinomycetales, Nocardia.

MICHAL, Maria E. (Miss), Sr. Editor, N. Y. Code Office, Natl. Assn. of Broadcasters, 1771 Sixth Ave., N. Y. 20, N. Y. Home Add.: 312 East 66th St., N. Y. 21, N. Y. EXPERIMENTAL AND PHYSIOLOGICAL PSYCHOLOGY. b. Brooklyn, N. Y., Aug. 16, 1916. d. Jaroslav A. and Marie A. (Wagner) Michal. Edn.: Attd., Med. Schl., Charles Univ., Prague, Czechoslovakia, 1936-39; B.A., Smith Coll., 1945; M.A., Columbia Univ., 1957. Exp.: Chemist Librn., Heyden Chem. Corp., Garfield, N. J., 1945-46; Rsch. Librn., Memorial Cancer Center, N. Y., 1946-47; Chem. and Med. Lit. Rsch., Greenwald & Mulinos Consultants, N. Y., 1948-53; Supvr., Rsch. Information, Philip Morris, Inc., N. Y., 1953-56; Mgr., ibid., 1957-62; Sr. Editor, N. Y. Code Office, Natl. Assn. of Broadcasters, 1962—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chemical Soc.; Lit. Div.; Acad. Polit. Sci.; Special Libs. Assn.; Grad. Fac. Alumni Columbia Univ.; Smith Coll. Alumnae Assn.; Woman's Auxiliary to Am. Soc. Mech. Engrs.; English Speaking Union. Areas of Rsch.: Tobacco smoking and health, Psychology of smoking.

MICHAL-SMITH, Harold I. (Ph.D.), Assoc. Prof. of Psychol., Dir., Div. of Psychol., Dept. of Peds., N. Y. Med. Coll., Flower and 5th Ave. Hosps., N.Y.C. Home Add.: 1230 Park Ave., N. Y. 28, N. Y. CLINICAL PSYCHOLOGY AND CHILD ANALYST. b. Plattsburg, N. Y., Sept. 22, 1919. s. Samuel E. and Alice E. (Michal) Smith. Edn.: B.S., Boston Univ., 1942; Psychol. Internship, Harvard Univ., 1943, '44; M.A., Columbia Univ., 1947; Professional Diploma, ibid., 1948; Ph.D., N. Y. Univ., 1950. m. Sylvia Lederman, 1952. Exp.: Assoc. Prof., Psychol., Associated Colls. of Upper N. Y., 1946-48; Instr., Princeton Univ., 1948-50; Chf. Psychol., N. J. State Dept. of Institutions and Agencies, 1950—; Prof. and Dir., Div. of Psychol., N. Y. Med. Coll., 1952—; Adjunct Prof., Grad. Schl., Long Island Univ., 1956—; Lectr., Tchrs. Coll., Columbia Univ., 1956—; Adjunct Prof., Grad. Schl., Yeshiva Univ., 1958—. Hon. Pos.: Special Consult., Natl. Insts. of Health, Natl. Inst. of Neurol. Diseases and Blindness; Mem., Professional Adv. Bd.,, United Cerebral Palsy Assn.; Internal. Secy., Internatl. Coun. on Social Disorders in Mental Subnormality. Mem.: Am. Assn. Ment. Def.; Am. Acad. Psychoanalysis; Sigma Xi; Am. Orthopsychiatric Assn.; Am. Psychol. Assn.; Am. Group Therapy Assn.; Soc. for Projective Techniques. Author: Pediatric Problems in Clinical Practice, 1954; The Mentally Retarded Patient, 1956; Management of the Handicapped Child, 1959; The Special Child, 1961. Contbr. to: Jour. Am. Ment. Def.; Jour. of Orthopsychiatry; Jour. Clin. Psychol.; N.E.A. Jour.; Pediatrics Clins. of N. Am.; Internatl. Group Psychotherapy Jour.; United Cerebral Palsy Assn. Areas of Rsch.: Mental Retardation, Brain-Injured Children, Children with Cerebral Palsy, Children with Blindness.



MICHIE, Richard Warren (Ph.D.), Asst. Prof., Dept. of Astronomy, Univ. of Calif., Berkeley, Calif. Home Add.: 44 Orchard Rd., Orinda, Calif. ASTROPHYSICS ASTRONOMY. b. Long Beach, Calif., July 23, 1931. s. Hecto and Lois Edith (Leyer) M. Edn., A.A., Glendale Coll., 1951; B.S., Calif. Inst. of Tech., 1957; Ph.D., Princeton Univ., 1960. m. Heid Buetschli, Sept. 25, 1959. c. David Ian; Gordon Linus. Exp.: Rsch. Astronomer, Univ. of Calif., Berkeley, Calif., 1960; Instr., ibid., 1960-61; Asst. Prof., ibid., 1961—. Mem.: Am. Astronomical Soc.; Fellow, Royal Astronomical Soc.; Am. Phys. Soc.; Sigma Xi; A.A.A.S. Contbr. to: Astrophysical Jour.; Phys. Rev. Letters. Serv. Rec.: U. S. Army, 1954-55. Gen. Int.: Obtained the Dynamical Evolution of Large Stellar Systems. Areas of Rsch.: Dynamics of Stellar System; Structure and Evolution; Physics of the Solar Corona and Interplanetary Medium; Interstellar Matter.

MIDDENDORF, Donald Floyd (Ph.D.), Poultry Rsch. Specialist, Central Soya Co., Decatur, Ind. Home Add.: 312 Winchester St., Decatur, Ind. BIOCHEMISTRY AND NUTRITION. b. Templeton, Ia., Feb. 26, 1931. s. Fred and Johanna (Sanders) M. Edn.: B.S., Ia. St. Univ., 1954; M.S., Univ. of Md., 1958; Ph.D., ibid., 1959. Exp.: Res. Asst., Univ. of Md., 1956-59; Poultry Res. Spec., Central Soya Co., Decatur, Ind., 1959—. Mem.: Poultry Sci. Assn.; World's Poultry Sci. Assn.; A.A.A.S.; Animal Nutrition Rsch. Council; Alpha Gamma Rho; Sigma Xi; Knights of Columbus. Serv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Replacement of Dietary Protein with Crystalline Amino Acids; General Nutrition Rsch. with Poultry.

MIELCAREK, J. Eugene (D.O.), Assoc. Prof. of Anat., Kans. City Coll. of Osteopathy and Surg., 2105 Independence Ave., Kans. City 24, Mo. Home Add.: Kernoodles Park, Hickman Mills, Mo. HISTOLOGY, FLUORESCENCE MICROSCOPY, PARASITOLOGY. b. Buffalo, N. Y., July 13, 1926. Edn.: B.S., Gannon Coll., 1947; M.S., Marquette Univ., 1948; D.O., Kans. City Coll. of Osteopathy and Surg., 1958. m. Jeanne Marie Rastatter, 1949. c.: William; Rosemarie; Mark; Paul. Exp.: Instr. of Biol., Gannon Coll., 1948-52; Asst. Prof. of Anat., Kans. City Coll. of Osteopathy and Surg., 1952-58; Assoc. Prof. of Anat., ibid., 1958—. Mem.: Am. Soc. of Parasitologists; A.A.A.S.; Am. Microscopic Soc.; Am. Osteopathic Assn.; Phi Sigma; Phi Sigma Gamma. Contbr. to: Jour. of Parasitol.; Trans. of Am. Microscopic Soc.; Jour. of Am. Osteopathic Assn.; Am. Biol. Tchr. Areas of Rsch.: Fluorescence Microscopy of Nerve Tissue, Correlation Between Basic and Clin. Rsch.

MIERA, Stephen Maurice II (Mr.), Planning Staff, Space Systems Ctr./Defense Systems, Lear Siegler, Inc., 3171 So. Bundy Dr., Santa Monica, Calif. Home Add.: 27086 Sunny Ridge Rd., Rolling Hills, Calif. ASTROBALLISTICS, ENGINEERING CYBERNETICS AND SYSTEMS ENGINEERING. b. Albuquerque, N. M., July 11, 1928. s. Stephen Maurice (dec.) and Carmen (Baca) M. Edn.: B.S., The Creighton Univ., 1951. m. Eileen Maxwell, July 1961. c.: Kim; David. Exp.: Physicist, Ballistic Rsch. Labs., White Sands Proving Ground, N. M., 1951-52; Supvry. Physicist, Plans and Progs. Office, Data Reduction and Field Measurements, ibid., 1952-59; Mem., Technical Staff, Space Technol. Labs., Systems Engrng. Div., Inglewood, Calif., 1959-60; Mem., Technical Staff, Space Systems Tech. Group, The Siegler Corp., Inglewood, Calif., 1960-62; Planning Staff, Ctr./Defense Systems, Lear Siegler, Inc., 1962—. Hon. Pos.: Assoc. Chmn., Civ. Adv. Comm. to Com. Gen. WSPG (4 yrs.); Bd. of Exam., U. S. Civ. Serv. Comm., 10th Reg., 1956-59; Calif. Schol. Fed. Mem.: RESA; Acad. of Polit. Sci.; Sr. Mem., Inst. of Radio Engrs.; Sr. Mem., Instr. Soc. of Am.; Calif. Acad. of Sci.; Am. Assn. for the Adv. of Science; Am. Rocket Soc. Serv. Rec.: U. S. Marine Corps, W. W. II. Areas of Rsch.: Advanced Aerospace Systems Planning, Systems Concepts and Mgmt., Operations Analysis, Flight Test Design, Range and Flight Safety, Flight Mechanics, Orbital and Re-entry Physics, Launch and Support Systems, Instrumentation and Data Processing Systems.

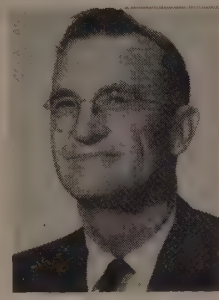
HICH, Enrico A. (M.D.), Assoc. Cancer Rsch. Scientist, Roswell rk Mem. inst., Buffalo, N. Y. Home Add.: 73 Larchmont Rd., ffalo 14, N. Y. CANCER CHEMOTHERAPY, PHARMACOLOGY. Fiume, Italy, Jan. 4, 1928. s. Milan and Rosina (Lenaz) M. n.: M.D., Univ. of Milan, Italy, 1951. m. R. M. Mustacchi, ot., 1954. c.: Sylvia. Exp.: Asst., Dept. Pharm., Univ. of lan, Italy, 1951-56; Rsch. Fellow, Sloan-Kettering inst., New rk, N. Y., 1952-54; Sr. Cancer Rsch. Scientist, Roswell Park em. Inst., Buffalo, N. Y., 1957-59; Assoc. Cancer Rsch. Scitist, ibid., 1959—. Mem.: Am. Soc. Pharm. and Expt. Therap.; n. Assn. Cancer Rsch.; N. Y. Acad. Sci.; A.A.A.S.; Soc. Expt. ol. and Med.; Italian Soc. Exptl. Biol.; Italian Assn. Cancer ch. Contbr. to: Cancer Rsch.; Jour. Pharmacol.; Proc. Soc. pti. Biol. and Med.; Nature; Arch. Inter. Pharm.; Bull. Ital. c. Exptl. Biol. Areas of Rsch.: Nutritional Approach to Cancer erapy, Tumor Host Relationship in Chemotherapy, Pre-Clinical armacology of Anti Cancer Drugs, Hypoglycemic Agents, Cholingic System.

LAM, Daniel Franklin, Jr. (M.D.), Physician, 27 103rd Ave., E., Bellevue, Wash. Home Add.: 2019 106th Ave., N.E., llevue, Wash. OPHTHALMOLOGY-PATHOLOGY. b. Paris, France, v. 21, 1926. s. Daniel Franklin and Mary Louise (Wilson) M. n.: B.S., Univ. of North Caroilna, 1945; M.D., Harvard Univ., 48. m. Barbara Pearson, 1954. c.: Franklin Wilson; Joan rolyn; Mary Pearson. Exp.: Physn., Bellevue, Wash., 1961—. em.: Am. Med. Assn.; Am. Acad. of Ophth. and Path. Contbr. : Am. Jour. of Ophthalmology. Serv. Rec.: U.S.N.R. Areas Rsch.: Ophthalmic Pathology.

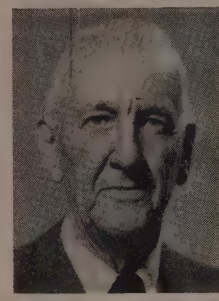
LCH, Robert Austin (M.D.), Asst. Prof. of Orthopaedic Surg., The hns Hopkins Univ., Balt., Md. Home Add.: 228 W. Lafayette e., Balt. 17, Md. ARTHRITIS; RESEARCH ORTHOPAEDIC SURGY. b. N. Y., May 24, 1929. s. Henry and Pearl (Salzrg) M. Edn.: A.B., Columbia Univ., 1949; M.D., ibid., 1953. Margot Wurtzburger, Aug. 14, 1960. Exp.: Rsch. Fellow, Med., an Kettering Inst., Mem. Cancer Ctr., N. Y., 1953-54; Surg. use Officer, Peter Bent Brigham Hosp., Boston, Mass., 1954-55; in. Assoc. in Surg., Natl. Cancer Inst., U. S. Pub. Hlth. Serv., 55-57; Asst. Res., Surgeon, Peter Bent Brigham Hosp., Boston, ass., 1957-58; Asst. Res., Johns Hopkins Hosp., 1958-60; Chf. s., ibid., 1960-61; Asst. Prof. of Orthopaedic Surg., The hns Hopkins Univ., 1961—. Hon. Pos.: Editorial Bd., "Arthritis d Rheumatism." Mem.: Am. Fed. for Clin. Rsch.; Am. Assn. Anatomists; Am. Assn. of Univ Profs.; Am. Soc. of Human enets; Am. Assn. of Milit. Surgs.; Am. Rheumatism Assn.; Bioem. Soc., London; Electron Microscope Soc. of Am.; Soc. for pti. Biol. and Med.; Royal Soc. of Med., London; Orthopaedic ch. Soc.; Am. Inst. of Biol. Scis.; Am. Leather Chemists Assn.; ternatl. Soc. of Leather Trades' Chemists. Author: Fracture rgery, A Textbook of Common Fractures, 1959. Contbr. to: thritis and Rheumatism; Metabolism; Acta Genet.; Am. Jour. man Genets.; Jour. Appl. Physiol.; Ann. N. Y. Acad. of Sci.; ur. Biol. Chem.; Arch. Biochem. Biophys.; Biochim. Biophys. cta; Jour. Mol. Biol.; Jour. Polymer Sci.; Jour. Am. Chem. c.; Nature; Sci.; Jour. Histo. Chem. Cytochem.; Proc. Soc. pti. Biol. and Med.; Clin. Orth.; Jour. Bone and Joint Surg.; ncer; Am. Jour. Surg. Areas of Rsch.: Biochemical Aspects Aging Processes.

ILES, James Franklin (Ph.D.), Assoc. Agricl. Econ., Agric. Econs. ept., Clemson Coll., Box 1041, Clemson, S. C. Home Add.: Meadowrose, Vineyard Rd., Clemson, S. C. DAIRY AND POULTRY MARKETING. b. Richland Co., S. C., June 10, 1913. s. James Riley and Fannie Bell (Creason) M. Edn.: A.B., Univ. of S. C., 1938; M.A., ibid., 1939; Ph.D., Cornell Univ., 1951. m. Mamie Rose Clawson of Rock Hill, S. C., Feb. 18, 1950. d. Mr. and Mrs. W. T. Clawson. Exp.: Soc. Sci. and Eng. Tchr., Parker H. S., Greenville, S. C., 1938-41; Dir., Reports and Accts., S. C. State Dept. of Edn., Columbia, 1941-42; Hd., Reports Sect., Agril. Mktg. Serv., U.S.D.A., Atlanta, Ga., 1942-43; Assoc. Agril. Economist, U.S.D.A., Ext. Serv., Wash., D. C., 1943-47; Assoc. Agril. Economist, Clemson Agril. Coll., 947—. Hon. Pos.: Dir., Pickens Co. Farm Bureau; Dir., Clemn Co. Commun. Coun.; Founder and Vice Chmn., Bd. of Dirs., ltn. for Histor. Restoration in Pendleton Area; Pres. and Dir., C. Hemerocallis Soc. and Mem., Am. Hemer. Soc.; Agric. ktg. Consult., 1961, to Ministry of Agric. in El Salvador, C. A.; res., S. C. Adult Edn. Assn.; Chmn., So. Regional Dairy Mktg. ech. Comm.; Chmn. Bd. of Trustees, Opportunity Schl. Mem.: he Southern Economic Assn.; Am. Farm Econs. Assn.; Phi Beta ppa; Phi Rho Pi; Kappa Phi Kappa; Pres., Sage Club; Clemson omm. Coun. Contbr. to: Feed Age; S. C. Exptl. Sta. Bulls. n.D. Dissertation: The Supply and Utilization of Fluid Milk in hree Major S. C. Milk Mkts., Charleston, Columbia, Greenville. ravel: Can.; Mex.; Bermuda; El Salvador; Puerto Rico; Guatemala; Honduras; Br. Guiana. Hobbies: Stamp Collector; Furniure Refinisher; Hybridizer of Hemerocallis. Listed in: Who's ho in the S. and S.W.; A.M.S. Areas of Rsch.: The Supply nd Distribution of Milk in Three Major Milk Markets; Dairy nd Poultry Marketing Fields.

MILES, Ivan Ernest (Ph.D.), Chief Agronomist, Medical Arts Bldg., Olin Mathieson Chemical Corp., Little Rock, Ark. Home Add.: Artesia Rd., Starkville, Miss. AGRONOMIST—SOIL FERTILITY. b. Collinsville, Miss., Oct. 3, 1904. s. Alex C. and Anne (Ethridge) M. Edn.: B.S., Miss. State Univ., 1930; M.S.A., Univ. of Fla., 1931; Ph.D., Univ. of Md., 1938. m. W. Corrine Howard, June, 1931. c.: Ivan E., Jr.; Nancy Ann. Exp: Hd. of Dept., Poly. Inst. of Puerto Rico, San German, P. R., 1931-33; Agronomist, U. S. D. A., Meridian, Miss., 1934-35; Agronomist, Miss. State Univ., State College, Miss., 1936-38; Dir. of Soil Testing, North Carolina Dept. of Agric., Raleigh, N. C., 1939-48; Hd. of Ext. Agron. and Dir. of Soil Testing, Miss. State Univ., State College, Miss., 1949-51; Tech. Consultant to the Philippines on the need, use, and value of fertilizer, U. S. Dept. of State, Manila, Philippines, 1952-53; Hd. of Ext. Agronomy and Dir. of Soil Testing, Miss. State Univ., State College, Miss., 1954; Agronomist, Olin Mathieson Chemical Corp., Jackson, Miss., Houston, Texas and Div. Office, Little Rock, Ark., 1955—. Mem.: Am. Soc. of Agron.; Soil Sci. Soc. of Am.; A.A.A.S.; Soil Conservation Soc. of Am.; Phi Kappa Tau; Alpha Zeta; Sigma Psi. Contbr. to: Diagnostic Technique; Pasture Book; Soil Sci. Proc.; Bull. Legumes as Soil Builders. Serv. Rec.: A.U.S. Areas of Rsch.: Soil Fertility and Soil Testing as a Guide in a Sound Fertilization Program.



MILES, Walter Richard (Ph.D.), Sci. Dir., U. S. Naval Med. Rsch. Lab., Box 100, USN Submarine Base, Groton, Conn. Home Add.: Harvard Terrace, Box 154, Glaes Ferry, Conn. SCIENCE ADMINISTRATION, PHYSIOLOGY, PSYCHOLOGY. b. Mar. 29, 1885, Silverleaf, N. D. s. Thomas Elwood and Sarah Caroline (White) M. Edn.: B.S., George Fox Coll., 1906; A.B., Earlham Coll., 1908; M.A., Ia. State Univ., 1910. Hon. Deg.: M.A., Yale Univ., 1931; Sc.D., Earlham Coll., 1952; Ph.D., Ia. State Univ., 1913. m. Elizabeth M. Kirk, Sept. 1, 1908 (dec. July 2, 1925); 2nd m. Dr. Catharine Morris Cox, Sept. 9, 1927. c.: Thomas Kirk; Mrs. F. L. Capers; Mrs. R. D. McClelland; Mrs. E. O. Jones III; Elwood Morris (dec.). Exp.: Instr., Psychol., Penn Coll., 1908-10; Asst. and Fellow, Ia. State Univ., 1911-13; Assoc. Prof. Psychol., Wesleyan Univ., 1913-14; Rsch. Psychologist, Carnegie Nutrition Lab., Boston, Mass., 1914-22; Prof. Exptr. Psychol., Stanford Univ., 1922-32; Prof. Psychol., Yale Univ., 1931-53; Emeritus Prof., ibid., 1953; Prof. Psychol., Istanbul Univ., 1954-57; Sci. Dir., USN Med. Rsch. Lab., Submarine Base, Groton, Conn., 1957—. Mem.: Natl. Acad. of Sci.; Am. Philos. Soc.; Am. Optical Soc.; Aeromed. Soc.; Sigma Xi; Tau Kappa Alpha. Author: Human Vitality and Efficiency Under Prolonged Restricted Diet, co-author, 1919; Alcohol and Human Efficiency, 1924; Psychological Studies of Human Variability, 1936; Seashore Commemorative Studies in Psychology, 1928, co-editor. Gen. Int.: Am. Psychol. Fdtn. Gold Medal Award, 1962. Areas of Rsch.: Visual Sci., Psychol. and Psychological-Med., Human Functions and Performance in Relation to Aging, Military Psychology; Ocular Dominance in Man; Age and Human Ability; Training, Practice, and Mental Longevity; Reaction Time of the Eye; Eye Movements at the Onset of Sleep; Night Vision; Psychological Aspects of Military Aviation.



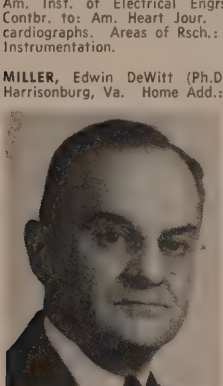
MILLER, A. Kathrine (Ph.D.), Rsch. Assoc., Rsch. Div., Merck-Sharp and Dohme Rsch. Labs., Div. of Merck and Co., Inc., Rahway, N. J. BACTERIOLOGY. b. E. Orange, N. J., June 8, 1913. d. William B. and Anna S. (Hartman) M. Edn.: B.A., Moravian Coll. for Women, 1934; M.S., Tchrs. Coll., Columbia Univ., 1936; Ph.D., Cornell Univ., 1942. Exp.: Asst. Prof. of Biol., Moravian Coll. for Women, 1936-41; Temp. Instr. of Biol., Wells Coll., 1942-43; Rsch. Assoc., Sharp and Dohme, Inc., 1943-53; Sharp and Dohme, Div. of Merck and Co., Inc., 1953-56; Merck-Sharp and Dohme Rsch. Labs., Div. of Merck and Co., Inc., Rahway, N. J., 1956—. Mem.: Soc. Am. Bacteriol.; Theobald Smith Soc.; Soc. Gen. Microbiol.; N. Y. Acad. of Sci.; Am. Acad. Micro.; A.A.A.S.; Soc. of Indus. Microbiol.; Phi Kappa Phi; Sigma Xi; Sigma Delta Epsilon. Contbr. to: Proc. Soc. of Exptl. Biol. and Med.; Jour. Am. Pharm. Assn.; Am. Jour. Clin. Pathol.; North Am. Vet.; Am. Jour. of Physiol.; Jour.

Lab. and Clin. Med.; Jour. Am. Vet. Med. Special Int.: Bacterimetric Evaluations; Exptl. Chemotherapy.

MILLER, Arnold Irwin (Mr.), Tchr. Biol. and Chemistry, Thomas Jefferson H. S., Brooklyn 7, N. Y. Home Add.: 1916 Ave. K, Brooklyn 30, N. Y. TEACHING OF BIOLOGY AND CHEMISTRY, MICRO BIOLOGY. b. Manhattan, Nov. 6, 1936. s. Benjamin A. and Gertrude (Blackman) M. Edn.: B.S., Brooklyn Coll., 1958; M.S., ibid., 1962. m. Janet Brown, June 13, 1959. Exp.: Tchr. of Biology and Chemistry, Thomas Jefferson H. S., Brooklyn 7, N. Y., 1960—; Rsch. in Microbiol., St. John's Univ., Jamaica, N. Y., 1960. Mem.: Natl. Sci. Tchr. Assn.; A.A.A.S.; N. Y. Acad. of Sci.; Natl. Assn. of Biol. Tchrs.; N. Y. Assn. of Tchrs. of Biological Sci.; Soc. of Biol. and Med. Contbr. to: Mycologica; Sci.; Jour. of the Am. Pharmaceutical Assn.; Sci. Tchr.; High Points; Am. Biol. Tchr. Areas of Rsch.: Microbiology, Bacteriology, Mycology, Effect of Crude Drugs on the Cultivation of Fungi.

MILLER, Arthur (Sc.D.), Dir. of Rsch., Sanborn Co., Waltham, Mass. Home Add.: 91 Walnut Hill Rd., Brookline 67, Mass. ELECTRONIC INSTRUMENTATION. b. Cambridge, Mass., July 25, 1912. s. Hyman and Sophia (Aronow) M. Edn.: B.S, M.I.T., 1934; Sc.D., ibid., 1938. m. Rose Shechet, June 7, 1942 c.: Sonna Lee; Dianne Ellen; Neil Alan. Exp.: Chf. Electrical Engr., Sanborn Co., 1936-58; Dir. of Rsch., ibid., 1958—. Hon. Pos.: Chmn., Boston Sect., Professional Group on Biomedical Electronics of Inst. of Radio Engr. Mem.: A.A.A.S.; Inst. of Radio Engrs.; Am. Inst. of Electrical Engrs.; Sigma Xi; Boston Stein Club. Contbr. to: Am. Heart Jour. Gen. Int.: Development of Electrocardiographs. Areas of Rsch.: Electronic Measuring and Recording Instrumentation.

MILLER, Edwin DeWitt (Ph.D.), Prof. of Biol., Madison Coll., Harrisonburg, Va. Home Add.: 200 Monument Ave., Harrisonburg, Va. ZOOLOGY. b. Bridgewater, Va., Oct. 17, 1891. s. Eugene Xerxes and Elizabeth Elberta (Bowman) M. Edn.: B.E., Bridgewater Coll., 1914; A.B., ibid., 1920; M.A., Univ. of Va., 1930; Ph.D., ibid., 1935. m. Alice McKee, Mar. 1942. Exp.: Instr., Sec. Schls., W. Va., 1922-29; Instr., Univ. of Va., Charlottesville, 1930-35; Rsch. Fellow, Schl. of Med., Univ. of Va., ibid., 1936-39; Prof., Biol., Madison Coll., 1939—. Mem.: A.A.A.S.; Sigma Xi; Am. Soc. of Zoologists; Soc. of So. Biols.; Va. Acad. of Sci.; Assn. Mem. Natural Hist. Museum; Am. Instit. of Biol. Scis.; Izaak Walton League of Am. Contbr. to: Zoologischer Anzeiger; Stain Technology; Biol. Bull.; Jour. of Morphol.; Sci. Serv. Rec.: U. S. A.E.F., 1917-19. Areas of Rsch.: Cytoplasmic Fragments; Stain Technique; Blood and Endocrines.



MILLER, E. Willard (Ph.D.), Hd., Dept. of Geog. and Prof. of Geog., Pa. State Univ., Univ. Park, Pa. Home Add.: 200 E. Irvin Ave., Sta. Coll., Pa. GEOGRAPHY. b. Turkey City, Pa., May 17, 1915. s. Archie H. and Tessie B. (Master) M. Edn.: B.S., Clarion Sta. Coll., 1937; M.A., Univ. of Nebr., 1939; Ph.D., Ohio State Univ., 1942. m. Ruby M. Skinner of Kittanning, Pa., 1941. d. Mr. and Mrs. George Skinner. Exp.: Instr., Ohio St. Univ., 1941-43; Asst. Prof., West. Reserve Univ., 1943-44; Geographer, Office of Strategic Services, 1944-45; Hd., Dept. of Geography, Pa. St. Univ., Univ. Park, Pa., 1945—; Assoc. Prof. of Geography, ibid., 1945-49; Prof. of Geog., ibid., 1949—. Hon. Pos.: Secy., Am. Soc. for Profl. Geographers, 1945-48; Pres., ibid., 1948-49; Geographic Editor to Thomas Y. Crowell Co., 1958—; Geog. Advisor to Funk and Wagnalls Encycl., 1958—; Pres., The Pa. State Univ. Chapter, A.A.U.P., 1957-59; Mem., Bd. of Dirs., Pa. State Univ. Press, 1956-59; Chmn., Bd. of Dirs., Soc. Sci. Rsch. Center, Pa. State Univ. 1958-59; Pres., Pa. Council for Geog. Edn., 1962. Mem.: Assn. Am. Geographers; Fellow, A.A.A.S.; Fellow, Am. Geographical Soc.; Am. Geophysical Union; Sigma Xi; Phi Gamma Mu; Fellow, Natl. Coun. for Geographic Edn.; Fellow, Internatl. Instit. of Arts and Letters. Author: Careers in Geography, 1948, Rev., 1955; Mineral Fuels in Conservation of Natural Resources, 1950, Rev., 1958; Recent Trends in the Pattern of European Mfg. In Outside Readings in Geog., 1955; Global Geography, Editor, 1957. Co-author: The World's Nations, An Economic and Regional Geography, 1958; A Geograp of Mfg., 1962. Contbr. to: Jour. Geog. Producers Monthl Annals of Assn. Am. Geographers; Econ. Geog. Scientific Monthl etc. Ph.D. Dissertation: Econ. Geog. of the Bradford Oil Regi (Pa.). Travel: Western Europe; Alaska; Mexico. Gen. Int.: R H. Whitbeck Award for Outstanding article on Econ. Geog. in Jou of Geog. Hobby: Photography. Listed in: W. W. in Am.; A.M.S W. W. in the East. Areas of Rsch.: Mineral Geography; Geogr phy of Manufacturing.

MILLER, Floyd Glenn (Ph.D.), Techn. Devel. Mgr., Minn. Mini and Mfg. Co.-Natl., 6850 S. Harlem Ave., Bedford Park, I Home Add.: 5701 N. Ke stone Ave., Chicago 46, Ill. I DUSTRIAL—MECHANICAL ENG NEERING. b. Chicago, Ill., M 25, 1935. s. Harvey R. and Ali K. (Koch) M. Edn.: B.S., Univ. Ill., 1957; Ph.D., ibid., 196 Exp.: Operations Analyst, Telety Corp., Chicago, Ill., Summer, 195 Plant Engr., ibid., Summer, 195 Design Engr., Admiral Corp., Chg Ill., Summer, 1958; Mech. Eng Cent. Scientific Co., Chgo., I Summer, 1959; Rsch. Stat., Un of Ill., Urbana, Ill., Summer, 196 Advanced Mfg. Engr., Bell & Ho ell Co., Chgo., Ill., 1960-6 Techn. Devel. Mgr., Minn. Mini and Mfg. Co.-Natl., 1962—. Ho Pos.: Charter Vice Pres. of Un of Ill. Student Indust. Engrn Soc.; Secy. of Student A.S.M.E. Mem.: A.S.M.E.; A.I.I.E A.A.A.S.; A.S.T.M.E. Author: Predetermined Standard Positi Time Values for Continuous Moving Targets, 1962. Areas Rsch.: Operations Research; Work Measurement; Labor a Industrial Relations; Collective Bargaining; Statistical Researc Manufacturing Engineering; Admn. Rsch. and Devel.

MILLER, Floyd Laverne (Ph.D.), Deputy, Esso Research and E gineering Company, P. O. Box 111, Linden, N. J. Home Ad Van Beuren Rd., Morristown, N. J. PHYSICAL CHEMISTRY. Arbela, Mich., April 12, 1905. s. Fred and Laura (Baldwin) Edn.: B.A., Eastern Mich. Univ., 1926; M.S., Univ. of Mic 1927; Ph.D., ibid., 1929. m. Ruth Pound, June, 1926. c.: Ma lyn Ruth (dec.); Lois Marjean; Leighton Pound. Exp.: Inst Chem., Eastern Mich. Univ., Ypsilanti, Mich., 1926-27; API F lowship, American Petroleum Inst., New York 20, N. Y., 1927-2 Chem. Fdn. Rsch. Grant, Univ. of Mich., Ann Arbor, Mich., 192 30; Esso Rsch. and Engr., Linden, N. J., 1930-31; Hd. Che Rsch. Group, ibid., 1931-33; Hd., Lubricants Sect., ibid., 193 37; Asst. Dir., Esso Lab., Rsch. Div., ibid., 1937-45; Assoc. Di ibid., 1945-47; Dir., ibid., 1947-53; Mgr. Contract, Legal a Patent Dept., ibid., 1953-55; Deputy Coord., ibid., 1955-5 Coordinator, ibid., 1957-60; Deputy, ibid., 1960—. Hon. Po Past Vice Chmn., Fuels and Lubricants Comm. of Metro Sec Past Chmn., Comm. on Chem. of Conf. on Elec. Insulation, Na Rsch. Coun.; Past Vice Chmn., Rsch. and Devel. Bd., Dept. Defense. Mem.: Armed Forces Chem. Assn.; Am. Ord. Assn A.P.I.; Am. Chem. Soc.; Soc. of Automotive Engrs.; A.A.A.S Sigma Xi; Phi Lambda Upsilon; Kappa Delta Pi; Gamma Alph Contbr. to: S.A.E. Jour.; Ind. Engr. Chem.

MILLER, G. H. (Ph.D.), Prof. of Maths. and Edn., Parsons Col Fairfield, Ia. Home Add.: 801 N. Court, Fairfield, Ia. MATH MATICS EDUCATION. b. Phil Pa., Mar. 2, 1924. s. Samu and Lena (Manus) M. Edn.: B.A Pomona Coll., 1949; M.Edn., Te ple Univ., 1951; Ph.D., Univ. Sou. Calif., 1957. m. Mary Heat Jan., 1961. c.: Byron. Exp Instr., L. A. Schl. Dist., Cali 1953-57; Assoc. Prof., Western I Univ., Macomb, Ill., 1957-60; Pro of Math., Sta. Tchrs. Coll. at To son, Towson, Md., 1960-61; Pro Parsons Coll., 1961—. Hon. Pos Vice Pres. and Acting Pres. of P L. A. Maths. Tchrs. Assn., In 1951-52. Mem.: N.C.T.M.; M.A.A Am. Assn. for the Adv. of Sc Am. Assn. Univ. Profs.; C.A.S.T.M Natl. Edn. Assn.; Chi Beta Ph Author: Basic Concepts of Arit metic; Algebra by A. N. Barsuko Translation. Contbr. to: Arith. Tchr.; Schl. Sci. and Maths.; Edn. Serv. Rec.: U. S. Army Air Force, 1943-46. Areas Rsch.: Retention in Mathematics, Comparative Mathematics Educ tion in Nations all over the World with a Specialization Russian Mathematics Education of all Levels; Studies in Deficie cies in Arithmetic and Algebra, Long Range Retention in Arit metic.

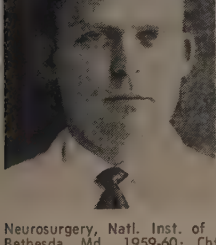
MILLER, Grace A. (Ph.D.), Assoc. Prof., Inst. Admin. and Rsc Mich. Sta. Univ., E. Lansing, Mich. Home Add.: 321 Bailey S E. Lansing, Mich. FOOD RESEARCH (EMPHASIS ON QUANTI FOOD SERVICE FOR MASS FEEDING UNITS. b. Cleveland, Oh Aug. 18, 1915. d. Victor E. and Ida M. (Hill) M. Edn.: B Simmons Coll., 1937; M.S., Mich. Sta. Univ., 1955; Ph.D., Ibi 1959. Exp.: Food Supvr., Colonnade Rsch. Co., Cleveland, Oh 1940-45; Cafe Dir., Inst. Admin., Univ. of Vt., Burlington,

945-52; Instr., Inst. Admin., Univ. of Ill., Urbana, 1953-54; ssoc. Prof., Inst. Admin. and Rsch., Mich. Sta. Univ., 1955—. Mem.: Sigma Xi; Am. Dietetic Assn.; Am. Home Econ. Assn.; mst. of Food Technology; Omicron Nu; Sigma Delta Epsilon. Contbr. to: Jour. of Food Sci.; Jour. of Am. Diet. Assn. Areas of Rsch.: Quantity Food Research, Currently Engaged in Long Term Project Concerning Cooking Methods and Palatability Factors Relative to Dry Heat Roasting of Beef Round; For Institutional Mass Feeding.

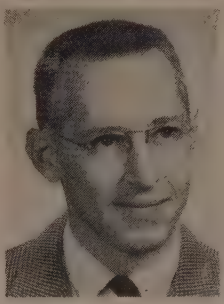
MILLER, George Andrew (M.D.), Radiologist, Carle Hosp. Clinic, Urbana, Ill. Home Add.: 407 W. Indiana, Urbana, Ill. RADIOLOGIST. b. Madison, Wis., Sept. 4, 1920. s. Sidney Lincoln and Ada Leucretia (Richardson) M. Edn.: B.A., St. Univ. of Ia., 1942; M.D., ibid., 1944. m. Ruth Eleanor Smith, Sept. 28, 1944. c. Barbara Diane; George Andrew, Jr. Exp.: Radiologist, Carle Hosp. Clinic and Meml. Hosp., Urbana, Ill., 1950—. Hon. Pos.: Secy.-Treas., Ill. Radiological Soc.; Fellow, Am. Coll. of Radiology. Mem.: A.M.A.; Am. Coll. of Radiology; The Radiological Soc. of N. Am.; Am. Roentgen Ray Soc.; Soc. of Nuclear Med.; Phi Gamma Delta; Phi Beta Kappa; Rotary. Contbr. to: Radiology Jour.; Jour. A.M.A.; Am. Jour. of Gastroenterology; Jour. Dis. Children; Am. Jour. Roentgenol. and Rad. Therapy. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Radiology.

MILLER, Howard Charles (Ph.D.), Assoc. Prof., St. Univ. of N. Y. Coll. of Forestry, Syracuse, N. Y. Home Add.: 242 Westminster Ave., Syracuse 10, N. Y. ECONOMIC ENTOMOLOGY AND FOREST PATHOLOGY. b. Syracuse, N. Y., Feb. 6, 1917. s. Jacob and Alice O. (Lueck) M. Edn.: B.S., N. Y. St. Coll. of Forestry, 1941; Ph.D., Cornell Univ., 1951. m. Mary Virginia Howse, Sept. 12, 1953. c.: Sarah Putnam Tyler; Howard Charles, Jr. Exp.: Entomologist, U. S. Dept. of Agri., Forest Insect Div., 1946; Rsch. Asst., Dept. Entomology, Cornell Univ., 1948-50; Instr., St. Univ. of N. Y. Coll. of Forestry, 1950-53; Asst. Prof., ibid., 1953-59; Assoc. Prof., ibid., 1959—. Hon. Pos.: Comm. of Insects and Disease Soc. of Am. Foresters, N. Y. Sec. Mem.: A.A.A.S.; Entomol. Soc. of Am.; Soc. of Am. Foresters; Lepidopterists Soc. Contbr. to: Jour. Econ. Entomol.; Jour. of Allergy. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Forest Insects and Disease Especially Dutch Elm Disease; Rsch. General Fields Biological Sciences (with Federal and State Agencies); Wildlife Parasites; Insects as Cause of Human Allergy (with College of Medicine Cooperators).

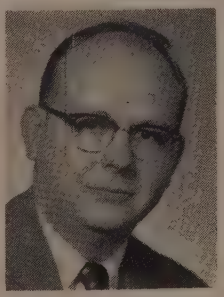
MILLER, Joseph Hardy (M.D.), Neurosurgeon, Natl. Naval Med. Center, 220 S. Claybrook, Memphis, Tenn. Home Add.: 601 West Drive, Memphis, Tenn. NEUROSURGERY, NEUROPHYSIOLOGY, BRAIN RECONSTRUCTION. b. Thrift, Tex., Apr. 9, 1930. s. Joseph Hardy, Sr. and Leta Elsie (Caddell) M. Edn.: A.A., Mars Hill Coll., 1949; A.B., Mercer Univ., 1951; M.D., Med. Coll. of Ga., 1955. m. Netta Sue Caudill, Mar. 25, 1950. c.: Leta Fern; Joseph Hardy; Paul Caudill; David Dwight; Netta Sue. Exp.: Surgical Intern, Baptist Meml. Hosp., Memphis, Tenn., 1955-56; Neurosurgical Resident, City of Memphis Hosps. and the Univ. of Tenn. Coll. of Med., John Gaston Hosp., Baptist Meml. Hosp., Memphis, Tenn., 1956-59; Rsch. Asst., Univ. of Tenn. Coll. of Med., 1957-59; Clin. Assoc. in Neurophysiol. and Neurosurgery, Natl. Inst. of Neurological Diseases and Blindness, Bethesda, Md., 1959-60; Chf., Neurosurgery, Natl. Naval Med. Ctr., 1960-61. Mem.: Assn. of Milit. Surgeons; Soc. of Milit. Neurological Surgeons of the U. S.; Cong. of Neurological Surgs.; Candidate of Am. Coll. of Surgs.; A.A.A.S.; Theta Kappa Psi; On Neurosug. Staff of Methodist Hosp., Bapt. Mmel. Hosp., St. Joseph Hosp., LeBonheur Childrens Hosp. in Memphis, Tenn. and Crittenden Hosp., W. Memphis, Ark.; Consultant to U. S. Naval Hosp., U. S. Publ. Hlth. Serv. Hosp., and W. Tenn. Tuberculosis Hosp., Memphis, Tenn.; A.M.A.; Sigma Xi. Contbr. to: Jour. of Neurosurgery; Sou. Med. Jour.; The Am. Surg.; Jour. of Neuropathol. and Exptl. Neurol.; Memphis Med. Jour. Serv. Rec.: U.S.P.H.S., 1959-60; U. S. Navy, M.C., 1960—. Gen. Int.: Medical Essay Award Southeastern Surgical Cong., 1958. Areas of Rsch.: Neurosurgery, Neuroanatomy, Neurophysiology, Tissue Culture, Cerebral Circulation; Old and New Testament, Anatomical and Religious Concepts of Evolution.



MILLER, J(ames) Robert (Ph.D.), Prof. ond Chmn. of Chem. Dept., Hartwick Coll., Oneonta, N. Y. Home Add.: R.D.I., Maryland, N. Y. ORGANIC CHEMISTRY. b. Milford, Nebr., July 2, 1922. s. Chris J. and Ruth (McClure) M. Edn.: B.S., Ia. Sta. Coll., 1943; Ph.D., Syracuse Univ., 1950. m. Jean T. MacArthur, 1945. c.: Robert; Susan; David; Stephen; Sarah. Exp.: Rsch. Asst. and Jr. Chemist, Parke, Davis and Co., Detroit, Mich., 1943-47; Bristol Labs. Rsch. Fellow, Syracuse Univ., N. Y., 1948 and 1949; Asst. Prof., Chem. Dept., Hartwick Coll., 1950-51; Assoc. Prof., 1952-53; Prof., 54—; Chmn. Dept., 1952—; Consultant, Fox Hosp. Lab., Oneonta, N. Y., 1958 and 1959. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Div. Chem. Edn. of A.C.S.; Phi Kappa Phi; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Synthetic Organic Medicinals and Heterocyclic Compounds.

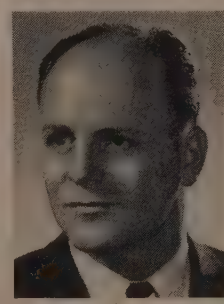


MILLER, Kenneth E. (Mr.), Asst. Prof. of Chem., Marquette Univ., Milwaukee 3, Wis. Home Add.: 2407 S. 58th St., West Allis 19, Wis. ORGANIC CHEMISTRY. b. Racine, Wis., Jan. 5, 1930. s. Frank G. and Estelle (Bryck) M. Edn.: B.S., Marquette Univ., 1951; M.S., ibid., 1953. Exp.: Instr., Marquette Univ., 1953-54; Organic Rsch. Chemist, S. C. Johnson and Sons, Inc., Racine, Wis., 1954-56; Lectr., Marquette Univ., 1954-56; Instr., ibid., 1956-60; Asst. Prof., ibid., 1960—. Hon. Pos.: Chmn. of Judging Comm. of Southeastern Wis. Sci. Fair for 1962; Chmn. of Chem. Edn. Comm. of Milwaukee Sect. of the ACS, 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; A.A.U.P.; Wis. Acad. of Sci., Arts and Letters; Sigma Gamma Chi. Author: Supplementary Manual for Organic Chemistry, 1958, 1961. Contbr. to: Jour. of Organic Chem. Areas of Rsch.: Preparation of Long-chained Compounds Using Chain-extenders; The Use of Thiophene As a Chain-Extender; The Substitution of Bithienyl for Thiophene in Chain-extending Reactions; The Conversion of Diols to Dibasic Acids Via Nitrile Hydrolysis; The Benzoin Condensation Involving Aldehydes of the Heterocyclic Series.



MILLER, Lois Harvey (Mrs.), Tchr., Home Econs. and Family Living, Edison H. Schl., 22nd and Monroe, N. E., Mpls., Minn. Home Add.: 516 14th Ave., S.E., Mpls. 14, Minn. HOME ECONOMICS AND FAMILY LIFE. b. St. Paul, Minn., July 23, 1906. d. Ernest Leroy Harvey and Elaine (Lees) H. Edn.: B.S., Univ. of Minn., 1929; M.S., ibid., 1942. m. Dr. Elmer S. Miller, June 3, 1933 (dec., 1941). c.: Jean Elaine; James Leroy. Exp.: Instr., Home Econs., Faribault, Minn. H. Schl., Faribault, Minn., 1929-33; Instr., Home Econs., Jamestown H. Schl., Jamestown, Minn., 1939-42; Instr., Home Econs., Edison H. Schl., 1942—. Hon. Pos.: Chmn. of Minn. H. E. Assn. Conf. Mem.: Omicron Nu; Phi Upsilon Omicron; Mortar Bd. Kappa Delta. Contbr. to: Pract. Home Econs. Areas of Rsch.: Family Life.

MILLER, Maynard Malcolm (Ph.D.), Assoc. Prof. of Geol. and Dir., Glaciological Instit., Mich. State Univ., E. Lansing, Mich. Home Add.: 363 Univ. Dr., E. Lansing, Mich. GEOLOGY; GEOMORPHOLOGY; GLACIOLOGY; PHOTOGRAMMETRY AND AERO-GEOLOGY: SELECTED SPECIALTY IN ARCTIC AND ALPINE GEOMORPHOLOGY, AND GLACIOLOGY. b. Seattle, Wash., Jan. 23, 1921. s. Joseph Anthony and Juanita (Queena) Davison. Edn.: S.B., Geol., Harvard Univ., 1943; M.A., Columbia Univ., 1948; Ph.D., Univ. of Cambridge, England, 1956. m. Joan Walsh, Sept. 15, 1951. c.: Ross McCord; Lance Davison. Exp.: Asst. Prof., Princeton Univ., Princeton, N. J., 1945-46; Geologist, Gulf Oil Corp., Cuba, 1947; Dir., Juneau Icefield Rsch. Program, Alaska, 1946-62; Rsch. Assoc., Lamont Geol. Observ., N. Y., 1954-57; Exec. Dir., Found. for Glacier Rsch., Seattle, Wash., 1955—; Sr. Scientist, Dept. of Geol., Columbia Univ., N. Y., 1957-59; Consultant, U. S. Air Force, and Boeing Airplane Co., Seattle, Wash., 1959-61; Consultant, State of Alaska, and U. S. Forest Service, 1961—; Dir., Glaciol. Instit., Mich. State Univ., 1961—; Assoc. Prof., ibid., 1961—; Geologist, Am. Mt. Everest Expedition, 1963. Hon. Pos.: National Lecturer, Am. Soc. of



Mechanical Engrs., 1960-61; Natl. Lectr., Eng. Speaking Union, 1958-62; Gov. Comm., British Glaciol. Soc., 1953-55; Chmn., Safety Com., Am. Alpine Club, 1948-52. Mem.: Geol. Soc. of Am.; Am. Geophys. Union; Am. Meteorl. Soc.; British Glaciol. Soc.; Royal Geograph. Soc.; Arctic Instit. of N. Am.; Am. Soc. of Photogrammetry; Found. for Glacier Rsch.; Phi Beta Kappa; Sigma Xi; Am. Alpine Club; British Alpine Club; Explorers Club; Naval Rsch. Assn.; Hon. Mem., Cambridge Univ. Mtng. Club; Medalist; Adventurers Club. Author: Juneau Icefield Rsch. Project Monograph Reports, 1950 to 1954; High Ice, 1963. Contbr. to: Jour. of Geol.; Jour. of Glaciol.; Acta Geographica; Polar Record; Procs. of Internatl. Union of Geodesy and Geophysics; Rsch. Revs.; Geographical Rev.; Natl. Geographic Mag.; Bull. Geol. Soc. of Am.; Natural History; Weatherwise; Sci. World; Procs., Internatl. Symposia on Arctic Geol. Serv. Rec.: U. S. Naval Reserve, 1939—; currently Commander, U.S.N.R.; Active Duty, 1943-45. Gen. Int.: Awarded Leader of Tomorrow, Medal by Seattle Chamber of Commerce, 1953; Received Distinguished Service Award and Named by U. S. Junior Chamber of Commerce as one of Ams. Ten Outstanding Young Men of the Year, 1954. Areas of Rsch.: Glacier Mechanics, Regimen, and Erosion; World Wide Glacio-Climatological Relationships; Aspects of Polar Land and Sea Ice Fluctuation; Desert-Arctic Geomorphology, and Pleistocene Geology.

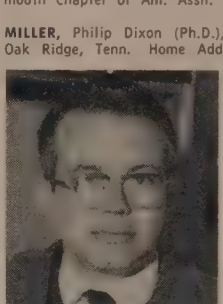
MILLER, Merle Vincent (Mr.), Supv. Design Engr., Flt. Test Instr., Vertol Div. (2c), The Boeing Co., Morton, Pa. Home Add.: 7414 Elizabeth Rd., Melrose Park 26, Pa. ELECTRICAL ENGINEERING. b. Philadelphia, Pa., Feb. 2, 1908. s. Edward Tatnall and Mabelle Claire (Sylvester) M. Edn.: M.E., Drexel Inst. of Tech., 1933. m. Helen Carrie Linck, June, 1932. c.: Robert Harry; Norman Edward. Exp.: Elec. Engr., Phila. Naval Shipyard, Phila., Pa., 1933-51; Elec. Engr., Wickes Engr. and Constr., Camden, N. J., 1951-52; Elect. Engr., Philco Corp., Phila., Pa., 1952-56; Elec. Engr., Anderson Nichols and Co., Phila., Pa., 1956-59; Elec. Engr., Philco Corp., Phila., Pa., 1959-60; Elec. Engr., Teledynamics Div., Am. Bosch Arma Corp., Phila., Pa., 1960-61; Elec. Engr., The Franklin Co., Phila., Pa., 1961; Systems Engr., Adler Electronics, Inc., New Rochelle, N. Y., 1961-62; Supv. Engr., Vertol Div., Morton, Pa., 1962—. Mem.: A.A.A.S.; A.I.E.E.; N.S.P.E. Serv. Rec.: A.U.S., 1942-46.

MILLER, Myer (Mr.), Lab. Dir., Physicians Lab. Service, 18 Orchard St., Middletown, N. Y. Home Add.: 17 Sunnyside Ave., Middletown, N. Y. MEDICAL LABORATORY (HAEMATOLOGY). b. Philadelphia, Pa., Dec. 31, 1904. s. Joseph and Rebecca (Green) M. Edn.: Ext. Courses at Columbia Univ. and Orange Co. Comm. Coll. m. Viola Swain Grossman, Nov. 22, 1946. c.: Meredith Jean; Minerva. Exp.: Ambulance Serv., Bellevue Hosp., N. Y. C., 1935-42; Lab. Dir., Middletown Sanitarium and Hosp., Middletown, N. Y., 1946-59; Lab. Dir. and Owner, Physicians Lab. Serv., Middletown, N. Y., 1949—. Hon. Pos.: Mem., Comm. of Bd. of Examiners and Certifiers in Clin. Lab. Supvn., 1958-60; Treas., Eastern Region Am. Assn. of Bioanalysts, 1956—. Mem.: A.A.A.S.; Am. Med. Technologists; Fellow, Am. Coll. of Med. Technologists; Diplomate, Am. Bd. of Bioanalysts; Am. Radiography Technologists; N. Y. State Soc. of Bioanalysts; N. Y. State Assn. of Clin. Labs.; N. Y. State Registry of Medical Tech.; A.I.B.S.; Masons; C. of C. Serv. Rec.: U .S. Army, 1942-45. Areas of Rsch.: Haematology.

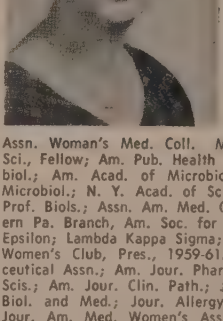
MILLER, Myrl Eugene (Ph.D.), Dir. Mfg. Serv., Organics, Olin Mathieson Chemical Corp., E. Alton, Ill. Home Add.: #7 Frontenac Pl., Godfrey, Ill. CHEMICAL ENGINEERING. b. Archbold, Ohio, Nov. 13, 1921. s. S. L. Miller. Edn.: B.Ch. Engr., Ohio State Univ., 1943; M.S., ibid., 1944; Ph.D., ibid., 1948. m. Ruth Morgan, Dec. 21, 1946. c.: Ken A. Exp.: Rsch. Asst., Southern Acid and Sulphur, Columbus, Ohio, 1945-46; Rsch. Assoc., ibid., 1946-50; Asst. Mgr.-Engr. Devel., Olin Mathieson Chem. Corp., Niagara Falls, N. Y., 1950-51; Asst. to Dir. of Houston Oper., ibid., Houston, Tex., 1951; Prod. Supt., ibid., 1951-52; Asst. Operations Mgr., ibid., 1952-53; Mgr. Process Dev., ibid., Baltimore, Md., 1953-54; Mgr. Opers. Insecticides and E. Fertilizer, ibid., 1954-56; Asst. to Vice-Pres., ibid., Niagara Falls, N. Y., 1956; Mgr. C.O.P. Operations, ibid., 1956-59; Mgr. Prod. Engrng., ibid., E. Alton, Ill., 1959-61; Dir. Mfg. Serv., Organics, 1961—. Mem.: A.I.Ch.E.; A.C.S.; A.O.A.C.; A.O.A.; A.S.T.M.; P.L.U.; Gamma Alpha; Sigma Xi; Mason; A.A.A.S.; Rotary; P.T.A.; Jr. Achievement. Serv. Rec.: U.S.N., W. W. II. Areas of Rsch.: Organic Insecticides, Plant Foods, Phosphates, Explosives, Actuating Devices, Boron Chemicals; Sulfur Recovery from Sour Gases; Recovery of SO_2 From Stack Gases; Uranium Recovery from Phosphatic Materials.

MILLER, Rose Mary (Miss), Tchr., Monmouth Coll., West Long Branch, N. J. Home Add.: 39 Cedar Ave., West End, N. J. MATHEMATICS. b. Peacham, Vt., Nov. 23, 1911. d. Frank A. and Margaret (Whitehill) M. Edn.: B.S., Middlebury Coll., 1933; Ed.M., Univ. of Vt., 1949. Exp.: Tchr., Peacham Acad., 1941; Tchr., Exeter, Me. H. S., 1941-42; Prin., Peacham Acad., 1944; Math. Tchr., Vt. Jr. Coll., 1944-56; Dean of Women, 1953-56; Asst. Prof., Math. Tchr., Monmouth Coll., 1957—. Mem: Am. Math. Soc.; A.A.U.W.; Assn. of Math. Tchrs. of N. Math. Assn. of Am.; A.A.A.S.; Order of the Eastern Star; Mmouth Chapter of Am. Assn. of the U.N.

MILLER, Philip Dixon (Ph.D.), Physicist, Oak Ridge Natl. La Oak Ridge, Tenn. Home Add.: 805 W. Vanderbilt, Oak Rid Tenn. LOW ENERGY NUCLE PHYSICS. b. Albuquerque, N. June 7, 1932. s. Philip D. Kathleen (Pugh) M. Edn.: B. Calif. Inst. of Technol., 19 M.A., Rice Inst., 1956; Ph. ibid., 1958. m. Suzette Gulle July 1950. c.: Dixon; Hu Daniel. Exp.: Physicist, Ridge Natl. Lab., 1958—; In and A.E.C. Fellow, Rice In 1954-58. Mem.: Sigma Xi; A Physical Soc.; I.R.E.; Assn. Computing Machinery; Pi Kap Alpha. Contbr. to: Physical vue; Bull. of Am. Physical S Areas of Rsch.: Low Energy clear Physics; Applications Electronic Data Processing.



MILLER, Ruth E(mma) (Ph.D.), Prof. of Microbiol., Chmn. of Dept., Woman's Med. Coll. of Pa., Phila. 29, Pa. Home Ad 2820 Schl. Lane, Drexel Hill, MEDICAL MICROBIOLOGY. Phila., Pa., Oct. 17, 1905. Robert and Regina (Ramspach M. Edn.: B.Sc., Phila. Coll. Pharmacy and Sci., 1928; M.S ibid., 1930; Ph.D., Univ. of P 1934. Exp.: Instr. in Bacteri Woman's Med. Coll., Phila., P 1934-38; Asst. Prof., ibid., 19 39; Assoc. Prof. and Acting H ibid., 1939-42; Prof. and Chm of Microbiol. Dept., ibid., 1942 Hon. Pos.: Consultant in Mic biol., V. A. Hosp., Phila., P Secy. Treas., Eastern Pa. Bran of Am. Soc. for Microbiol., 19 53; Pres., ibid., 1954-55; Cou cilor, ibid., 1958-59; Pres., Alu Assn. Phila. Coll. Pharm. and Sc 1947-48; Hon. Mem., Alumn Assn. Woman's Med. Coll. Mem.: Am. Assn. for the Adv. Sci., Fellow; Am. Pub. Health Assn., Fellow; Soc. for Gen. Mic biol.; Am. Acad. of Microbiol., Charter Fellow; Am. Soc. Microbiol.; N. Y. Acad. of Sci.; Am. Assn. Immunol.; Am. S Prof. Biols.; Assn. Am. Med. Coll.; Physiol. Soc. of Phila.; Ea ern Pa. Branch, Am. Soc. for Microbiol.; Sigma Xi; Sigma De Epsilon; Lambda Kappa Sigma; Upper Darby Bus. and Professio Women's Club, Pres., 1959-61. Contbr. to: Jour. Am. Pharm ceutical Assn.; Am. Jour. Pharmacy; Jour. Bact.; Am. Jour. M Scis.; Am. Jour. Clin. Path.; Jr. Immunol.; Proc. Soc. for Exp Biol. and Med.; Jour. Allergy; Jour. Urology; Pa. Med. Jou Jour. Am. Med. Women's Assn. Areas of Rsch.: Medical B teriology; Antiseptics; Inhibition of Enzymes by Antibodi Chitinase.



MILLER, Shelby Alexander (Ph.D.), Prof. and Chmn., Chem. Engrn Univ. of Rochester, Rochester, N. Y. Home Add.: 347 Hillsi Ave., Rochester 10, N. Y. CHEM CAL ENGINEERING. b. July 1914, Louisville, Ky. s. Geor W. and Stella K. (Cralle) Edn.: B.S. in Ch.E., Speed S Schl., Univ. of Louisville, K 1935; Ph.D., Univ. of Min 1944. m. Doreen A. Kenned 1952. c.: Shelby C. Exp.: As Chem., Corhart Refractories C 1935; Tchng. Asst., Chem. E grng., Univ. of Minn., 1935-3 Chem. Engrn., Engrng. Rsch. La E. I. duPont de Nemours a Co., 1940-46; Assoc. Prof., Che Engrng., Univ. of Kans., 1946-5 Prof., Chem. Engrng., ibid., 195 55; Fulbright Prof., King's Col Newcastle, England, 1952-5 Present Position, 1955—. Mem A.A.U.P.; N.S.P.E.; S.C.I.; A Ch.E.; A.C.S.; Sigma Xi; Sigma Tau; A.S.E.E.; A.A.A.S. (fellov Alpha Chi Sigma; Triangle; Tau Beta Pi. Contbr. to: Che Jours. Ph.D. Dissertation: Agitation of Two-Phase Systems Immiscible Liquids. Gen. Int.: Author, Annual Rev. on Filtrati for Industrial and Engrng. Chem., 1947-57. Contbr. to: 4th E Perry's Chem. Engrng. Handbook. Hobbies: Music; Conversatio Lang. and Word Use. Special Int.: Agitation, Filtration, D Dispersion.

MILLER, Sherwin Uda (M.D.), Calif. BIO-ASTRONAUTICS. b.

315 Edgewood Ave., Mill Valley, Denver, Colo., Mar. 13, 1930. s. Harry B. and Rosaline (Slohm) M. Edn.: M.D., Univ. of Colo., 1956. m. Patricia Ruth, July 18, 1951. c.: Nevin; Stefanie. Exp.: Rd., Space Medicine, Litton Industries, Beverly Hills, Calif., 1959-60; Dir., Life Scis., Space Systems, Burbank, Calif., 1960; Technical Dir., A.I.M.S. Rsch. Corp., San Francisco, 1961—. Hon. Pos.: Aviation Safety Representative, F.A.A. Mem.: Natl. Fdtn. Infantile Paralysis, Fellow; Pi Mu Epsilon; A.A.A.S.; Aerospace Med. Assn.; Am. Rocket Soc.; Inst. of Environmental Scis. Contbrng. Author: Vistas in Astronautics, 1961; Yearbook of Radiology, 1961. Contbr. to: Jour. of Aerospace Medicine; Am. Jour. of Medicine; Jour. of Inst. of Environmental Scis.; A.S.I.D.

MILLER, Victor Charles (Ph.D.), 9655 W. Colfax, Denver, Colo.

Pres., Miller and Assoc., Inc., Home Add.: 10065 W. 8th Ave., Denver 15, Colo. GEOMORPHOLOGY; PHOTOGEOLOGY. b. Stamford, Conn., March 17, 1922. s. Walter Strong and Mary Priscilla (Gortner) M. Edn.: B.A., Columbia Coll., 1943; M.A., ibid., 1947; Ph.D., ibid., 1953. m. Lucienne Breland, Sept. 7, 1955. c.: Leslie Ann; David Bryant; Michelle Renee; Denise Yvonne. Exp.: Photogeologist, Sinclair Oil and Gas, Denver, Colo., 1947-49; Lectr., Columbia Univ., N. Y., 1949-51; Photogeol., Geophoto Servs., Denver, Colo., 1951-52; Pres., Miller-McCulloch, Ltd., Calgary, Alberta, Can., 1952-56; Pres., V. C. Miller and Assoc., ibid., 1956-57; Pres., Miller and Assoc., Inc., Denver, 1957—. Mem.: A.A.P.G.; Am. Soc. Photogrammetry; Rocky Mt. Assn. Geol.; Alberta Soc. Petrol. Geol.; Alberta Soc. Professional Engrs.; Am. Assn. for the Adv. of Sci.; G.S.A.; Sigma Xi. Author: Photogeology, 1961. Contbr. to: Jour. Geol.; Bull. A.A.P.G.; Photogrammetric Engrng.; Jour. Alta. Soc. Petrol. Geol.; World Oil. Serv. Rec.: U. S. Army Air Force, 1943-45. Areas of Rsch.: Application of Advanced Principles of Geomorphology in Photogeologic Exploration for Oil and Gas in Glaciated and Unglaciated Plains Areas and in Low-Dip Basin and Coastal Plain Areas; quantitative geomorphic analysis of drainage basin characteristics in Folded Appalachian Mountains.

MILLER, Walter John, S. J. (Father), Jesuit Astronomer-Priest, Dir., Fordham Univ. Astronomical Lab., Box 88, Fordham Univ., N. Y. 58, N. Y. ASTRONOMY.

b. Rochester, N. Y., May 6, 1904. s. Andrew John and Agnes Frances (Burns) M. Edn.: N. Y. State Coll. of Forestry, 1922-24; B.A., Woodstock Coll., 1930; M.A., Ph.L., ibid., 1931; S.T.L., Woodstock Coll., 1937; S.T.D., ibid., 1938; A.M., Harvard Univ., 1941; Ph.D., ibid., 1943. Exp.: Asst. Prof. of Physics, Georgetown Univ., Wash., D. C., 1931-32; Asst. Astronomer, Georgetown Coll. Observatory, 1932-34; Prof. of Math., Woodstock Coll., Woodstock, Md., 1933-34; Asst. Chaplain, Kings Co. Hosp., Brooklyn, N. Y., 1939; Prof. of Math., Canisius Coll., Buffalo, N. Y., 1943-44; Prof. of Math., Woodstock Coll., Woodstock, Md., 1944-45; Asst. Papal Astronomer, Vatican Observatory, Castel Gandolfo, Italy, 1945-55; Dir. of Fordham Univ. Astronomical Lab., 1955—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Am. Assoc. of Jesuit Scientists; Am. Astronomical Soc.; Astron. Soc. of the Pacific; Royal Astron. Soc.; Royal Astron. Soc. of Canada; Astronomische Gesellschaft; Societa Astronomica Italiana; Internatl. Astron. Union (Comm. 27). Contbr. to: Astrophysical Jour.; Astronomical Jour.; Publications of Astronomical Soc. of the Pacific; Ricerche Astronomiche. Gen. Int.: Mem., Georgetown Univ. Eclipse Expedition, Fryeburg, Me., 1932; Founder and Dir., Fordham Univ. Astronomical Lab. Areas of Rsch.: Faint Variable Stars in the Milky Way; Galactic Structure; Determination of Stellar Spectral Types and Luminosity Classes from Objective-prism Spectra.

MILLER, William Eugene (Ph.D.), Asst. Dir., Inst. of Logopedics, Assoc. Prof., Univ. of Wichita, Wichita, Kans. Home Add.: 558 N. Bluff, Wichita, Kans. AUDIOLOGY. b. Longmont, Colo., March 3, 1916. s. Eugene M. and Mary Elizabeth (March) M. Edn.: B.S., Univ. of Wichita, 1940; M.A., ibid., 1947; Ph.D., Northwestern Univ., 1950. m. Emily Jane Yount, Aug. 18, 1946. c.: William David; Philip Francis; Katherine Elizabeth. Exp.: Asst. Dir., Inst. of Logopedics, Wichita, Kans., 1949—. Hon. Pos.: Chmn., Legislative Comm., Kans. Coun. for Children and Youth, Profl. Servs. Bd., Am. Speech and Hearing Assn. Mem.: Am. Speech and Hearing Assn.; Kans. Speech and Hearing Assn.; Convent. of Am. Instrs. of the Deaf; Delta Upsilon. Contbr. to: Proc. of the 40th Convention of the Am. Instrs. of the Deaf. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Audiology and Deaf Education.

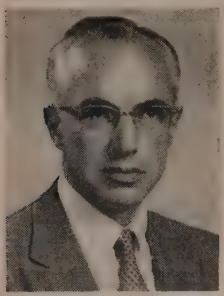
MILLER, Ward MacLaughlin (Mr.), Pres., Miller and Associates, Portsmouth, Ohio. Home Add.: Beechwood Heights, Portsmouth, Ohio. GERONTOLOGY. b. Portsmouth, Ohio, Nov. 29, 1902. s. Henry Ward and Annis (MacLaughlin) M. Edn.: B.A., Ohio State Univ., 1923; M.A., Harvard Univ., 1931. m. Marian Elizabeth Dillon, July, 1932. c.: Ward MacLaughlin, Jr.; Marian; Annis Bennett; Whitney Dillon; Henry James; Rosamond. Exp.: Instr. in Eng., Emerson Coll., Boston, Mass., 1928-30; Grad. Asst., Harvard and Radcliffe Colls., Cambridge, Mass., 1929-31; Asst. Editor, Bookman Magazine, New York, N. Y., 1931-33; Pres., Miller and Associates, Portsmouth, Ohio, 1933—. Mem.: Mod. Lang. Assn.; A.A.A.S.; Royal Inst. of Phil.; Phi Gamma Delta. Gen. Int.: Elected, Ohio's First State Bd. of Edn., 1955; Elected to 86th Congress, Nov., 1960. Areas of Rsch.: Gerontology.

MILLER, Wilmer Jay (Ph.D.), Assoc. Spect., Dept. of Microbiol., Schl. of Vet. Med., Univ. of Calif., Davis, Calif. Home Add.: 1307 Sequoia Pla., Davis, Calif. GENETICS, IMMUNOGENETICS. b. Lawton, Okla., July 15, 1925. s. Walter James and Dorothy Ethel (Virgin) M. Edn.: B.A., Univ. of Okla., 1948; Ph.D., Univ. of Wisc., 1954. m. Lotus Simon, Aug. 23, 1952. c.: Douglas Lindley; Alan Frederick. Exp.: Proj. Assoc., Univ. of Wisc., Madison, Wisc., 1954-55; Assoc. Spect., Dept. of Microbiol., Schl. of Vet. Med., Univ. of Calif., Davis, Calif., 1955-62; Assoc. Prof., Dept. of Genetics, Univ. of Ia. Sta., Ames, Ia., 1962—. Mem.: Sigma Xi; Am. Assn. for the Adv. of Sci.; Am. Genets. Assn.; Am. Soc. of Nats.; Genets. Soc. of Am.; Phi Sigma. Contbr. to: Animal Behaviour; AUK; Condor; Evolution, Genets.; Jour. of Heredity; Jour. of Immunol.; Jour. of Exptl. Zool.; Proc. of the Natl. Acad. of Scis.; Poultry Sci.; Immunogenets. Newsletter. Areas of Rsch.: Genetics, Immunogenetics, Hybridization of Doves and Pigeons, Cattle Blood Groups.

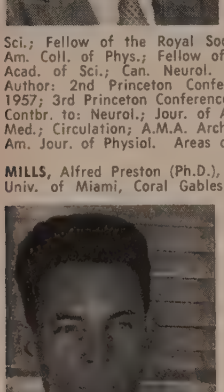
MILLER, William J. (Ph.D.), Prof. (emer.), Geol., Univ. Calif., Los Angeles, Calif. Home Add.: 525 Spruce Street, San Diego, Calif. GEOLOGY. b. Red Bluff, Calif., Apr. 26, 1880. s. Henry and Bertha (Potter) M. Edn.: B.S., Univ. of the Pacific, 1900; M.S., ibid., 1902; Ph.D., Johns Hopkins Univ., 1905. Hon. Degrs.: Sc.D., Univ. of the Pacific, 1926. m. Pearl Breniman, 1905. c.: Willis Hamilton. Exp.: Instr., Univ. of the Pacific, Stockton, Calif., 1900-03; Prof., Hamilton Coll., Clinton, N. Y., 1905-14; Prof., Smith Coll., Northampton, Mass., 1914-24; Prof., Univ. of Calif., Los Angeles, 1924-48; Visiting Prof., Univ. of N. C., Chapel Hill, N. C., 1949-50; Prof. (emer.), Univ. Calif., Los Angeles, Calif., 1950-62. Hon. Pos.: Pres., Cordilleran Sect., Geol. Soc. of Am., 1926-27. Mem.: Am. Acad. of Arts and Sci.; Geol. Soc. of Am.; Mineralo. Soc. of Am.; Am. Geophys. Union; Seismolo. Soc. of Am.; Am. Assn. for the Adv. Sci.; Am. Assn. Univ. Profs.; Phi Beta Kappa; Sigma Xi; Univ. Club of Claremont, Past Pres. Author: Elements of Geology, 1931, 1939; Introduction to Historical Geology, 1916, 1952; Introduction to Physical Geology, 1924, 1949; The Story of Our Earth, 1922, 1946; California Through the Ages, 1957. Contbr. to: Jour. of Geol.; Bull. Geol. Soc. Am.; Am. Mineralogist; Am. Jour. Sci.; Am. Geophys. Union; N. Y. State Mus. Bulls.; Univ. Calif. Press. Areas of Rsch.: Crystalline Rocks and Geomorphology of Northern New York and Southern California.

MILLEVILLE, Howard P. (Mr.), Editor, Food Processing, Putman Publishing Co., 111 East Delaware Pl., Chicago 11, Ill. Home Add.: 1736 Elliot Ct., Park Ridge, Ill. CHEMICAL ENGINEERING AND FOOD TECHNOLOGY TECHNICAL WRITING. b. Chicago, Ill., May 30, 1912. s. Philip G. and Alma C. (Ritter) M. Edn.: B.S., Ill. Inst. of Tech., 1936. m. Elizabeth C. Haines, April, 1946. c.: Marjorie Haines; Cynthia Haines; Amie Louise; Elizabeth Anne. Exp.: Chem. Engr., Eastern Regl. Rsch. Lab., USDA, Wyndmoor, Pa., 1941-46; Consultant, Donald K. Tressler and Associates, North Compo Rd., Westport, Conn., 1946-48; Editor, Food Processing Putman Publishing Co., Chicago, Ill., 1948—. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Inst. of Food Technologists; Tau Beta Pi; Phi Lambda Upsilon; Alpha Chi Sigma. Gen. Int.: Received Tau Beta Pi National Fellowship, 1936-37; USDA Distinguished Service Award, 1950. Areas of Rsch.: Chemical Engineering, Food Technology and Engineering, Volatile Flavor Recovery.

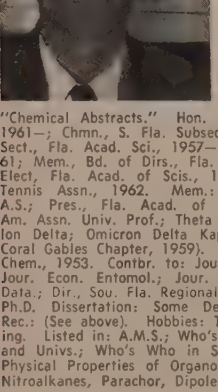
MILLIKAN, Clark Harold (M.D.), Consultant in Neurol., Mayo Clinic, Rochester, Minn. Home Add.: 1061 Plummer Lane, Rochester, Minn. NEUROLOGY. b. Freeport, Ill., March 2, 1915. s. William Clarence and Louise (Chamberlain) M. Edn.: M.D., Univ. of Kans., 1939. m. Gayle Margaret Gross, May 2, 1942. c.: Terri; Clark William; Jeffry Brent. Exp.: Asst. Prof., Neurol., Univ. of Ia., Ia. City, Ia., 1946-49; Consultant Neurol., Hd. Sect. of Neurol., Mayo Clinic, Rochester, Minn., 1954—; Prof. of Neurol., Univ. of Minn., Mlps., Minn., 1958—. Hon. Pos.: Pres., Assn. for Rsch. in Nervous and Mental Disease; Mem. of Scientific Adv. Coun., Natl. Instit. of Neurol. Disease and Blindness; Asst. Secy. of Am. Neurol. Assn. Mem.: Assn. for Rsch. in Nervous and Mental Disease; Am. Assn. for the Adv. of Sci.; Fellow of the Royal Soc. of Med., Great Britain; Fellow, Am. Coll. of Phys.; Fellow of the Am. Acad. of Neurol.; N. Y. Acad. of Sci.; Can. Neurol. Assn.; Am. Assn. of Univ. Profs. Author: 2nd Princeton Conference on Cerebrovascular Disease, 1957; 3rd Princeton Conference on Cerebrovascular Disease, 1961. Contbr. to: Neurol.; Jour. of Am. Med. Assn.; Annals of Internal Med.; Circulation; A.M.A. Arch. Neurol. and Psych.; Minn. Med.; Am. Jour. of Physiol. Areas of Rsch.: Cerebrovascular Disease.



MILLS, Alfred Preston (Ph.D.), Assoc. Prof. in Physical Chemistry, Univ. of Miami, Coral Gables, Fla. PHYSICAL CHEMISTRY. b. Jan. 8, 1922, Fallon, Nev. s. Percy E. (dec.) and Ruth E. (Candee) M. Edn.: B.S., Univ. of Nev., 1943; Ph.D., Tulane Univ., 1949. m. Josephine Elizabeth Sullivan of New London, Conn., Aug. 6, 1946. d. Margaret G. Sullivan. c.: James Everett; Nancy Louise. Exp.: Civil Service Physicist P-1, 1943; U.S.N., Comdr., 1943-46, 1952-53; Ellis-Foster Rsch. Fellow, Tulane Univ., 1946-48; Grad. Tchng. Fellow, ibid., 1948-49; Instr. in Phys. Chem., Univ. of Miami, Coral Gables, Fla., 1949-51; Asst. Prof. Phys. Chem., ibid., 1951-56; Assoc. Prof. in Phys. Chem., ibid., 1956—; Dir., Radioisotopes Lab., 1950-51, 1955—; Hd., Div. of Nat. Sci., Univ. Coll., 1960-61; Abstractor for "Chemical Abstracts." Hon. Pos.: Natl. Coun., A.C.S., 1956-58, 1961—; Chmn., S. Fla. Subsect., ibid., 1956; Chmn., Phys. Scis. Sect., Fla. Acad. Sci., 1957— Coord., Fla. Jr. Acad. Sci., 1958-61; Mem., Bd. of Dirs., Fla. Fdtn. for Future Scientists; Pres.-Elect, Fla. Acad. of Scis., 1961-62; 3rd Vice-Pres., Fla. Lawn Tennis Assn., 1962. Mem.: A.C.S.; Am. Physics Soc.; A.A.-A.S.; Pres., Fla. Acad. of Sci.; Sigma Xi; Phi Kappa Phi; Am. Assn. Univ. Prof.; Theta Chi; Alpha Chi Sigma; Alpha Epsilon Delta; Omicron Delta Kappa; Reserve Officers Assoc. (Pres. Coral Gables Chapter, 1959). Co-author: Lab. Manual in Physical Chem., 1953. Contbr. to: Jour. of A.C.S.; Jour. of Phys. Chem.; Jour. Econ. Entomol.; Jour. Chem. Edn.; Jour. Chem. & Eng. Data.; Dir., Sou. Fla. Regional Sci. Fair, 1955, '56, '57, '58, '59. Ph.D. Dissertation: Some Derivatives of Trichlorosilane. War Rec.: (See above). Hobbies: Tennis; Bridge; Chess; Square Dancing. Listed in: A.M.S.; Who's Who Among Students in Am. Colls. and Univs.; Who's Who in S. and S.W., Vol. 6. Special Int.: Physical Properties of Organosilicon Compounds, Nitroolefins and Nitroalkanes, Parachor, Dipole Moment, Infrared Spectra.



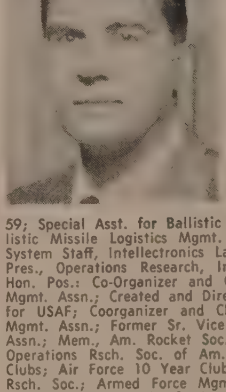
MILLS, Howard Leonard (Ph.D.), Prof. of Bot., Marshall Univ., Huntington, W. Va. Home Add.: 1234 Ninth St., Huntington, W. Va. PLANT PHYSIOLOGY. b. Huntington, W. Va., May 8, 1920. s. George A. and Mary (Martufi) M. Edn.: B.S., Marshall Univ., 1944; M.S., ibid., 1949; Ph.D., State Univ. of Ia., 1951. Exp.: Grad. Asst., Marshall Univ., 1948-49; Instr., State Univ. of Ia., Ia. City, Ia., 1949-51; Asst. Prof. to Prof., Marshall Univ., 1951—. Hon. Pos.: Chmn., Cent. Ohio Valley Techn. Socs. Coun. Mem.: Sigma Xi; Soc. of Plant Physiolts.; N. Y. Acad. of Sci.; W. Va. Acad. of Sci.; Ia. Acad. of Sci.; Tau Kappa Epsilon; Omicron Delta Kappa; Chi Beta Phi; Gamma Alpha. Contbr. to: Procs., W. Va. Acad. of Sci.; Rad. Bot. Serv. Rec.: U. S. Navy, 1942-46. Gen. Int.: Mem. of Rsch. Team Studying the Effects of Rad. on the Vegetation at A.E.C. Nev. Test Site; Dir. of Rsch. Team Studying Vegetation of Fla. Everglades. Areas of Rsch.: Physiology of Growth and Floral Initiation; Anthocyanin Production and Localization; Algal Nutrition, Radiobotany, Fission Product Uptake by Plant Roots.



MILLS, A(shley) Ernest (M.D.), Med. Dir., Delmont Labs., Inc., Swarthmore, Pa. Home Add.: 76 Boston Ave., West Medford 55, Mass. INTERNAL MEDICINE—BACTERIOPHAGOLOGY, CLINICAL APPLICATION OF. b. Somerville, Mass., Dec. 22, 1899. s. Ashley and Laura A. (MacCombie) M. Edn.: M.D., Tufts Coll., Schl. of Med., 1924. m. Alice E. Hoffer, Oct., 1927. Exp.: M.D., Private Practice, Medford, Mass., 1924—; Attending Physician, Lawrence Mem. Hosp., Medford, Mass., 1924—; Attending Phys., New England San. and Hosp., Stoneham, Mass., 1924—; Medical Dir., Delmont Labs., Inc., Swarthmore, Pa., 1954—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Med. Assn.; Mass. Med. Soc.; N. Y. Acad. of Sci.; New England Diabetes Soc.; A.A.A.S.; Samuel Crocker Lawrence Lodge A.F.&A.M. Contbr. to: Laryngoscope; Jour. Am. Med. Assn.; New England Jour. of Med.; M.D. Serv. Rec.: AUS, 1943-46. Areas of Rsch.: Laboratory and Clinical Evaluation of Staphylococcal Bacteriophages of Polyvalent Nature. Internal Medicine—Private Practice. Use of Vitamine E in Cardiovascular Disease.

MILLS, Roscoe Edward (Mr.), Prof. of Engrng. Mat., Schl. of Civil Engrng., Purdue Univ., Lafayette, Ind. Home Add.: 141 East Oak St., W. Lafayette, Ind. ENGINEERING. b. Monitor, Ind., Dec. 20, 1897. s. Edward and Olivia (Fretz) M. Edn.: B.S., Civil Engrng., Purdue Univ., 1920; M.S., ibid., 1928. m. Ethel Katherine Baker of Dayton, Ind., June, 1922. d. Mr. and Mrs. Edward E. Baker. c.: Edward Lee; Lois Irene. Exp.: 1920-21, Jr. Engr., Buckeye Pipeline Co., Lima, Ohio, Pipeline Location, Construction and Tankyard Layouts; 1921-28, Rsch. Asst., Engrng. Expt. Sta., Purdue Univ., Highway Rsch., Cooperative Project with U. S. Bur. of Pub. Roads; 1928-37, Rsch. Asst., Engrng. Expt. Sta., ibid.; 1937-39, Instr. in Civil Engrng., ibid.; 1939-44, Asst. Prof., ibid.; 1944-48, Assoc. Prof. of Civil Engrng., ibid.; 1948—, Prof. of Engrng. Mat., ibid. Mem.: Am. Soc. for Testing Materials; Am. Concrete Inst.; A.A.U.P.; Am. Soc. for Engrng. Edn.; Sigma Xi; Chi Epsilon; Triangle; Purdue Univ. Club; Mason. Contbr. to: Am. Concrete Inst. Hobbies: Hunting; Fishing; Wood Working. Listed in: Who's Who in Engrng.; Who's Who in the Midwest; A.M.S.

MILLSTEIN, Herbert S., Vice Pres., Operations Research, Inc., 225 Santa Monica Blvd., Santa Monica, Calif. Home Add.: 22410 Philiprimm St., Woodland Hills, Calif. MANAGEMENT SYSTEM ENGINEER (DESIGN). b. Chicago, Ill., May 17, 1920. s. Jack and Bessie (Friedman) M. Edn.: A. A. Wright Jr. Coll., 1940; B.S., Univ. of Ill., 1942; M.B.A., U.C.L.A. Grad. Schl. of Bus. Admin., 1960. m. Roslyn Becker, Nov. 20, 1941. c.: Merle Lynne; Randy Alan. Exp.: Coordinator Supvr., Radio Engr. Schl., U. S. Army Air Force, Scott Field, Ill., 1942-47; Trng. Officer, Vet. Admin., E. St. Louis, Ill., 1947-48; Industrial Engr. and Mfg. Repr., Arthur K. Meyer Co., Los Angeles, Calif., 1948-52; Radar Test Engr., Hughes Aircraft, Los Angeles, Calif., 1952—; Chief Production Div., Air Procurement Dist., USAF, 1952-59; Special Asst. for Ballistic Missile, ibid., 1952-59; Chief Ballistic Missile Logistics Mgmt. Div., ibid., 1952-59; Tech. Staff, System Staff, Intellectronics Lab., Ramo-Woolridge, 1959-60; Vice Pres., Operations Research, Inc., Santa Monica, Calif., 1960—. Hon. Pos.: Co-Organizer and Charter Vice-Pres., Fed. Production Mgmt. Assn.; Created and Directed Space Age and Lecture Series for USAF; Coorganizer and Charter Vice Pres., Fed. Production Mgmt. Assn.; Former Sr. Vice Commander, Fed. Employees Vets. Assn.; Mem., Am. Rocket Soc. Mem.: Am. Assn. Adv. of Sci.; Operations Rsch. Soc. of Am.; The Inst. of Mgmt. Scis.; Civic Clubs; Air Force 10 Year Club. Contbr. to: Jour. of Operations Rsch. Soc.; Armed Force Mgmt. Mag.; USAF Mag.; Mgmt. Sci. Mag. Serv. Rec.: U. S. Army Air Force, 1944-46. Gen. Int.: Received USAF Superior Accomplishment Award. Areas of Rsch.: Management System Engineering (Design), Aircraft and Missile Program Management and Maintenance. Contract Negotiation and Management Industrial, Electronic, Systems and Production Engineering, Integrated Data Systems, Logistic Management Systems, Training Program Management.



MILZER, Albert (M.D.), Assoc. Prof., Microbiol., Northwestern Univ. Med. Schl., Chicago, Ill. Home Add.: 8224 S. Kingston Ave., Chicago 17, Ill. MEDICAL MICROBIOLOGY. b. Denver, Colo., Nov. 29, 1915. s. Max and Sarah (Kippur) M. Edn.: B.A., Univ. of Colo., 1937; M.S., ibid., 1938; Ph.D., Univ. of Chicago, 1941; M.D., Northwestern Med. Schl., 1950. m. Dora Feinstein, Aug., 1939. c.: Edward; Carol; Mary Ellen. Exp.: Rsch. Bacteriologist, Michael Reese Rsch. Fdn., 1938-46; Dir. of Microbiol. Dept., Michael Reese Hosp., 1947-57; Assoc. Prof., Microbiol., Northwestern Univ. Med. Schl., Chicago, Ill., 1957—. Mem.: Phi Beta Kappa; Sigma Xi; Am. Coll. of Phys.; Am. Acad. of Microbiol.; Phi Delta Epsilon. Contbr. to: Jour. of Immunol., Am. Jour. Public Health; Jour. Am. Med. Assn.; Proc. Soc. of Exptl. Biol. and Med. Serv. Rec.: O.S.R.D., 1941-45. Areas of Rsch.: Vaccines for Poliomyelitis, Rabies, St. Louis Encephalitis; Inactivated by Ultraviolet Irradiation, Laboratory Diagnosis of Virus and Rickettsial Diseases. Penicillin Prophylaxis of Recurrences of Rheumatic Fever.

MINNER, Jeanne Francis (Sister), Hd., Sci. Dept., Incarnate Word Acad. and Mary Immaculate Coll., Corpus Christi, Tex. Home

dd.: 2930 So. Alameda, Corpus Christi, Tex. BIOLOGY, MA-INE BIOLOGY. b. Colusa, Calif., Mar. 30, 1917. d. Lee and innie (Postlethwaite) M. Edn.: B.S., Our Lady of the Lake oll., 1939; M.A., Catholic Univ., 1949; Grad. Work at Univ. Tex., 1958-62. Exp.: Hd., Sci. Dept., Incarnate Word Acad. nd Mary Immaculate Coll., Corpus Christi, Tex., 1948—. Hon. os.: State Dir., Natl. Sci. Tchrs. Assn.; Fair Dir., Annual So. exas Sci. Fair. Mem.: A.A.A.S.; N.S.T.A.; Natl. Biol. Tchrs. ssn.; Albertus Magnus Guild; Tex. Acad. of Sci.; Science Tchrs. ssn. of Tex. Contbr. to: Catholic Schl. Jour.; Statellite. Areas f Rsch.: Marine Biology.

INTO, Wallace Louis (Mr.), Pres., IBC Rsch. Labs., N. Y. Home dd.: 525 River Vale Rd., River Vale, N. J. TECHNICAL DIRECTOR N PHYSICAL AND CHEMICAL RESEARCH. b. Jersey City, N. J., ug. 6, 1921. s. Wallace M. and Hazel J. (Trautman) M. Edn.: .B., Columbia Coll., N. Y., 1942. m. Marilyn McDonald, Sept. 5, 1945. c.: Cynthia; Pamela; Kevin; Diana. Exp.: Lab. Chief, oec. Problems Div., Manhattan Proj., AEC, Univ. of Rochester, ochester, N. Y., 1944-47; Rsch. Dir., Clairmint Chem. Co., ewark, N. J., 1948-50; Vice Pres., Ken Rsch., Inc., Hackensack, . J., 1950-55; Pres., IBC Rsch. Labs., Inc., N. Y., 1955—. lem.: Am. Assn. for the Adv. of Sci., Fellow; Am. Chem. Soc.; . Y. Acad. of Sci.; N. J. Acad. of Sci.; A.I.M.E.; Chamber of ommerce; Lions. Author: Biological Studies with Polonium, adium and Plutonium, 1950. Contbr. to: Sci.; Antibiotics and hemotherapy. Gen. Int.: Numerous Patents in Fields of Chem., hysics and Engrng. Areas of Rsch.: Extractive Metallurgy; uclear and Solid State Physics; Electronics; Biochemistry; Bio-hysics; Experimental Methodology.

MIROYIANNIS, Stanley D. (Ph.D.), Prof. of Gross and Microscopic natomy and Chmn. of the Dept., Coll. of Osteopathic Med. and urg., Des Moines, Ia. COMPARATIVE ANATOMY GROSS AND MICROSCOPIC. b. Metelin, Greece, Nov. 24, 1908. s. Demetrius eorge and Androniki James (Mandanis) M. Edn.: B.S., North-est Nazarene Coll., 1927; M.A., Boston Univ., 1929; Ph.D., oid., 1939. m. Ruth Elizabeth Nemmers, Nov. 24, 1958. Exp.: chng. Fellow, Lectr., Boston Univ., 1929-35; Prof. and Chmn. of ept. of Biol., Northeastern Univ., 1936-49; Prof. and Hd. of he Dept. of Anat., The New England Inst. of Anat., part-time, 929-49; Med. Writer, Med. Div., Merck and Co., Rahway, N. J., 949-52; Prof. and Chmn., Dept. of Anat., Coll. of Osteopathic Med. and Surg., Des Moines, Ia., 1952—. Hon. Pos.: Mem. of dnl. Policies Comm.; Mem. of Admissions Comm.; Mem. of evelopmental Zoology Soc.; Mem. of the Royal Soc. of Health, ondon, England; Chmn. of Profl. Coun.; Chmn. of the Basic Sci. iv.; Premed. and Predent. Advisor; Mem. of Rsch. Com.; Mem. tudent Loan Com.; Mem., Admissions Com., Coll. of Osteopathic Medicine and Surgery. Mem.: Fellow, A.A.A.S.; Am. Coll. Biol. oc.; Soc. of Teratoma; Fellow, Iowa Academy of Science; ellow, Acad. of Zoology; Fellow, Am. Medical Writers' Assn.; oc. of Zool.; Profl. Mem., A.I.B.S.; Soc. of Systematic Zoolo-ists; Federation of Biol. Societies; Kappa Phi Kappa; Sigma Xi; au Sigma Tau; R.O.A.; M.G.A.; M.S.C.; Am. Soc. of Zoologists nd Mammalogists and 25 Other Profl. Societies. Author: Five undred and One Questions and Answers in Gross Anatomy, 1959; Manuals in Histology and Zoology and Anatomy, 1936-37-38. ontbr. to: Iowa Acad. of Sci. Proc.; Vantage Press. Serv. Rec.: Major, M.S.C., Staff and Faculty 373rd Gen. Hosp. Unit, Lt. Col., M.S.C., Staff and Faculty 5904 USAR Schl.; C.O., U. S. Army Garrison Unit, U.S.A.R. Med. Serv. Corps, Ft. Des Moines. Areas of Rsch.: Gross Anat., Histology and Embryology.

MISH, Lawrence B. (Ph.D.), Assoc. Prof., Dept. Biol., State Coll., Bridgewater, Mass. Home Add.: 191 Main St., Bridgewater, Mass. BOTANY. b. Stamford, Conn., Feb. 27, 1923. s. Bronislaw Jan and Joanna (Mihalak) M. Edn.: A.B., Univ. of Conn., 1950; A.M., Harvard Univ., 1951; Ph.D., ibid., 1953. m. Ina Rude, Sept. 1, 1950. c.: Peter; Eleanor; Deborah; Christopher. Exp.: Tchng. Fellow and Instr., Harvard Univ., Cambridge, Mass., 1950-53; Instr., ibid., Sum., 1955; Instr. to Asst. Prof., Wheaton Coll., Norton, Mass., 1953-59; Lectr., Univ. So. Ill., Carbondale, Ill., Sum., 1957; Assoc. Prof., State Coll., Bridgewater, Mass., 1959—. Mem.: Bot. Sci. of Am.; Sigma Xi; A.A.U.P.; A.I.B.S.; Gamma Alpha; Sigma Alpha Epsilon; Norton Singers; Cub Scouts Coun.; Harvard Club. Contbr. to:

Nature, London; Am. Jour. Bot.; Plant Physiol. Serv. Rec.: U. S. Marine Corps, 1941-45. Areas of Rsch.: Biology of Lichens; Soil Microbiology; Teaching of General Biology.

MISSLER, Charles W. (Mr.), Systems Rsch. Scientist, System Development Corp., 2500 Colorado Ave., Santa Monica, Calif. Home Add.: 1406 S. Bentley, Los Angeles 25, Calif. INFORMATION SYSTEMS. b. Chicago, Ill., May 28, 1934. s. Jacob John and Elisabeth Margaret (Haase) M. Edn.: B.S., U. S. Naval Acad., 1956; M.S., U.C.L.A., 1962. m. Nancy Klitten, Sept. 20, 1957. c.: Charles Walter, Jr.; Mark Jay. Exp.: Consultant, M. R. Klitten Co., Los Angeles, Calif., 1959; Staff Scientist, Data Systems Lab., Ramo Wooldridge, U.S.A.F., Denver, Colo., 1959-60; System Rsch. Scientist, System Development Corp., Santa Monica, Calif., 1960—. Mem.: A.A.A.S.; Am. Inst. of Elec. Engrs.; Inst. of Radio Engrs.; Am. Rocket Soc.; Am. Radio Relay League; Calif. Scholarship Fed.; Key Club Internatl.; U. S. Naval Acad. Alumni Assn. Author: Simulation Handbook, 1960. Co-author: Arms Control Simulation, 1961. Contbr. to: Proc., Inst. of Radio Engrs.; Mgmt. Sci. Serv. Rec.: U. S. Navy, 1952-56; U. S. Air Force, 1956-59. Areas of Rsch.: Technical Mgmt. Systems; Milit. Intelligence Information Systems; Space Instrumentation Information Systems; Studies of Problems Associated with the Coordination of Scientific Rsch. for the Federal Govt.

MITCHELL, David Farrar (Ph.D.), Prof. and Chmn., Oral Diagnosis and Radiology, Indiana Univ. Schl. of Dentistry, 1121 West Mich. St., Indianapolis 2, Ind. Home Add.: 135 West Hampton Dr., Indianapolis 8, Ind. EXPERIMENTAL PATHOLOGY; ORAL PATHOLOGY. b. Arkansas City Kansas, Dec. 15, 1918. s. Lester David and Lucille (Farrar) M. Edn.: B.S., Univ. of Ill., 1940; D.D.S., Univ. of Ill., 1942; Ph.D., Univ. of Rochester, Schl. of Med. and Dent., 1948. m. Trone Hawkes, Feb. 6, 1943. c.: Dana S.; Lindsay T.; David F., Jr. Exp.: Rsch. Group, Fellow, Sr. Fellow, Univ. of Rochester Grad. Schl., Dental Rsch., 1946-48; Assoc. Prof. and Chmn., Univ. of Minn., Oral Pathology and Oral Diagnosis, 1948-55; Prof. and Chmn., Indiana Univ. Schl. of Dentistry, 1955—. Hon. Pos.: Editor, Jour. of Indianapolis Dist. Dent. Soc., 1960—; Assoc. Editor, Jour. of Dental Rsch.; Pres., Am. Acad. Oral Pathol., 1961. Mem.: Internatl. Assn. Dental Rsch.; Am. Dental Assn.; Soc. Exper. Biol. and Med.; Am. Acad. Oral Pathol.; A.A.A.S.; Beta Theta Pi; Delta Sigma Delta; Omicron Kappa Upsilon; Sigma Xi. Contbr. to: Jour. of Dental Rsch.; Sci.; Jour. of Dental Assn.; Jour. of Periodontology; Oral Surg. Oral Med. and Oral Pathol.; State Dental Jour.; Armed Forces Jour. Serv. Rec.: U.S.A.F., 1942-46. Areas of Rsch.: Experimental Pathology; Dental Caries and Periodontal Disease; Tissue Reactions to Implanted Dental Materials; Clinical Dental Research.

MITCHELL, Frank Gordon (Mr.), Ext. Pomolt. Mktg Univ. of Calif., Davis, Calif. Home Add.: 747 Elmwood Dr., Davis, Calif. POMOLOGY-POST HARVEST PHYSIOLOGY. b. San Jose, Calif., Feb. 5, 1924. s. Frank Wilbur and Marjorie Eleanor (Sprecker) M. Edn.: B.S., Univ. of Calif., 1949; M.S., Cornell Univ., 1961. m. Bethea Grace Bucher, Apr. 24, 1948. c.: Thomas Gordon; Martha Gail; William Lee. Exp.: Farm Advisor, Univ. of Calif., Stockton, Calif., 1949-57; Ext. Mktg. Technol., Univ. of Calif., Davis, Calif., 1957-59; Ext. Pomolt., Mktg., ibid., 1959—. Mem.: Am. Soc. for Hort. Sci.; Am. Inst. for Biol. Sci.; Alpha Zeta; Toastmasters, Internatl. Contbr. to: Am. Soc. for Hort. Sci. Areas of Rsch.: Deciduous Fruit Handling and Quality Improvement; Maturity, Storage, Packaging and Transportation Problems.

MITCHELL, Harold Hanson (Dr.), Prof. of Animal Nutrition, Emer., Univ. of Ill., Urbana, Ill. NUTRITION. b. Evanston, Ill., Jan. 22, 1886. s. Charles Page and Clara Minerva (Hanson) M. Ethel Opal Kilbury, July 8, 1910. c.: Donald Stanley; David Kilbury; Robert Hanson (dec.); Marguerite Evelyn. Exp.: Asst. Chemist, Ill. Agril. Expt. Sta., 1909-13; Asst. in Animal Nutrition, Univ. of Ill., 1913-18; Asst. Prof., ibid., 1918-20; Assoc. Prof., ibid., 1920-25; Prof. and Hd. Division, ibid., 1925-54; Prof., Emer., ibid., 1954—. Mem.: A.A.A.S.; Amer. Inst. of Nutrition, Fellow in 1958; Am. Soc. of Animal Sci., Fellow, 1960; Am. Soc. Biol. Chemist; Soc. Exptl. Biol. and Med.; Phi Lambda Upsilon; Sigma Xi; Phi Kappa Phi. Author: Biochem. of the Amino Acids, with T. S. Hamilton, 1929; Nutrition and Climatic Stress, with Particular Reference to Man, with Marjorie Edman, 1951. Contbr. to: Jour. of Nutrition; Jour. Animal Sci.; Jour. Biol. Chem.; Archives of Biochem.; Nutrition Abstracts and Reviews; Jour. Amer. Dietetic Assn. Special Int.: Animal and Human Nutrition; Protein, Energy and Mineral Requirements and Utilization; Fluorine Toxicity. Gen. Int.: Recipient of Borden Award, Administered by the American Inst. of Nutrition, 1945; Recipient of Morrison Award, Administered by the Amer. Soc. of Animal Production, 1950.

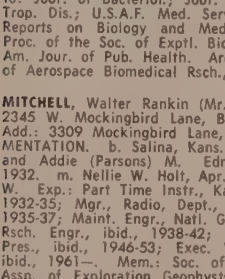
MITCHELL, Jerome Brockman (M.D.), Physician, 142 E. Front St., Lonoke, Ark. Home Add.: 420 W. Front St., Lonoke, Ark. MEDICINE AND SURGERY: GERIATRICS. b. Olney, Ill., Oct. 28, 1899. s. Harry Lee and Agnes C. (Brockman) M. Edn.: B.S., Kans. Coll., Med. and Surg., 1924; M.D., ibid., 1924. m. Betty Jane Lewis, 1939. c.: Harry Jerome; William Garner; Mary Kathleen; Miriam Agnes. Exp.: Intern, Chicago Hosp., Chicago, Ill., 1924-25; Res., Jackson Park Hosp., ibid., 1925-27; Res. Student, Univ. Mex., Mexico City, 1928; Res. Student, U. S. Vet. Adm., ibid., 1929-37; Priv. Practice, Lonoke, Ark., 1937—. Hon. Pos.: Secy., Ark. Eclec. Med. Assn.; Pres., Natl. Eclec. Med. Assn.; Chmn., Sect. Geriatrics Hosp.; Pres., Southern Ped., 1947. Mem.: Am. Assn. Adv. Sci.; Ark. Eclec. Med. Assn.; Health Officer Ark. Mun. League; The World Med. Assn.; Ark. Hosp. Assn.; Natl. Rehab. Assn.; Am. Geriatric Soc., Fellow; Natl. Eclec. Med. Assn.; Elks Club; Lions Club; Am. Legion. Contbr. to: Natl. Eclec. Med. Assn.; Am. Geriatric Soc. Areas of Rsch.: Geriatrics Special Interest in Psychiatric Geriatrics.

MITCHELL, John Murray, Jr. (Ph.D.), Climatologist, U. S. Weather Bureau, Washington 25, D. C. Home Add.: 1309 Ridge Road, McLean, Va. METEOROLOGY. b. New York, N. Y., Sept. 17, 1928. s. John Murray and Lanier (Comly) M. (dec.). Edn.: B.S., M.I.T., 1951; M.S., ibid., 1952; Ph.D., Pa. St. Univ., 1960. m. Pollyanne Bryant, May 5, 1956. c.: John Murray, III. Exp.: Observer, Harvard Univ., Blue Hill Meteorological Observatory, 1946-52, part time; Weather Officer, U.S.A.F., Wash., D. C. and Alaska, 1952-55; Climatologist, U. S. Weather Bureau, Wash., D. C., 1955—. Mem.: Am. Meteorological Soc.; Royal Meteorological Soc.; Wash. Acad. of Scis.; Arctic Inst. of N. Am.; Am. Geophysical Union; Sigma Xi; St. Anthony Club. Author: Measurement of Secular Temperature Change, 1961. Contbr. to: Bull., Jour. of Meteorol.; Weatherwise; Monthly Weather Review; Weekly Weather and Crop Bull.; Heating, Piping and Air Conditioning Magazine. Serv. Rec.: See Positions. Gen. Int.: Am. Meteorological Soc. Certified Consulting Meteorologist. Areas of Rsch.: Climatic Change; Dynamic Climatology; Weather and Climate Control; Meteorological Statistics.

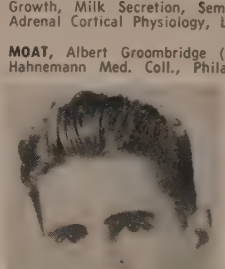
MITCHELL, Roland Burnell (Ph.D.), Dir., Biosystems Rsch. Div., Schl. of Aerospace Med., Aerospace Med. Div., (AFSC), Brooks Air Force Base, Tex. Home Add.: 234 Larkwood Dr., San Antonio 9, Tex. MICROBIOLOGY. b. Denton, Tex., Mar. 24, 1910. s. Robert M. and Robbie W. (Hawkins) M. Edn.: B.S., North Tex. State Coll., 1932; M.A., Univ. of Tex., 1937; Ph.D., ibid., 1939. m. Julianne Still, Sept. 6, 1938. c.: Dir., Regional, Tex. State Public Health Lab., Austin, and Waco, Tex., 1942; Commissioned Officer, Sanitary Corps, Med. Dept. of the U.S.A., 1942-46; Asst. Dir. and Chf. of Bacteriol. Bur. of Lab., Fla. State Bd. of Health, Jacksonville, Fla., 1946-48; Chf., Dept. of Microbiol., Schl. of Aviation Med., U.S.A.F., Randolph Air Force Base, Tex., 1948-57; Chf., Med. Sci. Div., Schl. of Aviation Med., U.S.A.F., Randolph Air Force Base, Tex., 1957-59; Chf., Dept. of Med. Sci., Brooks A.F.B., Tex., 1959-61; Dir., Biosystems Res. Div., Brooks A.F.B., Tex., 1961—. Hon. Pos.: Diplomate, Am. Board of Microbiol., 1961; Pres., Texas Branch, Soc. of Am. Bacteriology, 1958. Mem.: Fellow, Am. Acad. of Microbiology; Fellow, Am. Public Health Assn.; Soc. for Exptl. Biol. and Med.; Soc. of Am. Microbiologists; Assn. of Milit. Surgeons of the United States; The Aerospace Med. Assn.; A.A.A.S.; Sigma Xi. Contbr. to: Jour. of Bacteriol.; Jour. of Infect. Dis.; The Am. Jour. of Trop. Dis.; U.S.A.F. Med. Serv. Digest; The Laryngoscope; Tex. Reports on Biology and Med.; Antibiotics and Chemotherapy; Proc. of the Soc. of Exptl. Biol. and Med.; Bacteriological Proc.; Am. Jour. of Pub. Health. Areas of Rsch.: Direction and Admin. of Aerospace Biomedical Rsch., Aerobiology, Microbiology.

MITCHELL, Walter Rankin (Mr.), Pres., Natl. Geophys. Co., Inc., 2345 W. Mockingbird Lane, Box 35666, Dallas 35, Tex. Home Add.: 3309 Mockingbird Lane, Dallas 5, Tex. SEISMIC INSTRUMENTATION. b. Salina, Kans., Nov. 15, 1908. s. Miles Leckie and Addie (Parsons) M. Edn.: B.S., E.E., Kans. State Univ., 1932. m. Nellie W. Holt, Apr. 17, 1931. c.: Herbert L.; Robert W. Exp.: Part Time Instr., Kans. Wesleyan Univ., Salina, Kans., 1932-35; Mgr., Radio, Dept., Cowie Elect. Co., Wichita, Kans., 1935-37; Maint. Engr., Natl. Geophys. Co., Dallas, Tex., 1937-38; Rsch. Engr., ibid., 1938-42; Lab. Supvr., ibid., 1942-46; Vice Pres., ibid., 1946-53; Exec. Vice Pres., ibid., 1953-61; Pres., ibid., 1961—. Mem.: Soc. of Exploration Geophysts.; European Assn. of Exploration Geophysts.; Am. Geophys. Union; Inst. of Radio Engrs.; Dallas Petrol. Club; Delta Sigma Phi. Areas of Rsch.: Research on Seismic Instrumentation, Seismic Wave Distortion; Delivered Papers Before Technical Societies in U. S., Can., Europe and N. Africa.

MIXNER, John Paulding (Ph.D.), Chmn. and Prof. of Dairy Sci. Rutgers Univ., New Brunswick, N. J. Home Add.: 34 Whitehall Rd., East Brunswick, N. J. ANIMAL PHYSIOLOGY, ENDOCRINOLOGY, THYROID, SEMEN PHYSIOLOGY. b. Bridgeton, N. J., Nov. 1, 1915. s. Melvin Bradford and Frances (Smith) M. Edn.: B.Sc., Rutgers Univ., 1936; M.Sc., ibid., 1938; Ph.D., Univ. of Mo., 1943. m. Exa O'Neal, June, 1942. c.: Jean Frances; Jack Bradford. Exp.: Instr. of Zool., La. State Univ., Baton Rouge, La., 1943-47; Assoc. Prof. Dairy Husb., Rutgers Univ., New Brunswick, N. J., 1947-56; Prof. of Dairy Sci., Rutgers Univ., 1956—; Chmn., Dept. of Dairy Sci., Rutgers Univ., 1961—. Mem.: End. Soc. of Am.; Am. Dairy Sci. Assn.; Am. Soc. of Animal Sci.; Am. Physiol. Soc.; Soc. Exptl. Biol. and Med.; A.A.A.S.; N. Y. Acad. of Sci.; Sigma Xi; Alpha Zeta; Kappa Phi Kappa; Gamma Sigma Delta; Gamma Alpha. Contbr. to: Endocrinology; Jour. Dairy Sci.; Jour. Animal Sci.; Proc. Soc. Exptl. Biol. and Med.; Poultry Sci. Jour. Gen. Int.: Received N. Y. Farmers Award, 1959. Areas of Rsch.: Mammary Growth, Milk Secretion, Semen Physiology, Thyroid Physiology Adrenal Cortical Physiology, Liver and Kidney Function.

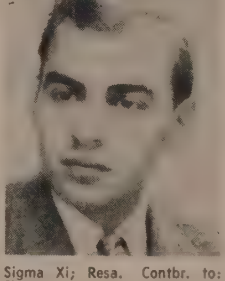


MOAT, Albert Groombridge (Ph.D.), Assoc. Prof. of Microbiol., Hahnemann Med. Coll., Philadelphia 2, Pa. Home Add.: 34[illegible] Roberts Ave., Glenside, Pa. MICROBIOLOGY. b. Nyack, N. Y., April 23, 1926. s. Albert G. and Ellen (Morris) M. Edn.: B.S., Cornell Univ., 1949; M.S., ibid., 1950; Ph.D., Univ. of Minn., 1953. m. Irene Slattery, June, 1949. c.: John A. G.; Laura Marie; Mary Ellen. Exp.: Instr. to Asst. Prof. to Assoc. Prof., Hahnemann Med. Coll., Phila., Pa., 1952—. Mem.: Am. Soc. Microbiol.; Am. Soc. Biol. Chem.; Soc. Gen. Microbiol.; A.A.A.S.; N. Y. Acad. Sci.; Am. Chem. Soc.; Am. Acad. Microbiol.; Sigma Xi; Lambda Chi Alpha. Contbr. to: Jour. Bacteriol.; Jour. Biol. Chem.; Arch. Biochem. Biophys.; Bacteriol. Review. Serv. Rec.: U.S.N.A.F., 1943-46. Areas of Rsch.: Physiology and Metabolism of Microorganisms; Function of Biotin in Metabolic reactions; Penicillinase and relationship to resistance to penicillin; selection of auxotrophic yeast mutants with antifungal agents.



MOATS, William Alden (Ph.D.), Biochem., U. S. Dept. of Agric., Beltsville, Md. Home Add.: 11724 Roby Ave., Beltsville, Md. BIOCHEMISTRY. b. Des Moines, Ia., Nov. 30, 1928. s. Francis I. and Fanny C. (Steves) M. Edn.: B.S., Ia. Sta. Univ., 1950; Ph.D., Univ. of Md., 1957. m. Sheila Ama, March 1, 1958. c.: Laura Ann. Exp.: Grad. Asst., Univ. of Md., Coll. Park, Md., 1950-55; Biochemist, U. S. Dept. of Agric., Beltsville, Md., 1957—. Mem.: Am. Chem. Soc.; Sigma Xi; Lambda Chi Alpha; Alpha Chi Sigma. Contbr. to: Jour. of Dairy Sci.; Jour. of Bacteriol. Areas of Rsch.: Enzymes; Dairy Chemistry and Bacteriology; Bacterial Staining; Analysis of Pesticide Residues.

MOEDRITZER, Kurt, Ph.D., Rsch. Chemist; Monsanto Chem. Co. St. Louis, Mo. Home Add.: Add.: 408 Belleview Ave., St. Louis 19, Mo. INORGANIC AND METAL-ORGANIC CHEMISTRY. b. Prague, Czechoslovakia, June 20, 1929. s. Josef and Luise (Jaksch) M. Edn.: Diploma Chemiker, Univ. of Munich, Germany, 1953; Ph.D., ibid., 1955. m. Anne Middlebrook, Dec. 27, 1957. c.: Michael; Mark. Exp.: Rsch. Asst., Univ. Munich, Munich, Germany, 1953-56; Fulbright Fellow, Univ. of Southern Calif., Los Angeles, Calif., 1956-57; Rsch. Asst., Univ. of Munich, Munich, Germany, 1957-59; Instr., Univ. of Md., Munich Branch, Munich, Germany, 1958-59; Rsch. Chemist, Monsanto Chem. Corp., St. Louis, Mo., 1959—. Mem.: Am. Chem. Soc.; Gesellschaft Deutscher Chemiker; Am. Assn. for the Adv. of Sci.; Sigma Xi; Resa. Contbr. to: Chem. Ber.; Jour. Inorg. Nuclear Chem.; Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Chem. Engr. Data. Areas of Rsch.: Chemistry of Metal Hydrides, Metal-organic Compounds of Arsenic, Antimony and Bismuth; Organo-phosphorus Chemistry; Nuclear Magnetic Resonance, Structural Reorganization.



MOELLER, Hugo Charles (M.D.), Asst. Prof. of Med., Univ. of Calif. Med. Center, San Francisco, Calif. Home Add.: 700 Parnasus, San Francisco, Calif. INTERNAL MEDICINE, GASTROENTEROLOGY, PHARMACOLOGY. b. Schleswig, Iowa, July 9, 1923. s. John D. and Freida (Jensen) M. Edn.: B.A., Drake Univ., 1946; B.S., Univ. of Chicago, 1945; M.D., ibid., Med. Schl., 1948; Ph.D., ibid., Dept. of Pharmacol., 1951. Exp.: Intern, St. Luke's Hosp., Chicago, 1948-49; U.S.P.H.S. Postdoctorate Fellow in Med., Univ. of Chicago, 1949-51; Res. in Med., Billings Hosp., ibid., 1951-53; Clin. Asst. in Med., Univ. of Colo. Schl. of Med., 1954-55; Sr. Attending Physician, V. A. Rsch. Hosp., Asst. Prof. of Med., Northwestern Univ. Med. Schl., 1955-56; Asst. Prof. of Med., Univ. of Calif. Med. Center, 1956—; Visiting Physician, H. C. Moffitt Hosp. and San Francisco Gen. Hosp. Mem.: Phi Beta Kappa; Sigma Xi; A.A.A.S.; Am. Gastroscopic Soc.; Am. Fedn. for Clin. Rsch.; Surgeon General's Task Force on Intravenous Fat; Am. Med. Assn.; Am. Gastroenterological Assn.; Am. Coll. of Physicians; Alpha Kappa Kappa; Commonwealth Club of Calif. Co-Author: A Disturbance in Gastrointestinal Motility, 1959. Contbr. to: Am. Jour. Med. Sci.; Lab. Clin. Med.; Fed. Proc.; Proc. Soc. Exptl. Biol. and Med.;

Ann. Int. Med.; Clin. Rsch. Proc.; Am. Jour. Gastroenterology. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Peptic Ulcer, Ulcerative Colitis, Gastrointestinal Neoplasm, Geriatrics, Studies on Tolerance of Organic Phosphates in Humans.

MOENSSENS, Andre A. (Mr.), Hd. Instr., Instit. of App. Sci., 1920 Sunnyside Ave., Chicago 40, Ill. Home Add.: 4623 N. Hermitage Ave., Chicago 40, Ill. CRIMINAL IDENTIFICATION AND CRIMINALISTICS AND CRIMINAL LAW. b. Belgium, Jan. 13, 1930. s. Moenssens Francois and Leontine (De Meulenaere) M. Edn.: Attended St. Antonius Coll., Belgium and St. Jans Berchmans Coll., Belgium, 1941-46. Exp.: Secy., Chanc., Consulate of Portugal, Los Angeles, Calif., 1957-60; Hd. Instr., Instit. of App. Sci., Chicago, Ill., 1960—. Hon. Pos.: Pres. for Life of Union Professionnelle Belge de la Police Privee. Mem.: Internatl. Assn. for Identification; Am. Assn. for the Adv. of Sci.; Sta. Microscopical Soc. of Ill. Author: Cursus in Dactyloscopie, 1952; Classification of Fingerprints, 1958; A Comparative Study of the Henry System and FBI Extensions, 1954. Contbr. to: Jour. of Criminal Law, Criminology and Police Science; Finger Print and Identification Magazine; Jour. of Forensic Sci. Areas of Rsch.: Fingerprint History and Development; Criminalistics; Criminal Law.

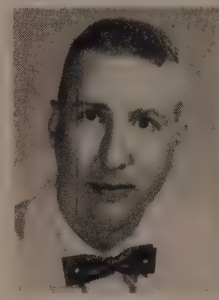
MOGG, Donald Whitehead (Mr.), Section Hd., Rsch. Dept., Great Lakes Carbon Corp., 8210 Austin Ave., Morton Grove, Ill. Home Add.: 7455 N. Greenview Ave., Chicago 26, Ill. PHYSICAL CHEMISTRY. b. La Grange, Ill., Feb. 11, 1924. s. Harold W. and Margaret (Whitehead) M. Edn.: B.S., Allegheny Coll., 1944. Exp.: Asst. Chemist, Great Lakes Carbon Corp., Ill., 1947-48; Chemist, ibid., 1948-53; Rsch. Chemist, ibid., 1953-56; Project Supervisor, ibid., 1956-59; Section Hd., ibid., 1959—. Mem.: Am. Chemical Soc.; A.A.A.S.; Am. Concrete Inst.; Phi Kappa Psi; Phi Beta Kappa. Serv. Rec.: U.S.A. Areas of Rsch.: Mineral Products, Explosives, Carbon Products.

MOHR, Charles E(dward) (Mr.), Educational Dir., Kalamazoo Nature Ctr., Kalamazoo, Mich. Home Add.: 1702 Greenbriar Dr., Kalamazoo, Mich. ANIMAL ECOLOGY. b. Reading, Pa., June 3, 1907. s. Luther S. and Anna (Davis) M. Edn.: A.B., Bucknell Univ., 1930; A.M., ibid., 1931. m. Margaret Spaar, 1940. c.: Mary Jo-Anne. Exp.: Dir.-Educ., Acad. Nat. Scis., Philadelphia, Pa., 1939-47; Dir., Audubon Ctr. of Conn., Greenwich, Conn., 1947-59; Dir., Swiss Pines Preserve, Valley Forge, Pa., 1959-61; Edn. Dir., Kalamazoo Nature Ctr., Mich., 1962—. Mem.: Fellow, A.A.A.S.; Am. Nature Study Soc.; A.S. Ich. to Herps.; A.S. Mamm.; Natl. Speleological Soc.; Pa. Acad. of Sci.; Cave Rsch. Found.; Phi Beta Kappa; Sigma Xi. Author: Celebrated American Caves, co-author, 1956; Hunting with the Camera, co-author, 1957. Contbr. to: Copeia; Jour. Mammalogy. Areas of Rsch.: Cave Fauna; Conservation Edn.; Biological Photography.

MOLDAVSKY, Leon Frank (M.D.), Obstetrician-Gynecologist, 1000 2nd Natl. Bldg., Akron, Ohio. Home Add.: 143 Schocalog Rd., Akron, Ohio. GYNECOLOGY. b. Schenectady, N. Y., Nov. 23, 1911. s. Frank and Pauline (Poch) M. Edn.: A.B., Adelbert Coll. of Western Reserve Univ., 1931; M.S., Univ. of Ill., 1932; M.D., ibid., 1938. Exp.: Asst. Embryology, Western Res. Univ., 1931; Fellow in Anatomy and Physiol., Univ. of Ill., 1931-33; Rotating Interne, Mt. Sinai Hosp., Cleveland, Ohio, 1937-38; Sr. Interne, Asst. Res., Res. in Obstetrics and Gynecology, Mt. Sinai Hosp., Baltimore, Md., 1938-41; Res. in Obst. and Gynec., Jewish Hosp., St. Louis, Mo., 1941-42; Major, Med. Corps, U.S.A., Regional Air Force, Surgical Serv., Harmon Gen., LaGarde, and Brooks Gen. Hosps., 1942-45; Private Practice, Obst. and Gynec., Akron and Barberton, Ohio, 1946—; Chf. of Obst., Citizen's Hosp., Barberton, Ohio, 1952-59; Chf. of Staff, ibid., 1960; Chief OB-Gyn., Citizens, 1962; Acting Chief OB-Gyn., Akron General, 1962. Hon. Pos.: Vice-Pres., 1955, Pres., 1956, Akron Obstetrical Gynecological Soc.; Sr. Staff, Akron Gen. Hosp.; Courtesy Staff in Obstetrics and Gynecology, St. Thomas Hosp., Courtesy Staff, City Hosp. Mem.: Diplomate, Am. Bd. of Obstetrics and Gynecology; Am. Soc. of Abdominal Surgeons; Diplomate of Internatl. Bd. of Surgery; Fellow, Internatl. Coll. of Surgeons; Fellow, Am. Coll. of Obst. and Gynec.; Fellow, Am. Coll. of Surgeons; Scientific Rsch. Soc. of Am.; Assn. of Milit. Surgeons; World Med. Assn.; Sigma Xi; Phi Lambda Kappa; Summit County Med. Assn.; Ohio State Med. Assn.; A.A.A.S.; Akron Art Inst.; Akron Jewish Center; Barberton C. of C.; B'nai Brith; Am. Legion; Jewish War Veterans; Rosemont Country Club. Contbr. to: Am. Jour. of Physiol.; Jour. of Physiol. (English); Proc. Soc. Exptl. Biol. and Med.; Jour. of Neuro-Physiol.; Arch. Phys. Therapy; Southern Surgeon; Ohio State Med. Jour.; Sci.; Am. Jour. Obst. and Gynec.; Milit. Surgeon; Army Bull. Med.; Oral Penicillin; Proc. Soc. of Exptl. Biol. and Med. Serv. Rec.: U. S. Army, 1942-45, Captain to Major.

MOLBY, Fred A. (Ph.D.), Prof., Emeritus, W. Va. Univ., Morgantown, W. Va. Home Add.: Baldwin, Kans. PHYSICS. b. Linn, Kans., Jan. 5, 1878. s. Samuel James and Adelia (Molony) M. Edn.: A.B., Baker Univ., 1904; A.M., Cornell Univ., 1908; Ph.D., ibid., 1910. m. 1st. Leona M. Houghton, 1907. m. 2nd. Frances R. Wilson, 1946. Exp.: Asst., Phys., Baker Univ., 1902-04; Asst. U.S.C. and G. Survey, Magnetic Observ., Baldwin, Kans., 1904-05; Grad. Student, Cornell Univ., 1905-06; Magnetic Observ. (part-time), U.S.C. and G. Survey, 1906-10; Asst. Phys., Cornell Univ., 1906-08; Instr., Phys., ibid., 1908-12; Asst. Prof., Phys., Ind. Univ., 1912-18; Asst. Prof., Phys., Univ. of Cincinnati, 1918-20; Assoc. Prof., Phys., W. Va. Univ., 1920-21; Prof., ibid., 1921-48; Prof. (Emeritus), ibid., 1948—. Mem.: A.A.A.S., Fellow; Am. Phys. Soc.; Am. Phys. Tchrs. Assn.; Optical Soc. of Am.; A.A.U.P.; Am. Inst. of Phys.; W. Va. Acad. of Sci.; Kans. Acad. of Sci.; Sigma Xi; Sigma Pi Sigma. Contbr. to: Am. Phys. Rev.; Jour. of the Opt. Soc. of Am. Areas of Rsch.: Effect of Low Temperature on Optical Rotatory Powers; Expansion Co-Efficients and Refractive Indices of Optical Glasses from 100° C. to - 190° C., Am. and German Glasses; Applicable in Precision Instruments.

MOLDENHAUER, James G. (Mr.), Proj. Engr., Appl. Sci. Div., Hycon Mfg. Co., Santa Paula, Calif. Home Add.: 404 Del Norte, Ojai, Calif. PHYSICS, APPLIED. b. Kenosha, Wisc., May 20, 1930. s. R. H. and Hulda C. (Klingman) M. Edn.: B.A., Univ. of Wisc., 1952; M.A., ibid., 1954. m. Marjorie A. Gilbert, Sept. 14, 1952. c.: Kari; Viki. Exp.: Hd., Propulsion Analysis Br., U. S. Naval Ordn. Test Station, China Lake, Calif., 1955-62; Proj. Engr., Appl. Sci. Div., Hycon Mfg. Co., 1962—. Mem.: Am. Rocket Soc.; Am. Phys. Soc.; Am. Assn. for the Adv. of Sci.; Deutsche Gesellschaft fur Raketentechnik und Raumfahrt; British Interplanetary Soc.; Sierra Club. Serv. Rec.: U. S. Air Force, 1956-59. Areas of Rsch.: Molecular Spectroscopy, Ballistic Missile Systems, Especially Guidance and Propulsion; Propulsion Systems Including Electric, Weather Modification, Bio-Machine Interactions.



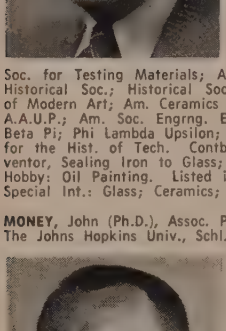
MONDY, Nell Irene (Ph.D.), Assoc. Prof., Food and Nutrn., Cornell Univ., Ithaca, N. Y. Home Add.: 130 Coll. Ave., Ithaca, N. Y. BIOCHEMISTRY; BIOCHEMISTRY OF FOODS. b. Pocahontas, Ark., Oct. 27, 1921. d. Daly and Frances (Carroll) M. Edn.: B.S., Ouachita Coll., 1943; B.A., ibid., 1943; M.A., Tex. Univ., 1945; Ph.D., Cornell Univ., 1953. Exp.: Rsch. Assoc., Biochem., Cornell Univ., 1945-46; Instr., Chem., Sampson Coll., Sampson, N. Y., 1946-47; Asst. Prof., Chem., ibid., 1947-48; Instr., Cornell Univ., 1948-51; Asst. Prof., ibid., 1953-57; Assoc. Prof., ibid., 1957—. Mem.: Am. Chem. Soc.; N. Y. Acad. of Sci.; Am. Home Economics Assn.; Am. Assn. of Univ. Profs.; Institute of Food Techn.; Am. Assn. for the Adv. of Sci.; Omicron Nu; Pi Lambda Theta; Iota Sigma Pi; Sigma Delta Epsilon; Phi Tau Sigma; Phi Kappa Phi; Sigma Xi. Contbr. to: Jour. of Biol. Chem.; Arch. of Biochem.; Food Technol.; Am. Potato Jour.; Food Rsch.; Proc. Soc. Biol. and Med.; Jour. Am. Diet. Assn. Areas of Rsch.: Enzyme Chemistry; Microbiological Vitamin Analysis.

MOLINA, Antonio (M.D.), Medical Editor, Abbott Lab. Int., Merchandise Mart Pl., Chicago, Ill. Home Add.: 628 W. Sheridan Rd., Chicago 13, Ill. EDITORSHIP, MEDICAL WRITER, INTERNAL MEDICINE. b. Barcelona, Spain, May 29, 1897. s. Jacinto and Teresa (Ravello) M. Edn.: B.S., Inst. San Isidro, Madrid, Spain, 1914; M.D., Central Univ. of Madrid, 1921. m. Olga Schutte, Aug. 25, 1945. c.: Anthony. Exp.: Medical Inspector of Emigration Service, Spain, 1925-35; Editor, Am. Clinica in colab. with N. Y. Acad. of Med., 1943-46; Medical Editor, Abbott Lab. Int., Chicago, Ill., 1948—; Editor, Sinopsis Med. Int., Chicago, Ill., 1953-58; Editor, Monografia Med. Mensual, Chicago, Ill., 1958—. Mem.: The New Acad. of Sci.; Am. Assn. Adv. of Sci.; Ill. State Acad. of Sci. Contbr. to: Am. Coll. of Surgeons; Am. Clinica, N. Y.; Pharmacy Int.; El Hosp.;

Sinopsis Medica Int.; Monografia Medica Mensual; La Prensa Medica Argentina; Gaceta Medica Espanola; Medicina; Medicina Clinica, Barcelona; A Gazeta da Farmacia, Rio Janeiro; Prensa Medica Venezolana; Revista Medica Cubana; Revista Medica Peruana; Archivos Medicos de Cuba; El Dia Medico, Buenos Aires; Gaceta Medica, Guayaquil; Abbotterapia, Chicago, Ill.

MONACK, Albert James (Dr.), Assoc. Prof. of Applied Mechanics, Newark Coll. of Engrng., Newark, N. J. ELECTRICAL INSULATION. b. Dec. 30, 1904, Charleroi, Pa. s. N. James and Stephanie (Clement) M. Edn.: B.S., W. Va. Univ., 1927; M.S., Univ. of Ill., 1929; Ph.D., N. Y. Univ., 1962. m. Wendy Pieper of Charleroi, Pa., Nov. 3, 1926. d. F. W. and Irma Pieper. Exp.: Spec. Rsch. Asst., Univ. of Ill., 1929-32; Rsch. Engr., Western Elect. Co., 1935-39; Rsch. and Development Engr., Radio Corp. of Am., 1939-42; Instr. in Chem., Cooper Union, 1939-42; Vice-Pres. and Chief Engr., Mycalex Corp. of Am., 1942-46; Asst. Prof. of Engrng., Fairleigh Dickinson Coll., 1947-54; Asst. Prof. of Phys., Newark Coll. of Engrng., 1954-59; Assoc. Prof. of Applied Mechanics, ibid., 1960—. Mem.: Am. Soc. for Testing Materials; Am. Assn. Physics Teachers; N. J Historical Soc.; Historical Soc., Western Pennsylvania; Museum of Modern Art; Am. Ceramics Soc.; Soc. Am. Military Engineers; A.A.U.P.; Am. Soc. Engrng. Edn.; Soc. of Plastics Engrs.; Tau Beta Pi; Phi Lambda Upsilon; Sigma Xi; Hist. of Sci. Soc.; Soc. for the Hist. of Tech. Contbr. to: Sci. Jours. Gen. Int.: Inventor, Sealing Iron to Glass; Electrical Insulating Compositions. Hobby: Oil Painting. Listed in: A.M.S.; Who's Who in Engrng. Special Int.: Glass; Ceramics; Plastics.

MONEY, John (Ph.D.), Assoc. Prof., Med. Psychol. and Pediatrics, The Johns Hopkins Univ., Schl. of Med., Baltimore 5, Md. Home Add.: 7 E. Eager St., Baltimore 2, Md. b. Morrinsville, New Zealand, July 8, 1921. s. Frank and Ruth Mary (Read) M. Edn.: M.A., Univ. of New Zealand, 1943; Dip. Hons., ibid., 1944; Ph.D., Harvard Univ., 1952. Exp.: Jr. Lectr., Univ. of Otago, New Zealand, 1945-47; Visit. Lectr., Bryn Mawr Coll., 1951-52; Instr., Johns Hopkins Univ., 1951-55; Asst. Prof., ibid., 1955-59; Assoc. Prof., ibid., 1959—. Mem.: Soc. for the Scientific Study of Sex; Sigma Xi; Am. Psychosomatic Soc. Author: Psychologic Study of Man, 1957; Reading Disability; Progress and Research Needs, 1962. Contbr. to: Arch. of Gen. Psychiatry; Behavioral Sci.; British Jour. of Med. Psychol.; Bull. Johns Hopkins Hosp.; Jour. of Nervous and Mental Disease; Jour. of Psychiatric Rsch.; Pediatrics; Psychiatry; Psychosomatic Med.; Annual Survey of Psychoanalysis; Recent Advances in Biol. Psychiatry; Determinants of Human Sexual Behavior; Sex and Internal Secretions; Encycl. of Sexual Behavior; Encycl. of Mental Health; Encycl. of Homosexual Behavior. Gen. Int.: Co-Recipient, Hofheimer Prize of the Am. Psychiatric Assn., 1956. Areas of Rsch.: Hermaphroditism; Clinical Psychoendocrinology; Cerebrocognitional Dysfunction; Dyslexia and Related Aphasic Disorders; Psychology of Cytogenetic Disorders.

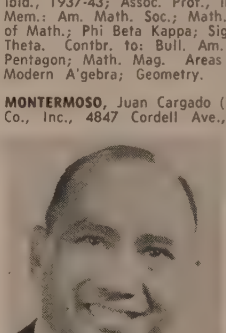


MONTENEGRO, Tulo Hostilio (Mr.), Secy. General, Inter-Am. Statistical Inst., Wash., D. C. Home Add.: 9609 Singleton Dr., Bethesda 14, Md. STATISTICS. b. Espirito Santo, Brazil, Mar. 9, 1916. s. Jonas M. B. and Semiramis (Neto) M. Edn.: Attended Law Schl., Espirito Santo, 1933-36. m. Virginia Doria, May 25, 1942. c.: Fernando Jose; Regina Maria; Maria Carolina; Rachel. Exp.: Chief, Sect. of Econ. Stat., Dept. Stat., Bahia, Brazil, 1941-43; Dir., Dept. of Stat., Espirito Santo, Brazil, 1944; Secy. of Gov., Espirito Santo, 1944-46; Chief, Stat. Serv. of Milit. Purposes, Rio de Janeiro, 1946-47; Regional Stat. Inspector, Rio Grande do Sul, Brazil, 1947; Dir., Tech. Div., Natl. Census Serv., Brazil, 1949-52; Dir., Inter-Am. Trng. Center for Econ. and Financial Stat., Santiago, Chile, 1952-55. Hon. Pos.: Vice-Pres., Wash. Stat. Soc., 1959; Commn. on Stat. Edn., Internatl. Stat. Inst., 1958-61. Mem.: Sociedade Brasileira de Estatistica; Sociedade Brasileira de Geografia; Inter-Am. Stat. Inst.; Internatl. Stat. Inst.; Union for the Scientific Study of Population; The Econometric Soc.; A.A.A.S.; Fellow, Am. Statistics Assn.; The Am. Acad. of Political and Social Science; Asocion Chilena de Estatisticos; Nucleo de Estadist del Ecuador. Author: Aspectos Censitarios Americanos, 19 O Problema do Livro no Brasil, 1955; Tuberculose e Lit tura, 1949; O Comprimento do Periodo como Caracteris Estatistica do Estilo, 1957; A Analise Matematica do Est 1958. Contbr. to: Revista Brasileira do Estatistica; Estadist Jour. of the Am. Stat. Assn. Areas of Rsch.: Census; Stat. E

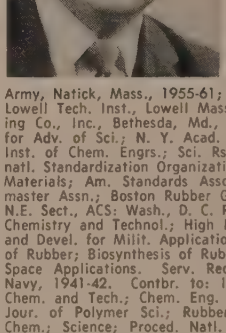
MONROE, Stanley Edwin (M.D.), Surgeon, Clinic Owner, 765 Ave., Chula Vista, Calif. Home Add.: 2 Palomar Dr., Ch Vista, Calif. SURGERY. b. Bangor, Mich., June 26, 1902. Samuel E. and Ella (Monroe) M. Edn.: B.A., Univ. of Mi 1926; M.D., Univ. of Chicago, 1937. m. Ruth Williams, Ju 1935. Exp.: Surgeon and Clinic Owner, Chula Vista, Ca Mem.: Alpha Omega Alpha; Internatl. Coll. of Surg.; Am. M Writers Assn.; Assn. of Military Surgeons of U.S.; Phi Beta Alpha Omega Alpha. Contbr. to: Am. Jour. of Surg.; Ca Med.; Ariz. Med.; Annals of Surg.; Jour. Internatl. Coll. Surg. Serv. Rec.: AUS, 1942-47.

MONTAGUE, Harriet Frances (Ph.D.), Prof. of Maths., The U of Buffalo, Buffalo 14, N. Y. Home Add.: 81 Princeton Bl Kenmore 17, N. Y. MATHEMATICS. b. Buffalo, N. Y., June 1905. s. Laurence M. and Alice B. (Haffa) M. Edn.: B.S., Univ. of Buffalo, 1927; M.A., ibid., 1929; Ph.D., Cornell Un 1935. Exp.: Instr., The Univ. of Buffalo, 1929-37; Asst. Pr ibid., 1937-43; Assoc. Prof., ibid., 1943-47; Prof., ibid., 194 Mem.: Am. Math. Soc.; Math. Assn. of Am.; Nat. Coun. To of Math.; Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon; Pi Lam Theta. Contbr. to: Bull. Am. Math. Soc.; Am. Math. Monti Pentagon; Math. Mag. Areas of Rsch.: Mathematics Educati Modern A'gebra; Geometry.

MONTERMOSO, Juan Cargado (Ph.D.), Dir. of Rsch., R. E. Darl Co., Inc., 4847 Cordell Ave., Bethesda, Md. CHEMISTRY. Manila, Philippines, Aug. 1909. s. Manuel and Paula (C gado) M. Edn.: A.B., Univ. Calif., Berkeley, 1935; M ibid., 1937; Ph.D., ibid., 19 m. Anita Pablo on June 2, 19 c.: Juan P., Jr. Exp.: Rs Chem., Works Progress Adm 1937-40; Tech. Asst., Univ. Calif., 1940-41; Intelligence D U. S. Navy, 1941-42; Rubber Te Mare Island Rubber Lab., 19 48; Assoc. Chemist, Naval Rs Lab., Wash., D. C., 1948-49; P Chemist and Chf. Rubber Se Rsch. and Dev. Div., Off. of Quartermaster Gen., Dept. of Army, Wash., D. C., 1949- Physical Administrator and C Elastomer Br., Quartermaster Rs and Devel. Ctr., Dept. of Army, Natick, Mass., 1955-61; Lectr. on Rubber Chem. and Te Lowell Tech. Inst., Lowell Mass., 1955-61; Dir. Rsch., R. E. D ing Co., Inc., Bethesda, Md., 1961—. Mem.: A.C.S.; Am. As for Adv. of Sci.; N. Y. Acad. of Scis.; Am. Inst of Chem.; A Inst. of Chem. Engrs.; Sci. Rsch. Soc. of Am.; Sigma Xi; In natl. Standardization Organization on Rubber, Am. Soc. for Test Materials; Am. Standards Assoc.; Am. Ord. Assn.; The Quar master Assn.; Boston Rubber Group; Elastomers and Plastic G N.E. Sect., ACS: Wash., D. C. Rubber Group. Special Int.: Rub Chemistry and Technol.; High Polymer Chemistry; Elastomer Rs and Devel. for Milit. Applications; Compounding and Vulcanizat of Rubber; Biosynthesis of Rubber; High Temp. Materials for A Space Applications. Serv. Rec.: Intelligence Div., Dept. of Navy, 1941-42. Contbr. to: Indusl. and Engrng. Chem.; Rub Chem. and Tech.; Chem. Eng. Prog.; Rubber World; Rubber A Jour. of Polymer Sci.; Rubber and Plastics Age; Jour. of C Chem.; Science; Proced. Natl. Acad. of Scis.; Plant Physiolo Jour. Am. Chem. Soc. Listed in: Am. Men of Sci.; Chemical W.; Rubber's W. W.; Who Knows—and What.



MONTJAR, Monty Jack (Ph.D.), Asst. Prof. of Chem., St. Vinc Coll., Latrobe, Pa. Home Add.: 324 Chestnut St., Latrobe, PHYSICAL CHEMISTRY. b. trobe, Pa., Aug. 12, 1924. D. J. and Elsie A. (Blum) Edn.: B.S., St. Vincent Co Coll., 1949; M.S., Univ. of No Dame, 1950; Ph.D., Carnegie In of Tech., 1955. Exp.: Chem Callery Chem. Co., Callery, P 1954-57; Asst. Prof., Pa. St Univ., Univ. Park, Pa., 1957- Asst. Prof., St. Vincent Co 1960—. Mem.: Am. Chem. So Am. Assn. for the Adv. of Sc Sigma Xi; Phi Lambda Upsil Delta Epsilon Sigma; A'pha Sigma. Contbr. to: Analyt. Che Serv. Rec.: U. S. Army, 1942- Areas of Rsch.: Surface Chem try; Boron Chemistry; Fracti ating Processes; Molecular Str ture.



MONTIE, Thomas Charles (Ph.D.), Asst. Mem., The Albert Einst Medical Ctr., Phila., Pa. Home Add.: 700 Wyndale Rd., Jenk town, Pa. BIOCHEMISTRY. b. Cleveland, Ohio, Oct. 8, 19 s. Wilbert and Jean (Hansen) M. Edn.: B.A., Oberlin Coll., 19

S., Univ. of Md., 1958; Ph.D., ibid., 1961. m. Diane Block, n., 1956. c.: Denise Margaret; Michael Thomas. Exp.: Tchng. st., Univ. of Md., College Park, Md., 1956-57; Rsch. Asst., id., 1959-60; Rsch. Assoc., Inst. for Cancer Rsch., Phila., Pa., 60-62; Asst. Mem., Albert Einstein Med. Ctr., 1962—. Mem.: gma Xi. Contbr. to: Chem. and Industry; Phytopathology. rv. Rec.: Army Reserve, 1953—. Areas of Rsch.: Microbiology ochemistry, Yeast Metabolism.

ONTY, Richard Arthur (Ph.D.), Rsch. Psychologist, Cornell Aero- nut. Lab., Inc., P. O. Box 235, Buffalo 21, N. Y. Home Add.: 249-C Kenville Road, Buffalo, New York. ENGINEERING PSYCHOLOGY; EXPERIMENTAL PSYCHOLOGY; HUMAN FACTORS IN SPACE TRAVEL; DESIGN AND ANALYSIS OF EXPERIMENTS. b. Sanford, Me., Apr. 2, 1935. s. Leo J. and Evelyn J. (Delahunt) M. Edn.: A.B., Boston Univ., 1956; A.M., Columbia Univ., 1957; Ph.D., Univ. of Rochester, 1962. Exp.: Rsch. Asst., U. S. Army, Leadership, Human Rsch. Unit, Monterey, Calif., 1957-59; Tchng.. and Rsch. Asst., The Univ. of Rochester, Rochester, N. Y., 1959-61; Engrng. Psychologist, Gen. Electric Missile and Space Vehicle Dept., Phila., Pa., 1961-62; Rsch. Psychol., Cornell Aeronaut. Lab., Inc., 1962—. Mem.: Am. Psychol. Assn.; uman Factors Soc.; Am. Assn. for the Adv. of Sci.; Sigma i. Contbr. to: Perceptual and Motor Skills, Human Factors. Serv. ec.: U. S. Army, 1957-59. Areas of Rsch.: Vision; Audition; igilance; Motivation; Learning.

OODY, Alton B. (Mr.), Chief, Navigational Systems, National eronautics and Space Admin., Washington 25, D. C. NAVIGATION. b. Thatcher, Ariz., July 28, 1911. s. William Alfred and Sarah Emily (Blake) M. Edn.: B.Sc., U. S. Naval Acad., 1935. m. Ruth Leah Isbell on Jan. 1, 1938. c.: Catherine Patricia; Virginia; Evelyn; William Alton; David Rupert. Exp.: In Charge of Private Navigation School which trained many navigators for the Armed Forces, 1938-44; Naval Officer and Navigation Instr., Lectr. at U. S. Naval Acad., 1941-46; Deputy Dir., Div. of Navigational Sci., U. S. Navy Hydrographic Office, Wash. 25, D. C., 1946-62; Chf., Navigational Supt., Natl. Aeronaut. and Space Admin., 1962—. Hon. Pos.: Pres., Inst. of Navigation; Govt. Mem. of Governing Bd. of the U. S. Power

quadrons; Mem., Bd. of Governors of the Am. Polar Soc.; Internatl. Thurlow Navigtn. Award, 1953; Navy Superior Civilian Serv. Award, 1959. Mem.: Inst. of Navigtn.; Arctic Inst. of N. Am.; Am. Polar Soc.; N. Y. Acad. of Sci.; Sci. Res. Soc. of Am.; A.A.A.S. Hon. Mem.: N. Club of the U. S. Power Sqdns.; Potomac River Power Sqdn. Author: Navigation and Nautical Astronomy, 1948; Navigation Dictionary (H.O. Pub. No. 220), 1956; Air Navigation (H.O. Pub. No. 216), 1955; Am. Practical Navigator (H. O. Pub. No. 9), 1958. Contbr. to: U. S. Naval Inst. Proc.; Navigation; Proc. of the I.R.E.; Internatl. Hydographic Rev.; Shipmate; Mast; The Ensign; Jour. of the Inst. of Navigation; Motor Boating; Polaris; Military Engr.; Travel; Sky and Telescope; Armada (Colombia). Serv. Rec.: U. S. Navy, 1941-46. Special Int.: Polar Navigation; Navigation Methods; Ship Grounding; Navigational, Geodetic Satellites; Space Navigation. Listed in: A.M.S.; Who Knows and What; World W. W. in Commerce and Industry.

MOONEY, David Samuel (Ph.D.), Assoc. Prof. of Chem., Wash. and Jefferson Coll., Washington, Pa. Home Add.: 56 Old York Rd., Washington, Pa. ORGANIC CHEMISTRY. b. Albany, N. Y., Oct. 13, 1928. s. Edward Samuel and Mary (Kurtz) M. Edn.: B.A., State Univ. of N. Y., Albany, 1950; M.A., ibid., 1951; Ph.D., Rensselaer Poly. Inst., 1955. m. Margaret Devitt, Aug., 1960. c.: Douglas David. Exp.: Tchg. Asst., Rensselaer Poly. Inst., Troy, N. Y., 1951-55; Asst. Prof., Washington and Jefferson Coll., Washington, Pa., 1955-58; Assoc. Prof., ibid., 1958—. Mem.: Am. Chem. Soc.; AAAS; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc. Listed in: Am. Men of Sci.; WWAE. Areas of Rsch.: Organolithium Compounds, Organic Reaction Mechanisms.

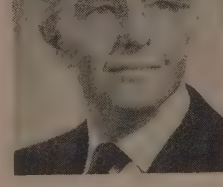
MOORE, Evelyn Alice (Miss), Reference Librarian, Scl. and Tech. Div., Libr. of Congress, Wash. 25, D. C. Home Add.: 120 4th St., S.E., Washington 3, D. C. CHEMISTRY, INFORMATION RETRIEVAL. b. Houston, Tex., Sept. 15, 1936. d. Clark W. and Vivian (Fletcher) M. Edn.: B.S. in Chem., Univ. of Denver, 1958; M.S.L.S., Western Reserve Univ., 1961. Exp.: Rsch. Asst., Denver Rsch. Inst., Denver, Colo., 1957-59; Librarian Trainee, Monsanto Chem. Co., St. Louis, Mo., 1959-61; Librarian, Trainee, Libr. of Congress, Washington, D. C., 1961-62; Ref. Librarian, ibid., 1962—. Mem.: Am. Chem. Soc.; AAAS; Am. Documentation Inst.; Special Libs. Assn.; Am. Libr. Assn.; Iota Sigma Pi. Areas of Rsch.: Information Retrieval, Literature of Chemistry.

MOORE, Floy Jack (M.D.), Prof. and Chmn., Dept. of Psychiat., Dir. of Lab. of Clin. Electroencephal., Univ. Med. Ctr., Univ. of Miss., Jackson, Miss. Home Add.: 2006 Cherokee Dr., Jackson, Miss. PSYCHIATRY AND ELECTROENCEPHALOGRAPHY. b. Moundsville, W. Va., May 25, 1924. s. William R., Sr., and May Weaver (Francis) M. Edn.: A.B., Univ. of W. Va., 1945; M.D., Univ. of Pa., 1948. m. Jacqueline G. Verbrugghen, Feb. 16, 1950. c.: Adrien Ray; Kevin Robert. Exp.: Intern, Presbyt. Hosp., Chgo., Ill., 1948-49; Res., Baylor Univ. Coll. of Med., Houston, Tex., 1951-53; Cert. by exam. by Am. Bd., of Psychiat., 1955; Asst. Instr., Dept. of Psychiat., Baylor Univ. Coll. of Med., Houston, Tex., 1951-53; Instr., Dept. of Psychiat. and Physiol., ibid., 1953-55; Asst. Prof. of Physiol., ibid., 1955-56; Asst. Prof. of Psychiat., ibid. ,1955-56; Prof. and Chmn., Dept. of Psychiat., Univ. of Miss., 1955—; Chmn., Advr. Coun., Sta. Bd. of Hlth., Hinds Co. Ment. Hlth. Serv. Clinc, 1962—; Psychiat. Examnr. for the Meth. Ch. Foreign Bd. of Missions; Chf. of the Med. Staff, Univ. Med. Ctr., Jackson, Miss., 1960-61. Mem.: Am. Psychiat. Assn., Fellow, 1961; ibid., Ad Hoc Comm. on Recog. of Allied Serv. Persnl. in Ment. Hosps., 1958—; ibid., Comm. on Psychiat. and Soc. Work., 1961—; ibid., Chmn., 1960, Reg. Comm. on Psychiat. and Soc. Wrk.; Pres., 1959-60, Miss. Psychiat. Soc., Dist. Br. of the Am. Psychiat. Assn.; Sec.-Treas., 1956-58, Pres., 1958-59, So. Electroencephal. Soc.; Am. Electroencephal. Soc.; Houston Neurol. Soc.; Am. Med. Assn.; Miss. St. Med. Assn.; Central Med. Soc.; Chmn., 1962-63, So. Profs. of Psychiat.; So. Psychiat. Assn.; Acad. of Religion and Men. Hlth.; Am. Assn. for History of Med.; Am. Sociol. Soc. Contbr. to: A.M.A. Arch. of Indust. Hyg. and Occupati. Med.; Neurol.; Dis. of the Nervous Syst.; The Jour. of Med. Edn.; Soc. of Exper. Bio. and Med.; The W. Va. Med. Jour.; Jour. of the Miss. Sta. Med. Assn. Serv. Rec.: U. S. Navy, 1943-45; U.S.N.R., 1948-51.

MOORE, Harold Emery (Ph.D.), Prof. of Botany in and Dir. of L. H. Bailey Hortorium, Mann Library, Cornell Univ., Ithaca, N. Y. Home Add.: 7 Genung Rd., RD2, Ithaca, N. Y. PLANT TAXONOMY. b. Winthrop, Mass., July 7, 1917. s. Harold E. and Helen J. (Margeson) M. Edn.: B.S., Mass. State Coll., 1939; M.A., Harvard Univ., 1940; Ph.D., ibid., 1942. Exp.: Tech. Asst., Gray Herbarium, Harvard Univ., Cambridge, Mass., 1947-48; Asst. Prof., L. H. Bailey Hortorium, Cornell Univ., Ithaca, N. Y., 1948-51; Assoc. Prof. to Prof., ibid., 1951—. Mem.: Am. Soc. of Plant Tax.; Botanical Soc. of Am.; Soc. for the Study of Evolution; Soc. for Econ. Botany; New England Botanical Club; Palm Soc.; Internatl. Assn. for Plant Tax.; A.A.A.S.; A.I.B.S.; Phi Sigma Kappa; Sigma Xi. Author: African Violets, Gloxinias, and their Relatives, 1957. Contbr. to: Rhodora, Taxon., Gentes Herbarum, Baileya, Brittonia, American Hort. Mag.; Principes. Serv. Rec.: A.U.S., 1942-46. Areas of Rsch.: Taxonomy of Cultivated Plants, Palmae, Gesneriaceae.

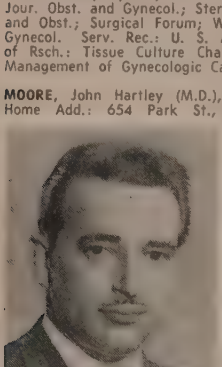
MOORE, Herbert Charles (Mr.), Assoc Prof. of Dairy Husbandry, 12 Bagdad Rd., Durham, N. H. DAIRY MANUFACTURING. b. Frankfort, Ind., Sept. 24, 1900. s. Charles S. and Jossie L. (Hoover) M. Edn.: B.S., Purdue Univ., 1923; M.S., Univ. of Minn., 1925. m. Florence L. Smith of Frankfort, Ind., Sept. 3, 1929. d. Mr. and Mrs. C. K. Smith. c.: Mary E.; Charles S. Exp.: Instr., Rutgers Univ., 1925-26; Chem., Paulus Dairy 1926-28; Instr., Dairy Husb. and Asst. Dairy Husb., Agri. Expt. Sta., Univ. of N. H., 1928-39; Asst. Prof., Dairy Husbandry and Asst. Dairy Husb., ibid., 1939-43; Assoc. Prof., Dairy Husbandry and Assoc. Dairy Husb., ibid., 1943—. Mem.: Am. Dairy Sci. Assn.; Alpha Zeta; Tau Kappa Epsilon; Sigma Xi; Mason. Contbr. to: Jour. of Dairy Sci.; Jour. of Milk and Food Tech. Special Int.: Composition of Milk, Quality Control.

MOORE, Howard Roswald (Ph.D.), Branch Hd. and Chem. Consultant, U. S. Naval Air Devel. Ctr., 200 W. Montgomery Ave., Hatboro, Pa. PLASTICS AND SURFACE CHEMISTRY. b. Chicago, Ill., Oct. 4, 1901. s. Eugene Howard and Jessie (Compton) M. Edn.: S.B., Univ. of Chgo., 1921; S.M., ibid., 1922; Ph.D., ibid., 1924. m. Mary Colette Brode, Dec. 13, 1930. c.: Howard, Jr.; Evangeline; Jean; William. Exp.: Photochemist, Eastman Kodak Co., 1925-27; Chemist, Bur. of Standards, 1927-30; Colloid Chemist, Celanese Corp. of Am., 1930-33; Natl. Aniline and Chem. Co., 1934-35; Tech. Dir., Kay and Ess Co., 1936-37; Chemist, Phila. Naval Shipyard, 1938-48; Branch Head, and Chem. Consultant, Aero. Electronic Lab., U. S. Naval Air Development Center, Johnsonville, Pa., 1948—. Mem.: A.C.S.; Fellow, Am. Inst. of Chemists; Soc. Plastics Inst.; Am. Chem. Soc.; Soc. Plastics Engrs.; Fellow, A.A.A.S.; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Modern Plastics; Soc. of Plastics Industry; Jour. Optical Soc. Am. Gen. Int.: Textured Wrinkle Finishes; Invention of Surface Coating Analyzer and Electro-thermal Fire Tester; Hot and Cold Processes of Producing Surface Conversion Coatings on Steel to Prolong Paint Durability; Foam Resin Synthesis; Low Temp. Process for Expanded Plastics; Application of Plastics in Design of Explosive Bombs. Special Int.: Improved Plastics and Ceramics Materials for Radomes and Irdomes for Guided Missiles; Applications of High Polymers and other Non-Metallic Materials and Constructions to Electronic and Acoustic Devices; Formulation of Marine Paints; Inhibitive Pickling Process for Mild Steel; Improvements in Phosphating of Steel.

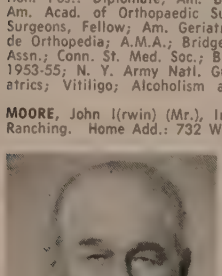


MOORE, John George (M.D.), Assoc. Prof. of Obstetrics and Gynecology, Univ. of Calif., Los Angeles Schl. of Med., Los Angeles, Calif. Home Add.: 603 Hightree Rd., Santa Monica, Calif. OBSTETRICS AND GYNECOLOGY. b. Berkeley, Calif., Sept. 17, 1917. s. John George, Sr. and Mercedes (Sullivan) M. Edn.: A.B., Univ. of Calif., Berkeley, 1939; M.D., Univ. of Calif., San Francisco, 1942. m. Mary Louise Laffer, 1946. c.: Barbara; Terence; Bruce; Martha. Exp.: Instr. to Asst. Prof., Univ. of Iowa, 1950-51; Asst. to Assoc. Prof., U.C.L.A. Schl. of Med., 1951—. Hon. Pos.: Pres., U.C.L.A. Med. Soc., 1962-63; Chmn., Admissions Com., U.C.L.A. Schl. of Med., 1962-63. Mem.: Sigma Xi; N. Y. Acad. Scis.; Alpha Omega Alpha; Soc. for Gynecologic Investigation; Am. Assn. of Obst. and Gynecol.; Am. Gynecol. Soc.; Nu Sigma Nu. Author: Lawyer's Medical Encyclopedia, Vol. V Obstetrics, 1961. Contbr. to: Am. Jour. Obst. and Gynecol.; Sterility and Fertility; Surgery Gynecol. and Obst.; Surgical Forum; Western Jour. of Surgery, Obst. and Gynecol. Serv. Rec.: U. S. Army Med. Corps, 1942-46. Areas of Rsch.: Tissue Culture Characteristics of Gynecologic Tissues; Management of Gynecologic Cancer.

MOORE, John Hartley (M.D.), Home Add.: 654 Park St., Bridgeport, Conn. ORTHOPAEDIC SURGERY AND TRAUMATOLOGY. b. Englewood, N. J., Feb. 3, 1928. s. Justin Hartley and Rosa (Tamborrell) M. Edn.: B.S., Colegio Frances Morelos, Mexico City, Mex., 1946; M.D., Universidad Nacional Autonoma de Mexico, 1951. m. Patricia J. Sullivan, May 1, 1961. c.: Lisa Rose. Exp.: Intern, Hosp. Gen., Mexico City, Mex., 1950-51; Intern, Hackensack Hosp., N. J., 1952; Post-Grad. Course in Surg., N. Y. Univ., Post-Grad. Med. Schl., 1952-53; Resident Surgeon in Orthopaedics, Bellevue Hosp. Ctr., N.Y.C., 1955-56; Resident Surgeon in Orthopaedics, N. Y. St. Rehabilitation Hosp., W. Haverstraw, N. Y., 1956-57, Bellevue and Meadowbrook Hosps., N. Y., 1957-58; Instr., N. Y. Univ., Post Grad. Med. Schl., 1958-59; Clinical Asst., Yale Univ. Schl. of Med., 1960—; Asst. Attending Orthopaedic Surgeon, Bridgeport, Conn. Hosp.; Consultant Orthopaedic Surgeon, The Hillside Hosp., Bridgeport, Conn.; Courtesy Staff, St. Vincent Hosp. and The Park City Hosp., Bridgeport, Conn. Hon. Pos.: Diplomate, Am. Bd. of Orthopaedic Surgery. Mem.: Am. Acad. of Orthopaedic Surgeons, Fellow; Internatl. Coll. of Surgeons, Fellow; Am. Geriatric Soc., Fellow; Sociedad Mexicana de Orthopedia; A.M.A.; Bridgeport Med. Assn.; Fairfield Co. Med. Assn.; Conn. St. Med. Soc.; B.P.O. Elks. Serv. Rec.: U. S. Army, 1953-55; N. Y. Army Natl. Guard, 1956—. Areas of Rsch.: Geriatrics; Vitiligo; Alcoholism and Exptl. Surgery.

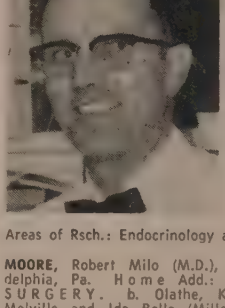


MOORE, John I(rwin) (Mr.), Independent Geologist; Oil Producer; Ranching. Home Add.: 732 West Ave. D, San Angelo, Tex. GEOLOGY. b. Owensville, Ind., Oct. 4, 1897. s. John P. and Mary C. (Skelton) M. Edn.: A.B., Ind. Univ., 1921; M.S., Univ. of Chgo., 1922. m. Blossie Evans, May 29, 1938. Exp.: Field Geologist, Roxana Petroleum Corp. (Shell), Okla., Kans., Western Canada, Mich. and Tex., 1922-28; Geologist and Dir., Fuhrman Petroleum Corp., San Angelo, Tex., 1928-30; Consulting Geologist, ibid., 1930-32; Pres., Moore Petroleum Corp., ibid., 1932-36; Pres., Moore Bros. Corp., San Angelo and Midland, Tex., 1936-38; Pres., Moore Exploration Co., Midland, Tex., 1938-54; Pres., Permian Royalty Co., San Angelo, Tex., 1938-56. Mem.: Geological Soc. Am.; Am. Meteorological Soc.; Am. Assn. Petrol. Geologists; Am. Geophys. Union; A.A.A.S. (Fellow); Okla. Acad. Sci.; Ind. Acad. Sci.; Tex. Acad. Sci.; Royal Geographical Soc. of London (Fellow); Zool. Soc. of London (Fellow); Am. Geographical Soc. (Fellow); Am. Polar Soc.; Arctic Inst. of No. Am.; West Tex. Geol. Soc.; Kappa Epsilon Pi; Sigma Xi. Author: A Review of the Present Knowledge of Fossil Scorpions with the Description of a New Species from the Pottsville Formation of Clay Co., Ind., 1922, 1923. Areas of Rsch.: Stratographic Geol. and Geography.



MOORE, Norman Slawson (M.D.), Clinical Dir., Cornell Univ., 512 East State St., Ithaca, N. Y. MEDICINE. b. Ithaca, N. Y., April 17, 1901. s. Veranus and Mary (Slawson) M. Edn.: A.B., Cornell Univ., 1923; M.D., ibid., 1926. m. Bernice Barkee, 1932. Exp.: Internship, Second Med. Div., Bellevue Hosp., 1926-28; Asst. Residency, Hosp. of the Rockefeller Inst., 1928-29; Practice Int. Med., Ithaca, N. Y., 1929-40; Physician-in-Chf., Cornell U Infirmary and Clinic, 1940—; Prof. of Clin. Med., Dept. of and Preventive Med., ibid., 1940—; Consulting Physician, To kins County Meml. Hosp., 1940—; Hd. of Dept. of Clin. Preventive Med., 1943—; Prof. of Clin. Med., Schl. of Nutrit Cornell Univ., 1945—; Chmn., Tompkins County Pub. Hlth. Com 1935-47; Mem. N. Y. State Pub. Hlth. Council, 1954—; Chr Tompkins Co. Bd. of Health, 1947—; Asst. Editor, N. Y. S Jour. of Med., 1953—; Chmn., Comm. on Pub. Health and E 1957-60; Pres., Med. Soc. St. of N. Y., 1960; Chmn., N. Y. Hosp. Planning and Review Council, 1961. Mem.: Gamma Cha Phi Sigma Kappa; Cornell Club of N. Y.; Ithaca Country Cl A.A.A.S.; Harvey Soc.; Am. Coll. of Physicians; Diplomate, Bd. Internal Med.; Sigma Xi. Listed in: W. W. in Am.; Wh Important in Med.

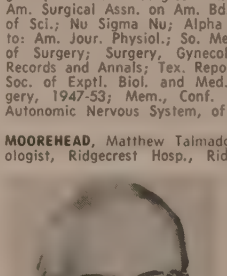
MOORE, L(aurel) Arthur (D.O.), Osteopathic Physician and Surge 323 18th St., Bakersfield, Calif. Home Add.: 3518 Pickwick Bakersfield, Calif. ENDOCRIN OGY; MANIPULATION. b. St. Jo Kans., May 1, 1910. s. L. Bur and Cora (Kinnamon) M. Ed A.A., Compton Jr. Coll., Ca 1935; D.O., Coll. of Osteopat Physicians and Sufrgeons, Los geles, 1940. m. Mildred Manni July, 1935. c.: Marylon; Mich Arthur. Exp.: Osteopathic Ph cian and Surgeon, Gen. Pract Bakersfield, Calif., 1940-60. H Pos.: Past Pres., Kern County teopathic Soc. Mem.: A.A.A Am. Osteopathic Assn.; Calif. teopathic Assn.; Acad. of Appl Osteopathy; Coll. of Gen. Pra tioners in Osteopathic Med. Surgery; Optimist Club; B.P.O. Commonwealth Club, San Francis Serv. Rec.: U. S. Navy, 1928-



Areas of Rsch.: Endocrinology and Manipulation.

MOORE, Robert Milo (M.D.), Secy., Am. Bd. of Surg., Ph delphia, Pa. Home Add.: 161 San Marino, Galveston, T SURGERY. b. Olathe, Kan., Nov. 18, 1902. s. Rob Melville and Ida Belle (Miller) M. Edn.: M.D., Wash. Un 1926. m. Ruth Elizabeth Williams, 1931. c.: Peter Melville Stephen Williams. Exp.: Interne in Surgery, Barnes Hosp., Louis, Mo., 1926-27; Asst. Resident Surgeon, ibid., 1929-30; M Fellow of Natl. Rsch. Coun., Dept. of Physiol., Harvard M Schl., Boston, Mass., 1927-29; Assoc. Prof. of Exptl. Surge Univ. of Tex., Galveston, Tex., 1930-44; Prof. of Surgery, ib 1944-62; Chmn., Dept. of Surgery, ibid., 1947-60; Secy., A Bd. of Surg., 1962—. Hon. Pos.: Certified by Am. Bd. Surgery, 1938; Mem., Am. Bd. of Surgery, 1947-55; Me Conf. Com. on Grad. Trng. in Surgery, 1958—; Mem., Co Com. on Graduate Training in Surgery, 1948-62. Mem.: A Surgical Assn.; Southern Surgical Assn.; Am. College of S geons; Western Surgical Assn.; A.A.A.S.; Representative Am. Surgical Assn. on Am. Bd. of Surgery, 1947-53; Texas Ac of Sci.; Nu Sigma Nu; Alpha Omega Alpha; Sigma Xi. Cont to: Am. Jour. Physiol.; So. Med. Jour.; Annals of Surgery; Ar of Surgery; Surgery, Gynecol. and Obstetrics; Surgery; M Records and Annals; Tex. Reports on Exptl. Biol. and Med.; Pr Soc. of Exptl. Biol. and Med.; Am. Surgeon; The So. Surge gery, 1947-53; Mem., Conf. Com. on Grad. Trng. in Surge Autonomic Nervous System, of Embolism; Abdominal Surgery.

MOOREHEAD, Matthew Talmadge (M.D.), Surgeon-Pathologist-Ra ologist, Ridgecrest Hosp., Ridgecrest, Calif. Home Add.: 2 Graaf St., Ridgecrest, Calif. RA OLOGY; PATHOLOGY AND SURGE (MAJOR SURGERY). b. Plainfie Ohio, 1897. s. Matthew T. a Mary (Tallmadge) M. Edn.: B. Ohio Wesleyan Univ., 1917; M. Western Reserve Univ., 192 M.S., Grad. Schl. of Med., Un of Pa., 1948. m. Mary Morr July 1, 1949. c.: Holly; Matthe III; Morrill. Exp.: Pathologi U. S. Vet. Adm., Calif., Ala., M 1924-40; Radiologist, ibid., 192 40; Assoc. Pathol., Univ. of Al Schl. of Med., 1935-40; Surgeo ibid., 1950-52; Surgeon, Pathol Radiolt., Ridgecrest Hosp., 1952 Hon. Pos.: Chf. Res. Physn. a Surgeon, Univ. of Pa. Med. Sch and Hosp. Mem.: Scientific Rs Soc.; Am. Assn. for the Adv.



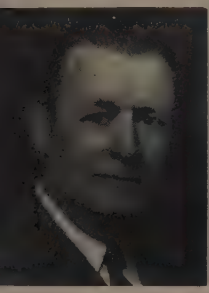
Sci.; Am. Colls. of Radiology; Radiol. Soc. of No. Am.; Interna Coll. of Surgeons; Am. Bd. of Surg.; Am. Bd. of Pathol.; A Bd. of Radiol.; Sigma Phi Epsilon; Phi Rho Sigma; 32° Mas and Shriner Contbr. to: Radiol.; Mod. Med.; The Med. Bull. the Vets. Admin.; The Jour. of the Me. Sta. Med. Assn.; T Practitioner's Libr. of Med. and Surg.; The Med. Jour. of Bri The Jour. of the Internatl. Coll. of Surgeons; Ariz. Med.; T Jour. of the Am. Med. Assn. Serv. Rec.: U. S. Army, W.W. (1st Lt.). Areas of Rsch.: Radiology, Roentgenology; Nucle Physics and Isotopes (radioactive); Surgery (General and Abdon nal); Pathology and Clinical Pathology (including Forensic Path ogy); Cancer Therapy and the Peptic Ulcer Problem.

OORING, Eugene Cameron (Mr.), Technical Dir., Prewitt Plastics
., Shirley Hwy. at Edsall Rd., Alexandria, Va. Home Add.:
1010 Hillcrest Lane, Annandale, Va.
PLASTICS ENGINEERING. b. Houston, Tex., July 17, 1922. s. Eugene Christopher and Inez M. (Keniston) M. Edn.: B.S., Calif. Inst. of Technol., 1949. m. Catherine S. Alexander, November 27, 1943. c.: Alan; Diane; Bruce. Exp.: Asst. Hd., Plastics Sect., M. & P. Engrng., Douglas Aircraft Co., Santa Monica, Calif., 1949-59; Staff Engr., Atlantic Rsch. Corp., Alexandria, Va., 1959-61; Technical Dir., Prewitt Plastics, Clifton Hgts., Pa., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Soc. Plastic Engrs.; Am. Ord. Assn. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Structural, Insulative and Ablative Applications of Plastics.

OOS, Gilbert Ellsworth (Ph.D.), Assoc. Prof. of Chem., St. Law-
nce Univ., 28 Farmer St., Canton, N. Y. ORGANIC BIOCHEMISTRY. b. Hasbrouck Heights, N. J. May 1, 1915. s. Bernard and Florence Margaret (Dalrymple) M. Edn.: B.S., St. Lawrence Univ., 1936; S.M., M.I.T., 1937; Ph.D., ibid., 1939. m. Ruth Carolyn Feinthel on June 17, 1944. c.: Carolyn Ruth; Walter Hamilton. Exp.: Instr. in Chem., Rollins Coll., Winter Park, Fla., 1939-40; Rsch. Assoc., M.I.T., Cambridge, Mass., 1940; Rsch. Chemist and Group Ldr., Am. Oak Leather Co., Cincinnati, Ohio, 1941-42; Research Chemist., then Sect. Hd., Celanese Corp. of Am., 1942-52; Asst. Prof. of Chem., St. Lawrence Univ., 1952-55; Assoc. Prof., 1955—; Chmn., Western Md. Sect., Secy.-Treas., 1954, Chmn., 1955, No. N. Y. Sect., Am. Chem. Soc.; Vice-

res., 1955-56, Pres., 1956-57, A.A.U.P., St. Lawrence Univ. Chapt.
em.: Am. Chem. Soc.; Am. Assn. Univ. Profs.; N. Y. Acad. of
ci.; A.A.A.S.; Sigma Xi; Gamma Sigma Epsilon. Contbr. to:
our. Am. Chem. Soc.; Jour. Chem. Edn.; Jour. Polymer. Science.
pecial Int.: Synthetic Organic Chem.; Synthesis of New Plastics
nd Fibers; Cancer Chemotherapy; Protein Synthesis; Polypeptide
ynthesis.

OOSE, Joe Eugene (Ph.D.), Dean, Grad. Schl., Univ. of Nev.,
eno, Nev. Home Add.: 1008 Gordon Ave., Reno, Nev. CHEMISTRY AND CHEMICAL ENGINEERING. b. Pooleville, Tex., May 28, 1895. s. Joe and Lou (Kendrick) M. Edn.: A.B., S.M.U., 1917; M.S., Univ. of Ill., 1922; Ph.D., ibid., 1924. m. Mary Jane Cox of Urbana, Ill., Aug. 9, 1924 (Dec.). d. D. P. and Eugena C. c.: Joe David. Exp.: Prin., Mineral Wells H. S., Tex., 1919; Asst. and Assoc. Prof., Univ. of Okla., 1924-29; Rsch. Chem., Swann Rsch. Co., 1929-35; Rsch. Chem. Engr., Monsanto Chem. Co., 1935-45; Prof. of Chem., Univ. of Nev., 1945-56; Dean of Grad. Schl. (Emeritus), ibid., 1955-61. Hon. Pos.: Pres., Rotary Club; Chmn., Nev. Basic Sci. Exam. Bd. Mem.: Sigma Xi; Phi Lambda Upsilon; Phi Kappa Phi; Alpha Epsilon Delta; A.C.S.;

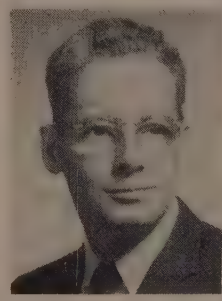


A.U.P.; Am. Inst. Chem. Engrng.; A.A.A.S.; Sigma Alpha Epsi-
n; Gamma Alpha; Alpha Chi Sigma; Rotary. Contbr. to: Jour.
A.C.S. Ph.D. Dissertation: A Redetermination of the Heats
Oxidation of Certain Metals. Serv. Rec.: 2nd Lt., ORC, 3rd
nti Aircraft, C.A.C., 1917-19, W.W. I. Hobbies: Golf; Gardening.
sted in: A.M.S.; W. W. in the West; W. W. in Am.; Trustees,
res. and Deans of Colls. Special Int.: Phosphorus, Phosphates,
yrolisis.

ORAN, James Michael (Mr.), Pres., Barkley and Dexter Lab.,
c., 50 Frankfort St., Fitchburg, Mass. Home Add.: 53 Austin
., Leominster, Mass. ELECTRONICS. b. Silverwood, Ind.,
ept. 25, 1916. s. Michael J. and Alice L. (Alvey) M. Edn.:
S./E.E., Rutgers Univ., 1940. m. Martha J. Algermissen, April,
942. c.: James M., Jr.; Alice L.; Mark G. Exp.: Sr. Tech.
bserver, Harvard Univ., Cambridge, Mass., 1943-45; Exec. Vice
res., Barkley and Dexter Labs., Inc., Fitchburg, Mass., 1945-54;
res., ibid., 1954—; Exec. Vice Pres., Barkley and Dexter, Inc.,
tchburg, Mass., 1961—. Mem.: Am. Inst. of Electl. Engrs.;
st. of Radio Engrs.; Am. Ordnance Assn.; Tau Beta Pi; U.S.
of C. Contbr. to: Review of Scientific Instruments; A.I.M.;
dustry. Areas of Rsch.: Engineering, Research, Consulting and
anagement in Field of Machinery, Plant Layout, Manufacturing
rocesses, Electrical, Electronic, Instrumentation, Applied Physics.

MORAN, Juliette May (Miss), Asst. to the Pres., Gen. Aniline & Film Corp., 111 W. 50th St., New York 20, N. Y. Home Add.: 415 West 118th St., New York 27, N. Y. ORGANIC CHEMISTRY. b. N.Y.C., June 12, 1917. d. James J. and Louise M. Edn.: B.S., New Coll., Columbia Univ., 1939; M.S., N. Y. Univ., 1948. Exp.: Lab. Asst., New Coll., Columbia Univ., 1938-39; Rsch. Asst., Columbia Univ., 1941; Jr. Engr. Signal Corps Lab., U. S. Army, Red Bank, N. J., 1942-43; Jr. Chem., Gen. Aniline & Film Corp., N. Y., 1943-44; Tech. Asst. to N. Y. Proc. Dev. Dept., ibid., 1944-48; Tech. Asst. to Dir., Central Rsch. Lab., ibid., 1948-52; Tech. Asst. to Dir. Comm. Develop., ibid., 1952-55; Supvr., Tech. Serv., ibid., N. Y., 1955-59; Sr. Devel. Specialist, ibid., 1959-60; Mgr., Planning, 1961; Asst. to Pres., 1962—. Mem.: Am. Assn. Textile Chemists and Colorists; Am. Chem. Soc.; Comm. Chem. Devel. Assn.; Fellow, A.A.A.S.; Am. Inst. Chemists. Contbr. to: Chem. and Engrng. News; The Chemist. Areas of Rsch.: Synthetic Organic Chemistry; Structure of Haemocyanine, Dyestuffs, Surface Active Agents, High Pressure Acetylene Chemicals; Information Systems; Technical Writing; Rsch. Admin.

MORAWETZ, Herbert (Ph.D.), Prof., Polytech. Inst. of Brooklyn, Brooklyn, N. Y. Home Add.: 246 W. 12th St., N. Y. 14, N. Y. PHYSICAL CHEMISTRY. b. Prague, Czechoslovakia, Oct. 16, 1915. s. Richard and Frida (Glaser) M. Edn.: B.A.Sc., Univ. of Toronto, 1943; M.A.Sc., ibid., 1944; Ph.D., Polytech. Inst. of Brooklyn, 1951. m. Cathleen Synge, Oct. 28, 1945. c.: Pegeen Ann; John Synge; Lida Joan; Nancy Babette. Exp.: Asst. Prof., Polytech. Inst. of Brooklyn, 1951-53; Assoc. Prof., ibid., 1953-58; Prof., ibid., 1958—. Mem.: Am. Chem. Soc.; Am. Soc. for the Adv. of Sci.; Sigma Xi; Faraday Soc. Contbrng. Author: Trapped Radicals, 1960; Reactivity of Solids, 1961; The Organic Solid State, 1962; Polyelectrolyte Solutions, 1961. Contbr. to: Jour., A.C.S.; Jour. Phys. Chem.; Jour. Polymer Sci.; Jour. Biol. Chem.;



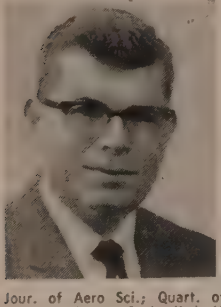
Arch. Biochemical Biophysics; Biochimie Biophysica Acta; Makromol. Chemie; Fortschr. Hochpol. Forsch.; Disc. Faraday Soc. Areas of Rsch.: Polyelectrolytes, Solid State Polymerization, Hydrolytic Enzyme Models, Physical Chemistry of Polymers.

MORBIO, Adolph (Mr.), Mgmt. Engr., P. O. Box 1242, Walnut Creek, Calif. Home Add.: 976 Keeler Ave., Berkeley 8, Calif. EMPIRICAL FORMULAE, APPLIED ECONOMETRICS, ELECTRONICS, INDUSTRIAL PSYCHOLOGY. b. San Francisco, Calif., Apr. 26, 1889. s. Pio Alberto and Rosa Victoria (Sutro) M. Edn.: M.E., Cornell Univ., 1913. m. Lucile Culver, June 3, 1921. Exp.: Mechanical Engrng. Aid, Panama-Pacific Internatl. Exposition, 1914-15; Engineering Aid (Mech. Engrg.), Design Heating Systems for Exposition Bldgs.; Great Western Power Co., San Fran., Calif., 1915-17; Capt. Engrs., Am. Peace Comm., France, 1917-19; Self-Employed, San Fran., 1920-39; Elect. Engr., United Eng. Co., Alameda Naval Air Station, Alameda, Calif., 1940-45; Mgmt. Engr., ibid., 1946-60; Mgt. Engr., Berkeley and Walnut Creek, Calif.,

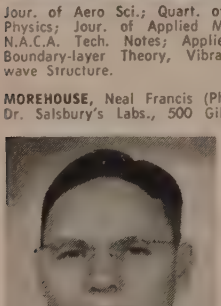
1960—. Hon. Pos.: Exec. Board, Boy Scouts of Am.; Mem., Foundation for the Study of Cycles. Mem.: A.A.A.S.; The Econometric Soc.; National Register of Scientific and Technical Personnel; Cornell Soc. of Engineers; Social Register. Serv. Rec.: See Positions. Areas of Rsch.: Color Blindness That Is Purely Psychological and a Methol of Detecting It; A new Circuit for Amplifying Audio Signals Giving Very High Fidelity; Applied Econometrics; Bus. Admin. with Special Relation to Estates and Guardianships; Job Analysis; Industrial Psychology; Math.; Empirical Formulae.

MORE, Robert Hall (M.D.), Prof. of Pathol., Richardson Lab., Queen's Univ., Kingston, Can. PATHOLOGY. b. Kitchener, Ont., Can., Dec. 16, 1912. s. Robert Hall and Nellie E. (Lackner) M. Edn.: M.D., Univ. of Toronto, 1939; M.Sc., McGill Univ., 1942. m. Dorothy McOrmond, 1943. c.: David; Patricia; Christopher. Exp.: Jr. Intern, Toronto General Hosp., 1939-40; Douglas Fellow in Pathol., McGill Univ., 1940-42; Sr. Intern in Surgery, Toronto Gen. Hosp., 1942-43; Lectr. in Pathol., McGill Univ., 1943-46; Pathologist, Woman's Gen. Hosp., Montreal, 1945-46; Assoc. in Rsch., Dept. of Pathol., Cornell Univ. Med. Coll., 1946-47; Miranda Fraser Asst. Prof. of Comparative Pathol., McGill Univ., 1947-49; Prof. and Hd. of Dept., Queen's Univ., 1951—. Mem.: Am. Soc. for Study of Arterioclerosis; Am. Assn. of Pathologists and Bacteriologists; Quebec Assn. of Pathologists; Am. Soc. of Exptl. Pathologists; Pathol. Soc. of Great Brit. and Ireland; Canadian Assn. of Pathologists; Ont. Assn. of Pathologists. Special Int.: The Pathol. of Hypersensivity and Collagen Diseases of Man; Arteriosclerosis.

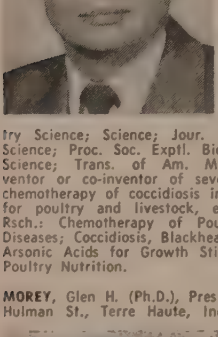
MORDUCHOW, Morris (Dr.), Prof., Applied Mechanics, Poly Inst. of Brooklyn, Brooklyn, N. Y. Home Add.: 1490 Ocean Ave., Brooklyn 30, N. Y. APPLIED MECHANICS, ESPECIALLY FLUID DYNAMICS; DYNAMICS; NUMERICAL ANALYSIS. b. Russia, Sept. 25, 1921. s. Benjamin and Lisa (Greenfield) M. Edn.: B.A., Brooklyn Coll., 1942; B.Ae.E., Poly. Inst., Bkln., 1943; M.Ae.E., ibid., 1945; D.Ae.E., ibid., 1947. Exp.: Rsch. Asst. and Assoc., Polytech. Inst., Bkln., 1943-47; Instr. of Aero Engrng., ibid. 1947-50; Asst. Prof. of Applied Math. ibid., 1950-53; Assoc. Prof. of Applied Math., ibid., 1953-1961; Prof. of Applied Mech., ibid., 1961—. Mem.: Inst. of Aerospace Scis. (Assoc. Fellow); Sigma Xi; Am. Math. Soc.; Math. Assn. of Am.; A.A.A.S.; Pi Mu Epsilon; Tau Beta Pi; Pres., Sigma Xi (Polytech. Chapt.) Contbr. to: Jour. of Aero Sci.; Quart. of Applied Math.; Jour. of Applied Physics; Jour. of Applied Mech.; Jour. of Math. and Phys.; N.A.C.A. Tech. Notes; Applied Mech. Revs. Areas of Rsch.: Boundary-layer Theory, Vibration Theory, Curve-fitting, Shock-wave Structure.



MOREHOUSE, Neal Francis (Ph.D.), Mgr. of Applied Rsch., Farm Dr. Salsbury's Labs., 500 Gilbert St., Charles City, Ia. Home Add.: 300 Blunt St., Charles City, Ia. PARASITOLOGY, PROTOZOOLOGY, CHEMOTHERAPY OF POULTRY DISEASES. b. Emmett, Idaho, Sept. 7, 1908. s. Clarence O. and Sylvia (Hopper) M. Edn.: B.S., Kans. State Univ., 1933; M.S., Ia. State Univ., 1935; Ph.D., ibid., 1942. m. Florence Schwendener, June 25, 1936. c.: David Frank. Exp.: Instr. in Zool., Municipal Univ. of Omaha, 1936-37; Hd., Protozool. Dept., Dr. Salsbury's Labs., Charles City, Ia., 1937-60; Mgr. Rsch. Farm, ibid., 1944-60; Mgr., Applied Rsch., 1961—. Mem.: A.A.A.S.; Am. Soc. of Parasitology; Soc. Protozool.; Am. Inst. of Biol. Scis.; Poultry Sci. Assn.; Ia. Acad. Sci.; Phi Kappa Phi; Sigma Xi. Contbr. to: Poultry Science; Science; Jour. Parasitology; Proc. Iowa Acad. of Science; Proc. Soc. Exptl. Biol. and Med.; Ia. State Coll. Jour. Science; Trans. of Am. Microscopical Soc. Gen. Int.: Inventor or co-inventor of several U. S. and foreign patents on chemotherapy of coccidiosis in poultry and on growth stimulants for poultry and livestock, especially arsonic acids. Areas of Rsch.: Chemotherapy of Poultry Diseases, Especially Parasitic Diseases; Coccidiosis, Blackhead, Hexamitiasis and Trichomoniasis; Arsonic Acids for Growth Stimulation of Poultry and Livestock; Poultry Nutrition.



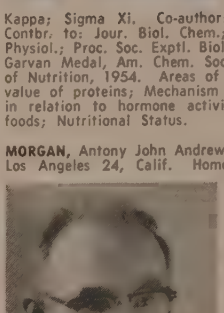
MOREY, Glen H. (Ph.D.), Pres., Glas-Col Apparatus Co., Inc., 711 Hulman St., Terre Haute, Ind. RESEARCH CHEMIST, PHYSICAL AND ORGANIC. b. Alma, Mich., Apr. 21, 1902. s. John Gardner and Ollie (Williams) M. Edn.: B.S., Univ. of Chgo., 1929; M.S., ibid., 1930; Ph.D., ibid., 1932. Hon. Deg.: D.Sci., N. Mich. Coll., 1961. m. Ruth J. Kemp, Aug. 11, 1928. c.: John Gardner, II. Exp.: Instr. in Chem., Carnegie Inst. of Tech., 1930; In Charge Dev. Chem. Exhibits, A Century of Prog. Expos., 1932-33; Research Chem., Phillips Petroleum Co., 1933-36; Rsch. Chem., Commercial Solvents Corp., 1936-45; Founder, Pres., Glas-Col Apparatus Co., Inc., 1945—. Mem.: Sigma Xi; Am. Chem. Soc.; Fellow, A.A.A.S. Contbr. to: Jour. Am. Chem. Soc.; Indus. and Engrng. Chem. Gen. Int.: Over 80 Patents in the Chem. and Related Fields; Inventor of the Heating Mantle—A Major Contribution to Lab Safety. Special Int.: Thermodynamics of Hydrocarbon Reactions, Chemical Equilibria, Organic Syntheses, Laboratory Safety.



MORGAN, Antonia Bell (Mrs.), Assoc. Dir., Aptitude Associates, Merrifield, Va. CLINICAL AND EDUCATIONAL PSYCHOLOGY. b. Strawberry Hill, Middlesex, Eng., Oct. 5, 1914. d. James Young Bell, C. B., and Jean Hill (Macnair) B. Edn.: B.A., Univ. of Oxford, 1936; Diploma in Edn., Univ. of London, 1938; M.A., Univ. of Oxford, 1945. m. William J. Morgan, Nov. 2, 1944. c.: William James, Jr.; Jean Elizabeth; Robert Macnair. Exp.: Chmn., Dept. of Classical Studies, St. Albans Schl., Hertfordshire, Eng., 1938-41; Walter Hines Page Scholar and Lectr., U. S., 1941-42; Lectr., Brit. Ministry of Information, 1942-43; Asst. Prin., India Office, London, 1943-45; Exec. Secy. and Psycholst., Aptitude Associates, Inc., Merrifield, Va., 1946-49; Assoc. Dir., ibid., 1949—. Hon. Pos.: Vice-Pres., Northern Va. Mental Health Soc.; Mem Com. on Jr. H. S., Fairfax County; Consultant, Church Scho of the Diocese of Virginia. Mem.: Am. Psychol. Assn.; A Assn. for the Adv. of Sci.; Va. Acad. of Sci.; Southeaste Psychol. Assn.; Natl. Vocl. Guid. Assn.; Va. Psychol. Assn.; O ford Soc.; English Speaking Union. Author: Morgan Test Logical Reasoning, 1955; Verbal Intelligence Test, 1948; Bas Number Skills Test, 1951. Contbr. to: The Scientific Monthl Jour. of Applied Psychol.; Psychological Reports; Aptitude Ass ciates, Inc. Areas of Rsch.: Psychological Study and Edntl. Gui of the Gifted Child.

MORGAN, Agnes Fay (Ph.D.), Prof. of Nutrition Emeritus, Univ. Calif., Berkeley, Calif. Home Add.: 1620 Spruce St., Berkele Calif. NUTRITION AND FOO CHEMISTRY. b. Peoria, Ill., M 4, 1884. d. Patrick J. and Ma (Dooley) Fay. Edn.: B.S., Uni of Chicago, 1904; M.S., ibi 1905; Ph.D., ibid., 1914. Ho Deg.: LL.D., Univ. of Calif., Berk ley, 1959. m. Arthur I. Morga May 17, 1908. c.: Arthur Jr. Exp.: Instr.: Hardin Col 1905-07; Asst. in Chem., Univ. Mont., 1907-08; Instr. in Chem Univ. of Wash., 1910-13; As Prof. to Prof. of Nutrition, Uni of Calif., Berkeley, 1915-54; Eme Prof., ibid., 1954—. Hon. Pos Faculty Rsch. Lectr., Univ. Calif., Berkeley, 1951. Mem Fellow, Am. Inst. of Nutritio Am. Soc. of Biol. Chem.; A.A.A.S Fellow; Iota Sigma Pi; Phi Be Kappa; Sigma Xi. Co-author: Experimental Food Study, 193 Contbr. to: Jour. Biol. Chem.; Jour. of Nutrition; Am. Jour. Physiol.; Proc. Soc. Exptl. Biol. and Med.; Food Rsch. Gen. In Garvan Medal, Am. Chem. Soc., 1949; Borden Award, Am. In of Nutrition, 1954. Areas of Rsch.: Effect of heat on biologic value of proteins; Mechanism of action of Vitamins, particular in relation to hormone activity; Vitamin Analysis of process foods; Nutritional Status.

MORGAN, Antony John Andrew (Ph.D.), Prof. of Engrng., U.C.L.A Los Angeles 24, Calif. Home Add.: 11740 Mayfield Ave., L Angeles 49, Calif. MECHANI OF CONTINUOUS MEDIA. b. Lim Peru, S. Am., Mar. 22, 1924. William John and Fausta A. (Fi uerola) M. Edn.: B.S., Calif. In of Technol., 1944; M.S., ibi 1947; Ph.D., ibid., 1951. Exp Rsch. Asst., Calif. Inst. of Tec nol., 1946-51; Pres., Aercon, In Pasadena, Calif., 1951-55; Rsc Scientist, Rand Corp., San Monica, Calif., 1951-53; Pre Aer, Inc., Pasadena, Calif., 195 60; Assoc. Prof., U.C.L.A., 196 61; Prof., ibid., 1962—. Mem Am. Soc. of Mechanical Engr Inst. of Aero-Space Scis.; Sig Xi. Contbr. to: Jour. of A Aero-Space Scis.; Quarterly Jou of Math.; Jour. for Applied Mat and Physics; The Aeronautic Quarterly; A.S.M.E. Trans. Serv. Rec.: U. S. Navy, 1944-4 Areas of Rsch.: Mechanics of Continuous Media; Group Theo and Partial Diffrential Equations; Elasticity; Thermoelasticit Fluid Mechanics.

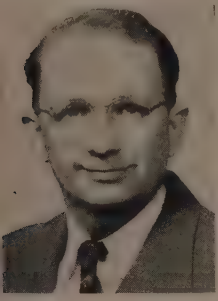


MORGAN, Karl Ziegler (Ph.D.), Dir. of Health Phys. Div., O Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 110 Plymou Circle, Oak Ridge, Tenn. HEAL PHYSICS AND PHYSICS. b. Ki napolis, N. C., Sept. 27, 190 s. Jacob L. and Elizabeth Virgi Clay (Shoup) M. Edn.: A.B., Un of N. C., 1929; M.A., ibid., 193 Ph.D., Duke Univ., 1934. m. Hel Lee McCoy, Aug. 2, 1937. Karl Z., Jr.; Eric Lee; Joan 'Ele Diana. Exp.: Chmn. Physics Dep Lenoir Rhyne Coll., Hickory, N. 1934-43; Health Physicist, Un of Chgo., Chgo., Ill., 1943; D Health Phys. Div., Oak Ridge Na Lab., Oak Ridge, Tenn., 1943 Hon. Pos.: Chmn. Natl. Comm. Radiation Protection, Internal De Comm.; Chmn. Internatl. Comm. Radiol. Protection Internal De Comm.; First Pres. of Health Phy Soc. Mem.: Am. Assn. for t Adv. of Sci.; Am. Indust. Hygiene Assn.; Rsch. Soc. of Am Radiation Rsch. Soc.; Tenn. Acad. of Sci.; Soc. of Nuclear Me Assn. Fellow of Am. Coll. of Radiol.; Fellow of Am. Phys. So Am. Nuclear Soc., Fellow; Sigma Pi Sigma; Sigma Xi. Auth Progress in Nuclear Energy, 1958. Contbr. to: Phys. Rev.; H Methodist Woman; Natl. Safety News; Health Physics; Bull. Atomic Scientists; Everybody's Digest; Jour. of Phy. and Colli Chem.; Am. Jour. of Phys.; World Outlook; Chem. and En

News; The Engr. Jour., Can.; Acta Radiologica; The Am. Phys. Tchr.; Sci. News Letters; Keledata; Radiolo. Health and Civil Defense. Gen. Int.: Early Rsch. in Cosmic Radiation; Principal Organizer of Health Phys. Soc.; Editor of Health Physics Journal; Recipient, Gold Medal Award, Royal Swedish Acad., 1962. Areas of Rsch.: Cosmic Radiation; Health Physics; Internal Dose from Radionuclides.

MORGAN, Charles (Mr.), Prof. of Engrng., San Diego State Coll., San Diego, Calif. MECHANICAL ENGINEERING. b. Aug. 22, 1922, Savannah, Ga. s. Charles and Marjorie (Gaddis) M. Edn.: M.E., Stevens Inst. of Tech., 1944; M.S., Univ. of Calif., 1949. m. Barbara Owen of Modesto, Calif., July 7, 1946. d. Jess and Hazel Owen. c.: Marjorie Gail; Madeline Louise; Michele Jeanette. Exp.: Naval Officer, 1943-46; Engr., De Laval Steam Turbine Co., 1946-47; Lectr., Univ. of Calif., 1949; Instr., San Diego State Coll., 1949-51; Asst. Prof., ibid., 1952-55; Assoc Prof., ibid., 1955-58; Prof., ibid., 1958—; Design Specialist, 1959, Convair Aircraft Corp.; Vice-Pres. in charge of Devel. and Mem. of the Bd. of Dirs., Southwestern Rsch. Associates, Inc. Mem.: Licensed Consulting Engr.; Phi Delta Kappa; Sigma Xi; Am. Soc. Engrng. Edn.; A.A.A.S.; A.S.M.E.; S.A.E.; A.A.U.P.; I.A.S. Travel: Asia. Hobbies: Sailing. Special Int.: Fluid Mechanics.

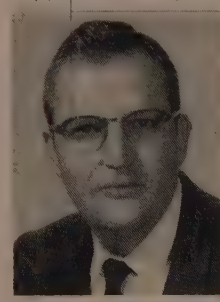
MORGAN, Walter Clifford, Jr. (Ph.D.), Geneticist, South Dakota St. Coll., Brookings, S. Dak. Home Add.: 1610 First St., Brookings, S. Dak. PHYSIOLOGICAL GENETICS, DEVELOPMENTAL GENETICS, ANIMAL GENETICS. b. Ledyard, Conn., Dec. 22, 1921. s. Walter C. and Margaret (Allyn) M. Edn.: B.Sc., Univ. of Conn., 1946; M.Sc., George Wash. Univ., 1949; Ph.D., Univ. of Conn., 1953. m. Marcella Ruth Hodge, Dec. 28, 1948. c.: Nancy Ruth; Margaret Louise; Elizabeth Jane. Exp.: Animal Husbandman, Natl. Cancer Insts., Bethesda, Md., 1946-49; Rsch. Assoc., Columbia Univ., 1949-53; Asst. Prof. Poultry Genetics, Univ. of Tenn., 1953-54; Assoc. Prof., Poultry Genetics, S. Dak. St. Coll., 1954-58; Prof., ibid., 1958—. Mem.: Genetics Soc. of Am.; Am. Genetics Assn.; A.A.A.S. (fellow); Poultry Sci. Assn.; Tenn. Acad. Sci.; S. Dak. Acad. Sci.; Sigma Xi; World's Poul. Sci. Assoc.; Kappa Sigma; Boy Scouts of Am. Contbr. to: Jour. Natl. Cancer Inst.; Jour. of Heredity; The Am. Naturalist; Genetics; Proc. of the Natl. Acad. of Sci.; Anatomical Records; Jour. of the Tenn. Acad. of Sci.; Jour. of Genetics (British); Am. Jour. of Human Genetics; Proc. of the S. Dak Acad. of Sci.; Poultry Sci.; Nature; Wilson Bull. Serv. Rec.: Cryptographer, U. S. Army Air Force, 1942-45. Gen. Int.: Dev. analyses of lethal mutations in mice, anatomical anomalies in mice and chickens; Improved poultry breeding methods. Areas of Rsch.: Physiology of Reproduction; Inheritance of Newly Discovered Mutations; Testing of Breeding Methods to Improve Egg Production; Hormonal Imbalances induced by Gonadectomy.



MORGAN, William James (Ph.D.), Psychologist, Pres., Aptitude Associates, Inc., Merrifield, Va. Permanent Home Add.: Merrifield, Va. PSYCHOLOGY. b. Rochester, N. Y., Apr. 30, 1910. Edn.: A.B., Univ. of Rochester, 1933; Ph.D., Yale Univ., 1937. m. Antonia Beli of Guildford, Eng., Nov. 2, 1944. c.: William James, Jr.; Jean Elizabeth; Robert Macnair. Exp.: Chf., Psychological Clinic, Trng. Schl., Vineland, N. J., 1936-38; Assoc., Psychological Corp., N.Y.C., 1938-39; Psychologist, Public Schools, Rochester, N. Y., 1939-41; Dir., Psychol. Test Bureau, Rochester, N. Y., 1941-42; Army of the U. S., Major, ETO and CT, 1942-46; Deputy Chf., Trng. Staff, Central Intelligence Agency, 1946-49; Chf., Psychol. Assessment Div., C.I.A., 1949-51; Rsch. and Evaluation Off., Psychol. Strategy Bd., The White House, Wash., D. C., 1951-52; Rsch. Consult., Psychol. and Unconventional Warfare, Dept. of the Army, 1953-56; at various times, 1951-55; Consult. to Bur. of Soc. Sci. Rsch., Am. Univ.; U. S. Dept. of Justice; Navy Dept.; U. S. Dept. of Defense; Vice-Pres., 1956-57, and Pres., 1957-58, Va. Psychol. Assn.; Organized Various Trng. Staff, Psychol Assessment Units, and Testing and Evaluation Div. for U. S. Govt., Wash., D. C., 1947—. Mem.: A.A.A.S; Fellow, Am. Psychol. Assn.; Diplomate, Clin. Psychol., Am. Bd. of Examiners in Profl. Psychol.; Certified Clin. Psychologist, Commonwealth of Va.; Mem. Va. Examining Bd. for Certfiication of Clinical Psychologists, 1959-1964; Eastern Psychological Assn.; Sigma Xi. Contbr. to: Psychol. Jours. Ph.D. Dissertation: Principles of Conditioning in Human Goal Behavior. Author: Spies and Saboteurs: Selection and Training (Gollancz, 1955); The O.S.S. and I (Norton, 1957). Serv. Rec.: See above. Travel: Eng.; France; Germany; Austria; Switzerland; Italy; Belgium; Egypt; India; China. Decorations: Silver Star, Bronze Star, Croix de Guerre with Silver Star. Hobbies: Writing.

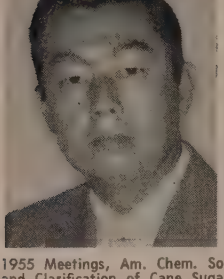
MORGAN, Lee (Mrs. Eric Riss), Dir., Scientific Introduction Serv., 186 East 73rd St., N.Y.C. Home Add.: 165 East 72nd St. N.Y.C. SOCIAL RESEARCH AND SCIENTIFIC MATE SELECTION. b. Irvington, N. J., Oct. 24, 1930. d. Bert Alan and Regina (Berkowitz) Schoen. Edn.: B.A., N. J. Coll. for Women, 1951; M.A., N. Y. Univ., 1957. m. Eric Riss, July 22, 1956. Exp.: Depth Interviewer, Inst. for Motivational Rsch., N.Y.C., 1951-52; Social Worker, Outpatient Dept., Bronx Hosp., N. Y., 1952-54; Statistician, Rayco, Paterson, N. J., 1954-55; Market Researcher, Wallach Rsch., N.Y.C., 1955-56; Dir. and Pres., Scientific Introduction Serv., 1956—. Mem.: A.A.A.S.; Soc. for the Scientific Study of Sex; Am. Sociological Soc.; Am. Acad. of Polit. and Social Sci.; Natl. Coun. on Family Relations; Internatl. Soc. for Gen. Semantics. Gen. Int.: Application of Personality Tests, Depth Interviewing, and Large Scale Electronic Sorting and Computer Techniques to Mate Selection. Areas of Rsch.: Phychology of Sexual Attraction, Scientific Techniques of Mate Selection, Marriage Counseling.

MORI, Paul Albert, Jr. (M.D.), Dir. of Radiology, Baptist Mem. Hosp., 800 Miami Rd., Jacksonville 7, Fla. Home Add.: 4836 Yacht Club Rd., Jacksonville, Fla. RADIOLOGY. b. Amherst, Ohio, May 5, 1925. s. Paul Albert and Mattie Melissa (Cummings) M. Edn.: B.A., Ohio St. Univ., 1947; M.D., ibid., 1948. m. Minna Lee Conn, Aug. 30, 1947. c.: Mark Waggoner; Kurt Wick; Thorpe Stewart; Meredith Dea. Exp.: Sr. Clin. Instr., Univ. of Mich. Med. Schl., 1955-56; Dir. of Radiol., Baptist Mem. Hosp., Jacksonville, Fla., 1956—. Hon. Pos.: Past Chmn., Cancer Committee, Duval Co. Med. Soc.; Past Chmn., Professional Edn. Committee; Duval Co. Unit Am. Co. Soc.; Past Pres., N. Fla. Radiological Soc. Mem.: Am. Bd. of Radiol., Diplomate; Am. Coll. of Radiology and Radiological Soc. of N. Am.; A.M.A.; Fla. Med. Assn.; Duval Co. Med. Soc.; N. Fla. Radiological Soc.; Am. Cancer Soc.; Nu Sigma Nu; Alpha Epsilon Delta; Phi Eta Sigma; Rotary Club. Contbr. to: Radiology; Cranial Manifestations of Familial Metaphyseal Dysplasia; A Sign of Intestinal Perforation. Serv. Rec.: U. S. Navy, 1950-52. Areas of Rsch.: Radiological Diagnosis.

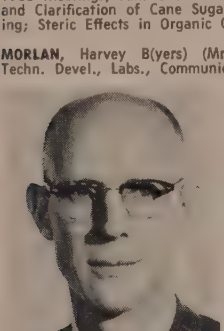


MORIARTY, Doris Marie (Miss), Statistical Assistant, Educational Testing Service, Princeton, New Jersey. Home Add.: 49 Crescent Avenue, Rocky Hill, New Jersey. PSYCHOLOGY. b N.Y.C., N. Y., Sept. 28, 1926. d. Francis Joseph and Mildred (Matthews) M. Edn.: B.A., Hunter Coll., 1956; M.A., Tchrs. Coll., Columbia Univ., 1959. Exp.: Sales, Bloomingdale's, N. Y., 1944-45 (Part-time); Billing Clerk, J. Walter Thompson, N. Y., 1944-45; Bookkeeper, Cutter and Dixon, N. Y., 1945-46; Bookkeeper, Solomon Bros. and Hutzler, N. Y., 1946; Secy., Schenley Industries, N. Y., 1946-49; Secy. and Copywriter, N. Y. Sun, N. Y., 1949; Secy., Braun & Co., N. Y., 1950-51; Secy., Air and Heat Co., N. Y., 1951-52; Advtg. Copywriter, S. Klein, N. Y., 1952-53; Waitress, Schrafft's, N. Y., 1954 (part-time); Tutor to Blind Student, Hunter Coll., N. Y., 1954 (part-time); Libr. Asst., ibid., 1954 (part-time); Rsch. Asst., Payne Whitney Clinic, N. Y. Hosp., Cornell Medical, 1954-56 (part-time); Secy., Douglas Williams Associates, Inc., Mgmt. Consultants, 1955-56 (part-time); Secy., Dr. John Frosch, N. Y., 1956; Secy., Drs. Albert Thompson and Donald Super, Tchrs. Coll., Columbia Univ., 1956-60; Rsch. Asst., Horace Mann Lincoln Inst., Tchrs. Coll., Columbia Univ., 1960-62; Stat. Asst., Edni. Testing Serv., 1962—. Hon. Pos.: Democrat County Comm., 1956, '58; Secy.-Treas., Psi Chi, 1962-63; V.-Pres., Kappa Chapt., Kappa Delta Pi, 1959-60. Mem.: A.A.-A.S.; A.A.U.W.; Kappa Delta Sorority; Kappa Delta Pi; A.P.G.A.; N.V.G.A.; A.C.P.A.; A.P.A.; Pi Lambda Theta; Anoroc Democratic Club. Contbr. to: Jour. of Psychology, 1956. Areas of Rsch.: Personnel Psychol. and Counseling Psychology; Psychological Rsch. on the Career Pattern Study of Donald E. Super, HMI; Rsch. on the Psycholgalvanic Response, Div., Livingston Welch, Hunter Coll.; Inst. Rsch. in Clin. and Child Psychol.

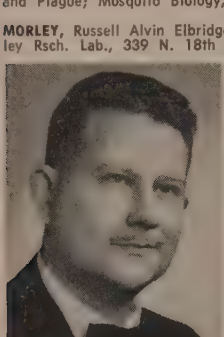
MORITSUGU, Toshio (Ph.D.), Assoc. Technologist, Experiment Sta., H.S.P.A., Honolulu 14, Hawaii. Home Add.: 3664 Loulu St., Honolulu 14, Hawaii. ORGANIC AND CARBOHYDRATE CHEMISTRY. b. Honolulu, Hawaii, Apr. 2, 1925. s. Yasuichi and Yoshiko (Sumida) M. Edn.: B.A., Univ. of Louisville, 1949; M.S., The Ohio St. Univ., 1951; Ph.D., ibid., 1954. m. Dorothy Hoshide, Feb. 27, 1959. c.: Alison Kay. Exp.: Rsch. Asst., Ohio St. Univ., 1951-54; Post Doctoral Rsch. Assoc., ibid., 1954-55; Assoc. Technologist, Expt. Station, H.S.P.A., Honolulu, Hawaii, 1955—. Mem.: Am. Chem. Soc.; Sigma Xi; A.A.A.S.; Hawaiian Sugar Technologists; Int. Soc. of Sugar Cane Technologists; Hawaiian Acad. of Sci.; Gamma Alpha; Woodcock Soc. Contbr. to: Int. Soc. of Sugar Cane Technologists; Hawaiian Sugar Technologists; Spring, 1951 and 1955 Meetings, Am. Chem. Soc. Areas of Rsch.: Crystallization and Clarification of Cane Sugar; Ion Exchange in Sugar Processing; Steric Effects in Organic Chemistry.



MORLAN, Harvey B(yers) (Mr.), Sr. Sanitarian (Entomologist), Techn. Devel., Labs., Communicable Disease Ctr., P. O. Box 769, Savannah, Ga. Home Add.: 201 Willow Road, Savannah, Georgia. MEDICAL ENTOMOLOGY. b. Denver, Colorado, October 12, 1917. s. Samuel Erwin and Ethel (Angle) M. Edn.: B.S., Colo. Sta. Univ., 1941; M.S., Tex. Tech. Coll., 1950. m. Josephine Byers, 1938. c.: James E.; David B.; Douglas J. Exp.: Jr. Entomol., U. S. Pub. Health Serv., Tex., Ga., N. Mex., 1942-43; Asst. Sanitarian, ibid., 1943-45; Sr. Asst. Sanitarian, ibid., 1945-49; Sanit., ibid., 1949-61; Sr. Sanitarian, Communicable Disease Ctr., Fla., 1961-62; Techn. Dev. Labs., Communicable Disease Ctr., 1962—. Mem.: Am. Assn. for the Adv. of Sci.; Entomol. Soc. of Am.; Am. Mosquito Control Assn.; Sigma Phi Epsilon; Research Soc. of Am. Contbr. to: Mosquito News; Texas Academy of Science; Jour. of Econ. Entomology; Public Health Rep.; Jour. of Parasit.; Am. Mid. Naturalist; Tex. Rept. on Biol. and Med. Serv. Rec.: U. S. Pub. Health Serv., 1943-52. Areas of Rsch.: Ectoparasites with Relation to Murine Typhus and Plague; Mosquito Biology, Especially Aedes aegypti.

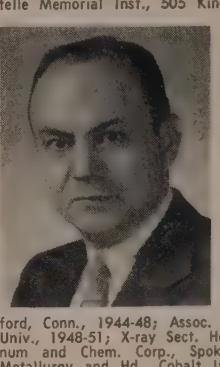


MORLEY, Russell Alvin Elbridge (Mr.), Rsch. Geologist, Dir., Morley Rsch. Lab., 339 N. 18th St., N.E., Salem, Ore. GEOLOGY; METEORITICS. b. Salem, Ore., June 3, 1923. s. Robert and Opal Louise (Brown) M. Mem.: A.A.A.S.; Mineralogical Soc. Am.; Am. Malacol. Union; Mineralogical Soc. of Great Britain and Ireland; Meteoritical Soc.; Am. Meteor Soc.; Am. Astronautical Soc.; Royal Australasian Ornithologists Union; Royal Astronomical Soc. of Can.; Am. Forestry Assn.; Mineralogical Assn. of Can.; Natl. Wildlife Federation; Fellow, Brit. Interplanetary Soc.; Am. Ordnance Assn.; Assoc. Mem., U. S. Naval Institute; Am. Museum of Natural Hist. Special Int.: Recovery and Classification of Meteorites; Methods for Recording Exact Location of Meteoritic Discoveries; Methods and Techniques in Determining Specific Gravity of Meteorites; The Mineralogy of Meteoric Minerals; The Origin, Paragenesis, and Mineralogy of Natural Occurring Terrestrial Iron and Nickel-Iron; Paleornithology of Flightless Birds; Comparison between Contemporary and Fossil Mollusca; Design and Devel. of Scientific Instruments and Equipment.

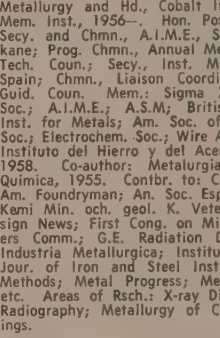


MORRELL, William E. (Ph.D.), Program Dir. for Summer Institutes, Natl. Sci. Found., Washington 25, D. C. Home Add.: 1024 Sylvan Dr., Falls Church, Va. SCIENCE EDUCATION. b. Logan, Utah, July 30, 1909. s. J. William and Maude (Egbert) M. Edn.: B.S., Utah State Agri. Coll., 1933; Ph.D., Univ. of Calif., Berkeley, 1938. m. Evelyn Reeder of Weston, Idaho, May 19, 1933. d. J. F. and Anna R. c.: Michael, Laurence, Marilyn. Exp.: Instr., Chicago City Coll., 1938-42; Instr., Univ. of Ill., 1942-43; Asst. Prof. of Chem., ibid., 1943-49; Assoc. Prof. of Phys. Sci., ibid., 1949-58; Prof. of Phys. Sci., Ibid., 1958-59; Coun. in the Student Counseling Bur., Ibid., 1947-54; Asst. Program Dir. for Summer Institutes, Natl. Sci. Found., 1958-59; Program Dir. for Summer Insts., ibid., 1959—. Mem.: A.C.S.; Fellow, A.A.A.S.; Sigma Xi; Phi Beta Kappa; Phi Kappa Phi. Contbr. to: Jour. of Chem. Edn.; Scl.; J.A.C.S.; Jour. Chem. Physics. Ph.D. Dissertation: The Distribution of Molecules in a Model Liquid; The Polymerization of Gaseous Hydrogen Fluoride. Travel: Germany, 1929-32; Pakistan, 1960. Hobbies: Music; Photography. Liste in: A.M.S.; Who's Who in Amer. Edn.

MORRAL, F(acundo) R(olf), (Ph.D.), Consultant, Metallurgy, Ba telle Memorial Inst., 505 King Ave., Columbus 1, Ohio. Hom Add.: 1867 Bedford Rd., Columbu 12, Ohio. METALLURGICAL EN GINEERING, PHYSICAL META LURGY, ELECTROCHEMISTRY. Chemnitz, Ger., June 19, 190 s. F. Morral and Eva (Illing) M Edn.: B.S., Mass. Inst. of Tech 1932; Ph.D., Purdue Univ., 194 m. Lillie Westberg, 1934. c Frank; John; Sandra; Ann; Ha riet. Exp.: Mgr., Textile Mil Martin Morral, Sabadell, Spai 1934-36; Rsch. Metallurgist, Co tinental Steel Corp., Kokom 1939-41; Instr., Night Course Purdue Univ., Kokomo, Mario and Muncie, 1940-41; Asst. Prof Metallurgy, Pa. State Coll., 194 43; Indust. Fellow, Mellon Inst 1943-44; Group Leader, Rsc Lab., Am. Cyanamid Co., Stam ford, Conn., 1944-48; Assoc. Prof., Materials Engrng., Syracus Univ., 1948-51; X-ray Sect. Hd., Metallurgy Rsch., Kaiser Alum num and Chem. Corp., Spokane, Wash., 1951-56; Consultan Metallurgy and Hd., Cobalt Information Center Project, Battel Mem. Inst., 1956—. Hon. Pos.: Edn. Chmn., A.I.M.E., Spokan Secy. and Chmn., A.I.M.E., Spokane; Edn. Chmn., A.S.M., Sp kane; Prog. Chmn., Annual Meeting, Wire Assn.; Chmn., Spokan Tech. Coun.; Secy., Inst. Metalurgica y Mecanica, Barcelon Spain; Chmn., Liaison Coordination; Vocl. Guid. Comm., Voc Guid. Coun. Mem.: Sigma Xi; Fellow, A.A.A.S..; Am. Chem Soc.; A.I.M.E.; A.S.M; British Iron and Steel Inst.; Britis Inst. for Metals; Am. Soc. of Engrng. Edn.; Am. Electroplater Soc.; Electrochem. Soc.; Wire Assn.; Inst. Metalurgica y Mecanica Instituto del Hierro y del Acero. Author: Cobalt and Its Alloy 1958. Co-author: Metalurgia, Extractiva, Fisica, Mecanica Quimica, 1955. Contbr. to: Cobalt Monograph; Acero y Energia Am. Foundryman; An. Soc. Espanola de Fisica y Quimica; Ark. Kemi Min. och. geol. K. Vetenskaps Akad.; A.S.M.; Cobalt; D sign News; First Cong. on Mining and Geol.; Foundry; Galvani ers Comm.; G.E. Radiation Digest; La Industria Catalana; I Industria Metallurgica; Instituto del Hierro y Acero; Iron Ag Jour. of Iron and Steel Inst.; Jour. of Metals; Materials an Methods; Metal Progress; Metals and Alloys; Metals Finishin etc. Areas of Rsch.: X-ray Diffraction, Fluorescent Analysis, an Radiography; Metallurgy of Cobalt, Aluminum, and Steel; Coa ings.



MORRIS, Everett Franklin (Ph.D.), Assoc. Prof., Western I Univ., Macomb, Ill. Home Add.: 603 W. Carroll St., Macom Ill. MYCOLOGY. b. Bellmon Ill., May 23, 1924. s. Herbe E. and Rosa M. (Mills) M. Edn B.S., Eastern Ill. Univ., 195 M.A., Univ. of Wyo., 1952; Ph.D St. Univ. of Ia., 1955. m. Louise Bowman, Apr. 20, 194 c.: Terry Paul; Kevin Bria Exp.: Asst. Prof., Millikin Univ 1955-57; Assoc. Prof., Univ. Tenn., 1957-58; Asst. Prof Western Ill. Univ., 1958—; Asso Prof., ibid., 1962—. Mem.: Si ma Xi; Mycological Soc. of Am Am. Inst. of Biological Scis Iowa Acad. of Sci., Fellow; I Acad. of Sci.; Assn. of Midwe Coll. Biol. Tchrs.; Tri-Beta. Co tbr. to: Mycologia; Am. Midla Naturalist. Serv. Rec.: U. Navy, 1942-45, 1951-52. Ge Int.: N.S.F. Grant, 1961, 1962. Areas of Rsch.: Taxonomy Fungi Imperfecti.

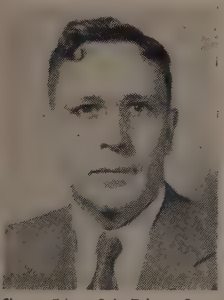


MORRIS, Alvin Lee (Mr.), National Center for Atmospheric R search, Boulder, Colo. Home Add.: 319 Beacon Hill Ct., Norfolk Va. METEOROLOGY, OCEANOGR PHY. b. Kim, Colo., June 7, 1920. Roy E. and Eva Edna (James) M Edn.: B.S., Univ. of Chicag 1942; M.S., U. S. Naval Postgra Schl., 1954. m. Ruth Caroly Hatch, Feb. 24, 1946. c.: A drew; Nancy; Mildred; Ann; Jan Exp.: Asst. Aerologist, U. S. Nav Air Sta., Quonset Point, R. I 1942-43; Aerologist, ibid., Gua tanamo Bay, Cuba, 1943-44; Ste Aerologist, Hdqtrs., Eastern S Frontier, N. Y. C., 1944-45; Ass Officer-in-Chg., U. S. Fleet Weath Central, Manila, P.I., 1945-4 Meteorologist, Pacific Gas an Electric Co., San Francisco, Cali 1947-50; Staff Aerologist, Hdqtrs Commander-in-Chf., Elmendorf A Force Base, Alaska, 1950-5 Asst. Officer in Charge, Fleet Weather Central, Washingto D. C., 1951-52; Senior Staff Instructor, U. S. Naval Postgra

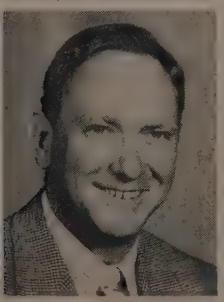
uate Schl., Monterey, Calif., 1954-56; Staff Aerologist, Commander, Seventh Fleet, Far East Waters, 1956-57; Asst. Officer in Chg., U. S. Buaer Project AROWA, Naval Air Sta., Norfolk, Va., 1957-58; Dir. of Rsch., U. S. Navy Weather Rsch. Facility, Naval Air Station, Norfolk, Va., 1958-62. Mem.: Am. Meteorol. Soc.; Am. Gophysical Union; U. S. Naval Inst., Am. Forestry Assn.; Lambda Delta Lambda; Kappa Delta Pi. Contbr. to: NWRF Meteorol. and Oceanography Series; U. S. Navy Bur. of Naval Weapons, Meteorol. and Oceanography Series; Naval Aviation Safety Rev. Serv. Rec.: U.S.N., 1942-46, 1950-57. Gen. Int.: C.A.A. Weather Bur. Meteorol. Fellowship to Univ. of Chicago, 1941. Areas of Rsch.: Meteorological and Oceanographic for Military Application.

MORRIS, James Russell (Ph.D.), Consulting Economist, 803 Norton Rd., Alexandria, Va. Home Add.: 803 Norton Rd., Alexandria, Va. ECONOMICS. b. Lakeland, Fla., Nov. 27, 1922. s. Scott and Blanche Gladys (Dicus) M. Edn.: A.A., Univ. of Fla., 1943; B.A., Oberlin Coll., 1945; M.B.A., Univ. of Chicago, 1947; Ph.D., ibid., 1957. m. Grace Fanes, June, 1946. Exp.: Instr., Univ. of Ill., Chicago, Ill., 1946-57; Lectr., Univ. of Chicago, Winter, 1950; Asst. Prof., Univ. of Ark., Fayetteville, Ark., 1975-58; Sr. Economist, Am. Enterprise Assn., Washington, D. C., 1960-61; Consulting Economist, Chicago, Ill., 1953-57; Consulting Econ., Winter Haven, Fla., 1958-59; Consulting Econ., Gainesville, Fla., 1959-60; Consulting Econ., Alexandria, Va., 1961—. Mem.: Am. Econ. Assn.; Am. Statistical Assn.; A.A.A.S.; Gerontol. Soc.; Am. Acad. of Pol. and Soc. Sci.; Phi Eta Sigma; Beta Gamma Sigma. Author: Employment Opportunities in Later Years, 1960. Co-Author: Renewing America's Cities, 1962. Contbr. to: Southern Econ. Jour.; Labor Law Jour.; Catholic Lawyer; Jour. of Bus.; Freeman; New Leader. Areas of Rsch.: Gerontology, Economics of Recreation, Political Economy, Labor Relations, Urban Renewal.

MORRIS, Joseph Edgar (Colonel), Hd., Sci. Dept., Lovett Schl., 4075 Pases Ferry Rd., N.W., Atlanta 5, Ga. Home Add.: 2155 Cascade Rd., S.W., Atlanta 11, Ga. PHYSICS. b. Albemarle, N. C., March 10, 1908. s. Rev. D. P. and Alice (Buie) M. Edn.: A.B., Univ. of N. C., 1928; M.A., ibid., 1937. m. Hazel Grogan, June, 1932. c.: Margaret Frances. Exp.: Hd. Sci. Dept., New Hanover H. Schl., Wilmington, N. C., 1929-33; Chem. Tchr., Tech. H. Schl., Atlanta, Ga., 1934-40; Hd. Sci. Dept., Brown H. Schl., Atlanta, Ga., 1947-59; Supvr. of Math. and Sci., St. of N. C., Raleigh, N. C., 1959-60; Hd. Sci. Dept., Lovett Schl., 1960—. Mem.: Ga. Acad. of Sci., Fellow; Am. Chem. Soc.; Atlanta Sci. Club; Natl. Sci. Tchrs. Assn.; Kappa Phi Kappa; Mason; Rotary; Ret. Officers Assn. Contbr. to: Jour. of Chem. Edn.; Sci. Tchr. Serv. Rec.: U. S. Army, 1940-46. Gen. Int.: Many Students I have encouraged to Prepare for Careers in Sci. and Engrng. and Many Pupils won Local, State, and Natl. Sci. Contests. Areas of Rsch.: Nuclear Reactions.



MORRIS, Maurice F., (Mr.), Assoc. Phys. Prof., Adams Sta. Coll., Alamosa, Colo. Home Add.: #1 Faculty Dr., Alamosa, Colo. PHYSICS. b. Blanca, Colo., Apr. 29, 1919. s. Jerry Lester and Clara (Milford) M. Edn.: A.B., Adams Sta. Coll., 1953; M.A., Univ. of Colo., 1955. m. Jackalene Aldridge, Aug. 25, 1942. c.: Marian Ellen; Martha Irene; Kathy Marie. Exp.: Phys. Instr., Adams Sta. Coll., Alamosa, Colo., 1955-57; Asst. Phys. Prof., ibid., 1957-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: Commanding Officer, Local A.F. Res. Unit. for the Past 6 Years; Past Pres., Colo. Personnel and Guid. Assn.; Reg. Sci. Fair Dir., 1955—. Mem.: A.A.A.S.; Am. Assn. of Phys. Tchrs.; Natl. Sci. Tchrs. Assn.; A.A.U.P.; Colo.-Wyo. Acad. of Sci.; Phi Delta Kappa; Kappa Delta Pi; Blue Key; Toastmasters Internatl. Serv. Rec.: U. S. Army, 1941-46; Air Force Res., 1946—. Areas of Rsch.: Improving of Laboratory Apparatus and Techniques for College-Level Physics and General Science (Physical) Use; Electronics; Semiconductors; and Geomagnetism.



MORRIS, Robert G(emmill), (Ph.D.), Professor of Physics, Hd. of Dept., S. D. Schl. of Mines & Technol., Rapid City, S. D. Home Add.: 2620 Brook Lane, Rapid City, S. D. SOLID STATE PHYSICS. b. Des Moines, Ia., July 20, 1929. s. Robert and Iva (Gemmill) M. Edn.: B.S., Ia. St. Univ., 1951; M.S., Calif., Inst. of Technol., 1954; Ph.D., Ia. St. Univ., 1957. m. Beverly Schupfer, July, 1955. c.: Robert; John. Exp.: Rsch. Fellow, Swiss Federal Inst. of Technol., Zurich, Switzerland, 1957-58; Asst. Prof., S. D. Schl. of Mines and Technol., 1958-59; Assoc. Prof., ibid., 1959-62. Mem.: Am. Physical Soc.; Am. Assn. of Physics Tchrs.; Swiss Physical Soc.; S. D. Acad. of Sci. Contbr. to: Physical Rev. Gen. Int.: Fulbright Scholar, Univ. of Graz, Austria, 1951-52; Fellowship, Swiss Federal Inst. of Technol., Zurich, Switzerland, 1957-58. Areas of Rsch.: Energy and Charge Transport in Solids; Magnetic Properties of Solids.

MORRIS, Robert James (Ph.D.), Prof. of Chem., Univ. of Nev., Reno, Nev. Home Add.: 1445 Hillside Dr., Reno, Nev. ORGANIC CHEMISTRY. b. New Auburn, Wisc., March 10, 1915. s. Arthur and Madie (Pasco) M. Edn.: B.S., Ch.E., Univ. of Idaho, 1936; M.S., ibid., 1938; Ph.D., The Ohio Sta. Univ., 1947. m. Venetia Hazel, March 9, 1940. c.: Janice Carol; William James. Exp.: Tchng. Fellow, Univ. of Idaho, Moscow, Idaho, 1936-38; Instr., ibid., 1938-41; Grad. Asst., Ohio Sta. Univ., Columbus, 1941-42; Spec. Asst., ibid., 1943-44; Rsch. Asst., O.S.R.D., 1944-45; Rsch. Assoc., ibid., 1945-47; Instr., Univ. of Nev., 1947-48; Asst. Prof., ibid., 1948-55; Assoc. Prof., ibid., 1955-61; Prof., ibid., 1961—. Hon. Pos.: Consult., A.E.C. Proj. on Uranium Recovery from Low Grade Uranium Ores, 1954-58; Consult., Agric. Chem. Dept., Expt. Sta., Max E. Fleischmann Coll. of Agric., 1957-60; Consult. Rolley Co. and for the Sea and Ski Div., Bot. Indust., Reno, Nev., 1960—; Rsch. Assoc., Desert Rsch. Inst., 1961—. Mem.: Am. Chem. Soc.; Tau Kappa Epsilon; Sigma Xi; Phi Lambda Upsilon; Sigma Tau; Sigma Pi Sigma; Phi Kappa Phi. Contbr. to: Anal. Chem.; Jour. Am. Chem. Soc.; Jour. Org. Chem.; Jour. of Phys. Chem.; Jour. Opt. Soc. of Am.; Am. Jour. of Bot.; Sci., Min. Eng.; Trans. A.I.M.E.; Food Sci. Jour. Areas of Rsch.: Structural Studies and Synthesis of Natural Products, Dyes; Developmental Studies in Colorimetric Analytical Methods; Resonance Behavior and Spectrophotometric Investigations.

MORRISON, John Herbert (Ph.D.), Assoc. Prof., Dept. of Biol. Sci., Kent St. Univ., Kent, Ohio. Home Add.: 619 West Main St., Kent, Ohio. EXPERIMENTAL CYTOLOGY. b. Parry Sound, Ontario, Can., Apr. 10, 1927. s. William Henry and Emily (Paine) M. Edn.: B.A., Univ. of Vt., 1951; M.A., Univ. of Toronto, 1954; Ph.D., ibid., 1958. m. Harmie Taylor, Sept. 2, 1950. c.: Mark Taylor; Gail Susan. Exp.: Rsch. Assoc., Mich. St. Univ., 1957-59; Asst. Prof., Western Reserve Univ., 1959-61; Assoc. Prof., Kent St. Univ., 1961—. Mem.: N. Y. Acad. of Scis.; A.A.A.S.; Sigma Xi. Author: Cytology, 1961. Contbr. to: Science; Cytologia; Jour. Biophys. and Biochem. Cytology; Jour. Histochem. and Cytochem.; Proc. Am. Micr. Soc.; Encyclopedia of the Biol. Scis. Serv. Rec.: U. S. Naval Reserve, 1945-46. Areas of Rsch.: Physiology of Cell Division with Particular Reference to Blood Cell Development.

MORRISON, Spencer Horton (D.V.M.), Mgr., The Morrison Publishing Co., Dir. of Agricon, 515 Woodlands Dr., Clinton, Ia. VETERINARY MEDICINE, ANIMAL NUTRITION. b. Madison, Wis., Apr. 17, 1919. s. Frank Barron and Elsie (Bullard) M. Edn.: B.S., Cornell Univ., 1939; M.S., ibid., 1946; Ph.D., ibid., 1949; D.V.M., Univ. of Ga., 1954. m. Catherine Fleming, May 18, 1946. c.: Spencer Horton, II; William Leversee; Robert Stuart; Frank Barron; Ann Leith; Kathryn Ellen. Exp.: Grad. Tchng. Rsch. Asst., Cornell Univ., 1945-48; Assoc., Dept. of Animal Husbandry, Univ. of Calif., 1948-49; Assoc. Prof., Dairy Dept., Univ. of Ga., 1949-54; Technical Sales Dir., Pillsbury Mills, Clinton, Ia., 1954-57; Dir. of Rsch., ibid., 1957-58; Partner, The Morrison Publishing Co., Ithaca, N. Y., 1940; Mgr., ibid., Clinton, Ia., 1958—; Dir. of Agricon, Clinton, Ia., 1958—. Mem.: Am. Dairy Sci. Assn.; Ia. and Am. Vet. Med. Assn.; Poultry Sci.

Assn.; Soc. Animal Prod.; Am. Chemical Soc.; Dairy Industry Soc. Internatl.; Sigma Xi; A.A.A.S.; Royal Soc. of Health; Rotary; Gyros. Co-author: Feeds and Feeding, 1956; Feeds and Feeding, Abridged, 1958; Diseases of Cattle, 1955; The Chemistry and Technology of Cereals as Food and Feed, 1959.

MORRISON, Robert Jay (O.D.), Pres. and Chf. of Consultation and Research Depts., Morrision Labs., Inc., Green and Div. Sts., Harrisburg, Pa. Home Add.: 1800 York Lane, Harrisburg, Pa. CONTACT LENSES; FITTING OF PATIENTS AND MANUFACTURING AND NEW LENS EXPERIMENTS AND RESEARCH. b. Harrisburg, Pa., Dec. 1, 1924. s. Hyman and Helen (Curson) M. Edn.: O.D., Pa. State Coll. of Optometry, 1948. m. Ruth Rapoport, Jan. 29, 1956. c.: James W.; Patricia J. Exp.: Priv. Practice, Optometry, 1949-63; Hd., Optometry Clinic, Eye Clinic, New Cumberland Army Hosp., 1950-54; Hd., Optometry Clinic, Eye Clinic, Carlisle Barracks Hosp., 1950-54; Instr., Visiting Staff, Contact Lens Dept., Pa. State Coll. of Optometry, 1957-58; Vis. Clin. Staff, ibid., 1961—; Pres., Chf. of Consultation and Rsch., Morrison Labs., Inc., 1957—; Pres., Morrison Rsch., Inc., 1959—. Hon. Pos.: Chmn. of Contact Lenses Comm., Cen. Pa. Optometric Assn.; Vice-Pres., Eastern Beta Sigma Kappa; Mem. Editorial Staff, Encyc. of Contact Lens Practice. Mem.: Fellow, Am. Acad. Optometry; Dipl., Contact Lens Sect. of Am. Acad.; Internatl. Coll. of Ocular Sci.; Fellow, Am. Acad. Adv. Sci.; Fellow, Pa. Acad. for Adv. Sci.; Gamma Omega Phi; Zeta Beta Tau; Pi Tau Pi; Optimist. Author: Contact Lens Manual, 1959, 1960; Your Contact Lenses, 1960. Contbr. to: Contacto; Optometric Weekly; Optical Jour. and Rev. of Optometry; Pa. Optometrist; Br. and Australian Jour.; Armed Forces Med. Jour. Serv. Rec.: U. S. Army, W. W. II. Gen. Int.: Originator of theory of "Myopia Control through Contact Lenses"; has lectured in Moscow (Helmhoz Inst.) and City Eye Hosp. of Leningrad; London Med. Soc., Univ. of Graz, Austria, Helsinki, Finland, Rome, Paris, Northampton Coll. of Adv. Tech., London; Hadassah Hosp. Staff in Jerusalem; and many others. Areas of Rsch.: Contact Lenses and the Progression of Myopia, General Contact Lens Practice, Research in Plastics and New Types of Lenses; General Optometric Practice and Teaching of Optometrists and Lecturing to Ophthalmologists.

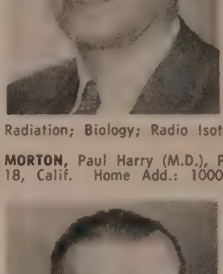
MORROW, Charles Tabor (S.D.), Mgr. of Techn. Relations, Aerospace Corp., P.O. Box 95085, Los Angeles 45, Calif. Home Add.: 5617 Busch Dr., Malibu, Calif. ACOUSTICS AND COMMUNICATIONS. b. Gloucester, Mass., May 3, 1917. s. Dr. Charles Harvey and Luella (Tabor) M. Edn.: A.B., Harvard Univ., 1937; S.M., ibid., 1938; S.D., ibid., 1946. m. Julia Buxton Brown, 1949. c.: Hope Elizabeth; Anne Barbara. Exp.: Rsch. Assoc., Physics, Harvard Univ., 1940-41; Tchng. Fellow, ibid., 1941; Spec. Rsch. Asst., Underwater Sound, 1941; Spec. Rsch. Asst., Underwater Sound, Mass. Inst. of Technol., 1942; Instr., Radio and Radar, Harvard Officers Trng. Schl., 1942-44; Lectr., Indus. Electronics, ESMWT, Northeastern, 1944-45; Spec. Rsch. Asst., Harvard Electro-Acoustic Lab., 1944-45; Tutor, Physics and Math., Bur. of Supvrs., Harvard Univ., 1944-46; Sr. Proj. Engr., Sperry Gyroscope Co., 1946-51; Rsch. Physicist, Hughes Aircraft Co., 1951-55; Mem. of the Sr. Staff, Space Tech. Labs., Inc., Los Angeles, Calif., 1955-60; Mem., Tech. Staff, Aerospace Corp., 1960-62; Mgr. of Techn. Relations, ibid., 1962—. Mem.: Institute of Radio Engineers; Acoustical Soc. of Am.; Soc. of Motion Picture and TV Engrs.; Am. Rocket Soc.; A.A.A.S.; Sigma Xi; Scientific Rsch. Soc. of Am. (R.E.S.A.); Sierra Club. Contbr. to: Jour. Acoustical Soc. of Am. Gen. Int.: Design of Vibratory Gyroscope; Introduction of Complex-wave and random vibration testing of missile equipment. Areas of Rsch.: Acoustics, speech acoustics, communication theory, aeronautical instrumentation, gyroscopic instrumentation, shock and vibration, reliability, systems engineering.

MORSE, Roy Earl (Ph.D.), Dir. Tech. Rsch., Thomas J. Lipton, Inc., Hoboken, N. J. Home Add.: 3 Cobb Rd., New Brunswick, N. J. FOOD SCIENCE. b. Boston, Mass., Nov. 3, 1916. s. Louis and Esther (Briggs) M. Edn.: B.S., Univ. of Mass., 1940; M.S., ibid., 1941; Ph.D., Oregon State Univ., and Univ. of Mass., 1948. m. Mary Powers Farrell, Sept., 1946. c.: Michael William; Timothy Roy; Andrew Leonard. Exp.: Packaging Rsch., Owens-Ill. Glass Co., San Francisco, Calif., 1941; Instr., Ore. State Coll., Corvallis, Ore., 1941-42; Instr., Food Tech., Univ. of Mass., Amherst, Mass., 1946-48; Assoc. Prof., Food Tech., Univ. of Ga., Athens, Ga., 1948-49; Hd., Food Tech. Lab., Monsanto Chem. Soc., Anniston, Ala., 1949-51; Rsch. Dir., Kingan and Co., Indianapolis, Ind., 1951-53; Rsch. Dir., William J. Stange Co., 1953-56; Prof. of Food Tech. and Chmn. Dept., Rutgers Univ., New Brunswick, N. J., 1956-59; Dir., Tech. Rsch., Thomas J. Lipton, Inc., 1959—. Hon. Pos.: Councilor, N. Y. Sec., Inst. of Food Tech.; Old Guard, Canners Assn.; Chmn. N. Y. Sec., Inst. of Food Tech. Mem.: Sigma Xi; Phi Tau Sigma; Inst. of Food Tech.; Am. Chem. Soc.; Am. Inst. of Microbiol.; A.A.A.S.; Am. Inst. of Chemists; Chemists Club; Kappa Sigma; Phi Tau Sigma. Editor: Biological Abstracts. Serv. Rec.: U. S. A.A.F., W. W. II. Areas of Rsch.: Developer of Commercial Processes for High Speed Fat Rendering, Electrostatic Smoking of Bacon and Meat Curing.

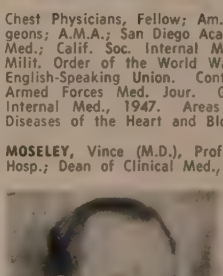
MORTENSON, Everett N. (Mr.), Chf. Rsch. Engr., Swift and Co., 150 Marble St., Hammond, Ind. Home Add.: 10440 Calumet Ave., Hammond, Ind. CHEMICAL ENGINEER. b. Cherokee, Ia., June 19, 1911. s. F. O. and Anna (Peterson) M. Edn.: B.S., Iowa State Univ., 1934. m. Helen Higgins (dec.), July, 1941. c.: Richard E. Exp.: Analytical Chem., Swift and Co., Chicago, Ill., 1934-36; Rsch. Engr., ibid., 1936-48; Chf. Rsch. Engr., ibid., Hammond, Ind., 1948—. Hon. Pos.: Past Chmn., Chicago Sec. of A.I.Ch.E. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; A.A.A.S.; Lambda Chi Alpha. Areas of Rsch.: Manufacture, Formulation and Production of Chemical Fertilizers.

MORTON, Joseph Lewis (M.D.), Radiologist, St. Vincents Hosp., Indianapolis 8, Ind. Home Add.: 3272 W. 42nd St., Indianapolis 8, Ind. RADIOLOGY (MEDICAL). b. New Vienna, Ohio, Dec. 13, 1912. s. Lyle George and Hele (Hull) M. Edn.: M.D., Ohio State Univ., 1936. m. Mary Frances Boone, 1937. c.: Joseph; John. Exp.: Assoc Prof., Ohio State Univ., Columbus, Ohio, 1946-47; Assoc., ibid., 1948-54; Radiologist, St. Vincents Hosp., 1955—. Hon. Pos.: Acting Chmn. Radiol., Ohio State Univ., 1954. Mem.: Radium Soc.; Ind. State Radio. Soc.; Am. Assn. for the Adv. of Sci.; R. and R. and Nuclear Soc.; Marion Co. Med. Soc.; Soc. of Nuclear Med.; Sigma Phi Epsilon; Alpha Kappa Kappa. Contbr. to: Am. Jour. of R. and R. Therapy; Radiology. Serv. Rec.: Army, U. S., 1942-45. Areas of Rsch.: Radiation; Biology; Radio Isotopes; Medical Applications.

MORTON, Paul Harry (M.D.), Physician, 1117 Tenth St., Coronado 18, Calif. Home Add.: 1000 Adella Ave., Coronado 18, Calif. INTERNAL MEDICINE. b. Salt Lake City, Utah, May 26, 1910. s. Thomas F. Harry and Nellie (Pettit) M. Edn.: B.A., Univ. of Utah, 1934; M.D., Jefferson Medical Coll. of Phila., 1938. m. Lenore Smith, 1934. c.: Thomas F. H., III; John Paul. Exp.: Asst. Surgeon, U. S. Navy, 1938-42; Naval Flight Surgeon, ibid., 1941-50; Cmdr., U. S. Navy; Pvt. Practice, 1950—. Hon. Pos.: Chf. of Med. and Cardiologist, Coronado Hosp.; Visiting staffs of San Diego Hosps.; San Diego Co. Soc. of Internal Med.; Bd. of Dirs., San Diego Co. Heart Assn.; Mem. Exec. Comm., ibid. Mem.: Am. Coll. Physicians; Fellow and Life Mem., ibid.; Am. Coll. of Cardiology, Fellow; Am. Coll. of Chest Physicians, Fellow; Am. Heart Assn.; Assn. of Milit. Surgeons; A.M.A.; San Diego Acad. Med.; Internatl. Soc. of Internal Med.; Calif. Soc. Internal Med.; A.A.A.S.; Sons of Am. Rev.; Milit. Order of the World Wars; Navy League of the U.S. and English-Speaking Union. Contbr. to: Annals of Internal Med.; Armed Forces Med. Jour. Gen. Int.: Diplomate, Am. Bd. of Internal Med., 1947. Areas of Rsch.: Internal Medicine and Diseases of the Heart and Blood Vessels.



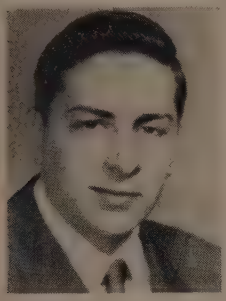
MOSELEY, Vince (M.D.), Prof. of Med., Med. Dir., Med. Coll. Hosp.; Dean of Clinical Med., Med. Coll. of S. C., 16 Lucas St., Charleston, S. C. Home Add.: 5 East Bay, Charleston, S. C. INTERNAL MEDICINE; GASTROENTEROLOGY. b. Orangeburg, S. C., Oct. 29, 1912. s. William L. and Jessie (Vince) M. Edn.: A.B., Duke Univ., 1933; M.D., ibid., Schl. of Med., 1936. m. Matilda Elizabeth Holleman of Durham, N. C., Oct. 11, 1938. d. Mr. and Mrs. W. D. Holleman. c.: Robert Dwight; Julia Caroline Kelsey Elizabeth; William Vince; Matilda Rain; Esther Jane; Lawrence Holleman; Selma Jessica. Exp.: M.D., Duke, 1936; Internship, N. C. State T.B. San., 1937; Interne, Syndham Hosp., Baltimore, Md.; Interne and Asst. Resident in Med., Duke Hosp., 1937-39; Fellow, Duke Univ. Schl. of Med., 1939-40; Asst. in Med., Duke Univ., ibid., 1940; Assoc. in Med. and Fellow, Univ. of Pa. Hosp. and Schl. of Med., 1940-41; Ex-



Act. and U. S. Army, 1941-47; Assoc., Asst. Prof., Assoc. Prof., and Prof., Med. Coll., St. of S. C., 1947—; Prof., 1949; Assoc. Dean, Clinical Med., ibid., 1959-60; Dean, Clinical Med., ibid., 1960—. Mem.: Certified Am. Bd. of Internal Med., June, 1945; Sou. Med. Assn.; Med. Soc. of S. C.; A.M.A.; S. C. Acad. Sci.; F.A.C.P.; A.A.A.S.; So. Soc. Clin. Rsch.; Soc. Exp. Biol. and Med.; Sigma Upsilon; Alpha Omega Alpha; Kappa Alpha; Phi Chi; Mem. of Bd. of Trustees, Presby. Coll., Clinton, S. C.; Am. Clinical and Climatologic Assn.; Kiwanis. Contbr. to: Archives Int. Med.; Annals Int. Med.; So. Med. Jour. Serv. Rec.: E.A.D., 1941, 1st Lt., Capt., Maj., Lt. Col., Col., Reserve. Areas of Rsch.: Gastroenterology and Antibiotic Study.

MOSER, Earl Hampton, Jr. (Mr.), Dir., Polar Div., Naval Civil Engrng. Lab., Port Huenemee, Calif. Home Add.: 3386 George St., Oxnard, Calif. POLAR ENGINEERING SPECIALIZING IN HABITATION AND UTILIZATION OF SNOW AND ICE AS CONSTRUCTION MATERIALS. b. Zebulon, N. C., July 5, 1914. s. Early H. and Myrtle (Folger) M. Edn.: B.S., N. C. State Coll., 1934. m. Clare Down, 1946. Exp.: Hydraulic Engr., Sedimentation Rsch. Soil Conservation Service, U.S.A., 1934-42; Civil Engr., Amphibious Equipment, Naval Advance Base Proving Ground, Port Hueneme, Calif., 1946-51; General Engr., Naval Civil Engrng. Lab., ibid., 1954—. Mem.: Fellow, A.S.C.E.; A.G.U.; A.A.A.S.; S.A.-M.E.; A.I.N.A. Author: "Hardtop I," "Snow Compaction Techniques," and "Snow Compaction Design Criteria." Serv. Rec.: U. S. Naval Reserve, W. W. II. Areas of Rsch.: Habitation of Polar Regions, Air Operational Facilities on Ice Shelves and Sea Ice.

MOSER, Gene Wendell (Mr.), Prog. Dir., Sci., Univ. of Rochester, Univ. Schl. and Asst. Prof., Edn., Coll. of Edn., ibid., Rochester, N. Y. Home Add.: 843 Paul Rd., Rochester 24, N. Y. BIOLOGICAL SCIENCE EDUCATION. b. Hawley, Pa., July 25, 1929. s. Charles Benjamin and Pearl (Hale) M. Edn.: B.S., E. Stroudsburg St. Tchrs. Coll., 1953; M.A., Columbia Univ. Tchrs. Coll., 1955. m. Joyce Elen Moran, Mar. 22, 1952. Exp.: Tchng. Fellow in Biol., Bowdoin Coll., 1955-56; Asst. Prof., Oswego St. Coll., 1957-58; Shell Oil Asst., Assoc. Dir., Natl. Sci. Fdn. Insts., Cornell Univ., 1958-60; Prog. Assoc. in Higher Edn., St. Edn. Dept., Albany, N.Y., 1960-62; Dir., Sci. and Asst. Prof., Edn., Univ. of Rochester, 1962—. Mem.: A.A.A.S.; Am. Inst. of Biological Scis.; Natl. Assn. of Biol. Tchrs.; Kappa Delta Pi. Contbr. to: Am. Biology Teacher; N. Y. Jour. of Mathematics; Science Education. Serv. Rec.: U. S. Air Force, 1950-51. Areas of Rsch.: Sci. Edn. of Elem. and Secd. Tchrs.; Sci. Attitudes of Students; Embryology of Anomopods.

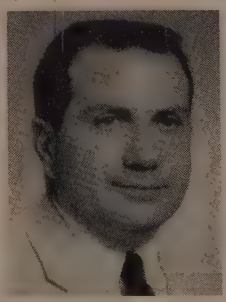


MOSES, Montrose J. (Ph.D.), Assoc. Prof. of Anatomy, Duke Univ. Med. Schl., Durham, N. C. Home Add.: 152 Pinecrest Rd., Durham, N. C. CYTOLOGY (ELECTRON MICROSCOPY AND CYTOCHEMISTRY), FINE STRUCTURE AND CYTOCHEMISTRY OF NUCLEUS AND CHROMOSOMES. CORRELATION OF LIGHT AND ELECTRON MICROSCOPE TECHNIQUES IN STUDY OF CELL STRUCTURE AND FUNCTION. b. N. Y., N. Y., June 26, 1919. s. Montrose J. and Dorothy (Herne) M. Edn.: B.S., Bates Coll., 1941; A.M., Columbia Univ., 1942; Ph.D., ibid., 1949. m. Constance Roy, July 3, 1949. c.: Mollie C.; Katherine C. Exp.: Assoc. Cytochemist, Brookhaven Natl. Lab., Upton, N. Y., 1948-52; Cytochemist, ibid., 1952-55; Visiting Investigator, Cytology, The Rockefeller Inst., N. Y., 1954-55; Asst., Cytology, ibid., 1955-56; Assoc., Cytology, ibid., 1956-57; Asst. Prof., Cytology, ibid., 1957-59; Assoc. Prof., Dept. of Anatomy, Duke Univ., 1959—. Hon. Pos.: Acting Secy., Am. Soc. Cell Biol., 1960-61, Secy., 1961—; Vice Chmn., Gordon Conference on Cell Structure and Metabolism, 1958; Chmn., ibid., 1959. Mem.: Fellow, A.A.A.S.; Am. Soc. for Cell Biol.; Am. Soc. of Naturalists; Am. Soc. of Zoologists; Genetics Soc. of Am.; Histochem. Soc.; Internatl. Soc. for Cell Biol.; Radiation Rsch. Soc.; Biophys. Soc.; Sigma Xi. Discussion Editor: The Chemistry and Physiology of the Nucleus, 1952. Contbr. to: Jour. Biophysic. Biochem. Cytology; Expt. Cell Rsch. Serv. Rec.: U. S. Army Signal Corps, 1942-46. Areas of Rsch.: Cytology; Electron Microscopy; Microscopical Cytochemistry, especially of Nucleic Acids and Proteins, Visible and Ultraviolet Light Microscopy, Cytophotometry.

MOSKOWITZ, Arthur (Mr.), Supvr., Stainless Rsch. Crucible Steel Co., Pittsburgh, Pa. Home Add.: 3152 Woodridge Dr., Pittsburgh, 27, Pa. CORROSION FERROUS METALLURGY, PHYSICAL CHEMISTRY. b. N. Y. City, Sept. 2, 1928. s. Murray and Lillian (Rosenthal) M. Edn.: B.A., Cornell Univ., 1949; M.S., Univ. of Chicago, 1950. m. Althea Valanoff, 1956. Exp.: Chemist and Supvr., Analyt. Lab., Inst. for Study of Metals, Univ. of Chicago, Chicago, Ill., 1951-54; Rsch. Chemist, Chem. and Radiol. Labs., Army Chem. Ctr., Edgewood, Md., 1954-56; Supvr., Stainless Steel Rsch., Crucible Steel Co., 1956—. Mem.: Am. Chem. Soc.; Natl. Assn. of Corrosion Engrs.; Am. Assn. for the Adv. of Sci.; Electrochem. Soc.; Am. Soc. for Metals; Welding Rsch. Coun.; A.S.T.M. Contbr. to: Analyt. Chem.; Corrosion. Serv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Stainless Steels-Alloys Development, Property Improvement, Physical and Chemical Metallurgy.

MOSNER, Paul (Mr.), Staff Scientist, Avco Mfg. Corp., Rsch. and Adv. Devel. Div., Wilm., Mass. Home Add.: 56 Griffin Rd., Saxonville, Mass. ENGINEERING PHYSICS: GUIDANCE AND CONTROL. b. Chicago, Ill., Jan. 28, 1930. s. Max and Sarah (Razonsky) M. Edn.: B.S., Univ. of Wash., 1951; M.S., Mass. Inst. of Techn., 1960. m. Zelda Pransky, May 3, 1953. c.: Ellen Rachel; Michael David. Exp.: Sr. Mem., RCA, Missile Elects. and Controls Dept., Burlington, Mass., 1957-60; Rsch. Asst., Mass. Inst. of Tech., Instrumentation Lab., Cambridge, Mass., 1960; Staff Scient., Avco Mfg. Corp., Rsch. and Adv. Devel. Div., 1960—. Mem.: Zeta Mu Tau. Contbr. to: Fourth I.R.E. Instrument Conf.; I.R.E. Trans. on Instrument; I.R.E. Trans. on Automatic Control. Serv. Rec.: U. S. Naval Reserve, Active 1954-57. Areas of Rsch.: Guidance and Control.

MOSS, Bertram Bernard (M.D.), Physician, 55 E. Wash., Chicago 2, Ill. and 5360 N. Lincoln, Chicago 25, Ill. Home Add.: 3750 Lake Shore Dr., Chicago 13, Ill. PSYCHOSOMATIC MEDICINE. b. N. Y., July 11, 1919. s. Edward and Mathilda (Salle) M. Edn.: B.S., Northwestern Univ., 1941; M.D., The Chicago Med. Schl., 1944. m. Ruth Ann Lipsker, Sept., 1942. c.: Gregory David; Gail Victoria. Exp.: Physician, Chicago, Ill., 1955—. Hon. Pos.: Secy., Edgewater Reg. Chapter, Acad. and the Am. Acad. of Gen. Pract.; Med. Consult. to the U. S. Parole and Probation Serv., N. Dist. of Ill.; Med. Consult. Sheriff of Cook Co., 1955-57; Ill. Rep. to the Natl. Conf. for Revising Parole Laws, 1956. Mem.: Am. Med. Assn.; Chicago Med. Soc.; Ill. Sta. Med. Soc.; Secy., Acad. of Psychosomat. Med.; Secy., Ill. Acad. of Criminol. Contbr. to: Gen. Pract.; Med. Econs.; Med. Times; What's New; Psychosomatics. Serv Rec.: U. S. Army, 1952-54. Areas of Rsch.: Psychosomatic Medicine.

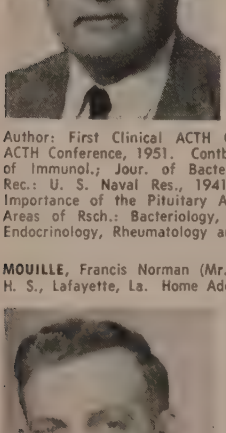


MOSS, Charles Norman (M.D.), Chf., Missile Test and Range Support Div., Office of Staff Surgeon, Air Force Missile Test Ctr., Chf., Air Force Clinics, U.S.A.F. Hosp., Patrick AFB, Fla. AEROSPACE MEDICINE, PREVENTIVE MEDICINE, OCCUPATIONAL MEDICINE. b. Los Angeles, Calif., June 13, 1914. s. Charles Francis and Lena (Rye) M. Edn.: A.B., Stanford Univ., 1940; M.D., Harvard Med. Schl., 1944; M.P.H., Univ. of Calif., 1955. c.: Charles Eric; Gail Linda. Exp.: Intern in Surg., Peter Bent Brigham Hosp., Boston, Mass., 1944-45; Asst. in Surg., ibid., 1947; Battalion Surgeon, U.S.A., China, 1945-47; Special Mission, China to Germany, 1947; Student, First Long Course for Flight Surgeons, U.S.A.F. Schl. of Avn. Med., Randolph AFB, Tex., 1948-49; Fighter Wing Base Surgeon, Flight Surgeon, Med. Group Commander, U.S.A.F., Germany, 1949-52; Surgeon, San Antonio Air Material Area and Kelly AFB, Tex., 1952-54; Office of the Air Force Surgeon General, Directorate of Professional Servs., Wash., D. C., 1955-59; Commander Air Force Hosp., Izmir Turkey, 1959; Office of the Staff Surgeon, Air Force Missile Test Ctr., Patrick AFB and Cape Canaveral, Fla., 1959—. Mem.: Am. Bd. of Preventive Med. in Avn. Med.; Am. Coll. of Preventive Med., Fellow; F.A.C.P.M.; Am. Publ. Health Assn.; F.A.P.H.A., Fellow; A.A.A.S., Fellow; Royal Soc. of Health; Aerospace Med. Assn.; Soc. of Air Force Flight Surgeons; Am. Conf. of Govtl. Hygienists; Assn. of Milit. Surgeons of the U. S.; A.M.A.; Industrial Med. Assn.; Fla. Publ. Health Assn. Serv. Rec.: U. S. Air Force, 1942—.

MOSS, John Hall (Ph.D.), Prof. of Geol., Franklin and Marshall Coll., Lancaster, Pa. Home Add.: 1034 Lampeter Rd., Lancaster, Pa. GEOLOGY. b. Philadelphia, Pa., Oct. 25, 1918. s. Frank Hazlett and Rebecca Anna (Hunter) M. Edn.: A.B., Princeton Univ., 1941; M.S., M.I.T., 1943; M.A., Harvard Univ., 1947; Ph.D., ibid., 1949. m. Margaret Stewart, June 26, 1942. c.: Margaret Penney; John Hall, Jr.; Barbara Hunter; William Stewart; Jane Stewart; Frederick. Exp.: Geologist, U. S. Geologist, U. S. Geol. Survey, Washington, D. C., 1943-45; Staff, Franklin Marshall Coll., 1948—. Hon. Pos.: Chmn., F. and M. Dept. of Geol.; Pres., Eastrn. Sect., Nat. Assn. of Geol. Tchrs.; Chmn., Pa. Dept. Pub. Edn., Earth and Space Sci. Course Comm. Mem.: Geol. Soc. of Am.; Soc. of Econ. Paleontol. and Mineralog.; Natl. Assn. Geol. Tchrs.; Pa. Acad. of Sci.; Arctic Inst. Am. Geog. Soc.; Am. Assn. Adv. Sci.; Am. Assn. of Univ. Profs. Author: Early Man in the Eden Valley, 1951; Teaching Guide to the Pennsylvania Earth and Space Science Course, 1958. Contbr. to: Bull. Geol. Soc. of Am.; Proc. Pa. Acad. of Sci.; Am. Jour. of Sci. Serv. Rec.: U. S. Geol. Survey Mil. Geol. Unit, 1943-45. Areas of Rsch.: Pleistocene Glaciation and River Terrace Sequences in New York, Pennsylvania and the Rocky Mountains.

MOSS, Samuel (Ph.D.), Physiolt., Div. of Rsch. Grants, N. Inst. of Hlth., Bethesda, Md. Home Add.: 11912 Stonewood Lane Rockville, Md. PHYSIOLOGY OF REPRODUCTION AND DEVELOPMENT. b. Drahovo-Czechoslovakia, July 2, 1914. s. David (dec.) and Ella (Markbreiter, dec.) M. Edn:. M.S., Masaryk Univ., Brno, Czechs., 1939; Ph.D., N. Y. Univ., 1950. m. Sally L. Ruffine, June 4, 1944. c.: Ella Judith; David Steven. Exp.: Physiolt., Agric. Rsch. Ctr., U. S. Dept. of Agric., Beltsville, Md., 1950-56; Physiolt., Div. of Rsch. Grants, Natl. Intst. of Hlth., 1956—. Mem.: Sigma Xi; Am. Assn. of Anat.; Am. Soc. of Cell Biol., Teratol. Soc. Contbr. to: Sci.; Jour. of Biol. Chem.; Anat. Rec.; Endocrinol.; Jour. of Animal Sci.; Jour. of Vet. Rsch. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Physiology of Reproduction, Human Embryology and Development, Administration of Research Grants Program.

MOTE, John Robert (M.D.), Indep. Indust., Med. Consultant, 11 E. 68th St., N. Y. 21, N. Y. Home Add.: 5 Vista Ave., Old Greenwich, Conn. ENDOCRINOLOGY AND CLINICAL EVALUATION OF PRODUCTS. b. Temple, Tex., Apr. 2, 1907. s. Silas W. and Deana (Morris) M. Edn.: B.A., Univ. of Ariz., 1930; M.D., Harvard Univ. Med. Schl., 1935. m. Jean Chisolm, Oct. 22, 1936. c.: Perry; Gaye; Dian. Exp.: Instr., Harvard Med. Schl., Boston, Mass., 1937-41; Dir., British Supps., Mission, Wash., D. C., 1941-46; Med. Dir., Armour Labs., Chicago, Ill., 1946-51; Med. Dir. and Indep. Indust. and Med. Consultant, N. Y., 1951—. Mem.: Order of British Empire; Endocrine Soc.; Rheumatism Soc.; Phi Beta Kappa; Phi Kappa Phi; Alpha Omega Alpha; Sigma Lambda Rho; Phi Delta Theta; Harvard Club of N. Y. City.



Author: First Clinical ACTH Conference, 1950; Second Clinical ACTH Conference, 1951. Contbr. to: Jour. of Clin. Invest.; Jour. of Immunol.; Jour. of Bacteriol.; Jour. of Endocrinol. Serv. Rec.: U. S. Naval Res., 1941-46. Gen. Int.: Crystallizing the Importance of the Pituitary Adrenal Axis in the Human Being. Areas of Rsch.: Bacteriology, Immunology, Preventive Medicine, Endocrinology, Rheumatology and Clinical Evaluation of Products.

MOUILLE, Francis Norman (Mr.), Sci. and Math. Tchr., Lafayette H. S., Lafayette, La. Home Add.: 433 E. Main St., Lafayette, La. MATHEMATICS AND SCIENCE. b. Church Point, La., Feb. 19, 1938. s. Cleophas and Elsie Jewel (Higginbotham) M. Edn.: B.S., Univ. of Southwestern La., 1959; M.Ed., Univ. of Southwestern La., 1961; B.S., Univ. of S.W. La., 1960. m. Katherine Irene Tabor, Dec. 28, 1961. Exp.: Sci. Tchr., Lafayette H. S., 1959—; Supvr. of Student Tchng. for the Univ. of Southwestern La., 1961—. Hon. Pos.: Faculty Repr. to Lafayette Parish Classroom Tchrs. Assn. Mem.: Assn. for Student Tchng.; Am. Ordnance Assn.; Lafayette Parish Classroom Tchrs. Assn.; La. Tchrs. Assn.; La. Sci. Tchrs. Assn.; Natl. Edn. Assn.; Generol. Rsch. Soc. of New Orleans; Natl. Coun. of Tchrs. of Math.; Central Assn. of Sci. and Math. Tchrs.; A.A.A.S.; Kappa Delta Pi; Kappa Mu Epsilon; Sons of Confed. Vet. Gen. Int.: Chapt. Advr. for Friendship Internatl. Chapt. of the Am. Field Serv.; Am. Legion Award; H. S. Jr. and Sr. Class Pres.; Valedictorian; Sponsor of Lafayette High Student Coun.; Sponsor of Lafayette High Sci. Club; Grad. of Lafayette Diocese Adult Schl. of Religion.

MOSTERT, Paul Stallings (Ph.D.), Prof., Dept. of Math., Tulane Univ., New Orleans, La. Home Add.: 2227 Calhoun St., New Orleans 18, La. MATHEMATICS. b. Morrilton, Ark., Nov. 27, 1927. s. J. F. T. and Lucy (Stallings) M. Edn.: B.A., Southwestern at Memphis, 1950; M.S., Univ. of Chicago, 1951; Ph.D., Purdue Univ., 1953. m. Kathleen Gray, Dec. 20, 1947. c.: Paul Theodore; Richard Stalling; Kathleen. Exp.: Rsch. Inst., Tulane Univ., 1953-54; Asst. Prof., ibid., 1954-58; Assoc. Prof., ibid., 1958-62; Prof., ibid., 1962—. Mem.: Am. Math. Soc.; Sigma Xi. Author: Analytic Trigonometry, 1960. Contbr. to: Annals of Math.; Trans. Am. Math. Soc.; Proc. Am. Math. Soc.; Memoirs Am. Math. Soc.; Duke Math. Jour., and others. Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Topological Algebra; Transformation groups, Topological Groups and Semigroups.

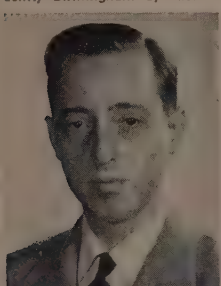
MOULTON, James Malcolm (Ph.D.), Assoc. Prof., Biol., Bowdoin Coll., Brunswick, Me. Home Add.: 28 Columbia Ave., Brunswick, Me. ZOOLOGY, ANIMAL MORPHOLOGY AND DEVELOPMENT; MARINE BIOLOGY. b. W. Haven, Conn., July 25, 1921. s. James William and Anna (Young) M. Edn.: B.S., Univ. of Mass., 1947; M.A., Harvard Univ., 1950; Ph.D., ibid., 1952. m. Hope Isabel Kibbe, June 25, 1949. c.: Nancy Martha; John Newell; James Roby. Exp.: Instr., Biol., Brown Univ., Providence, R. I., 1951; Instr., Anat., The Johns Hopkins Univ., Balt., Md., 1951-52; Instr., to Assoc. Prof., Biol., Bowdoin Coll., 1952—. Hon. Pos.: Fulbright Rsch. Scholar and Guggenheim Fellow, at the Univ. of Queensland, Australia, 1960-61; Assoc. in Marine Biol., Woods Hole Oceanogr., Inst. Mem.: Am. Assn. for the Adv. of Sci., Fellow; Am. Soc. of Zoolts.; Ecol. Soc.; Am. Fish. Soc.; A.I.B.S.; Am. Ichth. and Herpetolts.; Lambda Chi Alpha; Sigma Xi. Contbr. to: Biol. Bull.; Copeia; A. Rsch. Bull.; Sci.; Herpetol.; Oceanus; Maine Field Nat.; Woods Hole Oceanogr. Instn. Contbrns.; Maine Dept. Sea and Shore Fish. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: The Ear and Structure and Evolution, Underwater Noise Made by Animals; Animal Behavior; Marine Biology; Plankton; Anatomy, Histology and Embryology of Animals.

MOURFIELD, Walter Raymond, Jr. (D.D.S.), Dentist, 1473 Madison Ave., Memphis 4, Tenn. Home Add.: 3336 Highland Park Pl., Memphis 11, Tenn. DENTISTRY, ORAL MEDICINE AND SURGERY. b. Knoxville, Tenn., Aug. 10, 1919. s. Walter Raymond (dec.) and Nell Lelia (Pollard) M. Edn.: D.D.S., Univ. of Tenn. Coll. of Dentistry, 1953. m. Beverly Ruth Miller, Apr. 11, 1954. c.: Raymond Bryan; Christian Ferrell. Exp.: Asst. Instr. of Clin. Oral Surg. and Periodontol. and Lectr. of Anesthesiol., Histol., Oral Pathol., Univ. of Tenn. Coll. of Dentistry, 1953-55; Instr., Clin. Oral Med., Clin. Periodontol., Clin. Radiology, Oral Diagnosis, ibid., 1955-59; Lectr. of Internal Med. in Dental Practice, Oral Diagnosis, Oral Pathol., Radiology, and Lectr. Internal Med. in Dental Practice, Inst. of Pathol., Univ. of Tenn. Coll. of Med., 1960—; Staff, Dept. Surg., St. Joseph Hosp., 1953—; Staff, Dept. Surg., Meth. and Eye, Ear, Nose and Throat Hosps., 1957—. Mem.: Am. Dental Assn.; Tenn. State Dental Assn.; Memphis Dental Soc.; Am. Acad. Dental Med.; N. Y. Acad. Scis.; Marguerite Taylor Dean and Richard Doggett Dean Hon. Odontological Soc.; Royal Soc. of Health, London; Psi Omega; Optimist; Internatl. Acad. of Orthodontics. Contbr. to: Jour. Oral Surg., Oral Med. and Oral Pathol.; Jour. of Tenn. State Dental Assn.; Jour. Ga. State Dental Soc.; etc. Serv. Rec.: U. S. Air Force, W. W. II. Gen. Int.: Surgical Reconstruction and the Design and Fabrication of special prosthetic appliances in oral rehabilitation of traumatic accident cases. Areas of Rsch.: Broad Spectrum Antibiotics in the Prophylaxis and Control of Oral Infection; Antibiotic Therapy for Control of Infection in Oral Surgery Procedures; The Prophylaxis and Control of Drug Reactions Through Use of Antihistiminic and Steroid Therapy.

MOULY, George Joseph (Ph.D.), Prof. of Edn., Univ. of Miami, Miami, Fla. Home Add.: 5900 S.W. 32nd St., Miami 55, Fla. EDUCATION. b. Sask., Can., Sept. 16, 1915. s. Paul J. and Mary Louise (France) M. Edn.: B.A., Univ. of Sask., 1945; B. Edn., ibid., 1946; M. Edn., ibid., 1947; Ph.D., Univ. of Minn., 1949. m. Gertrude M. Dubois, 1940. c.: Paul; Michael; Eileen. Exp.: Tchr., Sask. Pub. Schl., Can., 1934-42; Instr. of Math., Univ. of Sask., Saskatoon, Sask., Can., 1946-47; Dir. Testing Bureau, Univ. of Miami, Fla., 1949-50; Prof. of Edn., ibid., 1950—. Mem.: Am. Psychol. Assn.; Am. Ednl. Rsch. Assn.; Phi Delta Kappa. Author: Psychology for Effective Teaching, 1960; Test Items in Education, 1962. Contbr. to: Jour. Edn. Psychol.; Jour. Edn. Rsch.; Personnel and Guid. Jour. Serv. Rec.: Can. Army, 1942-44. Gen. Int.: Index of Business Conditions. Areas of Rsch.: Educational Research.

MOWRY, Helen Axtell (Ph.D.), Prof. of Biol., Skidmore Coll., Saratoga Spgs., N. Y. PROTOZOOLOGY, HISTOLOGY, INVERTEBRATE ZOOLOGY. b. Millville, Mass., July 22, 1896. d. Wendell A. and Mabel Alma (Thayer) M. Edn.: A.B., Brown Univ., 1918; A.M., ibid., 1920; Ph.D., Ia. Sta., 1930. Exp.: Lab. Asst., Forest Pathol. Office Bur. of Plant Industry, U.S.D.A., Providence, R. I., 1918-20; Field Asst., Forest Pathol., Bureau Plant Industry, U. S. Dept. of Agric., Wash., D. C., Summer, 1920; Assoc. Prof., Biol., Skidmore Coll., 1920-43; Lab. Asst., Zool., Univ. of Colo., Boulder, Colo., Summer, 1927; Tchng. Fellow, Gen. Biol., Ia. Sta. Coll., Ames, Ia., 1929-30; Prof. of Biol., Skidmore Coll., 1943—. Hon. Pos.: 2nd Natl. Vice-Pres., Sigma Delta Epsilon, 1937. Mem.: Phi Beta Kappa; Sigma Xi; Pi Gamma Mu; Sigma Delta Epsilon; A.I.B.S.; A.A.U.W.; Lake Placid Club. Contbr. to: Trans. of Am. Microscopical Soc.

MOWRY, Robert Wilbur (Mr.), Prof. of Pathol., Univ. of Ala. Med. Cent., Birmingham 5, Ala. PATHOLOGY AND HISTOCHEMISTRY. b. Griffin, Ga., Jan. 10, 1923. s. Dr. Roy B. and Mary F. (Tipton) M. m. Margaret Neilson in June, 1949. c.: Janet Lee; Robert Gordon; Barbara Ann. Exp.: Intern, Jefferson-Hillman Hosp., Birmingham, Ala., 1946-47; Asst. Res. in Pathol., ibid., 1947-48; Sr. Asst. Surgeon, U. S. Public Health Serv., Natl. Institutes of Health, Bethesda, Md., 1948-52; Prof. of Pathol., ibid., 1958—. Assigned as fellow in Pathol., Mallory Inst. of Pathol., Boston, Mass., 1949-50; Asst. Prof. of Pathol., Washington Univ. Schl. of Med., 1952-53; Asst. Prof. of Pathol., Univ. of Ala. Med. Ctr., Birmingham, Ala., 1953-54; Assoc. Prof. of Pathol., ibid., 1954-58; Mem.: Am. Assn. of Pathologists and Bacteriologists; Am. Soc. Exptl. Pathol.; Internatl. Acad. of Pathol.; The Histochem. Soc.; The Biological Stain Commn.; The RES Soc.; and Sigma Xi. Co-Author: "Staining Methods: Histologic and Histochemical," 1960. Contbr. to: Am. Jour. of Pathol.; Proc., Soc. of Exptl. Biol. and Med.; Jour. of Lab. and Clin. Med.; Lab. Investigation; Cancer; Am. Jour. Physiol.; and Bull. of the Internatl. Assn. of Med. Museums. War Rec.: U. S. Army, 1943-46. Special Int.: Applications of Histochem. to Pathol.; Fate of Dextran and other Plasma Expanders; and Histochem. Methods for the Study of Complex Carbohydrates in Normal and Abnormal Tissues.



MOYANO, Sylvia McGovern (Mrs.), Instr., Life Sci., Trenton Jr. Coll., Trenton, N. J. Home Add.: 57 Colonial Ave., Trenton 8, N. J. MICROBIOLOGY; HISTORY OF MEDICINE. b. N. Y. C., Sept. 9, 1905. d. Thomas and Theresa (Murphy) McG. Edn.: B.S., Univ. of Chicago, 1925; M.S., DePaul Univ., 1939. m. Rafael M., Mar. 2, 1935. c.: Vincent E. Exp.: Hd. Dept. Sci.; Visual Edn. Coordinator; Program Chmn., Flower Tech. High Schl., Chicago, Ill., 1934-53; Instr., Biol. Sci., Good Counsel Coll., White Plains, N. Y., 1954-55; Instr. Sci. for Nurses, Beth Israel Hosp., Newark, N. J., 1955-56; Instr. Life Sci., Trenton Jr. Coll., N. J., 1959—. Hon. Pos.: Pres., Chicago Biol. Round Table, 1947-48. Mem.: A.A.A.S.; Natl. Assn. Biol. Tchrs.; N. J. Acad. Sci.; N. J. Edn. Assn.; Am. Inst. of Biol. Sci. Contbr. to: Am. Biol. Tchr.; Audio-Visual Guide; Edn. Screen. Areas of Rsch.: Visual Edn.; Hist. of Sci.; Use of Museums in Edn.

MOYER, James Wallace (Ph.D.), Dir. of Rsch., Servomechanisms, Inc., Goleta, Calif. Home Add.: 3040 Samarkand Dr., Santa Barbara, Calif. PHYSICS. b. Syracuse, N. Y., Aug. 16, 1919. s. Wallace Earl and Viola (Hook) M. Edn.: A.B., Cornell Univ., 1938; Ph.D., Univ. of Rochester, 1948. m. Nedra Blake, Sept. 10, 1940. c.: Jeffry, Elaine, Virginia, Julia. Exp.: Grad. Asst. in Physics, Rutgers Univ., New Brunswick, N. J., 1938-41; Inspector of Ordn., Rochester Ordnance Dist., Rochester, N. Y., 1941-42; Physicist, Radiation Lab., Univ. of Calif., Berkeley, Calif., 1942-43; Sr. Physicist, Clinton Eng. Works, Tenn. Eastman Corp., Oak Ridge, Tenn., 1943-46; Grad. Inst. in Phys., Univ. of Rochester, Rochester, N. Y., 1946-48; Rsch. Assoc., Knolls Atomic Power Lab., General Electric Co., Schenectady, N. Y., 1948-55; Consulting Engr., Microwave Physics, Gen. Electric Microwave Lab., Palo Alto, Calif., 1955-57; Manager, Physical Sciences, Gen. Elec. Co. Technical Military Planning Operation, Santa Barbara, Calif., 1957-60; Dir. of Rsch., Sperry Rand Rsch. Ctr., Sudbury, Mass., 1960-61; Dir. of Rsch., Servomechanisms, Inc., Rsch. and Devel. Ctr., Santa Barbara Airport, Goleta, Calif., 1961—. Mem.: Am. Physical Soc.; Am. Rocket Soc.; A.A.A.S.; Inst. of Radio Engrs.; Philosophical Soc. of Wash.; Am. Astronautical Soc.; Sigma Xi; Union League Club of N. Y. Contbr. to: Physical Review; Jour. of the Optical Soc. of Am.; Jour. of Applied Physics; Physics Today. Areas of Rsch.: Nuclear Physics; Solid State Physics; Thermionics; Microwave Physics; Technical Long Range Planning.

MOYER, Melvin Isaac (Ph.D.), Sect. Chief Chemist, Am. Cyanamid Co., Bound Brook, N. J. Home Add.: 16 Oak Terrace, Apt. D, Somerville, N. J. ORGANIC CHEMISTRY. b. Newton, Kans., June 30, 1921. s. John F. and Helen (Isaac) M. Edn.: A.B., Bethel Coll., Kans., 1942; M.S., Univ. of Okla., 1944; Ph.D., Univ. of Kans., 1952. m. Ann Coccia, 1961. Exp.: Grad. Asst., Univ. of Okla., 1942-44; Chemist, Cities Service Oil Co., Bartlesville, Okla., 1946-48; Asst. Instr., Univ. of Kans., 1948-50; Chemist, Am. Cyanamid Co., Bound Brook, N. J., 1952—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma. Serv. Rec.: U. S. Navy Reserves, 1944-46. Areas of Rsch.: Manufacture of Organic Chemical Intermediates.

MROZOWSKI, Stanislaw W., (Ph.D.), Prof., Chmn., Dept. of Physics, Univ. of Buffalo, Buffalo 14, N. Y. Home Add.: 109 Westfield Rd., Buffalo 26, N. Y. SOLID STATE PHYSICS, ATOMIC AND MOLECULAR SPECTROSCOPY. b. Warsaw, Poland, Feb. 9, 1902. s. Joseph and Amelia (Zlotnicka) M. Edn.: Ph.D., Univ. of Warsaw, Poland, 1929. m. Irene Tarwacka, June 26, 1926. Exp.: Rsch. Fellow, Univ. of Warsaw, Poland, 1929-33; Asst. Prof., ibid., 1933-37; Assoc. Prof., ibid., 1937-39; Rsch. Fellow, Univ. of Calif., 1939-40; Rsch. Assoc., Univ. of Chicago, 1940-45; Assoc. Prof., Chmn., Dept., George Williams Coll., 1942-45; Head, Dept. of Physics, Rsch. Div., Great Lakes Carbon Corp., Chicago, Ill., 1945-49; Prof. of Physics, Univ. of Buffalo, 1949—. Hon. Pos.: Chmn., Am. Carbon Comm.; Editor, Proc. of Conferences on Carbon. Mem.: Am. Phys. Soc., Fellow; Opt. Soc. of Am.; Soc. of Rheol.; Am. Assn. of Phys. Tchrs.; A.C.S.; Sigma Xi. Contbr. to: Bull. Acad. Polonaise, Acta Physica Polonica, Zeitschr. f. Physik; Helv. Phys. Acta.; Nature; Phys. Rev.; Jour. Am. Opt. Soc.; Jour. Chem. Physics; Jour. Chim. Physique; Proc. Carbon Conf. Areas of Rsch.: Atomic and Molecular Resonance Fluorescence, Analysis of Atomic and Molecular Spectra, Hyperfine Structure, Forbidden Lines, Zeeman Effect; Physics and Technol. of Carbons and Graphites: X-Ray Structures, Galvanomagnetic Properties, Electron Spin Resonance, Thermoelectric Properties, Heat Conduction and Mechanical Properties, Carbonization and Graphitzation Processes.

MUCHMORE, Robert B. (Mr.), Dir., Phys. Rsch. Div., Space Techn. Labs., 1 Space Park, Redondo Beach, Calif. Home Add.: 720 Napoli Dr., Pacific Palisades, Calif. COMMUNICATION ENGINEERING. b. Augusta, Kans., July 18, 1917. s. Ray B. and Charlotte (Macpherson) M. Edn.: B.S., Univ. of Calif., Berkeley, 1939; E.E., Stanford Univ., 1942. m. Betty Vaughan, 1944. c.: Andrew V.; Douglas B. Exp.: Proj. Engrng., Sperry Gyroscope Co., Garden City, L. I., 1942-46; Sr. Mem., Techn. Staff, Hughes Aircraft Co., Culver City, Calif., 1946-54; Dir., Phys. Rsch. Div., Spac Techn., Labs., Redondo Beach, Calif., 1954—. Mem.: Fellow, Inst. of Radio Engr.; Mem., Acoust. Soc. of Am.; Am. Geophys. Union; Sigma Xi; R.E.S.A.; Life Mem., Sierra Club of Calif. Author: Essentials of Microwaves, 1952; Guided Missile Engineering, 1959, Contbrng. Author; Foundations of Future Electronics, 1961, Contbrng. Author; Guided Missile and Space Vehicle Systems, 1961, Contbrng. Author; Methods of Experimental Physics, 1961, Contbr. to. Contbr. to: Proc. Insts.

Radio Engrng.; Jour. Opt. Soc. of Am.; Trans. Prof. Grp. on Ant. and Propagation.; Jour. of A.S.M.E. Areas of Rsch.: Radio Propagation, Random Noise Theory, Microwaves.

MUDD, Richard (M.D.), Medical Director, Chevrolet-Grey Iron Foundry, Saginaw, Mich. Home Add.: 1001 Hoyt St., Saginaw, Mich. PREVENTIVE MEDICINE. b. Wash., D. C., Jan. 24, 1901. s. Dr. Thomas Dyer and Mary Elizabeth (Hartigan) M. (dec.). Edn.: A.B., Georgetown Univ., 1921; M.A., ibid., 1922; Ph.D., ibid., 1925; M.D., ibid., 1926. m. Rose Marie Krummack, June 20, 1928. c.: Mrs. John E. McHale; Richard D., II; Major Joseph F.; Mrs. Frank Vargas; Mrs. John H. Nickodemus; Thomas B.; Stella K. Exp.: Externe, Tuberculosis Hosp., Wash., D. C., 1925-26; Interne, Henry Ford Hosp., Detroit, 1926-27; Resident, Internal Med., ibid., 1927-28; Med. Dir. of Various Divisions, Gen. Mtrs. Corp., 1928—. Hon. Pos.: Consulting Staff, St. Mary's Hosp., Saginaw, Mich.; Consulting Staff, Saginaw County Hosp.; Sr. Staff, Saginaw Gen. Hosp.; Consultant in Occupational Med., U.S.A.F., Wash., D. C.; Bd. of Dirs., Mich. Indust. Med. Assn. Mem.: Am. Bd. of Prev. Med.; Fel., A.M.A.; Fellow, Am. Indust. Med. Assn.; Fellow, Am. Pub. Health Assn.; Fel., A.A.A.S.; Fel., Am. Acad. of Occupational Med.; Am. Bd. of Indust. Hyg.; Mich. Trauma Committee; Natl. Rehabilitation Assn.; Saginaw Valley Public Health Assn.; Royal Soc. of Health, England; Natl. Citizens Committee, World Health Organization; C. of C., Mich. Author: Mudd Family of the United States, 1950. Contbr. to: Ind. Med.; Am. Jour. of Public Health; Trained Nurse and Hosp. Rev.; Dental Bull. Serv. Rec.: Army Air Corps Reserve, 1926-41, 1941-46; U.S.A.F. Reserve, 1951-60 (Retired). Gen. Int.: Developed Occupational Medical Services in About 45 USAF Bases in World War II; Organized Dept. of Med. and Surgery, Army Field Med. Schl. (Now Ft. Sam Houston, Tex.); Organized First Am. Med. Assn., Approved Occupational Med. Residency, Saginaw, Mich. Areas of Rsch.: Tuberculosis in Industry; Pneumocomoses in Industry, Absenteeism in Industry; Special Interest, Aero-Space Medicine; Aviation Medicine, in General (1934-60); Genealogist (1928-61).

MUELLER, Eugene F. (Mr.), Physicist, Natl. Bureau of Standards, Washington, D. C., Retired. Home Add.: 900 E. Harrison Ave., C35, Pomona, Calif. TEMPERATURE AND HEAT MEASUREMENTS. b. Denison, Ia., Jan. 8, 1883. s. Wilhelm Friederich and Amalia (Theil) M. Edn.: A.B., St. Univ. of Ia., 1902. m. Ethel Eckman, June 27, 1911. c.: Frances M. Reed; Eugene F., Jr. Exp.: Prof., Denison Normal Schl., Denison, Ia., 1902-04; Physicist, Natl. Bureau of Standards, Washington, D. C., 1905-44. Mem.: A.A.A.S.; Philosophical Soc. of Wash.; Wash. Acad. of Scis.; Calif. Acad. of Scis. Contbr. to: Refrigerating Engrng.; Mech. Engrng.; A.S.T.M. Jour.; Papers of Natl. Bureau of Standards. Areas of Rsch.: Precision Control and Measurement of Temperature; Design, Testing and Use of Apparatus for Such Measurements.

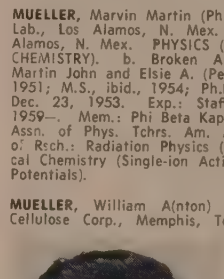
MUELLER, Fritz W. Hellmut (Ph.D.), Dir. of Rsch. and Dev., Photo and Repro. Div., Gen. Aniline and Film Corp., Binghampton, N. Y. RESEARCH AND DEVELOPMENT ON PROCESSES FOR PHOTOGRAPHIC FILM AND PAPER EMULSIONS. b. Dresden, Germany, Apr. 18, 1905. s. Fritz Muller and Gertrud (Muller) M. Edn.: Univ. of Leipzig, Germany, 1924-28; Univ. of Freiburg, (Br.), Germany, 1929-30; Ph.D., ibid., 1929. m. Dorothea Hofmann, Ph.D., Oct., 1935. c.: Peter; Sabina. Exp.: Rsch. Asst., Univ. of Freiburg, Germany, 1929-30; Rsch. Asst., Univ. of Calif., 1930-33; Instr. in Biochem., ibid., 1932-33; Rsch. Assoc., Univ. of Leipzig, Ger., 1933-35; Rsch. Chemist, Agfa Plant, Germany, 1935-36; Asst. Dept. Hd., Ansco Div., Binghamton, N. Y., 1937-43; Dir. of Rsch., ibid., 1944-46; Dir. of Rsch. and Devel., ibid., 1946—. Mem.: Am. Chem. Soc.; Fellow of Photographic Soc. of Am.; A.A.A.S.; Fellow, Soc. Phot. Sci. and Engr.; So. Tier Tech. Soc.; Am. Phys. Soc.; Sigma Xi; N. Y. Acad. Sci.; Corr. Mem., Deutsche Photogr. Ges.; Binghamton C. of C. Contbr. to: Jour. Optical Soc. Am.; Phot. Sci. and Engr.; P.S.A.J., etc. Gen. Int.: Ansco Repr. at Internatl. Phot. Congresses, London (1953), Cologne 1956), Int. Sympos. Paris (1951), Liege (1959), Zurich (1961), Secy. Proceedings; Res. Administrator Organis. Special Int.: Chem. and Optical Sensitization of Photgr. Emulsions, Designer of Ultra Highspeed Films (earning award for Ansco from Acad. Motion Picture Arts & Sciences in 1938); Hypersensitization, X-ray Emulsions, Photopolymerisation, etc. 30 Patents.

MUELLER, Harold William (M.D.), Chf. Surg. Serv., U.S.A.H., Ft. Carson, Colo. Home Add.: 7015 Hollandia Dr., Fort Carson, Colo. GENERAL SURGERY. b. Kearney, Nebr., Aug. 20, 1917. s. Samuel E. and Emma A. (Hanke) M. Edn.: B.Sc., Nebr. Sta. Tchrs. Coll., 1941; M.D., Coll. of Med. Univ. of Nebr., 1950. m. M. Maxine Wylie, June 23, 1951. c.: William F.; Frederick W.; James W.; Mary E. Exp.: Supt., Rose Valley Schls., Broken Bow, Nebr., 1937-38; Prin., Nichols H. Schl., N. Platte, Nebr., 1938-40; Asst. Chf. Surg., U. S. Army Hosp., Ft. Hauchuca, Ariz., 1951-52; Chf. of Surg., U.S.A.F. Infirmary, Eielson A.F.B., Alaska, 1952-54; Asst. Chf., Dept., Surg. and Chf., Gen. Surg., Ireland Army Hosp., Ft. Knox, Ky., 1960-61; Chf. Surg., U. S. Army Hosp., Ft. Carson, Colo., 1961—. Hon. Pos.: Am. Med. Consult. to Korean Red Cross, Pusan Chapter; Surg. Consult. Pusan Korea Children's Charity Hosp. Mem.: Am. Med. Assn.; Am. Assn. for the Adv. of Sci.; Natl. Geog. Soc.; Assn. of Milit. Surg. of the U. S.; Nu Sigma Nu; Alpha Omega Tau; Lambda Delta Lambda; Xi Phi. Contbr. to: Armed Forces Med. Jour.; Yearbook of Cancer. Serv. Rec.: U. S. Army, 1942-45, Reserve, 1945-50, Natl. Guard, 1950; Active Duty, 1950—. Areas of Rsch.: Surgery.

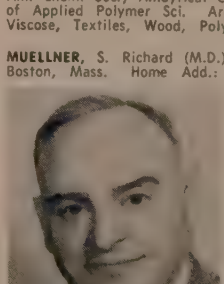
MUELLER, Ivan (Ph.D.), Asst. Prof., Dept. of Geodetic Sci., The Ohio Sta. Univ., Columbus 10, Ohio. Home Add.: 2933 Northwest Blvd., Columbus 21, Ohio. GEODETIC SCIENCE. b. Budapest, Hungary, Jan. 9, 1930. s. Laszlo and Irene (Fischer) M. Edn.: Dipl. Eng., Tech. Univ. of Budapest, 1952; Ph.D., The Ohio Sta. Univ., 1960. m. Marianne Gelei, Sept. 9, 1950. c.: Julianne. Exp.: Instr., Dept. of Geodesy, Tech. Univ. of Budapest, 1951-52; Asst. Prof., ibid., 1954-56; Design Engr., C. H. Sells, Inc., N. Y., 1957-58; Instr., Dept. of Geod. Sci., The Ohio Sta. Univ., 1958-59; Asst. Prof., ibid., 1960—. Mem.: Am. Geophys. Union; Soc. of Exploration Geophys.; Am. Congress on Surveying and Mapping; Canadian Inst. of Surveying; Am. Assn. for the Adv. of Sci.; Sigma Xi. Author: Physical Geodesy, I-II, 1954; The Gradients of Gravity and Their Application in Geodesy, 1960. Contbr. to: Acta Technica Hungarica; Geofisica Pura e Applicata; Surveying and Mapping; Geofizikai Kozlemenyek; Geodezia es Kartografia. Areas of Rsch.: Gravimetric Geodesy; Satellite Geodesy; Spherical and Practical Astronomy; Map Projections.

MUELLER, Marvin Martin (Ph.D.), Staff Mem., Los Alamos Scient. Lab., Los Alamos, N. Mex. Home Add.: 3590 Gold St., Los Alamos, N. Mex. PHYSICS (RADIATION PHYSICS AND PHYSICAL CHEMISTRY). b. Broken Arrow, Okla., Sept. 29, 1928. s. Martin John and Elsie A. (Peper) M. Edn.: B.S., Univ. of Okla., 1951; M.S., ibid., 1954; Ph.D., ibid., 1959. m. Elvira D. Bain, Dec. 23, 1953. Exp.: Staff Mem., Los Alamos Scient. Lab., 1959—. Mem.: Phi Beta Kappa; Sigma Pi Sigma; Sigma Xi; Am. Assn. of Phys. Tchrs. Am. Assn. for the Adv. of Sci. Areas of Rsch.: Radiation Physics (Absorption of Beta-Particles); Physical Chemistry (Single-ion Activity Coefficients and Liquid-Junction Potentials).

MUELLER, William A(nton) (Ph.D.), Rsch. Specialist, Buckeye Cellulose Corp., Memphis, Tenn. Home Add.: 4494 Princeton Rd., Memphis 17, Tenn. CELLULOSE CHEMISTRY. b. Dortmund, Ger., Feb. 27, 1911. s. F. Anton and Kate T. (Reitsma) M. Edn.: B.S., Univ. of Wis., 1933; Ph.D., ibid., 1938. m. Maggie Ruth Thomas, July 28, 1953. c.: W(illiam) Thomas; Margaret L(ei). Exp.: Asst. Prof. of Chem., Southeast Mo. St. Coll., 1938-43; Asst. Prof. of Chem. and Physics, Southwestern Univ., 1943-44; Rsch. Chem., Buckeye Cotton Oil Co., Memphis, 1944-49; Hd., Cellulose Rsch., Cellulose and Specialties, ibid., 1949-54; Assoc. Dir., Dir., Buckeye Cellulose Corp., 1954-57; Rsch. Specialist, ibid., 1957—. Mem.: Am. Chem. Soc.; A.A.A.S.; T.A.P.P.I.; Textile Rsch. Inst.; Am. Forestry Assn.; Phi Beta Kappa; Sigma Xi. Contbr. to: Ind. and Eng. Chem.; Jour. Am. Chem. Soc.; Anlaytical Chem.; Jour. of Polymer Sci.; Jour. of Applied Polymer Sci. Areas of Rsch.: Cellulose Chemistry, Viscose, Textiles, Wood, Polymers.



MUELLNER, S. Richard (M.D.), Physician, 416 Marlborough St., Boston, Mass. Home Add.: 126 Walnut Hill Rd., Brookline, Mass. UROLOGY. b. Libau, Latvia, Dec. 3, 1903. s. Leopold and Rebecca (Skolnik) M. Edn.: M.D., Tufts Univ. Med. Schl., 1929. m. Anne Meyer, Aug. 25, 1936. c.: Robert L.; Howard W.; Leonard C. Exp.: Visit. Surgeon in Urol., Boston City Hosp., Mass., 1945—; Assoc. Staff, Mt. Auburn Hosp., Faulkner Hosp., Winthrop Community, 1948—; Consult. in Urol., L. I. Hosp., L. I., N. Y., 1950—; Consult., Urol., Lemuel Shattuck Hosp., Mass., 1955—; Visit. Urolt., Beth Israel Hosp., Boston, Mass., 1956—; Lectr. in Urol., Tufts Univ. Med. Schl., 1959—; Clin. Assoc. Urol., Harvard Med. Schl., 1960—. Hon. Pos.: Diplomate Am. Bd. of Urol., 1942—. Mem.: Am. Med. Assn.; Mass. Med. Assn.; Am. Urol. Assn.; New England Urol.; Boston Surg.; Am. Bd. of Urol.; Am. Soc. for the Adv. of Sci.; Harvard



Club of Boston. Contbr. to: Jour. of the Am. Med. Assn.; Jour. of Urol.; Bull. N. E. Med. Ctr.; Jour. of Int. Med. Areas of Rsch.: Urology.

MUHLER, Joseph C. (Ph.D.), Prof., Ind. Univ. Med. Center, 1100 W. Mich., Indianapolis, Ind. Home Add.: 420 Buckingham Dr., Indianapolis, Ind. BIOCHEMISTRY. b. Ft. Wayne, Ind., Dec. 22, 1923. s. Howard J. and Lauretta (Zurbuck) M. Edn.: B.S., Ind. Univ., 1945; D.D.S., ibid., 1948; Ph.D., ibid., 1951. m. Majetta Jean Stewart, Feb. 2, 1949. c.: Joseph Charles II; James Patrick. Exp.: Tchng. Fellow, Ind. Univ., 1948-49; Post-Doctorate Fellow, U. S. Public Health Serv., 1949-51; Asst. Prof., Ind. Univ., 1951-55; Assoc. Prof., ibid., 1955-59; Rsch. Prof., ibid., 1959—. Hon. Pos.: Chmn., Section on Rsch., A.D.A. 100th meeting, New York, 1959; Sec. Ind. Univ. Grad. Dental Program; Secy-Treas., Internatl. Assn. for Dental Research, 1961—; Section on Biochem., Am. Assn. Dental Schls. Mem.: Hon. Mem., European Assn. for Fluorine Rsch.; Fellow, Am. Coll. of Dentists; Carbohydrate Sec., Am. Chem. Soc.; Internatl. Assn. for Dental Rsch.; Soc. for Exp. Biol. and Med.; Ind. Acad. of Sci.; A.A.U.P.; Am. Soc. of Dentistry for Children; Indianapolis District Fellow, A.A.A.S.; Sigma Xi; Omicron Kappa Upsilon; Phi Lambda Upsilon. Contbrng. Author: Preventive Dentistry, 1954; An Introduction to Chemistry, 1957; Introduction to Experimental Chemistry, 1958. Co-Author: Endocrine Factors in Experimental Animal Caries, 1955; Laboratory Study of Biological Chemistry, 1957; A Symposium on Preventive Dentistry, 1956; Laboratory Manual of Biological Chemistry for Students of Dentistry; Textbook of Biochemistry, Fluorine and Dental Health. Ed.: Jour. of Ind. St. Dental Assn., 1958—. Contbr. to: Jour. of Dental Rsch.; Jour. Nutrition; Jour. Dental for Children; Jour. Am. Chem. Soc.; Am. Jour. Public Health; Jour. Dental Edn.; Sci.; Jour. Pharm. and Exp. Therapeutics; Proc. Soc. Exp. Biol. and Med.; Jour. Periodontol.; Jour. Ind. St. Dental Assn.; Jour. Pediatrics; Jour. A.D.A.; Jour. Oral Surg. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: 1959 Ind. Div., for "Distinguished Service in Teaching, Rsch., and Public Serv." Areas of Rsch.: Research Nutrition; Dental Caries; Trace Element Metabolism.

MULAIK, Stanley B. (Ph.D.), Assoc. Prof., Zool., Univ. of Utah, Salt Lake City, Utah. NON-INSECT ARTHROPODS; NATURAL HISTORY. b. Sept. 30, 1902, Pittsburgh, Pa. s. George and Minnie (Miller) M. Edn.: B.S., Tchr. Coll., Pa., 1928; M.S., Cornell, 1931; Ph.D., Univ. of Utah, 1954. m. Dorothea Demuth of Cleveland, Ohio, 1931. d. Fred E. Demuth. c.: Stanley A. Exp.: Univ. of Utah, 1939; Supvr. Nature Study, Tex. Schl., 1932-39; Nature Study, Slippery Rock, Pa., 1927; Dir. Program, Boy Camps; Nature Director Trng. Camp, 1934-35; Assoc. Dir., Inst. of Biol., Univ. of Utah, 1956—. Hon. Pos.: Edn. Comm. Soil Cons. Soc. Am.; Pres., Utah Nat. Study Soc.; Utah Cons. Edn. Council. Mem.: Texas Acad. Sci., Fellow; A.N.S.S., Pres. '59; Editor Quart. Newsletter; Cons. Edn. Assn., Vice Pres.; Sigma Xi; Phi Sigma; Utah Acad. of Sci.; A.A.A.S., Fellow; Biol. Soc. Wash.; Ent. Soc. Wash.; Soc. Syst. Zool.; Natl. Audu. Soc.; Biol. Tchrs.; A.A.U.P.; Nature Cons.; Wild Soc.; N.S.T.A.; N.A.R.S.T. Author: Over 30 articles. Contbr. to: Copeia; Cons. Edn. Assn.; Schl. Sci. Math. and others. Travel: Can.; Mex. Hobbies: Ornithol.; Nature. Listed in: A.M.S.; Who Knows—and What. Special Int.: Terrestrial Isopods; Mites (Caeculidae); Sounds in Nature.

MULLER, Ernest Hathaway (Ph.D.), Assoc. Prof., Dept. of Geol., Syracuse Univ., Syracuse 10, N. Y. Home Add.: 416 Thurber St., Syracuse 5, N. Y. GEOLOGY—GEOMORPHOLOGY, GLACIAL GEOLOGY. b. Tabriz, Iran, Mar. 4, 1923. s. Hugo A. and Laura (McComb) M. Edn.: B.A., Coll. of Wooster, 1947; M.S., Univ. of Ill., 1949; Ph.D., ibid., 1952. m. Wanda Custis, Apr. 7, 1951. c.: Ruth Anne; David; Katherine. Exp.: Geol., U. S. Geol., Alaska and Wash., D. C., 1949-54; Geol., N. Y. State Museum, 1955—; Asst. Prof., Cornell Univ., Ithaca, N. Y., 1954-59; Assoc. Prof., Dept. of Geol., Syracuse Univ., 1959—. Mem.: Am. Assn. for the Adv. of Sci.; Sigma Xi; Geol. Soc. of Am.; Am. Geogr. Soc.; Brit. Glaciol. Soc.; Am. Assn. of Univ. Profs.; Natl. Assn. Geol. Tchrs.; Am. Geophys. Union. Author: Laboratory Manual for Physical Geology, 1960. Contbr. to: Am. Jour. Sci.; Geog. Rev.; Sci. Bull. Geol. Soc. of Am. Serv. Rec.: U. S. Army Air Force, 1943-46. Gen. Int.: Am. Geog. Soc. S. Chile Exped., 1959. Areas of Rsch.: Geomorphology, Permafrost, Military Geology, Glacial Geology.

MULLIKIN, Houston Yost (Mr.), Prof., Head, Dept. of Physics and Astronomy, Georgetown Coll., Georgetown, Ky. Home Add.: 407 Hollyhock Lane, Georgetown, Ky.

TEACHING COLLEGE PHYSICS. b. Flintville, Tenn., Oct. 10, 1907. s. Thomas A. and Maymie (Yost) M. Edn.: A.B., Univ. of Ala., 1939; M.S., Univ. of Tenn., 1948. m. Daisy Copeland, Jan. 3, 1927. c.: Thomas Wilson; Richard Andrew; Harry Copeland. Exp.: Instr. in Physics, Univ. of the South, Sewanee, Tenn., 1943-46; Instr. in Physics, Univ. of Tenn., 1946-50; Prof., Head, Physics Dept., Georgetown Coll., 1950—. Mem.: A.A.P.T.; A.S.A.; Alpha Tau Omega; Sigma Pi Sigma; Gamma Sigma Epsilon; Rotary. Areas of Rsch.: Spectroscopy; Examinations for General Physics.

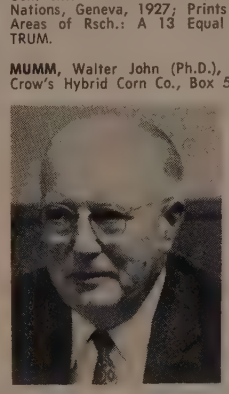
MULSOW, Frederick W. (Ph.D.), (Partly Ret.), Clin. Pathol., 359 Garden Dr., S.E., Cedar Rapids, Ia.

BACTERIOLOGY AND PATHOLOGY. b. Baldwin, Kans., Oct. 6, 1882. s. Frederick W. and Mary Jane (Reel) M. Edn.: A.B., Baker, 1911; A.M., Kans. Univ., 1915; Ph.D., Chicago Univ., 1918; M.D., Rush Univ., 1920. m. Maude A. Emery, June 20, 1922. Exp.: Prin., Wathena H. S., Wathena, Kans., 1911-13; Fellow, Kans. Univ., Lawrence, Kans., 1913-14; Asst. Food Bacteriologist, Kans. Univ., ibid., 1914-15; Prof. Bact., Wash. State Coll., Pullman, Wash., 1915-16; Asst. in Bacteriol., Chicago Univ., Chicago, Ill., 1916-17; Instr., ibid., 1917-18; Resident Physician, Durand Hosp., 1918-20; Prof. Pathol. and Bacteriol., Univ. of Iowa, Iowa City, Iowa, 1921-22; Hd. of Dept. Pathol. and Bacteriol., ibid., 1922-26; Pathologist and Chmn. Pathol., St. Luke Hosp., Cedar Rapids, 1926-48; Attending Pathol., Mercy Hosp., ibid., 1929-47; Consulting Pathol., ibid., 1930-52; Clinical Pathologist, Cedar Rapids, Iowa, 1926-60. Mem.: Am. Assn. Pathol. and Bacteriol.; A.A.-A.S.; Am. Pub. Health Assn.; A.M.A.; Am. Soc. Clin. Pathol.; Iowa State Med. Soc.; Am. Coll. Physicians; Am. Coll. Pathol.; N. Y. Acad. of Sci.; High Twelve; Cedar Rapids C. of C. Contbr. to: Arch. Pathol.; Jour. Am. Med. Assn.; Gastroenterol.; Am. Jour. Digestive Diseases; Am. Jour. Pub. Health; Iowa St. Med. Jour.; Am. Jour. Obst. and Gynec.; Jour. Infect. Dis. Special Int.: Cancer; Diseases of the Stomach, and Intestines.

MUMAW, Everett Elliott (Mr.), Structural Designer with Loedding Eng. Inc., Ambridge, Pa. Home Add.: P.O. Box 214, Kingsville, Ohio.

ASTRONOMY AS APPLIED TO CALENDAR FORM SPECIFICALLY REFORM OF THE PRESENT GREGORIAN CALENDAR. b. Welshfield, Ohio, Sept. 20, 1887. s. Wesley and Mary (Elliott) M. Edn.: C.E., Case Instit., 1920; B.S. in C.E., ibid., 1915. m. Rachel Emerick, Dec. 1, 1933. c.: Everett D.; D.D.S.; John Pike; James Grant. Exp.: Aid, U.S.C. and G. Survey, Alaska, P. I., 1909-12; Detailer, Am. Bridge Co., Ambridge, Pa., 1916-21; Struct. Des., Pittsburgh Br. and Iron Rochester, Pa., 1922-27; Struct. Des., Detroit Edison Co., Detroit, Mich., 1928-30; Designer Structure, 1940 to 1952, Loedding Eng. Inc., 1953—. Hon. Pos.: Office Mgr., Cleveland Underground Survey, 1939-40; Mem. of Visit. Scients. Prog., Ohio Acad. of Sci., 1962-63. Mem.: Sigma Xi; Am. Assn. for the Adv. of Sci.; Ohio Acad. of Sci.; Cleveland Engrng. Soc., Ohio. Contbr. to: Ohio Jour. of Sci. Gen. Int.: Presented the SPECTRUM Calendar to the League of Nations, Geneva, 1927; Prints of this Calendar Revised in 1957. Areas of Rsch.: A 13 Equal Month Calendar Called the SPECTRUM.

MUMM, Walter John (Ph.D.), Dir. of Rsch. and Plant Breeding, Crow's Hybrid Corn Co., Box 5, Milford, Ill. Home Add.: 510 E Jones St., Milford, Ill.



AGRONOMY AND PLANT GENETICS. b. Sidney, Ill., Nov. 20, 1895. s. Paul Henry and Minnie (Grishow) M. Edn.: B.S., Univ. of Ill., 1919; M.S., ibid., 1929; Ph.D., ibid., 1940. m. Marian Estelle Rideout, July 2, 1921. c.: Robert Franklin. Exp.: Asst. Agronomist, Univ. of Ill., 1927-28; Instr. in Agron., ibid., 1928-31; Assoc. in Agron., ibid., 1931-37; Dir. of Rsch. and Plant Breeding, Crow's Hybrid Corn Co., Milford, Ill., 1938—. Mem.: Am. Soc. of Agron.; Soil Sci. Soc. of Am.; A.A.A.S.; Ill. Acad. of Sci.; Alpha Zeta; Gamma Sigma Delta; Phi Sigma; Am. Legion. Contbr. to: Jour. of Heredity; Crops and Soils; Seed World. Serv. Rec.: U. S. Army, 1918. Gen. Int.: Specialized in production of single cross hybrid corn for commercial use. Developed multiple-ear corn for combining by crossing corn with teosinte. Areas of Rsch.: Explored Possibilities of Crosses Between Corn and Teosinte, Found New Genes Affecting Corn Endosperm, Studied Corn Root Systems Better Fertilizer Practices, Deep Seed Beds and Use of Corn for Plow-down.

MUMMERY, Dorothy Victoria (Ph.D.), Ext. Specl., Child Devl. and Family Rels., A.E.S., Purdue Univ., W. Lafayette, Ind. Home Add.: P.O. Box 404 (1144 Windsor Dr.), W. Lafayette, Ind. CHILD PSYCHOLOGY. b. Milford, Mich., May 12, 1901. d. William James and Lena Edith (Long) M. Edn.: A.B., Univ. of Mich., 1923 (magna cum laude); M.A., Tchrs. Coll., Columbia

Univ., 1930; Ph.D., Univ. of Iowa, 1943; Harvard Univ. Grad. Schl. of Edn.; Nursery Training Schl. of Boston; Chicago Univ. Soc. Serv. Admin.; Cornell Univ.; Chicago Univ. Rsch. Workshop; Cornell Univ. Ext. Workshop. Exp.: Instr., Child Devl., Iowa State Tchrs. Coll., 1927-29; Instr., Univ. of Tex., 1930-31; Instr., Vassar Coll., 1931-34; Dir., Nursery Schl.-Kindergarten and Instr. Child Devl. and Parent Edn., Univ. of N. Hamp., 1934-37; Dir., Day Nursery Schl., Family Welfare Assn. and Jr. League, Wichita, Kans., 1937-39; Supvr., Child Care Ctrs., Fed. Works Agency, WPA and Lanham and St. Nursery Schls., Ind. and N. Y., 1942-44, 1945-46; Asst. Prof., Mich. St. Coll. and Dir. Nursery Schl., 1944-45; Curriculum Consult., Child Edn. Found., N. Y., 1946-47; Assoc. Prof., Univ. of Ga., 1947-49; Rsch., Merrill-Palmer Schl., Detroit, Mich., 1949-50; Specl., Child Dev. and Family Rels., Purdue Univ., 1950—. Hon. Pos.: Govr.'s Comm. on Children and Youth; Consult. to Comm. on Aging; Edn. Comm. of Govr.'s Coun. on Aging and the Aged, Ind. Mem.: Sigma Xi; Phi Beta Kappa; Pi Lambda Theta; Delta Kappa Gamma; Epsilon Sigma Phi; Internatl. Coun. of Psychol.; Midwest Psychol. Assn.; Am. Assn. Univ. Profs.; Natl. Coun. on Family Rels.; Groves' Conf. on Marriage and the Family; Am. Home Econ. Assn.; Gerontol. Soc., Inc.; Natl. Edn. Assn.; Soc. Rsch. in Child Devl.; Sigma Kappa; Bus. and Profl. Women's Club. Author: Nursery School Manual, 1932. Contbr. to: Child Devl.; The Merrill-Palmer Jour. Areas of Rsch.: Ascendant Behavior of Pre-school Children and Parents' Goals for Children; Child Development and Psychology (Especially Social-Emotional Development); Early Childhood Education; Gerontology; Methods in Adult Education.

MUNCH, Ralph Howard (Ph.D.), Rsch. Assoc., Monsanto Chem. Co., Advanced Organic Chems. Rsch., 1700 S. Second St., St. Louis 77, Mo. Home Add.: 303 Planthurst Rd., Webster Groves 19, Mo. IN STRUMENTATION, PHYSICAL CHEMISTRY, SPECTROSCOPY, ANALYTICAL CHEMISTRY. b. Lafayette, Ind., May 5, 1911. s. Howard F. and Margaret (Obee) M. Edn.: B.S., Chem., Univ. of N. C., 1931; M.S., ibid., 1932; Ph.D., Northwestern Univ., 1935. m. Charlotte R. Erwin, June 20, 1935. c.: John; Mary; David; Susan; Charles. Exp.: Rockefeller Rsch. Asst., Univ. of Chicago, Ill., 1935-37; Rsch. Chemist, Monsanto Chem. Co., St. Louis, Mo., 1937-41; Group Leader Organic Rsch. Dept., ibid., 1941-54; Sect. Ldr., ibid., 1954-56; Asst. Dir. of Rsch., ibid., 1954-60; Rsch. Assoc. in Adv. Org. Chem. Rsch., Dept. of Monsanto, ibid., 1960—. Hon. Pos.: Vice Chmn. A.A.A.S., Gordon Rsch. Conf. on Instrumentation, 1953; Chmn., A.A.A.S., ibid., 1954; Vice Pres., Instrument Soc. of Am., 1946. Mem.: Am. Inst. of Physics; Am. Chem. Soc.; Optical Soc. of Am.; Instrument Soc. of Am.; Coblentz Soc.; Sigma Xi. Contbrng. Editor: Industrial and Engineering Chemistry, 1944-53. Areas of Rsch.: Physical Chemistry; Instrumentation; Catalysis.

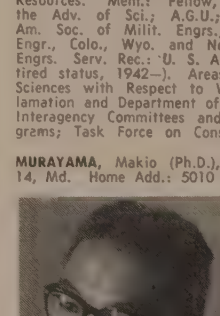
MUNN, Lottie Ella (Ph.D.), Hd. of Chem. Dept., Orlando Jr. Coll., Orlando, Fla. Home Add.: 641 Lake Ave., Maitland, Fla. CHEMISTRY. b. N. Eaton, Ohio, June 15, 1897. d. Edgar L. and Ella (Fauver) M. Edn.: A.B., Baldwin Wallace Coll., 1917; M.S., Univ. of Ill., 1922; Ph.D., ibid., 1924. Exp.: Instr., Chem., Baldwin Wallace Coll., Berea, Ohio, 1917-20; Grad. Asst., Univ. of Ill., Urbana, Ill., 1920-23; Fellow, ibid., 1923-24; Prof. of Chem., Lake Erie Coll., Painesville, Ohio, 1924-58; Hd. of Chem. Dept., Orlando Jr. Coll., 1959—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Fla. Acad. of Sci.; Sigma Xi; Iota Sigma Pi; Am. Assn. Univ. Women. Contbr. to: Jour. of Bacteriol. Areas of Rsch.: Inorganic Chemistry.

MUNSON, Norma Frances (Miss), Biol. Instr., Libertyville-Fremont Schl., Box 222, Libertyville, Ill. Home Add.: Box 425, Baudette, Minn. BIOLOGICAL SCIENCE. b. Stockport, Iowa, Sept. 22, 1924. d. Glenn E. and Frances (Wilson) M. Edn.: B.A., Concordia Coll., 1946; Univ. of Minn., 1950; M.A., Univ. of Mo., 1955; The Pa. State Univ., 1957, 1961-62. Exp.: Sci. Tchr., Aitkin H. S., Aitkin, Minn., 1946-48; Biol. Tchr., Detroit Lakes H. S., Detroit Lakes, Minn., 1948-54; Biol. Instr., Libertyville-Fremont H. S., Libertyville, Ill., 1955—. Mem.: A.A.A.S.; Am. Biol. Tchrs. Assn.; Am. Forestry Assn.; A.I.B.S.; A.A.U.W.; Nu Sigma Rho. Author: The Development of Critical Thinking on the High School Level, 1960. Areas of Rsch.: Teaching Biology on the High Schl. Level by the Laboratory Approach. Hormone Study of Cancerous Tissue, and the Nutrition Study of Multiple Sclerosis.

MUNRO, Thomas (Ph.D.), Editor, The Jour. of Aesthetics and Art Criticism, Cleveland Museum of Art, Cleveland 6, Ohio. Home Add.: 2244 Harcourt Dr., Cleveland 6, Ohio. PSYCHOLOGICAL AESTHETICS; PSYCHOLOGY OF ART. b. Omaha, Nebr., Feb. 15, 1897. s. Alexander A. and Mary (Spaulding) M. Edn.: A.B., Columbia Univ., 1916; A.M., ibid., 1917; Ph.D., ibid., 1920. Hon. Deg.: L.H.D., Coe Coll., 1955. m. Lucile Nadler, 1925. c.: Donald Jacques; Mrs. Eleanor Carroll Frankfurter; Mrs. Cynthia Prufer; Elisabeth Clerc. Exp.: Prof. of Art, Western Reserve Univ., Cleveland, Ohio, 1931—; Curator of Edn., Cleveland Museum of Art, Cleveland, Ohio, 1931—; Editor, Jour. of Aesthetics and Art Criticism, Cleveland Museum of Art, 1945—. Hon. Pos.: Pres., Am. Soc. for Aesthetics, 1942-44. Mem.: Am. Soc. for Aesthetics; Fellow, Am. Assn. for the Adv. of Sci.; Am. Acad. of Arts and Sci.; Royal Soc. of Arts, London; Am. Philos. Assn.; Officer, Legion of Honor, France. Author: Scientific Method in Aesthetics, 1928; The Arts and Their Interrelations, 1949; Toward Science in Aesthetics, 1956; Evolution in the Arts, 1962. Contbr. to: Jour. of Aesthetics and Art Criticism; Jour. of Philos.; Art Jour. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Aesthetics; Philosophy of History.

MUNSON, Wendell Curtis (Mr.), Hydraulic Engr., Bur. of Reclamation, Salem, Ore. and Wash., D. C. Home Add.: 1101 8th St., Apt. A-1, Alexandria, Va. HYDROLOGY WITH RESPECT TO IRRIGATION DEVELOPMENT INCLUDING ALL ASPECTS OF WATER REQUIREMENTS AND WATER USE. b. Chicago, Ill., June 18, 1905. s. Arthur Curtis and Katherine (Henn) M. Edn.: P.E., Colo. Schl. of Mines, 1927. 2nd m. Aline Smith, Aug. 29, 1959. 1st m. Genevieve Mueller, April 14, 1928 (dec., Oct., 1958), 1st m. c.: William C.; Mrs. Janet Frederick. Exp.: Engr., Producers and Refiners Corp., Wyo., 1927-34; Water Utilization Techn., U. S. Dept. of Agric., Wyo., Mont., Nebr., 1935-46; Sr. Engr., Nebr. Bur. Rds. and Irrig., Lincoln, Neb., 1946-47; Hyd. Engr., Bur. of Reclamation, 1948—. Hon. Pos.: Interagency Subcomm. on Hydrology; Chmn., Interagency Subcomm. on Sedimentation, Inter Agency Comm. on Water Resources. Mem.: Fellow, A.S.C.E.; Fellow, Am. Assn. for the Adv. of Sci.; A.G.U.; Int. Comm. Irrig. and Drainage; Am. Soc. of Milit. Engrs.; Internatl. Soc. of Hydrol.; Profl. Engr., Colo., Wyo. and Neb. Contbr. to: Am. Soc. of Civil Engrs. Serv. Rec.: U. S. Army, Capt. Engrs. Res., 1934-35 (Retired status, 1942—). Areas of Rsch.: Water Use, Atmospheric Sciences with Respect to Water Requirements; Bureau of Reclamation and Department of Interior Representative on Numerous Interagency Committees and Panels on Scientific Research Programs; Task Force on Consumptive Use Requirements, ASCE.

MURAYAMA, Makio (Ph.D.), Rsch. Biochemist, N.I.H., Bethesda 14, Md. Home Add.: 5010 Benton Ave., Bethesda 14, Md. BIOCHEMISTRY, PHYSICAL CHEMISTRY OF PROTEINS, AMPEROMETRIC TITRATION OF MERCAPTO GROUPS OF PROTEINS, SULFHYDRYL INTERACTIONS OF HEMOGLOBINS, MERCAPTO-MERCAPTO INTERACTIONS OF HEMOGLOBIN. b. San Francisco, Calif., Aug. 10, 1912. s. Hakuyo Murayama and Namiye Miyasaka Murayama Matsumura. Edn.: B.A., Univ. of Calif., Berkeley, Calif., 1938; M.A., ibid., 1940; Ph.D., Univ. of Mich., 1953. m. Sono Soga, Oct. 10, 1945. Exp.: Rsch. Fellow, Calif. Inst. of Technol., 1954-56; Rsch. Assoc., Univ. of Pa., 1956-57; Special Rsch. Fellow, Cavendish Lab., Cambridge, England, 1958; Rsch. Biochemist, N.I.H., Bethesda, Md., 1958—. Mem.: A.C.S.; Sigma Xi; A.A.A.S.; N. Y. Acad. of Sci.; Am. Soc. of Biological Chemists. Contbr. to: Jour. of Biological Chemistry; Nature, London; Sci.; Jour. of Lab. and Clinical Medicine; Jour. of Pediatrics; Analytical Chemistry. Areas of Rsch.: Mercaptomercapto (Sh-SH) Interactions, Amino Acid Interchange in Hemoglobin-I Genetic Alteration, Instrumentation—Electro-Mechanical and Automation; Optical Rotatory Dispersion; Effect of Bacterial Antigen on ATPase Activity of Nuclei-Free Homogenate.



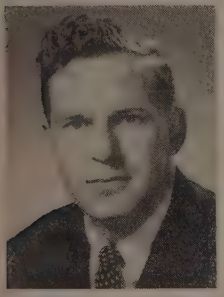
MURPHY, Frederick James (Mr.), Chief Engrng. Div., V. A. Center, Biloxi, Miss. MECHANICAL ENGINEERING; SAFETY ENGINEERING; ADMINISTRATIVE ENGINEERING. b. Revere, Mass., Aug. 23, 1906. s. Ambrose Joseph and Mabel Louise (Foley) M. m. Kathleen V. Hertweck, June 16, 1931. c.: Edward; Kathleen; Frederick, Jr. Exp.: Chf. Engrng. Div. and Dir. of Safety, V. A. Center, 1931-61. Life Mem., Local 528 of Natl. Federation Employees. Mem.: Am. Soc. Safety Engrs.; A.A.A.S.; Masonic Lodge; Eastern Star. Serv. Rec.: U. S. Coast Guard; U. S. Naval Reserve; U. S. Army. Areas of Rsch.: Safety in Hosp. Operating Rooms; Disaster Relief Plans, Civil Defense; Safety in Public Buildings.

MURCRAY, David Guy (Mr.), Rsch. Physicist, Univ. of Denver, Denver, Colo. Home Add.: 2464 South Stuart, Denver 19, Colo. PHYSICS. b. Leadville, Colo., Jan. 19, 1924. s. James G. and Adda I. (Crawford) M. Edn.: M.S., Okla. State Univ., 1950;

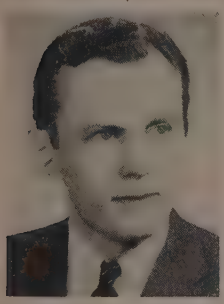
B.S., Univ. of Denver, 1948. m. Evelyn M. Hannigan, May 31, 1945. c.: Frank James; Kathleen Joanne. Exp.: Asst. Instr., Kans. Univ., 1950-51; Rsch. Mathematician, Phillips Pet. Co., Bartlesville, Okla., 1951-52; Rsch. Physicist, Univ. of Denver, 1952–. Mem.: Optical Soc. of Am.; Royal Meteorological Soc.; A.A.A.S.; Phi Beta Kappa; Sigma Xi; Sigma Pi Sigma; Pi Mu Epsilon. Contbr. to: Jour. of Optical Soc. of Am.; Jour. of Geophysical Rsch.; Jour. of Applied Optics; Infrared Physics. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Upper Atmospheric Physics; Infrared Spectroscopy; Balloon Instrumentation.

MURPHEY, Bradford (M.D.), Physician, 325 Republ. Bldg., Denver, 2, Colo. Home Add.: 345 Vine St., Denver 6, Colo. PSYCHIATRY. b. Kans. City, Mo., May 23, 1891. s. James Jay and Mary Alice (Hayes) M. Edn.: A.B., Univ. of Nebr., 1918; M.D., ibid., 1920. Hon. Deg.: Dr. Sc., Colo. Coll., 1939. m. Margaret Griffin, Nov. 9, 1921. c.: Bradford Griffin; Murray Griffin. Exp.: Physician, Psychiat., (Priv. Pract.), Denver, Colo., 1923 -. Hon. Pos.: Pres., Elect, Colo. Med. Soc. Mem.: Denver Med. Soc., Past. Pres.; Colo. Med. Soc.; Colo. Neuropsychiat. Soc.; Am. Psychiat. Assn.; Fellow, Am. Coll. of Physns.; Am. Med. Assn.; Am. Psychiat. Assn.; Am. Orthopsychiat. Assn.; Alpha Omega Alpha; Delta Epsilon; Beta Theta Pi; Nu Sigma Nu; Denver City Club; Denver Country Club; Mt. Vernon Country Club. Contbr. to: Am. Jour. of Psychiat.; Am. Jour. of Othopsychiat.; Rocky Mtn. Med. Jour.; Jour. of Geriats. Areas of Rsch.: Psychiatry and Child Psychiatry.

MURPHY, Daniel Lawson (Ph.D., Assoc. Prof., Dept. of Geology, Univ. of Wichita, Wichita 8, Kans. Home Add.: 409 S. Crestway, Wichita 8, Kans. ECONOMIC GEOLOGY. b. Tarrytown, N. Y., Oct. 3, 1929. s. Daniel F. and Alice (Lawson) M. Edn.: B.A., Lehigh Univ., 1951; M.A., Univ. of Mo., 1955; Ph.D., Univ. of Mich., 1961. m. Joan Berninger, Aug., 1954. c.: Maureen A.; Kathleen M. Exp.: Geologist, Std. Oil Co. of Texas, San Angelo, Tex., 1955-56; Geologist, Party Chief, Quebec Dept. of Natural Resources, Quebec, P. Q., 1957-62; Consulting Geologist, ibid., Wichita, Kans., 1960-62; Asst. Prof., Univ. of Wichita, 1958-62; Assoc. Prof., ibid., 1962 . Mem.: G.S.A.; A.S.P.; Geochem. Soc.; A.I.M.E.; Sigma Xi. Contbr. to: Quebec Dept. Geol. Publications; A.I.M.E.; Bull. G.S.A. Serv. Rec.: U.S.M.C.R., 1951-53. Areas of Rsch.: Genesis and Structural Control of Metallic and nonmetallic ore Deposits, Application of Photogeology to Mineral Resource Evaluation, Mineral Economics.



MURPHY, Gordon J. (Ph.D.), Prof. and Chmn., Northwestern Univ. Tech. Inst., 2145 Sheridan Rd., Evanston, Ill. Home Add.: 638 Garden Ct., Glenview, Ill. INFORMATION-PROCESSING AND CONTROL SYSTEMS. b. Milwaukee, Wis., Feb. 16, 1927. s. Gordon M. and Cecelia (Knerr) M. Edn.: B.S., Milwaukee Schl. of Engrng., 1949; M.S., Univ. of Wis., 1952; Ph.D., Univ. of Minn., 1956. m. Dorothy Brautigam, June 26, 1948. c.: Lynne; Craig. Exp.: Asst. Prof., Milwaukee Schl. of Engrng., 1949-51; Proj. Engr., AC Spark Plug Div., Gen. Motors Corp., Milwaukee, Wis., 1951-52; Instr., Univ. of Minn., 1952-56; Asst. Prof., ibid., 1956-57; Consultant, Minn.-Honeywell Regulator Co., Minneapolis, Minn., 1954-57; Consultant, AC Spark Plug Div., Gen. Motors Corp., Milwaukee, Wis., 1959 -; Assoc. Prof., Northwestern Univ., 1957-60; Prof. and Chmn., Dept. of Elect. Engrng., Northwestern Univ., 1960–. Hon. Pos.: Chmn., Chicago Sect., IRE Profl. Group on Automatic Control, 1959-61. Mem.: Inst. of Radio Engrs.; Am. Inst. of Elect. Engrs.; Am. Soc. for Engrng. Edn.; Sigma Xi; Eta Kappa Nu. Author: Basic Automatic Control Theory, 1957; Control Engineering, 1959. Contbr. to: IRE Trans.; AIEE Trans.; NEC Proc.; Science; Jour. of Am. Rocket Soc. Serv. Rec.: U. S. Navy, 1945-46. Gen. Int.: Named one of Chicago's 10 Outstanding Young Men for 1961 by Chicago Jr. C. of C. Areas of Rsch.: Information-Processing and Control Systems.



MURRAY, John Richard (Dr. Juris), Partner, Murray and Trettel, Cert. Consulting Meteorologists, 414 W. Frontage Rd., Northfield, Ill. Home Add.: 650 So. Beverly Pl., Lake Forest, Ill. METEOROLOGY (APPLIED). b. Chicago, Ill., Oct. 6, 1921. s. William G. and Olive (Kimmet) M. Edn.: B.S. in Meteorol., Univ. of Mich., 1947; Dr. Juris, DePaul Univ., 1950. m. Grace Gast, June 7, 1944. c.: John Terrence; Mary Jill; Kathleen Ann; Nancy Grace; Carolyn Jean; William G., II. Exp.: Partner and Founder, Murray and Trettel, 1947–. Hon. Pos.: Pres., Chicago Sem., Am. Meteorol. Soc.; Coun. Mem., Chicago Tech. Socs. Coun.; Cert. Consulting Meteorol., Comm. on Indust. Meteorol., A.M.S. Mem.: Am. Meteorol. Soc.; Am. Assn. for the Adv. of Sci.; Am. Geophys. Union; Lake Forest Club; City Club. Serv. Rec.: U. S. Army Air Force, 1942-46. Gen. Int.: Founder and Charter Mem., Natl. Assn. of Indust. Meteorologists. Areas of Rsch.: Applied Meteorology and Climatology; Micro-Meteorology.

MURRAY, Gordon Nicholas (Mr.), Asst. Prof. in Biol., Chicago City Coll., Woodrow Wilson Branch, 6800 S. Stewart Ave., Chicago, Ill. Home Add.: 1016 Harvard Terrace, Evanston, Ill. BOTANY, MICROBIOLOGY, MYCOLOGY, PHYCOLOGY. b. Chicago, Ill., Mar. 22, 1917. s. Dr. Alfred Nicholas and Edna (Schmidt) M. Edn.: B.S., Northwestern Univ., 1939; M.S., ibid., 1948. m. Leda Johnson, R.N., 1945. c.: Robert Nicholas; Susan Carolyn; Nancy Jean; Alfred Nicholas II. Exp.: Asst. Prof. of Biol., Univ. of Tenn., 1946-50; Asst. Prof., Biol., Chicago City Coll., Chicago Woodrow Wilson and Amundsen Branches, 1950–; Instr. in Microbiol., Grant Hosp. Schl. of Nursing, Chicago, Ill., 1958–; Instr. in Microbiol., Evangelical Hosp. Schl. of Nursing, Chicago, Ill., 1961–. Mem.: A.A.A.S.; Botanical Soc. of Am.; Am. Inst. of Biological Scis.; Ill. Acad. of Scis.; Higher Edn. Assn. of the Natl. Edn. Assn.; Am. Assn. of Univ. Profs.; Ill. Soc. of Bacteriologists; Natl. Geographic Soc.; Am. Museum of Natural Hist.; Lambda Chi Alpha. Contbr. to: Jour. Tenn. Acad. of Scis.; Jour. Chicago Acad. of Scis. Serv. Rec.: A.U.S., W. W. II. Gen. Int.: Established Information-Edn. Serv. for the Med. Dept. in the Central Pacific Area, A.U.S., W. W. II; Addressed Botanical Section at Tenth Annual Meeting of the Assn. of Southeastern Biologists at Univ. of Tenn., 1949. Areas of Rsch.: Effects of Temperature Upon Division of the Generative Cell in Pollen Tubes of Polygonatum; Antibiotic Production from Molds; Reproduction in Algae.

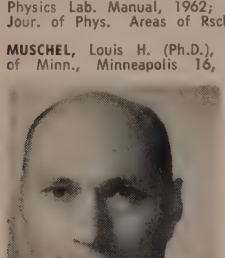
MURRAY, Raymond LeRoy (Ph.D.), Burlington Prof. and Hd. Dept. of Physics, N. C. St. Coll., Raleigh, N. C. PHYSICS. b. Lincoln, Nebr., Feb. 14, 1920. s. Ray A. and Bertha M. (Mann). Edn.: B.Sc., Univ. of Nebr., 1940; M.A., ibid., 1941; Ph.D., Univ. of Tenn., 1950. m. Ilah Mae Rengler, June 16, 1941. c.: Stephen; Maureen; Marshall. Exp.: Rsch. Physicist, Univ. of Calif. Radiation Lab., Berkeley, Calif., 1942-43; Asst. Dept. Supt., Tenn. Eastman Corp., Oak Ridge, Tenn., 1943-47; Sr. Physicist, Carbide and Carbon Chem. Corp., Oak Ridge, Tenn., 1947-50; Prof. of Physics, N. C. St. Coll., Raleigh, N. C., 1950–; Consultant, Oak Ridge Natl. Lab., Union Carbide Nuclear Corp., Oak Ridge, Tenn., 1950–; Monsanto Chemicals Co., St. Louis, Mo., 1951-52; Redstone Arsenal, Huntsville, Ala., 1952-54; Babcock and Wilcox Co., Akron, Ohio, 1954-55; Am. Machine and Foundry Co., Greenwich, Conn., 1954–; Alco Products, Inc., Schenectady, N. Y., 1956–; Westinghouse Elec. Corp., Atomic Power Dept., 1958–; Lockheed Aircraft Corp., 1959–; Armour Rsch. Fdtn., 1959–. Mem.: Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon; Phi Kappa Phi; Am. Phys. Soc.; Am. Inst. Physics; Am. Assn. Physics Tchrs.; Southeastern Sect., Am. Phys. Soc.; Am. Assn. Engrng. Edn.; Am. Nuclear Soc.; Bd. of Dirs., Am. Nuclear Soc., 1958-61; Chmn., Edn. Comm., 1961 -; Mem. and Chmn., Physics Sect., N. C. Acad. of Sci., 1958-59. Author: Methods of Study of Arc Discharges in Uniform Magnetic Fields; Introduction to Nuclear Engrng., 1954; 2nd edition, 1961; Nuclear Reactor Physics, 1957; Collier's Encyclopedia on Nuclear Engineering. Contbr. to: Jour. Applied Physics; Rev. Scientific Instruments; Nucleonics; Nuclear Science and Engineering. Special Int.: Electrical Discharges in gases and ion acceleration; nuclear reactor theory and experiment; instruction in nuclear physics and nuclear engineering.

MURRELL, Stratton C. (Dr.), Pres., Multiple Rsch. and Development, Inc., 237 River Dr., Jacksonville, N. C. Home Add.: 905 Vernon Dr., Jacksonville, N. C. VISION (PRACTICAL AND EXPERIMENTAL IN THE FIELD OF PSYCHOLOGY, PHYSIOLOGY, AND BIONICS). b. Jacksonville, N. C., Jan. 11, 1928. s. Z. E. and Louise (Chadwick) M. Edn.: B.S., Wake Forest Coll., 1949; Dr. of Optometry, Pa. St. Coll. of Optometry, 1954. m. Billie Jean Smith, July 7, 1955. c.: Mark Steven. Exp.: Rsch. Asst., Bowman Gray Schl. of Med., 1950-51; Rsch. Consultant, Multiple Rsch. and Development, Inc., Jacksonville, N. C., 1951-55; Vice Pres., ibid., 1956-59; Pres., ibid., 1959–. Hon. Pos.: Pres., Onslow Co.-Camp Lejeune Safety Coun.; Dir. of Parapsychol.; Past Pres., Costal Optometric Dist.; Campaign Chmn., Onslow Co.-Camp Lejeune Am. Red Cross; Chmn., Camping

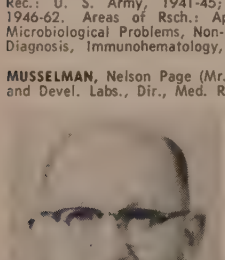
and Activities Comm., Onslow Dist. Boy Scouts of Am.; Advisor, Croatan Lodge, Order of the Arrow. Mem.: Eye Rsch. Fdtn.; British Royal Soc. of Health; Philomathesian Literary Soc.; Onslow Co. Friends of the Libra.; A.A.A.S.; Am. Assn. of Psychological Rsch.; The Soc. of Applied Psychol. and Motivational Rsch.; Am. Optometric Assn.; Coastal Optometric Dist.; N. C. St. Optometric Soc.; Sociedad Americana de af Talmologia-y-optometria; Kiwanis; Lion's Club; Jacksonville C. of C. Author: What You Should Know About Contact Lenses, 1956; Visual and Psychological Problems Involved in Space Travel, 1957; The Deep Probe, A New Method Towards Better Advertising, 1957; The World Beyond Our Perception, 1960. Contbr. to: Optometric Weekly; Jour. of Am. Optometric Assn.; Industrial Relations; Arch. of Sociedad Americana de af Talmologia-y-optometria. Areas of Rsch.: Vision; Rsch. Psychol.; Motivational Rsch.; Remedial Reading; Instrument Designing; Public Relations.

MURTAUGH, Walter A. (Rev.), O.P., Chmn., Phys. Dept., Providence Coll., Providence, R. I. AERONAUTICS, STABILITY PROBLEMS, PHYSICS. b. Providence, R. I., Apr. 17, 1903. s. Patrick J. and Bridget E. (Bowie) M. Edn.: A.B., Providence Coll., 1924; M.S., Catholic Univ., 1943. Hon. Deg.: M.A., Providence Coll., 1945. Exp.: Hd. Physics Dept., Aquinas Coll. and H. S., Columbus, Ohio, 1933-43; Chmn. Phys., Providence Coll., 1943—. Hon. Pos.: Chmn., N. England Sect. A.P.S.; Advisory Comm. for Radiation Protection, R. I.; New England Sect. of A.A.P.T. Mem.: Am. Phys. Soc.; Am. Nuclear Soc.; Soc. of Am. Milit. Engrs.; Providence Engrng. Soc.; Kappa Sigma Kappa. Author: Optics Lab. Manual, 1957; General Physics Lab. Manual, 1935; College Physics Lab. Manual, 1962; Elasticity, 1937. Contbr. to: Am. Jour. of Phys. Areas of Rsch.: Aerodynamics.

MUSCHEL, Louis H. (Ph.D.), Faculty, Dept. Microbiology, Univ. of Minn., Minneapolis 16, Minn. Home Add.: 1789 Ford Pkwy., St. Paul 16, Minnesota. SEROLOGY AND IMMUNOCHEMISTRY. b. New York, N. Y., July 4, 1916. s. Maurice and Betty (Tobey) M. Edn.: B.S., Univ. Coll., N. Y. Univ., 1936; A.M., Columbia Univ., 1938; M.S., Yale Univ., 1951; Ph.D., ibid., 1953. m. Anne D. Orzel, Oct. 22, 1946. c.: Ruth Josephine. Exp.: Chief, Dept. of Serol. and Immunol., 406th Med. Gen. Lab., U. S. Army Far East Command, 1953-56; Chief, Exptl. Immunol. Section, Dept. of Applied Immunol., Walter Reed Army Inst. of Rsch., Wash., D. C., 1956-57; Chief, Dept. of Serol., ibid., 1957-62; Faculty, Dept. of Microbiol., Univ. of Minn., 1962—. Mem.: Bacteriology and Mycology Study Sect., Div. of Rsch. Grants, Natl. Insts. of Health; Am. Assn. of Immunologists; British Soc. of Immunol.; N. Y. Acad. of Sci.; A.A.A.S.; Soc. of Am. Bacteriologists; Tissue Culture Assn.; Soc. for Exptl. Biol. and Med.; Phi Lambda Upsilon; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Immunol.; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Clin. Pathol.; Sci.; Nature; Jour. Lab. and Clin. Med.; Jour. Exp. Med.; U. S. Armed Forces Med. Jour.; Ann. N. Y. Acad. Sci.; Jour. Clin. Invest.; Vox Sanguinis. Serv. Rec.: U. S. Army, 1941-45; U. S. Army, Med. Serv. Corps, 1946-62. Areas of Rsch.: Applications of Immunochemistry to Microbiological Problems, Non-Specific Factors in Immunity, Serum Diagnosis, Immunohematology, Autoantibodies and Disease.



MUSSELMAN, Nelson Page (Mr.), Chemist, U. S. Army Chem. Rsch. and Devel. Labs., Dir., Med. Rsch., Edgewood Arsenal, Md. Home Add.: 1302 St. Paul St., Baltimore 2, Md. CHEMISTRY. b. Luray, Va., Mar. 20, 1917. s. Albert O. and M. Grace (Hottel) M. Edn.: A.B., Western Md. Coll., 1938; Advanced Studies, Univ. of Md., Johns Hopkins Univ. Exp.: Tchr., Social Investigator, Sales and Sales Mgmt., Baltimore, Md., 1938-41; 1946-51; Chemist, Armco Steel Corp., Baltimore, Md., 1951-54; Chemist, Army Chem. Center, 1954—. Mem.: Am. Chem. Soc., A.A.A.S. Contbr. to: Am. Ind. Hygiene Assn. Jour.; Aerospace Med. Serv. Rec.: U. S. Army, 1942-46; Private, 1942; 2nd Lt., 1943; 1st Lt., 1944; Capt., 1945. Gen. Int.: Continuous Exposure of Lab. Animals to Low Concentrations of Carbon Monoxide; Work Presented to First Internatl. Symposium on Space and Submarine Med., 1958. Areas of Rsch.: Chemical Warfare, Vapor Toxicology, Research and Development on New Drugs and Protective Devices, Pharmacology of Toxic Agents, Air Pollution, Analytical Analysis and Methods, Carbon Monoxide Toxicity.

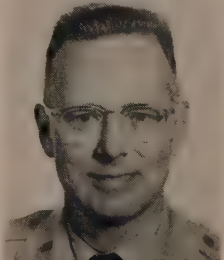


MUSGRAVE, Ray Sigler (Ph.D.), Prof. and Chmn., Dept. of Psychol., Univ. of Southern Miss., Hattiesburg, Miss. Home Add.: 201 Ross Blvd., Hattiesburg, Miss. PSYCHOLOGY. b. Mt. Lake Park, Md., Feb. 3, 1911. s. Pinkney Z. and Mary M. (Sigler) M. Edn.: A.B., Bethany Coll., 1933; M.A., Ohio Wesleyan Univ., 1935; Ph.D., Syracuse Univ., 1937. m. Anna Phair, 1935. c.: Rae Ann. Exp.: Acting Hd., Dept. of Psychol., Birmingham-Southern Coll.,1937-38; Instr., Psychol., Russell Sage Coll. ,1939; Prof., Psychol., Millsaps Coll., 1939-54; Prof., Psychol., Te State Coll. for Women, 1954-56; Prof. and Chmn., Dept. of Psychol., Univ. of Southern Miss., 1956—. Mem.: Am. Psycho Assn.; Am. Personnel and Guidance Assn.; Southeastern Psycho Assn.; Mo. Psychol. Assn.; Kappa Alpha; Tau Kappa Alpha; P Chi; Sigma Xi; Kiwanis. Contbr. to: Jour. of Personality. Ser Rec.: Army of U. S., 1942-46. Areas of Rsch.: Analysis Behavior, Personality, Counseling.

MUSULIN, Boris (Ph.D.), Assoc. Prof. of Chem., Sou. Ill. Univ Carbondale, Ill. Home Add.: Box 596, Carbondale, Ill. CHEMISTRY. b. Chicago, Ill., Sept. 6, 1929. s. Milan and Ma Agnes (Palaska) M. Edn.: Ph.B., Northwestern Univ., 194 Ph.D., ibid., 1954. m. Shelba Jean Choate, Aug. 12, 196 Exp.: DuPont Instr., Univ. of Minn., Mpls., Minn., 1953-5 Asst. Prof., Mich. State Univ., E. Lansing, Mich., 1954-5 Asst. Prof., Sou. Ill. Univ., 1956-61; Assoc. Prof., ibi 1961—. Hon. Pos.: Chmn., Chem. Sect., Ill. State Acad. of Sc 1960-61. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Am. Ass of Univ. Profs.; Am. Assn. for the Adv. of Sci.; Ill. State Aca of Sci.; Ill. Chem. Tchrs. Assn.; Alpha Chi Sigma; Alpha Sigm Lambda; Phi Mu Epsilon; Phi Lambda Upsilon; Sigma X Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Phy Chem.; Jour. of Chem. Phys.; Jour. of Chem. and Engrn Data; Trans. of Ill. Acad. of Sci. Areas of Rsch.: Quantu Chemistry, General Physical Chemistry.

MYER, Jon H(arold) (Mr.), Mgr., Materials Operations, Hughe Semiconductors, P. O. Box 1278, Newport Beach, Calif. Hom Add.: 1906 Beryl Lane, Newpo Beach, Calif. EXPERIMENTA PHYSICS. b. Heilbronn, German Sept. 29, 1922. s. Oscar Norma and Greta Cecile (Wolf) M. Edn B.E.E., Hebrew Technical Coll Haifa, Palestine, 1941. m. Ger R(achel) Simson, Apr. 20, 194 c.: Gary; Eric; Karen; Kennet Exp.: Instrument Maker, Ang Iranian Oil Co., Abadan, Ira 1942-44; Instrument Designe SPIN, Hebrew Tech. Coll., Haif Palestine, 1944-46; Independe Engrng. Consultant, Haifa, Pale tine, 1946-47; Instrumentologis Univ. of Sou. Calif., 1947-5 Sub-Lab. Hd., Dept. Hd., Labor tory Mgr., Hughes Semiconductor 1953—. Hon. Pos.: Post Adviso Sci. Explorer Post 201; Mem Advisory Comm., Engrng. Dept., Los Angeles State Coll.; Mem Sou. Calif. Indutsry Edn. Coun.; Past Student Relations Chmn Los Angeles Section, Inst. of Radio Engrs. Mem.: Sr. Mem Inst. of Radio Engrs.; The Scientific Rsch. Soc. of Am.; An Physical Soc. Contbr. to: Rev. of Scientific Instruments; Trans I.R.E., P.G.E.D. Gen. Int.: Magnetically Suspended Vacuu Ultra-Centrifuge; Apparatus Design, Instrumentology, Solid Stat and Semiconductor Physics Apparatus and Instrumentation.

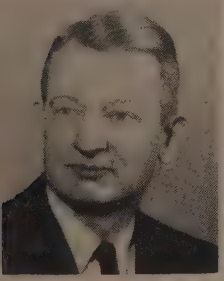
MYERS, Edward James (Ph.D.), Major, U.S.A.F., Assoc. Prof A. F. Inst. of Tech., Wright-Patterson A.F. Base, Ohio. Hom Add.: 1600 Redbush Ave., Da ton 20, Ohio. PHYSICAL METAL LURGY. b. Bakersfield, Calif Sept. 23, 1922. s. Fayette and Margaret (Harrison) M. Edn B.S., Univ. of Ariz., 1943; M.S.E Univ. of Mich., 1955; Ph.D., ibid 1962. m. Florence Nielsen, Fe 23, 1946. c.: Peter; Jan; Davi Kirby; Polly. Exp.: Metallurg cal Engr., Miami Copper Co Miami, Ariz., 1946-47; Metallurg cal Engr., Ladish Co., Cudah Wis., 1948-50; Chem. Engr Strong-Cobb Co., Lake Worth Fla., 1950-53; Proj. Engr., Ma terials Central, Wright-Patterso A.F. Base, Ohio, 1955-57; Asso Prof., A.F. Inst. of Tech., ibid 1958—. Mem.: Am. Soc. Metals; Am. Int. of Min. an Met. Engrs.; British Inst. of Metals; Am. Soc. of Engrng. Edn Internatl. Soc. for Stereology; Tau Beta Pi; Sigma Xi; Phi Kapp Phi; Phi Lambda Ups.lon; Pi Mu Epsilon; Theta Tau. Contb to: Acta Crystallographica; Metals Rev.; Trans., Am. Soc. fo Metals. Serv. Rec.: U. S. Air Force, 1943-46, 1953—. Area of Rsch.: Tchng. Metallurgy, Rsch. in Quantitative Metallography Stereology, X-Ray Diffraction, Crystallography.



MYERS, Albert Leroy (Ph.D.), Prof. of Chem., Carson-Newman Coll., Jefferson City, Tenn. Home Add.: 306 E. Ellis St., Jefferson City, Tenn. PHYSICAL CHEMISTRY. b. Church Hill, Tenn., Dec 18, 1915. s. Roy and Gertrude (Line) M. Edn.: B.S., Carson Newman Coll., 1937; M.S., Univ. of Ga., 1939; Ph.D., Purdue Univ., 1950. m. Katherine Bass, June 6, 1941. c.: John Bill; Jim. Exp.: Supvr., Trojan Powder Co., Allentown, Pa., an Sandusky, Ohio, 1941-43; Supv. and Staff Chemist, Clinton Engi Wks., Tenn. Eastman Corp., Oak Ridge, Tenn., 1943-46; Asso Prof. of Chem., Ouachita Coll., Arkadelphia, Ark., 1946-49 Rsch. Fellow, Purdue Univ., West Lafayette, Ind., 1949-50; Asso Prof. of Chem., Furman Univ., S. C., 1950-54; Acting Hd. Dept., ibid., 1951-53; Assoc. Prof. of Chem., Carson-Newma

Coll., Jefferson City, Tenn., 1954-58; Prof. of Chem., ibid., 1958—. Hon. Pos.: Pres., SCICAC, 1960-61; Sponsor, Collegiate Div., Tenn. Acad. of Sci., 1959—; Rsch. Participant and Rsch. Chemist, Oak Ridge Natl. Lab., summers, 1959-62; Chmn., West Carolina Section, Am. Chem. Soc., 1953-54; Chmn., Chem. Section, Tenn. Acad. of Sci., 1956-59; Vice-Pres., SCICAC, 1959-60. Mem.: Am. Chem. Soc.; A.A.A.S.; Tenn. Acad. of Sci.; Soc. of Sigma Xi; Phi Lambda Upsilon; SCICAC (South Central Independent Coll. Assn. of Chemists); Civitan. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Tenn. Acad. of Sci. Areas of Rsch.: Dipole Moments; Vapor Pressures of Solutions; Properties of Starch Acetate.

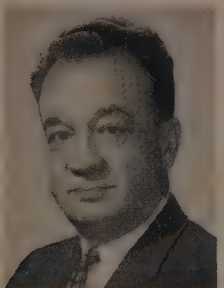
MYERS, Hugh Irvin (Ph.D.), Chmn., Div. of Sci., Coll. of Emporia, Kans. Home Add.: 1708 Old Manor Road, Emporia, Kans.



BIOLOGY-HISTOLOGY AND PATHOLOGY. b. Brandon, Miss., Nov. 7, 1910. s. Irvin Thomas and Alma Earle (Myers) M. Edn.: B.A., Miss. Coll., 1930; M.A., Univ. of Richmond, 1932; Ph.D., Brown Univ., 1935. m. Buena Perkins, June 11, 1936. c.: Hugh Irvin, Jr.; Mary Wheeler. Exp.: Asst. Prof., Zool., Univ. of Richmond, 1935-43; Instr., Anatomy, Med. Coll. of Va., 1941-43; Asst. Prof., Prof. Histol. and Path., Univ. of Kans. City Schl. of Dentistry, 1945-60; Dir. of Rsch. and Grad. Studies, ibid., Chmn., Div. of Sci., Coll., of Emporia, 1960—. Hon. Pos.: Councillor, Kans. City Sect., Internatl. Assn., Dental Rsch.; Pres., Sigma Xi Club, Kans. City. Mem.: Fellow, Am. Assn. Adv. Sci.; Am. Soc. Zool.; RESA; Am. Assn. Anatomists; Internati. Assn. for Dental Rsch.; Lions Club; Hon. Mem., Sigma Xi; O.K.U.; Emporia District Dental Soc. Contbr. to: Anatomica Record; Jour. of Dental Rsch.: Oral Surgery, Oral Medicine, Oral Pathol. Serv. Rec.: U.S.A.F., 1943-45. Areas of Rsch.: Tooth Transplantation, Bone Destruction and Metabolism and Experimental Orthodontics.

MYERS, Joseph Adrian (Mr.), Plant Pest Control Inspector, Soybean Cyst Nematode Lab., P. O. Box 989, Gulfport, Miss. PHYTONEMATODEOLOGY, ORCHIDOLOGY, HORTICULTURE. b. West Palm Beach, Fla., Oct. 14, 1927. s. Roy L. and Juanita (Heisler) M. Edn.: B.S.A., Univ. of Fla., 1952. Owner and Mgr., Joe's Orchids, West Palm Beach, Fla., 1954-57; Fla. State Plant Bd., Mediterranean Fruit Fly Program, West Palm Beach, Fla., 1956-57; Imported Fire Ant Program, USDA-ARS-PPC Div., Jacksonville, Fla., 1957-59; Burring Nematode Program, ibid., Lake Alfred, Fla., Soybean Cyst Nematode Lab. Supv., USDA-ARS, Plant Pest Control Div., Gulfport, Miss., 1959—.

MYERS, William Graydon (M.D.), Rsch. Prof. of Med. Biophysics, Ohio State Univ., Columbus 10, Ohio. Home Add.: 2724 Wexford Rd., Columbus 21, Ohio.



NUCLEAR MEDICINE, DEVELOPMENT OF RADIOISOTOPES, AND COMPOUNDS LABELED WITH THEM, USEFUL IN THE DIAGNOSIS AND TREATMENT OF DISEASE. b. Toledo, Ohio, Aug. 7, 1908. s. Leo J. and Anna C. (Johnson) M. Edn.: A.B., Ohio State Univ., 1933; M.Sc., ibid., 1937; Ph.D. Phys. Chem., ibid., 1939; M.D., ibid., 1941. m. Florence Lenahan, M.D., Dec. 24, 1940. Exp.: Asst. Chem., Ohio St. Univ., 1933-37; Rsch. Assoc., Ohio St. Univ. Rsch. Found., 1942-45; Rsch. Fel., Ohio State Univ., 1945-49; Assoc. Prof., ibid., 1949-53; Rsch. Prof., ibid., 1953—. Hon. Pos.: Pres., Ohio State Univ. Chapt., Sigma Xi, 1959-60. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Am. Physiol. Soc.; Am. Radium Soc.; Am. Assn. Cancer Rsch.; A.A.A.S.; Soc. Exptl. Biol. and Med.; Radiation Rsch. Soc.; Am. Nuclear Soc.; Am. Soc. Nuclear Med.; Am. Coll. of Physicians; Am. Fed. Clin. Rsch.; A.M.A.; World Med. Assn.; Ohio State Med. Assn.; Phi Eta Sigma; Sigma Xi; Phi Lambda Upsilon; Torch Club of Columbus. Contbr. to: Physical Chem.; Ohio Acad. of Sci.; Radiology; Am. Roentgenol., Radium Therapy and Nuclear Med.; Sci.; Bacteriol.; Ohio State Med.; Lab and Clin. Med.; Cancer Rsch.; Nucleonics; Ann. Int. Med.; Surgical Forum; Proc. 2nd Natl. Cancer Conf.; Immunology; Cancer; Physiologist; News in Engrng.; Applied Rad. and Isotopes; Trans., 9th Internatl. Cong. of Radiol.; Nuclear Med. Areas of Rsch.: Development of Radiocobalt-60, Radiogold-198 and Chromium-51 as Advantageous Successors to Radium and Radon for Radiation Therapy of Cancer; Radiostrontium-87m for Studies of Bone Metabolism; Radiodine-123 and Radioiodine-125 for Applications in Nuclear Med.; Radioidine-125 X-Rays for Radiography; Synthesis of Labeled Radioactive Compounds for Physiological and Clinical Diagnostic Applications.

MYERS, John James (Ph.D.), Dir. of Engrng., Columbus Div., N. Am. Aviation, Inc., 4300 E. 5th Ave., Columbus 16, Ohio. Home Add.: 400 Medick Way, Worthington, Ohio.

ELECTRONICS ENGINEERING. b. Columbus, O., Aug. 3, 1920. s. James E. and Clara May (Eden) M. Edn.: B.S., Ohio St. Univ., 1943; M.S., Univ. of Ill., 1947; Ph.D., ibid., 1959. m. Alice Jane Brown, July 3, 1948. c.: James H.; Jenny L.; Julia A.; Janice C. Exp.: Rsch. Assoc., Univ. of Ill., 1946-51; Div. Mgr., Automatic Electric Sales Corp., Chicago, Ill., 1951-54; Head, Electronics Dept., Autelco Mediterranea, Milan, Italy, 1954-56; Consultant, Stewart Warner Electronics, Chicago, Ill., 1956-57; Rsch. Asst. Prof., Univ. of Ill., 1957-59; Dir. of Engrng., Hoffman Electronics Corp., L. A., Calif., 1959-62; Dir. of Div., N. Am. Aviation, Inc., 1962—. Mem.: A.A.A.S.; Inst. of Radio Engrs.; Sigma Xi; Eta Kappa Nu. Contbr. to: Trans. Inst. Radio Engrs.; Proc. Natl. Electronics Conference. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Electromagnetic Wave Propagation, Antennas, Communications, Radar, Radio Direction Finding.

MYERS, Peter Briggs, (Dr.), Mgr. Rsch. and Adv. Tech., Electronics Syst. and Prods. Div., Martin Marietta Corp., Baltimore 3, Md. Home Add.: 6905 Linden Ave., Baltimore 6, Md. SOLID STATE PHYSICS. b. Wash., D. C., Apr. 24, 1926. s. Clarence G. and Isabel (Briggs) M. Edn.: B.S.E.E., Worcester Polytech. Inst., 1946; D.Phil., Physics, Oxford Univ., 1950. m. Elizabeth Monk, 1948. c.: Jonathan. Exp.: Physicist, Natl. Bureau Standards, Wash., D. C., 1947; Mem. of Tech. Staff, Bell Telephone Labs., Murray Hill, N. J., 1950-59; Staff Scientist, Motorola, SPD, Inc., Phoenix, Ariz., 1959-62; Mgr. Rsch. and Adv. Tech., Martin Marietta Corp., 1962—. Mem.: Fellow Am. Assn. for the Adv. of Sci.; Sr. Mem., I.R.E.; Mem., A.I.E.E.; A.P.S., Electrochem. Soc.; Operations Rsch. Soc. of Am.; Am. Soc. for Quality Control; Philos of Sci. Assn.; Sigma Xi. Contbr. to: Procs. of 1961 Western Joint Computer Conf.; Datamation. Serv. Rec.: U. S. Naval Reserve, 1944-46. Gen. Int.: Rhodes Scholar, Pa. and Lincoln, 1947 to Oxford Univ. Areas of Rsch.: Velocity Modulated Electron Beam Tubes, Switching Research, Semiconductor Devices and Circuits, Circuit Physics, Integrated Circuitry.

MYHRE, Arthur Ilo (Mr.), Dist. Materials Engr., Ia. State Hwy. Comm., 430 16th Ave., S.W., Cedar Rapids, Ia. Home Add.: 2242 C St., S.W., Cedar Rapids, Ia.

PROFESSIONAL ENGINEERING-HIGHWAY ENGINEERING. b. Graettinger, Ia., May 28, 1901. s. Martin and Mathilda (Skor) M. Edn.: B.A., St. Olaf Coll., Northfield, Minn., 1925. m. Margaret M. Warner, 1928. c.: Theodore A.; Sandra D. Corbin. Exp.: Chemist, Western Elect. Co., Chicago, Ill., 1925-32; Materials Insp., Ia. State Hwy. Comm., Ames, Ia., 1936-43; Radio Engr., Army-Navy Electronics Stds. Agcy., Red Bank, N. J., 1943-46; Materials Insp., Ia. State Hwy. Comm., Ames, Ia., 1946-48; Dist. Matls. Engr., Ia. State Hwy. Comm., Cedar Rapids, Ia., 1948—. Mem.: Ia. Engrng. Soc.; Natl. Soc. of Profl. Engrs.; Cedar Rapids Engr. Club; Ia. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Ia. Geol. Soc. Contbr. to: Northwest Constructor. Gen. Int.: Developed Initial Joint Army Navy Specifications on Resistors.

N

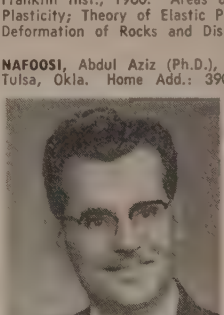
NACHBAR, William (Ph.D.), Sr. Staff Scientist, Lockheed Missiles and Space Co., Palo Alto, Calif. Home Add.: 3415 Janice Way, Palo Alto, Calif. APPLIED MATHEMATICS. b. Brooklyn, N. Y., Apr. 25, 1923. s. Daniel and Rosa (Sepler) N. Edn.: B.M.E., Cornell Univ., 1944; M.S., N. Y. Univ., 1948; Ph.D., Brown Univ., 1951. m. Pauline Mann, Dec. 11, 1952. c.: John Haines. Exp.: Rsch. Specialist, Boeing Airplane Co., Seattle, Wash., 1951-55; Rsch. Scientist, Lockheed Missiles and Space Co., Palo Alto, Calif., 1955-56; Group Ldr., ibid., 1956-58; Sect. Hd., ibid., 1958-60; Staff Scientist, ibid., 1960-61; Sr. Staff Scientist, ibid., 1962; Rsch. Assoc. and Lectr., Dept. of Aeronautics and Astronautics, Stanford Univ., Stanford, Calif., 1961—. Hon. Pos.: Rsch. Comm. of Advisory on Missile and Spacecraft Structures, N.A.S.A., 1960-61. Mem.: Am. Math. Soc.; A.S.M.E.; Tau Beta Pi; Sigma Xi. Contbr. to: Jour. of Applied Mechanics; Quart. of Applied Mathematics; Jour. of the Aerospace Sci.; A.R.S. Jour. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Continuum Mechanics, Thin Shell Theory, Flow of Chemically-reacting Continua.

NACHMANSOHN, David (M.D.), Prof. of Biochem., Coll. of Physicians and Surgeons, Columbia Univ., N. Y., N. Y. CHEMICAL MECHANISM OF NERVE FUNCTION. b. Jekaterinoslaw, Russia. s. Moses and Regina (Klinkowstein) N. Edn.: Koenigliches Humanistisches Gymnasium, Danzig, Germany, 1918; Schl. of Med. at the Universities of Berlin, Frankfurt and Koenigsberg, Germany, 1918-23; Medical State Bd., 1924; M.D., Univ. of Berlin, Germany, 1926. m. Edith Berger on July 29, 1929. c.: Ruth Deborah. Exp.: Physicochem. and Enzyme Chem., Dept. of Chem., Pathologisches Institut, Univ. of Berlin, 1925-26; Prof. Otto Meyerhof, Rsch. on Biochem. and Physiol. of Muscular Contraction, Kaiser-Wilhelm Institut of Biologie, Berlin, 1926-30; Assoc. in Med., Clinical Rsch. in Intermediate Metabolism and Endocrinology, Univ. of Frankfurt and Rudolf Virchow Hosp., Berlin, 1930-32; Rsch. in Biophysics and Biochem. of Nerve and Muscle, Lab. of General Physiol., Sorbonne, Paris, 1933-39; Instr. of Physio., Rsch. in Biophys. and Biochem. of Nerve, Yale Univ. Schl. of Med., New Haven, Conn., 1939-42; Rsch. Assoc., Dept. of Neurology, Coll. of Physicians and Surgeons, Columbia Univ., 1942-47; Asst. Prof., ibid., 1947-51; Assoc. Prof., ibid., 1951-55; Prof. of Biochem., ibid., 1955—. Mem.: N. Y. Acad. of Med.; N. Y. Acad. of Sci.; A.A.A.S.; N. Y. Zool. Soc.; Am. Soc. of Biological Chemists; Am. Physiol. Soc.; The Biochem. Soc., London, England; Harvey Soc.; Sigma Xi; etc. Author: Chemical and Molecular Basis of Nerve Activity, Acad. Press, N. Y., 1959. Contbr. to: Jour. of Biological Chem.; Jour. of Neurophysiology; Advances of Enzymology; etc. War Rec.: Scientific Rsch. on Chem. Warfare Agents. Gen. Int.: Integration of Electrical and Chem. Signs of Nerve Activity; Established Sequence of Energy Transformations in Conduction; Integrated Acetylcholine into the Metabolic Cycle of the Nerve Cell; Achieved First Enzymatic Acetylation in Solution. Special Int.: Biophys. and Biochem. of Cellular Function; Enzyme Chem.

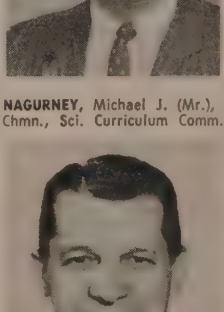
NAETER, Albrecht (Mr.), Prof. and Hd. Emer., Schl. of Elec. Engrng., Okla. St. Univ., Stillwater, Okla. Home Add.: 419 Stanley, Stillwater, Okla. ELECTRICAL ENGINEERING, POWER PHASES. b. New Baden, Tex., Mar. 21, 1894. s. Albrecht Sr. and Marie (Hiltpold) N. Edn.: B.S., Univ. of Tex., 1917; M.S., Cornell Univ., 1923. m. Ruby Wheaton, June 30, 1924. c.: Carol Ann N. Estrem; Audrey Joy N. Stunkard. Exp.: Stud. Asst., App. Math., Univ. of Tex., 1916-17; Grad. Stud. Course, Engrng. and Design Schls., Indl. Motor Design, Westinghouse Elect. and Mfg. Co., 1917 and 1918-19; Instr., Cornell Univ., 1919-23; Assoc. Prof., Univ. of N. C., 1923-24; Gen. Tester, Test Dept., N. Y. Edison Co., New York, N. Y., summers, 1920-23, 1925; Instr. in Chg. of Dynamo Lab., Indl. Elect. Engr. Pratt Inst., 1924-25; Assoc. Prof., Mich. State Univ., 1925-29; Engr., Operating Div., Detroit Edison Co., Detroit, Mich., summers, 1926-28; Prof. and Hd., Elect. Engrng., Okla. St. Univ., 1929-59; Prof. and Hd. Emer., ibid., 1959—. Hon. Pos.: Chmn., Okla. City Sect., Am. Inst. Elect. Engrs., 1934-35; Chmn., Elect. Engrng. Div., Am. Soc. Engrng. Edn., 1936-37; Counselor-Chmn., S.W. Dist., AIEE, 1939-40; Natl. Adv. Bd., Eta Kappa Nu, 1951-54; Natl. Pres., Ibid., 1959-61; Hist., Hanner-Sharp Post, Am. Legion, 7 yrs. Mem.: Am. Inst. Elect. Engrs. (Fellow and Life Mem.); Am. Soc. Engrng. Edn. (Life Mem.); Acacia; Tau Beta Pi; Eta Kappa Nu; Sigma Tau; Am. Legion; Masonic Lodge. Contbr. to: Elect. World; Elect. Engrng.; Am. Engr.; Jour. Engrng. Edn. Serv. Rec.: U. S. Army, W.W. I. Gen. Int.: Made Orig. suggestion that led to Gen. Engrng. Curr. at Okla. State Univ. Areas of Rsch.: Power Phases of Electrical Engineering.

NADAI, Arpad Ludwig (Dr. Ing.), Cons. Mech. Engr., Westinghous Rsch. Labs., Pittsburgh 35, Pa. Home Add.: 136 Cherry Valle Rd., Pittsburgh 21, Pa. APPLIED AND THEORETICAL MECHANIC THEORIES OF ELASTICITY AND PLASTICITY, STRENGTH OF ME ALS. b. Budapest, Hungary, Apr. 3, 1883. Edn.: Dipl. Ing Swiss Feder. Inst., Zurich, Switzerland, 1906; Dr. Ing., Technisch Hochschule, Berlin, Germany, 1912. m. Elisabeth Witte (dec. Sept. 20, 1913. Exp.: Prof., Univ. of Gottingen, Germany, 192 29; Cons. Mech. Engr., Westinghouse Rsch. Labs., Pittsburgh, Pa 1929—. Hon. Pos.: Chmn., Rsch. Comm. of Plasticity, Am. So Mech. Engrs. Mem.: Am. Geophys. Union; Soc. of Rheol A.A.A.S. Author: Theory of Elastic Plates, 1925; Der Bildsam Zustand, 1927; Plasticity, 1931; Theory of Flow and Fracture Solids, Vol. 1, 1950, Vol. 2, 1962. Contbr. to: Jour. of Applie Mechanics; Jour. of Applied Physics; A.S.M.E. Trans.; Tran Geophysical Union. Serv. Rec.: Austrian Hungarian Army, 191 18. Gen. Int.: Recipient, A.S.M.E. Worcester Reed Gold Meda 1947; Eugene Bingham Medal, Soc. of Rheol., 1952; Stephe Timoshenko Medal, A.S.M.E., 1958; Elliot Cresson Gold Meda Franklin Inst., 1960. Areas of Rsch.: Theories of Elasticity, Plasticity; Theory of Elastic Plates; Crepe of Metals; on Rheol Deformation of Rocks and Distortion of the Solid Earth's Crus

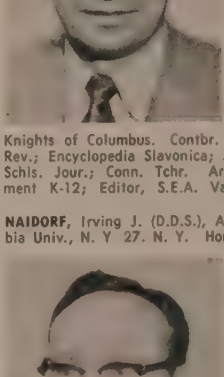
NAFOOSI, Abdul Aziz (Ph.D.), Assoc. Prof., The Univ. of Tulsa Tulsa, Okla. Home Add.: 3902 E. Eyler St., Tulsa 15, Okl MATHEMATICS—THEORY OF NUM BERS. b. Mosul, Iraq, June 1922. s. Kasim and Jamila (S leem) N. Edn.: B.A., Highe Tchrs. Coll., Iraq, 1944; M.A Univ. of Mich., 1950; Ph.D., Uni of Colo., 1960. m. Kawkab M Allah, July, 1950. c.: May Mona; Sami; Maan; Saad. Exp Instr., Higher Tchrs. Coll., Bag dad, Iraq, 1950-56; Instr., Uni of Colo., Boulder, Colo., 195 59; Asst. Prof., Kans. State Col Pittsburgh, Kans., 1959-62; Asso Prof., The Univ. of Tulsa, 1962- Hon. Pos.: Pres., Grad. Math Club, Univ. of Colo. Mem.: Am Mathl. Soc.; Iraqi Sci. Soc. Area of Rsch.: Mathematics-Theory Numbers.



NAGURNEY, Michael J. (Mr.), Prin., Rogers Elem. and Jr. H. S Chmn., Sci. Curriculum Comm., Stamford Publ. Schls., Stamfor Conn. Home Add.: 76 Hope St Stamford, Conn. SCIENCE CU RICULUM DEVELOPMENT. b. Je sup, Pa., Jan. 21, 1910. s. Nic olas and Mary N. Edn.: B.A Scranton Univ., 1932; M.A., T. C Columbia Univ., 1941; Profe sional Diploma (Pre-Doctoral) T. C Columbia Univ., 1951. m. Ann C., Aug., 1937. c.: Michael Exp.: Tchr. and Prin., St. Basil Preparatory Schl., Stamford, Conn 1933-41; Chem. Tchr., Stamfor H. S., ibid., 1941-50; Chief Chem ist, Glassfloss Corp., ibid., W Years; Quality Control, Asst. Prin Prin., Rogers Elem. and Jr. H. S 1950—. Hon. Pos.: Pres., Stam ford Catholic Libr.; Past Pres Stamford Edn. Assn. Mem.: A.A A.S.; N.E.A.; Stamford Edn. Assn Knights of Columbus. Contbr. to: Clearing House; East Europe Rev.; Encyclopedia Slavonica; Jour. of Edn.; Schl. Exec.; Catho Schls. Jour.; Conn. Tchr. Areas of Rsch.: Curriculum Develo ment K-12; Editor, S.E.A. Vanguard.



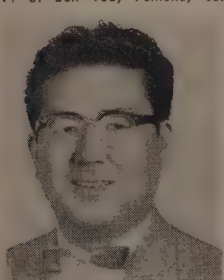
NAIDORF, Irving J. (D.D.S.), Asst. Clin. Prof. of Dentistry Colu bia Univ., N. Y. 27. N. Y. Home Add.: 411 Parkside Ave., Broo lyn 26, N. Y. ROOT CANAL THE APY AND MICROBIOLOGY. Brooklyn, N. Y., Oct. 19, 191 s. Zelig and Sarah (Breslau) Edn.: B.A., N. Y. Univ., 193 D.D.S., Columbia Univ., 1941. Blanche Goodman, 1942. c.: M chael; Kenneth. Exp.: Instr., De tistry, Columbia Univ., 1952-5 Lectr., Microbiol., Columbia Univ Schl. of Dent. Hygiene, 1957- Asst. Clin. Prof., Dentistry, Colu bia Univ., 1958—; Consult. in E dodontics—V. A. Mem.: A.D.A A.A.A.S.; Am. Soc. for Microbiol Sigma Xi; N. Y. Acad. of Scis Am. Assn. of Endodontists; Om cron Kappa Upsilon. Contbr. t N. Y. State Dental Jour.; Jour. Oral Surg., Oral Med. and Or Pathol. Serv. Rec.: U. S. Arm 1942-46. Areas of Rsch.: Root Canal Therapy; Bacteriology the Root Canal.



NAKABAYASHI, Nicholas Takateru (Ph.D.), Asst., Rsch. Physiol., Dept. of Surgery, UCLA Schl. of Med. Home Add.: 5323 9th Ave., Los Angeles 43, Calif. RE-

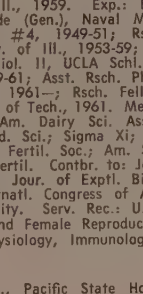
PRODUCTIVE PHYSIOLOGY; BIOCHEMISTRY OF SPERMATOZOA. b. Honolulu, Hawaii, Feb. 25, 1920. c.: Denji; Ume (Terakawa) N. Edn.: B.S., Utah St. Univ., 1949; M.S., Univ. of Ill., 1953; Ph.D., Univ. of Ill., 1959. Exp.: Biological Aide (Gen.), Naval Med. Res. Unit #4, 1949-51; Rsch. Asst., Univ. of Ill., 1953-59; Jr. Rsch. Physiol. II, UCLA Schl. of Med., 1959-61; Asst. Rsch. Physiol., ibid., 1961—; Rsch. Fellow, Calif. Inst. of Tech., 1961. Mem.: A.A.A.S.; Am. Dairy Sci. Assn.; N. Y. Acad. Sci.; Sigma Xi; Pacific Coast Fertil. Soc.; Am. Soc. Study of Fertil. Contbr. to: Jour. Dairy Sci.; Jour. of Exptl. Biol.; Proc. Internatl. Congress of Animal Reproduction; Jour. Fertil. and Sterility. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Male and Female Reproductive Physiology and Endocrinology, Sperm Physiology, Immunological Aspects of Reproduction, Infertility.

NAKAMURA, Hiromu (Mr.), Clin. Psychol., Pacific State Hosp., P. O. Box 100, Pomona, Calif. Home Add.: 2420 Logan St., Pomona, Calif. PSYCHOLOGY. b. Los Angeles, Calif., Nov. 6, 1926. s. Genjiro and Kamura (Misao) N. Edn.: B.A., Univ. of Redlands, 1948; M.A., Univ. of Calif., Los Angeles, 1951. m. Tamaye Yumiba, Mar. 27, 1955. c.: Glenn V.; Colleen P. Exp.: Clin. Psychol. Intern, Massillon St. Hosp., Ohio, 1951-52; Clin. Psychol., Patton St. Hosp., Calif., 1952-58; Clin. Psychol., Pacific State Hosp., Pomona, Calif., 1958—. Hon. Pos.: Chmn., Employees' Adv. Comm., 1960-61. Mem.: Am. Psychol. Assn.; Am. Assn. on Mental Deficiency; Am. Assn. for the Adv. of Sci.; Calif. State Psychol. Assn.; Calif. Academy of Scis.; Psi Chi. Contbr. to: Am. Jour. of Mental Deficiency. Areas of Rsch.: Mental Development; Mental Retardation; Personality Theory and Evaluation.

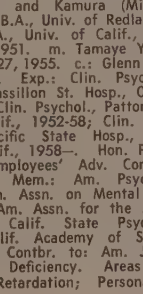


NARDI, George Lionel (M.D.), Assoc. Vistg. Surgeon, Mass. General Hosp., Boston, Mass. Asst. Clinical Prof. of Surgery, Harvard Medical Schl., Cambridge, Mass. Home Add.: 54 Claremont Rd., Belmont, Mass. SURGERY. b. Bologna, Italy, Mar. 9, 1923. s. Menotti and Anteniscą (Rinaldi) N. Edn.: B.S., Univ. of Chicago, 1941; M.D., ibid., 1944. m. Sally Cantwell, Aug., 1951. c.: Linda; Elizabeth; Sally; George; Edward. Exp.: Intern in Surgery, Mass. General Hosp., Boston, Mass., 1944-45; Diplomate, Natl. Bd. of Med. Examiners, 1945; Third Asst., Resident in Surgery, Mass. Gen. Hosp., Boston, Mass., 1946-47; Sec. Asst., ibid., 1947-48; First Asst., ibid., 1948; Milton Fellow, Harvard Univ., 1948-49; First Asst., Resident in Surgery, Mass. Gen. Hosp., Boston, Mass., 1949-50; Tchg. Fellow, Anatomy, Harvard Med. Schl., Cambridge, Mass., 1950; Resident in Surgery, Mass. Gen. Hosp., 1951; Asst. in Surgery, ibid., 1952-53; Instr. in Surgery, Harvard Med. Schl., 1952-56; Dalton Scholar, Mass. Gen. Hosp., 1952; Dalton Scholar, ibid., 1955; Clinical Assoc., Surgery, Harvard Med. Schl., 1956-61; Consulting Asst. Surgeon, Mass. Eye and Ear Inirmary, 1957; Consultant, Thoracic Surgery, Tewksbury State Hosp. and Infirmary, 1958; Attending Physician in Gen. and Thor. Surgery, W. Roxbury, V.A. Hosp., 1960; Asst. Clinical Prof. of Surgery, Harvard Med. Schl., Cambridge, Mass., and Assoc. Vistg. Surgeon, Mass. Gen. Hosp., Boston, Mass. and Editorial Bd., Little, Brown and Co., Boston, 1961—. Mem.: Mid Century Surgeons Club; Am. Med. Assn.; Mass. Med. Soc.; Am. Coll. of Surgeons; Am. Fed. for Clinical Rsch.; Soc. of Univ. Surgeons; Boston Surgical Soc.; N. Y. Acad. of Sci.; Reticuloendothelial Soc.; Am. Assn. for Thoracic Surgery; AAAS; Royal Soc. of Med.; Soc. for Surgery of Alimentary Tract; Delta Upsilon; Alpha Omega Alpha. Co-Author: The Esophagus, 1958; Surgery, 1961. Contbr. to: Annals of Surgery; Surgery, Gynecology and Obs.; N. England Jour. of Med.; Science; Am. Jour. of Roentgenology; Surgery; Jour. of Lab. and Clinical Med.; Jour. of Clinical Investigation; Am. Jour. of Med. Scis.; Archives of Surgery; Am. Jour. of Surgery; Gastroenterology; Strahlentherapie; General Practitioner; Current Therapy; Jour. of Thoracic and Cardiovascular Surgery. Serv. Rec.: USNR, 1945-46; Lt. Cdr., MC, USNR, 1954-55. Gen. Int.: Received Annual award of R. Franklin Carter Foundation, Inc., 1958 for most significant contribution to biliary tract research in 1957. Areas of Rsch.: Pancreatic Physiology; Intermediary Metabolism; Esophageal Surgery; Hepatic and Coronary Blood Flow.

NARIN, Francis (Mr.), Staff Mem., Los Alamos Scientific Lab., Los Alamos, N. Mex. Home Add.: 246 Chamisa, Los Alamos, N. Mex. NUCLEAR ROCKET PROPULSION. b. Phila., Pa., May 10, 1934. s. B. E. and A. L. (Lipsius) N. Edn.: B.S., Franklin and Marshall Coll., 1955; M.S., N. C. St. Coll., 1957. m. Carole A. Shapiro, July 6, 1958. c.: Cynthia Jean. Exp.: Rsch. Asst., Grad. Student, N. C. St. Coll., 1955-57; Physicist, Armour Rsch. Fdn., Chgo., Ill., 1957-59; Staff Mem., Physicist, Los Alamos Scientific Lab., Los Alamos, N. Mex., 1959—. Mem.: Am. Nuclear Soc.; A.A.A.S.; Sigma Pi Sigma. Contbr. to: Nuclear Sci. and Engrng.; Trans. of Am. Nuclear Soc.; U. S. A. E. C. Rpts. Areas of Rsch.: Nuclear Rocket Propulsion, Nuclear Testing; Data Processing Systems, Nuclear Rocket Dynamics; Nuclear Weapons.



NASH, Charles Dudley, Jr. (Ph.D.), Assoc. Prof., Dept. of Mechanical Engrng., Univ. of Me., Orono, Me. Home Add.: 9 Chapel Rd., Orono, Me. APPLIED MECHANICS, MECHANICAL ENGINEERING. b. N. Y. C., May 28, 1926. s. Charles D. and Maude Mildred (Todd) N. Edn.: B.E., Yale Univ., 1949; M.S., Ohio State Univ., 1951; Ph.D., ibid., 1959. m. Frances E. Agar, Feb. 12, 1949. c.: Deborah Ann; Jonathan Stewart; Susan Todd. Exp.: Mech. Engr., Wright Air Devl. Ctr., Dayton, Ohio, 1949-54; Instr., Ohio State Univ., 1955-59; Asst. Prof., ibid., 1959-62; Specialist, Rsch., N. Am. Avia., Columbus, Ohio, Summers, 1956-61; Assoc. Prof., Univ. of Me., 1962—. Mem.: Am. Soc. of Mechanical Engrs.; Inst. of Aerospace Scis.; Am. Soc. for Engrng. Edn.; Sigma Xi; Soc. for Industrial and Applied Math. Contbr. to: Air Force Studies and Reports; N. Am. Aviation Studies and Reports; Annual Conf. for Engrs., OSU; Proc. of Am. Helicopter Soc. Serv. Rec.: Crops of Engrs., 1946-47. Gen. Int.: Continental Oil Co. Fellow in Mechanical Engrng., Ohio State Univ., 1954-55. Areas of Rsch.: Fatigue of Metals and Structures; Applied Math.; Applied Mechanics; Mechanical Engrng.; Materials Sci.

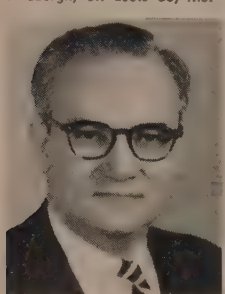


NASH, Peter Hugh (Ph.D.), Hd., Dept. of Geography and Regional Planning and Prof. of Geography and Planning, Univ. of Cincinnati, Cincinnati 21, Ohio; Planning Consult., esp. to ACTION, Inc. Home Add.: 821 Dunore Rd., Cincinnati 20, Ohio. CITY AND REGIONAL PLANNING; URBAN GEOGRAPHY. b. Frankfurt/Main, Ger., Sept. 18, 1921. s. John H. and Alice (Heuman) N. Edn.: B.A., U.C.L.A., 1942; M.A., ibid., 1946; Cert. d'Et., Univ. of Grenoble, France, 1945; Univ. of Wis., 1946-47; M.C.P., Harvard Univ., 1949; M.P.A., ibid., 1956; Ph.D., ibid., 1958. m. Inez Frost, July 30, 1955. c.: Carina Frost; Peter Hugh, Jr. Exp.: Prin. Planning Asst., Boston City Planning Bd., 1949-50; Sr. Planner, City of Worcester, Mass., 1950-51; Sr. Planner, Boston Housing Authority, 1951-52; Dir., Planning Dept., City of Medford, Mass., 1952-56; Visiting Critic, Grad. Schl. of Design, Harvard Univ., 1956-57; Assoc. Prof. of City and Regional Planning, Grad. Schl., Univ. of N. C., Chapel Hill, N. C., 1957-59. Mem.: Assn. of Am. Geographers; Am. Inst. of Planners; Am. Geographical Soc.; A.A.A.S.; Sigma Nu; Sigma Xi; Sagamore Lodge, A.F. & A.M.; Durham Commandery #3, Knights Templar. Contbr. to: Geographical Rev.; Annals of the Assn. of Am. Geographers; A.S.P.O. Yearbook; Jour. of the Am. Inst. of Planners; Soc. Forces. Serv. Rec.: U. S. Army, 1943-45, Combat Engrs. and Milit. Intelligence. Special Int.: Analysis of the Responsibilities and Limitations of the Planning Dir. in a Council-Mgr. Form of City Govt. Areas of Rsch.: Planning Theory; History of City Planning and Urban Renewal; Behavioral and Administrative Aspects of Professional Public Planning; Human Ecology; Urban Geography; Regional Analysis and the Conservation of Resources.

NASH, Murray L. (Mr.), Chf., Classification Br., U. S. Atomic Energy Comm., Wash. 25, D. C.

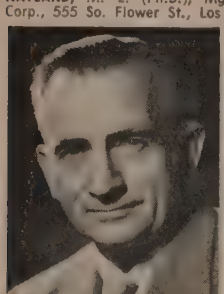
CHEMISTRY. b. Brooklyn, N. Y., Dec. 28, 1917. s. Julius and Bessie (Lachow) N. Edn.: B.S., Brooklyn Coll., 1938; P.E., 1952. m. Laura Ruth Kopeikin, Aug. 19, 1940. c.: Heather Alice; Barbara Frances; Paul J. Exp.: Phys. Sci. Aide, Bur. of Standards, Wash., D. C., 1941-42; Jr. Chem., U. S. Bur. of Mines, Coll. Park, Md., 1942-44; Rsch. Assoc., Substitute Alloy Materials Lab., Columbia Univ., N.Y.C., 1944; Chem. and Major Prod. Supvr., Carbide and Carbon Chem. Corp., Oak Ridge, Tenn., 1944-46; Scientific Analyst, U. S. Atomic Energy Comm., Oak Ridge, Tenn., 1946-49; Tech. Asst., U.S. Atomic Energy Comm., Wash., D. C., 1949-55; Chf. Classification Analyst, 1955-56; Chf., Classification Br., 1956—. Mem.: Am. Chem. Soc. Special Int.: Phys. Chem. of Uranium; Separation of Isotopes; Mass and Emission Spectroscopy; Spectrographic and Other Physico-Chem. Methods of Analysis; Prod. of Uranium 235.

NASON, Howard King (Mr.), Pres., Monsanto Rsch. Corp., 800 N. Lindbergh, St. Louis 66, Mo.



Home Add.: 9970 Old Warson Rd., St. Louis 24, Mo. INDUSTRIAL CHEMISTRY. b. Kans. City, Mo., July 12, 1913. s. Eber James and Florence (King) N. Edn.: A.B., Univ. of Kans., 1934. m. Oralee Kraus, Jan. 6, 1934. Exp.: Chief Chemist, Anderson-Stolz Corp., Kansas City, 1935-36; Rsch. Chem., Monsanto Chem. Co., 1936-39; Asst. Dir. Rsch., Plastics Div., 1939-44; Dev. Dir., Assoc. Dir., Dir., Central Rsch. Dept., 1944-50; Asst. to Vice-Pres., 1950-51; Gen. Mgr. Rsch. and Engrng. Div., Vice-Pres., ibid., 1956-60; Pres., ibid., 1960—. Hon. Pos.: Bd. of Dirs., Am. Soc. for Testing Materials, 1948-54; Comm. on Publications, ibid., 1947-55; Comm. on Rsch., ibid., 1955—; Exec. Comm., Am. Sect., Soc. of Chem. Indus. Mem.: Am. Chem. Soc.; Am. Soc. for Testing Materials; Soc. of Rheology; A.A.A.S.; N. Y. Acad. Scis.; Am. Inst. Chem. Engrs.; Soc. of Chem. Indus., Am. Sect.; Am. Mineralogical Soc.; Inst. of Aeronautical Scis.; etc. Contbr. to: Chemist Analyst; Industrial and Engrng. Chem.; Jour. Am. Water Works Assn.; A.S.H.V.E. Jour.; Proc. of A.S.T.M.; Jour. Applied Physics; Chemurgic Digest; Am. Mgmt. Assn.; and others. Gen. Int.: Cited by Am. Standards Assn. for contributions to development of standards for Army and Navy Electronic Equipment, and for work as a member of Assns. War Comm. on Radio. Areas of Rsch.: Industrial Application of Chemicals and Plastics; Fuels and Lubricants; Technical Management.

NATLAND, M. L. (Ph.D.), Mgr., Production Rsch., Richfield Oil Corp., 555 So. Flower St., Los Angeles 17, Calif.



Home Add.: 18 E. Crest Rd., Rolling Hills, Calif. GEOLOGY. b. Hawley, Minn., Dec. 4, 1906. s. Laura Christenson. Edn.: B.A., Pomona Coll., 1928; Ph.D., Univ. Calif. at Los Angeles, 1952. m. Dorothy D., Oct. 7, 1933. c.: James P.; Martin C.; Richard K. Exp.: Paleontologist, Shell Oil Co., Long Beach, Calif., 1928-37; Regional Geologist, Richfield Oil Corp., Los Angeles, Calif., 1937-53; Mgr., Production Rsch., ibid., 1953—. Hon. Pos.: Pres., S.E.P.M., 1962-63. Mem.: A.A.P.G.; S.E.P.M.; G.S.A.; A.A.A.S.; Sigma Xi. Contbr. to: A.A.P.G. Bull.; G.S.A. Memoir; S.E.P.M. Bull.; Bull. Scrips Inst. Areas of Rsch.: Micropaleontology, Sedimentation, Nuclear Physics.

NEAL, James Thomas (Mr.), Tast Scientist, Air Force Cambridge Rsch. Labs., Bedford, Mass. Home Add.: 6 Prospect St., Watertown, Mass. GEOLOGY, MINERALOGY. b. Detroit, Mich., Feb. 9, 1936. s. Herbert Roland and Ida Irene (Forster) N. Edn.: B.S., Mich. St. Univ., 1957; M.S., ibid., 1959. m. Mary Virginia Klinedinst, July 30. 1960. c.: Rebecca Kathleen. Exp.: Exploration Geologist, Cleveland-Cliffs Iron Co., Ishpeming, Mich., 1957; Grad. Asst., Mich. St. Univ., 1959; Exploration Geologist, Cleveland-Cliffs Iron Co., Ishpeming, Mich., 1959; Rsch. Geophysicist, Air Force Cambridge Rsch. Labs., Bedford, Mass., 1960—. Mem.: Am. Geophysical Union; Am. Soc. of Photogrammetry; A.A.A.S.; Geochemical Soc.; R.E.S.A.; Sigma Xi; Sigma Gamma Epsilon. Contbr. to: Photogrammetric Engrng.; Geotimes. Serv. Rec.: U. S. Air Force, 1960—. Areas of Rsch.: Geology of Iron Formations, Engrng. and Military Geology, Mineralogy.

NAUMAN, Edward Franklin (Mr.), Gen. Mgr., Thiokol Chemical Corp., Bdigham City, Utah.

Home Add.: 659 N. 5th E., Brigham City, Utah. CHEMICAL ENGINEERING. b. Kansas City, Mo., May 1, 1915. s. Edward A. and Lida (Stevens) N. Attended: Kans. City Jr. Coll., 1932-35; Univ. of Kansas City, Mo., 1939. m. Elizabeth Wiles, Feb. 6, 1943. c.: Edward Bruce; Kent Jerome; Mark Robert. Exp.: Chemist, Procter and Gamble, Kansas City, Kans., 1935-38; Chief Chemist, U. S. Cold Storage Co., Kans. City, Mo., 1938-41; Chemical Engr., Remington Arms Co., Independence, Mo., 1941-43; Chf. of Chem. Investigations, Pratt & Whitney, Kans. City, Mo., 1943-45; Tech. Dir., J. A. Folgers & Co., Kans. City, Mo., 1945-54; Gen. Mgr., Thiokol Chem. Co., Brigham City, Utah, 1954—. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Am. Rocket Soc.; A.A.A.S.; Am. Ordnance Assn.; Natl. Roster of Scientific and Tech. Personnel; U.S.A. Roster of Ammunition; Rotarian; C. of C. Serv. Rec.: U.S.A. Gen. Int.: Inventor of Nauman Dim Igniter. Areas of Rsch.: Rocket Propellants; Explosives and Pyrotechnics.

NAUMANN, Theodor F(riedrich) (Ph.D.), Assoc. Prof. of Psychology, Central Wash. State Coll., Ellensburg, Wash.

Home Add.: 808 Hobert Ave., Ellensburg, Wash. PSYCHOLOGY. b. Essen/Ruhr, Germany, Aug. 15, 1918. s. Theodor D. G. and Johanna (Wirf) N. Edn.: M.E., State Coll. of Engrng, Essen, Germany, 1940; B.A., Warner Pacific Coll., 1952; M.A., Oregon State Univ., 1954; Ph.D., Univ. of Ore., 1956. m. Christel Strekies, 1949. c.: Reinhold G.; Gisela C.; Ingrid S. Exp.: Rsch. Engr., Luftfahrtforschungsanstalt, Braunschweig, Germany, 1940-45; Rsch. Asst., Univ. of Ore., Eugene, Ore., 1953-54; Instr., Univ. of Md., Overseas Program, 1956-57; Instr., Warner Pacific Coll., Portland, Ore., 1957-59; Consulting Psychol., Public Schls., Ellensburg, Wash., 1959—; Assoc. Prof., Central Wash. State Coll., ibid., 1959—. Mem.: Am. Psychol. Assn.; Am. Assn. on Mental Deficiency; Am. Edn'l. Rsch. Assn.; Oreg. Psychol. Assn.; Wash. St. Psychol. Assn.; Phi Delta Kappa. Contbr. to: Psychol. Abstracts; Calif. Jour. of Edn'l. Rsch.; Mental Health Rsch. Bull.; Auto-Instructional Devices; Jour. of Programmed Instruction. Gen. Int.: Psychology and Edn. of Exceptional Children; Development of Auto-Instructional Material; Development of School Psychological Services. Areas of Rsch.: Programmed Instruction and Teaching Technology; Mental Health Rsch. with Children; Human Learning; Personality Rsch.

NEATHERY, Robert Walter, Jr. (Mr.), Dir. of Sci. Museum, The Franklin Inst., 20th and The Pkwy., Phila. 3, Pa.

Home Add.: 151 Merion Ave., Narberth, Pa. SCIENCE EDUCATION. b. North East, Pa., Dec. 13, 1905. s. Robert Walter, Sr. and Rosa Lee (Ragland) N. Edn.: B.A., Univ. of Richmond, 1927; Grad. Student, Columbia Univ., Temple Univ., Pa. m. Katherine S. Allen, June 24, 1931. c.: Rosemary Ann N. Atwell. Exp.: Sci. Tchr., Falconer, N. Y. Pub. Schls., 1927-29; Sci. and Math. Tchr., Pawling, N. Y., 1929-30; Hd. of Sci. Dept., Wooster Schl., Danbury, Conn., 1930-42; Hd. of Sci. Dept., Episcopal Academy, Phila., Pa., 1942-57; Planetarium Lectr., Franklin Inst., Phila., Pa., 1945—; Dir. of Museum Edn., ibid., 1947-59; Dir. of Sci. Museum, ibid., 1959—. Hon. Pos.: Chmn., Comm. of Chem. Examiners, Coll. Entrance Examn. Bd., 1956-57; Bd. of Govs., Heart Assn. of Southeastern Pa., Bd. of Dirs., Pa. Heart Assn. Mem.: Am. Assn. of Museums; Scientific Rsch. Soc. of Am.; A.A.A.S.; Natl. Sci. Tchrs. Assn.; New England Assn. of Chem. Tchrs.; Lambda Chi Alpha; Engrs. Club, Philadelphia. Gen. Int.: Concerned Chiefly with use of Sci. Museum as Edn'l. Museum. Areas of Rsch.: Chemistry and Science Education.

NEBEL, Bernard Rudolf (M.D., Ph.D.), Sr. Cytologist, Argonne Natl. Lab., Argonne, Ill. Home Add.: 4637 Forest Ave., Downers Grove, Ill. CYTOLOGY, PLANT AND ANIMAL. b. Durban, S. Africa, Aug. 10, 1901. s. Rudolf and Marie (Rolfes) N. Edn.: Ph.D., Univ. of Halle Wittenberg, 1926; M.D., Univ. of Rochester Med. Schl., 1946. m. Mabel Ruttle, Mar., 1928. c.: Kay Allen; Bernard James. Exp.: Assoc. in Rsch., Cornell Univ., 1929-42; Asst. to Assoc. Prof., Med. Schl., Univ. of Rochester, N. Y., 1947-52; Sr. Rsch. Cytologist, Argonne Natl. Lab., Argonne, Ill., 1955—; Med. Br. Div. Biol. and Med. AEC, Wash., D. C.; Industrial

Med. Liaison Rsch. Mem.: Sigma Xi; Am. Naturalists Genetics Soc. of Am.; Radiation Rsch. Soc.; Am. Soc. Cell Biologists; Growth Soc.; AAAS. Contbr. to: Jour. Biophys. and Biochem. Cytology; Nature; Am. Jour. of Heredity; Chromosoma; Cytologia. Gen. Int.: First Comml. Colchicine Tetraploids. Areas of Rsch.: Electronmicroscopy of Structure of Chromosomes; Entoptics of the Human Eye; Effect of Irradiation on Spermatogenesis.

NEBESKY, Edward Anthony (Ph.D.), Prof., Rutgers Univ., N. Brunswick, N. J. Home Add.: 71 Garden Rd., Little Silver, N. J. FOOD SCIENCE AND PACKAGING.

b. Amesbury, Mass., Mar. 3, 1919. s. Joseph and Josephine (Ordowska) N. Edn.: B.S., Univ. of Mass., 1943; M.S., ibid., 1948; Ph.D., ibid., 1950. m. Wilma Jane Clem, Nov. 1, 1946. c.: Billie Jean; William; Michael. Exp.: Instr., Univ. of Mass., 1948-51; Product Mgr., The Cryovac Co., Cambridge, Mass., 1951-56; Assoc. Prof., Cornell Univ., 1956-59; Prof., Rutgers Univ., 1959—. Hon. Pos.: Vice-Pres., Rutgers Chapt., Phi Tau Sigma. Mem.: Inst. of Food Technologists; Packaging Inst., Sigma Xi; A.A.A.S.; Contbr. to: Inst. of Food Tech.; Food Rsch.; Jour. of Milk and Food Tech.; Natl. Provisioner. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Dir., Meat Sci. Inst.; Dir., Packaging Trng. Schl., Ind. Mgmt. Center; Dir., Food Industry Sci. Schl. Areas of Rsch.: Chemistry; Bacteriology and Nutritional Aspects of Foods; Packaging as a Major Field of Interest.

NEEDHAM, Gerald M. (Ph.D.), Medical Bacteriologist, Mayo Clinic, Rochester, Minn. BACTERIOLOGY.

b. Caldwell, Ida., Aug. 4, 1917. s. Oliver Morton and Susie B. (Crowther) N. Edn.: B.S., Coll. of Idaho, 1940; Ph.D., Univ. of Minn., 1947. m. Billie Buettner, June 26, 1942. c.: Bobbie; Patty. Exp.: Bacteriologist, Minn. Dept. of Health, 1940-41; Instr. in Bacteriol., Univ. of Minn., Schl. of Med., Mpls., Minn., 1941-46; Consulting Bacteriologist, Econ. Lab., St. Paul, Minn., 1941-46; Civilian with Office of Scientific Rsch. and Devel., 1942; Med. Bacteriologist, Mayo Clinic., 1946—. Mem.: A.A.A.S.; Soc. of Am. Bacteriols.; Sigma Xi; Gamma Alpha. Contbr. to: Sci.; Jour. of Parenteral Therapy; Am. Jour. of Clinical Pathol.; Proc. Staff Meetings of the Mayo Clinic; Annals de L'Institut Pasteur; Am. Jour. Med. Sci. Special Int.: Med. Bacteriol.; Antibiotics; Tuberculosis.

NEELY, Richard James (Mr.), Vice Pres., The Almasol Corp., Div. Lubrication Engrs., Inc., 316 N. Sylvania Ave., Ft. Worth 11, Tex. Home Add.: 3033 Sante Fe, Fort Worth 11, Tex. LUBRICATION ENGINEERING.

b. Oakmont, Pa., Oct. 15, 1921. s. Joseph B. and Jean (Campbell) N. Edn.: B.S., Wash. and Jefferson Coll., 1943. m. Mary Yeager, Aug., 1943. c.: Mary Susan. Exp.: Chemist, Gulf Rsch. and Devel. Corp., Pittsburgh, Pa., 1943-55; Sr. Chemist, Convair Div., General Dynamics Corp., Ft. Worth, Tex., 1955-59; Vice Pres., The Almasol Corp., Div. Lubrication Engrs., Inc., Fort Worth, Tex., 1959—. Mem.: Am. Chem. Soc.; Am. Soc. of Lubrication Engrs.; Soc. of Aerospace Materials Process Engrs.; Lambda Chi Alpha. Contbr. to: Lubrication; Power Engrng.; Non Metallic Minerals Proc. Gen. Int.: Patents in Field of Lubrication; Devel. of High Temperature Solid Lubricants for Aircraft and Missiles. Areas of Rsch.: Lubricants and Organic Chemistry of Lubricant Additives.

NEFF, Frederick Clifton (Ed.D.), Prof. of Edn., Chmn., Dept. of Hist. and Phil. of Edn., Wayne St. Univ., Detroit 2, Mich. Home Add.: 10435 Cadieux Rd., Detroit 24, Mich. PHILOSOPHY OF SCIENCE. b. Columbus, Ohio, June 24, 1913. s. Fred C. and Cecelia (Patton) N. Edn.: B.S., Ohio St. Univ., 1935; M.A., ibid., 1941; Ed.D., Univ. of Calif., Los Angeles, 1950. Exp.: Asst. and Assoc. Prof., Occidental Coll., 1950-55; Prof. Edn. Fndns., Rutgers Univ., 1955-59; Prof. of Edn., Wayne St. Univ., 1959—; Visiting Prof., summers, Univ. of Ill., 1953; Univ. of Calif., Los Angeles, 1955 and 1958; Univ. So. Calif., 1956; Ind. Univ., 1959; Univ. Brit. Columbia, 1960; Syracuse Univ., 1961. Fellow: A.A.A.S.; Phil. of Edn. Soc. Mem.: Am. Assn. of Univ. Prof.; Am. Philos. Assn.; Assn. of Higher Edn.; John Dewey Soc.; Midwest Phil. of Edn. Soc.; Natl. Soc. of Coll. Tchrs. of Edn.; Natl. Soc. for the Study of Edn.; Phi Delta Kappa. Contbr. to: Christian Century; Clearing House; Education; Edn. Admin. and Supvr.; Edn. Digest; Edn. Forum; Edn. Theory; Jour. of Tchr. Edn.; Phi Delta Kappan; Hist. of Edn. Jour.; New Outlook; Rsch. and Studies; Sat. Rev.; Sci. Monthly; Schl. and Soc.; Studies in Phil. and Edn.; Tchrs. Coll. Record.

NEIFELD, Dr. Morris R. (Ph.D.), Consultant in Consumer Credit. Home Add.: 649 Prospect St., Maplewood, N. J. CONSUMER CREDIT.

b. New York City, May 14, 1892. s. Joseph S. and Sophe (Wechsler) N. Edn.: A.B., Cornell Univ., 1913; M.A., Columbia Univ., 1916; Ph.D., N. Y. Univ., 1922. m. Gertrude Salwen, Mar. 24, 1921. c.: Marion Janet Russak; Martin Joel. Exp.: Rsch. Analyst, Atlantic and Pacific Tea Co., Jersey City, N. J., 1925-26; Vice-Pres. and Economist, Beneficial Mgmt. Corp., Morristown, N.J., 1926-61; Adjunct Prof., Grad. Schl. of Bus. Admin., Rutgers Univ., 1939—. Hon. Pos.: Former Pres., Broad St. and Merchants Assn.; Former Chmn., Newark Comm. for Econ. Devel.; Past Pres., Northern N. J. Chapt. of Am. Mktg. Assn.; Chmn., Long Range Planning Comm., Newark Coun. of Social Agencies. Mem.: Econometric Soc.; Am. Stat. Assn.; Am. Econ. Assn.; Fellow, Am. Assn. for the Adv. of Sci.; Natl. Acad. of Econs. and Polit. Sci.; Acad. for World Econs.; Am. Assn. for the U. N.; Phi Beta Kappa; Pi Gamma Mu, and many others. Author: The Personal Finance Business, 1933; Cooperative Consumer Credit, 1936; Personal Finance Comes of Age, 1939; Newark Will Have Money to Spend, 1944; The Newark Market, 1945; Neifeld's Guide to Installment Computations, 1951; Trends in Consumer Finance, 1954; Neifeld's Manual on Consumer Credit, 1961. Contbr. to: Encycl. Brit. Serv. Rec.: U. S. Army, 1918-20. Listed in: Dir. of Am. Scholars; W. W. in the East; Who Knows—and What; W.W.A.E.; A.M.S. Gen. Int.: Lectured in Consumer Credit in Countries of Cent. Am., Latin Am., Near East, Far East, Africa and Europe. Areas of Rsch.: Consumer Credit.

NEILAND, Kenneth Alfred (Mr.), Rsch. Biologist, Alaska Dept. Fish and Game, Juneau, Alaska. Home Add.: 1203 Auke Bay, Alaska. PARASITOLOGY: PHYSIOLOGY OF MOLTING IN CRUSTACEA.

b. Portland, Ore., Feb. 18, 1929. s. Ernest A. and Frances (Holt) N. Edn.: B.A., Reed Coll., 1950; M.A., Univ. of Ore., 1953. m. Bonita Miller, Dec., 1955. c.: David B. Exp.: Doctoral Can., Univ. of Ore., Eugene, Ore., 1954-57; Instr., Ore. Coll. Edn., Monmouth, Ore., 1957-59; Rsch. Biologist, Alaska Dept. Fish and Game, Juneau, Alaska, 1959—. Mem.: Sigma Xi; Am. Soc. Parasitologists. Contbr. to: Jour. of Parasitology. Serv. Rec.: USN, 1948. Areas of Rsch.: Taxonomy and Ecology of Parasitic Worms; Physiology of Molting in Crustacea.

NELSON, Arthur Fredrick (Ph.D.), Prof. of Chem., Chmn. of Div. of Math. and Sci., St. Cloud St. Coll., St. Cloud, Minn. Home Add.: 1724 8th Ave., S.E., St. Cloud, Minnesota. PHYSICAL CHEMISTRY.

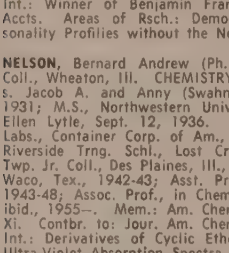
b. Shennington, Wis., May 19, 1901. s. Christian Holm and Trena Maria (Pedersen) N. Edn.: B.A., St. Olaf Coll., 1928; M.S., St. Univ. of Ia., 1931; Ph.D., ibid., 1932. m. Ruth Rasmussen of Boston, Mass., June 23, 1934. d. Mr. and Mrs. Alfred E. Rasmussen. c.: Karen Anne; Alan Holm; Deborah Ruth; Fredric Paul; David Arthur. Exp.: Asst. in Chem., St. Olaf Coll., 1928-29; Instr. in Chem., Dana Coll., Blair, Nebr., 1929-30; Rsch. Asst., Harvard Univ., 1932-33; Prof. of Chem., Am. Internatl. Coll., 1933-35; Rsch. Asst., Harvard Univ., 1935-36; Asst. Chf. Chem., Rsch. Chem., Lever Bros. Co., Cambridge, Mass., 1936-42; Rsch. Engr., Scintilla Magneto Div., Sidney, N. Y., summers, 1943-45; Prof. of Chem., Hartwick Coll., 1942-47; Prof. of Chem., St. Cloud St. Coll., 1947—. Mem.: Am. Chem. Soc.; Sigma Xi; Minn. Acad. of Sci; A.A.U.P.; N.E.A.; Minn. Edn. Assn.; Natl. Sci. Tchrs. Assn.; Alpha Chi Sigma; Phi Lambda Upsilon; Alpha Phi Omega. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Chem. Edn. Gen. Int.: Introduced Sci. Fairs for High Schl. Students in State of Minn.; Dir. of Sci. Talent Search in State of Minn. since 1952. Areas of Rsch.: Vapor pressures of Solutions of Alkali Salts and Activity Coefficients, Photoiodination of Ethylenic Bonds, Quantitative Analysis of Glycerol.

NELSON, Benjamin Otto (Mr.), Admin. Asst., Associated Hosp. Serv. of Phila., 112 South 16th St., Phila. 2, Pa. Home Add.: 506 Summit Ave., Jenkintown, Pa.

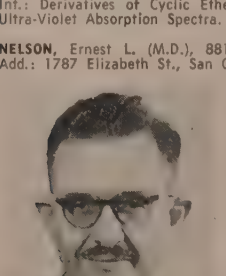
HUMAN GEOGRAPHY: SYSTEMS ENGINEERING: MANAGEMENT ACCOUNTING. b. Brooklyn, N. Y., Dec. 28, 1905. s. Charles Jonathan and Helen (Hard) N. Edn.: B.A., Columbia Coll., 1930; M.A., Tchrs. Coll., Columbia Univ., 1940; C.P.A., State of Del., 1951. m. Lilian Rowland, 1936. c.: Natalie Helen; Benjamin Otto, Jr.; Philip Rowland. Exp.: Assoc. Prof. and Chmn. of Acct. Dept., Univ. of Bridgeport, Conn., 1948-53; Lectr., Temple Univ., Phila., Pa., 1954-62; Admin. Asst., Associated Hosp. Serv. of Phila., Pa., 1959—. Hon. Pos.: Charter Mem. and Co-founder, Am. Assn. of Statistical Quality Control, 1943. Mem.: Natl. Coun. of Geographic Edn.; Am. Assn. of Hosp. Accts.; AAAS; AAUP; Am. Acct. Assn.; Natl. Assn. of Accts.; Controller, Am. Arbitration Assn.; Controller, Knickerbocker Hosp. Co-author: Management Accounting for Hospitals. Gen. Int.: Winner of Benjamin Franklin Award, Am. Assn. of Hosp. Accts. Areas of Rsch.: Demographic Fluidity; Diagraming Personality Profiles without the Necessity for Testing in Depth.

NELSON, Bernard Andrew (Ph.D.), Prof. of Chemistry, Wheaton Coll., Wheaton, Ill. CHEMISTRY. b. Chicago, Ill., Jan. 10, 1910. s. Jacob A. and Anny (Swahn) N. Edn.: B.S., Wheaton Coll., 1931; M.S., Northwestern Univ., 1938; Ph.D., ibid., 1942. m. Ellen Lytle, Sept. 12, 1936. Exp.: Industrial Chemist, Austenal Labs., Container Corp. of Am., Chicago, Ill., 1931-35; Sci. Tchr., Riverside Trng. Schl., Lost Creek, Ky., 1935-36; Instr., Maine Twp. Jr. Coll., Des Plaines, Ill., 1939-42; Asst. Prof., Baylor Univ., Waco, Tex., 1942-43; Asst. Prof., Wheaton Coll., Wheaton, Ill., 1943-48; Assoc. Prof., in Chem., ibid., 1948-54; Prof. in Chem., ibid., 1955—. Mem.: Am. Chem. Soc.; A.A.A.S.; A.A.U.P.; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Edn. Special Int.: Derivatives of Cyclic Ethers; Dioxane and Tetrahydropyran. Ultra-Violet Absorption Spectra.

NELSON, Ernest L. (M.D.), 881 Ralston, Belmont, Calif. Home Add.: 1787 Elizabeth St., San Carlos, Calif. MEDICINE. b. Brigham City, Utah, Aug. 20, 1909. s. Nels James and Ingrid (Dalgas-Hansen) N. Edn.: B.S., Utah State Univ., 1930; M.A., Univ. of Calif., 1933; M.D., Creighton Univ. Med. Schl., 1946. m. Louise Philpott, May 22, 1937. c.: Elaine; Phyllis; Dale; Betty; Jane; Sheryl; David. Exp.: Tchr., H. S., Mink Creek, Idaho, 1930-32; Tchr., Sci. and Math., H. S., Idaho, 1933-37; Tchr., (1 yr.), Prin., Park City H. S., Utah, 1938-43; Physician and Surgeon, Downey, Ida., 1947-51; Physician and Scrgeon, Belmont, Calif., 1951—. Hon. Pos.: Mem., House of Repr., Utah, 1934; Chf. of Staff, Marsh Valley Hosp., Ida., 1949-51; Mem., Judical Com., Sequoia Hosp., 1958-61, 1962-65. Chmn., San Carlos, Calif. Schl. Bd., 1959-60; Zone Chmn., Lions, 1962-63. Mem.: Am. Assn. for the Adv. of Sci.; Am. Med. Assn.; C.M.A.; Am. Acad. of Gen. Practice; World Med. Assn.; Mem., Bd. of Dirs., San Mateo County Heart Assn.; Delta Nu; Phi Rho Sigma; Kiwanis; Lions; C. of C. Contbr. to: Creighton Univ. Med. Schl. Quart. Serv. Rec.: U.S.A.F. Med. Corps, 1952-54. Listed in W. W. in the West. Areas of Rsch.: Medical History; Genetics.

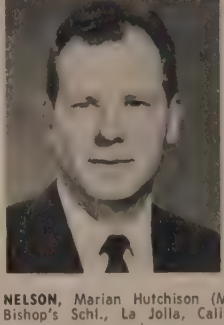


NELSON, Jerry Allen (Ph.D.), Div. Hd., E. I. duPont de Nemours & Co., Jackson Lab., Box 525, Wilmington, Del. Home Add.: 1012 Baylor Dr., Newark, Del. ORGANIC AND POLYMER CHEMISTRY. b. Durango, Colo., Feb. 22, 1923. s. Frank L. and Thelma L. (Rice) N. Edn.: B.S., Univ. of Wash., 1946; Ph.D., Ibid., 1950. m. Carmen L. Gueffroy, Mar. 1, 1944. c.: Cheryl Louise, Clark Allen, Gwyneth Marie. Exp.: Rsch. Chemist, DuPont, Jackson Lab., Wilmington, Del., 1950-52; Rsch. Supvr., Ibid., 1952-56; Div. Hd., ibid., 1956—. Mem.: Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. of the Am. Chem. Soc.; Chem. Rev.; Jour. of Chem. Edn.; Indusl. and Engrng. Chem. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Polymers, Textile Chemicals, Chemical Intermediates.



NELSON, Carl Willard (Ph.D.), Advisory Engr., Gen. Products Div., Devel. Lab., IBM Corp., Endicott, N. Y. Home Add.: 610 Bassett Ave., Endicott, N. Y. APPLIED MECHANICS AND MACHINE DESIGN. b. Iron Mtn., Mich., Feb. 2, 1912. s. Nels and Ellen M. (Johnson) N. Edn.: B.S., Univ. of Mich., 1934; M.S., ibid., 1934; Ph.D., ibid., 1939. m. Kathryn G. Stevens, June 20, 1936. c.: Stephen M.; William C.; Thomas J.; Carl W., Jr.; Susan K. Exp.: Testing and Rsch., Railway Rsch. Dept., Timken Roller Bearing Co., Canton, Ohio, 1936-41; Asst. Prof. of Math., Tex. Christian Univ., Ft. Worth, Tex., 1946; Asst. Prof., Assoc. Prof., Mechanics and Design, Univ. of Calif., Berkeley, Calif., 1946-59; Staff Engr., Gen. Prods. Div., Devel. Lab., IBM Corp., Endicott, N. J., 1959-61; Advisory Engr., ibid., 1961—. Mem.: Am. Soc. of Mech. Engrs.; Phi Kappa Phi; Sigma Xi. Contbr. to: A.S.M.E. Jour. of Applied Mechanics. Serv. Rec.: U. S. Army Signal Corps, 1941-46. Spec. Int.: Rsch. in Elasticity, Dynamics, with Emphasis on Applied Math.

NELSON, Leonard Carl (Ph.D.), Pres., W. Va. Inst. of Tech., Montgomery, W. Va. Home Add.: 320 Fiffth Ave., Montgomery, W. Va. HEAT TRANSFER AND THERMODYNAMICS. b. Albia, Iowa, Aug. 26, 1920. s. John and Nellie (Coulson) N. Edn.: B.S., Ia. St. Univ., 1943; M.S., Mo. Schl. of Mines and Metallurgy, 1949; Ph.D., Northwestern Univ., 1953. m. Barbara Parcher, June 1946. c.: Randall; David; Laurel Sheryl. Exp.: Assoc. Prof., N. C. St. Coll., 1954-56; Dean, W. Va. Inst. of Tech., 1956-61; Pres., W. Va. Inst. of Tech., 1961—. Mem.: A.S.M.E.; A.S.E.E.; Pi Tau Sigma; Sigma Xi; Sigma Phi Epsilon. Contbr. to: Chem. Engrng.; Jour. of Mech. Engrng. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Thermodynamics and Heat Transfer.

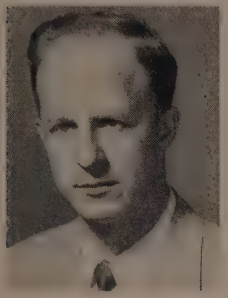


NELSON, Marian Hutchison (Mrs.), Tchr., Chem. and Biol., The Bishop's Schl., La Jolla, Calif. Home Add.: 235 Nautilus, La Jolla, Calif. GENERAL CHEMISTRY IN SECONDARY SCHOOL. b. El Reno, Okla., Dec. 1, 1897. d. Milton Starr and Rose (Payne) Hutchison. Edn.: B.A., Wichita Univ., 1920; M.S., Mont. State Univ., 1954. m. Edwin B. Nelson, July, 1933. Exp.: Tchr., Eng. Jour., Newton H. S., Newton, Kans., 1923-24; Statistician, Fed. Reserve Bank, N.Y.C., 1925-30; Tchr., Chem., Central H. S., Okla. City, Okla., 1931-50; Tchr., Chem. and Biol., Bishop's Schl., La Jolla, Calif., 1954—. Hon. Pos.: Chmn., Reg. Natl. Sci. Tchrs. Assn.; Co-Chmn., 5th Southwest Reg. Conv. A.C.S., 1949. Mem.: Am. Chem. Soc.; AAAS; Natl. Sci. Tchrs. Assn.; Natl. Assn. Biology Tchrs.; Mortar Bd. Contbr. to: A.C.S. Comm. for High School Chemistry Tests. Areas of Rsch.: Ionization potentials; Spectroscopy, Under-water arc.

NELSON, Martin E. (Ph.D.), Chmn. Physics Dept., Univ. of Puget Sound, Tacoma 6, Wash. Home Add.: 305 Regents Blvd., Tacoma 66, Wash. PHYSICS TEACHING, RADIOACTIVITY, COSMIC RAYS. b. Tacoma, Wash., Oct. 21, 1915. s. Ernest V. and Sigrid (Lindstrom) N. Edn.: B.S., Coll. of Puget Sound, 1937; M.S., Univ. of Hawaii, 1939; Ph.D., Ohio State Univ., 1942. m. Mary Ellen Baird, June 4, 1942. c.: Victor; Karen Elizabeth; Marsha. Exp.: Instr., Univ. of Ill., 1942-44; Physicist, Navy Dept., 1944-46; Asst. and Assoc. Prof., Coll. of Puget Sound, 1946-52; Rsch. Engr., Boeing Aircraft Co., 1952-56; Prof. and Chmn. Physics Dept., Univ. of Puget Sound, 1956—. Mem.: Am. Physical Soc.; Am. Assn. of Physics Tchrs.; A.A.A.S.; Sigma Xi; Phi Kappa Phi. Contbr. to: Am. Jour. of Physics; Physical Rev. Areas of Rsch.: Artificial Radioactivity; Cosmic Rays.

NELSON, Russell Andrew (M.D.), Dir., The Johns Hopkins Hosp., Baltimore 5, Md. Home Add.: 100 West Univ. Parkway, Baltimore 10, Md. HOSPITAL ADMINISTRATION. b. Grand Forks, N. Dak., May 13, 1913. s. David Andrew and Hattie M. (Thompson) N. Edn.: A.B., Univ. of Minn., 1933; M.D., The Johns Hopkins Univ. Schl. of Med., 1937. m. Ruth O. Jeffcoat, June 2, 1939. Exp.: Successively Intern, Asst. Res. and Res. in Med., The Johns Hopkins Hosp., Baltimore, Md., 1937-44; Instr. and Asst. Prof., Preventive Med., Johns Hopkins Univ. Schl. of Med., 1940-43; Asst. Prof., Med., ibid., 1943-47; Assoc. Prof., Med., ibid., 1947-52; Adjunct Prof., Publ. Health Admin., ibid., 1952-55; Lecturer, Publ. Health Admin., ibid., 1955-57; Dir. of Med. Clinics, Asst. Dir. of Hosp. and Dir. of Hosp., Johns Hopkins Hosp., Baltimore, Md., 1945—. Hon. Pos.: Pres., Med. Dist. of Columbia-Delta. Hospts. Assn., 1956-57; Pres., Md. Hosp. Assn., 1956; Chmn., Council on Professional Practice of Am. Hosp. Assn., 1956-58; Pres., Am. Hosp. Assn., 1959-60; Bd. of Dirs., Blue-Cross Blue-Shield of Md., 1954—; Chmn. Jt. Comm. Hosp. Accreditation, 1961; Mem., Bd. of Govs., Blue Cross Assn., 1960-62; Mem., Fed. Hosp. Coun., 1962—. Mem.: Am. Hosp. Assn.; Am. Med. Assn.; Am. Coll. of Physicians; A.A.A.S.; Med. and Chirurgical Faculty of the State of Md.; Phi Beta Kappa. Contbr. to: Hosp. and Trustee; Am. Hosp. Assn. Jour.; The Mod. Hosp. Serv. Rec.: U.S.N.R., 1940-46. Areas of Rsch.: Medical Edn., Hosp. Admin.

NELSON, Russell Charles (D.Sc.), Assoc. Prof., Univ. of Nebr., Lincoln, Nebr. Home Add.: 500 Lyncrest Dr., Lincoln, Nebr. METALLURGICAL ENGINEERING. b. Hackensack, N. J., Nov. 3, 1925. s. Nels U. and Grace C. (Lindgren) N. Edn.: B.S., Lehigh Univ., 1948; M.S., Colo. Schl. of Mines, 1949; D.Sc., ibid., 1951. m. Dorothy Jean Prouse, June 1, 1952. c.: Janice Lynn; Jeffrey Scott. Exp.: Tchng. Fellow, Colo. Schl. of Mines, Golden, Colo., 1949-50; Tchng. Fellow, ibid., 1950-51; Mineral Engr., Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1951-53; Hd., Metals Rsch., Sylvania Elect. Prods., Chem. and Metal. Div., Towanda, Pa., 1953-61; Assoc. Prof., Univ. of Nebr., 1961 . . . Hon. Pos.: Past Chmn., Penn-York Sect., Am. Powder Metall. Inst.; Mem., IMD Refract. Metals Comm., AIME. Mem.: Sigma Xi; Am. Inst. of Mining, Metallurgy and Petroleum Engrs.; Am. Soc. for Metals; Inst. of Metals and Powder Metallurgy Joint Grp.; Am. Powder Metall. Inst.; Am. Soc. for Engrng. Edn.; Theta Chi. Contbrng. Author: High Temperature Materials Conference, 1962. Contbr. to: Trans. of Metall. Soc. of AIME; Materials Rsch. and Stands.; Jour. of Metals; Mining World Yearbook; Wire and Wire Prods.; Engrng. and Mining Jour.; Reps. on Govt. Indust. Rsch. Contracts. Serv. Rec.: U. S. Marine Corps, 1944-46. Gen. Int.: Founder of Northeast Pa. Chapter of ASM; Founder of Penn-York Sect. of A.P.M.I. Areas of Rsch.: Refractory Metals; High Temperature Metallurgy; Powder Metallurgy.



NELSON, Stuart Owen (Prof.), Investigations Leader, U. S. Dept. of Agri. and Assoc. Prof. of Agri. Engrng., Univ. of Neb., Lincoln, Neb. Home Add.: 921 Northborough Lane, Lincoln 5, Neb. AGRICULTURAL ENGINEERING, PHYSICS. b. Pilger, Neb., Jan. 23, 1927. s. Irvin A. and Agnes E. (Nissen) N. Edn.: B.S., Univ. of Neb., 1950; M.S., ibid., 1952; M.A., ibid., 1954. m. C. Joye Fricke, Dec., 1953. c.: Richard Lynn; Jana Sue. Exp.: Grad. Asst. Phys., Univ. of Neb., 1952-54; Project Leader, U. S. Dept. of Agri., Lincoln, Neb., 1954-59; Investigations Leader, ibid., 1959—; Rsch. Assoc., Univ. of Neb., 1954-60; Assoc. Prof., ibid., 1960—. Mem.: Am. Soc. of Agri. Engrs.; Am. Assn. for the Adv. of Sci.; Neb. Engrng. Soc.; Sigma Tau; Gamma Sigma Delta; Sigma Xi. Contbr. to: Agri. Engrng.; Transactions of the ASAE; Proc. of AOSA. Serv. Rec.: U.S.N., 1946-48. Areas of Rsch.: Radio-frequency Dielectric Properties of Grains and Seeds, Measurement and Values; Use of Radio-frequency Electric Fields for Stored-grain Insect Control and Seed Treatment to Improve Germination Characteristics.

NEPTUNE, William Everett (Ph.D.), Dean of Liberal Arts, Prof. of Chem., Okla. Baptist Univ., Shawnee, Okla. Home Add.: 4007 N. Aydelotte, Shawnee, Okla. PHYSICAL CHEMISTRY. b. Lawton, Okla., Apr. 28, 1928. s. Everett E. and Mary Louise (Green) N. Edn.: B.S., Okla. Baptist Univ., 1950; M.S., Univ. of Okla., 1952; Ph.D., ibid., 1954. m. Mary Lu Ligon, 1950. c.: Jennifer Anne; Stephanie. Exp.: Asst. Prof., Assoc. Prof., Prof. of Chem., Okla. Bapt. Univ., 1954—; Dean of Liberal Arts, ibid., 1961—. Mem.: A.C.S.; The Chem. Soc. (English); A.A.U.P.; Phi Lambda Upsilon; Sigma Pi Sigma; Phi Eta Sigma; Alpha Chi Sigma; Lions Internatl. Contbr. to: Nuclear Sci. Abstracts; Analytical Chem. Gen. Int.: William Earl Schlueter Rsch. Fellow, Univ. of Okla. Areas of Rsch.: Electrochem., Colloids, Electrochem. of Carbon.

NESBITT, Lyle Edwin (Mr.), Rsch. Chemist, Duval Sulphur & Potash Co., Carlsbad, N. M. Home Add.: 1011 Valverde St., Carlsbad, N. M. PHYSICAL-INORGANIC CHEMISTRY. b. Washington, Ia., Sept. 5, 1929. s. George William and Josephine Agnes (Czerny) N. Edn.: B.S., Univ. of Ia., 1950; M.S., ibid., 1952. m. Rita Adell Brown, June 12, 1955. c.: Laurel Elaine; Lloyd Eric. Exp.: Chemist, Dowell Div., Dow Chemical Co., Tulsa, Okla., 1954-58; Rsch. Chemist, Duval Sulphur & Potash Co., Carlsbad, N. M., 1960—. Mem.: A.C.S.; A.A.A.S.; Alpha Chi Sigma; Kappa Mu Epsilon. Contbr. to: Jour. of Petroleum Engrng. Serv. Rec.: U. S. Army, 1946-47. Areas of Rsch.: Thermodynamics and Surface Chem.

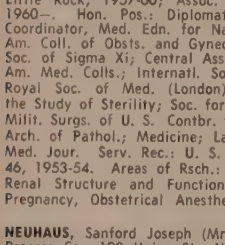
NESBITT, Paul H. (Ph.D.), Dir., Arctic-Desert Tropic Info. Center, Air Univ., Montgomery, Ala. Home Add.: 3123 Wilmington Rd., Montgomery 5, Ala. ANTHROPOLOGY AND GEOGRAPHY. b. Savanna, Ill., Aug. 15, 1904. s. Thos. E. and Estelle (Grayless) N. Edn.: B.A., Beloit Coll., 1926; M.A., Univ. of Chicago, 1928; Ph.D., ibid., 1938. m. Helen Divine, 1954. c.: Thomas R.; James R. Exp.: Prof. Anthropology and Dir. Logan Museum, Beloit Coll., Wis., 1930-45; Dir. Guatemala National Museum, Repub. of Guatemala, C. A., 1946-48; Dir. Arctic-Desert-Tropic Info. Ctr., Air Univ., Montgomery, Ala., 1948—. Mem.: AAAS; A. Anthro. Assn.; Soc. of Am. Arch.; Ala. Acad. of Sci.; Polar Soc.; Beta Theta Pi; Omicron Delta Gamma; Sigma Xi. Author: The Ancient Mimbrenos, 1932; Starkweather Ruin, 1938; The Survival Book, 1960. Contbr. to: Am. Antiquity; Engrng. Review; Am. Anthropologist. Serv. Rec.: USAF, 1943-45. Gen. Int.: Leader, 12 archaeological expeditions to Fr., N. Africa, Mex. and Am. Southwest; Received Distinguished Serv. Citation, Beloit Coll., 1952. Areas of Rsch.: European Archaeology; Am. Archaeology; Ethnography of USSR and S. E. Asia; Human Factors.

NESBITT, Robert E. L., Jr. (M.D.), Prof. and Chmn., Dept. of Obst. and Gynecol., State Univ. of N. Y. Upstate Med. Ctr., Syracuse 10, N. Y. Home Add.: 112 Circle Rd., Syracuse, N. Y. OBSTETRICS AND GYNECOLOGY. b. Albany, Ga., Aug. 21, 1924. s. Robert E. L., Sr. and Anne Louise (Hill) N. Edn.: B.A., Vanderbilt Univ., 1944; M.D., Vanderbilt Med. Schl., 1947. m. Verne Allen Feeback, June 14, 1947. c.: Marcia; Mary Beth. Exp.: Asst. Prof., Obs., Johns Hopkins Med. Schl., 1954-56; Chf. of Obs., Pathol. Lab., ibid., 1955-56; Prof. and Chmn., Dept. of Obs. and Gyn., Albany Med. Coll. of Union Univ., N. Y., 1956-61; Prof. and Chmn., Dept. of Obs. and Gyn., State Univ. of N. Y., Upstate Med Ctr., 1961—. Hon. Pos.: Mem.: State Pub. Hlth. Coun., 1962-66; Diplomat, Am. Bd. of Obs. and Gyn. Mem.: Am. Med. Assn.; FACOG; FACS; SGI; Med. Soc. State of N. Y.; Onondaga Co. Med. Soc.; Fellow, Am. Assn. of Maternal and Child Hlth.; N. Y. Acad. of Scis.; Pan Am. Med. Assn.; Central N. Y. Assn. of Obstetricians and Gynecologists; Onondaga Co. Unit, Am. Cancer Soc. Author: Perinatal Loss in Modern Obstetrics, 1957. Contbrng. Author: Novak and Woodruff: Gynecologic and Obstetric Pathology Medicine. Contbr. to: Am. Jour. of Obs. and Gyn.; Obs. and Gyn.; N. Y. St. Jour. of Med.; Clin. Med.; Acta Cytologica; Obs. and Gyn. Survey; Jour. Am. Med. Assn.; Surg., Gynec. and Obst.; New England Jour. Med.; Clinical Obst. and Gynec.; Bull. Johns Hopkins Hosp.; Rypins' Med. Licensure Examinations. Serv. Rec.: U. S. Army Med. Corp, 1952-54. Gen. Int.: One of Ten Outstanding Young Men in Am., U. S. Jr. C. of C., 1957; One of Five Outstanding Young Men in St. of N. Y., N. Y. State Jr. C. of C., 1957.

NETHERCUT, Philip Edwin (Ph.D.), Exec. Secy., Technical Assn. of the Pulp and Paper Industry, 360 Lexington Ave., N.Y.C. Home Add.: 196 Bell Rd., Scarsdale, N. Y. PULP AND PAPER TECHNOLOGY. b. Indpls., Ind., Apr. 3, 1921. s. William R. and Ruth (Habbe) N. Edn.: B.S., Beloit Coll., 1942; M.S., Lawrence Coll., 1944; Ph.D., ibid., 1949. m. Leah Diehl, 1949. c.: Bruce; Gail; Anne. Exp.: Rsch. Chemist, Watervliet Paper Co., Watervliet, Mich., 1949-50; Rsch. Mgr., Scott Paper Co., Chester, Pa., 1951-56; Exec. Secy., Technical Assn. of the Pulp and Paper Ind., N.Y.C., 1957—. Mem.: Paper Industry Mgmt. Assn.; Canadian Pulp and Paper Assn. Technical Section; British Paper and Board Makers' Assn. Technical Sect.; Verin Der Zellstoff—und Papier—Chemiker und—Ingenieure; Svenska Pappers—Och Cellulosaingeniorsforeningen; Assn. Technique de l'Industrie Papetiere; Asociacion Mexicana de Tecnicos de las Industrias de la Celulosa y del Papel A. C.; Beta Theta Pi; Phi Beta Kappa; Town Club, Scarsdale, N. Y. Contbr. to: Tappi. Serv. Rec.: U.S.N.R., 1944-46.

NETTLES, John Barnwell (M.D.), Assoc. Prof. of Obst. and Gynec., Univ. of Ark. Schl. of Med., 4301 W. Markham St., Little Rock, Ark. Home Add.: 7801 Apache Rd., Little Rock, Ark. OBSTETRICS AND GYNECOLOGY. b. Dover, N. C., May 19, 1922. s. Rev. Stephen A. and Martha Estelle (Hendrix) N. Edn.: B.S., Univ. of S. C., 1941; M.D., Med. Coll. of the State of S. C., 1944. m. Eunice Anita Saugstad, Apr. 28, 1956. c.: Eric Saugstad; Robert C. Exp.: Rotating Intern, Garfield Meml. Hosp., Wash., D. C., 1944-45; Rsch. Fellow in Pathol., Med. Coll. of Ga., Augusta, 1946-47; Res. in Gynec., Univ. of Ill. and Manteno St. Hosp., 1947-48; Res. Staff, Obst. and Gynec., Univ. of Ill. Hosps., Chgo., 1948-51; Instr., Obst. and Gynec., Univ. of Ill. Coll. of Med., 1951-54; Asst. Prof. of Obst. and Gynec., ibid., 1954-57; Asst. Prof. of Obst. and Gynec., Univ. of Ark. Schl. of Med., Little Rock, 1957-60; Assoc. Prof. of Obst. and Gynec., ibid., 1960—. Hon. Pos.: Diplomate, Am. Bd. of Obst. and Gynec. Coordinator, Med. Edn. for Natl. Defense (Ark.). Mem.: Fellow, Am. Coll. of Obsts. and Gynecs.; Fellow, Am. Coll. of Surgeons; Soc. of Sigma Xi; Central Assn. of Obsts. and Gynecs.; Assn. of Am. Med. Colls.; Internatl. Soc. for General Semantics; Affiliate, Royal Soc. of Med. (London); Phi Rho Sigma; Am. Soc. for the Study of Sterility; Soc. for Gynecologic Investigation; Assn. of Milit. Surgs. of U. S. Contbr. to: Am. Jour. of Obsts. and Gynec.; Arch. of Pathol.; Medicine; Lancet; Clin. Obst. and Gynec.; Sou. Med. Jour. Serv. Rec.: U. S. Army, 1943-44, U. S. Navy, 1945-46, 1953-54. Areas of Rsch.: Genital Malignancy, Kidney Biopsy, Renal Structure and Function, Perinatal Mortality, Toxemia of Pregnancy, Obstetrical Anesthesia and Analgesia.

NEUHAUS, Sanford Joseph (Mr.), Managing Partner, The Aurilyte Process Co., 100 Union St., Newark, N. J. Home Add.: 251 So. Harrison St., East Orange, N. J. ELECTRODEPOSITION (Consultation, Development, Production). b. N.Y.C., Apr. 5, 1925. s. Herman K. and Hannah (Pfeiffer) N. Edn.: B.S., M.I.T., 1945. Exp.: Partner, The Aurilyte Process Co., 1942—; Chem. Engr., Kellex Corp., Manhattan Dist. Proj., 1944; Managing Partner, The Aurilyte Process Co., 1955—. Mem.: Am. Chem. Soc.; The Electrochem. Soc.; Am. Electroplaters' Soc.; A.A.A.S.; Tau Beta Pi; Sigma Xi; N. J. C. of C. Areas of Rsch.: Electrodeposition; Corrosion.



NEUMAN, Raymond Vance (Mr.), Chemist, U.S.A. Corps of Engrs., S.P.D. Lab., Sausalito, Calif. Home Add.: 4509 Fran Way, Richmond, Calif. QUALITATIVE AND QUANTITATIVE ANALYTICAL CHEMISTRY. b. Albany, Calif., April 5, 1939. s. Raymond E. and Velda B. (Lancaster) N. Edn.: B.S., Univ. of Pacific, 1961. Exp.: Control Chemist, FMC Corp., Niagara Chem. Div., Richmond, Calif., 1961; Chemist, U.S.A. Corps of Engrs., SPD Lab., Sausalito, Calif., 1961—. Mem.: Am. Chem. Soc.; AAAS; Alpha Chi Sigma. Areas of Rsch.: X-Ray Diffraction and Spectrography.

NEVEU, Darwin David (Mr.), Rsch. Chemist, Freeman Chem. Corp., Port Washington. Home Add.: 1007 N. Van Buren St., Milwaukee 2, Wis. BREWING CHEMISTRY, PROBLEMS, DEVELOPMENTAL RESEARCH, QUALITY CONTROL, INSTRUMENTATION, SPECTROSCOPY, GAS CHROMATOGRAPHY. b. Green Bay, Wis., Feb. 26, 1933. s. Alphonse J. and Florence (Kelley, dec.) N. Edn.: B.S., Wis. St. Coll., 1958. Exp.: Lab. Technician, Larsen Canning Co., Green Bay, Wis., 1952; Lab. Instr., Wis. State Coll., 1953-55; Forensic Chemist, Wis. Dept. of Taxation, Div. of Beverage and Cig. Taxes, Madison, Wis., 1958-60; Brewing Chemist, Jos. Schlitz Brewing Co., Milwaukee, Wis., 1960-62; Rsch. Chemist, Freeman Chem. Corp., 1962—. Hon. Pos.: Pres., Campus Forum, Wis. State Coll., 1954-55. Mem.: A.C.S.; A.A.A.S.; Am. Soc. of Brewing Chemists; Chigo-Milwaukee Brewing Chemists. Serv. Rec.: U. S. Army, 1955-58. Areas of Rsch.: Specialized Knowledge and Experience in the Detection of the Refilling of Liquor Bottles with Brands other than the Labeled Brand; Also Expert in Legal Prosecution of Such Cases; Ultraviolet Stabilization of Polyester Resins.

NEVINNY-STICKEL, Hans B. (M.D.), Clinical Fellow in Med., Mass. Gen. Hosp. and Instr. in Med., Tufts Med. Schl., Boston, Mass. Home Add.: 150 Warren St., Newton Center 59, Mass. INTERNAL MEDICINE; CANCER RESEARCH. b. Innsbruck, Austria, Jan. 12, 1927. s. Prof. Hans and Zweta (Dimitrowa) N. Edn.: M.D., Leopold Franzens Universitat, Innsbruck, Austria, 1951; M.S., Harvard Schl. of Pub. Hlth., Boston, Mass., 1961 m. Dagmar Tirala, 1951. c.: Victoria Irene; Corinne Helene. Exp.: Asst. Pathol. Anat. Inst., Univ. of Innsbruck, Austria, 1951-52; Asst., Med. Clinic, Univ. of Bern, Switzerland, 1953; Asst., Orthop. Clinic, Univ. of Florence, Italy, 1953; Intern, DeGoesbrand Hosp., Burlington, Vt., 1954-55; Resident, Meml. Hosp., Pawtucket, R. I., 1955-56; Resident, Kent Co. Hosp., Warwick, R. I., 1956; Civilian Physician, U. S. Army, 7th Army Hq., Stuttgart, Germany, 1957; Resident, Faulkner and L. Shattuck Hosp., Boston, Mass., 1957-58; Clin. Fellow, Mass. Gen. Hosp., Boston, 1958—; Fellow in Oncol., L. Shattuck Hosp., Boston, Mass., since 1958; Rsch. Fellow in Med., Harvard Med. Schl., Boston, 1958-61; Instr. in Med., Tufts Med. Schl., Boston, Mass., 1961—. Mem.: N. Y. Acad. of Scis.; A.A.A.S. Author: German Translation of Disturbances of Body Fluids, 1956; Storungen des Wasserund Elektrolythaushaltes, 1959. Contbr. to: Zschr. Orthop.; Geburtsh. und Frauenh.; Archivo Putti; Proc. Am. Assn. Cancer Rsch.; Cancer Rsch.; Academic Press; Clin. Rsch.; Cancer Chemotherapy Reports. Gen. Int.: Etiol. and Pathol. of Bone Diseases; Bone Metabolism; Action of Anti-Typertensive Drugs; Radioactive Isotope Uptake in Tumor Diagnosis; Prevention of Hormone-Induced Hypercalcemia with Antimetabolites; Cellular Prognostic Factors. Areas of Rsch.: Cancer Chemotherapy, Clin. Trials; Epidemiology of Cancer.

NEVINS, Beatrice Irene (Ph.D.), Prof. of Biol., Valdosta St. Coll., Valdosta, Ga. BOTANY. b. May 4, 1900, Oshkosh, Wis. d. Charles Veranus and Ethel Adelaide (Copeland) N. Edn.: Diploma, S.T.C., Oshkosh, Wis., 1920; Ph.B., 1925, Ph.M., 1926, Ph.D., 1930, Univ. of Wis. Exp.: Tchr., Primary Grades, Wrightstown, Wis., 1920-21; Tchr., First Grade, Kenosha, Wis., 1921-23; Rsch. Asst. in Bot., Univ. of Wis., 1925-27; Asst. Instr. in Bot., ibid., 1927-30; Assoc. Prof. of Biol., Ga. State Coll. for Women, Milledgeville, Ga., 1930-36; Prof. of Biol., Valdosta State Coll., 1936—. Mem.: A.A.A.S., Fellow; Bot. Soc. of Am.; Ga. Acad. of Sci.; Assn. of Southeastern Biol.; Wis. Acad. of Sci., Arts and Letters; Sigma Xi; Sigma Delta Epsilon; Alpha Chi; A.A.U.P.; Ga. Edn. Assn. Contbr. to: Am. Jour. of Bot.; La Cellule. Ph.D. Dissertation: Cytological Studies on the Antheridia of Spaerocarpos Donnellii. Listed in: A.M.S.; W.W.A.E.; W.W.S. and S.W. Special Int.: Plant Cytology and Plant Morphology.

NEVISON, Thomas Oliver, Jr. (M.D.), Dept. of Aerospace Med. and Bioastronautics, Lovelace Found., Albuquerque, N. Mex. Home Add.: 4432 Avenida Del Sol N.E., Albuquerque, N. Mex. AEROSPACE MEDICINE AND BIOASTRONAUTICS. b. Cleveland, Ohio, April 15, 1929. s. Thomas O. and Agnes Valerie (Sofko) N. Edn.: A.B., Harvard Coll., 1951; M.D., Harvard Med. Schl., 1956; M.I.H., Harvard Schl. of Publ. Health, 1959. m. Nancy Higginson Fordyce, June 9, 1956. c.: Joel; Eric. Exp.: Intern, Univ. of Oregon Med. Schl. Hosps. and Clinics, 1956-57; Physiologist, U.S.A.F. Schl. of Aerospace Med., Brooks AFB, Tex., one year attached to 1960-61 Himalayan Scientific and Mountaineering Expedition, 1959-61; Guggenheim Fellow, Harvard Schl of Publ. Health, 1957-59; Dept. of Aerospace Med. and Bioastronautics, Lovelace Found., Albuquerque, N. Mex., 1960—. Hon. Pos.: Chmn., Med. Comm., Am. Alpine Club. Mem.: A.A.A.S.; Am. Rocket Soc.; Aerospace Med. Assn.; Lancet Club; Delta Omega. Contbr. to: Harvard Publ. Health Alumni Bull.; Harvard Med. Alumni Bull. Serv. Rec.: U.S.A.F. (M.C.), 1959-61. Areas of Rsch.: Medical Instrumentation, High Altitude Physiology and Medicine.

NEVITT, Henry John Barrington (Mr.), Consulting Telecommunications Engr. and Internatl. Mktg. Consultant; associated with The Telesis Company, 14, Commerce St., Newark, N. J., and Intercontinental Scientific and Technical Advice Bureau, Ltd., 234 Eglinton Ave., East, Toronto 12, Can. Mailing Add.: 2 Clarendon Ave., Apt. 207, Toronto 7, Can. TELECOMMUNICATIONS AND ELECTRONICS. b. St. Catherines, Ont., Can., June 1, 1908. s. Robert Barrington and Selma (Melville) N. Edn.: B.A. Sc., Univ. of Toronto, 1934; M.Eng., McGill Univ., 1945; Advanced Mgmt., Univ. of Western Ontario, 1960. m. Constance Johnson, Junt 28, 1941. c.: Richard; Amy. Exp.: Mfrng. Engr., Northern Elec. Co., Montreal, Cana., 1934-39; Equipment Engr., Canadian Pacific Telegraphs and Defence Communications Ltd., Montreal, Canada, 1939-44; Staff Engr., R.C.A. Victor, Montreal and Camden, N. J., 1944-45; Exec. Engr., R.C.A.

Internatl. Div., N. C., 1945-47; Consulting Engr. and Consultant to Mgmt., Telefonaktiebolaget L. M. Ericsson, Stockholm, Sweden and Assoc. Cos. in North and South Am., 1947-60; Independent Consulting, 1960—; Royal Commission on Government Organization, Ottawa, Ontario, 1961. Mem.: Fellow, A.I.E.E. and A.A.A.S.; Sen. Mem.: I.R.E.; Mem.: Engrng. Inst. of Canada, I.E.E. (Gr. Br.), Sigma Xi, Am. Mgmt. Assn. Contbr. to: Electronics; Ericsson Review; A.I.E.E. Technical Papers: Univ. of Western Ontario Business Qtrly. Gen. Int.: Stimulated Development of Long Distance Telecommunications Equipment Designs Particularly Suited to Latin Am.; Initiated First Commercial VHF Multichannel arrier Telephone and Telegraph Services Over Propagation Paths Exceeding 200 Kilometers, Bogota-Medellin, Columbia; First 960 Channel Capacity Coaxial Cable Telephone System in Latin America, Sao Paulo-Santos. Areas of Rsch.: Telecommunication Systems Research and Development, Marketing and Management. General Science.

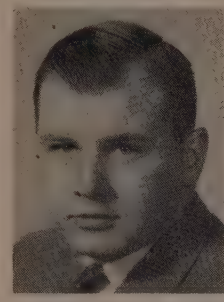
NEWBURN, Ray Leon, Jr. (Mr.), Group Supvr., Jet Propulsion Lab., Pasadena, Calif. Home Add.: 4419 Lowell Ave., La Crescenta, Cailf. ASTRONOMY OF THE SOLAR SYSTEM. b. Rock Island, Ill., Jan. 9, 1933. s. Ray L. and Gertrude G. (Nelson) N. Edn.: B.S., Calif. Inst. of Tech., 1954; M.S., ibid., 1955. Exp.: Scientist, Jet Propulsion Lab., Pasadena, Calif., 1956-60; Sr. Scientist, ibid., 1960—; Group Supvr., ibid., 1962—. Mem.: Am. Astronomical Soc.; Am. Geophysical Union; Am. Optical Soc.; Astron. Soc. of the Pacific; Sigma Xi; Am. Assn. for the Adv. of Sci. Contbrng. Author: Advances in Space Science, Vol. III, 1961. Contbr. to: Astron. Jour.; Astrophysical Jour.; Publications of the Astron. Soc. of the Pacific. Areas of Rsch.: Astronomy of the Solar System; Design of Space Probe Expts.

NEWCOMB, William W., Jr. (Ph.D.), Dir., Tex. Mem. Mus., 24th and Trinity, Austin 5, Tex. Home Add.: 2609 Albata, Austin 5, Tex. ANTHROPOLOGY, AMERICAN INDIAN ETHNOLOGY AND ETHNOHISTORY. b. Detroit, Mich., Oct. 30, 1921. s. William W. and Esther (Matthews) N. Edn.: A.B., Univ. of Mich., 1943; M.A., ibid., 1947; Ph.D., ibid., 1953. m. Glendora Thielan, Aug. 24, 1946. c.: Mary Elaine. Exp.: Instr., Univ. of Tex., 1947-50 and 1951-52; Asst. Prof., Colgate Univ., 1953-54; Dir., Tex. Mem. Mus., Austin, Tex., 1957—. Mem.: Fellow, Am. Anthropol. Assn.; Cent. States Anthro. Soc.; Tex. Archeol. Soc.; Sigma Xi. Author: The Indians of Texas—From Prehistoric to Modern Times, 1961. Contbr. to: Am. Anthropol.; S.W. Jour. of Anthro.; Tex. Jour. of Sci.; Bull. Tex. Archeol. Soc. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Texas Inst. of Letters Award for most informative and useful book in field of gen. knowledge, 1961, $500 prize. Areas of Rsch.: Texas Indians; Delaware Indian Culture and Acculturation.

NEWELL, Homer Edward (Ph.D.), Dir., Office of Space Scis., Natl. Aeronautics and Space Admin., Washington 25, D. C. Home Add.: 4401 Westbrook Lane, Kensington, Md. SPACE SCIENCE. b. Holyoke, Mass., Mar. 11, 1915. s. Homer Edward and Annie Abigail (Davis) N. Edn.: A.B., Harvard Univ., 1936; AMT, Harvard Grad. Schl., 1937; Ph.D., Univ. of Wis., 1940. m. Janice May Hurd, Feb. 12, 1938. c.: Judith Deborah; Sue Ellen; Jennifer Dianne; Andrew David. Exp.: Grad. Asst. and Fellow in Math., Univ. of Wis., 1937-40; Instr., Asst. Prof. Math., Univ. of Md., 1940-44; Lecturer in Math., ibid., 1951-58; Lectr., Astron., Natl. Park Coll., 1942; Ground Instr., Navigation and C.A.R., C.A.A., 1942-43; Spec. Asst., Sect. Hd., Branch Hd., Acting. Supt., Atmosphere and Astrophysics Div., Naval Rsch. Lab., 1944-58, also Sci. Prog. Coordinator for Project Vanguard, at Naval Rsch. Lab., 1956-58; Asst. Dir., Space Scis., NASA, 1958-60; Deputy Dir., Space Flight Progs., ibid., 1961; Dir., Office of Space Scis., ibid., Washington, D. C., 1961—. Hon. Pos.: Mem. Bd. of Editors, Space Science Reviews and Monograph Bd. of AGU. Mem.: A.A.A.S., Fellow; Am. Astron. Soc., Fellow; Am. Rocket Soc.; Am. Geoph. Union; Res. Soc. of Am.; Phi Beta Kappa; Sigma Xi. Author: High Altitude Rocket Research, 1953; Vector Analysis, 1955; Space Book for Young People, 1958; Guide to Rockets, Missiles and Satellites, 1958; Sounding Rockets, 1959; Window in the Sky, 1959; Express to the Stars, 1961. Contbr. to: Duke Math. Jour.; Rev. of Scientific Instr.; Compedium of Meteorol.; Annales de Geophysique; Jour. of Geophy. Rsch.; Science; Bull. of the Atomic Scientists. Areas of Rsch.: Mathematical Analysis; Upper Atmosphere Physics; Space Sci.

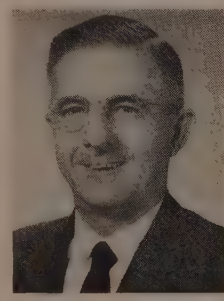
NEWELL, Irwin Mayer (Ph.D.), Prof. of Zool. and Chmn., Div. of Life Scis., Univ. of Calif., Riverside, Calif. Home Add.: 4477 Picacho Dr., Riverside, Calif. ACAROLOGY. b. Coeur d'Alene, Idaho, Sept. 15, 1916. s. Chellapha G. and Margaret (Gehring) N. Edn.: B.S., Washington St. Univ., 1939; M.S., ibid., 1941; M.S., Yale Univ., 1942; Ph.D., ibid., 1945. m. Fern Hope Watson, May 31, 1961. c.: Diana Louise; Kermit Irwin. Exp.: Instr., Univ. of Ore., 1946-47; Asst. Prof., ibid., 1947-48; Assoc. Entomologist, ibid., 1948-52; Entomologist, Univ. of Hawaii, 1952-53; Assoc. Prof., Univ. of Calif., 1954-60; Prof., ibid., 1960—. Hon. Pos.: Chmn., Div. of Life Scis., Univ. of Calif., 1961—. Mem.: A.A.A.S.; Soc. Systematic Zool.; Entomological Soc. of Am.; Am. Microsc. Soc.; Arctic Inst. of N. Am.; Hawaiian Entomological Soc.; Southern Calif. Acad. of Sci.; Phi Kappa Phi; Phi Beta Kappa; Sigma Xi. Contbr. to: Acarologia; Transactions of the Am. Microscopical Soc.; Annals of the Entomological Soc. of Am.; Pacific Sci.; Proceedings of the Hawaiian Entomological Soc.; Annals and Magazine of Natural Hist. Gen. Int.: Fulbright Rsch. Fellow, Univ. Coll. of Rhodesia and Nyasaland, Salisbury, Southern Rhodesia, 1960-61. Areas of Rsch.: Biol. and Classification of Mites.

NEWKIRK, Gordon Allen, Jr. (Ph.D.), Prof.-Adj., Univ. of Colo.; Sr. Staff, High Alt. Obs., Boulder, Colo. Home Add.: Sunshine Canyon, Boulder, Colo. ASTROPHYSICS. b. Orange, N. J., June 12, 1928. s. Gordon A. and Mildred (Fleming) N. Edn.: A.B., Harvard Univ., 1950; M.A., Univ. of Mich., 1952; Ph.D., ibid., 1953. m. Nancy Buck, Apr. 12, 1956. c.: Sally; Linda; Jennifer. Exp.: Sr. Staff, High Alt. Obs., Boulder, Coll., 1955—; Prof.-Adj., Univ. of Colo., 1961—. Mem.: Am. Astron. Soc.; Internatl. Astron. Union; Internat. Sci. Rad. Union; A.A.A.S.; Am. Geophys. Union; Sigma Xi; Rsch. Soc. of Am. Contbr. to: Astrophys. Jour.; Pub. Astron. Soc. of Pac.; Planetary and Sp. Sci.; Jour. of Opt. Soc. of Am.; Nature. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Solar Physics; Scattering of Light by Small Particles; Balloon Astronomy.

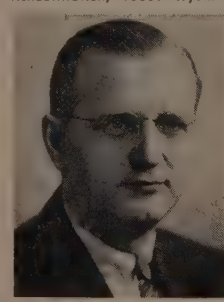


NEWLIN, Delmas Burton (Mr.), Geodesist, U. S. Coast and Geodetic Survey, Washington 25, D. C. Home Add.: 4411 20th Rd., North, Arlington 7, Va. LOCATION OF EARTH SETTLEMENT AREAS AND PLANNING AND INSTRUCTIONS OF FIELD LEVEL PARTIES. b. Graham, N. C., Jan. 20, 1907. s. David Hadley and Mary Elizabeth (Thompson) N. Edn.: B.S., Guilford Coll., 1930. m. Hyden Elizabeth Beale, Apr. 16, 1938. c.: Delmas Burton, Jr. Exp.: Jr. Mathematician, Coast and Geodetic Survey, Washington, D. C., 1935-39; Asst. Mathematician, ibid., 1939-47; Mathematician, ibid., 1947-57; Geodesist, ibid., 1957—. Mem.: Am. Geophysical Union; Am. Congress on Surveying and Mapping; The Soc. of Am. Milit. Engr. Areas of Rsch.: Earth Settlement in the U. S.

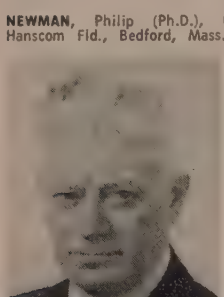
NEWMAN, Marcel K. (Ph.D.), Prof. and Consult., Univ. of Tenn., Grad. Schl., AEDC Br., Arnold Engrng. Devel. Ctr., Arnold Air Force Stan., Tenn. Home Add.: Country Club Dr., Route 2, Tullahoma, Tenn. MECHANICS, APPLIED PHYSICS, NUCLEAR ENGINEERING, DYNAMICS. b. Frankfurt, Germany, Apr. 29, 1903. s. Mscislav Kuklinski and Henny (Melmer) N. Edn.: B.S. in M.E., Univ. of Ky., 1930; M.S., M.E., Univ. of Pgh., 1934; Ph.D., Columbia Univ., 1950. m. Mia K. Ervens, May 11, 1932. c.: Elizabeth Mary Obara. Exp.: Rsch. Engr., Westinghouse Rsch. Lab., Pgh., Pa., 1930-34; Devel. Engr., Gulf Devel. Corp., Pgh., Pa., 1934-36; Instr., Mech. and Phys., Columbia Univ., N. Y., 1936-44; Rsch. Engr., Walter Kidde, Inc., Belleville, N. J., 1944-45; Assoc. Prof., M. E., Syracuse Univ., Syracuse, N. Y., 1945-47; Assoc. Prof., Mech., Univ. of Buffalo, Buffalo, N. Y., 1947-50; Prof. and Hd., M. E. and Dir. of Nuclear Engrng., Univ. of Notre Dame, Notre Dame, Ind., 1950-61; Prof. and Consult., Univ. of Tenn., 1961—. Hon. Pos.: Chmn., Comm., ASME Heat Transfer Div., 1957-60; Engr. of the Year St. Joseph Sect., ASME, 1961; Ad hoc Comm., ECPD. Mem.: Am. Soc. of Mech. Engrs.; Am. Phys. Soc.; Am. Rocket Soc.; Am. Nuclear Soc.; Am. Soc. for Engrng. Edn.; Am. Soc. Profl. Engrs.; Sigma Xi; Country Club, Tullahoma, Tenn. Contbr. to: Gen. Radio Exptr.; Am. Jour. of Phys.; Jour. of the Astronaut. Scis.; Jour. of Appl. Mechs. Areas of Rsch.: Applied Mechanics, Vibrations, Nuclear Propulsion.



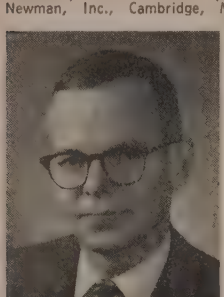
NEWMAN, Max Karl (M.D.), Dir., Detroit Inst. Phys. Med. and Rehabilitation, 16861 Wyoming, Detroit 21, Mich. Home Add.: 19171 Woodston Rd., Detroit 3, Mich. PHYSICAL MEDICINE AND REHABILITATION. b. Malden, Mass., Jan. 19, 1909. s. Samuel Paul and Celia (Korn) N. Edn.: A.B., Univ. of Mich., 1930; M.D., ibid., 1934. m. Sophia Rosenzweig, 1932. c.: Martin; Phyllis; Steven; Donald; Geoffrey. Exp.: Asst. Clin. Prof., Phys. Med. and Rehab., Wayne Sta. Univ., Detroit, Mich., 1962; Med. Dir., Dept. of Phys. Med. and Rehabilit., Detroit Mem. Hosp. and Sinai Hosp. of Detroit, Mich.; Lectr., Inst. of Continuing Legal Edn., Univ. of Mich., Ann Arbor, Mich.; Dir., Detroit Inst. Phys. Med. and Rehab., 1962—. Hon. Pos.: Past Pres., Mich. Acad. of Phys. Med. and Rehab.; Past Secy., Treas., Am. Acad. of Phys. Med. and Rehab.; Pres., Elect., Am. Acad. of Phys. Med. and Rehab.; Vice Pres., Am. Acad. of Law Sci. Mem.: Am. Acad. of Phys. Med. and Rehabitn.; Am. Congress of Phys. Med. and Rehab.; Am. Geriats. Soc.; Assn. of Milit. Surg. and Physns.; Am. Acad. of Cerebral Palsy; Am.



Acad. of Law-Sci.; Am. Acad. of Neurol.; Alpha Omega Alpha; Phi Kappa Phi; Phi Beta Kappa; Am Coll. of Physns. Gen. Int.: Electromyographic Diagnostic Methods in Rheumatoid Arthritis, Ultrasound and Neurofibromatosis, Rehabilitation of the Chronic Arthritic Hand, Prognosis in Muscular Dystrophy, Physical Medicine and Rehabilitation, its Use in Law-Science. Areas of Rsch.: Research in Muscle Disease, as well as in the Causation of Pain.



NEWMAN, Philip (Ph.D.), Chief, Propagation Lab., AFCRL, Hanscom Fld., Bedford, Mass. Home Add.: RFD #1, Concord, Mass. RADIO PROPAGATION. b. N. Y. City, June 23, 1904. s. Abraham and Sarah (Frumein) N. Edn.: B.S., City Coll. of N. Y., 1924; M.A., Columbia Univ., 1925; Ph.D., ibid., 1940. m. Elsa Serra, Aug., 1941. c.: Anna. Exp.: Instr., City Coll., N. Y. City., 1925-43; Chief, Prop. Lab., AFCRL, Hanscom Fld., 1945—. Hon. Pos.: Chmn., Ionespheric Rsch. Comm. of AGARD, NATO; Chmn., PGAP, IRE, 1956; Chmn., AFCRL Chapter of RESA, 1962. Mem.: Phys. Soc.; Am. Assn. for the Adv. of Sci.; IRE; Phi Beta Kappa. Author: Geometry of Planar Connex, 1942. Contbr. to: Jour. Geophys. Rsch.; Bull. of Am. Soc. Areas of Rsch.: Radio Propagation; Effects of Nuclear Detonations.



NEWMAN, Robert Bradford (Mr.), Vice-Pres., Bolt Beranek and Newman, Inc., Cambridge, Mass.; Assoc. Prof., Architecture, M.I.T., Cambridge, Mass.; Visit. Lectr. on Acoustics, Harvard Univ. and Yale Univ. Home Add.: 17 Moon Hill Rd., Lexington 73, Mass. ARCHITECTURAL ACOUSTICS. b. Ungkung, Kwangtung, China, Nov. 5, 1917. s. Henry Ware and Ethel (Smith) N. Edn.: B.A., Univ. of Tex., 1938; M.A., ibid., 1939; M.Arch., M.I.T., 1949. m. 2nd wife, Mary Shaw, June 4, 1955. c.: (by prev. marriage), Catherine; Henry; Bradford. Exp.: Rsch. Engr., RCA, Camden, N. J., 1941; Special Rsch. Assoc., Electroacoustic Lab., Harvard Univ., 1941-43; Hd., Audio Div., Aero Radio and Radar Lab., NAES, Phila., 1943-45; Tchng. Asst., M.I.T., 1947-49; Instr., ibid., 1949-50; Asst. Prof., ibid., 1950-56; Assoc. Prof., ibid., 1956—; Partner, Bolt Beranek and Newman, 1950-54; Vice-Pres., ibid., 1954—; Visiting Prof. (Fulbright Senior Scholar), Royal Danish Acad. of Fine Arts, 1959. Hon. Pos.: Past Chmn., Comm. on Architectural Acoustics, Acoustical Soc. of Am. (Fellow); Bd. of Govs., Bldg. Rsch. Inst., Natl. Rsch. Coun., 1957-60; Hon. Mem., Instituto Brasileiro de Acustica, 1958; Phi Beta Kappa. Contbr. to: Jour. of Acoustical Soc. of Am.; Architectural Forum; Architectural Record; Progressive Architecture; Encycl. Britannica. Areas of Rsch.: Auditoriums, Concert Halls and other spaces where hearing conditions are important.

NEWMAN, Stanley Ray (Ph.D.), Group Leader, Texaco Rsch. Ctr., P.O. Box 509, Beacon, N. Y. Home Add.: Virginia Ave., Fishkill, N. Y. ORGANIC CHEMISTRY. b. Milo, Idaho, Mar. 5, 1923. s. Franklin Hughes and Ethel Amelda (Crowley) N. Edn.: B.S., Univ. of Utah, 1947; Ph.D., ibid., 1952. m. Rosa Klein, May 27, 1961. Exp.: Tchng. Fellow, Univ. of Utah, 1946-52; Chemist, Texaco Rsch. Center, Beacon, N. Y., 1951-59; Rsch. Chemist, ibid., 1959-61; Group Leader, ibid., 1961—. Mem.: Am. Chem. Soc.; Petroleum Div. Am. Chem. Soc.; Rsch. Soc. of Am.; A.A.A.S.; Alpha Chi Sigma; Sigma Xi; Dutchess Boat Club. Contbr. to: Jour. of Organic Chem.; S.A.E. Jour. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Natural Products, Organic Carbonates, Chem. of Organic Phosphorus Compounds, Lead Appreciators, Tertiary Esters of Organic Acids, Organic Synthesis, Fuel Additive Rsch. and Development; Effect of Surface Active Agents on Crystallization of Organic Compounds.

NEWTON, Abba Verbeck (Ph.D.), Prof. of Math., Vassar Coll., Poughkeepsie, N. Y., Home Add.: 151 College Ave., Poughkeepsie, N. Y. MATHEMATICS. b. Ballston Spa, N. Y., Feb. 19, 1908. d. Samuel Smith and Sarah Clark (Verbeck) N. Edn.: A.B., Mt. Holyoke Coll., 1929; M.A., Univ. of Chicago, 1931; Ph.D., ibid., 1933. Exp.: Tchr., Sci. Hill Schl., Shelbyville, Ky., 1929-30; Instr., Am. Internat. Coll., 1934-38; Prof., Hartwick Coll., 1938-43; Asst. Prof., Smith Coll., 1943-44; Asst. Prof., Assoc. Prof., Vassar Coll., 1944-57; Prof., ibid., 1957—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Am. Assn. Univ. Profs.; Phi Beta Kappa; Sigma Xi; Dutchess Co. Coun. on World Affairs; Adirondack Mt. Club. Contbr. to: Trans. Am. Math. Soc. Gen. Int.: Att. inst. Henri Poincare, Sorbonne, Paris, 1951; Natl. Sci. Found. Fellowship, Univ. of Mich., 1958-59.

NEWTON, Robert Park, Jr. (Mr.), Pres., App. Engrng. Co., Orangeburg, S. C. Home Add.: 1120 Moss Ave., Orangeburg, S. C. CHEMICAL AND MECHANICAL ENGINEERING; FLUID FLOW; HEAT TRANSFER; HEAT RECLAMATION. b. Jackson, Ga., Oct. 25, 1913. s. Robert Park, Sr. and Emily (Powell) N. Edn.: B.S., Ch.E., Ga. Schl. of Tech., 1935. m. Elizabeth Edwards, Aug. 23, 1936. c.: Nancy Elizabeth; Robert Park, III; William Aris. Exp.: Rsch. Chemist, Swann and Co., Birmingham, Ala., 1936-40; Vice Pres., Wannamaker Chem. Co., Orangeburg, S. C., 1941-45; Pres. and Treas., App. Engrng. Co., 1945—. Mem.: Am. Chem. Soc.; Phi Delta Theta; Tau Beta Pi; Alpha Chi Sigma; Rotary Club. Areas of Rsch.: Design and Construction of Specialized Plants; Waste Heat Reclamation Systems; Stand-by Gas Plants; General Thermal Efficiency Systems.

NICHOLAKAKOS, Peter (Mr.), Technical Sales Representative, Evans Chemetics, Inc., 250 E. 43 St., New York 17, N. Y. Home Add.: 6413 18 Ave., Brooklyn 4, N. Y. PHYSICAL CHEMISTRY, NON-ELECTROLYTIC METHODS OF PLATING. b. New York, N. Y., June 13, 1932. s. James and Katy (Papadakos) N. Edn.: B.S., Polytechnic Inst. of Brooklyn, 1953; M.A., Brooklyn Coll., 1959. Exp.: Sr. Rsch. Chemist, Evans Rsch. and Develop. Corp., New York, N. Y., 1958-61; Tech. Sales Representative, Evans Chemics, Inc., ibid., 1961—. Mem.: A.C.S.; A.A.A.S.; Am. Ordnance Assn.; Sigma Xi. Serv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Non-Electrolytic Methods of Plating; Solid State Reactions and Solid-Vapor Reaction; Properties of Amalgams.

NICHOLAS, James A. (M.D.), Orthopedic Surgeon, 150 E. 77th St., N. Y., N. Y. Home Add.: 12 Salem Dr., Murdock Woods, Scarsdale, N. Y. ORTHOPEDICS. b. Portsmouth, Va., Apr. 15, 1921. s. Harry and Julia (Diamond) N. Edn.: B.A., N. Y. Univ., 1942; M.D., Long Island Coll. of Med., 1945. m. Kiki Chris, June 14, 1952. c.: Philip Duncan; Stephen James; Nicole. Exp.: Instr. of Surg., Orthopedics, Cornell Univ. Med. Coll., 1953-58; Asst. Prof., ibid., 1958—; Assoc. Attending Orthop. Surg., N. Y. Hosp., 1954-58; Asst. Orthop. Surg., Hosp. for Special Surg., ibid., 1955—; Assoc. Attending Orthop. Surg., Lenox Hill Hosp., N. Y., 1953—. Mem.: A.M.A.; Am. Coll. of Surgeons; Am. Acad. of Orthop. Surg.; Orthop. Rsch. Soc.; A.A.A.S.; N. Y. Acad. of Med.; N. Y. Acad. of Sci.; Orthop. Rsch. and Edn. Fdtn.; Hellenic Univ. Club; etc. Contbrng. Author: Treatment of Fractures, 1960. Contbr. to: Jour. of Bone and Joint Surg.; Surg.; Gynecol. and Obstetrics; Jour. Am. Med. Assn.; Jour. of Pediatrics; N. Y. State Jour. of Med.; Jour. of Clin. Investigation; Modern Med. Serv. Rec.: U. S. Army Med. Corps, 1942-45; 1951. Gen. Int.: Recd. Cert. of Merit, A.M.A., 1959. Areas of Rsch.: Metabolic Bone Disease, Orthopedic Surgery; Metabolic Aspects of Trauma.

NICHOLS, Nathaniel Burgess (Mr.), Vice-Pres. and Chf. Engr., Taylor Instr. Cos., 95 Ames St., Rochester, N. Y. Home Add.: 20 East Blvd., Rochester 10, N.Y. SERVOMECHANISMS AND AUTOMATIC CONTROL. b. Nottawa Township, Mich., Dec. 31, 1914. s. Samuel O. and Florence Edna (Burgess) N. Edn.: B.S., Cent. Mich. Univ., 1936; M.S., Univ. of Mich., 1937. m. Catherine M. Burkhardt, July 1, 1938. c.: Paul; Gail. Exp.: Physicist, Radiation Lab., M.I.T., Staff Mem. and Group Ldr., Radiation Lab., M.I.T., Cambridge, Mass., 1942-46; Dir. of Rsch., Taylor Instr. Cos., Rochester, N. Y., 1946-50; Prof. of E.E., Univ. of Minn., 1950-51; Mgr. Rsch. Div., Raytheon Mfg. Co., Waltham, Mass., 1951-55; Asst. Vice-Pres., ibid., 1954-57; Mgr., Commercial Engrng. Div., ibid., 1955-57; Chf. Engr., Taylor Instr. Cos., Rochester, N. Y., 1957—; Vice-Pres. and Chf. Engr., ibid., 1957—. Mem.: Am. Physical Soc.; Am. Chem. Soc.; A.A.A.S.; Am. Soc. Mech. Engrs.; Am. Inst. of Elec. Engrs.; Inst. of Radio Engrs.; Sigma Xi; Rochester C. of C. Co-author: Theory of Servomechanisms, 1947. Contbr. to: Trans. of the A.S.M.E.; A.I.E.E. Trans.; Instrument Soc. of Am. Jour.; Chem. Engrng. Progress; Trans. of the Electrochemical Soc.; Sci.

NICHOLSON, Douglas G. (Ph.D.), Prof. and Chmn., Chem. Dept., East Tenn. State Coll., Johnson City, Tenn. Home Add.: 2200 Greenwood Dr., Johnson City, Tenn. INORGANIC CHEMISTRY—TITANIUM COMPOUNDS. b. Joliet, Ill., Dec. 29, 1908. s. John M. and Elizabeth (Lindsay) N. Edn.: B.S., Univ. of Ill., 1930; M.S., ibid., 1931; Ph.D., ibid., 1934. m. Helen Gurney, Sept. 17, 1932. c.: Donald D.; Beatrice Elizabeth. Exp.: Asst., Chem., Univ. of Ill., 1931-34; Rsch. Chem., E. I. duPont deNemours & Co., 1934-35; Instr., Assoc. Chem., Univ. of Ill., 1935-42; Assoc. Prof., Chem., Univ. of Pittsburgh, 1945-49; Dir., Edn. Serv., Fisher Sci. Co., Pittsburgh, Pa., 1949-53; Prof., Chem., E. Tenn. State Coll., 1953—. Hon. Pos.: Past Chmn., Natl. Div. Chem. Edn. of Am. Chem. Soc.; Past Chmn., Pittsburgh Div. Chem. Edn. Mem.: Phi Beta Kappa; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Phi Kappa Phi; Am. Chem. Soc. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Edn. War Rec.: U. S. Army, 1942-

5. Areas of Rsch.: Titanium tetrachloride—its reactions—purification and its compounds.

NICHOLSON, Isadore (Ph.D.), Assoc. Prof., Long Island Univ., Brooklyn 1, N. Y. Home Add.: 95 Eastern Parkway, Brooklyn 38, N. Y. ORGANIC CHEMISTRY.

b. Philadelphia, Pa., Apr. 28, 1925. s. Morris and Sadie (Palmer) N. Edn.: B.A., Temple Univ., 1949; Ph.D., Rutgers Univ., 1954. Exp.: Post-Doc. Rsch. Asst., Univ. of Mich., 1955; Post-Doc. Rsch. Fellow, Univ. of Minn., 1956; Sr. Rsch. Chem., U. S. Rubber Co., Naugatuck, Conn., 1956-58; Sr. Rsch. Spec., ibid., Wayne, N. J., 1958-59; Asst. Prof., Long Island Univ., 1959-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Predoc. DuPont Rsch. Fellow, Rutgers Univ., 1953. Mem.: Am. Chem. Soc.; Eng. Chem. Soc.; N. Y. Acad. Sci.; Sigma Xi; Phi Lambda Upsilon; Gamma Alpha. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem. Serv. Rec.: J. S. Army, 1943-46. Areas of Rsch.: Organic Photochemistry; Chemiluminescence; Organic Synthetic Methods.

NICHOLSON, Patrick James (Ph.D.), Vice-Pres., Univ. of Houston, Houston 4, Tex. Home Add.: 27 East Rivercrest Dr., Houston 42, Tex. PSYCHOLOGY. b. Houston, Tex., Nov. 28, 1920. s. John Joseph and Mary Ellen (Brennan) N. Edn.: B.A., The Rice Inst., 1942; I.A., Harvard Univ., 1943; M.B.A., ibid., 1946; Ph.D., Univ. of Houston, 1959. m. Anne Stevenson, Dec. 26, 1951. Exp.: Personnel Asst., Freeport Sulphur Co., New Orleans, La., 1946-47; Consult. with Public Relations Firms, Houston, Tex., 1947-56; Lectr. in Management, Univ. of Houston, 1951-56; Exec. Dir. of Develop., ibid., 1956; Asst. to the Pres., ibid., 1957; Vice-Pres., Univ. Develop., ibid., 1957—. Hon. Pos.: Treas., Develop. Sect., Am. Coll. Pub. Relations Assn.; Dir., Eyes of Tex. Sight Fdtn., Inc.; Tex. Law Enforcement Fdtn.

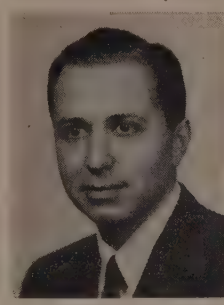
Mem.: Am. Psychol. Assn.; Acad. of Mgmt.; Am. Coll. Pub. Relations Assn.; Tex. Psychol. Assn.; Pub. Relations Soc. of Am.; A.A.A.S. Contbr. to: Pub. Relations Jour.; Coll. and Univ. Jour.; Pride. Serv. Rec.: U. S. Army, 1943-46; Major, U. S. Army Reserve, 1946—. Areas of Rsch.: Creativity, Mass Communications, Motivation.

NICIU, Iliana (Miss), Science Tchr., Belleville and Henderson Central Schls., Belleville, N. Y. Home Add.: Osceola, N. Y. EDUCATION. b. Osceola, N. Y., May 5, 1930. d. Andron and Elena (Anghelache) N. Edn.: B.A., N. Y. State Coll. for Tchrs. at Albany, 1952; M.A., ibid., 1953. Exp.: Sci. Tchr., Belleville and Henderson Central Schls., Belleville and Henderson, N. Y., 1959—. Mem.: A.A.A.S.; Natl. Assn. of Biol. Tchrs.; Natl. Sci. Tchrs. Assn.; Natl. Aerospace Edn. Coun.; N. Y. St. Tchrs. Assn.; Am. Mus. of Nat. Hist.; Natl. Geographic Soc.; Sci. Tchrs. Assn. of N. Y. State; N.E.A. Areas of Rsch.: Biology and Science Education.

NICKLIN, George Leslie, Jr. (M.D.), Psychiatrist, 1171 Bernard Dr., Westbury, L. I., N. Y. Home Add.: 1171 Bernard Dr., Westbury, L. I., N. Y. PSYCHIATRY.

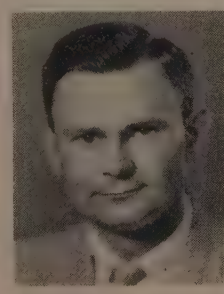
b. Franklin, Pa., July 1925. s. George Leslie and Emma Arlene (Reed) N. Edn.: B.A., Haverford Coll., 1949; M.D., Columbia Univ., 1951; Grad. in Psychoanalysis, William A. White Inst., New York, 1962. m. Katherine M. Aronson, Sept. 30, 1950. c.: Emily Ann; David Evan; Jane Elizabeth. Exp.: Internship, Bassett Hosp., Cooperstown, N. Y., 1951-53; Asst. Resident, Resident, and Chf. Resident in Psychiatry, Bellevue Hosp., N. Y., 1953-56; Clinical Asst. in Psychiatry, N. Y. Univ., 1956-58; Clinical Instr. in Psychiatry, N. Y. Univ., 1958-61; Asst. Clin. Prof. in Psychiatry, ibid., 1962—; Psychiatrist, Westbury, L. I., N. Y., 1958-62. Hon. Pos.: Asst. Visiting Neuropsychiatrist, Bellevue Hospital, N. Y. Mem.: Am. Psychiatric Assn.; Am. Med. Assn.; Am. Assn. Adv. of Sci.; William A. White Inst. in Psychiatry; N.A.A.C.P.; Acad. of Psychoanalysis. Contbr. Author: Recent Advances in Biological Psychiatry, 1960. Contbr. to: Jour. of the Am. Psychiat. Assn.; The Psychiat. Qtrly. Supplement. Serv. Rec.: U.S.A. Med. Corps. Areas of Rsch.: Cross Transfusion in Schizophrenia; Open Door Policy in Psychiatric Hosp.; Patterns of Adolescent Mental Illness; Teaching and Training of Psychiatric Residents.

NIEBERG, Lewis Gordon (M.S.D.), Orthodontist Professional Bldg., 280 Mamaroneck Ave., White Plains, N. Y. Home Add.: 9 Oriole Pl., Town of Rye, Port Chester, N. Y. DENTISTRY, ORTHODONTICS. b. New York, N. Y., May 23, 1928. s. Henry Cyrus and Fay (Rosenberg) N. Edn.: A.B., Univ. Coll., N. Y. Univ., 1950; D.D.S., N. Y. Univ., 1957; M.S.D., Univ. of Kans. City, 1959. m. Joan Suzanne Sittenberg, April 12, 1952. c.: Elise Mindy. Exp.: Private Practice Orthodontics, Associated with Dr. Robert H. Alexander, White Plains, N. Y., 1959—. Hon. Pos.: Chmn., Children's Dental Health Week, White Plains; Chmn., Alpha Omega Sci. Seminar, Westchester; Secy.-Treas., Westchester Unit, N. Y. State Soc. Dent. for Children; Clinician; Am. Assn. of Ortho. Mem.: N.E. Soc. of Ortho.; N. Y. State Soc. Dent. for Children; A.A.A.S.; Am. Assn. of Orthodontists; Am. Dental Assn.; Northeastern Soc. of Orthodontists; N. Y. State and Ninth Dist. Dental Socs.; Westchester Acad. Med.; N. Y. State Soc. Dent. for Children; Alpha Omega; Pi Lambda Phi. Author: An Electromyographic and Cephalometric Radiographic Investigation of the Oro-Facial Muscular Complex, 1959. Contbr. to: Am. Jour. of Orthodontics. Serv. Rec.: 2nd to 1st Lt., U.S.A.F., 1951-53. Gen. Int.: Recipient Milo Hellman Rsch. Award, 1960. Areas of Rsch.: Orthodontics, Electromyography, Cephalometrics, Tongue Habits.



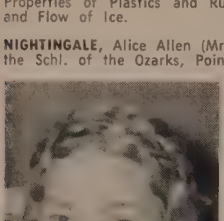
NIELSEN, Harald Herborg (Dr.), Prof. and Chmn., Dept. of Physics and Astronomy, Ohio State Univ., Columbus, Ohio. Home Add.: 199 Rustic Place, Columbus 14, Ohio. INFARED SPECTROSCOPY AND MOLECULAR STRUCTURE. b. Menominee, Mich., Jan. 25, 903. s. Knud and Maren (Nielsen) N. Edn.: B.S., Univ. Mich., 1926; M.A., ibid., 1927; Ph.D., 1929. m. Martha Ann Evans, Spt. 19, 1943. c.: Peter Herborg. Exp.: Instr., Ohio State Univ., 1930-33; Asst. Prof., Physics, ibid., 1933-36; Assoc. Prof., ibid., 1936-43; Prof. Physics, ibid., 1943—; Chmn., Dept. Physics and Astronomy, ibid., 1946—. Hon. Pos.: Tech. Representative, Natl. Defense Comm., 1942-44; Chmn., Dept. Physics, Ohio State Univ., 1946; Guggenheim Fellow, 1949-50; Sci. Attache, U. S. State Dept., Stockholm, 1952-53; Chmn., Natl. Rsch. Coun. and Natl. Acad. Scis. Comm. on Symbols, Units and Nomenclature; Secy., of Triple Comm., Spectroscopy IUPAP, 1960; Fulbright Lectr., Univ. Paris, 1958-59; Consultant, Sci. Advisory to U. S. Secy. of State, 1958; Vice Pres., Internatl. Union Pure and Applied Physics, 1960; Pres., IUPAP Comm. on Symbols, Units and Nomemclature, 1952-60. Editor, J.O.M.S., 1956—. Awards: Medal of the Univ. of Liege, Belgium, 1949, Cross of the Order of Leopold, Belgium, 1953, Cross of the Order of Knight of Dannebrog, Denmark, 1957. Mem.: Am. Phys. Soc.; Am. Soc. Adv. Sci.; Am. Assn. Physics Tchrs.; Am. Astronomical Soc.; Phi Beta Kappa; Soc. Sigma Xi; Torch Club; Open Court; Zero Club. Contbr. to: Phys. Rev.; Die Naturwisseuschaiten; Jour. Chem. Phys.; Proc. Natl. Acad. Sci.; Jour. Opt. Soc.; Rev. Modern Phys.; Rev. Sci. Inst.; Sci.; Med. Physics; Chem. Analysis; Jour. Molecular Spectroscopy. Areas of Rsch.: Infrared Spectra and Structure of Molecules.

NIELSEN, Svend Woge (Ph.D.), Prof., Dept. of Animal Diseases, Univ. of Conn., Storrs, Conn. Home Add.: R.R. 1, Davis Road, Storrs, Conn. VETERINARY PATHOLOGY. b. Herning, Denmark, Apr. 4, 1926. s. Peter Woge and Marie (Nielsen) N. Edn.: D.V.M., Royal Veterinary and Agric. Coll., Copenhagen, Denmark, 1951; M.Sc., Ohio State Univ., 1957; Ph.D., ibid., 1959. m. Lorraine C. Beaman, July 18, 1952. c.: Karen Beth; Peter Kevin. Exp.: Resident in Pathol., Angell Mem. Hosp., Boston, Mass., 1951-52; Grad. Asst., Lectr., Asst. Prof. in Pathol., The Ontario Veterinary Coll., Guelph, Can., 1952-55; Instr., Assoc. Prof. in Pathol., The Ohio State Univ., 1955-60; Prof., Dept. of Animal Dis., Univ. of Conn., 1960—. Hon. Pos.: Chmn., Com. on Tech. Methods, Am. Coll. of Veterinary Pathologists, 1957-58; Chmn., Com. on Edn., Am. Coll. of Vet. Pathol., 1959-60. Mem.: Internatl. Acad. of Pathologists; Am. Coll. of Veterinary Patholst.; Conf. of Rsch. Workers in Animal Dis.; Am. Vet. Med. Assn.; A.A.A.S.; Phi Zeta; Alpha Psi; Omega Tau Sigma. Contbr. to: Am. Jour. of Vet. Rsch.; Jour. Am. Vet. Med. Assn.; Cornell Veterinarian; Abstract Writer for Excerpta Medica. Areas of Rsch.: Comparative Oncology.

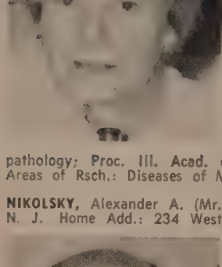


NIELSEN, Lawrence Ernie (Ph.D.), Sr. Scientist, Monsanto Chem. Co., Springfield 2, Mass. Home Add.: 47 Brainard Rd., N. Wilbraham, Mass. STRUCTURE AND MECHANICAL PROPERTIES OF POLYMERS; PHYSICAL CHEMISTRY. b. Pilot Rock, Ore., Dec. 17, 1917. s. Hans C. and Mable (Galbreath) N. Edn.: B.A., Pacific Univ., 1940; M.S., State Coll. of Wash., 1942; Ph.D., Cornell Univ., 1945. m. Deanne Boss, 1942. c.: Linda. Exp.: Physicist, Monsanto Chem. Co., Springfield, Mass., 1945-55; Sr. Scientist, ibid., 1955—. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Sigma Xi; Glaciological Soc.; Arctic Inst.; Soc. of Rheology; Am. Alpine Club. Author: Mechanical Properties of High Polymers, 1962. Contbr. to: Jour. Am. Chem. Soc.; Jour. Appl. Physi.; Jour. Colloid Sci.; Jour. Polymer Sci.; Soc. Plastics Engr. Jour.; Ind. Eng. Chem.; Bull. Geol. Soc. Am.; Jour. Glaciology. Gen. Int.: Leader of 7 expeditions to Alaska for Rsch. on Glaciers. Areas of Rsch.: Structure and Mechanical Properties of Plastics and Rubbers; Colloid Chemistry; Glaciers and Flow of Ice.

NIGHTINGALE, Alice Allen (Mrs.), Chmn. Biol. Dept., Jr. Coll. of the Schl. of the Ozarks, Point Lookout, Mo. Home Add.: P.O. Box 6, Point Lookout, Mo. BOTANY. b. Omaha, Nebr., Oct., 1896. d. Walter William and Mollie Henrietta (Wild) Allen. Edn.: B.S., Univ. of Nebr., 1920; M.S., Chicago Univ., 1921; Ph.D., ibid., 1932. m. G. T. Nightingale, 1934. c.: Thayer Glen Charles. Exp.: Asst. Pathologist, Bureau of Plant Industry, U.S.-D.A., Chicago Market Pathol. Lab., 1921-34; Tchr., Kirbyville, Mo. Schl., 1952-53; Tchr., Sci., Hollister, Mo., 1953-55; Chmn., Biol. Dept., Schl. of the Ozarks Jr. Coll., 1955—. Mem.: Sigma Xi; Phi Beta Kappa; A.I.B.S.; A.A.-A.S.; N.A.B.T.; Sigma Delta Epsilon; Business and Professional Women. Contbr. to: Botanical Gazette; U.S.D.A. Bull.; Phytopathology; Proc. Ill. Acad. of Sci.; Bull. of Am. Peony Soc. Areas of Rsch.: Diseases of Market Crop Plants.

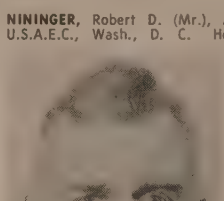


NIKOLSKY, Alexander A. (Mr.), Prof., Princeton Univ., Princeton N. J. Home Add.: 234 Western Way, Princeton, N. J. FLIGHT MECHANICS, LOW SPEED FLIGHT. b. Kursk, Russia, Oct. 23, 1902. s. Alexander M. and Elizabeth (Pleteneff) N. Edn.: Cert., Univ. of Paris, Fr., 1926; E.E. and M.E., Schl. of Electr. and Mech. Engineering, Paris, Fr., 1926; M.S., Ae., Mass. Inst. of Technol., 1929. m. Marion Hubbell, Feb. 3, 1933. c.: Alexander Hubbell. Exp.: Chf. Aerodyn. and Structures, Sikorsky Aircraft Co., Stratford, Conn., 1929-42; Prof., Princeton Univ., 1942—. Hon. Pos.: Mem., Army Scientific Adv. Panel; Chmn., Advisory Panel on VTOL, United Aircraft Corp. Mem.: Sigma Xi; Inst. of Aerospace Scis.; Princeton Club of N. Y. Author: Helicopter Design Theory, 1944; Helicopter Analysis, 1951. Contbr. to: N.A.-S.A. (NACA). Areas of Rsch.: Flight Mechanics (Dynamics Simulation by use of Models of V/Stol Aircraft).



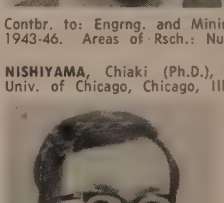
NIMKOFF, Meyer Francis (Ph.D.), Prof. and Hd. of Sociol. Dept., Fla. State Univ., Tallahassee, Fla. Home Add.: 2214 Amelia Circle, Tallahassee, Fla. SOCIOLOGY. b. N. Y., N. Y., Apr. 16, 1904. s. Abraham and Lena (Selwiz) N. Edn.: A.B., Boston Univ., 1925; M.A., Univ. of Sou. Calif., 1926; Ph.D., ibid., 1928. m. Frances S. Lucas, June 25, 1929. c.: Peter Llewellyn. Exp.: Asst. in Hist., Boston Univ., 1924-25; Asst. in Sociol., Univ. of Sou. Calif., 1925-27; Instr. in Americanization, Los Angeles City Evening H. S., 1926-27; Asst. Prof. of Sociol., Bucknell Univ., 1928-30; Lectr., Broadoaks Schl. of Child Rsch., Pasadena, Calif., 1930-31; Dir., Inst. of Family Guid., Los Angeles, 1930-31; Assoc. Prof. of Sociol., Bucknell Univ., Dir., Inst. for Family Guid., 1931-38; Prof. of Sociol., ibid., 1938-50; Chmn., Dept. of Sociol., ibid., 1940-50; Prof. of Sociol., Chmn. of Dept., Fla. State Univ., 1950—; Visiting Prof., summer sessions: Ball State Tchrs. Coll., 1936; Univ. of Sou. Calif., 1937; Mich. State Univ., 1939; Univ. of Ore., 1940; Univ. of Denver, 1950; Univ. of Sou. Calif., 1955; Boston Univ., 1961. Hon. Pos.: Pres., Eastern Sociol. Soc., 1950; First Vice-Pres., So. Sociol. Soc., 1958, Pres.-Elect, 1960-61; Pres., 1961-62; Co-op. Editor, Sociol. and Social Rsch., Am. Jour. of Sociol.; Chmn., Comm. on Rsch., Natl. Coun. on Family Rel., 1948-50; Fulbright Rsch. Scholar, 1950-51, 1958-59; Mem., Bd. of Trustees, Interprofessional Comm. on Marriage and Divorce Law Exec. Comm., Am. Bar Assn.; Vice-Pres., Alpha Kappa Delt Editor, Marriage and Family Living, 1953-56; Editorial Adv. Sociol., Houghton Mifflin Co. Mem.: Am. Sociol. Soc.; So. Socio Soc.; Sociol. Rsch. Assn.; Natl. Coun. on Family Relation A.A.U.P.; Alpha Kappa Delta; Phi Delta Kappa; Phi Kappa Ph Phi Beta Kappa. Author: The Family, 1934; The Child, 193 Parent-Child Relationships, 1935; Marriage and the Family, 194 Co-author: Sociology, 1958; Technology and the Changing Famil 1955. Contbr. to: Sociol. and Soc. Rsch.; Soc. Forces; Famil Mental Hyg.; Am. Jour. of Sociol.; Am. Sociol. Rev.; The Annal Psychol. Rev. Marriage and Family Living. Areas of Rsch.: Ma riage and the Family.

NININGER, Robert D. (Mr.), Asst. Dir., Div. of Raw Material U.S.A.E.C., Wash., D. C. Home Add.: 14627 Crossway Roa Rockville, Md. GEOLOGY OF N CLEAR RAW MATERIALS. b. Broo ings, S. D., Mar. 28, 1919. Harvey H. and Addie (Delp) Edn.: A.B., Amherst Coll., 194 A.M., Harvard Univ., 1942. Eleanor Jones, June 23, 194 c.: Sally E.; Susan M.; Robert H Catherine F. Exp.: Geologis U. S. Geological Survey, Wash D. C., 1942-43; Geolst., U. A.E.C., 1947-48; Dep. Asst. Di Div. of Raw Materials, ibid., 194 55; Asst. Dir., ibid., 1955 Mem.: A.I.M.M.P.E.; A.A.A.S G.S.A.; S.E.G.; A.S.P.A.; Ari Acad. of Sci.; Am. Nuclear Soc Phi Beta Kappa; Chi Psi. Autho Minerals for Atomic Energy, 195 2nd Ed., 1956; Exploration f Nuclear Raw Materials, 195



Contbr. to: Engrng. and Mining Jour. Serv. Rec.: U. S. Arm 1943-46. Areas of Rsch.: Nuclear Raw Materials.

NISHIYAMA, Chiaki (Ph.D.), Assoc., Comm. on So. Though Univ. of Chicago, Chicago, Ill. Home Add.: 5439 S. Woodlaw Ave., Chicago 15, Ill.; Asso Prof., St. Paul's Rikkyo Univ Tokyo, Japan. Home Add.: 3 2-chome, Kamiuma, Setagaya-k Tokyo, Japan. THE PHILOSOPH OF SCIENCE; THE METHODOLOG OF ECONOMICS, MICRO-ECONON ICS. b. Japan, Aug. 9, 1924. Michiki and Teruko (Tshujii) Edn.: M. Econ., Rikkyo St. Paul Univ., 1950; M.A., Univ. of Ch cago, 1952; Ph.D., ibid., 196 m. Shigeko Okabe, June, 195 Exp.: Rsch. Asst., Univ. of Ch cago, Ill., 1958-59; Lecturer, ibid 1960-61; Assoc., ibid., 1960— Mem.: Am. Assn. Adv. Sci.; Am Econ. Assn.; Econometric Soc Royal Econ. Soc.; Assn. for Asia Studies. Author: A Theory of Sel love; The Methodology of Econom ics, 1960. Areas of Rsch.: The Methodology of Economics; Th Monetary System in Japan.

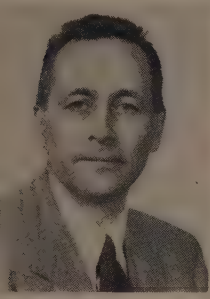


NIXON, Alan Charles (Ph.D.), Rsch. Supvr., Shell Devl. Co Emeryville, Calif. Home Add.: 31 Windsor Ave., Berkeley Calif. CHEMISTRY. b. England, Oct. 10, 1908. s. Horac C. and Elizabeth D. (Macfarlane) N. Edn.: B.S., Univ. Sask., Can., 1929; M.S., ibid., 1931; Ph.D., Univ. of Calif 1934. m. Gwendolen H. Mullett, 1937. c.: Sandra; Sheila Exp.: Instr., Rsch. Assoc., Univ. of Calif., 1934-37; Rsch Chem., Shell Devl. Co., Emeryville, Calif., 1937-54; Rsch. Supvr ibid., 1954—. Hon. Pos.: Coun., Am. Chem. Soc., Calif. Sect Chmn., ibid.; Mem., Affairs Comm., ibid. Mem.: Am. Chem Soc.; Am. Rocket Soc.; Tech. Assn. of the Pulp and Paper Ind. Forest Prod. Rsch. Soc.; Am. Assn. Text. Chem. and Colorists Soc. of Plastics Ind.; Soc. of Plastics Engrs.; Sigma Xi; A.A.A.S. Alpha Chi Sigma. Contbrng. Author: Antoxidant and Antioxidants 1962; Encyclopedia of Science and Technology, 1960; Scienc of Petroleum, 1948. Contbr. to: Indl. and Engrng. Chem.; Chem Engrng.; Jour. of Chem. Phys.; Jour. Am. Chem. Soc.; Vortex Fifth World Petroleum Congress. Areas of Rsch.: Petroleur Chemistry; Antioxidants; Paper Treating Chemicals; Adhesives Radiation Chemistry.

NJUS, Olav (Col.), Dir. of Applied Rsch., Electronics Sys. Div. L. G. Hanscom Field, Bedford, Mass. Home Add.: 392 Mai St., West Concord, Mass. GEOPHYSICS; MANAGEMENT OF RE SEARCH AND DEVELOPMENT. b. New London, Minn., Jan. 16 1915. s. N. J. and Ellen (Torgerson) N. Edn.: B.A., Concordi Coll., 1937; M.S., Calif. Inst. Tech., 1946. m. Jean L. Letch Dec. 15, 1945. c.: Lois Marie; Glen Olavson; Camille Louise Exp.: Forecaster, U. S. Weather Bur., Chicago, Ill., 1945-46 Forecaster, Air Weather Serv., U.S.A.F., 1942-45 and 1946-56 Rsch. and Dev. Dir., A.F.S.C., U.S.A.F., Andrews AFB, Wash D. C. and L. G. Hanscom Field, Bedford, Mass., 1956—. Mem. Am. Meteor. Soc.; Am. Geophys. Union; A.A.A.S. Serv. Rec. See Above Exp. Areas of Rsch.: Management of Applied Re search with Emphasis in the Areas of Geophysics; Electronic and Information Processing.

NOBLE, Elmer R. (Ph.D.), Prof. of Zool., Univ. of Calif., Santa Barbara, University, Calif. ZOOLOGY. b. Pyeng Yang, Korea, Jan. 16, 1909. s. Wm. Arthur and Mattie (Wilcox) N. Edn.: A.B., Univ. of Calif., 1931; M.A., ibid., 1933; Ph.D., ibid., 1936. m. Nancy Burnell of Eureka, Calif., 1932. d. Mary Edna and Lewis M. Burnell. c.: Carolyn Burnell; Mary Elaine; Ellen Elisabeth; David Ray. Exp.: 1936-38, Instr. in Biol., Santa Barbara State Coll.; 1938-43, Asst. Prof., ibid.; 1943-48, Assoc. Prof., Univ. of Calif., Santa Barbara Coll., 1948; Chmn., Dept. of Biol. Sci., ibid., 1947-51; Dean, Div. of Letters and Sci., ibid., 1951-59; Prof. of Zool., ibid., 1951—; Acting Provost, ibid., 1956-58; Vice-Chancellor, ibid., 1958-61. Hon. Pos.: ICA Consultant in Higher Edn. to Indonesia. Mem.: Am. Soc. of Zoologists; Am. Soc. Parasitol.; Soc. Protozoologists; A.A.U.P.; Sigma Xi. Co-Author: Parasitology, The Biology of Animal Parasites. Contbr. to: Jour. Parasitol.; Quart. Rev. Biol.; and others. Ph.D. Dissertation: The Life Cycle of Zygosoma Globosum Sp. Nov. A Gregarine Parasite of Urechis Caupo. Travel: Japan; Korea; Orient; Europe; England. Hobbies: Music; Fishing. Listed in: Am. Men of Sci.; Who Knows—and What; Who's Who in Am. Special Int.: Life Cycles of Protozoan Parasites; Ecology of Parasitism; Parasites of Fishes.

NOLDE, George V.(ladislav) (D.Sc.), Mgr. of Aerospace Ground Support Systems Engrng., Data Systems Div., Radio Corp. of Am., Van Nuys, Calif. Home Add.: 537 San Vicente Blvd., Santa Monica, Calif. ELECTRICAL AND MECHANICAL ENGINEERING. b. St. Petersburg, Russia, Feb. 28, 1900. s. Vladislav and Maria (Rashinscaja) N. Edn.: E.E., East Syberian Poly. Coll., 1923; D.Sc., Moscow Tech. Schl. of Higher Learning, 1929. m. Eugenia Poliakova, Oct., 1936. Exp.: Develop. Engr., Moscow Radio Works, Russia, 1923-26; Chf. Engr., Bd. Erection Moscow Aluminum Works, Russia, 1930-33; Consulting Engr., Los Angeles, Calif., 1934-36; Rsch. Assoc., Photom. Lab., Univ. of Calif., 1937; Develop. Engr., Butte Elec. and Mfg. Co., San Francisco, 1938-40; Rsch. Engr., Marchant Calculators, Inc., Oakland, Calif., 1940-44; Consulting Engr., Dalmo Victor Inc., Calif., 1945-46; Marchant Calculators, Inc., 1946-48; Rsch. Dir., ibid., 1949-52; Develop. Engr. and Mgr., Computing Devices Unit, RCA, N. J., 1953-54; Prof. of Elect. Engrng., Univ. of Calif., Berkeley, Calif., 1955-57; Project Engr., Missile and Surface Radar Div., RCA, Van Nuys, Calif., 1957-61; Mgr. of Aerospace Ground Support Systems Engrng., Data Systems Div., ibid., 1961—. Mem.: Am. Soc. of Mech. Engrs.; Sr. Mem., Inst. of Radio Engrs.; Life Mem. A.A.A.S.; Natl. Soc. of Prof. Engrs.; Am. Ordnance Assn. Co-Author: Radar Visibility of Submarine Snorkels, 1959; Comparative Investigation of Design Factors for Doppler Navigators With Fixed or Stabilized Antenna, 1958; Study and Development of Missile Guidance Deception Techniques, 1960. Author: On Kinetics of Leaf Springs, 1952; Some Aspects of Airborne Radar in the Defense Against Submersibles, 1961. Contbr. to: Machine Design. Gen. Int.: Inventor of Improvements in the Field of Electronic Computers, Automatic Devices and Remote Control Systems; Awarded 16 U. S. Letters Patents; Accredited with Design of Electronic Computing Equipment for the Logistic Data Processing System Created by RCA for U. S. Ordnance Tank and Automotive Center, Detroit, Mich., 1955. Areas of Rsch.: Doppler Radar; Radar Systems; Instrumentation; Light Machinery Design; Magnetometric Analysis; Dynamics of Metals; Industrial Electronics; High Speed Memory Devices; Calculating Machines and Techniques.



NOBLES, William Lewis (Ph.D.), Dean of Grad. Schl. and Prof. of Pharmaceutical Chem., Box 321, Univ. of Miss., University, Miss. Home Add.: Pinecrest Dr., Oxford, Miss. PHARMACY AND PHARMACEUTICAL CHEMISTRY. b. Meridian, Miss., Sept. 11, 1925. s. J. S. (dec.) and Ruby Rae (Roper) N. Edn.: B.S., Univ. of Miss., 1948; M.S., ibid., 1949; Ph.D., Univ. of Kans., 1952. m. Joy Ford, Aug. 29, 1948. c.: Sandra Jeanne; Glenda Suzanne. Exp.: Asst. Prof., Univ. of Miss., 1952-54; Assoc. Prof., ibid., 1954-55; Prof. of Pharm. and Pharm. Chem., ibid., 1955—; Dean of Grad. Schl., ibid., 1960—. Hon. Pos.: Secy.-Treas., Mid-South Pharmaceutical Rsch. Found.; Secy.-Treas., Dist. 3, AACP-NABP. Mem.: Sigma Xi; Phi Kappa Phi; Phi Eta Sigma; Rho Chi; Pi Kappa Alpha; Kappa Psi; Rotary Club. Contbr. to: Jour. Am. Chem. Soc.; Jour. Am. Pharm. Assn.; Jour. Jour. of Pharm.; Jour. Pharm. Scis. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Synthesis of Compounds of Potential Value as Medicinal Agents.

NORDQUIST, Walter Sidney, Jr. (Mr.), Chf., Atmospheric Propagation Br., Missile Meteorol. Div., R. and D. Dept., U. S. Army Signal Missile Support Agency, White Sands Missile Range, New Mex. Home Add.: 9516 Waverly Dr., El Paso, Tex. METEOROLOGICAL ASPECTS OF ACOUSTIC AND ELECTROMGNETIC PROPAGATION IN THE ATMOSPHERE. b. Eureka, Calif., Apr. 1, 1928. s. Walter S. and Julia Margaret (Malloy) N. Edn.: B.S., Univ. of Calif., 1951; M.B.A., ibid., 1952; B.S., Pa. State Univ., 1954; M.S., Univ. of Mich., 1958. m. Jeslyn Lois Muarfoot, Aug. 31, 1957. c.: Lynda Marie; Steven William; Douglas Alan. Exp.: Meteorologist, USAF, 1953-57; Meteorologist, U. S. A. Signal Missile Support Agency, 1958—. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; Air Pollution Control Assn.; Pi Kappa Phi; Delta Sigma Pi. Contbr. to: Techn. Reports. Serv. Rec.: U. S. Air Force, 1952-57. Areas of Rsch.: Atmospheric Acoustics, Meteorology and Air Pollution, Weather Forecasting.

NORD, F(riedrich) F. (D.Sc.). Home Add.: 333 Westchester Ave., Fleetwood, Mt. Vernon, N. Y. ORGANIC CHEMISTRY, BIOCHEMISTRY. b. Budapest, Aug. 9, 1889. Edn.: D.Sc., Tech. Univ., Karlsruhe, Germany, 1914. Hon. Deg.: Dr. Agr.h.c., Univ. of Pisa, Italy, 1955. m. Jean Preston Muncell, 1949. Exp.: Asst. Prof., Kaiser Wilhelm Inst., Berlin, Dahlem, 1914-20; Asst. Prof., Univ. of Berlin, 1920-38; Rockefeller Trav. Fellow, Mayo Clinic, Rochester, Minn., 1925; Fellow, Dept. Biochem., Univ. of Minn., 1926; Visiting Prof., India and Japan, 1927. Hon. Pos.: Chmn., Basic Rsch., Germ. Comm. Nutrition; Hon. Mem., Acad. of Sci., Ferrara, Italy Mem.: N. Y. Acad. of Sci.; Harvey Soc., Am. Chem. Soc.; Gesellsch. Dtsch. Chemiker, Dtsch. Bunsen Gesellsch.; Swiss Chem. Soc.; Biochem. Soc.; Faraday Soc.; Soc. Analytical Chem.; Sigma Xi. Author: Mechanism of Enzyme Action and Associated Cell Phenomena, 1929; Zum Mechanismus d. Enzymwirkung unter besonderer Berucksichtigung der Kryolyse, 1933. Contbr. to: Editor, Advances in Enzymology; Archives of Biochem. and Biophys.; Jour. Biol. Chem.; Chem. Berichte; Jour. Physical Chem.; Jour. Am. Chem. Soc.; Kolloid Z.; Jour. Coll. Sci.; Experientia; Protoplasma; Science; Nature; Naturwiss; Trans. Faraday Soc.; Proc. Natl. Ac. Sci.; Holzforschg. Areas of Rsch.: Catalysis, Cryolysis, Enzymology, Fermentation, Effects of Temperatures on Colloids, Organic Reaction Mechanisms, Heterocyclics, Pigments, Fat Formation, Chem. of Molds, Lignin.

NORMAN, Arthur Geoffrey (Ph.D.), (D.Sc.), Prof. and Dir., Botanical Gardens, Univ. of Mich., Ann Arbor, Mich. Home Add.: 3475 Woodland Rd., Ann Arbor, Mich. PLANT BIOCHEMISTRY AND SOIL MICROBIOLOGY. b. Birmingham, England, Nov. 26, 1905. s. Arthur and Charlotte (Mant) N. Edn.: B.Sc., Univ. of Birmingham, England, 1925; Ph.D., ibid., 1928; M.S., Univ. of Wis., 1932; D.Sc., Univ. of London, England, 1933. m. Marian Foote, Sept., 1933. c.: Anthony Westcott; Stephen Trevor. Exp.: Biochemist, Rothamsted Expt. Sta., Harpenden, England, 1933-37; Prof., Ia. State Coll., Ames, Ia., 1937-46; Biochemist, U. S. Army Chem. Corps, Fort Detrick, Md., 1946-52; Prof., Univ. of Mich., Ann Arbor, Mich., 1952—. Hon. Pos.: Chmn., Natl. Acad. Sci. Comm. on Effects of Atomic Radiation on Agric. and Food Supplies, 1955-61. Mem.: Biochem. Soc.; Am. Soc. Pl. Physiol.; Am. Soc. Microbiol.; Am. Soc. Agron.; Soil Sci. Soc. Am.; Royal Inst. Chem.; A.A.A.S.; Sigma Xi; Phi Kappa Phi. Author: Biochemistry of Cellulose, 1936. Editor: Advances in Agronomy, 1949-62. Contbr. to: Biochem. Jour.; Soil Sci. Soc. Am. Proc.; Jour. Bact.; Agron. Jour. Serv. Rec.: U.S.A.F.R., Col. Areas of Rsch.: Soil-Plant Relationships; Plant Growth regulators.

NORRIS, Paul Edmund (Ph.D.), Group Leader, Procter and Gamble, Cincinnati, Ohio. Home Add.: 476 Beech Tree Dr., Cincinnati 24, Ohio. PHARMACEUTICAL CHEMISTRY. b. Detroit, Mich., Nov. 9, 1918. s. Earl M. and Nellie E. (Hubner) N. Edn.: B.S., Univ. of Mich., 1941; M.S., ibid., 1942; Ph.D., ibid., 1952. m. Arlene R. McGruer, June, 1944. c.: Gail Arlene; David Paul. Exp.: Instr. in Pharmacy, Univ. of Mich., 1948-51; Asst. Prof. of Pharmacy, Univ. of Mich., 1951-54; Dev. Chemist, Procter and Gamble, 1954—. Hon. Pos.: Finneytown Bd. of Edn., 1959-63; Pres., Cincinnati Branch of Am. Pharmaceutical Assn., 1958-60. Mem.: Am. Chem. Soc.; Am. Pharmaceutical Assn.; A.A.A.S.; Sigma Xi; Rho Chi; Gamma Alpha; Alpha Chi Sigma; Ann Arbor Hills Assn.; View Place Civic Assn. Contbr. to: Jour. Am. Chem. Soc.; Jour. Am. Pharm. Assn.; Bull. Am. Soc. Hosp. Pharm. Serv. Rec.: U.S.N. Areas of Rsch.: Synthetic Drugs, Ergot Substitutes, Anticariogenic Agents, Design and Analysis of Dental Caries Clinical Studies.

NORRIS, Terry Orban (Ph.D.), Dir. of Chem. Rsch., Keuffel and Esser Co., 300 Adams St., Hoboken, N. J. Home Add.: 599 Duquesne Terrace, Union, N. J. ORGANIC CHEMISTRY—POLYMER CHEMISTRY. b. Watauga Co., N. C., April 29, 1922. s. Stuart Hill and Minnie Candace (Davis) N. Edn.: B.S., Univ. of N. C., 1947; M.S., ibid., 1949; Ph.D., ibid., 1954. m. Cecilia Diaz, April, 1951. c.: Stuart Hill, II; Jane Candace. Exp.: Rsch. Chemist, E. I. duPont, Wilmington, Del., 1949-51; Rsch. Chemist, ibid., Parlin, N. J., 1954-56; Dir. of Chem. Rsch., Keuffel and Esser Co., Hoboken, N. J., 1956—. Mem.: A.C.S.; Sigma Xi; A.A.A.S.; F.A.I.C.; N. Y. Acad. of Sci.; Phi Beta Kappa; Alpha Chi Sigma; Phi Gamma Delta. Contbr. to: Analytical Chem.; Jour. of Dental Rsch.; Industrial Photography.

Serv. Rec.: U.S.N., 1942-46. Areas of Rsch.: Instrumental Analysts, Synthetic Organic Chemistry, Organic Reaction Mechanisms, Polymer Chemistry, Photoconductors.

NORTON, John William Roy (M.D.), St. Health Dir., N. Car. St. Bd. of Health, Raleigh, N. C. Home Add.: 2129 Cowper Dr., Raleigh, N. C. PUBLIC HEALTH. b. Scotland Co., N. C., July 11, 1898. s. Lafayette and Iola Josephine (Reynolds) N. Edn.: A.B., Duke Univ., 1920; Univ. of N. C. Schl. of Med., 1925-26; M.D., Vanderbilt Univ. Med. Schl., 1928; M.P.H., Harvard Schl. of Pub. Health, 1936. m. Juanita Harris Ferguson, 1928. c.: Geraldine; Jean; Lafayette Ferguson. Exp.: City Health Supt., Rocky Mount, N. C., 1931-35; Asst. Div. Dir., N. C. St. Bd. of Health, Raleigh, N. C., 1936-38; Prof. Pub. Health Admin., Univ. of N. C., 1938-40; Chf. Health Officer, TVA, Tenn., 1946-48; St. Health Dir., N. C. St. Bd. of Health, Raleigh, N. C., 1948—; Vis. Assoc. Prof., Schl. of Publ. Health, Univ. of N. C., 1948—. Mem.: Am. Pub. Health Assn.; Am. Med. Assn.; Am. Med. Assn.; Am. Bd. of Preventive Med.; Sigma Xi; Delta Omega; Alpha Omega Alpha; Rotary. Contbr. to: Jour. Am. Publ. Health Assn.; N. C. Med. Jour. Serv. Rec.: U. S. Army, 1918; U. S. Army Med. Corps, 1940-45. Gen. Int.: Awarded battle stars Tunisian and Scilian Campaigns; Awarded Army Commendation Citation for serv. as Army Epidemiol. Chief. Areas of Rsch.: Public Health Administration: Local, State, Army; Teaching.

NORVELL, John Edmondson, III (Mr.), Asst. Prof., Otterbein Coll., Dept. of Biology, Westerville, Ohio. Home Add.: 107 Greenbrier St., Charleston 1, W. Va. HUMAN GROSS ANATOMY. b. Charleston, W. Va., Nov. 18, 1929. s. John E. and Mathilde (Wood) N. Edn.: B.S., Morris Harvey Coll., 1953; M.S., W. Va. Univ., 1956. m. Rosemary Justice, 1962. Exp.: Instr., Johnstown Coll. of Univ. of Pittsburgh, Johnstown, Pa., 1956-60; Asst. Prof., Otterbein Coll., Westerville, Ohio, 1960—. Mem.: A.A.A.S.; Ohio Acad. of Sci.; Chi Beta Phi; A.A.U.P. Co-Author: Ohio Jour. of Sci. Areas of Rsch.: Human Gross Anatomy.

NOVAK, Josef (M.D.), Clin. Prof., Gynecology, Columbia Univ., Park Ave., N. Y. 21, N. Y. Home Add.: 1199 Fifth Ave., N. Y. C. GYNECOLOGY AND OBSTETRICS. b. Hostomice, Bohemia, Feb. 28, 1879. s. Maurice and Katharine (Engel) N. Edn.: M.D., Univ. of Prague, Bohemia, 1903. m. Hertha Hermine Wallnstorfer, Dec. 20, 1921. c.: Ilse; Lotte; Gertrude. Exp.: Various Pos., Univ. Clinics, Prague, Bohemia, 1905-07; Various Pos., Surg. and Gynecol. Clin., Vienna, 1908-38; Privatdozent, Gynecol. and Obstetrics, Univ. of Vienna, 1916-24; Prof., Gynecol. and Obst., ibid., 1924-38; Clin. Prof., Gynecol., Columbia Univ., 1939-49; Private Practice, N. Y. C., 1949—. Mem.: N. Y. Acad. Scis.; Med. Circle N. Y.; Rudolf Virchow Soc., N. Y. Co-author: Integrated Gynecology, 1956. Author of: Gynecological Therapy, 1960. Contbr. to: 160 gynecological and obstetrical publications. Serv. Rec.: Austrian Army, 1914-18. Area of Rsch.: Gynecol. and Obst.

NORTON, Joseph Louis (Ph.D.), Prof. of Educational Psychol., Grad. Schl., Alfred Univ., Box 844, Alfred, N. Y. PSYCHOLOGY. b. Albany, N. Y., Sept. 6, 1918. s. Arden L. and Jessie Van Schaick) N. Edn.: B.A., St. Lawrence Univ., 1940; M.A., ibid., 1941; Ph.D., Syracuse Univ., 1950. m. Ruth P. McCarthy, April 5, 1947. c.: Carl Timothy; Deborah Judith. Exp.: Asst. Prof., Counselor, Mich. St. Univ., 1949-51; Assoc. Prof. of Psychol., Dir. of Counseling and Placement, Knox Coll., 1951-53; Assoc. Prof. of End. Psychol., Alfred Univ., 1953—. Hon. Pos.: Mem., St. Bd. of Managers, N. Y. State Congress of Parents and Tchrs., Inc.; Representative Dir., N. Y. State Assn. for Mental Health, 1955-58. Mem.: Am. Psychol. Assn.; Am. Personnel and Guidance Assn.; A.A.A.S.; E. Psychol. Assn.; N. Y. St. Psychol. Assn.; Am. Assn. of Univ. Prof.; Alpha Tau Omega; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Genetic Psychol.; Personnel and Guidance Jour.; Jour. of Counseling Psychol. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Development of Vocational Interests and Work Careers; Counselor Education.

NOVICK, Gabriel (Ph.D.), Sr. Consulting Engr., Bendix Corp., Eatontown, N. J. Home Add.: Roma Court, Lincroft, N. MICROWAVE VACUUM TUBES. b. New York, N. Y., Jan. 19, 192[5] s. Harry and Anna (Hatenko) N. Edn.: B.E.E., Coll. of City of N. Y., 1947; M.E.E., Poly. Inst. of Brooklyn, 1949; Ph.D., Stanford Univ., 1961. Exp.: Tech. Staff Mem., Poly. Rsch. and Devel. Corp., Brooklyn, N. Y., 1948-49; Asst. Chf. Rsch. Engr., Channel Master Corp., Ellenville, N. Y., 1949-50; Elect. Engr., Signal Corps Engr. Lab., Fort Monmouth, N. J., 1950-55; Tech. Staff Mem., General Electric Co., Palo Alto, Calif., 1955-60; Rsch. Asst., Stanford Univ., Calif., 1957-60; Sr. Consulting Engr., Stewart Engrng. Co., Santa Cruz, Calif., 1960; Sr. Consulting Engr., Westinghouse Corp., Baltimore, Md., 1960-61, Sr. Consulting Engr., Tucor Corp., Wilton, Conn., 1961-62; Sr. Consulting Engr., Bendix Corp., Eatontown, N. J., 1962—. Mem.: Inst. of Radio Engrs.; Am. Inst. of Elect. Engrs.; A.A.A.S.; Nat. Soc. of Prof. Engrs.; Sigma Xi. Author: Hollow-Bean Electrostatically Focused High-Power Traveling Wave Tubes, 1964. Contbr. to: Proc. of Natl. Elect. Conf.; Electronics; Crossed-Field Microwave Devices. Serv. Rec.: U.S.A., 1944-45. Gen. Int.: Registered Elect. Engr. in St. of Calif. Areas of Rsch.: Microwave Tubes.

NOWAK, Frank John (M.D.), Physician and Surgeon, 5053 S. Damen Ave., Chicago 9, Ill. Home Add.: 9221 So. Damen Ave., Chicago 20, Ill. SURGERY. b. Harvey, Ill., Oct. 19, 1914. Jacob and Anna (Berek) N. Edn.: B.S.M., Loyola Univ., 1935; M.S., ibid., Post Grad. Schl., 1936; M.S., Loyola Med. Schl., 1938; m. Edna R. Tichy, Aug., 1940; c.: Elyse Ann; Edna Ruth; Frank Jr.; Candace Lynn; Paula Nina. Exp.: Local Surgeon, Santa Fe R.R., Chicago, Ill., 1939-41; Assoc. Surgeon, Holy Cross Hosp., Chicago, Ill., 1946-58; Sr. Surgeon, ibid., 1959—. Hon. Pos.: Chmn., Disaster Comm., Holy Cross Hosp. Mem.: Am. Med. Assn.; Am. Bd. of Abdominal Surg.; International. Acad. of Proctology; Am. Geriatric Soc.; Am. Coll. of Gastroenterology; Sr. Mem. Am. Astronautical Soc.; A.A.A.S.; British Interplanetary Soc.; Am. Soc. of Abdominal Surgeons; Assn. Military Surgeons. Contbr. to: Anatomical Record. Serv. Rec.: A.U.S., 1942-46. Areas of Rsch.: Astronomy-Navigation-Space Medicine.

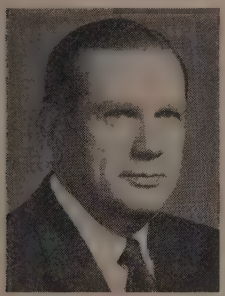
NOYES, H(enry) Pierre (Ph.D.), Admin. Hd., Theoretical Physics Sect., Stanford Linear Accelerator Ctr., Stanford Univ., Stanford, Calif. THEORETICAL PHYSICS. b. Paris, France, Dec. 10, 192[2] s. William Albert and Katharine (Macy) N. Edn.: B.A., Harvard Coll., 1943; Ph.D., Univ. of Calif., 1950. m. Mary Wilson, Dec. 20, 1947. c.: David Brian; Alan Guinn; Katherine Hope. Exp.: Asst. Prof., Univ. of Rochester, 1951-55; Leader, General Rsch. Group, Lawrence Radiation Lab., Livermore, Calif., 1955-6[2] Leverhulme Lecturer, Univ. of Liverpool, England, 1957-5[8] Admin. Hd., Theoretical Physics Sect., Stanford Linear Accelerator Ctr., Stanford Univ., 1962—. Mem.: Am. Physical Soc.; Phys. Soc., London; Societa Italiana di Fisica; A.A.A.S.; Sigma Xi. Contbr. to: Editor, Proc. of Annual Internatl. Conf. on High Energy Physics, 1952, '53, '54, '55; Phys. Rev.; Nuovo Cimento; Annual Rev. of Nuclear Sci. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Theory of the Strong Interaction Elem. Particles, and Analysis of High Energy Scattering Exp.

NOYES, Richard Macy (Ph.D.), Prof. of Chem., Univ. of Ore., Eugene, Ore. Home Add.: 2014 Elk Ave., Eugene, Ore. PHYSICAL CHEMISTRY; REACTION KINETICS. b. Champaign, Ill., Aug. 6, 1919. s. William A. and Katharine (Macy) N. Edn.: A.B., Harvard Coll., 1939; Ph.D., Calif. Inst. of Tech., 1942. m. Winninette Arnold, July 12, 1946. Exp.: Instr., Calif. Inst. of Tech., 1942-43; Rsch. Assoc., Govt. Contract, 1942-46; Instr., Columbia Univ., 1946-49; Asst. Prof., ibid., 1949-54; Assoc. Prof., ibi[d]

1954-58; Prof., Univ. of Ore., 1958—. Hon. Pos.: Chmn., Dir. Phys. Chem., Am. Chem. Soc., 1961-62. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Sigma Xi; Phi Beta Kappa; Alpha Chi Sigma. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Chem. Physics; Jour. of Physical Chem.; Jour. of Chem. Edn.; Analytical Chem. Areas of Rsch.: Mechanisms of Exchange Reactions Between Elementary Halogens and Organic Halides; Mechanisms of Oxidation by Permanganate; Theories of Diffusion Controlled Reactions with Special Applications to Recombination of Iodine Atoms in Solution; Thermodynamics of Ions in Solution.

NUNN, Harriett Louise (Miss), Chem. and Math. Tchr., Stephens-Lee H. Schl., Asheville, N. C. Home Add.: 1006 S. Person St., Raleigh, N. C. CHEMISTRY EDUCATION. b. Raleigh, N. C., Nov. 2, 1931. d. Charles and Louise (Edwards) N. Edn.: B.S., Shaw Univ., 1953; M.Ed., Univ. of N. C., 1959. Exp.: Tchr., Shawtown H. Schl., Lillington, N. C., 1953-58; N.S.F., Fellow, Univ. of N. C., 1958-59; Tchr., Stephens-Lee H. S., Asheville, N. C., 1959—. Hon. Pos.: Mem., Exec. Comm. of Math. and Sci. Div., N. C. Tchr. Assn. Mem.: N. C. Tchr. Assn.; Natl. Edn. Assn.; Natl. Coun. of Math. Tchr.; Natl. Sci. Tchr. Assn.; Delta Sigma Theta. Areas of Rsch.: Trends in Secondary School Science and Mathematics Curriculums.

NUSHAN, Harry (M.D.), Chf., Med. Service, V.A. Hosp., Salisbury, N. C. INTERNAL MEDICINE. b. Berdichev, Russia, June 23, 1902. s. Moses and Lena (Lerner) N. Edn.: Columbia Univ., 1921; M.D., L. I. Coll. Hosp., 1925. m. Olive F. Trudeau, Dec., 1930. c.: Marvin G.; Lois F. Exp.: Intern, Metropolitan Hosp., N. Y. City, N. Y., 1925-26; Resident Physician, Correction Hosp., N. Y. City, N. Y., 1926-27; Dir., Field Hosp., Aetna Ins. Co., N. Y. City, 1927-28; Private Practice of Med., N. Y. City, 1927-42; Act. Chf., Med. Serv., V.A. Center, Kecoughtan, Va., 1946-50; Chf., Med. Serv., ibid., 1950-53; Chf., Med. Serv., V.A. Hosp., Salisbury, N. C., 1953—. Hon. Pos.: Past Vice Pres., Peninsula Acad. of Med., Va.; Diplomate of Bd. of Internal Med.; Fellow of Am. Coll. of Physicians. Mem.: Va. State Med. Soc.; Am. Med. Assn.; A.A.A.S.; Assn. of Military Surgeons; Am. Thoracic Soc.; N. C. Thoracic Soc.; Internatl. Soc. of Internal Med.; Am. Coll. of Physicians. Contbr. to: Va. Med. Monthly; Annals of Internal Med.; Gastroenterology; Am. Jour. of Roentgenology; Radium Therapy and Nuclear Med.; Am. Jour. of Cardiology. Serv. Rec.: A.U.S., 1942-46. Areas of Rsch.: Clinical Internal Medicine.



NUSSBAUM, William (M.D.), Physician, 82-31 Austin St., Kew Gardens 15, N. Y. GYNECOLOGY AND OBSTETRICS; FEMALE TWINS; EUNUCHOIDISM; PHYSICAL ANTHROPOLOGY. b. Frankfurt, Main, Apr. 28, 1896. s. Bonum and Veilchen (Kaufmann) N. Edn.: M.D., Friedrich Wilhelm Univ., Berlin, 1921. m. Lotte Frankfurther, Mar. 5, 1929. c.: Bernard J.; Michael. Exp.: Chf. Resident, Frauen-Klinik Dr. Karl Abel, Berlin, 1923-25; Chief Consultant in Gynecol., City Hosp., Berlin-Buch, 1927-33; Instr. and Lectr., Major Gynecolog. Surg., Friedrich Wilhelm Univ., Berlin English Section of Post Grad. Studies, 1932-33; Rsch. Assoc., Columbia Univ., 1935-40; Assoc. Gynecologist, Jewish Hosp. for Chronic Diseases, Brooklyn, N. Y., 1959—; Assoc. Gynecologist and Obstetric Sydenham Hosp., N. Y., 1959—; Attending Gynecologist, Menorah Home and Hosp. for Aged and Infirm, Brooklyn, N. Y. Hon. Pos.: Mem. of Medical Advisory Comm., Medico, Inc.; Major Gyn.-Obs. Consultant, Midland General Hospital, Jamaica, N. Y.; Advisory Comm., United Cerebral Palsy of Queens; Mem. of Bd. of Dirs., Civil Defense, Kew Gardens, N. Y. Mem.: Am. Med. Assn.; A.A.A.S.; Internatl. Congress of Anthropol. and Ethnol., London, Brussels, Philadelphia; Am. Assn. of Physical Anthropolsts.; Am. Geriatrics Soc.; Am. Coll. of Sports Medicine; Internatl. Cong. of Surg. (Fellow); Fellow, Royal Anthropol. Inst. of Gr. Br. and Ireland; N. Y. Acad. of Med. (Fellow); N. Y. Acad. of Sci.; Kiwanis; Exec. Mem., Kew Gardens Civic Assn.; Am. Assn. for the United Nations. Contbr. to: Zentralblatt fuer Gynaekologie; Fortschritte der Medizin; Deutsche Medizinische Wochenschrift; Am. Jour. of Obstetrics and Gynecol.; Proc. of the Rudolf Virchow Med. Society in the City of New York. General Interest: Painting: Two One Man Exhibits; Winner of First and Second Prizes (Oil and Pastel), Am. Physicians Art Assn.; Winner of Second Prize (Water Color), Art Exhibit, Long Island State Park Commission; Writing Poetry, One Volume of Poems Published. Areas of Rsch.: Gynecology and Obstetrics; Geriatrics; Heredity; Physical Anthropology; Eunuchoidism; Female Twins.

NUTTLI, Otto William (Ph.D.), Prof. of Geophys. and Geophys. Engrng., St. Louis Univ., 3621 Olive St., St. Louis 8, Mo. Home Add.: 5422 Finkman St., St. Louis 9, Mo. GEOPHYSICS. b. St. Louis, Mo., Dec. 11, 1926. s. Otto P. and Marie B. (Wehinger) N. Edn.: B.S., St. Louis Univ., 1948; M.S., ibid., 1950; Ph.D., ibid., 1953. Exp.: Instr., St. Louis Univ., 1952-55; Asst. Prof., ibid., 1955-59; Assoc. Prof., ibid., 1959-62; Prof., ibid., 1962—. Hon. Pos.: East. Sect. Chmn., Seismol. Soc. of Am., 1960-61; Vice Chmn., ibid., 1959-60; Secy., ibid., 1957-59. Mem.: Am. Geophys. Union; Seismol. Soc. of Am.; Soc. of Explor. Geophys.; A.A.A.S.; Sigma Xi; Pi Mu Epsilon; Alpha Sigma Nu. Contbr. to: Seismol. Soc. Am.; Trans. Am. Geophys. Union; Mining Engrng. Areas of Rsch.: Seismology; Geophysical Engineering.

NYABONGO, Virginia Simmons (Ph.D.), Prof. of French, Dir. of Student Pers. and Guid. Rsch., Tenn. Agril. and Indusl. St. Univ., Nashville 8, Tenn. FRENCH, EDUCATION, STUDENT PERSONNEL ADMINISTRATION. b. Baltimore, Md., Mar. 20, 1913. d. Vester and Mary (Warren) S. Edn.: B.A., Bennett Coll., 1934; M.A., Univ. of Wis., 1937; M.A., Columbia Univ., 1948; Ph.D., Univ. of Wis., 1944. Exp.: Acting Registrar, Tchr. of Current Affairs, Hist. of Edn., Sub-Freshman English and Math., Bennett Coll., 1934-36; Asst. Prof., French, Wilberforce Univ., 1937-41; Dean of Students, Bennett Coll., 1941-42; Dir. of Student Pers. and Guid., Prof. of French, Rsch., Tenn. Agril. and Industrial State University, 1944. Mem.: African Studies Association; Alpha Kappa Mu; Am. Academy of Polit. Sci.; A.A.A.S.; Am. Assn. of Tchrs. of French; Am. Pers. and Guid. Assn.; Kappa Delta Pi; Mod. Lang. Assn.; Natl. Coun. on Relig. in Higher Edn.; Pi Delta Phi, Natl. French Soc.; Tenn. Philological Assn.; Pi Lambda Theta; Alpha Kappa Alpha; Young Women's Christian Assn.; Nashville Comm. on United Negro Coll. Fund. Author: Whitecaps, Les Palmiers, 1950. Contbr. to: The French Rev.; Jour. of Negro Edn.; Mod. Lang. Jour.; Faculty Jour. Areas of Rsch.: French Lang. and Lt., Civilization, Linguistics; Education, Teaching of Langs., Student Pers. and Guid.

NYBORG, Wesley L. (Ph.D.), Prof. of Physics, Univ. of Vt., Burlington, Vt. ACOUSTICS, ULTRASONIC, BIO-ACOUSTICS; PHYSICS; BIOPHYSICS. b. Ruthven, Ia., May 15, 1917. s. Isaac and Leva (Larson) N. Edn.: B.A., Luther Coll., 1941; M.S., Pa. State Univ., 1944; Ph.D., idid., 1947. m. Beth Woolsey, 1945. c.: Elsa Beth. Exp.: Instr., Asst. Prof. of Physics, Pa. State Univ., 1947-50; Asst. Prof., Physics, Brown Univ., 1950-54; Assoc. Prof., ibid., 1954-60; Prof. of Physics, Univ. of Vt., 1960—; Visit. Scient., Oxford Univ., 1960-61. Mem.: Am. Physical Soc.; Acoust. Soc. of Am.; Am. Assn. Physics Tchrs.; Am. Assn. Adv. Sci.; Biophysical Soc.; Sigma Xi. Contbr. to: Jour. of Acoustical Soc. of Am.; Jour. of Applied Physics; I.R.E. Trans. in Medical Electronics. Gen. Int.: Fellow, Schl. for Advanced Study, M.I.T., 1956-57. Areas of Rsch.: Acoustics; Ultrasonics; Bio-Acoustics.

NYHUS, Lloyd Milton (M.D.), Assoc. Prof. of Surg., Univ. of Wash., Seattle 5, Wash. Home Add.: 8788 22nd Northwest, Seattle 7, Wash. GASTRIC AND LIVER PHYSIOLOGY. b. Mt. Vernon, Wash., June 24, 1923. s. Lewis G. and Mary (Shervem) N. Edn.: B.A., Pacific Lutheran Coll., 1945; M.D., Med. Coll. of Ala., 1947. m. Margaret Sheldon, Nov., 1949. c.: Sheila Margaret; Leif Torger. Exp.: Instr., Dept. of Surg., Univ. of Wash., Schl. of Med., 1954-56; Post-doctorate Rsch. Fellow, U. S. Publ. Health Serv., 1952-54; John Simon Guggenheim Fellow, Study in Lab. of Prof. Philip Sandblom, Sweden; Scotland, 1955-56; Asst. Prof., Dept. of Surg., Univ. of Wash., 1956-59; Assoc. Prof., ibid., 1959—. Mem.: Wash. State Med. Assn.; Seattle Gastrointestinal Club; King Co. Med. Soc.; Am. Med. Assn.; Internatl. Soc. of Surg.; Soc. of Univ. Surg.; Fellow, Am. Coll. of Surg.; Fellow, Royal Soc. of Med.; Am. Gastroenterological Assn.; Seattle Surg. Soc., N. Pacific Surg. Assn.; Am. Surgical Assn.; Phi Beta Pi; Sigma Xi; Horse Shoe Club. Author: Surgery of the Stomach and Duodenum, co-author, 1962. Contbr. to: Am. Jour. of Physiol.; Am. Jour. Surg.; Am. Surg.; Angiology; Ann. Surg.; Arch. Surg.; Bull. Soc. Int. Chirurg.; Gastroenterology; Jour. A.M.A.; Jour. Thoracic Surg.; Northwest Med.; Scot. Med. Jour.; Surgery; West Jour. Surg. Serv. Rec.: U.S.N.R., 1943-46, 1950-52. Areas of Rsch.: Gastric Physiology, Liver Physiology.

NYSTROM, Paul H. (Ph.D.), Prof. of Marketing, Emer., Grad. Schl. of Bus., Columbia Univ., Box 88, Spring Valley, N. Y. MARKETING. b. Maiden Rock, Wis., Jan. 25, 1878. m. Mildred C. Chicker, Bay City, Wis., Aug. 27, 1903. c.: Marden R.; Birna G.; Lucile. Edn.: Ph.B., Univ. of Wis., 1909; Ph.M.,

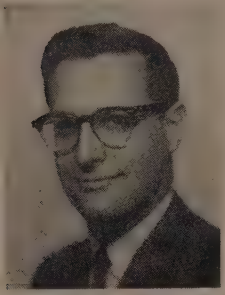
ibid., 1910; Ph.D., ibid., 1914. Hon. Deg.: LL.D., Ohio State Univ., 1950; Converse Award, Univ. of Ill., for Contributions in Mktng., 1949; Charles Coolidge Parlin Memorial Award, 1952; Order of the North Star, First Class, from the King of Sweeden, 1950. Exp.: Tchr. in Country Schls., Prin. in Grades and H. S. in Wis., 1897-1908; 1st Rep., Univ. Ext., Univ. of Wis., 1909-12; Asst. Prof. of Polit. Econ., 1912-14; Assoc. Prof. of Econ., Univ. of Minn., 1914-15; Dir., Trade Rsch., U. S. Rubber Co., N. Y. City, 1915-17; Sales Mgr., Internatl. Mag. Co., N. Y. City, 1917-21; Dir. of Retail Rsch. Assn., and Assoc. Merchan. Corp., 1921-27; Prof. of Mktng., Columbia, 1926-50; Pres., Ltd. Price Variety Stores Assn., 1933-54; Vice-Chmn. and Chmn., Natl. Retail Code Authority, 1933-35; Chmn., Central Coun. of Natl. Retail Assn., 1942-53. Mem.: Fed. Adv. Bd. for Voc. Edn., 1936-46 (Chmn., 1937-39, 1944-46); Pres., John Ericsson Soc., 1953-58; Pres., N. Y. Sales Exec. Club, 1937-38, 1939-45, and life hon. mem. of Club and of Bd. of Dirs.; Hon. Life Mem. of Soc. for the Adv. of Management; Vice-Pres., Am. Vo. Assn., Inc., 1939-45; Am. Sociological Assn. (Fellow); Am. Econ. Assn.; Am. Mktg. Soc. (Pres., 1933-34); Am. Mgmt. Assn.; Soc. for the Adv. of Mgmt.; Am. Stat. Assn. (Vice-Pres., 1929-30); Eta Mu Pi; Beta Gamma Sigma. Ph.D. Dissertation: Econs. of Retailing. Author: Econs. of Retailin (3rd Ed.), 1932; Econs. of Fashion, 1928; Econs. of Consumption 1929; Fashion Merchan., 1932; Elements of Retail Selling 1936; Retail Store Operation, 1937, Rsch. Studies for Privat Companies. Editor of Mktg. Handbook, 1947. Special Int. Mktg. at Consumer Levels.

NUZMAN, Carl Edward (Mr.), Asst. Engr., Div. of Wate Resources, 1026-S Sta. Office Bldg., Topeka, Kans. Home Add. Route 1, Silver Lake, Kans. HYDROLOGY AND AGRICULTURA ENGINEERING. b. Topeka, Kans., Aug. 5, 1930. s. Loren Manue and Lillian Lorraine (Bowler) N. Edn.: B.S., Kans. State Univ. 1953. m. Janet R. Steck, Aug., 1952. Exp.: Engr., C. and H Irrigation Co., Norton, Kans., 1956-57; Asst. Engr., Div. o Water Resources, 1957—. Hon. Pos.: Kans. Profl. Engr. License Mem.: Am. Soc. of Agric. Engrs.; Am. Geophys. Union; Kans Engrng. Soc.; Natl. Soc. of Prof. Engrs.; Alpha Kappa Lambda Sigma Tau; Steel Ring. Serv. Rec.: U. S. Air Force, 1953-56 Areas of Rsch.: Specialized Knowledge in Ground Water Hydrol ogy, Analysis of Problem Areas and Prediction of Future Wate Levels; Assisted in Programing an Electric Analog Model Stud of a Groundwater Basin; Material Unpublished.

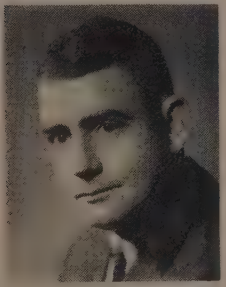
OBARA, Zdzislaw J. (Mr.), Technical Dir., D.A.P., Inc., Box 999 Dayton 31, Ohio. Home Add.: 124 Davis Rd., Centerville, Ohio. ORGANIC CHEMISTRY. b. Chicago, Ill., Mar. 17, 1927. s. Joseph and Stella (Galat) O. Edn.: B.S., Kalamazoo Coll., 1950. m. Elizabeth M. Newman, Aug. 16, 1958. c.: John Christopher. Exp.: Vice Pres., Crawford Labs., Chicago, Ill., 1953-56; Chf. Chemist, Asst. Tech. Dir., Valspar, Lyons, Ill., 1956-59; Tech. Dir., D.A.P., Inc., Xenia, Ohio, 1959—. Mem.: A.A.A.S.; A.C.S.; Ill. Acad. of Sci.; Fed. of Soc. Paint Tech.; N.P.V. and L.A.; A.S.T.M.; Alpha Delta Phi. Contbr. to: Rubber World; Glass Digest; Ill. Acad. of Sci. Serv. Rec.: U. S. Army, W.W. II. Areas of Rsch.: Rheology of Pigmented Systems, Adhesives.

OBER, Robert Emil (M.D.), Physician, 1412 Blue Hill Ave., Boston, Mass. Home Add.: 15 Carlson Ave., Newton, Mass. INTERNAL MEDICINE. b. Boston, Mass., Nov. 1, 1913. s. Edward and Julia (Gelb) O. Edn.: A.B., Tufts Univ., 1936; M.D., ibid., 1940. m. Thelma, May 26, 1940. c.: Arlon; Wayne. Exp.: Epidemiologist, Mass. Dept. of Public Health, 1942; State District Health Officer, 1946-47. Mem.: Am. Med. Assn.; Mass. Med. Soc.; Norfolk Co. Med. Soc.; Greater Boston Med. Soc.; N. Y. Acad. of Sci.; A.A.A.S.; Phi Lambda Kappa. Contbr. to: N.E. Med. Jour.; Mod. Med.; Jour. A.A.H.A. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Communicable Diseases.

OBERMAYER, Arthur S. (Ph.D.), Pres., Moleculon Consultants, Inc., 139 Main St., Cambridge, Mass. Home Add.: 100 Memorial Dr., Cambridge, Mass. CHEMISTRY. b. Phila., Pa., July 17, 1931. s. Leon J. and Julia (Sinsheimer) O. Edn.: B.A., (High Honors), Swarthmore Coll., 1952; Ph.D., Mass. Inst. of Tech., 1956. Exp.: Group Leader, Tracerlab, Inc., Waltham, Mass., 1956-59; Mgr., Chem. Dept., Phys. Sci. Div., Allied Rsch. Assocs., Inc., Boston, Mass., 1959-61; Pres., Moleculon Consultants, Inc., 1961—. Hon. Pos.: Chmn., TV Comm., N.E. Sect., Am. Chem. Soc.; Natl. Sci. Found. Fellow, 1953-55; M.I.T. Overseas Summer Fellow, Goteborg, Sweden, 1953. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Am. Assn. for the Adv. of Sci.; Inst. of Plastics Engrs.; Sigma Xi. Contbrng. Author: Jour. Chem. Phys., Diffusion of Radiocalcium, 1955; Exec. Editor, Measurements and Standards of Radioactivity, 1958, Natl. Acad. of Sci. Areas of Rsch.: Chemical Analytical Instrumentation; High Temperature Polymer Synthesis; Radiochemical Techniques; Reaction Mechanism Studies; Organic Semi-Conductors.



O'BRIAN, Dennis Martin (Ph.D.), Asst. Prof., Seton Hall Univ. Home Add.: 134 Walker Rd., W. Orange, N. J. BIOLOGY. b. N. Y. C., Mar. 28, 1931. s. Dr. Dennis Martin and Margaret (Desmond) O. Edn.: A.B., St. Anselm's Coll., 1952; M.S., Univ. of Notre Dame, 1955; Ph.D., Fordham Univ., 1960. m. Zita Burns, Dec. 27, 1958. Exp.: Graduate Asst., Univ. of Notre Dame, 1954-55; Graduate Asst., Fordham Univ., 1956-59; Instr., Seton Hall Univ., 1959-60; Asst. Prof., ibid., 1960—. Mem.: A.A.A.S.; N. Y. Acad. Sci.; Ind. Acad. of Sci.; Entomol. Soc. of Am.; Sigma Xi; A.A.U.P. Contbr. to: Proc. Ind. Acad. Sci.; Ann. Entomol. Soc. Am. Areas of Rsch.: Gen. Physiology, Parental Age Effects and Ageing.



OBERT, Paul Michael (M.D.), Pathologist and Dir. of Lab., 2602 Houston Highway, Victoria, Tex. Home Add.: 608 W. Commercial, Victoria, Tex. MEDICINE-PATHOLOGY. b. Apache, Okla., Apr. 25, 1924. s. Joseph and Mary (Fitter) O. Edn.: B.S., Stanford Univ., 1944; M.D., Okla. Univ. Schl. of Med., 1947. m. Gene Salisbury, Apr. 27, 1947. c.: Mary; Jeanne; Paul; Elizabeth; Catherine. Exp.: Asst. Professor Pathology, Okla. Univ. Schl. of Med., 1952-56; Attending Pathologist, V.A. Hosp., Oklahoma City, Okla., 1953-56; Pathologist in Chief, Marine Hosp., Galveston, Tex., 1953-56; Asst. Prof. Pathol., Univ. of Tex., 1954-57; Pathol.-in-Chief and Dir. of Labs., Citizens Memorial Hosp., Victoria, Tex., and Calhoun Mem. Hosp., Port Lavaca, Tex., 1956—; Dir., Viking Motel Corp., Inc., Port Lavaca and Corpus Christi, Tex., 1961—; Trustee, Victoria Edn. Found., ibid., 1961—; Consultant in Pathol., M. D. Anderson Hosp., Houston, Tex., 1962—. Hon. Pos.: Past Pres., McClain Co. Med Soc., Oklahoma. Mem.: Am. Society of Clin. Pathologists; Diplomate Am. Bd. of Pathol.; A.M.A.; T.M.A.; Fellow, Coll. of Am. Pathol.; Internatl. Acad. Path.; Soc. Exper. Biol. and Med.; N. Y. Acad. of Sci.; Tex. Assn. Pathologists; A.A.A.S.; S. Tex. Post-Grad. Assn.; Lions Club. Contbr. to: Jour. Okla. State Med. Assn.; Jour. Tex. State Med. Assn.; Proc. Soc. Exper. Biol. and Med.; Jour. Urology; Jour. Internatl. Coll. Surg. Serv. Rec.: U. S. Army, 1943-46, 1953-56. Areas of Rsch.: Medical-Legal Med.; Anatomical Pathology; Clinical Pathology; Liver Diseases. Listed in: Who's Who in South and Southwest U. S.; W.W. in Am. Med.

O'BRIEN, Cyril Cornelius (Ph.D.), Prof. Edn., Marquette Univ., Milwaukee, Wis. Home Add.: 2568 N. Summit Ave., Milwaukee 11, Wis. INDUSTRIAL AND EDUCATIONAL PSYCHOLOGY. b. Halifax, Nova Scotia, Mar. 22, 1906. s. Arthur Michael and Mary Jane (Buchanan) O. Edn.: B.A., St. Mary's Univ., 1926; L.Mus., McGill Univ., 1931; M.A., Mt. Allison Univ., 1932; B.Paed., Univ. of Toronto, 1934; B.Mus., Laval Univ., 1937; D.Paed., Univ. of Mont., 1937; D.Mus., Univ. of Montreal, 1950; Ph.D., Univ. of Ottawa, 1944. m. Madeleine Agatha Jones (dec.), Rockingham, N. S., July 4, 1939. d. Mr. and Mrs. A. W. Jones. c.: Maureen Louise; Terry Michael; Christopher Joseph. m. (2) Patricia Mary Davison at Green Bay, Wis., July 27, 1957. Exp.: Prin., Waterville, Kings Co., N. S., 1927; Tchr., Halifax Public Schls., 1927-38; Prin., ibid., 1938-47; Hd., Dept. Psychol., Maritime Acad. of Music, Halifax, N. S., 1935-47; Lieut., Canadian Officers Training Corps, 1942-46; Lecturer, St. Mary's Univ., 1942-46; Consulting Psychologist at the Allis-Chalmers Co., 1948—; Asst. Prof. Edn., Marquette Univ., 1947-54; Assoc. Prof. Edn., ibid., 1954-59; Prof. Edn., ibid., 1959—; Lectr. in Psychol., Marquette Univ., Labor Coll., 1950-54; Lectr. in Psychol., Mt. Mary Coll., 1956; Lectr. in Psychol., Milwaukee Inst. of Tech., 1959—. Hon. Pos.: Fellow, Univ. Wis., 1950; A.A.A.S.; Royal Stat. Soc. (London, England); Vice-Pres., Royal Can. Coll. of Organists, 1946-47. Mem.: Fellow, Am. Psychol. Assn.; Royal Soc. of Tchr.; Natl. Soc. for Study of Edn.; Am. Edn. Rsch. Assn.; N.E.A.; A.A.U.P.; N.V.G.A.; Acoustical Soc. of Am.; Fellow, Royal Soc. of Arts (London, England); Fellow, Internatl. Inst. of Arts and Letters; Am. Inst. of Physics; Vice Pres. of the Wis. Acad. of Sci., 1958-59 and 1960-61; Wis. Acad. of Sci.; Am. Inst. Mgmt.; M.E.N.C.; Knights of Columbus; Am. Coll. Pers. Assn.; Consult. Psychologist, Allis-Chalmers Mfg. Co., 1948—; Midwest Psychological Assn.; Wis. Psychological Assn. Co-Author: Management of Addictions (1955), Ed. by Edw. Podolsky, M.D. Contbr. to: Schl. and Soc.; Edn.; Am. Jour. Psychol.; Jour. Edn. Psychol.; Am. Jour. of Pharm.; Sci. Edn.; Quart. Jour. on Studies on Alchol; Jour. of Acoustical Soc. of Am.; Jour. of Schl. Health; Jour. Genetic Phychol.; Digest Neurol. and Psychiatry; Jour. Higher Edn.; Jour. Bus. Edn. Ph.D. Dissertation: A Philosophy of Guidance. Gen. Int.: Rsch. Grant, Am. Assn. for Adv. Sci., for Research; Graduate Scholarship from Dean Carl E. Seashore. Hobbies: Baseball; Boating; Camping; Fishing; Writing; Music. Listed in: Who Knows—and What; Who's Who in Music; Who's Who in Midwest; Dir. Consumer-Motivation Specialists; Monthly Supplements to W.W.A.; W.W. in Am. Edn.; A.M.S.; Am. Cath. W.W.; Who Is Who in Wis. Areas of Rsch.: Learning—Psycho-Acoustics; Esthetics; Mental Hygiene; and Alcoholism.

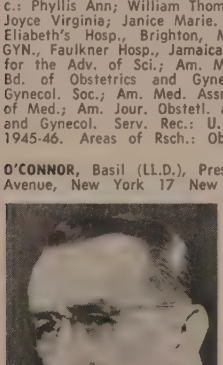
OCHSNER, Alton (M.D.), Emeritus Prof. of Surgery, Tulane Univ., Dir. of Surg., Ochsner Clin. and Ochsner Found. Hosp., 3503 Prytania St., New Orleans 15, La. Home Add.: 1347 Exposition Blvd., New Orleans 18, La. GENERAL SURGERY. b. Kimball, S. D., May 4, 1896. s. Edward Philip and Clara (Shontz) O. Edn.: B.A., Univ. of S. D., 1918; M.D., Wash. Univ. Med. Schl., 1920. Hon. Deg.: D.Sc., Univ. of S. Dak., 1936; Doctor Honoris Causa, La Universidad, Libre de Nicaragua, 1946; D.Sc., Bringham Young Univ., 1961. m. Isabel Kathryn Lockwood, Sept. 13, 1923. c.: Alton, Jr.; John; Mims; Isabel. Exp.: Med. Intern and Asst. Resident under Dr. Geo. Dock, Barnes Hosp., St. Louis, Mo., 1920-21; Surgical Resident under Dr. A. J. Ochsner, Augustana Hosp., Chicago, Ill., 1921-22; Exchange Surgical Asst. to Prof. Clairmont, Kantonsspital, Univ. of Zurich, Zurich, Switzerland, 1922-23; Exchange Surgical Asst. to Prof. Schmieden, Staedtisches Krankenhaus, Univ. of Frankfurt, Frankfurt-am-Main, Germany, 1923-24; Surgical Practice in Chicago, Ill., Associated with Dr. D. A. Orth, also Instr. in Surg. and Surgical Pathol., Northwestern Univ., Chicago, Ill., 1925-26; Asst. Prof. of Surg., Univ. of Wis. Med. Schl., Asst.

Visiting Surgeon, State of Wis. Gen. Hosp., Madison, Wis., 1926-27; Prof. of Surg. and Chmn. of the Dept. of Surg., Schl. of Med., Tulane Univ. of La., New Orleans, La., 1927-38; William Henderson Prof. of Surg. and Chmn. of the Dept. of Surg., ibid., 1938-56; Dir. of Surg., Ochsner Clinic and Found. Hosp., New Orleans, La.; Sr. Visiting Surg., Charity Hosp., New Orleans; Consult. Surgeon, Sou. Pacific Railroad; Attending Specialist in Chest Surg., U. S. Publ. Health Hosp., New Orleans; Consult. in Thoracic Surg., Vet. Admin. Hosp., New Orleans. Hon. Pos.: Pres., Internatl. Soc. of Surgery; Pres., Pan-Pacific Surgical Assn.; Pres., Cordell Hull Found. for Internatl. Edn.; Pres., Internatl. House; Honorary Mem. of Royal College of Surgeons in Ireland. Hon. Mem., Royal Coll. of Surgeons, England. Mem.: International Society of Surgeons; Am. College of Surgeons; Am. Surgical Assn.; Soc. of Clinical Surg.; Sou. Surgical Assn.; Am. Assn. for Thoracic Surg.; A.M.A.; Am. Coll. of Chest Physicians; La. State Med. Soc.; Internati. Cardiovascular Soc.; Soc. for Vascular Surgeon; Interstate Postgrad. Med. Assn.; Alpha Omega Alpha; Sigma Xi; Omicron Delta Kappa; Am. Cancer Soc.; Internatl. Soc. for Welfare of Cripples; Nu Sigma Nu; Soc. for Crippled Children and Adults. Author: Varicose Veins, 1936; Smoking and Cancer; Smoking and Health. Co-Editor: Christopher's Minor Surgery, 7th and 8th Eds. Contbr. to: Sections in Various Med. Books. War Rec.: Special Consultant in Surg. to the Army Air Force; Mem. of the Surgical Comm. of the Natl. Rsch. Council as Advisor to the Surgeons Gen. of the Army, Navy, and Public Health, World War II; Presently Consultant to Air Force. Special Int.: Thoracic Surgery; Vascular Surgery.

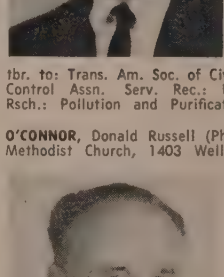
OCHSNER, John Lockwood (M.D.), Surgeon, Ochsner Clinic, New Orleans, La. Home Add.: 8018 Jeannette St., New Orleans, La. CARDIO-VASCULAR SURGERY. b. Madison, Wis., Feb. 10, 1927. s. Dr. Alton and Isabelle (Lockwood) O. Edn.: M.D., Tulane Univ., 1952. m. Mary Louise Hannon, Mar. 20, 1954. c.: John Lockwood, Jr.; Joby Hannon; Katherine. Exp.: Instr., Baylor Med. Schl. Houston, Tex., 1959-61; Instr., Tulane Med. Schl., 1961—. Mem.: Beta Theta Pi; Nu Sigma Nu. Contbr. to: Univ. of Mich. Med. Bull.; Surgery; Am. Surgeon; A.M.A. Arch. Surg.; Surgical Forum; Am. Jour. Roentgenol.; Surgical Considerations, Dis. Colon and Rectum; Circulation; Proc. Soc. Exper. Biol. and Med.; La. St. Med. Jour.; Heart Bull.; Jour. Thoracic and Cardiovascular Surg. Serv. Rec.: USAF Med. Serv., 1954-56. Areas of Rsch.: Research in vascular prosthesis and hernia prosthesis; Research in heart surgery.

O'CONNELL, William Thomas (M.D.), Physician, 697 Cambridge St., Brighton 35, Mass. Home Add.: 248 Bellevue St., W. Roxbury 32, Mass. OBSTETRICS AND GYNECOLOGY. b. Boston, Mass., Mar. 6, 1916. s. William Hannon and Mary Ann (Morris) O. Edn.: A.B., Boston Coll., 1938; M.D., Tufts Coll. Med. Schl., 1943. m. Dorothy Mildred Hogue, Sept. 10, 1946. c.: Phyllis Ann; William Thomas; Mary Patricia; Richard Joseph; Joyce Virginia; Janice Marie. Exp.: Visiting OB. and GYN., St. Eliabeth's Hosp., Brighton, Mass., 1958-62; Visiting OB. and GYN., Faulkner Hosp., Jamaica Plain, 1955-62. Mem.: Am. Assn. for the Adv. of Sci.; Am. Med. Writers Assn.; Diplomate Am. Bd. of Obstetrics and Gynecol.; New England Obstetl. and Gynecol. Soc.; Am. Med. Assn. Contbr. to: New England Jour. of Med.; Am. Jour. Obstetl. and Gynecol.; Mod. Med.; Obstets. and Gynecol. Serv. Rec.: U. S. Army, 1944-45; U. S. Army, 1945-46. Areas of Rsch.: Obstetrics and Gynecology.

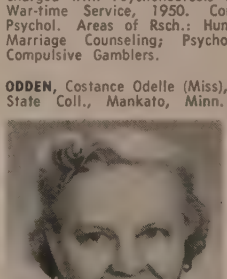
O'CONNOR, Basil (LL.D.), Pres., The Natl. Found., 800 Second Avenue, New York 17 New York. Home Add.: 35 E. 76th St., N. Y. 21, N. Y. b. Taunton, Mass., Jan. 8, 1892. s. Daniel B. and Elizabeth A. (O'Gorman) O'C. Edn.: A.B., Dartmouth Coll., 1912; LL.B., Harvard Law Schl., 1915. Hon. Degs.: LL.D., Blackburn Coll., 1941, Dartmouth Coll., 1946, Emory Univ., 1952, St. John's Univ., 1954, St. Lawrence Univ., 1954, Natl. Univ. of Ireland, 1958, Baylor Univ. Coll. of Med., 1959, Univ. of Mich., 1959; L.H.D., Coll. of Wooster, 1948, Tuskegee Inst., 1956. m. 1st. Elvira Miller, Aug. 31, 1918, dec., 1955. 2nd. m., Hazel Royall, June 12, 1957. c.: Mrs. Betty Ann Culver, dec., 1961; Sheelagh. Exp.: Law Firm, Cravath and Henderson, N. Y., 1915-16; Law Firm, Streeter and Holmes, Boston, Mass., 1916-19; Private Practice, N. Y., 1919-25; Law Firms, Roosevelt and O'Connor, N. Y., 1925-33, and O'Connor and Farber, N. Y., 1933—; Pres., The Natl. Found., 1938 ; Pres., Ga. Warm Springs Found., 1945—; Pres., Internatl. Poliomyelitis Congress, 1948—; Trustee and Treas., The Salk Inst. of Biol. Studies, 1962—; Chmn. and Pres., Am. Natl. Red. Cross, 1944-49; Chmn., Bd. of Govs., League of Red Cross Socs.; Pres., Natl. Health Coun., 1957-58. Hon. Pos.: Pres., Internatl. Med. Congress; Mem. Bd. of Dirs. and Founder of Natl. Conf. of Christians and Jews, Inc.; Hon. Chmn., Bd. Natl. Vitamin Found., Inc.; Chmn., Bd. of Trustees, Tuskegee Inst.; Vice Pres., Am. Coun. for Health Edn. of Pub., 1959; Pres., Harry S. Truman Libr., Inc.; Dir., Harry S. Truman Libr. Inst.; Vice Pres., Social Leg. Informat. Serv.; Mem., Exec. Comm. U.S. Comm. for the United Nations. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Bar Assn.; N. Y. State Bar Assn.; N. Y. Co. Lawyer's Assn.; Assn. Bar City of N. Y.; Harvard Law Schl. Assn. of N. Y.; Natl. Inst. of Social Scis.; Am. Irish Hist. Soc.; New England Soc.; Am. Phys. Therapy Assn.; N. Y. Acad. of Scis.; Royal Soc. Health; Sigma Phi Epsilon. Gen. Int.: Albert Lasker Scientific Award of the Am. Publ. Health Assn., 1958; Named First Layman "Gold Member" by the N. Y. Acad. of Scis., 1957; Medal for Merit of the U. S. of Am., 1952; Decoration from Belgium, Brazil, Bulgaria, Cuba, Denmark, Finland, France, Great Britain, Greece, Holland, Italy, Monaco, Norway, Rumania, Sweden, Venezuela.



O'CONNOR, Donald J. (Sc.D.), Assoc. Prof. of Civil Engrng., Manhattan Coll., New York, N. Y. Home Add.: 33 Garret Pl., Glen Rock, N. J. ENGINEERING SCIENCE (CIVIL ENGINEERING). b. New York, N. Y., Nov. 7, 1922. s. William and Helen (Ryan) O. Edn.: B.C.E., Manhattan Coll., 1944; M.C.E., Polytech. Inst. of Brklyn., 1947; Eng. Sc.D., N. Y. Univ., 1956. m. Anita Lordi, 1948. c.: Dennis; Arlene; Jeanette. Exp.: Instr., Manhattan Coll., N. Y., 1946-47; Instr., Polytech. Inst. of Brklyn., N. Y., 1948-50; Asst. Prof. of C. E., Manhattan Coll., 1952-56; Assoc. Prof. of C. E., ibid., 1956—. Mem.: Am. Soc. of C. E.; Am. Geophyys. Union; N. Y. State Water Pollution Control Assn.; Am. Soc. for Engrng. Edn.; Chi Epsilon; Sigma Xi. Author: Biological Waste Treatment, 1961. Contbr. to: Trans. Am. Soc. of Civil Engrs.; Jour. of Water Pollution Control Assn. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Pollution and Purification of Natural Waters.



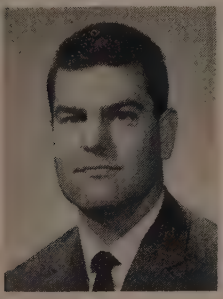
O'CONNOR, Donald Russell (Ph.D.), Supt., Riverside Dist. of The Methodist Church, 1403 Wells Ave., Claremont, Calif. SOCIAL SCIENCES. b. Vicksburg, Miss., Dec. 3, 1917. s. J. Michael and Luvenia (Rushing) O. Edn.: B.S., Millsaps Coll., 1939; B.D., Emory Univ., 1943; Ph.D., Univ. of Sou. Calif., 1950. m. Ollie Mae Gray, June 9, 1942. c.: Patrick; Kathleen; Maureen. Exp.: Psychologist, Veterans Adm., New Orleans Region, S.E. Louisiana Coll., 1945-47; Minister, Methodist Church, Los Angeles, Calif., 1947-52; Instr., Univ. of Nev., 1953-59; Pastor, First Methodist Church, Las Vegas, Nev., 1952-59; Dist. Supt., The Methodist Ch., Riverside Dist., Calif., 1959—. Hon. Pos.: Chmn. of Bd., Marriage Counseling Service, Inc., 1956-59; Founding Mem. of Nev. Mental Health Assn. and Sou. Nev. Comm. on Alcoholism. Mem.: Am. Psychol. Assn.; Am. Assn. of Univ. Prof.; Am. Assn. of Marriage Counselors; A.A.A.S.; Natl. Coun. on Family Relations; Omicron Delta Kappa; Rotary Club. Author: A Comparative Study of 200 World War II Veterans Discharged with Psychoneurosis and 200 Non-disabled Veterans of War-time Service, 1950. Contbr. to: Internatl. Congress of Psychol. Areas of Rsch.: Human Factors in Sci. and Vocation; Marriage Counseling; Psychol. of Relig.; Rehabilatation of Compulsive Gamblers.



ODDEN, Costance Odelle (Miss), Asst. Prof. in Microbiol., Mankato State Coll., Mankato, Minn. Home Add.: 518 S. 4th St., Mankato, Minn. MICROBIOLOGY. b. Osage, Iowa, Oct. 1, 1905. d. Hans A. and Olena Christine (Maakestad) O. Edn.: B.A., St. Olaf Coll., 1927; M.S., St. Univ. of Ia., 1940. Exp.: Sci. Tchr., Bellingham H. S., Bellingham, Minn., 1927-29; Med. Tech., Interne, Mpls. Gen. Hosp., Mpls., Minn., 1929-30; Med. Technologist, Gardner-Hallberg Clinic, ibid., 1930-37; Rsch. Asst., St. Univ. of Ia., 1938-40; Bacteriologist, Minn. Dept. of Health, Minneapolis, Minn., 1940-58; Bacteriologist in Charge, ibid., Duluth, Minn., 1943-46; Instr., Mankato St. Coll., 1958-62; Asst. Prof., ibid., 1962—. Hon. Pos.: Secy., Henrici Soc. of Minn.; Secy., Med. Technologists of Minn. and St. Paul; Fellow, A.A.A.S.; A.P.H.A.; Am. Scandinavian Found. Mem.: Soc. of Am. Microbiol.; Royal Soc. of Health; Natl. Edn. Assn.; Midwest Biol. Tchrs. Assn.; A.A.U.W.; Minn. Acad. of Sci.; Minn. Publ. Hlth. Assn.; Sigma Delta Epsilon Women in Sci. Rsch. Contbr. to: Acta Path.; Serum. Inst. Copenhagen. Areas of Rsch.: Bacteriological Studies of the Mouth Flora and its Relationship to Dental Caries. Salmonella and Brucella Micro-organisms; Serological Interrelationships of the Enterobacteriaceae.

ODELL, Clarence Burt (Ph.D.), Managing Editor, Denoyer-Geppert Co., 5235 Ravenswood Ave., Chicago 40, Ill. Home Add.: 2410 Greenwood Ave., Wilmette, Ill. GEOGRAPHY. b. Normal, Ill., Sept. 3, 1907. s. William H. and Ruby F. (Conklin) O. Edn.: B.Ed., Ill. St. Normal Univ., 1930; M.A., Univ. of Ill., 1931; Ph.D., Univ. of Chicago, 1937. m. Madelyn C. Adams, June 11, 1931. c.: Sarah Jane. Exp.: Cartographer, McKnight and McKnight, Publishers, 1927-30; Tchng. Fellow, Univ. of Nebr., 1931-32; Cartographer, Grad. Lib. Schl., Univ. of Chicago, 1935-36; Instr., Geog. and Geol., Oak Park Jr. Coll., Oak Park, Ill., 1936-37; Assoc. Prof. of Geol., Stephen F. Austin St. Tchrs. Coll., 1937-39; Instr., Geog., Dept. of Geol. and Geog., Univ. of Mo., 1939-43; Asst. Prof. of Geog., ibid., 1943-46; Divisional Asst., Office of the Geographer, U. S. Dept. of St., Wash., D. C., 1942-46; Chief, Cartography Dept., Encycl. Britannica, Chicago, Ill., 1946-50; Geographic Editor, Denoyer-Geppert Co., Chicago, Ill., 1950-51; Managing Editor, ibid., 1951—. Hon. Pos.: Mem., Bd. of Dirs. and Past Pres., Geographic Soc. of Chicago. Mem.: Assn. of Am. Geographers; Sigma Xi; Natl. Coun. of Geog. Edn.; Fellow, Am. Geographical Soc.; Fellow, Am. Assn. Adv. Sci.; Gamma Theta Upsilon; Arctic Inst. of N. Am., Charter Assoc.; Am. Congress of Surveying and Mapping.

ODELL, William Douglas (M.D.), Sr. Scientific Investigator, Attending Physician, Natl. Cancer Inst., Bethesda, Md. Home Add.: 11107 Lund Place, Kensington, Md. ENDOCRINOLOGY, PHYSIOLOGY, MEDICINE. b. Oakland, Calif., June 11, 1929. s. Ernest A. and Emma L. (Mayer) O. Edn.: A.B., Univ. of Calif., 1952; M.S., Univ. of Chicago, 1956; M.D., ibid., 1956. m. Margaret F. Reilly, Aug. 19, 1950. c.: Michael; Timothy; Dennis; Deborah; Charles. Exp.: Intern, King Co. Hosp., Seattle, Wash., 1956-57; Rsch. Fellow, Endocrinology, Univ. of Wash., 1957-58; Asst. Resident in Medicine, ibid., 1958-59; Chf. Resident in Medicine, ibid., 1959-60; Sr. Scientific Investigator, Attending Physician, Natl. Cancer Inst., Bethesda, Md., 1960—. Mem.: A.A.A.S.; Am. Fed. for Clin. Rsch.; Endocrine Soc.; Soc. Exptl. Biol. and Med. Contbr. to: Jour. of Clin. End. and Metab.; N. Y. Acad. of Sci.; Arch. Int. Med.; Diabetes; Northwest Med.; Am. Jour. of Physiol. Serv. Rec.: U.S.P.H.S., 1960—. Areas of Rsch.: Internal Medicine; Physiol.; Endocrinology.



OESTER, Y. Thomas (M.D.), Dept. of Pharm., Prof., Stritch Schl. of Med. of Loyola Univ., Chicago, Ill. PHARMACOLOGY AND TOXICOLOGY; MEDICINE. b. West Brooklyn, Ill., Dec. 21, 1908. s. Frank and Caroline (Hildmann) O. Edn.: B.S., Univ. of Notre Dame, 1931; M.S., ibid., 1933; Ph.D., Univ. of Chicago, 1938; M.D., ibid., 1943. m. Elizabeth Frances Elkin, Mar. 19, 1939. c.: Michael; Miriam; Yvonne. Exp.: Instr., Univ. of Notre Dame, 1933; Fellow, Univ. of Chicago, 1934; Asst., ibid., 1934-38; Instr., Pharmacology, Loyola Univ., Chicago, Ill., 1938-39; Assoc. Prof., Dept. of Pharm., ibid., 1947-56; Acting Chmn., Dept. of Pharm., ibid., 1947-58; Chief Chemist, Ill. Racing Bd., 1934—; Chief Chem., Fla. Racing Comm., 1939-49; Chf. Chem., Mich. Racing Comm., 1946-52; Chief Chem., N. Mex. Racing Comm., 1949-51; Independent Consultant, Chicago Biological Rsch. Lab.; Acting Dir., Radioisotope Lab., Hines V.A. Hosp., 1954-59; Consultant, Radioisotope Lab., ibid., 1954—. Hon. Pos.: Ex-Pres., Am. Assn. of Electromyography and Electrodiagnosis; Ex-Pres., Chicago Soc. of Phys. Med. and Rehabilitation; Pres., Walter Reed Soc., 1956; Ex-Pres., Assn. of Official Racing Chemists. Mem.: Am. Med. Assn.; Am. Chem. Soc.; Am. Pharmaceutical Assn.; Am. Congress of Phys. Med. and Rehabilitation; Walter Reed Soc.; A.A.A.S.; Ill. Soc. for Med. Rsch.; N. Y. Acad. of Sci.; Am. Heart Assn.; Am. Soc. for Pharmacology and Expmtl. Therapeutics; Assn. Am. Med. Colls.; Natl. Soc. for Med. Rsch.; Natl. Soc. for Nuclear Med.; Soc. for Expmtl. Biol. and Med.; Sigma Xi. Contbr. to: Arch. Int. Pharmacodyn. et de Therapie; Circulation Rsch.; Phys. Therapy Rev.; Arch. Dermatology; Jour. Lab. and Clin. Med.; Science; Arch. Int. Med.; Am. Jour. Phys. Med.; N. Y. Acad. of Sci.; Am. Jour. Physiol.; Am. Jour. Pathol.; Arch. Phys. Med. and Rehabilitation; Ill. Med. Jour.; Am. Med. Jour.; Jour. Pharmacol. and Exptl. Therapeutics; Proc. Soc. of Exptl. Biol. and Med.; Jour. Am. Pharmaceutical Assn.; Federation Proc.; Proc. Acad. of Forensic Sci. War Rec.: Capt., Army Med. Corps, 1944-46. Special Int.: Pharmacol. and Toxicology.

OESTMANN, Mary Jane (Ph.D.), Assoc. Chemist, Internatl. Inst. of Nuclear Sci. and Engrng., Argonne Natl. Lab., 9700 S. Cass Ave., Argonne, Ill. Home Add.: 5152 Fairview Ave., Apt. 4, Downers Grove, Ill. RADIOISOTOPES, RADIOCHEMISTRY, RADIATION CHEMISTRY, DOSIMETRY, RADIATION EFFECTS STUDIES, ISOTOPE PRODUCTION AND APPLICATIONS, NUCLEAR FUEL REPROCESSING, SOLVENT EXTRACTION STUDIES. b. Chicago, Ill., May 22, 1924. d. Charles Edward and Harriet Evelyn (Stoltenberg) O. Edn.: A.B., Denison Univ., 1946; M.S., Univ. of Wis., 1948; Ph.D., ibid., 1954. Exp.: Tchng Asst., Univ. of Wis. ,1946-49; Rsch. Asst., ibid., 1949-51; Instr. Chem., Edgewood Coll., 1952-53; Visiting Scientist, Inst for Atomic Energy, Joint Establishment of Nuclear Energy Rsch., Kjeller, Norway, 1954-55; Visiting Scientist, A.B. Atomenergi, Stockholm, Sweden, 1955-56; Visiting Lectr. in Chem., St. Univ. of Ia., 1957; Prin. Chemist, Radioisotopes and Radiation Div., Battelle Memorial Inst., 1957-60, Sr. Chemist., ibid., 1960-61; Assoc. Chemist, Internatl. Inst. of Nuclear Sci. and Engrng., Argonne Natl. Lab., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; A.S.T.M.; Wis. Acad. of Sci., Arts, and Letters; Am. Nuclear Soc.; Phi Beta Kappa; Sigma Xi; RESA; Sigma Delta Epsilon; Iota Sigma Pi; Royal Norwegian Yacht Club; Scandinavian Club of Columbus. Author: Co-Ed., Index to the Proc. of the 2nd Int'l. Conference on the Peaceful Uses of Atomic Energy. Contbr. to: Proc. of the Inst. of Environmental Sci., 2nd Int'l. Conference on the Peaceful Uses of Atomic Energy, 1961; Natl. Aeronautic Meeting of Soc. of Automotive Engrs., Radiation Effects Information Center Reports and Memos. Areas of Rsch.: Radiation Effects on Chemical Systems, High-Level Gamma and Neutron Dosimetry, Radio and Nuclear Chem., Fuel Element Burnup, Reprocessing, Fission Process, and Fission Gas Release, Formerly connected with the Radiation Effects Information Center at Battelle. Areas of Tchng.: Radioisotope and Radiation Technol. for the Internatl. Inst. of Nuclear Sci. and Engr. at ANL.

OFFER, Daniel (M.D.), Rsch. Assoc., Michael Reese Hosp., Chicago, Ill. Home Add.: 5308 Hyde Park Blvd., Chicago 15, Ill. RESEARCH IN ADOLESCENT PSYCHIATRY. b. Berlin, Germany, Dec. 24, 1929. s. Walter Hirsch and Ilse (Meyer) O. Edn.: B.A., Univ. of Richester, 1953; M.D., Univ. of Chicago, 1957. m. Judith L. Baskin, July 2, 1961. Exp.: Clinical Instr., Univ. of Ill. Schl. of Med., Chicago, Ill., 1961—; Mental Health Career Investigator, Natl. Inst. of Mental Health, Michael Reese Hosp., Chicago, Ill., 1961—. Mem.: A.A.A.S.; Ill. Psychiatric Soc.; Am. Psychiatric Assn. Contbr. to: A.M.A. Archives of Gen. Psychiatry; Comprehensive Psychiatry; Am. Jour. of Orthopsychiatry Progress in Clinical Psychol. Serv. Rec.: Israeli Armed Forces, 1948-50. Areas of Rsch.: The Modal Adolescent, Rsch. in the Area of the Normal Psychological Devel. of the Teenager (14 to 17 yrs. old). Influence of Music on Painting of Disturbed and Normal Subjects.

OGATA, Akio (NMN) (Ph.D.), Hydraulic Engr., Rsch., USGS, 602 Fed. Bldg., Honolulu, Hawaii. Home Add.: 549 Paulele St., Kailua, Hawaii. HYDROLOGY (GROUND WATER). b. Puunene, Maui, Hawaii, July 20, 1927. s. Kazuto and Natsu (Yoshinaga) O. Edn.: B.S., Univ. of Utah, 1951; M.S., Northwestern Univ., 1956; Ph.D., ibid., 1958. m. Karleen U. Atebara, Aug. 7, 1954. c.: Albert K.; Steven A. Exp.: Hydra. Engr., E. Maui Irrig. Co., Paia, Maui, Hawaii, 1953-55; Rsch. Assoc., Northwestern Univ., Evanston, Ill., 1957-58; Hydra Engr., U. S. Geol. Survey, Phoenix, Ariz. and Honolulu, Hawaii, 1958—. Mem.: Am. Geophys. Union; Sigma Xi. Contbr. to: U. S. Geol. Survey Publs. Serv. Rec.: U. S. Army, T/5. Areas of Rsch.: Dispersion of Fluids in Porous Medias.

OGDON, Donald P. (Ph.D.), Assoc. Prof. of Psychol., Richmond Professional Inst. of the Coll. of William and Mary, Richmond, Va. Home Add.: 6902 Tulane Ave., Richmond, Va. CLINICAL PSYCHOLOGY; PSYCHODIAGNOSTICS AND CLINICAL RESEARCH, MENTAL RETARDATION. b. Oak Park, Ill., July 26, 1923. s. Glenn H. and Elizabeth (McDonald) O. Edn.: B.S., Univ. of Ill., 1949; M.A., Univ. of Tex., 1950; Ph.D., Univ. of Mo., 1955. Exp.: Acting Prof., Mo. Valley Coll., 1952-53; Clinical Psychologist, Mo. St. Schl., 1954-55; Assoc. Prof., Richmond Professional Inst. of the Coll. of William and Mary, 1955—. Mem.: Am. Psychological Assn.; A.A.A.S.; Va. Psychological Assn.; Sigma Xi; Psy. Chi. Contbr. to: Sci.; Psychological Bull.; Jour. of Consulting Psychol.; Am. Psychologist; Am. Jour. of Mental Deficiency. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Clinical Psychol.; Psychodiagnostics; Mental Retardation; Mental Health; Abnormal Psychology; Developmental Psychol.

OGBORN, Richard Eugene (M.D.), Chf. Radioisotope Serv., V.A. Hosp., 4101 Woolworth Ave., Omaha 5, Neb. Home Add.: 5108 Lafayette Ave., Omaha 32, Neb. PEDIATRICS/NUCLEAR MEDICINE. b. Sioux Falls, S.D., Apr. 25, 1920. s. Claude Cecil and

Margaret Elizabeth (MacLennan) O. Edn.: B.A., Univ. of S.D., 1942; B.S., M.S., ibid., 1944; M.D., Univ. of Louisville Med. Schl., 1946. m. Bessie C. Nourse, May 10, 1945. c.: Susan; Carolyn Jean. Exp.: Instr. in Pediatrics, Univ. of Louisville, 1946-48; Chf., Radioisotope Serv., U.S.V.A. Hosp., Omaha, Neb., 1956—. Mem.: Am. Coll. of Physicians; Soc. of Nuclear Med.; Am. Bd. of Pediatrics, Diplomate; A.M.A.; Sigma Xi; Optimist Club. Contbr. to: Jour. A.M.A.; Miss. Valley Med. Jour.; Neb. St. Med. Jour.; Pediatrics; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Roent.; Rad. Therapy and Nuclear Med.; S.D. Jour. Med. and Pharm.; Radiol.; Jour. Nuclear Med. Serv. Rec.: U. S. Army, 1948-56. Areas of Rsch.: Nuclear Med.

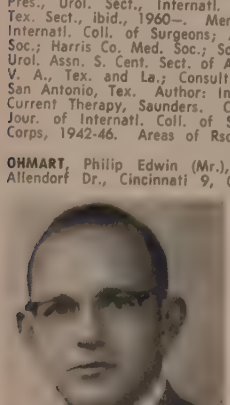
O'HALLORAN, James John (M.D.), Medical Dir., Deere & Co., 729 3rd Ave., Moline, Ill. Home Add.: 626 20th Ave. Ct., E. Moline, Ill. OCCUPATIONAL MEDICINE AND SURGERY. b. Clinton, Ia., Aug. 15, 1908. s. John A. and Winifred M. (Carmody) O. Edn.: A.B., St. Univ. of Ia., 1930; M.D., Rush Medical Coll., Univ. of Chicago, 1935. m. Camille Nolan, Nov. 26, 1942. c.: Mary Beth; Therese. Exp.: Physician, Deere & Co., Moline, Ill., 1935-42; Medical Dir., ibid., 1942—. Mem.: Am. Medical Assn.; Industrial Medical Assn., Fellow; Am. Coll. of Preventive Medicine, Fellow; Am. Industrial Hygiene Assn.; A.A.A.S.; Phi Beta Pi. Areas of Rsch.: Occupational Mediicne and Surgery.

OHANIAN, Edward (Ph.D.), Speech Pathologist and Psychologist, Loyola Univ., Los Angeles, Calif. Home Add.: 6931 Knowlton Place, Los Angeles 45, Calif. SPEECH PATHOLOGY AND CLINICAL Psychol. b. Selma, Calif., Nov. 14, 1922. s. Benjamin and Mary (Gorouzian) O. Edn.: B.A., Univ. of Southern Calif., 1947; M.A., ibid., 1950; Ph.D., ibid., 1952. m. Martha L. Taylor, Aug. 17, 1950. c.: Valerie Gay; Lee Edward. Exp.: Instr., Mont. State Univ., 1953-54; Asst. Prof., Pepperdine Coll., 1954-57; Assoc. Prof., ibid., 1958-61; Co-Dir. of the Psychol.-Speech Clinic, Los Angeles, Calif., 1954-61; Psychol. and Speech Pathology, Private Practice, ibid., 1961—; Lecturer, Loyola Univ., 1962—. Mem.: Am. Psychol. Assn.; Am. Speech and Hearing Assn.; Am. Assn. for Adv. of Sci.; Western Psychol. Assn.; Calif. Psychol. Assn.; Calif. Speech and Hearing Assn.; Kiwanis Club. Contbr. to: A.S.H.A. Jour.; EEG Clin. Neurophysiol. Serv. Rec.: U. S. Navy, 1942-45. Areas of Rsch.: Stuttering, Neurologically Handicapped, Electroencephalography, Individual and Group Psychotherapy.

O'HEERON, Michael Kinney (M.D.), 1804 The Medical Towers, Houston 25, Tex. Home Add.: 517 Wellesley, Houston 24, Tex.

MEDICINE; UROLOGY. b. Evins, Mo., Aug. 31, 1908. s. John Kinney and Early Viola (Neely) O'H. Edn.: B.A., Culver-Stockton Coll., 1934; M.O., Washington Univ.,Univ., Mo., 1935. m. Scharmayne Olsen (dec.), Oct. 19, 1946. m. 2nd Jean Bernard Bianchino, Oct. 28, 1961. c.: Michael K., Jr.; John Bingham; William Edward; Mark Cummings. Exp.: Chief Urology, St. Joseph's Hosp., Houston, Tex., 1946—; Chief, Urology, Meth. Hosp., Houston, Tex., 1947-60; Clin. Prof. of Urology, Baylor Univ., 1949—; Assoc. Clin. Prof. of Urology, Univ. of Tex., Postgrad. Schl. of Med., 1954—; Attending Urologist, St. Luke's Episcopal Hosp., Houston, Tex., 1960—. Hon. Pos.: Chmn., Credentials Com., St. Joseph's Hosp., 1950—; Scientific Exhibits Com., South Central Sect., Urological Assn., 1951—; Pres., Urol. Sect., Internatl. Coll. of Surgeons, 1953; Agent, Tex. Sect., ibid., 1960—. Mem.: Fellow, Am. Coll. of Surgeons, Internatl. Coll. of Surgeons; Am. Med. Assn.; Tex. State Med. Soc.; Harris Co. Med. Soc.; Southwestern Surgical Congress; Am. Urol. Assn. S. Cent. Sect. of Am. Urol. Assn.; Consult. Urologist, V. A., Tex. and La.; Consulting Urologist Brooke Army Hosp., San Antonio, Tex. Author: Injuries to the Kidney, 1959 ed. of Current Therapy, Saunders. Contbr. to: Am. Jour. of Urology; Jour. of Internatl. Coll. of Surgeons. Serv. Rec.: Army Med. Corps, 1942-46. Areas of Rsch.: Field of Urology, Clinical.

OHMART, Philip Edwin (Mr.), Pres., The Ohmart Corp., 4241 Allendorf Dr., Cincinnati 9, Ohio. Home Add.: 3668 Grandin Rd., Cincinnati 26, Ohio. ELECTRONIC ENGINEERING AND NUCLEAR PHYSICS. b. Springfield, Ohio, May 20, 1916. s. George Lowman and Hazel (Tuttle) O. Edn.: Attended—Wittenberg Coll., Ohio State Univ., 1934-38. m. Margaret Whittam, June 9, 1942. c.: Clifford W. Exp.: Technical Radio Operator, Ohio State Highway Patrol, 1936-39; Chief Radio Operator, Ohio State Highway Patrol, 1939-40; Second Lt., First Lt. and Capt., Signal Corps, U. S. Army, 1941-45; Group Leader, Monsanto Chemical Co., Miamisburg, Ohio, 1945-50; Pres., The Ohmart Corp., 1950—. Mem.: A.A.A.S.; I.S.A.; I.R.E.; Pi Kappa Alpha; Cincinnatus, Univ. Club. Contbr. to: Jour. of Applied Physics; I.S.A. Jour.; Jour. of the Soc. of Non Destructive Tests.



Serv. Rec.: U.S.A. Gen. Int.: Invented a Method of Converti Radioactive Energy Directly Into Electrical Current; Register Professional Engr. Areas of Rsch.: Applications of Radioisotop and Radioactivity to Industry for Process Measurement and Co trol.

OHMER, Merlin Maurice (Ph.D.), Prof. of Math., Univ. Southwestern La., Lafayette, La. Home Add.: 400 Roosev St., Lafayette, La. MATHEMATIC b. Napoleonville, La., March 1 1923. s. Tobias A., (dec.) a Elvina (Mayon) O. Edn.: B. Tulane Univ., 1944; M.S., ibi 1948; Ph.D., Univ. of Pe 1954. m. Beverly Landwerl Aug. 30, 1947. c.: Carol An Merlin Paul; Susan Stephan Exp.: Asst. Prof. of Math., Uni of So. La., 1948-53; Associa Prof., Math., ibid., 1953-5 Prof., Math., 1956—. Hon. Pos Visiting Asst. Prof. Math., T lane, 1949-50; Visiting Asso Prof. Math., Univ. of Pgh., Sep 1953-Jan. 1954; Chairman, Budg Comm. Chu.; Chmn. Cred. Comm Univ. of So. La., Fed. Cred Union; Pres., Local PTA; Pa Pres., Faculty Club, Univ. of S La.; Treas., Am. Assn. Univ. Profs., Local Chptr.; Mem. Faculty Senate. Mem.: Math. Assn. of Am.; Natl. Coun. Tchrs. of Math.; Am. Assn. for Univ. Profs.; Assn. for Computin Machinery; La. Acad. of Scis.; Kappa Mu Epsilon; Alpha P Omega. Contbr. to: Southwestern Jour. Serv. Rec.: U. Naval Reserve, W.W. II. Areas of Rsch.: Training and Retrai ing of Teachers.

OKADA, Satio (Dr. of Engr.), Staff Eng., Dept. Math. Analysi Mitre Corp., Bedford, Mass. Home Add.: 29, Davida Rd., Burlin ton, Mass. THEORY OF ELECTRICA ENGINEERING, MATHEMATICS, IN FORMATION THEORY, ALGEBRAI TOPOLOGY, NETWORK TOPOLOGY TENSOR ANALYSIS, THEORY O HARMONIC INTEGRALS. b. Tokyo Japan, July 10, 1909. Akiyuki and Kikuko (Momma) Edn.: B.Engr., Tohoku Univ Sendai, Japan, 1932; Dr. Engr., ibid., 1956. m. Mathild Nobuko Murakami, Feb. 12, 194 c.: Mrs. Aiko Sato; Kazuhiko Exp.: Sr. Engr., Bur. of Elec Com. of Japan, Tokyo, Japan 1932-36; Prof., Tohoku Univ Rsch. Lab. of Elec. Com., Senda Japan, 1936-49; Prof., Yamagat Univ., Yonezawa, Japan, 1949-54 Rsch. Assoc., Polytechnic Inst of Brooklyn, N. Y., 1954-60 Rsch. Fellow, General Dynamics/Electronics, Rochester, N. Y 1960-62; Staff Engr., Mitre Corp., 1962—. Hon. Pos.: Chmn Elect. Engrng. Dept. of Yamagata Univ. Mem.: Am. Math. Soc. Inst. of Radio Engrng.; Math. Soc. of Japan; Inst. of Electrica Engrng. of Japan; Inst. of Elec. Com. Eng. of Japan; Tenso Club of Great Britain; Rsch. Assoc. of Applied Geometry Tokyo, Japan; Sigma Xi; Eta Kappa Nu. Contbr. to: Inst. o Elec. Com. Eng. Japan, I.R.E. Areas of Rsch.: Tensor Analysis o Networks, Machines and Fields, Network Topology, Algebrai Topology, Theory of Harmonic Integrals, Information Theory.

OKITA, George Torao (Ph.D.), Univ. of Chicago, Asst. Prof., Chi cago, Ill. Home Add.: 8574 S. Avalon, Chicago 19, Ill. PHAR MACOLOGY, METABOLISM AN MECHANISM OF ACTION OF CAR DIAC GLYCOSIDES, BIOCHEMICA CHANGES IN CARCINOGENESIS. b Seattle, Wash., Jan. 18, 1922. Kazue and Fusao (Muguruma Edn.: B.A., Ohio State Univ. 1948; Ph.D., Univ. of Chicago 1951. m. Fujiko Shimizu, Nov 29, 1958. c.: Ronald Hajime Sharon Mariko. Exp.: Rsch. Asst. Univ. of Chicago, 1949-51 USPHS Post-Doctoral Fellow, Univ of Chicago, 1951-52; Rsch. As soc., ibid., 1953-56; Rsch. Assoc. Asst. Prof., ibid., 1956-58; Assi Prof., ibid., 1958—. Mem.: Am Soc. for Pharmacology and Ex perimental Therapeutics; Am. Soc for Experimental Biol. and Med. Am. Assn. for Cancer Rsch. A.A.A.S.; Sigma XI. Author: Selected Studies on the Metaboli Fate of Radioactive Digitoxin in Man, 1957. Contbr. to: Int Jour. Appld. Radn. and Isotope; Jour. Pharmacol. Expt. Therap; Jour. Biol. Chem.; Nature; Jour. Am. Geriatrics Soc.; Nucleonics; Circ. Rsch. Serv. Rec.: U.S.A. Areas of Rsch.: Biochemica Changes in Carciogenesis, Metabolism of Radioactive Digitoxi in Cardiac Patients, Mechanism of Action of Cardiac Glycosides Radioactive Tracer Techniques.

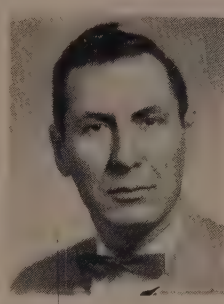
OLD, Bruce Scott (D.Sc.), Sr. Vice Pres., Arthur D. Little, Inc., Cambridge, Mass. Home Add.: 8 Hosmer Rd., Concord, Mass. METALLURGY. b. Norfolk, Va., Oct. 21, 1913. s. Edward Herbert O. and Eugenia (Smith) Manly. Edn.: B.S., Univ. of N. C., 1935; D.Sc., Mass. Inst. of Technol., 1938. m. Katharine Day, Oct. 7, 1939. c.: Edward H.; Randolph S.; Lansing G.; Ashlee V.; Barbara S. Exp.: Staff, Bethlehem Steel Co., Bethlehem, Pa., 1938-41; Vice Pres., Arthur D. Little, Inc., Cambridge, Mass., 1946—; Pres., Cambridge Corp., Cambridge, Mass., 1951-53; Pres., Nuclear Metals, Inc., Cambridge, Mass., 1954-57. Hon. Pos.: Consultant, A.E.C.; Chf. Metallurgy and Materials Br., Div. of Rsch.; Pres. Eisenhower's Sci. Advisory Committee. Mem.: Am. Inst. of Metallurgical Engrng.; Am. Soc. of Metals; A.A.A.S.; Am. Iron and Steel Inst.; Eastern Sates Blast Furnace Assn.; Natl. Planning Assn.; Am. Nuclear Soc.; Concord Country Club; Cosmos Club; Union Club; M.I.T. Faculty Club. Co-author: The Game of Doubles in Tennis, 1956; The Game of Singles in Tennis, 1962. Contbr. to: Scientific Monthly; Iron Age; Iron and Steel Engrs.; Mining and Metallurgy; Metal Progress; Physics Today; The Chemist; Blast Furnace and Steel Plant; Metals Technol. Serv. Rec.: U. S. Navy, 1941-46. Areas of Rsch.: Nuclear Energy; Direct Reduction of Iron, High Top Pressure Blast Furnace, Radioactive Tracer Work, Technical Audits.

OLDENDORF, William Henry (M.D.), Assoc. Chief, Neurol. Sect., VA Ctr., Los Angeles 25, and Asst. Clin. Prof., Med., Univ. Calif., Los Angeles, Calif. Home Add.: 71 A Hasse St., Los Angeles 25, Calif. NEUROLOGY AND NERVOUS SYSTEM INSTRUMENTATION. b. Schenectady, N. Y., Mar. 27, 1925. s. William Louis and Jane Willard (Shepherd) O. Edn.: M.D., Albany Med. Coll., 1944. m. Stella C. Zabielski, June 24, 1945. c.: Eric; Mark; William. Exp.: Rotating Interne, Ellis Hosp., Schenectady, N. Y., 1947-48; Res. Psychiat., Dept. of Met. Hyg., N. Y. Sta., 1948-51; Clin. Fellow, Neurol., Univ. of Minn., Mpls., Minn., 1954-55; Assoc. Chief., Neurol. Sect., VA Ctr., 1955—; Asst. Clin. Prof., Med., Univ. Calif., 1956—. Hon. Pos.: Chmn., L. A. Chapter, Prof. Group on Biomed. Electronics, Inst. of Radio Engrs., 1960-61. Mem.: Am. Med. Assn.; Fellow, Am. Acad. Neurol.; L. A. Co. Soc. of Psychiat. and Neurol.; Soc. of Nuclear Med.; I.R.E.; Am. Assn. for the Adv. of Sci.; Am. Bd. of Med. Exams.; Am. Bd. of Psychiat. and Neurol; Cert. in Psych. and Neurol. Contbr. to: Neurol.; Am. Jour. of Physiol.; I.R.E. Trans. on Biomed. Electronics; Jour. of Neurosurg.; Jour. of Nulear Med.; Bull. of Atomic Scientists. Serv. Rec.: Active Duty, U. S. Naval Reserve, 1952-53. Areas of Rsch.: Physical Instrumentation of Human Nervous System; Applications of Radioistopes to Clinical Neurology.

OLECH, Eli (D.D.S.), Prof. of Oral and Maxillofacial Surgery; Dir., Minor Oral Surgery; Clinical Prof. of Surgery, Dept. of Surgery, Coll. of Med., Univ. of Ill., Coll. of Dentistry, 808 S. Wood St., Chicago 12, Ill. Bus. Add.: 1893 Sheridan Rd., Highland Park, Ill. Home Add.: 334 Roger Williams Ave., Highland Park, Ill. ORAL SURGERY, ORAL PATHOLOGY. b. Russia, Feb. 12, 1902. s. Morris and Anna (Terkov) O. Edn.: D.D.S., Univ. of Ill., Coll. of Dentistry, 1923; M.S., ibid., 1930. m. Lilyan Anaya, May 2, 1947. c.: Lillian Ann. Exp.: Instr. in Operative Dentistry, Univ. of Ill. Coll. of Dentistry, 1923-24; Asst. in Oral Surgery, ibid., 1924-26; Instr. in Oral Surgery, ibid., 1926-29; Assoc. in Oral Surgery, ibid., 1929-41; Asst. Prof. in Oral Surgery, ibid., 1941-46; Assoc. Prof. in Oral and Maxillo Facial Surgery, Dir., Minor Oral Surgery, ibid., 1946-48; Prof. of Oral and Maxillofacial Surgery, Dir., Minor Oral Surgery, Clin. Prof. of Surgery, Coll. of Med., ibid., 1948—; Staff Mem., Ill. Research and Educational Hosp.; Consultant Staff, Highland Park Hosp.; Consultant, Jour., Am. Med. Assn.; Mem.: Omicron Kappa Upsilon; Sigma Xi; Fellow, Am. Coll. of Dentists; Fellow, Am. Assn. Adv. Sci.; Internatl. Assn. for Dental Rsch.; Chicago Soc. of Oral Surgeons; Am. Soc. of Oral Surgeons; Chicago Dental Soc.; Ill. State Dental Soc.; Am. Dental Assn.; Am. Dental Soc. of Anesthesiology. Contbr. to: Dental Cosmos; Dental Digest; Ill. Dental Jour.; Fortnightly Rev., Chicago Dental Soc.; Jour. of Oral Surgery; Jour. Oral Surg., Oral Med., Oral Path.; Jour. A.D.A.; etc. Areas of Rsch.: Oral Surgery; Oral Pathology; Oral Medicine.

OLDHAM, Helen Gertrude (Ph.D.), Nutrition Specialist, Human Nutrition Rsch. Div., A.R.S., U.S.D.A., Wash., D. C. Home Add.: 110 Devon Court, Silver Spring, Md. NUTRITION. b. Monroe, Ia., Jan. 7, 1903. d. Earnest J. and Edna (Swearingen) O. Edn.: B.S., Ia. State Coll., 1925; M.S., Univ. of Chicago, 1935; Ph.D., ibid., 1939. Exp.: H. S. Math. Tchr., Fredericksburg, Ia., 1926-28; H. S. Prin., Dunlap, Ia., 1928-30; Rsch. Tech., Dept. of Pediatrics, Univ. of Chicago, 1930-36; Rsch. Asst., Dept. of Ped., Univ. of Chicago, 1936-40; Rsch. Assoc., Dept. of Ped. and Instr., Dept. of Home Econ., Univ. of Chicago, 1940-42; Rsch. Assoc., Dept. of Ped. and Asst. Prof. Home Econ., ibid., 1942-45; Asst. Prof., Home Econ., iibd., 1945-48; Assoc. Prof., Home Econ., 1948-51; Nutrition Specialist, Human Nutrition Rsch. Div., Agri., Rsch. Service, U. S. Dept. of Agri., Wash., D. C., 1952—. Mem.: Sigma Xi; Iota Sigma Pi; Pi Mu Epsilon.; A.A.A.S.; Am. Inst. of Nutrition; Am. Home Econ. Assn.; Delta Zeta; Sigma Alpha Iota; Sigma Delta Epsilon. Author: Co-author, Methods of Vitamin Assay, 1947. Contbr. to: Jour. of Nutrition; Jour. of Pediatrics; Am. Jour. of Diseases of Children; Jour. of Amer. Dietetics Assn. Ph.D. Dissertation: Utilization of Organic and Inorganic Iron by the Normal Infant. Areas of Rsch.: Human Nutrition.

OLIVER, James Russell (Ph.D.), Dean of the Graduate Schl., Prof. of Chem. and Dir. of the Computing Center, Univ. of Southwestern Louisiana, Lafayette, La. Home Add.: 324 Charlotte St., Lafayette, La. INORGANIC AND PHYSICAL CHEMISTRY; NUCLEAR CHEMISTRY; DIGITAL COMPUTERS. b. Egan, La., Sept. 12, 1924. s. Jack and Edna (Trumps) O. Edn.: B.S., Univ. of Southwestern La., 1950; M.S., Tulane Univ., La., 1951; Ph.D., ibid., 1955. m. Betty Jean Truax, Nov. 21, 1945. c.: Cynthia Louise; James Russell, Jr.; Mary Ellen. Exp.: Rsch. Fellow, Tulane Univ., 1953-54; Assoc. Prof. of Chem., Univ. of Southwestern, La., Lafayette, La., 1954-59; Rsch. Participant, Oak Ridge Natl. Lab., Oak Ridge, Tenn., summers, 1957, 1958; Prof. of Chem., Univ. of Southwestern La., 1959—; Dean of the Graduate Schl., ibid., 1961—. Hon. Pos.: Dir., La. Sci. Talent Search; Mem., Advisory Comm., State Radiological Defense Office; Pres., Eastern Reg., I.B.M. 1620 Users Group; Sect. Ed., Chem. Abstracts; Reviewer, Computing Rev. Mem.: Sigma Pi Sigma; Sigma Xi; Phi Kappa Phi; Am. Chem. Soc.; A.A.A.S.; La. Acad. of Scis.; Am. Nuclear Soc.; Assn. for Computing Machinery; Am. Assn. of Univ. Profs.; Rotary Internatl.; Kappa Mu Epsilon; Lambda Chi Alpha; Alpha Phi Omega. Contbr. to: Chem. Abstracts; La. Acad. of Scis. Newsletter. Serv. Rec.: U.S.A.F., 1943-45, 1951-53. Areas of Rsch.: Coordination Compounds; Reaction Kinetics; Processing of Nuclear Reactor Fuels; Radioactive Wastes Disposal; Gas Chromotography; High Temperature Solution Chemistry; Digital Computers; Monte Carlo techniques; Operations Rsch.; Biological Application of Computers.



OLSON, Boyd E. (Mr.), Dir., Marine Scis. Dept., U. S. Hydrographic Office, Suitland, Md. Home Add.: 2518 Crest Ave., Cheverly, Md. OCEANOGRAPHY AND METEOROLOGY. b. Fairview, Utah, May 17, 1919. s. George F. and Neola (Ellertson) O. Edn.: B.S., Brigham Young Univ., 1941; M.B.A., Harvard Univ., 1951. m. Catherine Hall, 1942. c.: Brent; Kenneth; Kathryn; Karen. Exp.: Meteroit., Am. Overseas Airlines, Stockholm, Sweden, 1946-47; Meteorolt., U. S. Weather Bureau, Honolulu, T. H., 1947-48; Oceanographer, U. S. Hydrographic Office, 1948—. Hon. Pos.: Chmn., Adv. Bd. to the Natl. Oceanog. Data Ctr. Mem.: Am. Geophys. Union; Am. Meterol. Soc.; Rsch. Soc. of Am.; Blue Key Natl. Honor Soc. Contbr. to: Bull. Am. Meteorol. Soc.; Bull. Am. Geophys. Soc.; Jour. of Underwater Acoustics. Serv. Rec.: U. S. Air Force Reserve, 1942-46. Areas of Rsch.: Air-Sea Interface; Underwater Acoustics.

OLSON, Everett Claire (Ph.D.), Prof. of Geol., Univ. of Chicago, Chicago, Ill. Home Add.: 17963 Gottschalk Ave., Homewood, Ill. VERTEBRATE PALEONTOLOGY. b. Waupaca, Wis., Nov. 6, 1910. s. Claire Myron and Aimee (Hicks) O. Edn.: S.B., Univ. of Chicago, 1932; S.M., ibid., 1933; Ph.D., ibid., 1935. m. Lila Baker, 1939. c.: Claire; George Everett; Mary Ellen. Exp.: instr. to Prof., Univ. of Chicago, 1935—; Sect. Dept., Geol., Univ. of Chicago, 1943-57; Chmn., Dept. Geol., ibid., 1957-60; Assoc. Dean, ibid., 1948-60; Chmn., Comm. on Palezool., ibid., 1948—. Mem.: A.A.A.S., Ecol. Soc., Geol. Soc. Am.; Soc of Vertebrate Paleontol.; Soc. for the Study of Evolution; Am. Soc. of Zoologists; Phi Beta Kappa; Sigma Xi; Phi Kappa Psi. Co-author: Morphological Integration, 1958; Foreign Maps, 1944. Contbr. to: Fieldiana; Geol.; Chicago Nat. Hist. Mus.; Jour. Paleontol.; Jour. Geology; Evolution; Geol. Soc. Am. Gen. Int.: Editor, Evolution, 1952-58; Editorial Bd., Jour. Geol., 1957—. Areas of Rsch.: Permian Vertebrates, U. S. and U.S.S.R.; Biometry Applied to Evolution.

OLSON, F(ranklyn) C(arl) W(ester), (Ph.D.), Mem., Technical Staff, A.M.S., R.C.A., Princeton, N. J. Home Add.: RD2-147, Cherry Valley Road, Princeton, N. J. OCEANOGRAPHY. b. Waukegan, Ill., Mar. 15, 1910. s. Carl Gottfrid and Ingeborg (Wester) O. Edn.: B.S., Univ. of Chicago, 1933; Ph.D., Ohio St. Univ., 1950. m. Mary Ann Joyner, 1957. c.: Storrs; Susan; Terri. Exp.: Assoc. Prof. of Oceanography, Fla. St. Univ., 1950-57; Head, Oceanography Branch, U. S. Navy Mine Defense Lab., Panama City, Fla., 1957-60; Tech. Staff, R.C.A., Princeton, N. J., 1960—. Mem.: Am. Geophysical Union; Am. Geographical Soc.; Sigma Xi; Ocean. Soc. of Japan. Co-author: Sterilization in Food Technology, 1957. Contbr. to: Food Rsch.; Food Technol.; Industrial and Engrng. Chem.; Jour. of Applied Mechanics; Jour. Am. Publ. Health; Heating, Piping and Air Conditioning; Proc. Central

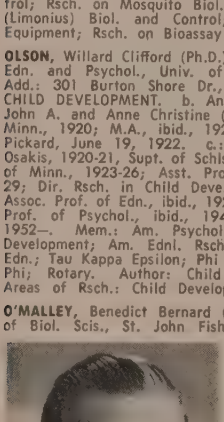
Soc. Clin. Rsch.; Deutsche Hydrographische Zeitschrift; Internatl. Rev. Hydrography; Proc. Am. Microscopical Soc.; Sci.; Schl., Sci. and Math.; Quart. Jour. Fla. Acad. of Sci.; Jour. Oceanographical Soc. of Japan; Jour. Acoustical Soc.; Trans. A.G.U. Areas of Rsch.: Inshore Oceanography, Limnology, Turbulence Theory.

OLSON, Martha Alexander (Mrs.), Operations Rsch. Analyst, Naval Radiol. Defense, Lab., San Francisco, Calif. Home Add.: 322 Highland, San Rafael, Calif. OPERATIONS RESEARCH. b. Springfield, Mo., March 12, 1908. d. Frank R. Alexander and Alma (Ebert) A. Edn.: A.B., Univ. of Ark., 1928; M.S., Univ. of Chicago, 1931. m. Ernest C. Olson, June 25, 1943. Exp.: Math. Instr., Lab. and Coll., Univ. of Chicago, Chicago, Ill., 1941-43; Math. Inst., Univ. of Md., Coll. Park, Md., 1943-44; Operations Analyst, U. S. Air Force, Pentagon, Wash., D. C., 1944-56; Operations Analyst, U. S. Air Force, Hamilton AFB, Calif., 1956-61; Operations Rsch. Analyst, Naval Radiol. Defense Lab., 1961—. Hon. Pos.: Chmn. of Ad Hoc Comm., Office of Secy. of Defense. Mem.: Am. Assn. Adv. Sci.; A.S.A.; O.R.S.A.; Chi Omega; Skull and Torch; Marin Bonsai Club. Gen. Int.: Development of Models for use in Estimating Aircraft Attrition in Combat Operations to the Air Force; Simplified Models for Estimating Defense Capabilities of Western Air Defense Force. Areas of Rsch.: Use of Operational Data in Development of Models and Relationships for Predicting Results of Future Operations.

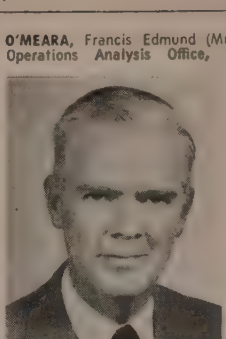
OLSON, Robert Edward, (Ph.D.), Prof. of Entomology and Entomologist, 302 Deering Hall, Univ. of Maine, Orono, Maine. Home Add.: 54 College Ave., Orono, Maine. ENTOMOLOGY. b. Titusville, Pa., Oct. 28, 1914. s. David Elmo and Arminta (Henne) O. Edn.: B.S., Cornell Univ., 1938; M.S., ibid., 1946; Ph.D., ibid., 1954. Exp.: Rsch.: Asst. in Econ. Entomol., Cornell Univ., 1938-43; Instr. to Professor, Univ. of Maine, 1946—; Asst. Entomologist to Entomologist, Maine Agricultural Exptl. Sta., 1953—; Rsch. Assoc., Univ. of Calif., 1956. Mem.: Entomol. Soc. of Am.; Soc. of Systematic Zool.; A.A.A.S.; Northeastern Mosquito Control Assn.; Am. Mosquito Control Assn.; Natl. Geog. Soc.; Eastern Beekeepers Assn.; Am. Mus. of Natural Hist.; Me. St. Beekeepers Assn.; A.A.U.P.; Sigma Xi; Xi Sigma Pi; Gamma Alpha. Co-Author: A Lab. Guide in Entomology, 1956. Contbr. to Jour. of Econ. Entomol.; Can. Entomol.; Me. Farm Rsch. Quart. War Rec.: U. S. Army, Aero-Med. Rsch. Lab., 1943-45; Army Schl. of Malariol., Ft. Clayton, Panama, 1945-46. Areas of Rsch.: Rsch. on Sawyer Beetle (Monochamus) Biol. and Control; Rsch. on Mosquito Biol. and Control; Rsch. on Wireworm (Limonius) Biol. and Control; Rsch. on High Altitude Flying Equipment; Rsch. on Bioassay of Organic Insecticides.

OLSON, Willard Clifford (Ph.D.), Dean, Schl. of Edn. and Prof. of Edn. and Psychol., Univ. of Mich., Ann Arbor, Mich. Home Add.: 301 Burton Shore Dr., Ann Arbor, Mich. PSYCHOLOGY—CHILD DEVELOPMENT. b. Annandale, Minn., Oct. 8, 1899. s. John A. and Anne Christine (Frykman) O. Edn.: B.A., Univ. of Minn., 1920; M.A., ibid., 1924; Ph.D., ibid., 1926. m. Violet Pickard, June 19, 1922. c.: Mary Anne. Exp.: Prin., H. S., Osakis, 1920-21, Supt. of Schls., Swanville, 1921-23; Instr., Univ. of Minn., 1923-26; Asst. Prof. of Edn., Psychol., ibid., 1927-29; Dir. Rsch. in Child Development, Univ. of Mich., 1929-52; Assoc. Prof. of Edn., ibid., 1929-35; Prof. of Edn., ibid., 1935—; Prof. of Psychol., ibid., 1946—; Dean, Schl. of Edn., ibid., 1952—. Mem.: Am. Psychol. Assn.; Soc. for Rsch. in Child Development; Am. Edn. Rsch. Assn.; Natl. Soc. for Study of Edn.; Tau Kappa Epsilon; Phi Delta Kappa; Sigma Xi; Phi Kappa Phi; Rotary. Author: Child Development, 1949, rev., 1959. Areas of Rsch.: Child Development.

O'MALLEY, Benedict Bernard (Ph.D.), Chmn. and Prof. of Dept of Biol. Scis., St. John Fisher Coll., Rochester, N. Y. Home Add.: 2813 Elmwood Avenue Rochester 18, N. Y. BIOCHEMISTRY AND PHARMACOLOGY OF CANCER; PHYSIOLOGY OF STRESS AND HYPERTENSION; USE OF ELECTRONIC INSTRUMENTATION IN PHARMACOLOGY. b. N. Y. City, June 25, 1923. s. Bernard B. and Sarah (Ruane) O. Edn.: A.B., Fordham Coll., 1944; M.S., Fordham Univ., 1948; Ph.D., ibid., 1950. m. Dorothy Devereux, Nov. 20, 1954. c.: Dorothy Anne; Mary Catherine; Bernard Benedict; Robert William; John Fisher. Exp.: Asst. Prof., Physiol., Fairleigh Dickinson Univ., Teaneck, N. Y., 1959-61; Chmn. of Dept. of Biol. Scis., St. John Fisher Coll., 1961—. Hon. Pos.: Chmn., Dept. of Physiol. and Pharmacol., St. Louis Coll. of Pharm. Mem.: Am. Assn. for the Adv. of Sci.; Am. Inst. of Biol. Scis.; Am. Pharml. Assn.; Am. Chem. Soc.; Assn. of Clinical Chemists; Fordham Univ. Alumni Fed. Contbrng. Author: Manual in Biochemistry and Physiology. Contbr. to: Am. Chem. Soc.; Lab. World; Am. Cancer Soc.; Jour. of Protozool.; Procs. of the Fed. of Am. Socs. for Exptl. Biol.; Nature; Am. Pharm. Assn. Jour.; Lab. World. Gen. Int.: Pianist; Violinist. Areas of Rsch.: Biochemistry and Pharmacology of Cancer; Physiology and Neuropathology of Stress: The Use of Electronic Methods in Pharmacology; The Use of Motion Picture Film in Teaching Physiology and Pharmacology; Fluorescent Techniques in D.N.A. and R.N.A. of Cancer Cells; Neurophysiol. and Neuroanatomy Rsch. in the Areas of Psychopharmacological Drug Action; The Use of Closed Television Circuits in Tchng. Physiol. and Biophysics.



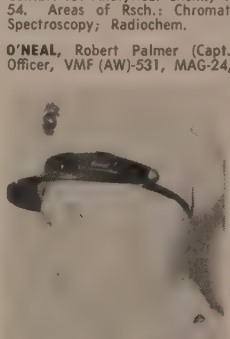
O'MEARA, Francis Edmund (Mr.), Chief, Offense Team, Air Force Operations Analysis Office, Washington, D. C. Home Add.: 3507 Dundee Dr., Chevy Chase 15, Md. PHYSICS. b. N. Y. City, N. Y., Aug. 8, 1923. s. Dennis and Frances (Kennedy) O. Edn.: B.S., Univ. of Mich., 1947. m. Aiwine Moritz. Nov. 23, 1944. c.: Kathleen; Terese; Dennis; Tyche Christina; Michael. Exp.: Physicist, NEPA Project, Oak Ridge, Tenn., 1948-51; Sr. Physicist, Bendix Rsch. Lab., Detroit, Mich., 1951-54; Div. Chief, Operation Analysis, SAC, Omaha, Nebr., 1954-57; Staff Member, WSEG, Wash., D. C., 1957-58; Section Chief, A.E.C., Wash., D. C., 1958-59; Project Scientist, Booz-Allen Applied Rsch., Bethesda, Md., 1959-61; Chief, Offense Team, Air Force Operations Analysis Office, Wash., D. C., 1961—. Mem.: A.A.A.S.; Assoc. Fellow, Inst. of the Aerospace Sci.; Am. Physical Soc.; Philosophical Soc. of Wash. Contbr. to: The Review of Scientific Instruments; The Physical Review, Jour. of Applied Physics, Atomics, Aeronautical Engrng. Review, Industrial Sc. and Engrng. Serv. Rec.: U.S.A.F. Areas of Rsch.: Nuclear Reactor Design; Nuclear Weapons; Weapons Systems Evaluation.



OMOHUNDRO, Allen Llewellyn, (Pharm.D.), Vice Pres. and Technical Dir., McKesson and Robbins, Inc., Bridgeport, Conn., N. Y., N. Y. Home Add.: Minute Man Hill, Westport, Conn. MEDICINAL CHEMICALS, PHARMACEUTICALS; RESEARCH, MANUFACTURE AND SALES AND GOVERNMENT REGULATIONS. b. Norfolk, Va., March 25, 1903. s. Allen C. and Margueritte Mae (Smith) O. Edn.: B.S., Univ. of Pa., 1925; Pharm.D., Conn. Coll. of Pharm., 1940; Reg. Pharm., Sta. of Conn., 1941. m. Grace E. Lynch, 1929. Exp.: Tech. Dir., McKesson and Robbins, Inc., Bridgeport, Conn., 1934—; Vice-Pres., ibid., N. Y., N. Y., 1940—. Mem.: F.A.I.C.; F.A.A.A.S.; N. Y. Acad. of Sci.; Am. Chem. Soc., Corp. Mem.; Soc. of Chem., Industry, Am. Sect.; Sigma Phi Epsilon; Alpha Chi. Areas of Rsch.: Pharmaceutical and Medicinal Chemicals.

O'NEAL, Floyd Breland (Ph.D.), Prof. of Chem., Tex. Western Coll., El Paso, Tex. Home Add.: 9532 Blue Wing Dr., El Paso, Tex. ANALYTICAL CHEMISTRY. b. Fairfax, S. C., May 4, 1928. s. Gilmore Simms, Jr., (dec.) and Susie (Breland) O. Edn.: B.S., The Citadel, 1948; M.S., Tulane Univ., 1950; Ph.D., Ga. Inst. of Technol., 1959. m. Billie Manning, Feb. 19, 1954. c.: Miles Sharon; Kathleen; William. Exp.: Instr., Tex. Western Coll., 1954-56; Asst. Prof., ibid., 1958-59; Assoc. Prof., ibid., 1959-61; Prof., ibid., 1961—. Mem.: A.C.S.; Sigma Xi; Alpha Chi Sigma. Contbr. to: Analytical Chem.; Talanta. Serv. Rec.: U.S.A.F., 1950-54. Areas of Rsch.: Chromatography; Emission and Absorption Spectroscopy; Radiochem.

O'NEAL, Robert Palmer (Capt.), U.S.M.C., Aircraft Maintenance Officer, VMF (AW)-531, MAG-24, 2nd Marine Aircraft Wing, F4H-1 Phantom II Mach II, Cherry Point, N. C. Home Add.: Rt. 4, Box 190, New Bern, N. C. AIRCRAFT MAINTENANCE; AERONAUTICAL ENGINEERING. b. Tonapah, Nev., Sept. 20, 1912. s. Robert Mc William and Aimee (Ford) O'N Edn.: A.B., Occidental Coll., 1935; M.A., ibid., 1936. m. Nancy Monroe, June 10, 1935. c.: Robert Monroe; Nancy O'Neal Arthur; Patricia McWilliam; Peggy Ford. Exp.: New England Repr., Monroe Chem. Co., 1937-39; Eastern Sales Mgr., ibid., 1939-41; Bur. of Aeronautics Repr., Pratt and Whitney Aircraft Corp., E. Hartford, Conn., Experimental and Production Test. Mfg., A/C Engines and A/C, 1941-43; Instr. in Principles of Engine Test, Accessories Overhaul, 1944-46; Officer in Chg. and Instr. in Trade Math. in Naval Apprentice Schl., MCAS, Cherry Point, N. C., 1946; Asst. to Power Plant Div. Officer, ibid., 1944-46; Project Adminstr., ibid., 1950-52; Plant Engrng., ibid., 1950-52; Production Control Officer, ibid., 1952; Asst. Production Officer, ibid., 1952-53; K-3, KOREA 1st MAW, Projects and Planning Officer, Air Installations Officer, Liaison Officer K-3 5th Air Force and 8th Army; Production Engrng. and Aeronautical Engrng., ibid., 1953-54; Staff Duties to Asst. Overhaul and Repair and Overhaul Repair Officer, ibid., 1955-56; Instr., Supvr. Trng. Program, ibid., 1957; 1958-59, 1st Marine A/C Wing, MWSG-17, MARS-17, Asst. A/C Maint. Officer, P&E Crash Damage A/C, Quality Control Officer, Dir. of Interim Re-work on A4D-1 A/C and Dir. JATO Installation Program for A4D-2 A/C; Material and Aircraft Maint. Officer, S.O.E.S., ibid., 1959-62; Aircraft Maintenance Officer, VMF(AW)-531, MAG-24, 2nd Marine Aircraft Wing, F4H-1 Phantom II, Mach 11; Cherry Point, N. C., 1962—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Eastern N. C. Sect., Am. Chem. Soc.; Soc. Am. Milit. Engrs.; Am. Ordnance Assn., Engrs. Joint Coun., Inc.; Delta Upsilon; Optimist Internatl. Contbr. to: Science; A.A.A.S. Jour. Serv. Rec.: U. S. Marine Corps, 1944—. Areas of Rsch.: Aircraft and Aircraft Engine Overhaul and Maint. and Aeronautical Engrng.



O'NEIL, James Julian (M.D.), Physician, 612 Med. Arts Bldg., Omaha 2, Neb. Home Add.: 107 S. 68th St., Omaha, Neb. OTOLARYNGOLOGY, BRONCHO-ESOPHAGOLOGY, HEAD AND NECK LARYNGEAL SURGERY. b. Council Bluffs, Ia., Jan. 20, 1919. s. Wm. Joseph and Emma G. (Dutcher) O. Edn.: B.S.M., Creighton Univ., 1940; M.D., ibid., 1944. m. Rosemary E. O'Neil, Aug. 5, 1943. c.: James J., Jr.; Robert Hugh. Exp.: Asst. Prof., Creighton Univ. Schl. of Med., 1948-62; Physician, Omaha, Neb., 1962—; Staff, Childrens Mem. Hosp., Omaha, Neb., 1948-62; Staff, Bishop Clarkson Mem. Hosp., ibid., 1948-62; Staff, Lutheran Med. Ctr., ibid., 1948-62; Staff, Creighton Mem. St. Joseph's Hospital, ibid., 1948-62; Staff, St. Catherine's Hosp., ibid., 1948-62; Staff, Doctors Hosp., ibid., 1961-62;; Mercy Hosp., Council Bluffs, Ia., 1961-62; Phyns., 1962—. Hon. Pos.: Secy., Comm. on Broncho-Esophagol., Am. Coll. of Chest Phyns.; Mem., Bd. of Trustees, Hansel Fdtn.; Dir., Resp. Rsch. Fdtn.; Bd. of Dirs., Neb. Blue Shield; Regent for the State of Neb., Internatl. Coll. of Surgeons. Mem.: Fellow, Am. Med. Assn.; Diplomate, Am. Bd. of Otolaryngol.; Fellow, Am. Acad. of Ophthalmol. and Otolaryngol.; Fellow, Am. Coll. of Chest Phyns.; Comm. on Broncho-Esophagol.; Fellow, Am. Coll. of Surg.; Fellow Am. Soc. of Ophthalmol. and Otolaryngol. Allergy; Am. Acad. for Plastic Surg. for Head and Neck; Fellow, Am. Otorhinol. Soc. for Plastic Surg.; Fellow, Internatl. Coll. of Surgns.; Fellow, Am. Geriat. Soc.; Fellow, Am. Laryngol. Assn.; N. Y. Acad. of Scis. Contbr .to: The Jour. of Laryngol. and Otology, London, England; E.E.N.T. Jour.; Jour. of Laryngol. and Otol.; Nebraska State Medical Journal; Medical Journal; Jour. Om. Mid-West Clin. Soc.; Mod. Med.; Laryngoscope; E.E.-N.T. Digest; Anns. of Otol. Rhinol. and Laryngol.; Trans. of the Am. Broncho-Esophagol. Assn. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Head and Neck Cancer and Pulmanary Physiology.

ONSAGER, Lars E. (Ph.D.), Prof. of Theort. Chem., Yale Univ., New Haven, Conn. Home Add.: 841 Whitney Ave., New Haven, Conn. THEORETICAL PHYSICS. b. Oslo, Norway, Nov. 27, 1903. s. Erling and Ingrid (Kirkeby) O. Edn.: Ch.E., Norges Tekniske Hoiskole, 1925; Ph.D., Yale Univ., 1935. Hon. Degs.: Sc.D., Harvard, 1954; Dr. Tehcn., Norges Tekniske Hoiskole, 1960. m. Margarete Arledter, Sept. 7, 1933. c.: Erling F.; Inger M.; M.; Hans T.; Christian C. Exp.: Instr., Brown Univ., 1928-33; Asst. Prof., Yale Univ., 1934-40; Assoc. Prof., ibid., 1940-45; Prof., ibid., 1945—. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Am. Assn. Adv. Sci.; Natl. Acad. Sci.; Am. Acad. Sci.; Am. Philos. Soc.; N. Y. Acad. of Sci.; Norw. Acad. Sci.; Norw. Acad. Sci. Oslo; Conn. Acad. of Sci. Contbr. to: Physik Zeit; Phys. Rev.; Jour. Chem. Physics; Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Phil. Mag.; Anns. N. Y. Acad. of Sci. Gen. Int.: Rumford Medal, Am. Acad. of Sci., 1953; Lorentz Medal, Netherlands Acad. of Sci., 1958; G. N. Lewis Medal, 1962. Areas of Rsch.: Statistical Mechanics, Transport Processes, Electrical Conductors, Dielectrics, Superfluids.

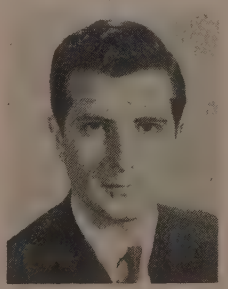
OPFELL, John Burton (Ph.D.), Head, Bioengrng., Dynamic Sci. Corp., 1445 Huntington Dr., S. Pasadena, Calif. Home Add.: 780 Woodland St., Orange, Calif. CHEMICAL ENGINEERING. b. Cushing, Okla., July 24, 1924. s. Edward Uriah and Evelyn (Walker) O. Edn.: B.S., Univ. of Wis., 1945; M.S., Calif. Inst. of Tech., 1947; M.B.A., Stanford Univ., 1951; Ph.D., Calif. Inst. of Tech., 1954. m. Olga Anna Strandvold, 1954. c.: Christopher Kaj; Thane Fredrick; Jon Guido. Exp.: Jr. Rsch. Engr., Stanolind Oil and Gas Co., 1947-49; Rsch. Fellow, Calif. Inst. of Tech., 1953-55; Supvr. of Operations Rsch., Cutter Labs., Berkeley, Calif., 1955-57; Mgr. of Chem. Engrng., ibid., 1957-60; Dir. of Process Engrng., ibid., 1960-61; Head, Bioengrng., Dynamic Sci. Corp., S. Pasadena, Calif., 1961—. Mem.: Am. Inst. of Chem. Engrs.; Sigma Xi; Operations Rsch. Soc. of Am.; The Inst. of Management Scis.; A.A.A.S.; Mason. Contributing Author: Equations of State for Hydrocarbons, 1959; Momentum Transfer in Fluids, 1956. Contbr. to: Indus. and Engrng. Chem.; Jour. Am. Pharmaceutical Assn., Scient. Edn.; Nature; Advances in Chem. Engrng. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Volumetric and Thermodynamic Properties of Hydrocarbons, Transport Properties of Fluids, Gas Sterilization, Chemical Engineering Statistical Calculaitons, Statistical Quality Control.

ORCHARD, John Ewing (Ph.D.) (dec.), Prof. Emer. of Economic Geography, Graduate Schl. of Business, Columbia Univ., N. Y. ECONOMIC GEOGRAPHY. b. Exeter, Nebr., July 19, 1893. s. William J. and Laura (Ewing) O. m. Dorothy A. Johnson of Alexandria, Va., Dec. 27, 1920. Edn.: A.B., Swarthmore Coll., 1916; A.M., Harvard Univ., 1920; Ph.D., Harvard, 1923; Univ. of Pa., 1917-18; Univ. of Chicago, summer, 1920. Exp.: Instr., Eng. and Hist., George Schl., Pa., 1916-17; Asst. Mine Econ., U. S. Bureau of Mines, 1918-19; Instr. Econ. Geog., Schl. of Bus., Columbia, 1920-24; Asst. Prof., ibid., 1924-29; Assoc. Prof., ibid., 1929-38; Prof., Econ. Geog., ibid., 1938-61; Acting Dean, 1947 and 1953; Econ. and Ind. Analyst, O.P.M., 1941; Sr. Asst. Admr., Lend-Lease Admin., 1941-43; Dir., Gen. Areas Br., For. Econ. Admin., 1943-44; Special Asst. to Asst. Sec. and Undersec. of State, 1944-45; Sr. Consultant to For. Liquidation Comm., 1945-46; Special Adv. on Overseas Territories, Econ. Coop. Admin., Paris, 1949-50; Consultant, Econ. Coop. Admin., 1950-53; Bd. of Mgrs., Swarthmore Coll., 1949-50; Presidential Certificate of Merit, 1947; Chevalier, Legion of Honor (France), 1951; Honorary Fellow, Am. Geog. Soc., 1961. Mem.: Assn. of Am. Geog. (Treas., 1935-37), Hon. Pres., 1959-60; Delta Upsilon; Phi Beta Kappa; Beta Gamma Sigma. Ph.D. Dissertation: The World's Coal Resources and Some of Their Influences on Natl. Econ. Author: Japan's Econ. Pos., 1930. Contbr. to: Geog. Rev.; Jour. of Geog.; Quart. Jour. of Econ.; Annals of Am. Acad. of Polit. and Soc. Sci.; For. Affairs; Polit. Sci. Quart. Rsch.; Econ.; Econ. Geog. (special emphasis on minerals and mfg.). Travel: Japan; India; China; Europe. Special Int.: Industrialization of the Far East; Development of Underdeveloped Areas. Gen. Int.: Coun. on For. Relations (Mem.); Fellow, John Simon Guggenheim Mem. Foundation, 1931-32.

OPOLONICK, Nicholas (Mr.), Chemist, N. Y. State Racing Comm. Lab., 148-07 Hillside Ave., Jamaica, N. Y. Home Add.: 200-20 34th Ave., Bayside 61, N. Y. ORGANIC AND ANALYTICAL CHEMISTRY. b. Selo Kamishevaha, Russian-Ukraine, Feb. 7, 1889. s. Ivan Mamontovich and Maria (Petrova) O. Edn.: B.S., Columbia Univ., 1928; M.A., ibid., 1929. Exp.: Chemist, Hammond Paint and Chemical Co., Beacon, N. Y., 1937-42; Chemist, N. Y. St. Racing Comm. Lab., Jamaica, N. Y., 1942-60. Mem.: A.C.S.; A.I.C., emeritus; A.A.A.S.; Assn. of Official Racing Chemists, Emeritus; Acad. of Polit. Sci.; Columbia Alumni Assn. Contbr. to: Ind. Eng. Chem.; Jour. Chem. Ed. Serv. Rec.: Russian Imperial Army, 1913. Listed in: Chemical W.W.; W.W. in the East.

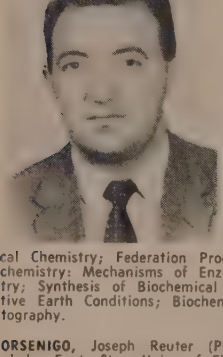
ORDUNG, Philip Franklin (D.Engr.), Prof. of Elec. Engrng., Univ. of Calif., Santa Barbara, Calif. Home Add.: 226 Northridge Rd., Santa Barbara, Calif. ELECTRICAL ENGINEERING. b. Luverne, Minn., Aug. 12, 1919. s. Philip N. and Kathryn (Franklin) O. Edn.: B.S. in E.E., S. Dak. State Coll., 1940; M.Eng., Yale Univ., 1942; D.Eng., ibid., 1949. m. Betty Jane Soergel, Dec. 22, 1945. c.: Christine Soergel; Katherine Louise. Exp.: Instr., Yale Univ., 1942-45; Instr. in Elec. Engrng., ibid., 1945-47; Asst. Prof., Elec. Engrng., ibid., 1947-51; Assoc. Prof., Elec. Engrng., ibid., 1951-57; Prof., Elec. Engrng., ibid., 1957-62; Prof., Elec. Engrng., Univ. of Calif., Santa Barbara, 1962—. Hon. Pos.: Mem., Branford Schl B., 1956-61; Chmn., Branford Schl. Bd., 1959-61; Chmn., Tabor Lutheran Church Bldg. Com., 1957-62. Mem.: Sigma Xi; Fellow, I.R.E.; A.I.E.E.; Fellow, A.A.A.S. Co-author: Microwave Theory and Techniques, 1953; Microwave Principles, 1957. Contbr. to: Proc., I.R.E.; Jour. of Franklin Inst.; Trans. of A.I.E.E.; Electronics; Yale Scientific; Jour. of Indus. Hyg. and Toxicology; Television Engrng. Serv. Rec.: U. S. Navy, 1944-45. Areas of Rsch.: Electrical Network Theory.

ORDWAY, Frederick Ira, III (Mr.), Chf., Space Systems Information Br., George C. Marshall Space Flight Ctr., Natl. Aeronautics and Space Admin., Huntsville, Ala. Home Add.: 3423 Lookout Dr., S.E., Huntsville, Ala. SPACE SCIENCE AND SPACE TECHNOLOGY. b. N. Y. City, Apr. 4, 1927. s. Frederick I., Jr. and Frances Antoinette (Wright) O. Edn.: S.B., Harvard Univ., 1949; 4 Cert., Grad. Work, Univ. of Paris, 1950-51; 1953-54. Specialized studies at Univ. Innsbruck and Univ. Barcelona in Europe and U. S. Air Univ. m. Maria Victoria Arenas, Apr. 13, 1950. c.: Fred I.; Albert J.; Aliette M. Exp.: Petroleum geologist-engr., Mene Grande Oil Co. (Gulf Oil Co.), San Tome, Venezuela, 1949-50; mining engr.-geolst., Orinoco Mining Co. (U. S. Steel Corp.), Cerro Bolivar, Venezuela, 1950; Mem., Engrng. Div. Staff, Reaction Motors, Inc., Lake Denmark, N. J.,



1951-53; Mem., Engrng. Div. Staff, Republic Avn. Corp., Guided Missiles Div., Hicksville, N. Y., 1954-55; Pres., Gen. Astronautics Corp. (now General Astronautics Rsch. Corp.), Huntsville, Ala. and Wash., D. C., 1955-59; Vice Pres. and Dir. of Tech. Operations, Natl. Rsch. and Devel. Corp., Atlanta, Ga., 1957-59; Asst. to the Dir., Saturn Project Office, Devel. Operations Div., Army Ballistic Missile Agency, Army Ordnance Missile Command, Redstone Arsenal, Ala., 1959-60; Chf., Space Systems Information Br., George C. Marshall Space Flight Center, Natl. Aeronautics and Space Admin., Huntsville, Ala., 1960—. Hon. Pos.: Mem., Editorial Bd., Astronautica Acta; Ciencia Aeronautica; Mem., Editorial Bd., Proc. of Internatl. Astronautical Congresses; Former Editor, Jour. of Astronautics and Dir., Am. Astronautical Soc.; Former Rsch. and Devel. Editor, Missiles and Rockets Mag.; GSE Mag. of Missile and Space Support Engrng., and Space Bus. Daily; Bd. of Consultants, Space Jour. Mem.: Am. Astronomical Soc.; Natl. Rocket Club; A.A.A.S. (Fellow); Am. Geophys. Union; Am. Rocket Soc.; British Interplanetary Soc. (Fellow); South African Interplanetary Soc. (Fellow); Societe Francaise d'Astronautique; Baronial Order of Magna Carta. Author: Advances in Space Sci., 1959, 1960 (ed.); Advances in Space Sci. and Technol., 1961, 1962 (editor). Co-Author: Space Flight, 1958; International Missile and Spacecraft Guide, 1960; Careers in Astronautics and Rocketry, 1962; Basic Astronautics, 1962; Annotated Bibliography of Space Science and Technology, 1962. Contbr. to: Bericht uber den V Internationalen Astronautishen Kongress, 1956; Handbook of Astronautical Engrng.; Ecycl. Americana (1961); Encyclopedia Britannica Book of the Year. Aero Digest; Aviation Week; Astronautica Acta; Jour. of Astronautics; Astronautics; GSE Mag. of Missile and Space Support Engrng.; Interavia; Space Jour.; Sky and Telescope; Geo-Times; Missiles and Rockets; Ordnance; Spaceflight; Jour. Am. Rocket Soc.; Revista de la Asociacion Argentina Interplanetaria; Ciencia Aeronautica; Bull. of Atomic Scientists. Serv. Rec.: U. S. Naval Reserve, 1945; U.S.A.F. Reserve. Gen. Int.: Only American observer, First Internatl. Astronautical Cong., Paris., 1950; Del., Congresses in Zurich, Innsbruck, Copenhagen, Stockholm, and Washington. Guest Lectr., Argentine Air Force, 1959. Areas of Rsch.: Space Science, Space Technology, Missiles, Space Carrier Vehicles, Spacecraft, Artificial Satellites.

ORO, Juan (Ph.D.), Assoc. Prof., Dept. of Chem., Univ. of Houston, Houston 4, Tex. Home Add.: 11306 Endicott, Houston 35, Tex. BIOCHEMISTRY, ORGANIC COSMOCHEMISTRY. b. Lerida, Spain, Oct. 26, 1923. s. Juan and Maria (Florensa) Oro-Vallverdu. Edn.: Licenciate, Univ. of Barcelona, Spain, 1947; Ph.D., Baylor Univ., 1956. m. Francisca Forteza, May 19, 1948. c.: Mary Ellen; John; James; David. Exp.: Asst. in Rsch. and Instr., Baylor Univ., Coll. of Med., 1953-55; Instr., Univ. of Houston, 1955-56; Asst. Prof., ibid., 1956-58; Assoc. Prof., ibid., 1958—. Mem.: Am. Chem. Soc.; A.A.A.S.; Geochemical Soc.; Sigma Xi; Alpha Chi Sigma. Contbr. to: Analytical Chem.; Archives of Biochemistry and Biophysics; Biochemical and Biophysical Rsch. Communications; Jour. of Biological Chemistry; Federation Proc.; Nature. Areas of Rsch.: Biochemistry: Mechanisms of Enzyme Action; Organic Cosmochemistry; Synthesis of Biochemical Compounds Under Possible Primitive Earth Conditions; Biochemical Applications of Gas Chromatography.



ORSENIGO, Joseph Reuter (Ph.D.), Assoc. Horticulturist, Everglades Expt. Sta., Univ. of Fla., Belle Glade, Fla. Home Add.: 101 S.E. 7th St., N. Belle Glade, Fla. HORTICULTURE. b. Barryville, N. Y., Apr. 4, 1922. s. Joseph Charles and Alexis V. (Reuter) O. Edn.: B.S., Cornell Univ., 1948; Ph.D., ibid., 1953. m. Mary N. Billings, Aug. 16, 1952. c.: Mark W.; Paul R. Exp.: Rsch. Fellow, Inter-Am. Inst. of Agril. Scis., Turrialba, Costa Rica, 1948-49; Agronomist, I.B.E.C. Rsch. Inst., Acarigua, Venezuela, 1953-55; Agronomist-Horticulturist and Mgr., Inter-Am. Cacao Center, Inter-Am. Inst. of Agril. Scis., Costa Rica, 1955-57; Assistant Horticulturist, Everglades Expt. Sta., Univ. of Fla., 1957-61; Assoc. Horticulturist, ibid., 1961—. Mem.: A.A.A.S.; Am. Soc. of Agron.; Weed Soc. of Am.; Sigma Xi. Contbr. to: Weeds; Sou. Weed Conf.; Soil and Crop Sci. Soc. of Fla. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Herbicides, Chemical Weed Control, Agronomic Crops, Horticultural Crops, Tropical Crops.

ORVIS, Harold Heacock (M.D.), Asst. Prof. of Med., The George Wash. Univ., Wash., D. C. Home Add.: 7705 Winterberry Pl., Bethesda 14, Md. INTERNAL MEDICINE. b. Phila., Pa., Jan. 13, 1924. s. Harold Heacock and Leora Alice (Chappell) O. Edn.: B.S., Guilford Coll., 1948; M.D., Columbia Univ., 1952. m. Ruth Schlaanstine, 1955. c.: Stephen Francis; Lynda Susan; John Frederick. Exp.: Instr., Med., George Wash. Univ., 1960; Asst. Prof., ibid., 1960— Hon. Pos.: Assoc. Dir., Respirato and Rehabiltn. Ctr., George Wash. Univ. Hosp. Mem.: A Fed. for Clin. Rsch.; Am. Heart Assn.; Am. Assn. for the A of Sci.; Rheumatism Soc. of the Dist. of Columbia; Med. S of the Dist. or Columbia. Contbr. to: Circ.; Am. Jour. of Med. Scis.; Archives of Internal Med. Serv. Rec.: U. S. Corps, 1942-46. Areas of Rsch.: Cardiovascular Diseases; Li Metabolism.

ORY, Robert Louis (Ph.D.), Biochemist, Seed Proteins Pioneer Rsch. Lab., U. S. Dept. Agric., New Orleans, La. Home Ad 3547 Roger Williams St., New Orleans 19, La. BIOCHEMISTR LIPASES AND FAT MOBILIZATION IN SEEDS. b. New Orlea La., Nov. 26, 1925. s. Alfred Alphonse and Louise Ma (Gendron) O. Edn.: B.S., Chem., Loyola Univ. of the Sou 1948; M.S., Univ. of Detroit, 1950; Ph.D., Tex. A. and Coll., 1954. m. Mary Elizabeth Hobley, Dec. 27, 1948, d 1957. c.: Barbara Ann; Mary Catherine. Exp.: Grad. As Univ. of Detroit, Detroit, Mich., 1948-50; Rsch. Asst., T A. and M. Coll., Coll. Sta., Tex., 1950-54; Biochemist, U. Dept. of Agric., 1954—. Mem.: Am. Chem. Soc.; Sigma Am. Assn. for the Adv. of Sci.; RESA; New Orleans Bioche Soc.; DeSaix Improvement Assn. Contbr. to: Anal. Chem.; Jo Biol. Chem.; Fed. Porcs.; Jour. Bact.; Jour. Chromatograp Jour. Lipid Rsch.; Biochem. Biophys. Rsch. Commun. Se Rec.: U. S. Marine, 1944-46. Areas of Rsch.: Biological Synthe of Amino Acids; Metabolism of Synthetic Fats Using Radioi topes; Fat Mobilization in Seeds; Isolation and Characterizat of Seed Lipases.

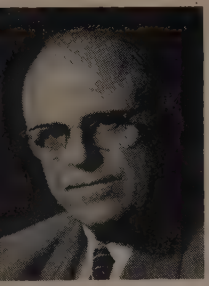
OSBORN, David Gordon (Ph.D.), Mgr. Market Rsch., Interna Bus. Machines Corp., P.O. Box 344, Yorktown Heights, N. Home Add.: 29 Locust Ave., White Plains, N. Y. GEOGRAP (INDUSTRIAL, ECONOMIC AND URBAN). b. Rehoboth, N. M., J 24, 1923. s. Edward H. and Helen (Blair) O. Edn.: A. Univ. of Chicago, 1949; Ph.D., ibid., 1953. m. Liliane Lemeun Feb. 24, 1946. c.: Jeffrey Thomas; David Woods. Exp.: Rs Assoc., Am. Soc. of Planning Officials, Chicago, Ill., 1950- Instr., Ind. Univ., 1951-53; Staff Asst. to Vice-Pres., Kroger Co., Cincinnati, Ohio, 1953-56; Assoc. Dir. of Rsc Nowland and Co., Inc., Greenwich, Conn., 1956-58; Mkt. Analy I.B.M. Corp., White Plains, N. Y., 1958-61; Mgr. Mkt. Rsc ASD Div., ibid., 1961—. Mem.: Assn. of Am. Geographe A.A.A.S.; Am. Geophys. Union; Am. Marketing Assn. Auth Geographic Features of the Automation of Industry, 1953. Author: Automation of Society, 1958. Contbr. to: Jour. Am. Inst. of Planners. War Rec.: U.S.N.R., W.W. II. Ar of Rsch.: Indusl. Location; Automation; Oceanography.

OSBORN, Elburt Franklin (Ph.D.), Vice-Pres. for Rsch., The State Univ., University Park, Pa. Home Add.: 330 E. Ir Ave., State College, Pa. GEOCHEMISTRY. b. Winnebago Ill., Aug. 13, 1911. s. William F. and Anna (Sherman) Edn.: B.S., DePauw Univ., 1932; M.S., Northwestern Un 1934; Ph.D., Calif. Inst. of Tech., 1937. m. Jean Thoms Aug. 12, 1939. c.: James F.; Ian C. Exp.: Tchng. Fell Geol., Northwestern Univ., 1932-34; Tchng. Fellow, Calif. In of Tech., 1934-37; Geologist, Que-on-Gold Mines, Ltd., Queb Can., 1936; Instr. in Geol., Northwestern Univ., 1937; Geolog Val d'Or, Quebec, Can., 1938 Petrologist, Geophysical L Carnegie Inst. of Wash., 1938-42; Physical Chemist, Div. Natl. Defense Rsch. Committee, Office of Scientific Rsch. Devel., Washington, D. C., 1942-45; Rsch. Chemist, Eastm Kodak Co., Rochester, N. Y., 1945-46; Prof., Geochemist Chmn., Div. of Earth Scis., Coll. of Mineral Industries, Pa. State Univ., 1946-52; Assoc. Dean, ibid., 1952-53; De Coll. of Mineral Industries, ibid., 1953-59; Vice-Pres. Rsch., ibid., 1959—. Hon. Pos.: Bd. of Trustees, Am. Soc.; Chmn., Basic Sci. Div.; Chmn., Tech. Adv. Com., N Bur. of Stds.; Chmn., Publ. Com.; Dir., Am. Geol. In Councilor, Geochem. Soc.; Councilor, Geol. Soc. of Am.; Counci Mineral Soc. of Am.; Vice Pres., Pres., Sigma Xi; Natl. Com Internatl. Union of Geological Scis. Mem.: A.A.A.S.; Am. Soc.; Am. Chem. Soc.; Am. Geol. Inst.; Am. Inst. of M Metal and Pet. Eng.; Gove. Commonwealth Fuel Conf.; G chem. Soc.; Geol. Soc. of Am.; Geol. Soc. of Wash.; Mine Assn. of Can.; Mineral Soc. of Am.; Mineral Soc. of Lond Soc. of Econ. Geol.; Phi Beta Kappa; Sigma Xi; Phi Lam Upsilon; Delta Tau Delta. Contbr. to: Bull. Geological S of Am.; Am. Mineralogist; Am. Jour. of Sci.; Jour. of Ceramic Soc.; Econ. Geol.; Jour. of Metals; Am. Iron Steel Inst. Yearbook; Trans., A.I.M.E.; Jour. of Geol.; Min Industries; Proc. of Internatl. Geologic Congress; Jour. of Chemical Soc.; Trans., British Ceramic Soc. Areas of Rsc Physicochemical and Structural Petrology; glass Technol.; Phys Chem. of Refractories; Blast Furnace Slags and Open Hea Slags; Phase Equilibria in Mineral Systems, Industrial Miner Mineral Synthesis.

OSBORN, Fairfield (D.Sc.), Pres., N. Y. Zool. Soc., 630 Fifth A Chmn. of the Bd., The Conservation Fdtn., 30 E. 40 St., N. City 16, N. Y. Home Add.: 137 E. 66 St., N. Y. 21, N. ZOOLOGY, CONSERVATION OF NATURAL RESOURCES. b. Prin ton, N. J., Jan. 15, 1887. s. Henry Fairfield and Lucretia (Pe O. Edn.: A.B., Princeton Univ., 1909. Hon. Degrs.: D.Sc., N. Univ., 1955; D.Sc., Princeton Univ., 1957; LL.D., Kenyon C 1959. m. Marjorie Lamond, Sept. 8, 1914. c.: Mrs. Shi Ayers; Mrs. Nathalie Murphy, Jr.; Mrs. Josephine Roth. E Pres., N. Y. Zool. Soc., and Chmn. of the Bd., The Conservat Fdtn., 1961—. Hon. Pos.: Hon. Vice Pres., Fauna Preserv. S London; Hon. Trustee, Royal Natl. Pks. of Kenya. Mem.: N. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Zool. Soc London; Royal Natl. Pks. of Kenya; Fauna Preservation S

ondon; Century Assn.; Univ. Club, N. Y. City. Author: Our lundered Planet, 1948; The Limits of the Earth, 1953; Editor, he Pacific World, 1944. Serv. Rec.: U. S. Field Artillery, World Var I.

SBORN, Gerald (Ph.D.), Dean of the Schl. of Lib. Arts and cis., Western Mich. Univ., Kalamazoo, Mich. Home Add.: 629 Campbell Ave., Kalamazoo, Mich. ORGANIC CHEMISTRY. b. Tangier, Ind., Apr. 11, 1903. s. Luther and Mary E. (Hadley) O. Edn.: A.B., Eastern Mich. Univ., 1927; M.S., Univ. of Mich., 1929; Ph.D., ibid., 1939. m. Dorothy Dunlap, Aug. 25, 1927. c.: James Maxwell; Arthur Hadley. Exp.: Asst. Prof., Chem., Eastern Mich. Univ., 1929-39; Hd., Chem. Dept., Western Mich. Univ., 1939-56; Dean, Schl. of Lib. Arts and Sci., ibid., 1956—; Acting Pres., ibid., 1960-61. Hon. Pos.: Chmn., Kalamazoo Sect., A.C.S.; Pres., Mich. Coll. Assn. Mem.: A.A.A.S.; Central Assn. of Sci. and Math. Tchrs.; Natl. Sci. Tchrs. Assn.; Sigma Xi; Phi Lambda Upsilon; Phi Kappa Phi; Kappa Delta Pi; iwanis. Contbr. to: Jour. of Organic Chem.; Schl. Sci. and Math.; Metro. Detroit Sci. Rev. Areas of Rsch.: Organic Free adicals; Energy of Activation; Chemical Edn.

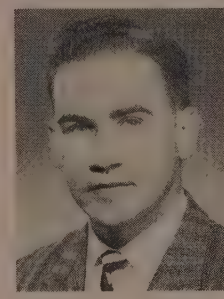


SBORN, Jesse Otto (Ph.D.), Prof., Harris Tchrs. Coll., Lectr., Wash. Univ., St. Louis 4, Mo. Home Add.: 3436 Longfellow Blvd., St. Louis 4, Mo. MATHEMATICS. b. Trinity, Ky., Oct. 15, 1894. s. Robert and Rosa (Meenach) O. Edn.: A.B., Berea Coll., 1917; A.M., Univ. of Ky., 1921; Ph.D., Cornell Univ., 1923. m. Charlotte Vandegrift of St. Louis, Mo., Mar. 8, 1946. d. George and Jessie Vandegrift. c.: Jean; Joan; Robert. Exp.: Asst. in Math., Univ. of Ky., 1919-20; Instr. in Math., Cornell Univ., 1921-23; Instr., Math., Univ. of Ia., 1923-24; Prof. of Math. and Edn., Harris Tchrs. Coll., 1924-41; Prin., Elem. and Jr. H. S. in St. Louis, 1941-45; Prof., Harris Tchrs. Coll., 1945—. Hon. Pos.: Chmn., Arith. Comm. of Radio Sta. KSLH (schl. sta.). Mem.: A.S.C.D.; N.C.T.M.; N.E.A.; M.S.T.A.; N.S.S.E.; Phi Delta Kappa; Sigma Xi; Pi Mu Epsilon; Phi Kappa Phi. Author: Adventures with Numbers, 1948; Math. or Daily Needs, 1954; Exploring Arith. Ph.D. Dissertation: Algebraic Geometry. War Rec.: U. S. Army, 1917-19. Gen. Int.: Writer of texts. Hobbies: Refinishing fine old furniture; collecting old mathematics books. Listed in: Am. Mem of Sci.; Worlds W.W. in Commerce and Industry; W.W. in Midwest. Areas of Rsch.: Selecting and Organizing Materials for Better Teaching and Better Texts in Math.

SER, Bernard L. (Ph.D.), Pres. and Dir., Food and Drug Rsch. abs., Inc., Maurice Ave. at 58 St., Maspeth 78, N. Y. City. Home Add.: 70-47 Harrow St., Forest Hills, N. Y. BIOCHEMISTRY AND NUTRITION. b. Philadelphia, Pa., Feb. 2, 1899. s. Harris Elias and Frances (Levussove) O. Edn.: B.S., Univ. of Pa., 1920; M.S., ibid., 1925; Ph.D., Fordham Univ., 1927. m. Clara Kotkin, May 27, 1923. c.: Zelda; Alan. Exp.: Asst., Dept. of Physiol. Chem., Jefferson Medical Coll., 1919-20; Biochemist, Philadelphia Gen. Hosp. and Instr., Dept. of Chem., Univ. of Pa., Grad. Schl. of Med., 1922-26; Asst. Dir., Biol. Labs., Food and Drug Rsch. Labs., N. Y. City, 1926-34; Dir., ibid., 1934-37; Vice Pres. and Dir., ibid., 1939-57; Pres. and Dir., ibid., 1958—; Lectr., Pub. Health and Admin. Med. Inst. of Nutrition Scis., Columbia Univ. Hon. Pos.: Diplomate, Am. Bd. of Nutrition and the Am. Bd. of Clin. Chemists; Mem., Food Technol. Sub-Com. of the Food Protection Com. of the Natl. Rsch. Coun., Food Additives Coms. of the Inst. of Food Technolst. and the Am. Pub. Health Assn.; Chmn., Food Division of Internatl. Union of Pure and Applied Chem.; Mem., Vitamin Advisory Bd. of U. S. Pharmacopeia; Fellow, Am. Assn. Adv. Sci.; Am. Chem. Soc.; Am. Assn. of Cereal Chemists; Soc. of Toxicol.; Am. Assn. of Clin. Chemists; Am. Coun. of Independent Labs.; Am. Inst. of Nutrition; Am. Pub. Health Assn.; Am. Soc. of Oil Chemists; Assn. of Food and Drug Officials of the U. S.; Assn. Consult. Chem. and Chem. Eng.; Inst. of Food Technolst.; N. Y. Acad. Scis.; N. Y. Acad. of Med.; Royal Soc. of Health; Alpha Epsilon Pi; Sigma Xi; Phi Tau Sigma. Co-Author: Practical Physiological Chemistry, 1954; Edit. Advy. Bds., Food Technology; Analytical Chem.; Jour. of Agric. and Food Chem. Gen. Int.: Scientific Editor, Food Drug Cosmetic Law Jour.; Received the Babcock-Hart Award of the Inst. of Food Technologists, 1958. Areas of Rsch.: Vitamin Methodology, Fortification and Stabilization of Foods; Utilization of Nutrients; Practical Physiological Chemistry; Safety of Food Additives; Scientific Aspects of Food and Drug Law.

OSNOS, Martha (Mrs.), Rsch. Worker, Columbia Univ., 630 West 168th St., N. Y. City, N. Y. Home Add.: 225 West 86th St. New York City, N. Y. BIOCHEMISTRY; ENZYMOLOGY. b. Warsaw, Poland, Oct. 1, 1906. d. Zygmunt and Gizela (Horwitz) O. Edn.: M.Sc., Univ., Warsaw, Poland, 1931. m. Joseph Osnos, May 15, 1930. c.: Robert Peter. Exp.: Hd. of Rsch. Lab., Magister Klawe, Warsaw, 1934-40; Hd. of Rsch., Lab., Raptakos and Brett, Bombay, India, 1941-44; Rsch. Worker, Columbia Univ., 1945—. Mem.: A.A.A.S. Contbr. to: Jour. of Pharmacology; Jour. of Obstetrics; Archives of Biochemistry; Neurology; Scientific Reports of the Inst. of Cancer Rsch.; Fed. Proc.

OSTENSO, Ned Allen (Ph.D.), Project Assoc., Geophysical and Polar Rsch. Ctr., Univ. of Wis., Madison 6, Wis. Home Add.: 109 Brittingham Pl., Madison 5, Wis. GEOPHYSICIST. b. Fargo, N. D., June 22, 1930. s. Nels and Estella (Temple) O. Edn.: B.S., Univ. of Wis., 1952; M.S., 1953; Ph.D., ibid., 1962. Exp.: Geophysicist, Arctic Inst. of N. Am., 1956-59; Project Assoc., Univ. of Wis., 1959—. Mem.: Am. Geophysical Union; Soc. of Exploration Geophysicists; European Assn. of Exploration Geophysicists; The Glaceological Soc.; Arctic Inst. of N. Am.; Scott Polar Rsch. Soc.; Am. Polar Soc.; New Zealand Antarctic Soc. Contbr. to: Jour. of Geophysical Rsch.; Trans. of A.G.U.; The Geophysical Jour.; The Jour. of Glaceol.; Arctic; Annual Rev. U. S. Geological Survey; Geophysics; Sci.; Bull. Am. Geological Soc.; Jour. of Am. Ornothological Soc. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Polar Rsch., Antarctic and Arctic.

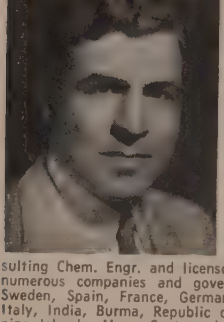


OSTERBERG, Arnold Erwin (Ph.D.), Head, Drug Control Section, N.C.I., Natl. Inst. of Health, Bethesda, Md. Home Add.: 2302 Colston Dr., Silver Spring, Md. CHEMISTRY. b. Minneapolis, Minn., Feb. 9, 1894. s. Emanuel and Marie (Olsen) O. Edn.: B.S., Univ. of Wash., 1916; M.S., Univ. of Minn., 1920; Ph.D., ibid., 1925. m. Anne E. Curtis, May 11, 1918. c.: Annette L.; Arnold C.; Donna M. Exp.: Asst. Chemist, Univ. of Wash., 1916-17; Asst. Bio-chemist, Mayo Clinic, Rochester, Minn., 1917-24; Assoc. Biochemist, ibid., 1924-30; Assoc. Prof. of Chem., Univ. of Minn., 1924-44; Clinical Biochemist, Mayo Clinic, 1930-46; Prof. of Chem., Univ. of Minn., 1944-46; Assoc. Clin. Invest., Abbott Labs., N. Chicago, Ill., 1946-59; Supvr. Chemist, Natl. Inst. of Health, Bethesda, Md., 1959—. Mem.: Am. Chem. Soc.; Soc. Biol. Chemists; A.A.A.S.; Soc. Exptl. Biol. and Med.; Phi Lambda Upsilon; Sigma Xi; Am. Legion; Kiwanis. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Clinical Chemistry and Clinical Investigation.

OSWALT, Edna Rickey (Ph.D.), Visit. Prof. Psychol., Westminster Coll., New Wilmington, Pa. Home Add.: Hiram, O. PSYCHOLOGY. b. Albany, O., Apr. 22, 1897. d. Fred Elza and Alice (Robinett) Rickey. Edn.: A.B., Ohio Univ., 1917; B.S., ibid., 1920; M.A., Ohio State Univ., 1921; Ph.D., ibid., 1924. m. Glen D. Oswalt, Jan. 1, 1943. Exp.: Tchr., H. S., Beverly and Jackson, O.; Supvr., Spec. Edn. for Mental Retarded, Columbus Normal Schl., 1924-31; Psychologist, Bureau of Juvenile Rsch., Columbus, Ohio, 1922-24; Visiting Prof., Abnormal Psychol., Syracuse Univ.; Supvr. Spec. Edn. and Asst. Dir., Psychol. Edn. Clinic, Western State Tchrs. Coll., Mich., 1934-36; Consultant, Analytic Assn., N. Y. City; Head, Dept. Spec. Edn., Kent St. Univ., 1936-59; Prof. of Psychol., ibid., 1947-59; Visit. Prof. Psychol., Westminster Coll., 1959—. Mem.: A.A.M.D., Fellow; A.A.G.C.; Natl. Edn. Assn.; O.E.A.; A.A.A.S., Fellow; Ohio Acad. of Sci.; Amer. Psychol. Assn., Fellow; Sigma Xi; Ohio Assn. Gifted Children; Kappa Delta Pi; Pi Lambda Theta; Zeta Tau Alpha; Delta Kappa Gamma; Coun. for Exceptional Children; Assn. of Educators of Gifted, Pres., 1961; A.A.U.W.; Natl. Assn. Family. Areas of Rsch.: Exceptional Children and Clinical Psychology.

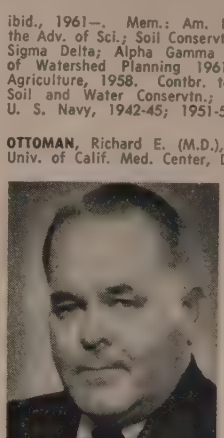
OTAGAKI, Kenneth K. (Ph.D.), Assoc. Animal Scientist, Univ. of Hawaii, Honolulu, Hawaii. Home Add.: 2858 Kahawai St., Honolulu 14, Hawaii. ANIMAL NUTRITION. b. Laupahoehoe, Hawaii, June 30, 1917. s. K. and K(Higashi) O. Edn.: B.S., Univ. of Hawaii, 1940; M.S., Ia. Sta. Coll., 1945; Ph.D., Univ. of Calif., 1954. m. Janet Maruhashi, Dec. 27, 1944. c.: Joy L.; Jill M.; Robin D.; Fern L.; Dean A. Exp.: Rsch. Asst., Univ. of Calif., Davis, Calif., 1953-54; Asst. Prof., Univ. of Hawaii, 1954-58; Assoc. Prof., ibid., 1958—. Hon. Pos.: Commr., Sta. Dept. of Agric., Sta. of Hawaii. Mem.: Am. Assn. for the Adv. of Sci.; ADSA; Am. Chem. Soc.; Sigma Xi; ASAP; Club 100; VFW; DAV. Contbr. to: Jour. Dairy Sci.; Jour. Animal Sci.; Food and Agric. Chem. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Animal Nutrition.

OTHMER, Donald Frederick (Ph.D.), Chem. Engr., Poly. Institute of Brooklyn, 333 Jay St., Brooklyn 1, N. Y. CHEMICAL ENGINEERING; INDUSTRIAL ENGINEERING; PHYSICAL CHEMISTRY. b. Omaha, Nebr., May 11, 1904. s. Frederick George and Fredericka Darling (Snyder) O. Edn.: Student Armour Institute, Chicago, 1921-23; B.Sc., Univ. of Neb., 1924. M.S., Univ. of Mich., 1925; Ph.D., 1927. Hon. Deg.: Dr. of Engrng., Univ. of Neb., 1962. m. Mildred Jane Topp of Omaha, Neb., Nov. 18, 1950. Exp.: Dev. Engr., Eastman Kodak Co. and Tenn. Eastman Corp., 1927-31; Instr., Poly. Inst. of Brooklyn, 1932-33, Prof., 1933—. Hd. of Dept. of Chem. Engrng., 1937-61; Distinguished Prof., ibid., 1961 ; Hon. Prof., Univ. of Conception, Chile; Licensed Professional Engr., in N. Y., N. J., Pa., Ohio; Consulting Chem. Engr. and licensor of process patents since 1931 to numerous companies and governmental agencies in U. S., Can., Sweden, Spain, France, Germany, England, Belgium, Switzerland, Italy, India, Burma, Republic of China, So. Africa, Japan, Philippine Islands, Mex., Cent. and S. Amer., Korea, Yugoslavia, Denmark, Finland, Cuba, Puerto Rico, in Fields of Chem. Manufacture, Refrigeration and Heat Transfer, Petroleum Refining and Petrochem., Fermenting, Penicillin and other Antibiotics, solvents, acetic acid, pigments, distilling, evaporation, Wood Utilization, Pulping Liquor Recovery, Wallboard, Engrng. Equip., Synthetic Rubber, Plastics, Synthetic fibers, Sugar Refining, Wood Distillation, Saline Water Conversion, Zinc and Lead Smelting; also to United Nations Chem. Corps and the Ordance Corps, U. S. Army, Special Devices Div., U. S. Navy, War Production Bd., U. S. Dept. of State; Office of Saline Water of the (U. S. Dept. of the Interior), and other Branches of United States and Foreign Governments, also to leading financial institutions, Sr. Gas Officer of Brooklyn Citizens Defense Corps; Designer of Plants and Processes for Many Natl. and Internatl. Corps; Officer and Dir., Various Corporations, Mem., Arbitration Panel, Amer. Arbitration Assn.; Patentee of Seventy-five Inventions, Mainly in Chem. Processes, Equipment and Manufacturing Methods for synthetic fibers, plastics, wood distillation, pulping liquors, refrigeration, Wallboard from Wood and other Cellulosic Wastes; Saline Water Conversion, Licensed by many domestic and For. Cos. Author or co-author: More than 225 Articles on Chem. Engrng, Physical Chemistry, Chemical Processes and Manufacturing, Thermodynamics, etc. in Amer. and Foreign Technical Journals; FLUIDIZATION AND FLUID PARTICLE SYSTEMS (co-author), Reinhold, 1960; Co-Ed., Kirk-Othmer ENCYC. OF CHEM. TECH., Inter-science Publishers, 15 Vols. and 2 Suppl. Vols.; Ed.; FLUIDIZATION, Reinhold, 1956. Mem.: Adv. Bd. Perry's CHEMICAL ENGINEERING HANDBOOK, Lectr. in Engrng. and Sci. Subj. in U. S., Europe, India, Japan; 1948, Lectr. in Swiss Univ., Sponsored by Amer.-Swiss Found. for Scientific Relations; 1950, Lctr. Tour for Chem. Inst. of Can.; 1944-58; Lecture Tours for Amer. Chem. Soc.; Delegate to Many Scientific and Engrng. Congresses Overseas; Plenary Lecture, ACHEMA (1958, and Honorary Delegate, 1961), Frankfurt, Ger. Mem.: A.A.A.S.; Amer. Inst. of Chemical Engrs., (Dir., 1956-59, Chmn., New York Sect., 1944, Tyler Award, 1958); Amer. Inst. of Consulting Engrs.; Soc. of Chemical Indus., (Mem. Exec. Com., 1947-50); Amer. Soc. Mech. Engrs., (Chmn., Process Indus. Div.); Amer. Inst. of Chem., (Dir., 1950); A.C.S., (Coun., 1945, Chmn., 1945, Chmn., Chem. Proc. Div., 1956); (Barber-Coleman Award, 1958); Dir., Engineers Joint Council, 1956-59; Societe de Chimie Industrielle, Amer. Sect.; Coun. for Agril. and Chemurgic Rsch., (Mem., Rsch. Com., 1956—); Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon; Iota Alpha; Alpha Chi Sigma; Lambda Chi Alpha; Chem. Club of N. Y.; Norwegian Club, N. Y. C.; N. Y. Acad. Sci. Ph.D. Dissertation: The Condensation of Steam. Listed in: W. W. in Amer.; W. W. in Engrng.; W. W. in N. Y.; W. W. in the East; Encyclopedia of the World; Amer. Men of Sci.; Chem. Who's Who; W. W. in Commerce and Indus.; etc.; "World Biography," "Internatl. Who's Who," "Who Knows—and What." Hobbies: Silviculture; Travel; Collecting Old Books; Maps; Textiles; Glass; Ship Paintings.



OTTE, Robert Charles (Ph.D.), Asst. Chf., Land and Water Econs. Br., Econ. Rsch. Serv., U. S. Dept. of Agric., Wash., D. C. Home Add.: 7600 Hogarth St., Springfield, Va. LAND AND WATER ECONOMICS. b. Elkhorn, Nebr., Aug. 17, 1922. s. Marcus and Loretta (Prinz) O. Edn.: B.S., Univ. of Nebr., 1947; M.A., ibid., 1954; Ph.D., Univ. of Wis., 1956. m. Lorraine Wilson, 1954. c.: Rebecca; John. Exp.: Instr., Univ. of Wis., Madison, Wis., 1955-56; Agricl. Econs., U. S. Dept. of Agric., Wash., D. C., 1956-61; Asst. Chf., Land and Water Econs. Br., ibid., 1961—. Mem.: Am. Farm Econs. Assn.; Am. Assn. for the Adv. of Sci.; Soil Conservtn. Soc. of Am.; Alpha Zeta; Gamma Sigma Delta; Alpha Gamma Rho. Author-Contbrng.: Economics of Watershed Planning 1961; Land: The 1958 Yearbook of Agriculture, 1958. Contbr. to: Jour. of Farm Econs.; Jour. Soil and Water Conservtn.; Agricl. Econs. Rsch. Serv. Rec.: U. S. Navy, 1942-45; 1951-52.

OTTOMAN, Richard E. (M.D.), Prof. of Radiology and Anatomy, Univ. of Calif. Med. Center, Dept. of Radiology, Los Angeles 24, Calif. Home Add.: 2260 Westridge Rd., Los Angeles 49, Calif. RADIOLOGY. b. Guthrie, Okla., Aug. 3, 1910. s. Adolph and Fern (Christian) O. Edn.: M.D., Univ. of Mich. Schl. of Med., 1941. m. Mary Elizabeth Merrill, Nov. 27, 1943. c.: Bonnie. Exp.: Rotating Intern, Va. Mason Hosp., Seattle, 1941-42; Staff Physician, Birmingham, V. A. Hosp., Van Nuys, Calif., 1946-47; Resident Radiology, ibid., 1947-50; Assoc. Radiologist, ibid., 1950; Assoc. Radiol. to Chief Therapeutic Radiologist, Long Beach V. A. Hosp., Calif., 1950-52; Attending Staff, Long Beach Veterans Hosp., Calif., 1952; Visiting Roentgenologist, Los Angeles County Harbor Gen. Hosp., 1950—; Attending Staff, St. John's Hosp., Santa Monica, 1950—; Consultant Radiol. and Radioisotopes, St. Joseph Hosp., Burbank, Calif., 1950; Consultant Radiol., Valley Hosp., Van Nuys, Calif., 1956; Instr., Radiology, Univ. of So. Calif., 1950-52; Asst. Prof., Radiol., U.C.L.A., 1953-54; Assoc. Prof. Radiol. and Anatomy, U.C.L.A., 1954-61; Prof., ibid., 1961—; Consultant Radiobiology, AEP, Univ. of Calif., L. A., 1952; Private Practice, 1955. Mem.: Fellow, Am. Coll. of Radiology; Radiol. Soc. of No. Am.; Pacific Roentgen Soc.; Radiol. Soc. of So. Calif.; Los Angeles Radiol. Soc.; Soc. of Nuclear Med.; Am. Med. Assn.; Calif. Med. Assn.; Los Angeles County Med. Assn.; Am. Assn. Adv. Sci.; Am. Fed. for Clin. Rsch.; Pacific Fertility Soc.; So. Calif. Soc. of Gastroenterology; Med. Rsch. Assn. of Calif.; N. Y. Acad. of Sci.; Am. Assn. Univ. Profs.; Am. Assn. of Univ. Radiologists; Calif. Physicians Service; L. A. County Physicians Aid Assn.; Public Health League of Calif.; Bay District Med. Soc.; The Med. Soc. of the Univ. of Calif. at L. A.; Am. Nuclear Soc.; Assn. of Am. Med. Colleges (individual men.); Phi Rho Sigma. Contbr. to: Radiology; Modern Med.; Calif. Med. Serv. Rec.: U. S. Medical Corps, 1942-46. Gen. Int.: Meritorious Service Citation, 1944-45. Areas of Rsch.: Cancer in Diagnosis and Treatment. Studies in the Early Detection of Radiation Sensitivity and Degree Thereof in Accessible Cancer. Human Chromosome Injury by Ionizing Radiation in Vitro and In Vivo, Acute Radiation Syndrome in Total Body Irradiation.



OUTTEN, L(ora) M(ilton) (Ph.D.), Prof., Biol., Mars Hill Coll., Mars Hill, N. C. BIOLOGY: VERTEBRATE ZOOLOGY, ICHTHYOLOGY, ANATOMY, ECOLOGY, EMBRYOLOGY, ENTOMOLOGY, GENETICS, LIMNOLOGY. b. Pocomoke City, Md., Aug. 17, 1913. s. L. F. and Dolsie Elizabeth (Blades) O. Edn.: A.B., Western Md. Coll., 1934; A.M., ibid., 1937; M.S., Cornell Univ., 1950; Ph.D., ibid., 1956; Advanced Studies, Marine Biological Laboratory, 1956; Univ. of Mich., 1958; Indiana Univ., 1959; N. C. State Coll., 1960; Univ. of N. C., 1960; Harvard Univ., 1961; Colorado St. Univ., 1961; Univ. of Louisville, 1962; Washington State Univ., 1962. Exp.: Lab. Asst., Biol., Western Md. Coll., 1933-34, 1936-37; Instr., Biol., Chem., Phys., Math., High Schls., Md. and Va., 1934-36, 1940-41 1943-46; Prof., Biol., Mars Hill Coll., 1946—. Mem.: A.A.A.S. (fellow); Am. Soc. Zool.; Am. Soc. Nat.; Am. Soc. Ichthyol. and Herpetol.; Ecol. Soc. Am.; Genetic Soc. Am.; Soc. Systematic Zool.; Am. Fisheries Soc.; Am. Microscopical Soc.; Internatl. Soc. of Limnol.; Am. Nature Study Soc.; Assn. Southeastern Biol.; N. C. Acad. Sci.; N.E.A.; Beta Beta Beta. Contbr. to: Jour. Elisha Mitchell Scientific Soc.; Jr. Coll. Jour. Areas of Rsch.: Life History, Behavior, Food Habits, Growth, Distribution, and Development of Fishes.

OVCHYNNYK, Michael Mitrophan (Ph.D.), Assoc. Curator of Ichthyol. and Herpetol., The Museum, Mich. St. Univ., E. Lansing, Mich. Home Add.: 1235 Vermont Ave., Lansing, Mich. ICHTHYOLOGY, ZOOLOGY, BIOLOGY. b. Hlukhiv, Ukraine, Sept. 19, 1907. s. Mitrophan and Pelahia (Yushchenko) O. Edn.: M.S., Klev St. Univ., Ukraine, 1926; Ph.D., Universitas Libera Ucrainensis, Germany, 1951. m. Maria Hupalivska, Dec. 18, 1952. Exp.: Head Ichthyol., Inst. for Fisnery Rsch., Kiev., Ukraine, 1930-38; Prof. of Zool., Agricl. Inst., Zhitomir, Ukraine, 1937-38; Scientific Rsch., German Inst. Fisheries, Berlin, Germany, 1943-45; Prof. Ukrainian Univ., Germany, 1946-48; Instr., Mich. St. Univ., 1951-54; Biologist, ibid., 1954-55; Assoc. Curator, ibid., 1955— Mem.: Ucrainian Free Acad. of Scis.; The Mich. Acad. of Sci. Art & Letters; The Am. Soc. of Ichthyologists and Herpetologists; Ecological Soc. of Am.; A.A.A.S.; The Am. Fisheries Soc.; Sigma Xi; A.A.U.P.; Am. Ucrainian Assn. of Univ. Profs.; Internatl. Acad. of Zool.; Soc. of Systematic Zool. Author: Mass Artificial Fertilization of Fishes, 1934; Leuciscus Idus From Dnipro River, 1937. Contbr. to: Jour. for Biozool. of the Ukrainian Acad. of Sci.; Fish Econ., Moscow; Inst. of Microbiol. of the Ukrainian Acad. of Scis.; Atlantic Ocean Fisheries, London. Areas of Rsch.: Growth Rate of Fish; Acclimatization of Fish; Taxonomy of Animals; Fish Industry of the U.S.S.R.

OVREBO, Paul Johannes (Ph.D.), Scientific Advisor for Foreign Technol., Foreign Technol. Div., W.P.A.F. Base, Ohio. Home Add.: 1157 Ridgeview Ave., Dayton 9, Ohio. PHYSICS. b. Summit, So. Dak., Aug. 3, 1901. s. Rev. O. J. and Mina (Mortenson) O. Edn.: A.B., St. Olaf Coll., 1923; Ph.D., Univ. of Chicago, 1928. Hon. Degree: D.Sc., St. Olaf Coll., 1957. m. Luella Venette Jacobson, July 31, 1926. c.: Julian Paul. Exp.: Asst. Prof., Physics, W. Va. Univ., 1928-30; Prof., Physics, Susquehanna Univ., 1930-43; Project Engr., advancing to Scientific Advisor, Foreign Technol. Div., W.P.A.F. Base, Dayton, Ohio, 1943—. Hon. Pos.: Sr. A.F. Mem., Infrared Panel, R.D.B.; Dir., Summer Schl., Susquehanna Univ., 1937; Chmn., Bldg. Comm., St. Marks Luth. Ch., Dayton, Ohio, 1953-54; Chmn., Comm. for Rev. of Curriculum, Susquehanna Univ., 1931-33. Mem.: Am. Phys. Soc.; Optical Soc. of Am.; Sigma Xi; Sigma Pi Sigma. Contbr. to: Proc. of the Inst. of Radio Engrs. Areas of Rsch.: Infrared background and target data; Military applications of infrared.

OWEN, Deha Gursey (M.D.), Asst. Psychiatrist, Sheppard and Enoch Pratt Hosp., Towson 4, Md. Home Add.: 3415 Univ. Place, Baltimore 18, Md. PSYCHIATRY; CLINICAL RESEARCH. b. Paris, France, Aug. 19, 1924. d. Ahmed Reshid and Remziye Salih (Hisar) G. Edn.: M.D., Univ. of Istanbul, 1949. m. Dr. George E. Owen, Oct. 3, 1959. c.: Stephen. Exp.: Asst. Res. and Res., Univ. of Va. Hosp., 1951-56; Rsch. Assoc., Univ. of Pittsburgh, Grad. Schl. of Public Health, 1956-59; Asst. Res. in Med., Union Memorial Hosp., Baltimore, Md., 1960-61; Asst. Psychiatrist, Sheppard and Enoch Pratt Hosp., Towson, Md., 1961—. Mem.: A.A.A.S.; Md. Med. Assn. Contbr. to: Depression of Serotonin and Norepinephrine Levels in Brain Stem of Rabbit; Proceedings of the Soc. of Exper. Biol. and Med.; Jour. of Med. Areas of Rsch.: Psychiatry; Rsch. on Alcoholism and Obesity; Psychotherapy c psychotics; Rsch. in Biochem. in Tryptophan Metabolism, Serotonin Response to Alcohol injection in Exp. Animals.

OWEN, Oliver Sylvanous (Ph.D.), Asst. Prof. of Biol., Mankato State Coll., Mankato, Minn. Home Add.: 315 Cherry St., Mankato, Minn. VERTEBRATE ZOOLOGY. b. Watertown, Wis., June 14, 1920. s. Ernest S. and Hattie (Fels) O. Edn.: B.A., Univ. of Wis., 1946; M.A., ibid., 1947; Ph.D., Cornell Univ., 1950. Exp.: Rsch. Assoc., Univ. of Wis., 1954-55; Instr., Univ. of Notre Dame, 1956-58; Asst. Prof., Mankato St. Coll., 1958—. Mem.: Phi Beta Kappa; Phi Eta Sigma; Sigma Xi. Contbr. to: Jour. of Mammal.; Wilson Bull.; Am. Midland Naturalist. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Bird Population Studies, Small Mammal Ecology, Territorial Behavior in Birds.

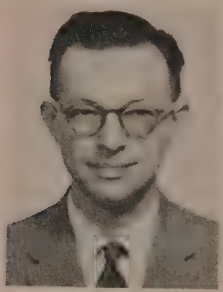
OWEN, Walter Edwin (M.D.), Physician and Surg., 1105 N. North St., Peoria, Ill. Home Add.: 316 E. High Point Rd., Peoria, Ill. OTOLARYNGOLOGY. b. Clinton, Mo., July 5, 1907. s. Walter E., Sr. and Eugenia S. (Britts) O. Edn.: A.B., Westminster Coll., 1929; M.D., Washington Univ., 1937. m. Mary Reardon, 1942. c.: Margaret Lewis; Walter E. III; John C. Hon. Pos.: Hansel Found. Founder, Secy.-Treas., 1946-56; Staff, Methodist Hosp., Pres., 1962; Assoc., St. Francis and Proctor Hosp.; Consultant, Peoria T.B. Sanitarium; Consultant, Peoria St. Hosp.; Pekin Mem. Hosp. Mem.: Am. Med. Asssn.; Am. Bd. of Otol.; Am. Coll. of Surgs., Bd. of Govs., 1955-58; Am. Soc. of Opth. and Otol. Allergy, Pres., 1960; Am. Acad. of Ophth. and Otol.; Central Ill. Soc. of Ophth. and Otol., Pres., 1956; Am. R. R. Surgs.; Am. Trudeau Soc.; Internatl. Assn. of Allergists; Internatl. Congress of Otol.; Am. Coll. of Allergists; Phi Delta Theta; Phi Beta Pi. Contbr. to: Jour. A.M.A.; Archives of Otol.; Trans. Am. Soc. of Optha.; Trans. Am. Acad. of Ophthal. and Otolaryn.; The Eye, Ear, Nose and Throat Monthly; Annals of Allergy. Areas of Rsch.: Otolaryngology and Allergy.

OWENS, (Arthur) Neal (M.D.), Owner, The Owens Clinic, 2223 Carondelet St., New Orleans, La. Home Add.: Six Audubon Pl., New Orleans, La. PLASTIC SURGERY. b. Heflin, Ala., Aug. 5, 1899. s. James Arthur and Laura (Neal) O. Edn.: B.S., Univ. of Ala., 1924; M.D., Emory Univ., Schl. of Med., 1926. m. Georgia Little, Sept. 30, 1931. c.: Mrs. George Lewis; Lucile; Alice; Neal, Jr. Exp.: Intern, Birmingham Bapt. Hosp., Ala., 1926-27; Intern, St. Agnes Hosp., Baltimore, Md., 1927-28; Resident in Surgery, ibid., 1928-29; Resident in Pathologist, ibid., 1929-30; Asst. Dispensary Surgeon in Plastic Surgery, Johns Hopkins Hospital, Baltimore, Md., 1930-33; Instr., Plastic Surgery, Tulane Univ., Schl. of Med., 1933-37; Asst. Prof. of Clin. Surgery in charge of Plastic Surgery, ibid., 1937-43; Prof., Clin. Surgery, Plastic Surgery, ibid., 1943—; Head, Dept. of Plastic Surgery, Eye, Ear, Nose and Throat Hosp., New Orleans, La., 1933—; also Sr. Visiting Surgeon, Touro Infirmary; Visiting Surgeon, Charity Hosp., New Orleans; Staff Mem., Mercy Hosp., Soniat Memorial, Hotel Dieu, Sara Mayo Hosp.; Consultant: U. S. Pub. Hlth. Hosp., New Orleans, La., Crippled Children's Hosp., ibid.; West Jefferson Gen. Hosp., Marrero, La., Ill. Cent. Railroad Hosp. Hon. Pos.: Past Pres., Trustee, Am. Assn. of Plastic Surgeons; Past Pres., Am. Soc. of Plastic and Reconstructive Surgery; Past Pres., Southeastern Soc. of Plastic and Reconstructive Surgeons; Fellow, Vice Pres., U. S. Sect., Internatl. Coll. of Surgeons; Chmn., Exec. Coun., U. S. Sect., Regent St. of La.; Past Chmn., Am. Bd. of Plastic Surgery and many others. Mem.: Sou. Surgical Assn.; Southeastern Surg. Congress; Am. Assn. for the Surgery of Trauma; Soc. of Head and Neck Surgeons; New Orleans Surgical Soc.; Am. Assn. of Railway Surgeons; Brazilian Coll. of Surgeons; The Soc. of Med. and Surgery of Sano Paulo, Brazil; Am. Med. Assn.; Sou. Med. Assn.; La. St. Med. Soc.; Orleans Parish Med. Soc.; Sigma Xi; N. O. Grad. Med. Assn. and others. Contbr. to: Plastic and Reconstructive. Surg.; Brit. Jour. of Plastic Surgery; Surgery; Annals of Otology, Rhinology and Laryngology; Clinics of N. A.; N. O. Med. and Surgical Jour.; Sou. Med. Jour.; Jour. Med. Assn. of Ala.; Annals of Surgery; Surgical Errors and Safeguards by Max Thoreck; Encycl. of Med. Gen. Int.: Awarded the Am. Med. Writers Assn. Honor Award; Significant Sig Award of the Sigma Chi Frat. Listed in: W.W. in Am.; Am. Men of Sci. Areas of Rsch.: Original work in tissue transplanting; treatment of burns; use of celluloid in correction of defects of contour; use of periosteal grafts; development and treatment of burns; developed a surgical tub for treatment of burns, infected wounds; developed Owens Surgical fabric.

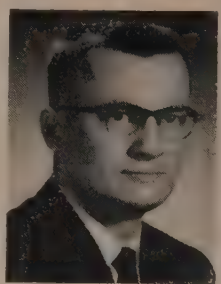
OWENS, Conrad Dale (Mr.), Technical Staff, Bell Telephone Labs., Allentown, Pa. PHYSICS APPLIED IN COMMUNICATION ENGINEERING. b. Wadesville, Ind., May 15, 1906. s. Flavius Dalton and Elizabeth Margaret (Kolb) O. Edn.: A.B., Ind. Univ., 1928; M.A., Columbia Univ., 1936. m. Josephine Brown, May 16, 1930. c.: Emily Pauline; Mary Josephine. Exp.: Design of Condensers, Loading Coils and Filter Coils, Bell Telephone Labs., Murray Hill, N. J., 1928-41; Design of Inductors and Radar Pulse Networks for Milit. Applications, ibid., 1941-45; Specialized Studies on Magnetic Materials, ibid., 1945—. Hon. Pos.: Chmn., Com. on Measurements and Instrumentation, IRE; Mem., IRE Standards Comm.; U. S. Delegate to Internatl. Electrotechnical Commn., Com. on Magnetics. Mem.: Fellow, A.A.A.S.; Sr. Mem., Inst. of Radio Engrs.; Am. Physical Soc.; Kappa Delta Rho; Phi Beta Kappa. Contbr. to: Bell Labs. Record; Proc. of Inst. of Radio Engrs.; Elect. Engrng. Gen. Int.: Elder and Active Layman, United Presby. Church, U.S.A. Special Int.: U.S. Patent, Development, Measurement and Application of Magnetic Materials, Especially Magnetic Powders and Ferrites.

OYSTER, L(aura) Leone (Miss) (Ret.), Asst. Prof. of Chem., Wis. St. Coll., Stevens Point, Wis. Home Add.: 812 Watson St., Ripon, Wis. CHEMISTRY. b. Ripon, Wis., Jan. 30, 1897. d. George W. and Lena (Zinth) Oyster. Edn.: B.A., Ripon Coll., 1919; M.A., Univ. of Wis., 1920. Exp.: Instr. in Chem., Albion Coll., 1920-23; Instr., Ripon Coll., 1923-24; Asst. in Organic Chem., Univ. of Chicago, 1924-25; Instr. in Chem., Ripon Coll., 1926-42; Asst. Prof., ibid., 1942-60; Assoc. Prof., ibid., 1960-62 (Ret.); Asst. Prof. of Chem., Wis. St. Coll., 1962—. Mem.: Am. Chem. Soc.; New England Assn. of Chem. Tchrs.; Midwest Assn. of Chem. Tchrs. in Liberal Arts Colleges; Sigma Xi; A.A.U.W.; B.P.W. Club; Ripon Garden Club. Contbr. to: J.A.C.S.; Jour. Chem. Edn. Gen. Int.: Recipient of Uhrig Memorial Award for excellence in teaching, May, 1960.

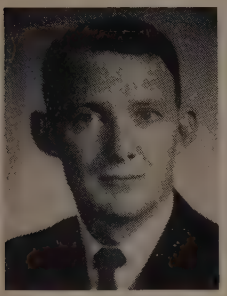
OWENS, Marvin Lee, Jr. (Ph.D.), Rsch. Group Leader, Monsanto Chem. Co., Texas City, Tex. Home Add.: 802-22 Ave., N., Texas City, Tex. ANALYTICAL CHEMISTRY; INDUSTRIAL PETRO-CHEMICAL MONOMER PROCESSES. b. Dubberly, La., Aug. 25, 1921. s. Marvin L. and Estelle (Chandler) O. Edn.: B.S., Centenary Coll. of La., 1943; B.S., La. State Univ., 1948; M.S., ibid., 1949; Ph.D., ibid., 1951. m. Ellen Nunnally, Jan. 27, 1948. c.: Catherine; Betty; Laura; Susan. Exp.: Lab. Instr., La. State Univ., 1947-49; Rsch. Asst., ibid., 1949-51; Rsch. Chem., Monsanto Chem. Co., 1951-53; Rsch. Group Leader, ibid., 1954—. Hon. Pos.: Chmn., H. S. Sci. Com., Am. Chem. Soc. Mem.: The Soc. of Sigma Xi; A.A.A.S.; Am. Chem. Soc.; Lambda Chi Alpha; Coun. Bd. of Boy Scouts of Am. Contbr. to: Analytical Chem. Gen. Int.: Three Patents, Field of Monomer Production and Processing. Areas of Rsch.: Rsch. Leading to the Production and Purification of Aromatic Hydrocarbons and Monomers Derived from Petroleum Sources; Analytical Chem. Related to Monomer Purification; Catalytic Hydrogenations and Dehydrogenations.



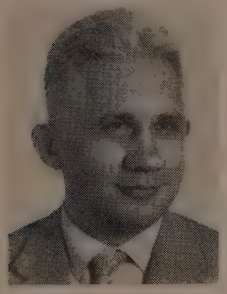
OXLEY, Joseph Hubbard (Ph.D.), Asst. Div. Chief, Battelle Mem Inst., Columbus 1, Ohio. Home Add.: 3714 Weston Pl., Columbu 14, Ohio. CHEMICAL ENGINEE ING. b. Akron, Ohio, Aug. 8 1929. s. Joseph Charles an Margaret (Harmon) O. Edn.: B.S. Carnegie Inst. of Tech., 1952 Ph.D., ibid., 1956. m. Margare Stewart, Aug. 25, 1951. c Linda M.; Carolyn B.; Joan C. Joseph S.; James B. Exp.: Jr Engr., Westinghouse Atomic Powe Div., 1954-56; Prin. Engr., Battell Mem. Inst., 1956-59; Asst. Div Chf., ibid., 1959—. Mem.: Am Inst. Chem. Engrs.; Am. Chem Soc.; Am. Inst. Min., Met. an Petr. Engrs.; Delta Upsilon; Sigma Xi; Phi Kappa Phi. Contbr. to Jour. of Metals; Indusl. an Engrng. Chem.; Nuclear Engrng Symposium Series of the Am Inst. of Chem. Engrs.; Battelle Tech. Rev.; Trans. A.I.M.E.; Jour. Electrochem. Soc.; A.I.Ch.E Jour. Gen. Int: Developed Halide processes for the production of metals and coating of nuclear fuel powders. Areas of Rsch. Fluidized-bed, High-temperature, high-vacuum operations.



PACK, Phillip Darrel (Mr.), Design Specialist, Engrng. Rsch. Group, Holmes and Narver, Inc., 849 S. Broadway, Los Angeles 14, Calif. Home Add.: P. O. Box 1093, Los Angeles 53, Calif. ENGINEERING GEOLOGY, SOIL AND ROCK MECHANICS. b. Salt Lake City Utah, June 25, 1925. s. Darrel Edwin and Myra Julia (Beck) P. Edn.: B.S., Univ. of Ariz., 1953. Exp.: Geological Engr., Cyprus Mines Corp., Los Angeles, Calif., 1953-54; Engrng. Geologist, Calif. Div. Water Resources, Los Angeles, Calif., 1953-55; Engrng. Geologist, U. S. Bur. of Reclamation, Sacramento, Calif., 1955-56; Engrng. Geologist, Calif. Dept. of Water Resources, Sacramento, Calif., 1956-58; Engrng. Geologist, Holmes and Narver, Inc., Los Angeles, Cailf., 1958—. Mem.: Am. Inst. of Mining, Metallurgical, and Petroleum Engrs.; Geological Soc. of Am.; Am. Geophysical Union; Calif. Assn. of Engrng. Geologists; Natl. Water Well Assn. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Geol.; Support of Underground Openings; Drilling and Mining Techniques; Ground Water Resources; Waste Disposal; Behavior of Soil and Rock Under High Static and Dynamic Loads.



PADDISON, Richard Milton (M.D.), Prof. of Neurology, La. State Univ. Schl. of Med., New Orleans, La. Home Add.: 1106 Nashville Ave., New Orleans, La. NEUROLOGY. b. Rochester, N. Y., Aug. 20, 1919. s. Osborn Howard and Ruby (Rapp) P. Edn.: A.B., Duke Univ., 1943; M.D., ibid., 1945. m. Josephine Butler Bowles, Dec. 18, 1943. c.: Richard, Jr.; Alice Jeannette; David Robert; Patricia Louise; Eileen Ruth; Wendy Ann. Exp.: Asst. Prof. Neurology, La. State Univ. Schl. of Med., 1954-56; Assoc. Prof., ibid., 1956-59; Prof., ibid., 1959—. Hon. Pos.: Pres. Elect., Southern Electroencephalographic Soc., 1962; Secy., Treas., New Orleans Soc. of Neurol. and Psychiatry, 1957-59. Mem.: Orleans Parish Med. Soc.; Philadelphia Co. Med. Soc.; La. State Med. Soc.; Am. Med. Assn.; Am. Psychiatric Assn.; Am. Acad. of Neurol.; Philadelphia Psychiat. Soc.; Philadelphia Neurol. Soc.; N. Y. Acad. of Scis.; Assn. for Rsch. in Nervous and Mental Disease; Am. Acad. of Cerebral Palsy; Southern Electroencephalographic Soc.; Assn. Mem. of Am. Coll. of Physicians. Contbr. to: Jour. La. State Med. Soc.; Current Therapy; Annals of Internal Med.; Archives of Neurol. and Psychiat. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Epilepsy, Electroencephalography, Vascular Disease of the Nervous System.



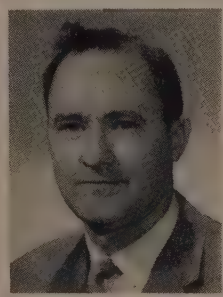
PAGE, (Charles) Getty, Jr. (Mr.), Exec. Secy., Vt. Sta. Med. Soc., 128 Merchants Row, Rutland, Vt. Home Add.: 69 Ives Ave., Rutland, Vt. ADMINISTRATOR (EXEC. SEC.) OF MEDICAL ORGANIZATION (VERMONT STATE MEDICAL SOCIETY). b. Bklyn., N. Y., Apr. 21, 1913. s.: Charles Getty, Sr. (dec.) and Geraldine (Lee) P. Edn.: B.S., Syracuse Univ., 1936; M.S., Edn., ibid., 1940; Attended: Mich. St. Normal Coll., 1932-33; Univ. of Buffalo, 1937-38; Doctorate Study, Syracuse Univ., 1940-43. m. Ann Elizabeth Ball, June 27, 1940. c.: Heather Ann Martin; Nancy Lee; John Marshall; Jean Getty. Exp.: Dir., Athletics, Orchard Park Schls., Orchard Pk., N. Y., 1936-38; Grad. Asst., Syracuse Univ., Syracuse, N. Y., 1938-40; Dir., Athletics, Hamilton Cent. Schl., Hamilton, N. Y., 1940-43; Field Dir., Am. Natl. Red Cross in North Africa and Europe with Parachute Infantry, 1943-45; Field Repre., Am. Natl. Red Cross of Vt., 1945-47; Dean of Students and Assoc. Prof. of Biol., Rutland Jr. Coll., Rutland, Vt., 1947-49; Field Dir., Am. Natl. Red Cross, 1947-49; Exec. Secy., Vt. Sta. Med. Soc., 1949—. Hon. Pos.: Bd. Mem., Blue Shield, Vt. Heart Assn.; Gov's. Comm.; Advry. Comm. on Hosp. Construction; Pres., Vt. Rural Safety Coun. Mem.: New England Health Edn. Assn.; Med. Soc. Execs. Assn.; Nu Gamma Phi; Kappa Phi Kappa; Phi Delta Kappa; Rutland Rotary Club. Author: "Case Studies of College Men with Low Physical Fitness Indicies," 1940; "Survey of Medical Aspects of the Aging in Vermont," 1960. Gen. Int.: Awarded Medal of Freedom, by U. S. Gov. Areas of Rsch.: Medical Society Administration and Public Relations.

PAGE, Calvin Ames (Mr.), Tech. Dir., Sci. Associates, Inc., 645 Rugby Ave., Orlando, Fla. Home Add.: 2208 Hargill Dr., Orlando, Fla. APPLIED MICROBIOLOGY; IMMUNOLOGY; VIROLOGY. b. Minneapolis, Minn., Nov. 8, 1922. s. John L. and Marion Evans (Laughlin) P. Edn.: B.S., Mich. State Coll., 1949; M.S., ibid., 1954. m. Laura Steel, Sept. 11, 1948. c.: Carolyn Ames; Thomas Calvin. Exp.: Assoc. Prof., Biol., Southwestern La. Inst., 1951-54; Prof., Bacteriol., ibid., 1954-59; Director of Microbiological Rsch. and Consulting Lab., 1959-61; Dir., Sci. Associates, Inc., Orlando, Fla., 1961—. Mem.: Sigma Xi; Soc. of Amer. Bacteriol.; A.A.A.S.; A.S.Q.C.; Phi Sigma Kappa. Serv. Rec.: U.S.A.F., 1941-45. Areas of Rsch.: Respiratory Virus Diseases; Immunological aspects of hepatoma; Kinetics of biological reactions.

PAGE, Edgar J. (Mr.), Chf. Chemist, Rsch. Div., Belding Heminway Corticelli, Putnam, Conn. CHEMISTRY OF TEXTILES AND HIGH POLYMERS. b. Putnam, Conn., Nov. 7, 1919. s. Eugene J. and Mary Anne (Durand) P. Edn.: B.S., Marianapolis Coll., 1943; M.S., Boston Coll., 1949. m. Eleanor Cournoyer, May 12, 1945. Exp.: Chemist, Belding Heminway Corticelli, Putnam, Conn., 1943-45; Control Chemist, Natl. Chromium Co., Putnam, Conn., 1942-44; Instr., Marianapolis Acad., Thompson, Conn., 1944-45; Rsch. Chemist, Belding Heminway Corticelli, Putnam, Conn., 1945-51; Chf. Chemist, ibid., 1951—. Hon. Pos.: Mem. Exec. Bd., Conn. Valley Sect., Am. Chem. Soc.; Chmn., ibid., 1959. Mem.: A.C.S.; A.A.A.S.; N. Y. Acad. Sci.; Soc. of Rheology; Biological Photographic Assn.; Am. Assn. Text. Chem. and Colorists; Tech. Div., P.S.A. Special Int.: Cellulose Chem.; Wetting and Detergency; Colorimetric Analysis; High-Polymer Reactions.

PAGE, Henry Felch (M.D.), Assoc. Physn., Lankenau Hosp., Lankenau Med. Bldg., Phila. 51, Pa. Home Add.: 102 W. Chestnut Hill Ave., Phila 18, Pa. INTERNAL MEDICINE. b. Phila., Pa., Nov. 6, 1908. s. Henry F. and Nancy Pendleton (Nichols) P. Edn.: A.B., Univ. of Pa., 1930; M.D., ibid., 1934. m. Ruth Unkles, 1943. c.: Ruth Pendleton. Exp.: Assoc. Physn., Lankenau Hosp., 1956—; Sr. Att. Physn., Chestnut Hill Hosp., Phila., Pa., 1961—. Hon. Pos.: Vice Pres., Bd. of Mgrs., Oakbourne Hosp.; Chmn., Div. of Out-Patients, Lankenau Hosp. Mem.: Fellow, Am. Coll. of Physns.; Zeta Psi; Rittenhouse Club. Serv. Rec.: U. S. Naval Reserve, 1940-46. Areas of Rsch.: Geriatrics.

PAGE, William Birney (Mr.), Asst. Chf., Div. of Rsch. Services, Natl. Inst. of Health, Bethesda, Md. Home Add.: 10313 Montrose Ave., Bethesda 14, Md. SANITARY ENGINEERING MANAGEMENT. b. Windham, Me., Apr. 8, 1918. s. Ira Brown and Lena Alice (Evans) P. Edn.: B.S., Univ. of Me., 1939; M.S., Harvard Univ., 1940. m. Mildred Raye Jennings, July 15, 1943. Exp.: Engr., Coast Geodetic Survey, North Am., 1940-48; Asst. Prof., Norwich Univ., 1948-49; Engr., Rsch., Arctic Health Rsch. Ctr., Anchorage, Alaska, 1949-58; Engr. Dir., Div. of Rsch. Services, Natl. Inst. of Health, Bethesda, Md., 1958—. Mem.: Am. Soc. of Civil Engrs.; Arctic Inst. of N. Am.; Royal Soc. of Health; Am. Public Health Assn.; A.A.A.S.; Tau Beta Pi; Phi Kappa Phi; Issac Walton League. Areas of Rsch.: Water Supplies in Northern Latitudes. Environmental Health in North Latitudes.

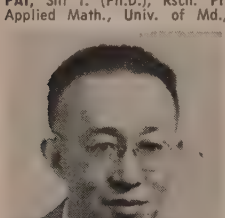


PAGE, John Orion (Ph.D.), Assoc. Prof. of Chem., A. and M. Coll. of Tex., Coll. Sta., Tex . Home Add.: 4305 Oaklawn St., Bryan, Tex. ANALYTICAL CHEMISTRY. b. Harrisville, Pennsylvania, March 2, 1906. s. Walter and Edna (Kreider) P. Edn.: B.S., Univ. of Rochester, 1927; Ph.D., Univ. of Ill., 1933. m. Genevieve Boeckmann of St. Louis, Mo., (dec.). m. (2nd), Julia Hora of Austin, Tex., 1953. c.: John Orion, Jr., Joni. Exp.: Analyst, Food & Drug Admin., U. S. Dept. Agri., 1927-29; Tchng. Asst., Ill., 1929-33; Analyst, State Water Survey, Ill., 1933-34; Develop. chemist, Owens Ill. Glass Co., Ohio, 1934-35; Chief Chemist, Hosp. Liquids Inc., Ill., 1935-36; Rsch. Chem., Upjohn Co., Mich., 1936-38; Anheuser-Busch Co., Mo., 1939; Prod. Chemist, Elmira Drug and Chem. Co., 1940; Rsch. Chem., Kingston Chem. Co., 1940-41; Rsch. Develop. Chem., Kroger Grocery and Baking Co., Ohio, 1941-42; Prin. Analyst, Clopay Co.,

1942-43; Rsch. Chem. Cactus Ord. Wks., Shell Chem. Co., Tex., 1943-44; Eldorado Oil Wks., Calif., 1944-45; Carbide and Carbon Chem. Co., Tenn., 1945; Develop. chemist, Vestal, Inc., Mo., 1945-46; Asst. Prof. Chem. and Asst. Chemist, Expt. Sta., Agri. and Mech. Coll., N. Mex., 1946-47; Asst. Prof. Chem., Idaho, 1947-48; Asst. Prof. Chem., A. and M. Coll. of Tex., 1948-51; Rsch. Chem., Casner Candelilla Co., Tex., 1947-50; Assoc. Prof. Chem., A. & M. Coll. of Tex., 1951—; Rsch. Chemist, Engineering Associates, Pa., 1959; Abstractor, CHEM. ABSTRACTS, 1957—. Mem.: Am. Chem. Soc.; Am. Ordnance Assn.; Am. Inst. Chemists; Sigma Xi; Phi Lambda Upsilon. Co-author Elementary Qualitative Analysis, 1956. Contbr. to: Jour. Am. Chem. Soc.; Anal. Chem.; Jour. Chem. Edn. Gen. int.: Analytical Methods. Areas of Rsch.: Analytical Methods; Reagents replacing H_2S; Fe, Cr and V in ores; Complexometric method for sulphate; detn. of properties of Al.

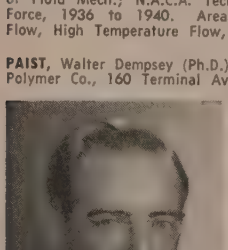
PAGETT, Ottis Lester (Mr.), Plant Chemist, Crysler Corp., Airtemp. Div., 1600 Webster St., Dayton 4, Ohio. Home Add.: 772 Fawcett Dr., Xenia, Ohio. CHEMISTRY AND BIOLOGY. b. Port William, Ohio, Apr. 11, 1920. s. Ottis and Leona Belle (Oglesbee) P. Edn.: B.S., Wilmington Coll., 1942. m. Georgia Elizabeth Keiter, July 1, 1947. c.: James David; Jo Anne; Ottis Allen. Exp.: Tchr., Sci., Kingston H. S., Kingston, Ohio, 1942; Job Analyst, Wright Field, Dayton, Ohio, 1947; Chemist Finishes Lab. and Specification Writing, Ohio, 1948-49; Chief Chemist, Kay and Esso Point Co., Dayton, Ohio, Plant Chemist, Air Temp. Div. of Chrysler, Dayton, Ohio, 1951—. Mem.: A.S.L.E.; A.A.A.S. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Metal Finishing and Machining Coolants.

PAI, Shi I. (Ph.D.), Rsch. Prof., Inst. for Fluid Dynamics and Applied Math., Univ. of Md., College Park, Md. Home Add.: 4301 Sarasota Pl., Beltsville, Md.



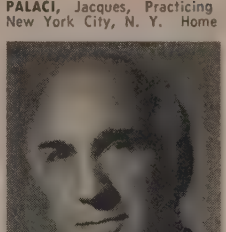
FLUID DYNAMICS, MAGNETOFLUID DYNAMICS. b. China, Sept. 30, 1913. s. Hsi Chuan and Cha Swe-lin P. Edn.: B.Sc., Natl. Central Univ., China, 1935; M.S., Mass. Institute of Tech., 1938; Ph.D., Calif. Inst. of Tech., 1940. m. Alice Wang-Yen-Lan, July 2, 1960. c.: Stephen Ming; Sue Yu; Robert Yang; Lou Lung. Exp.: Prof., Natl. Central Univ., Nanking, China, 1940-47; Visiting Prof., Cornell Univ., 1947-49; Rsch. Prof., Univ. of Md., 1949—; Visiting Prof., Inst. for Theor. Gasdy. D.V.L. Aachen, Germany, 1957-58; Consultant, Space Sci. Lab., General Electric Co., Philadelphia, Pa., 1959—. Hon. Pos.: Fellow, Academia Sinica; Guggenheim Fellow, 1957-58. Mem.: Inst. of Aero-space Sci.; Am. Physical Soc.; German Soc. of Applied Math. and Mech.; A.A.A.S.; Wash. Phil. Soc.; Sigma Xi. Author: Fluid Dynamics of Jets, 1954; Viscous Flow Theory, Vol. I, 1956, Vol. II, 1957; Theory of Compressible Flow, 1959; Magnetogasdynamics and Plasma Dynamics, 1961. Contbr. to: Aero. Digest; Jour. Aero. Sci.; Jour. Appl. Phy.; Quarterly Applied Math.; Jour. of Applied Mech.; Jour. of Franklin Inst.; Z.A.M.M.; Jet Propulsion; Physical Rev.; Phys. of Fluids; McGraw-Hill Encyc. of Sci. & Tech.; Handbk. of Fli. Dynamics; Rev. of Mod. Phy.; Midwest Conf. of Fluid Mech.; N.A.C.A. Tech. Note. Serv. Rec.: Chinese Air Force, 1936 to 1940. Areas of Rsch.: Jet Flow, Turbulent Flow, High Temperature Flow, Magnetogasdynamics.

PAIST, Walter Dempsey (Ph.D.), Sr. Development Assoc., Celanese Polymer Co., 160 Terminal Ave., Clark, N. J. Home Add.: 113 Diamond Hill Rd., Berkeley Hgts., N. J.



ORGANIC CHEMISTRY OF PLASTICS. b. Westchester, Pa., March 19, 1912. s. Phineas E. and Anna S. (Windle) P. Edn.: B.Sc., Univ. of Pa., 1934; Ph.D., Columbia, 1941. m. Vera Watson, 1949. Exp.: Rsch. Chemist, Celluloid Corp., Newark, N. J., 1934-38; Grad. Student and Lab. Asst., Coll. Univ., N. Y. C., 1938-41; Hd. Org. Rsch. Dept., Celanese and Summit, N. J., 1941-55; Tech. Advisor on Plastics, Celanese, Newark, N. J., 1955-61; Development Assoc., Celanese Polymer, Clark, N. J., 1961—. Hon. Pos.: Chmn., Polymer Section of No. Jersey Section of Am. Chem. Soc. Mem.: Am. Chem. Soc.; Soc. of Plastics Engr.; Soc. of Photographic Scientists and Engr.; Industrial Hygiene Assn.; Phot. Soc. of Am.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Blue Mt. Assn.; Orange Camera Club. Author: Cellulosics, 1958. Contbr. to: Colliers Encyclopedia; Sci.; Jour. of Organic Chem.; Am. Dyestuff Reporter. Areas of Rsch.: Synthesis of Resins and Plasticizers and Their Evaluation; Water Proofing, Flame Proofing and Dying of Textiles; Toxicology of Plasticizers, Plastics and Pigments; Flame Resistant Plastics. Mechanism of Weathering of Plastics.

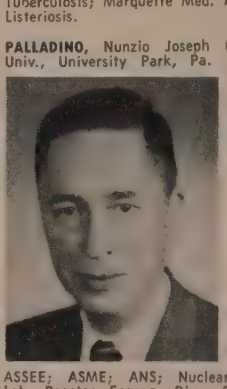
PALACI, Jacques, Practicing Psychoanalyst, 10 East 67th St., New York City, N. Y. Home Add.: 10 East 67th St., New York 21, N. Y.



PSYCHOANALYSIS AND PSYCHOLOGY. b. Istanbul, Turkey, Feb. 14, 1915. s. Nesim and Regine (Amon) P. Edn.: B.S., German Coll., Istanbul, 1934; PCB, Sorbonne, Univ. of Paris, 1936. Medical Schl., Univ. of Vienna, 1938; Med. Schl., Univ. of Istanbul, 1942; M.A., Clin. Psychol., Columbia Univ., 1948; W. A. White Inst. of Psychiatry and Certificate Natl. Psychol. Assn. for Psychoanal., 1952; Certified by the State of N. Y. m. Dorothy Monet, May 21, 1953. c.: Cristina. Exp.: Schl. Psychologist, Publ. Schls. of the Tarrytowns, N. Y., 1948-50; Instr., U. S. Intelligence Reserve Corps, New York, N. Y., 1946-48; Psychoanalytic Private Practice, New York, N. Y., 1948—; Mem. of Faculty, Trng. Inst., Natl. Psychol. Assn. for Psychoanal., 1961—. Hon. Pos.: Vice-Pres., Chmn. Standards Theodor Reik Clinic for Mental Health and Rsch.; Vice Pres., Chmn., Bd. of Dir., Natl. Psychol. Assn. for Psychoanalysis. Mem.: N. Y. State Psychol. Assn., Clin. Div.; N. Y. Soc. of Clin. Psychol.; Am. Soc. for Group Psychotherapy and Psychodrama. Fellow, Assn. of Psychoanalytic Psychologist; Natl. Psychol. Assn. for Psychoanalysis; Am. Assn. for the Adv. of Sciences; World Fed. for Mental Health; Am. Acad. of Psychotherapists. Author: Transl. Bergman "Innere Medizin" Part Infectious Diseases, 1941. Areas of Rsch.: Psychoanalysis.

PALEN, Sister M. Imogene (Ph.D.), Bacteriologist, St. Agnes Hosp., Fond Du Lac, Wis. BACTERIOLOGY. b. Modoc, Kans., Apr. 25, 1914. d. Nick J. and Katherine (Corpsteini) P. Edn.: B.S., Marquette Univ., 1941; Ph.D., Loyola Univ., Chicago, 1956. Exp.: Co-Dir. of Clin. Labs., St. Agnes Hosp., 1948—; Bacteriologist ibid., 1948—; Assoc. Prof. Biol., Marian Coll., Wis., 1951—. Mem.: Soc. of Am. Bacteriologists; Sigma Xi; Canadian Soc. Microbiologists. Contbr. to: Jour. of Bacteriology; Am. Rev. of Tuberculosis; Marquette Med. Rev. Areas of Rsch.: Tuberculosis; Listeriosis.

PALLADINO, Nunzio Joseph (Mr.), Prof. and Hd., Pa. State Univ., University Park, Pa.



Home Add.: 333 W. Park Ave., State College, Pa. NUCLEAR SCIENCE AND ENGINEERING. b. Allentown, Pa., Nov. 10, 1916. s. Joseph (dec.) and Angelina (Trentalange) P. Edn.: B.S. in M.E., Lehigh Univ., 1938; M.S. in M.E., ibid., 1939; Cert. in Bus. Mgrng., Univ. of Pittsburgh, 1955. m. Virginia D. Marchetto, June 16, 1945. c.: Linda Susan; Lisa Anne; Cynthia Madaline. Exp.: Engr., Westinghouse Elec. Corp., Philadelphia, Pa., 1939-46; Sr. Engr., Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1946-48; Staff Asst. to Div. Mgr., Argonne Natl. Lab., Argonne, Ill., 1948-50; PWR Reactor Subdiv. Mgmt., Westinghouse Elect., Pittsburgh, Pa., 1950-59; Prof. and Dept. Head, Pa. State Univ., 1959—. Mem.: ASSEE; ASME; ANS; Nuclear Div., A.I.Ch.E.; Argonne Natl. Lab. Reactor Engrng. Div.; Sigma Xi; Tau Beta Pi; Pi Tau Sigma; Pi Mu Epsilon; Gotshall Scholar; Rotary Club; Pa. State Univ. Club. Co-Author: Reactor Shippingport Pressurized Water Reactor, 1958. Contbr. to: Tool Engr.; Trans. ASME; Proc. of Internatl. Conf. in Geneva; Trans. ANS; Nucleonics. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: Westinghouse Order of Merit for Tech. Dir. of reactor designs of Atomic Submarine NAUTILUS and for Shippingport Nuclear Power Plant; Prime Movers Award of ASME. Areas of Rsch.: Reactor Engineering; Integration of Mechanical, Thermal and Nuclear Design; Reactor Fuels Management; Economics of Power Reactor Design; Heat Transfer and Fluid Flow; Boiling and Burnout; Reactor Transient Problems; Reactor Safety and Reactor Protection Accident Analysis.

PALM, Rose (Ph.D.), Psychologist, 263 W. End Ave., N. Y. 23, N. Y. PSYCHOLOGIST. b. Emmen, Holland, April 17, 1912. d. Karel and Selma (Windmuller) Palm. Edn.: B.A., Jr. Coll., Gymn., Kampen, Holland, 1929; M.A., Univ. of Amsterdam, 1934; Ph.D., ibid., 1938. Exp.: Chief Psychol., St. Hosp., Apeldoorn, Holland, 1938-40; Lectr., Psychol., Montessori Tchrs. Trng. Coll., Amsterdamdam, Holland, 1941-42; Psychol. Asst. to Prof., T. S. Simey, Colonial Office, Brit. Govt., Kingston, Jamaica, B.W.I., 1943-44; Clinic Worker, N. Y. St. Trng. Schl. for Boys, Warwick, N. Y., 1944; Psychol., The Jewish Bd. of Guardians, N. Y. City, 1945-47; Rsch. Psychol., Columbia Univ. and Josiah Macy Fdn., 1947-48; Sr. Rsch. Psychol., N. Y. St. Dept. of Ment. Hyg., 1948-53; Instr., Dept. of Psychol., Hunter Coll., 1949-51; Psychol. Consultant, Community Serv. Soc., Family Serv., N. Y. City, 1951-53; Lectr., Dept. of Psychol., Long Island Univ., N. Y., 1951-54; Lectr., Natl. Psychol. Assn. for Psychoanalysis, N. Y., 1952-61; Psychol., N. Y., 1944—. Hon. Pos.: Mem., Exec. Bd., N. Y. St. Psychol. Assn., Clin. Div., 1960; Bd. of Dirs., Inst. for Psycho-

analytic Trng. and Rsch., 1961. Mem.: N. Y. Acad. of Scis.; N. Y. St. Psychol. Assn.; N. Y. Soc. of Clin. Psychol.; Fellow, Am. Psychol. Assn.; Fellow, Soc. for Projective Techniques; Fellow, Am. Orthopsychiatric Assn. Contbr. to: American Imago; Jour. of Nervous and Mental Diseases; Psychoanalysis; The Psychoanalytic Rev. Gen. Int.: Cert. for Psychol., N. Y. St. Dept. of Edn., 1958; Diplomate in Clin. Psychol., Am. Bd. of Examiners in Prof. Psychology, 1950.

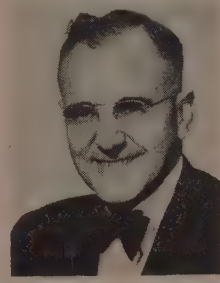
PALLOTTA, Arthur J. (Ph.D.), Dir. of Rsch., Bionetics Rsch. Lab., Inc., Box 26, Falls Church, Va. Home Add.: 911 Moly Drive, Falls Church, Va. PHARMACOLOGY. b. Medford, Mass., June 3, 1927. s. Arthur and Alma (Lucia) P. Edn.: B.S., Georgetown Univ., 1950; M.S., ibid., 1953; Ph.D., ibid., 1956. m. Mary I. Jameson, Dec. 17, 1949. c.: Pamela; Arthur J., Jr.; Thomas; Deborah; Mary J.; Karen; Margaret. Exp.: Dir., Endocrinol. Lab., Georgetown Univ., 1951-53; Lectr., Med. Schl., ibid., 1955—; Lectr., Catholic Univ., 1955—; Sr. Pharmacologist, Hazleton Labs., Inc., Falls Church, Va., 1960-61; Vice Pres., Dir. of Rsch., Bionetics Rsch. Labs, Inc., Falls Church, Va., 1961—. Mem.: A.A.A.S.; N. Y. Acad. of Scis.; Va. Acad. of Sci.; Am. Soc. of Zoologists; Am. Assn. of Clinical Chemists; Am. Federation for Clinical Rsch.; Am. Soc. for Artificial Internal Organs; Animal Care Panel; Soc. of Toxicol; Am. Chem. Soc. Contbr. to: Jour. of Pharmacol. Exptl. Therap.; Jour. Clin. Invest.; Jour. A.M.A., Cancer Rsch.; Jour. of Med. Pharm. Chem.; The Pharmacologist. Serv. Rec.: U. S. Army, 1945-47.

PALMATARY, Helen Constance (Miss), Rsch. Assoc. (Ret.). Home Add.: 423 Wesley Terrace, Des Moines, Washington (P. O. Box 442). ARCHEOLOGY OF THE AMAZON VALLEY. b. Wilmington, Dela. d. John Edwin and Anna Laura (Jarvis) P. Edn.: B.S., Univ. of Pa., 1924; M.A., ibid., 1936. Exp.: Tchr., Philadelphia Vocl. and H. S., 1925-52; Rsch. Assoc. in Brazilian Studies, Univ. Museum, Philadelphia, 1950-60, (resigned). Mem.: Am. Anthropological Assn., (fellow); Instituto de Anthropologia do Para (fellow); Am Folklore Soc.; Am. Acad. of Polit. and Soc. Sci.; Pi Lambda Theta. Author: Tapajo Pottery, 1939; The Pottery of Marajo Island, Brazil, 1950; The Archaeology of the Lower Tapajos Valley, Brazil, 1960. Areas of Rsch.: Arch. of the Amazon Valley.

PALMER, Charlene Darr (Ed.D.), Assoc. Prof. of Home Econ., Long Beach St. Coll., Long Beach, Calif. Home Add.: 3481 Ladoga Ave., Long Beach, Calif. CHILD DEVELOPMENT; HOME ECONOMICS EDUCATION. b. Jonesboro, Ark., Jan. 19, 1926. d. Abe Darr and Freddy (Lynch) D. Edn.: B.S., Ark. State Coll., 1945; M.Ed., Univ. of Ark., 1954; Ed.D., Univ. of Mo., 1957. m. Paul W. Palmer, 1946. c.: Paula Ann; Philip Aden. Exp.: Tchr., Wilson Pub. Schls., Wilson, Ark., 1945-46; Tchr., Instr., Ark. Sta. Coll., Sta. Coll., Ark., 1946-47; Tchr., Valley View Consolidated Schl., Jonesboro, Ark., 1950-51; Supvr., Jonesboro Pub. Schls., 1951-52; Tchr., Riverside City Schls., Riverside, Calif., 1955-57; Asst. Prof. of Home Econs., Univ. of Calif., Santa Barbara, Calif., 1957-62; Assoc. Prof. of Home Econs., Long Beach State Coll., 1962—. Hon. Pos.: Treas., Natl. Assn. of Home Econs. Tchr. Educators, 1960; Co-Chmn., Professional Home Econs. Comm., Calif. Assn. for Supvr. and Curr. Develop., Sou. Sect., 1961-62. Mem.: N. Y. Acad. of Scis.; Am. Sociol. Assn.; Am. Home Econs. Assn.; Am. Dietetic Assn.; Natl. Coun. on Family Relations; Assn. for Supvn. and Curriculum Devel.; Pi Gamma Mu; Kappa Delta Pi; Am. Assn. of Univ. Women. Contbr. to: Jour. of Home Econs.; Merrill-Palmer Quarterly of Behavior and Development; Marriage and Family Living; Jour. of Ednl. Rsch.; Calif. Home Econt.; Syonai Hippo; Wha't New in Home Econs.; Report of Pacific Reg. Conf. Home Econs. Edn.; Newsletter of the Profl. Home Econs. Comm., Calif. Assn. for Supvrn. and Curriculum Devel. Gen. Int.: Lecture Tour of Japan, 1960; Research Conducted in Japan, 1960. Areas of Rsch.: Child-Rearing Practices; Analysis of Child Development Publications; Principles of Child Development.

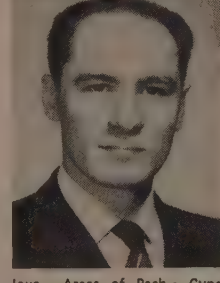
PALMER, Dewey Homer (Mr.), Dir. of Med. Engrng., Central Rsch. Div., Becton Dickinson Co., 429 Sylvan Ave., Englewood Cliffs, N. J. Home Add.: 527 Mackay Ave., Oradell, N. J. ENGINEERING AND PHYSICS. b. Stamford, Nebr., May 24, 1898. s. William H. and Delta (Reed) P. Edn.: B.S., Univ. of Colo., 1922; M.S., Ia. St. Coll., 1924. m. Alix Palmer, July 24, 1932. c.: Patty L. Herrick; Darwin L. Exp.: Dir. of Rsch., Hosp. Bur. of Standards and Sup., N. Y. C., 1939-55; Dir. of Product Development, Clay-Adams, N. Y. C., 1955-61; Dir. of Med. Engrng., Central Rsch. Div., Becton Dickinson Co., Eaglewood Cliffs, N. J., 1961—. Hon. Pos.: Chmn., Standards Comm., Am. Hosp. Assn. Mem.: N. Y. Acad. of Scis.; A.A.A.S., Fellow. Co-author: Millions on Wheels, 1938. Contbrng. Author: National Standards in a Modern Economy, 1956. Contbr. to: Modern Hospital; Purchasing. Serv. Rec.: U. S. Army, W. W. I.

PALMER, Gordon (D.D.), Educator, 886 Malcolm Ave., Los Angeles 24, Calif. HUMAN RELATIONS. b. Coveney, England. s. James Chapman and Louisa Bews (Pearson) P. Edn.: Ph.B., Redlands Univ., 1916; B.D., Berkeley Bapt. Div. Schl., 1916. Hon. Deg.: D.D., Univ. of Redlands, 1924; Litt.D., John Brown Univ., 1952; LL.D., Temple Univ., 1954; L.H.D., Linfield Coll., 1957; D.D., Eastern Bapt. Theol. Sem., 1960; L.H.D., Bob Jones Univ., 1946; D.D., Northern Bapt. Seminary, Chicago, Ill., 1960. m. Mila H. Treat, Sept. 9, 1919. c.: Gordon; Robert H.; Janet P.; Hatch. Exp.: Pres., Eastern Bapt. Theol. Sem., 1936-48; Educator, Gen. Edni. Serv., 1948—; Christ is the Answer Radio Broadcast, 1950—. Hon. Pos.: Vice-Pres., Bd. of Trustees, Univ. of Redlands; Vice-Pres., Am. Bapt. Conv.; Pres., Am. Bapt. Home Mission Soc. Mem.: A.A.A.S.; Am. Geog. Soc.; Mark Twain Soc.; Eugene Field Soc.; Pi Kappa Delta; Mason; Am. Legion; Kiwanis. Author: What's Right with The World, 1939; Manual of Rites and Ceremonies of the Church, 1947, 1948. Contbr. to: Christian Leader; Watchman Examiner. Serv. Rec.: 1st Lt., Chaplain, U. S. Army, 1917-19. Gent. Int.: Winner Freedom Found. Awards and Medals eight consecutive years; Valiant Patroit Award, All-Am. Conf. to Combat Communism, 1962. Areas of Rsch.: Religious Education and Improvement of Standards and Equipment for the Christian Ministry.



PALMER, Howard Benedict (Ph.D.), Prof., Head, Dept. of Fuel Technol., Coll. of Mineral Industries, Pa. St. Univ., University Park, Pa. Home Add.: 311 Adams Ave., State College, Pa. FUEL TECHNOLOGY, PHYSICAL CHEMISTRY. b. Indianapolis, Ind., July 10, 1925. s. Claude E. and Katharine (Benedict) P. Edn.: B.S., Carnegie Inst. of Technol., 1948; Ph.D., Univ. of Wis., 1952. m. Katherine Watson, June 30, 1951. c.: Andrew Stuart; Jeffrey Howard; David James. Exp.: Rsch. Assoc. in Chem., Brown Univ., 1952-53; Instr. of Chem., ibid., 1953-55; Asst. Prof. of Fuel Technol., Pa. St. Univ., 1955-57; Assoc. Prof., ibid., 1957-60; Head, Dept. of Fuel Technol., ibid., 1959—; Prof., ibid., 1960—. Mem.: A.C.S.; Combustion Inst.; Inst. of Fuel; Am. Gas Assn.; Am. Physical Soc.; Sigma Xi; Phi Lambda Upsilon; Tau Beta Pi; Phi Kappa Phi; Omicron Delta Kappa; Beta Theta Pi. Contbr. to: Jour. of Chem. Physics.; A.R.S. Jour.; Combustion and Flame; Proc. of Conf. on Industrial Carbon and Graphite; Chem. Revs.; Jour. of Inst. of Fuel; Proc. of 8th and 9th Symposia on Combustion; Proc. of Fifth Conf. on Carbon. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: High Temperature Reaction Kinetics and Radical Reactions; Gaseous Combustion Processes; Carbon Formation; Shock Waves in Gases.

PALUMBO, Leonard (M.D.), Assoc. Prof. of Obstetrics and Gynecol., N. C. Memorial Hosp., Chapel Hill, N. C. Home Add.: 1116 Ninth St., Durham, N. C. OBSTETRICS AND GYNECOLOGY. b. N. Y. C., May 18, 1921. s. Leonard Carl Vincent and Jennie (DeVincentis) P. Edn.: M.D., Duke Univ., 1944. Exp.: Assoc., Duke Univ. Med. Schl., 1950-52; Asst. Prof., Univ. of N. C. Med. Schl., 1952-56; Assoc. Prof., ibid., 1956—. Mem.: Am. Bd. of Obst. and Gynecol., Diplomate; Am. Coll. of Obstetricians and Gynecologists; S. Atlantic Assn. of Obst.-Gynecol.; N. C. Obst.-Gynecol. Soc.; Southeastern Obst.-Gynecol. Soc.; A.M.A.; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Elisha Mitchell Soc. Contbr. to: Am. Jour. of Obstet. and Gynecol.; Obstet & Gynecol.; Sou. Med. Jour.; N. C. Med. Jour. Areas of Rsch.: Gynecologic Oncol.



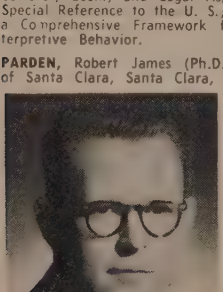
PALMER, James Beckley (Ph.D.), Editor and Publisher, 230 Mt. Yernon St., W. Newton, Mass. BIOLOGY AND PSYCHOLOGY. b. Meadville, Pa., Nov. 14, 1899. s. James J. and Ida (Gorman) P. Edn.: B.S., Cornell Univ., 1921; Ph.D., ibid., 1930. m. Martha Kinne, July 11, 1925. c.: James B.; Julia B.; Martha K.; Daivd J. Exp.: Instr. in Geol. and Biol., Cornell Univ., 1920-23; Inst. in Psychol. and Edn., ibid., 1926-33; Prof., St. Tchrs. Coll., Potsdam and Albany, N. Y., 1928-36; Acting Dean,

ibid., 1936; Editor, Ginn & Co., Ednl. Publishers, Boston, Mass., 1936-46; Editor in Chf., Clerk and Dir., ibid., 1946-61. Mem.: A.A.A.S.; Natl. Soc. St. of Edn.; A.A.S.A.; Gamma Alpha; Phi Kappa Phi; Phi Delta Kappa; Kappa Phi Kappa; Tuesday Club of Newton; Cornell Club of New England. Author: Casual Factors Underlying Changes in Elementary Curriculum in New York State, 1931; Living Conditions in Rural New York, 1932. Contbr. to: Sci.; N. Y. St. Ednl. Jour.; Nations Schls. Serv. Rec.: U. S. Army, W. W. I. Areas of Rsch.: Biology, Entomology, Child Growth and Learning Materials.

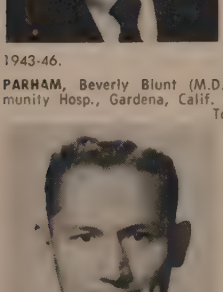
PAN, Huo-Ping, (Ph.D.), Asst. Biochemist, Dept. of Food Tech. and Nutr., Univ. of Fla., Gainesville, Fla. Home Add.: 815 N. W. 20th St., Gainesville, Fla. FOOD CHEMISTRY AND BIOCHEMICAL ENGINEERING. b. Foochow, China, Feb. 13, 1921. s. Baik-Ming and Yu (Chen) P. Edn.: B.S., Nat. S.W. Assoc. Univ., 1946; Ph.D., Univ. of Ill., 1954. m. Chiou-Wen Sha, Feb. 26, 1955. c.: Peno. Exp.: Staff Mem., Div. of Industl. Corp., Mass. Inst. of Tech., 1954-55; Staff Mem., Div. of Sponsored Rsch., ibid., 1955-57; Rsch. Assoc., ibid., 1957-58; Asst. Biochem., Univ. of Fla., 1958—. Mem.: Am. Chem. Soc.; Am. Oil Chem. Soc.; Inst. Food Tech.; Fla. St. Hort. Soc.; A.A.-A.S.; A.A.U.P.; Phi Tau Sigma; Sigma Xi. Contbr. to: Jour. Am. Oil Chem. Soc.; Mikrochemica Acta; Arch. of Biochem. and Biophys.; Textile Rsch.; Jour. of Food Sci.; Proc. Fla. St. Hort. Soc.; Anal. Chem.; App. Spectroscopy. Areas of Rsch.: Flavor Chemistry Chemistry of Lipids; Textile Chemistry; Irradiation Chemistry and Food Microbiology.

PAP, Leo (Ph.D.), Assoc. Prof. of Foreign Languages, St. Univ. Coll., New Paltz, N. Y. Home Add.: New California Quarry Rd., R.F.D. Box 197, Woodstock, N. Y. LINGUISTICS, SEMANTICS. b. Zurich, Switzerland, Nov. 4, 1915. s. Mathys and Mina (Dorn) P. Edn.: M.A., Columbia Univ., 1940; Ph.D., ibid., 1948. m. Valerie Sikulis, Jan. 6, 1962. Asst. Prof., U. S. Foreign Serv. Inst. and Naval Intelligence Schl., Washington, D. C., 1949-51; Lctr., Columbia Univ. and New Schl., 1955-57; Assoc. Prof., St. Univ. Coll., New Paltz, N. Y., 1957—. Mem.: A.A.A.S.; L.S.A.; A.A.A.; M.L.A. Author.: Portuguese-American Speech, 1959. Contbr. to: Language; Sociological Abstracts; Am. Speech; Sci.; Romance Philology. Areas of Rsch.: History and Socio-Cultural Traits of the Portuguese Ethnic Population in U. S.; Socio-Cultural, Econ., and Legal Aspects of the Tipping Custom with Special Reference to the U. S.; Conceptualization of Semantics as a Comprehensive Framework for the Study of Patterns of Interpretive Behavior.

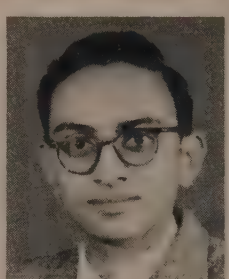
PARDEN, Robert James (Ph.D.), Dean, Schl. of Engrng., Univ. of Santa Clara, Santa Clara, Calif. Home Add.: 19832 Bonnie Ridge Way, Saratoga, Calif. INDUSTRIAL ENGINEERING. b. Mason City, Ia., Apr. 17, 1922. s. James Ambrose and Mary G. (Fahey) P. Edn.: B.S., St. Univ. of Ia., 1947; M.S., ibid., 1951; Ph.D., ibid., 1953. m. Elizabeth Taylor, June 15, 1955. c.: Patricia G.; James A.; John R. Exp.: Asst., St. Univ. of Ia., 1950-53; Assoc. Prof., Ill. Inst. of Technol., 1953-54; Prof., Asst. Dean, Santa Clara Univ., 1954-55; Dean, ibid., 1955—. Hon. Pos.: Chmn., Edn. Committee, Am. Inst. Ind. Engrs.; Chmn., Pacific S.W. Sect., Am. Soc. Engrng. Edn. Mem.: Am. Soc. of Mechanical Engrs.; Tau Beta Pi; Sigma Xi. Contbr. to: Jour. of Industrial Engrng. Serv. Rec.: U. S. Army, 1943-46.



PARHAM, Beverly Blunt (M.D.), Chf. Radiologist, Gardena Community Hosp., Gardena, Calif. Home Add.: 21316 S. Jaffrey St., Torrance, Calif. RADIOLOGY. b. Philippines, June 7, 1923. s. Archer Brandon and Rosario (Maga) P. Edn.: M.D., Univ. of the Philippines, 1951. m. Carol Dickson, 1959. c.: Anthony D.; Curtis A. Exp.: Instr. in Radiol., Univ. of Calif., Los Angeles, Calif., 1959 ; Resident, Harbor General Hosp., Torrance, Calif., 1956-59; Asst. Roentgenologist, ibid., 1959 ; Chf. Radiologist, Gardena Community Hosp., Gardena, Calif., 1959—. Mem.: A.A.-A.S.; U.C.L.A. Med. Assn.; A.M.A.; Phi Kappa Phi. Serv. Rec.: U. S. Naval Reserve, 1945-46. Areas of Rsch.: Radiology.



PARIKH, Gokaldas Chandulal (Mr.), Research Fellow, Southern Ill. Univ., Carbondale, Ill. Home Add.: 9110 S. Union Ave., Chicago 20, Ill. VIROLOGY. b. Bombay, India, July 22, 1932. s. Chandulal Girdharlal and Chandrakanta C. (Desai) P. Edn.: B.S., Univ. Bombay, India, 1953, B.Sc. (Chem.), ibid., 1954. m. Thelma Brooks, July 21, 1957. Exp.: Lab. Asst., Aarey Milk Colony, Bombay, India, 1953-54; Rsch. Asst., Nagpur. Med. Schl., 1954-56; Rsch. Fellow, Michael Reese Hosp., Chicago, 1956-59; Rsch. Fellow, N.D.E.A., Southern Ill. Univ., 1959, 1962; Fellow, ibid., 1962—. Hon. Pos.: Asst Supt. (Warden), Nagpur Med. Schl., India. Mem.: A.A.A.S.; N. Y. Acad. Scis.; Am. Assn. Bacteriol. Contbr. to: Bull. World Health Organization; Indian Jour. Med. Scis.; Japanese Jour. of Microbiol.; Die Natur Wissenschaften. Serv. Rec.: U. S. Army Natl. Guard, 6 mos. Active Duty and 5 yrs. Reserve. Gen. Int.: Selected as Research Fellow Under National Educational Defense Act Program. Areas of Rsch.: Virology; Immunology; Tissue Culture Rsch.



PARKE, Nathan Grier, III (Ph.D.), Dir. of Rsch., Parke Mathematical Labs., Inc., Carlisle, Mass. Home Add.: Concord St., Carlisle, Mass. THEORETICAL PHYSICS. b. Woodstock, Vt., Jan. 27, 1912. s. Nathan Grier, I and Olive Bemis (Williams) P. Edn.: A.B., Princeton, 1934; Ph.D., Mass. Inst. of Technol., 1948. m. 1st Sally Lara, Nov. 12, 1938 (div.), 2nd, Ann Ryder, Sept. 6, 1952. c.: Nathan Grier, IV; Joanthan Lara; Robert Wyman; Roger Stetson. Exp.: Rsch. Engr., Glenn L. Martin Co., Baltimore, Md., 1936-40; Principal Mathematician, Bu Aero, Navy Dept., Wash., D. C., 1942-45; Rsch. Assoc. Physics, Rsch. Lab. of Elect., Mass. Inst. of Technol., 1945-48; Consulting Physicist, Concord, Mass., 1948-51; Founder and Pres., Parke Mathematical Labs., Inc., 1951 Mem.: Assoc. F.I.Ae.S.; Fellow, Am. Assn. Adv. Sci.; Am. Math. Soc.; Am. Phys. Soc.; I.R.E.; Inst. of Math. Stat.; Opt. Soc. Am.; Soc. Am. Soc. of Mayflower Descendants; Sigma Xi; Tau Beta Pi. Author: Guide to the Literature of Mathematics and Physics, 1947, 2nd Ed., 1958. Contbr. to: M.I.T. Jour. of Math. and Phys.; Am. Math. Monthly. Gen. Int.: Founded, in 1948, one of the First Independent Rsch. and Consulting Groups Devoted to Applied Mathematics Not Tied to a Univ. or Computing Center. This Group incorporated as Parke Math Labs., 1951. Areas of Rsch.: Applications of Theoretical Physics in Engineering Analysis; Theoretical Physics Especially Classical and Quantum Mechs., Optics, Electromagnetic Theory and Sound; Bibliographic and Information Handling Problems in Mathematics and Physics.

PARKER, Frances Cherry Cartwright (Mrs.), Instr., Community Nursing, Univ. of N. C., Schl. of Nursing, Chapel Hill, N. C. Home Add.: Cherry Knoll Farm, Pittsboro, N. C. NURSING (PUBLIC HEALTH NURSING). b. Elkton, Ky., Oct. 12, 1920. d. Paul Seaton Cartwright and Frances Willard (Cherry) C. Edn.: R.N., St. Thomas Schl. of Nursing, 1941; B.S., P.H.N., Univ. of N. C., 1957. m. Fred Parker, July 12, 1942. c.: Pamela Cherry; David Cartwright. Exp.: Hosp. Nursing, St. Joseph's Hosp., Saratoga Gen. Hosp., Mich., 1943-46; Occupation Hlth. Nursing, Collins and Aikman Corp., Norwood, N. C., 1946-50; Nursing Edn., Instr., Univ. of N. C., 1957-59; Instr., ibid., 1960—. Hon. Pos.: Formerly, Chmn. of Pub. Relations Comm., N. C. League for Nursing, 1957-59. Mem.: Kappa Tau Alpha; Am. Nurses' Assn.; Natl. League for Nursing; Formerly Sta. Histn., N. C. Cong. of Parents and Tchrs., 1954-55 Contbr. to: Am. Jour. of Nursing; Nursing Outlook; Nursing World, R.N.; Tri-State Safety Jour.; The Bull., Univ. of N. C. Schl. of Med. N. C. Edn.; N. C. Folklore. Gen. Int.: Winner of Mary M. Robert's Journalism Fellowship, 1959, by the Am. Jour. of Nursing Co., N. Y. Areas of Rsch.: Research on the Profile of the Nurse in the Mass Media.

PARKER, Clyde Norwood (Ph.D.), Prof. Psychol., Frederick Coll., and Counselor, 614 Medical Arts Bldg., Norfolk, Va. Home Add.: 165 W. Bayview Blvd., Norfolk, Va. PSYCHOLOGY AND SOCIOLOGY. b. Prince George Co., Va., Feb. 24, 1907. s. Vernon and Cora (Coonley) P. Edn.: B.A., Univ. of Richmond

1926; B.S., ibid., 1928; M.A., ibid., 1942; Th.M., Sou. Bapt. Semin., 1929; Ph.D., ibid., 1932. Hon. Deg.: D.D., Univ. of Richmond, 1947. Exp.: Publisher and Editor, Petersburg, Va., 1942-46; Hd. Dept. of Econ. and Sociol., Meredith Coll., 1947-50; Information and Edn. Specialist, Fed. Gove., 1950; Publications Writer Quartermaster Tech. Trng. Serv., U. S. Dept. of Army, 1951-52; Grad. Rsch. and Internship in Clinical Psychol., N. C. Bapt. Hosp., Winston-Salem, N. C., 1952-53; Prof. and Counseling Psychologist, High Point Coll., 1953-55; Clin. Psychologist, Va. State Dept. of Health, Norfolk, Va., 1956-61; Prof. and Head of Dept. of Psychology, Frederick College, Portsmouth, Va., and member of Staff, Pyschological Consultants, Inc., Richmond, Va., 1961—. Hon. Pos.: Area Dir., U. S. Service to China, Inc.; Chrn., Va. Interracial Comm.; Field Rep. Children's Home Soc. of Va.; Sou. Regional Counc. Mem.: A.A.U.P.; Am. Sociol. Soc.; Sou. Sociol. Soc.; Am. Acad. of Polit. and Soc. Sci.; Natl. Protestant Counc. of Higher Edn.; Groves Cong. on Marriage and the Family; Natl. Coun. on Family Relations; Am. Psychologists and Marriage Counselors Inst; Tau Kappa Alpha; Phi Alpha Zeta; Alpha Kappa, and others. Areas of Rsch.: Psychotherapy for Alcoholics; Techniques of Marriage Counseling.

PARKER, Garald Gordon (Mr.), Rsch. Geologist, U. S. Geological Survey, Denver, Colo. Home Add.: 13005 W. 15th Dr., Golden, Colo. HYDROGEOLOGY, HYDROLOGY OF ARID LANDS; SALT-WATER ENCROACHMENT. b. Leona, Ore., July 2, 1905. s. Arta William and Bertha Mona (Smith) P. Edn.: A.B., Central Washington Coll. of Edn., 1935; M.S., Univ. of Wash., 1946. m. 1st, Martha Rosetta Harriger, 1926, dec., 1954; 2nd, Bernadette Elizabeth Spalding, 1955. c.: Avonne Arlene; Garald G.; Robert A.; Elizabeth Anne; Carole Lynne; Deborah Elaine. Exp.: Prin., Tchr., Publ. High and Jr. H. S., St. of Wash., 1927-37; Tchng. Fellow, Univ. of Wash., Dept. of Geol., 1939-40; Jr. Geologist to Sr. Geologist, U. S. Geological Survey, Miami, Fla., 1940-48; Geologist-in-Charge, to ibid., Hanford, Wash., 1948-49; Principal Geologist, ibid., Wash., D. C., 1949-56; Principal Geologist and Chief, Manpower Trng., ibid., Upper Darby, Pa., 1956-58; Prin. Geologist, and Acting Chief, Gen. Hydrol. Br., ibid., Wash., D. C., 1958-60; Prin. Geologist, and Chief, Soils and Moisture Conservation, ibid., Denver, Colo., 1960-62; Prin., Rsch. Geologist, Arid Lands Hydrology, 1962—. Hon. Pos.: Vice Pres., Fla. Acad. of Sci., 1946; Secy., Wash. Geol. Society, Washington, D. C., 1950; Vice Pres., ibid., 1957. Mem.: Fellow, A.A.A.S.; Fellow, Geol. Soc. of Am.; Am. Assn. Petrol Geol.; Soc. Econ. Geol.; Am. Geophys. Union; Soil Sci. Soc. of Fla.; Fla. Acad. of Sci.; Colo. Sci. Soc.; Wash. Geol. Soc.; Phi Delta Kappa; Mason; Kiwanis. Author: Water Resources of Southeastern Florida, 1955; Water Resources of the Delaware Basin, 1961. Contbr. to: Encyclopedia Am.; World Book Encyc.; Jour. of Am. Water Works Assn.; Jour. of the Soc. of Economic Geologists; Soil Sci.; U. S. Geol. Survey Prof. Paper Series; U. S. Geol. Survey Water-Supply Series. Gen. Int.: Outstanding Achievement Award, U. S. Geol. Survey, 1959; Gold Achievement Medal, Fla. Acad. of Sci., 1945. Areas of Rsch.: Hydrogeology of Fla.; Hydrogeology and Water Supply, Delaware River Basin; Hydrology of Arid lands; Erosion and Geomorphology.

PARKER, Grady P. (Ed.D.), Prof. and Head, Dept. of Edn. and Psychol., A. and M. Coll. of Tex., College Station, Tex. Home Add.: 1007 Walton Dr., College Station, Tex. SCIENCE EDUCATION, CHEMISTRY. b. Winfield, Tex., Mar. 30, 1903. s. Dr. Joseph J. and Eva Lee (O'Dea) P. Edn.: B.S., No. Tex. St. Coll., 1929; M.A., So. Methodist Univ., 1935; Ed.D., Univ. of Tex., 1942. m. Bernice Greathouse, May 6, 1925. c.: Mary Ann Bankston; Magie Nell Goodwin. Exp.: Supt., Hughes Springs Pub. Schls., 1929-35; Supt., Jefferson Pub. Schls., 1935-39; Fellowship, Univ. of Tex., 1939-40; Assoc. Prof. of Chem., A. and M. Coll. of Tex., 1940-48; Prof. and Hd. of Dept. of Edn. and Psychol., 1948—. Hon. Pos.: A.S.C.D. Rsch. Comm.; A. and M. Coll. Sci. Com. Mem.: Tex. Resources Use Edn. Commsn.; Masonic Lodge; Natl. Sci. Tchrs. Assn.; Tex. Acad. of Sci., Fellow; A.A.A.S., Fellow; Rotary Club. Contbr. to: Texas Outlook; Tex. Jour. of Sci.; Edn'l. Leadership; T.E.A. Sci. Bull.; Tex. Acad. of Sci. Bd. of Edn. Areas of Rsch.: Supervision and Curriculum Research.

PARKER, Hugh Klemme (Ph.D.), Consultant, 17 Cambridge Road, Glen Ridge, N. J. CHEMISTRY, CEREAL CHEMISTRY, FOOD CHEMISTRY AND SANITATION. b. Fayette, Ia., Apr. 11, 1894. s. James D. and Nellie (Klemme) P. Edn.: A.B., Upper Ia. Univ., 1916; Ph.D., Johns Hopkins Univ., 1921. Hon. Deg.: D.Sc., Upper Ia. Univ., 1951. m. Elizabeth Buchanan, Sept. 13, 1930. c.: Hugh K., Jr.; Claude Buchanan; James D., II. Exp.: Rsch. Chemist, Wallace and Tiernan Co., Inc., Belleville, N. J., 1921-23; Asst. to Pres., ibid., 1923-30; Asst. Dir. of Rsch., ibid., 1930-50; Dir., Flour Labs., ibid., 1950-59; Consultant, 1959—. Mem.: A.C.S.; A.A.A.S.; Am. Assn. of Cereal Chemists; I.F.T.; Soc. of Chemical Industry; Gamma Alpha; Glen Ridge Battalion Forum. Contbr. to: Cereal Chemistry; Cereal Science Today; Bakers Digest. Serv. Rec.: U. S. Army, 1917-19. Areas of Rsch.: Chemistry of Flour Maturing and Bleaching Flour Pigments, Continous Production of Bread, Sanitation in Food Field, Decay Control of Citrus Fruits, Water Sterilization.

PARKER, John M. (Mr.), Dist. Mgr., Kirby Petroleum Co., 518 Patterson Bldg., Denver 2, Colo. Home Add.: 1403 Baseline Rd., Boulder, Colo. PETROLEUM GEOLOGY. b. Manhattan, Kans., Sept. 13, 1920. s. John Huntington and Marjorie (Marchbank) P. Edn.: B.S., Kans. State Coll., 1937-41. m. Jan Goble, July 18, 1941. c.: Susan; Elizabeth; Deirdre; John Eric. Exp.: Party Chief, Imperial Oil Ltd., Northwest Territories, 1942-44; Party Chief, U. S. Publ. Roads Adm., British Columbia, 1942—; Party Chief, State Highway Comm. of Kans., 1941-; Dist. Geologist, Geophy. Coordinator, Area Geologist, Pan Am. Petroleum Corp., Mid-Continent, and Rocky Mts., 1944-52; Dist. Mgr., Kirby Petroleum Co., and Predecessor Co., Denver, Colo. and Billings, Mont., 1952—. Hon. Pos.: Ed. of Billings Geol. Soc. Field Conf. Guidebook, 1953; Editor of Rocky Mountain Assn. of Geologists Oil and Gas Field Volume, 1961. Mem.: A.A.P.G.; S.E.G.; A.A.A.S.; G.S.A.; B.G.S.; Sigma Alpha Epsilon; R.M.A.G.; W.G.A. Contbr. to: Billings Geol. Soc. Guidebooks; Wyoming Geol. Assn. Guidebooks; Rocky Mountain Assn. of Geol. Guidebooks. Areas of Rsch.: Petroleum Geology, Structure and Stratigraphy.

PARKER, Milton Marvin (Ph.D., M.D.), Psychiatrist, 9 Buttles Ave., Columbus 15, Ohio. Home Add.: 44 Richards Rd., Columbus 14, Ohio. PSYCHIATRY, ELECTROENCEPHALOGRAPHY, NEUROLOGY. b. N. Y., N. Y., Jan. 23, 1915. s. Morris and Sarah (Hurowitz) P. Edn.: B.S., Univ. of N. Y., 1935; M.A., Ohio St. Univ., 1936; Ph.D., ibid., 1939; M.D., ibid., 1943. m. Harriet S. Hyman. c.: Jeffery; Judith; Ellen. Exp.: Psychiatric Resident, St. Elizabeths Hosp., Wash., D. C., 1944-45; Sr. Psychiatric Resident, ibid., 1945-46; Instr. in Physiol., Georgetown Med. Schl., 1944-46; Med. Officer Neuropsychiatrist, U.S.N. Hosp., Great Lakes, Ill., 1946; Asst. Prof., Psychiatry and Neurol., Ohio State Univ., 1946—; Psychiatry and Neurol., Univ. Hosp., Columbus, Ohio, 1947-; Psychiatry and Neurol., Attending Staff, White Cross Hosp., Columbus, Ohio, 1947—; Consultant, Psychiatry and Neurol., Ohio State Juvenile Diagnostic Center, Columbus, Ohio, 1947—; Dir. of Electroencephalographic Lab., ibid., 1947—; Consultant in EEG, Columbus State Hosp., Columbus, Ohio, 1949-53; Consultant in EEG, Columbus State Schl., 1950-53; Consultant in Psychiatry, U. S. Veteran Hosp., Chillicothe, Ohio, 1947; Consultant for Convulsive Disorders, Ohio Soc. for Crippled Children, Columbus, Ohio, 1949-50; Psychiatry, Neurol., and Electroencephalography, Private Practice, 1947 . Hon. Pos.: Pres., Med. Staff, White Cross Hosp. Mem.: Sigma Xi; Am. Psychiatric Assn.; Am. Psychological Assn.; Am. Acad. of Neurol.; Central Assn. of Electroencephalography; Am. Electroencephalographic Soc.; Columbus Acad. of Med.; Ohio State Med. Assn.; Am. Med. Assn.; The Neuropsychiatric Soc. of Central Ohio; The Med. Soc. of St. Elizabeths Hosp.; Ohio Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Ohio Psychological Assn.; Am. Geriatrics Soc.; Am. Gerontological Soc.; Am. Assn. of Physicians and Surgeons; Am. Psychological Assn.; Am. Physicians Fellowship Comm., Inc.; Am. Jewish Physicians; Natl. Acad. of Religion and Mental Health; Natl. Acad. of Sci.; Natl. Soc. of Study and Edn. and A.P.F.C. of the Israel Med. Assn. Contbr. to: The Jour. of Abnormal and Social Psychology; The Health Center Jour.; Quarterly Review of Psychiatry and Neurol.; Southern Med. Jour.; Jour. Southern Med. Assn. Serv. Rec.: U.S.N.R.

PARKER, Vincent Eveland (Ph.D.), Deputy Dir., Oak Ridge Inst. of Nuclear Studies, P.O. Box 117, Oak Ridge, Tenn. Home Add.: 111 Elliott Circle, Oak Ridge, Tenn. EXPERIMENTAL NUCLEAR PHYSICS. b. Kuala Lumpur, Federated Malay States, Sept. 18, 1914. s. Rev. Walter G. and Alma E. (Shell) P. Edn.: A.B., Evansville Coll., 1936; Ph.D., Ind. Univ., 1940. m Laverne Martin, June 18, 1938. c.: Don M.; Roger E.; Paul J.; David B. Exp.: Assoc. Prof. and Hd., Dept. of Physical Sci., Central Normal Coll., Danville, Ind., 1940-41; Instr., Univ. of Del.; Asst. Microchemist, Biochemical Rsch. Found., 1941-43; Asst. Prof., Univ. of Dela., 1944-46; Assoc. Prof. and Chmn., Dept. of Physics, ibid., 1946-48; Prof. and Chmn., ibid., 1948-50; Prof. and Hd., Dept. of Physics and Astronomy, LSU, 1950-62; Deputy Dir., Oak Ridge Inst. of Nuclear Studies, Oak Ridge, Tenn., 1962—. Hon. Pos.: Chmn., Sou. Regional Accelerator Comm.; AIP-AAPT Comm. on Coll. Physics.; Exec. Council A.A.A.S.; Pres.-elect, Am. Assn. Physics Tchrs, 1962; Pres. A.A.P.T., 1963. Mem.: Fellow, Am. Physical Society; Fellow, A.A.A.S.; Am. Association Physics Teachers; Am. Chem. Society; Southwestern Section; Am. Physical Soc.; A.A.U.P.; Sigma Pi Sigma; Sigma Xi; Phi Lambda Upsilon; Omicron Delta Kappa; Alpha Chi Sigma; Phi Delta Chi; Pi Epsilon Phi; Rotary Club. Contbr. to: Am. Jour. of Physics; Physical Rev.; Nuclear Sci. Engr. Gen. Int.: Pres., Comm. Serv Council of Baton Rouge, 1959-60; First Vice Pres., 1958-59. Areas of Rsch.: Particle Accelerators; Time-of-Flight Neutron Spectrometry; Ion Source Terminal Pulsers For Van de Graaf Accelerators.

PARKER, William James (Mr.), Rsch. and Development Supvr., Air Reduction Chemical and Carbide, Calvert City, Ky. Home Add.: P.O. Box 366, Calvert City, Ky. ANALYTICAL RESEARCH. b. Warsaw, Ind., Feb. 9, 1926. s. Thomas A. and Esther Helen (Parker) P. Edn.: B.S., Univ. of Wis., 1953. m. Audrey Jean Meyers, June 21, 1958. c.: Arphalyne Ann; Thomas Alan.

Exp.: Chemist, Olin Mathieson Chemical Co., Baraboo, Wis., 1952-58; Chemist, Callery Chemical Co., Muskogee, Okla., 1959-60; Rsch. and Development Supvr., Air Reduction Chemical and Carbide, Calvert City, Ky., 1960—. Mem.: A.C.S.; Am. Ordnance Assn.; Am. Mgmt. Assn.; A.A.A.S.; Alpha Phi Omega; Vet. of Foreign Wars. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Lab. Instrumentation.

PARKER, William Vann (Ph.D.), Hd. Prof. of Math., Dean of Grad. Schl., Auburn Univ., Auburn, Ala. Home Add.: 304 Gardner Dr., Auburn, Ala. MATHEMATICS. b. Monroe, N. C., Dec. 22, 1901. s. Benjamin Franklin and Della (Cox) P. Edn.: A.B., Univ. of N. C., 1923; M.A., ibid., 1924; Ph.D., Brown Univ., 1931. m. Carolyn Edwards, July 3, 1926. c.: Edward Vann; Emily Anne Parker Shoemaker; Lola Jean. Exp.: Asst. Prof., Univ. of the South, 1924-25; Asst. Prof., Univ. of N. C., 1925-31; Instr., Princeton Univ., 1926-27; Prof., Miss. Woman's Coll., 1931-34; Asst. Prof., Ga. Inst. of Tech., 1934-36; Assoc. Prof., La. State Univ., 1936-38; Prof., ibid., 1938-42; Hd., Dept. of Math., ibid., 1942-47; Prof., Univ. of Ga., 1947-50; Hd. Prof., Auburn Univ., 1950-53; Hd. Prof. and Dean of Grad. Schl., ibid., 1953—. Hon. Pos.: Mem. of Council, Oak Ridge Inst. of Nuclear Studies; Vice Chmn., ibid., 1959-60; Chmn., La.-Miss. Sect., Math. Assn. of Am., 1946-47; Chmn., L.S.U. Chapt. of Sigma Xi, 1946-47. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Am. Assn. Adv. Sci.; Sigma Xi; Acacia; Pi Mu Epsilon. Co-Author: Matrices, 1960. Contbr. to: Bull. Am. Math. Soc.; Am. Math. Monthly; Duke Jour. of Math.; Jour. of London Math. Soc.; Tohoku Math. Jour. Areas of Rsch.: Matrix Theory.

PARKS, Jerry Kent (Mr.), Mem. of the Rsch. Lab., Lockheed Missile and Space Co., 3251 Hanover, Palo Alto, Calif. Home Add.: 14710 Manuella, Los Altos, Calif. CLASSICAL PHYSICS. b. Wenatchee, Wash., Oct. 21, 1926. s. John F. and Lola (King) P. Edn.: B.S., Univ. of Wash., 1952. m. Gloria McLeroy, May 27, 1956. c.: Jed. Exp.: Physicist, U. S. Navy Mine Defense Lab., Panama City, Fla., 1953-59; Mem. of Lab., Lockheed, Palo, Calif., 1959—. Mem.: Inst. of Radio Engrs.; Am. Phys. Soc.; Am. Geophys. Union. Contbr. to: Jour. of Geophys. Rsch. Serv. Rec.: U. S. Army, 1945-46. Areas of Rsch.: Under Water Sound, Ocean Wave Analysis, Radar Backscatter from the Sea.

PARKS, Thomas Branson (Ph.D.), Dir. Rsch., Jos. Schlitz Brewing Co., (Ret.), Milw., Wis. Home Add.: 4408 Calle Feliz, Phoenix 18, Ariz. BIOCHEMISTRY. b. Ramseur, N. C., Nov. 28, 1894. s. Thomas B. and Annie Elizabeth (Caveness) P. Edn.: B.A., Elon Coll., 1920; Ph.D., Ia. Sta. Coll., 1930. Post doc. studies, Cambridge Univ., England, 1932. m. Hazel M. Tedford, May 15, 1925. Exp.: Instr., Gen. and Analyt. Chem., N. C. Sta. Coll., 1920-22; Instr., Quant. Analysis, Pa. Sta. Coll., 1922-23; Fellow, Ia. Sta. Coll., 1923-27; Instr., Biochem., Dept. Med., Vt. Univ., 1927-33; Rsch. Chemist, Maltex Cereal Co., Burlington, Vt., 1933-35; Rsch. Chemist, S. F. Baker and Co., Keokuk, Ia., 1935-39; Asst. Prof., Ia. Sta. Coll., 1939-40; Rsch. Chemist, Jos. Schlitz Brewing Co., Milw., Wis., 1940-47; Dir., Rsch., ibid., (Ret.), 1947-58. Mem.: Am. Assn. Adv. Sci.; Am. Chem. Soc.; I.F.T.; Alpha Chi Sigma; Gamma Sigma Delta; Phi Lambda Epsilon. Contbr. to: Jour. Biol. Chem.; Jour. Nutrn.; Jour. Dairy Sci.; Proc. Soc. Exptl. Med.; Proc. Am. Soc. Brew. Chem.; Ia. Sta. Jour. Sci. Serv. Rec.: U. S. Army, 1917-18. Gen. Int.: Photochemistry of Certain Foods and Beverages; Development of Equipment and Methods of Testing and Evaluation of Food and Beverage Containers; Production of Thermophilefree Starch; Development of Brewing Methods and Techniques; Effect of Processing on Nutritive Value of Cereals and Products. Areas of Rsch.: Enzymes, Vitamins, Carbohydrates, Proteins, Brewing, Packaging, Photochemistry.

PARKS, W. George (Ph.D.), Prof. of Chem., Chmn., Dept. of Chem., Univ. of R. I., Kingston, R. I. Home Add.: 30 Lower College Rd., Kingston, R. I. PHYSICAL CHEMISTRY. b. Rockwood, Pa., Dec. 20, 1904. s. George and Ruby P. (Gardner) P. Edn.: A.B., Univ. of Pa., 1926; M.S., Columbia Univ., 1928; Ph.D., ibid., 1931. m. Margaret M. Merriman, Nov. 24, 1928. c.: Ann M.; George M. Exp.: Instr., Drexel Inst. of Technol., 1926-27; Asst. and Lectr., Columbia Univ., 1927-31; Asst. Prof. to Prof. of Chem., Univ. of R. I., 1931—; Chmn., Dept. of Chem., ibid., 1950—. Hon. Pos.: Dir., Gordon Rsch. Conferences. Mem.: N. Y. Acad. of Scis., Fellow; Sigma Xi; Phi Lambda Epsilon; Lions Club. Contbr. to: Jour. of Am. Chemical Soc.; Jour. of Phys. Chem.; Industrial and Engrng. Chemistry. Gen. Int.: Gold Medal, Am. Inst. of Chem., 1962. Areas of Rsch.: Catalysis in Vapor Phase Reactions.

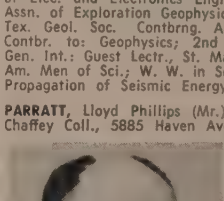
PARMELEE, David Freeland (Ph.D.), Assoc. Prof. of Biol., Kans. St. Tchrs. Coll., Emporia, Kans. Home Add.: 2101 Canterbury Rd., Emporia, Kans. ORNITHOLOGY. b. Oshkosh, Wis., June 20, 1924. s. Gale Freeland and Helen Dale (MacNaughton) P. Edn.: B.A., Lawrence Coll., 1950; M.S., Univ. of Mich., 1952; Ph.D., Univ. of Okla., 1957. m. Jean Marie Peterson, Dec. 4, 1943. c.: Helen Gale. Exp.: Grad. Asst., Univ. of Okla., 1952-56; Instr., ibid., 1956-58; Instr., Rocky Mtn. Biol. Lab., Gothic, Colo., summer, 1958; Asst. Prof., Kans. State Tchrs. Coll., 1958-61; Assoc. Prof., Ibid., 1961—. Mem.: Am. Ornithologists' Union; Assn. Midwest Coll. Biologist; Tri-Be Cooper Ornithological Soc.; Kans. Acad. of Sci.; Kans. As of Biol. Tchrs.; Kans. Ornithological Soc.; Kans. State Tch Assn.; Mich. Audubon Soc.; Phi Sigma; Rocky Mtn. Biol. L Sigma Xi; Southwestern Assn. of Naturalists; Wilson Ornit ogical Club. Contbr. to: Arctic; Auk; Bird-Banding; Condor; Ka Ornithological Bull.; Jack-Pine Warbler; Wilson Bull.; Natl. M of Can. Bull. Serv. Rec.: U.S.M.C.R., 1943-46. Areas of Rsc Distribution, Ecology and Taxonomy of Birds of the Canad Arctic Archipelago.

PARNES, Basil Robert (Ph.D.), Physicist, Autometric Corp., N. City, N. Y. Home Add.: 74 Riverside Dr., N. Y. 24, N. PHYSICS. b. Jersey City, N. J., Jan. 2, 1931. s. Jacob and Rose (Horowitz) P. Edn.: B.S., Calif. Inst. of Tech., 19 Ph.D., Ohio St. Univ., 1957. Exp.: Physicist, Ampex Corp., R wood City, Calif., 1957-60; Physicist, Autometric Corp., N. City, N. Y., 1960—. Mem.: Am. Phys. Soc.; Am. Assn. A Sci.; Sigma Pi Sigma; Pi Mu Epsilon. Areas of Rsch.: El tron Physics, Optics, Solid State.

PARR, Josephus Overton, Jr., (Mr.), Coordinator, Petty Lab Inc., P. O. Box 2061, San Antonio 6, Tex. Home Add.: 2

Janis Rae, San Antonio 1, T GEOPHYSICIST. b. McAlest Okla., Feb. 23, 1908. s. J. and Ida (Gamble) P. Edn.: B. Univ. of Okla., 1932. m. Ka erine Leigh, 1931. c.: Mary K Parr Reams; J. O., III. Ex Seismograph Operator, Petty G phys. Engr. Co., San Anton Tex., 1936-39; Rsch. Engr., Pe Labs., Inc., ibid., 1939-41; D of Research and Patents, ibi 1942-55; Consulting Geophysici Consultant, San Antonio, Te 1955—; Rsch. Coordinator, Pe Labs., Inc., ibid., 1959—. Ho Pos.: Elder, Presby. Ch.; Chm SWIRE Conf., 1958; Chmn., Te Program, 28th Internatl. Meetin Soc. of Exploration Geophysicis 1958. Mem.: Am. Phys. So Soc. of Exploration Geophysicists; Seismol. Soc. of Am.; Acous cal Soc. of Am.; Am. Assn. of Pet. Geologists; Sr. Mem., In of Elec. and Electronics Engr.; Am. Geophys. Union; Europe Assn. of Exploration Geophysicist; Geophys. Soc. of So. Tex.; Tex. Geol. Soc. Contbrng. Author: Uranium Prospecting, 195 Contbr. to: Geophysics; 2nd Internatl. Congress on Acoustic Gen. Int.: Guest Lectr., St. Mary's Univ., Tex., 1955. Listed i Am. Men of Sci.; W. W. in So. and Southwest. Areas of Rsch Propagation of Seismic Energy.

PARRATT, Lloyd Phillips (Mr.), Chmn., Dept. of Biological Sc Chaffey Coll., 5885 Haven Ave., Alta Loma, Calif. Home Add



500 West 14th St., Upland, Cal BIOLOGICAL SCIENCES. b. Nor Fairfield, Ohio, July 14, 191 s. Ray J. and Hazel (Phillip P. Edn.: A.B., Miami Uni 1933; M.A., Western Reser Univ., 1938. m. Grace Schulli July 17, 1937. c.: Mark; Mont Smith. Exp.: Tchr., Biol. Dep H. S., Mesa, Ariz., 1945-4 Tchr., Biol. Dept., Chaffey H. S Ontario, Calif., 1947-54; Prof. Biol. Sci., Chmn., Dept., Chaff Coll., 1954—. Hon. Pos.: Foun ing Chmn., Chaffey Conservati Program; Sponsor, Chaffey Sprin hill Reforestation Project. Mem A.I.B.S.; Cooper Ornithologic Soc.; Phi Delta Kappa; Phi Sigm Univ. Club. Author: Biology Organisms, 1962; Birds of Glaci National Park, 1962. Contbr. to: Auk; Wilson Bull.; Paci Discovery. Areas of Rsch.: Field Ornithol.; Seasonal Natural at Glacier Natl. Park; Ecol .

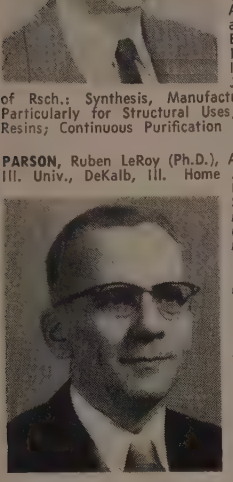
PARROTT, Ernest Milford (Ph.D.), Deputy Exec. Dir., Interdepa mental Comm. on Nutrition for Natl. Defense, Natl. Inst.

Health, Bethesda, Md. Hor Add.: 3207 John Marshall D Arlington 7, Va. NUTRITION. Cordova, Tenn., Dec. 17, 1903. S. E. and Mary (Murrell) P. Edn B.S., Union Univ., 1927; M. Univ. of Mass., 1932; Ph.D Univ. of Mo., 1938. m. Rach Irish, June 12, 1926. Beverly Ann. Exp.: Sci. Tch H. S., Monterey, Tenn., 1927-2 Lab. Instr. and Grad. Studen Univ. of Fla. and Mass. Sta Coll., 1929-31; Instr. Chem Univ. of Mass., 1931-36; Asst. Agri. Chem., Univ. of Mo., 193 38; Instr. Chem., Univ. of Mas 1938-42; Chief, Nutrition Branc Office of Surgeon Gen., U. Army, 1955-57; Deputy Exec. Di Interdepartmental Comm. on N trition for Natl. Defense, Bethesda, Md., 1957—. Mem.:

Kappa Phi; Sigma Xi; Gamma Sigma Epsilon. Contbr. to: Military Med.; U. S. Armed Forces Med. Jour.; Jour. Biol. Chem.; Poultry Sci.; Jour. of Nutrition. War Rec.: U. S. Army, 1942-55. Areas of Rsch.: Human Nutritional Requirements; Nutrition Survey Techniques.

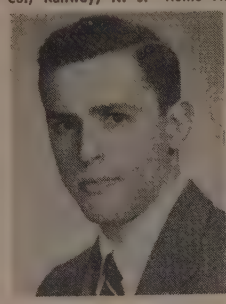
PARRY, Harvey Laird (Mr.), Sunpvr., Rsch. and Devel., Adhesives Dept., Shell Chem. Co., P.O. Box 831, Pittsburgh, Calif. Home Add.: 30 La Cuesta, Orinda, Calif. APPLICATION DEVELOPMENT, THEROMOSET RESINS. b. Atlanta, Ga., Dec. 14, 1919. s. Harvey Laird and Maude (Montgomery) P. Edn.: M.S., Emory Univ., 1943; A.B., ibid., 1942. m. Dorothy Allen, Oct. 16, 1943. c.: Laird; Ann; Mary Alice. Exp.: Chemist, Shell Devel. Co., Emeryville, Calif., 1943-53; Sr. Technologist, Shell Chemical Co., N. Y. C., 1953-58; Supvr., Shell Chemical Co., Pittsburg, Calif., 1958—. Mem.: Am. Chemical Soc.; A.A.A.S.; Am. Soc. for Testing and Materials; Soc. of Plastics Engrs.; Soc. of the Plastics Industry. Contbr. to: S.P.E. Jour.; Industrial and Engrng. Chem.; Jour. of Physical Chem. Areas of Rsch.: Synthesis, Manufacture and Use of Epoxy Resins, Particularly for Structural Uses; Reaction Mechanisms of Epoxy Resins; Continuous Purification Procedures for Organic Materials.

PARSON, Ruben LeRoy (Ph.D.), Assoc. Prof., Earth Scis., Northern Ill. Univ., DeKalb, Ill. Home Add.: 143 Hollister Rd., DeKalb, Ill. GEOGRAPHY, NATURAL RESOURCES. b. Battle Lake, Minn., May 3, 1907. s. Nels and Anna (Nelson) P. Edn.: B.S., S.T.C., Moorhead, Minn., 1932; M.A., Grad. Schl. of Geog., Clark Univ., 1934; Ph.D., ibid., 1943. m. Mary Louise Miller, July 20, 1940. c.: Ronal; Charles; Luanne. Exp.: Airways Observer, U. S. Weather Bureau, Moorhead, Minn., 1931-32; Junior Geographer, Tenn. Valley Authority, 1935-36; Jr. Soil Surveyor, Soil Conservation Service, Zanesville, Ohio, 1936; Geographer and Land Planner, Natl. Resources Com. and Miss. State Planning Commn., Jackson, Miss., 1937-39; Prof. of Geog. and Head, Dept. of Geog., State Tchrs. Coll., Troy, Ala., 1939-41; Coordinator, Civilian Pilot Trng., S.T.C., Troy, Ala. and Civil Aeronautics Admin., Wash., D. C., 1940-41; Prof. of Geog. and Head, Dept. of Geog. and Geol., East Tenn. State Coll., 1946-58; Assoc. Prof. of Earth Scis., Northern Ill. Univ., 1958—. Hon. Pos.: Chmn., Curr. Com., Conservation Edn. Assn. Mem.: Fellow, Assn. of Am. Geogrs.; Am. Geog. Soc.; Fellow, Natl. Coun. for Geog. Edn.; Am. Polar Society; A.A.U.P.; Ecol. Soc. of Am.; Soil Conservation Soc. of Am.; Am. Soc. of Range Mgmt.; Wildlife Soc.; Am. Forestry Assn.; Kappa Delta Pi; Gamma Theta Upsilon; Sigma Tau Delta; Alpha Psi Omega; Lambda Chi Alpha; Masons; Kiwanis; Natl. Parks Assn.; Ill. Edn. Assn.; Natl. Planning Assn.; African Studies Assn.; International Oceanographic Fdtn.; Ill. Acad. Sci.; Wilderness Soc.; Nat. Res. Coun., Ill.; Phi Delta Kappa. Author: Conserving American Resources, 1956. Contbr. to: Southern Conservationist; Jour. of Geog.; Edn.; Am. Inst. of Planners; Progress Report of the Miss. State Planning Commission; Sci. Tchr.; Americana Annual. War Rec.: U. S. Air Force, Intelligence, W.W. II; Korean War, Lt. Col., U.S.A.F. Ret. Res. Areas of Rsch.: The South; Geog. and Resource Mgmt., New England, Burma, India, England.



PARSONS, Cynthia (Miss), Edn. Editor, The Christian Science Monitor, Elementary Mathematics Coordinator, The Tarrytowns, New York. Home Add.: Stanwich Rd., Cos Cob, Conn. MATHEMATICS. b. Cleveland, Ohio, Jan. 1, 1926. d. Willard P. and Elenore (Mann) P. Edn.: B.A., The Principia Coll., 1948; M.A., Putney Graduate Schl., 1956. Exp.: Tchr., Desert Sun Schl., Idyllwild, Calif., 1948-54; Elem. Mathematics Tchr., The Tarrytowns, New York, 1959—; Madison Algebra Prof., Syracuse Univ., Summer, 1961. Hon. Pos.: Elem. Schl. Representative, Assn. of Math. Tchrs. of N. Y. St. Coun. Mem.: N.C.T.M.; A.A.A.S.; A.M.T.N.Y.S. Author: Open Sentences, 1962. Contbr. to: The Arithmetic Tchr.; The Instr.; The Christian Sci. Monitor. Areas of Rsch.: Creativity in Children; Teaching of Algebra and Coordinate Geometry to Children from 6-12 years of age.

PARSONS, Robert Wade, Jr. (Ph.D.), Rsch. Assoc., Merck and Co., Rahway, N. J. Home Add.: 44 Lenox Rd., Summit, N. J. ORGANIC CHEMISTRY. b. Summit, N. J., Jan. 15, 1933. s. Robert Wade, Sr. and Irene Edith (Johnson) P. Edn.: A.B., Princeton Univ., 1955; Ph.D., Mass. Inst. of Technol., 1960. Exp.: Sr. Chemist, Merck, Sharp and Dohme Rsch. Labs., Merck and Co., Inc., Rahway, N. J., 1960-62; Rsch. Assoc., ibid., 1962—. Mem.: Am. Chem. Soc.; The Chem. Soc. of London, Sigma Xi; Phi Lambda Upsilon. Co-Author: Approaches to Penicillin Analogs Derived From Cysteine, 1960. Areas of Rsch.: Antibiotics, Penicillins and Cephalosporins and Anthelmintics.



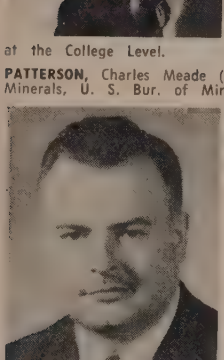
PASHEK, Robert Donald (Ph.D.), Prof. of Bus. Administration, Dir. of Grad. Studies in Bus. Administration, Pa. St. Univ., University Park, Pa. Home Add.: 1345 Old Boalsburg Rd., St. Coll., Pa. TRANSPORTATION ECONOMICS AND GOVERNMENT REGULATION OF BUSINESS ACTIVITY. b. The Dalles, Ore., Feb. 27, 1921. s. Gregory and Mary M. (Bonomi) P. Edn.: A.B., Central Wash. Coll., 1949; M.A., St. Univ. of Ia., 1950; Ph.D., Univ. of Ill., 1955. m. Esther V. Duvall, 1956. c.: Nicole M.; J. William. Exp.: Asst. Prof., Univ. of Wichita, 1953-55; Asst. Prof., Pa. St. Univ., 1956-58; Acting Asst. Dean for Rsch., ibid., 1959-60; Prof., ibid., 1960—. Hon. Pos.: Natl. Edn. Committee, Delta Nu Alpha; Bd. of Examiners, Am. Soc. of Traffic and Transportation. Mem.: Am. Econ. Assn.; Am. Transportation Rsch. Forum; Assn. of Interstate Commerce Comm. Practitioners; Alpha Kappa Psi; Order of Artus; Beta Gamma Sigma. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Social and Economic Impact of Improved Highways.

PASVOGEL, Myron W. (Ph.D.), Vice Pres., Dir. of Rsch., Poultry Div., Peter Hand Foundation, 1000 North Ave., Chicago 22, Ill. Home Add.: 410 Nawata Ave., Mt. Prospect, Ill. POULTRY NUTRITION AND PHYSIOLOGY. b. Park Ridge, Ill., Apr. 5, 1914. s. Walter J. and Marie E. (Zoellick) P. Edn.: B.S., Univ. of Ill., 1936; M.S., ibid., 1949; Ph.D., ibid., 1952. m. Eleanor Tobin, Aug. 1948. c.: David W.; Alice E.; Richard M. Exp.: Nutritionist, Internatl. Mineral and Chemical Corp., Chicago, Ill., 1952-53; Prof., Head of Poultry Dept., Univ. of Ariz., 1953-59; Vice Pres., Dir. of Rsch., Peter Hand Foundation, Chicago, Ill., 1959—. Mem.: Sigma Xi; A.A.A.S.; Poultry Sci. Assn. Contbr. to: Poultry Sci.; Jour. of Nutrition. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Calcium and Phosphorus Requirements of Poultry; Heat Tolerance of Chickens; Vitamin Requirements of Chicks and Layers.

PATRY, Frederick Lorimer (M.D.), Psychiatrist, 1917 14th St., West, Bradenton, Fla. Home Add.: 5912 Riverview Blvd. W., Bradenton, Fla. PRIVATE PRACTICE OF PSYCHIATRY. b. Toronto, Canada, Nov. 9, 1897. s. Joseph A. and Ida Jane (Purdy) P. Edn.: M.B., Univ. of Toronto, 1925; M.D., ibid., 1928. m. Irene MacGregor, May 8, 1958. c.: John J. R.; William F. Exp.: Asst. Physician, Utica State Hosp., Utica, N. Y., 1925-28; Asst. Psychiatrist, Henry Phipps Psychiatric Clinic, Johns Hopkins Hosp., Baltimore, Md., 1928-31; Psychiatrist, N. Y. State Edn. Dept., 1931-36; Special Lecturer in Psychiatry, Albany Med. Coll., 1931-36; Private Practice of Psychiatry, Albany, N. Y., 1936-59; Bradenton, Fla., 1959—; Neuropsychiatrist, Albany Induction and Recruiting Sta., Albany, N. Y., 1940-59. Hon. Pos.: Chmn., Maple Leaf Fund, Albany, N. Y. Branch; Chmn., British War. Relief Soc., Albany, N. Y. Branch; Past Pres., Lions Club, Albany, N. Y.; Past Pres., Natl. Sojourners (Ft. Orange Chapt. # 160); Past Pres., Johns Hopkins Alumni Assn., Upper N. Y. State Branch. Mem.: Fellow, Am. Psychiatric Assn.; Fellow, Am. Orthopsychiatric Assn.; Am. Med. Assn.; Am. Assn. for Rsch. in Nervous and Mental Diseases; Soc. for Biological Psychiatry; Eastern Psychiatric Rsch. Assn.; Fla. Med. Assn.; Fla. Psychiatric Soc.; Mason; Shriner and Royal Order of Jesters. Author: Outlines of Personality Studies, 1933; Formulations of Mental Hygiene Case Studies, 1934. Co-Author: Mental Health: Its Principles and Practices, 1935. Contbr. to: Am. Jour. of Psychiatry; Jour. of the Am. Orthopsychiatric Assn.; Psychoanalytic Rev.; Jour. of Nervous and Mental Diseases; Journal of the National Education Assn.; Mental Hygiene; The Nation's Schls.; N. Y. State Jour. of Med.; Jour. of Abnormal and Soc. Psychol.; Med. Record; Am. Jour. of Public Health; Med. Times; Clinical Med. and Surg.; Jour. of Juvenile Rsch.; Diseases of the Nervous System. Serv. Rec.: Canadian Expeditionary Forces, 1916-18; Med. Reserves, U. S. A., 1935-40. Gen. Int.: Invited by French Government to Address First Internatl. Congress for Child Psychiatry, Paris, 1937. Areas of Rsch.: Research in Nervous and Mental Diseases; Electroshock Therapy; Integration of Psychiatry and Mental Hygiene with Education; Child and Adult Psychiatry.

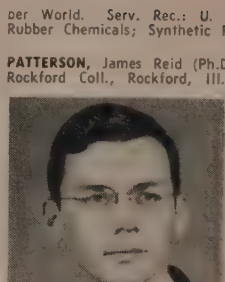
PATRIE, Lawrence A. (Ph.D.), Prof. of Phys. Sci., St. Univ. College, Fredonia New York. Home Add.: Fredonia, New York GENERAL SCIENCE. b. Brunswick, N. Y., Nov. 29, 1908. s. Walter and Angie (Mambert) P. Edn.: B.S., Cornell Univ., 1934; M.S., St. Coll. for Tchrs., Albany, N. Y., 1935; Ph.D., Cornell Univ., 1951. m. Phyllis Winifred Uline, Apr. 5, 1933. c.: Joan Eileen. Exp.: Hd. Sci., Williamson Central, Williamson, N. Y., 1935-40; Hd. Sci. Dept., Roslyn H. S., Roslyn, L. I., N. Y., 1940-46; Hd. Sci., Hamilton Central, Hamilton, N. Y., 1946-47; Prof. of Sci., St. Univ. Coll., Fredonia, N. Y., 1947—. Mem.: A.A.A.S.; Am. Assn. of Phys. Tchrs.; Am. Inst. of Phys.; Am. Assn. of Univ. Prof.; Phi Delta Kappa. Contbr. to: Am. Machinist. Areas of Rsch.: Physics in Conservation; General Sci. at the College Level.

PATTERSON, Charles Meade (Ph.D.), Physical Scientist, Div. of Minerals, U. S. Bur. of Mines, U. S. Dept. of the Interior, Washington 25, D. C. Home Add.: 8204 14th Ave., Hyattsville, Md. GEOLOGY. b. Waynesburg, Pa., June 24, 1919. s. Rev. Robert Meade and Margaret Eleanor (Milligan) P. Edn.: A.B., Coll. of Wooster, 1940; M.A., Columbia Univ., 1942; M.S., Calif. Inst. of Technol., 1943; Ph.D., Columbia Univ., 1947. Exp.: Geologist, Gulf Rsch. and Development Co., Harmarville, Pa., 1947-53; Gun Collector Representative, National Rifle Assn., Washington, D. C., 1953-57; Commodity Specialist, U. S. Bureau of Mines, Washington, D. C., 1957—. Mem.: Geological Soc. of Am.; Am. Geophysical Union; Phi Beta Kappa; Sigma Xi. Author: Pictorial History of United States Single Shot Martial Pistols, 1957. Contbr. to: Bull. of Geological Soc. of Am.; Bur. of Mines Minerals Yearbook; Am. Rifleman; The Gun Report. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Lime; Calcium Compounds; Clay; Pegmatites; Copper; Meteorology and Antique Firearms.



PATTERSON, Gordon Derby, Jr. (Ph.D.), Analytical Supvr., E. I. DuPont de Nemours and Co., Inc., Film Dept., Experimental Sta., Wilmington, Dela. Home Add.: 4503 Washington Blvd., Wilmington 2, Dela. ANALYTICAL CHEMISTRY AND POLYMER CHARACTERIZATION. b. Columbus, Ohio, May 6, 1923. s. Gordon D. and Ethel Mae (Beard) P. Edn.: B.S., Allegheny Coll., 1944; M.S., Purdue Univ., 1949; Ph.D., ibid., 1951. Exp.: Asst. Instr., Purdue Univ., 1949-51; Res. Chemist, DuPont Co., Buffalo, N. Y., 1951-55; Anal. Supvr., ibid., Wilmington, Dela., 1956—. Mem.: A.S.T.M.; A.C.S.; A.A.A.S.; Soc. of Applied Spectroscopy; Instrument Soc. of Am.; Alpha Chi Rho; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Analytical Chem.; Jour. of Chem. Edn.; Rev. of Sci. Instruments; Jour. of Applied Polymer Sci. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Physical and Mechanical Properties of Polymers; Instrumental Measurements, Automatic Computation, Chem. Analysis.

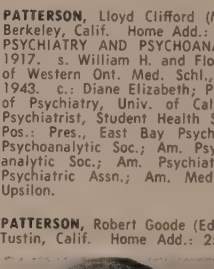
PATTERSON, Ian David (Mr.), Technical Coordinator, Rsch., The Goodyear Tire and Rcbber Co., Akron 16, Ohio. Home Add.: 245 Merriman Rd., Akron 3, Ohio. CHEMICAL ENGINEER, SYNTHETIC RUBBER. b. Homer, Mich., Apr. 6, 1897. s. Louis Kossuth and Eva Josephine (Blair) P. Edn.: A.B., Albion Coll., 1919; B.Sc.E., Univ. of Mich., 1920. m. Frances Marsh, June 10, 1922. c.: Mrs. Marilyn P. Olney; Mrs. Joanne P. Porter. Exp.: Chemical Engr., Rubber Compounder, Goodyear Tire and Rubber Co., Akron, Ohio, 1920-27; Chf. Chemist, ibid., Wolverhampton, England, 1927-39; Plant Mgr., ibid., St. Marys, Ohio, 1939-42; Mgr. Chemical Products, Technical Coordinator, ibid., Akron, Ohio, 1942—. Mem.: Am. Chemical Soc.; Am. Inst. of Chemical Engrs.; Institution of the Rubber Industry, British, Fellow; A.A.A.S.; Sigma Nu; Mason; Torch Club. Contbr. to: Rubber World. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Rubber Chemicals; Synthetic Rubber.



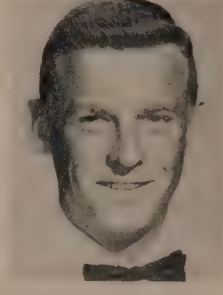
PATTERSON, James Reid (Ph.D.), Prof. and Head, Physics Dept., Rockford Coll., Rockford, Ill. Home Add.: 512 College Ave., Rockford, Ill. PHYSICS; EXPERIMENTAL NUCLEAR PHYSICS. b. Charlotte, N. C., Jan. 15, 1918. s. Dr. Reid and Mattie (Hyndman) P. Edn.: B.S., Davidson Coll., N. C., 1939; M.A., Duke Univ., 1941; Ph.D., ibid., 1955. m. Edith Hoke, June 1, 1950. c.: James Reid, Jr.; Carol Hoke; John William. Exp.: Physicist, Naval Ordnance Lab., Washington, D. C., 1941-46; Instr., N. C. State Coll., 1946-51; Asst. Prof., Furman Univ., 1954-55; Assoc. Prof., ibid., 1955-57; Assoc. Prof., Clemson Coll., 1957-61; Prof., Rockford Coll., 1961—. Mem.: Phi Beta Kappa; Sigma Pi Sigma; Am. Assn. of Physics Tchrs.; Am. Phys. Soc.; Southeastern Sect., Am. Phys. Soc.; Am. Assn. Univ. Profs. Contbr. to: Phys. Rev.; Annals of Physics. Areas of Rsch.: Neutron Cross Section Measurements in Kilovolt Region and in e.v. Region.

PATTERSON, Lloyd Clifford (M.D.), Physician, 2000 Dwight Way, Berkeley, Calif. Home Add.: 501 Coventry Rd., Berkeley 7, Calif. PSYCHIATRY AND PSYCHOANALYSIS. b. Toronto, Can., Jan. 16, 1917. s. William H. and Florence (Sonley) P. Edn.: M.D., Univ. of Western Ont. Med. Schl., 1942. m. Gloria Tharp, Nov. 12, 1943. c.: Diane Elizabeth; Pamelia Anne. Exp.: Asst. Clin. Prof. of Psychiatry, Univ. of Calif. Med. Schl., 1958—; Consulting Psychiatrist, Student Health Serv., Univ. of Calif., 1953—. Hon. Pos.: Pres., East Bay Psychiatric Assn. Mem.: San Francisco Psychoanalytic Soc.; Am. Psychoanalytic Soc.; Internatl. Psychoanalytic Soc.; Am. Psychiatric Assn., Fellow; Northern Calif. Psychiatric Assn.; Am. Med. Assn.; Calif. Med. Assn.; Delta Upsilon.

PATTERSON, Robert Goode (Ed.D.), Biol. Tchr., Tustin Union H. S., Tustin, Calif. Home Add.: 2526 ±B, W. McFadden, Santa Ana, Calif. BIOLOGICAL SCIENCE INSTRUCTION. b. Riverside, Calif., Dec. 13, 1937. s. Robert G. and Frances Louise (Rouner) P. Edn.: A.B., Whittier Coll., 1959; M.A., Long Beach St. Coll., 1962. m. Arleta Lei Furtado, Dec. 19, 1958. Exp.: Gen. Sci. Tchr., Smedley Sr. H. S., Santa Ana, Calif., 1960-61; Biol. Tchr., Tustin Union H. S., Tustin, Calif., 1961—. Hon. Pos.: Advisor, Tustin Medical Explorers. Mem.: A.A.A.S.; Am. Sci. Tchrs.; N.E.A.; Calif. Tchrs. Assn.; Whittier Coll. Sachsen Soc. Areas of Rsch.: Methods of Biol. Instrn. and Student Rating Scales for Tchrs.



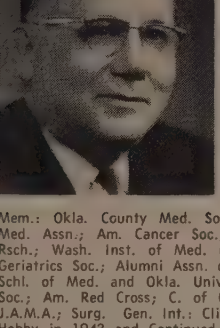
PATTON, John Wesley (Dr.), Bd. of Edn., Grand Rapids, Mich. Home Add.: 1407 Giddings, S.E., Grand Rapids 7, Mich. VETERINARY SCIENCE; ANIMAL NUTRITION, BIOLOGY AND PHYSIOLOGY. b. Armagh, N. Ireland, Dec. 15, 1889. s. Samuel and Sophia (Grace) P. Edn.: D.V.M., Tex. A. and M. Coll., 1921; M.S., Kans. State Univ., 1924; B.Sc., Mich. State Univ., 1927. m. Bernice Randall Hough, 1952. c.: Mary; David. Exp.: Poultry Husbandman Extension Service, Tex., 1921-22; Prof., Poultry Sci., Univ. of Mass., 1924-25; Asst. Prof., Physiol. and Pharmacology, Mich. State Univ., 1926-33; Dir. and Nutritional Consultant, Patton Biol. Lab., E. Lansing, Mich., 1933-49; U.N.N.R.A., China and Formosa, 1947-48; Faculty Mem., Ill. Inst. of Tech. (Korea Tech. Inst.), 1950; U. S. Govt. Consultant, E.C.A., Viet Nam, Cambodia, Laos, 1950-52; U. S. Govt. Consult., F.O.A., Govt. of Egypt, 1953-54; Instr., Grand Rapids Jr. Coll., Pharmacology, 1958—; Instr. Microbiology, Botany, Zoology, ibid., 1959-60; Bd. of Edn., Grand Rapids, Mich., 1960—. Mem.: Mich. Acad. Sci., Arts and Letters; M.R.S.H.; Royal Soc. Health (England); Assoc. for Rsch. in Growth Relations; N. Y. Acad. of Sci.; Omega Tau Sigma. Contbr. to: Jour. Bacteriol.; Poultry Sci.; Jour. Physiol.; Jour. Am. Vet. Med. Assn.; Vet. Med. Gen. Int.: Starch Digestion in the Dog. Areas of Rsch.: Vitamins (Vit. B_1), Charted Syndrome of Thiamine Deficiency, Bio-Assays, Nutritional Utilization Studies, Growth Studies, Physiology, Bac-



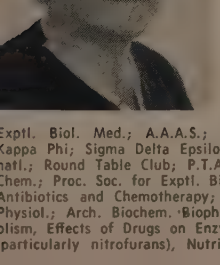
teriology. Serology and Immunology. Several Series of Articles Stressing the Need for Standardizing of Animal Foods Along Biological and Nutritional Lines.

PATTERSON, Roy (M.D.), Asst. Prof. of Med., Northwestern Univ. Med. Schl., Chicago, Ill. Home Add.: 230 Latrobe Ave., Northfield, Ill. INTERNAL MEDICINE; ALLERGY IMMUNOLOGY. b. Ironwood, Mich., Apr. 26, 1926. s. Donald and Helmi (Lantta) P. Edn.: B.S., Univ. of Mich., 1950; M.D., ibid., 1953. m. Elaine A. Gustafson, Aug. 28, 1948. c.: Kathleen; David; Tom. Exp.: Intern, Univ., Hosp., Ann Arbor, Mich., 1953-54; Asst. Res., ibid., 1954-55; Res., Med., ibid., 1955-57; Instr., Med., ibid., 1957-59; Consult., Univ. of Mich. Hlth. Serv., Ann Arbor, Mich., 1958-59; Asst. Prof., Univ. of Mich., ibid., 1959; Rsch. Fellow, Pathol., Univ. of Pgh., Pgh., Pa., 1959-60; Asst. Prof., Med., Northwestern Univ., 1960—; Attend. Physn., USVA Rsch. Hosp., Chicago, Ill., 1960—; Attend. Physn., Passavant Mem. Hosp., ibid., 1960—. Mem.: Am. Acad. of Allergy; Alpha Omega Alpha; Phi Eta Sigma; Phi Kappa Phi. Contbr. to: Jour. Am. Med. Assn.; Proc. Soc. Exptl. Biol. and Med.; Jour. Lab. and Clin. Med.; Jour. Allergy; Jour. Immunol.; Jour. Gen. Physiol. Serv. Rec.: U. S. Naval Reserve, 1944-46. Areas of Rsch.: Immunology; Diseases of Hypersensitivity.

PATZER, Reynold (M.D.), General Surgeon, 231 N.W. 13th, Okla. City, Okla. Home Add.: 600 N.W. 54th, Okla. City, Okla. CLINICAL CANCER RESEARCH AND GENERAL SURGERY. b. Kulm, N. Dak., Dec. 22, 1906. s. John (dec.) and Justine (Schimke) P. Edn.: M.D., Loma Linda Univ., 1937; M.S., Tulane Grad. Schl. of Med., 1945. m. May E. Schlosser, 1935. c.: Ada Mae; Joan Elaine; Margaret. Exp.: Interne, Methodist Hosp., Indianapolis, Ind., 1936-37; Resident, Anesthesia, ibid., 1937; Cook County Grad. Schl. of Med., 1938; Asst. in Surg., Tulane Univ. Schl. of Med., 1941-45; Asst. Prof. of Surg., Okla. Univ. Schl. of Med., 1945-46; Assoc. Prof. of Surg., ibid., 1946-47; Priv. Prac., Okla. City, Okla., 1947—. Hon. Pos.: Diplomate, Natl. Bd. of Med. Examiners; Am. Soc. of Abdominal Surgeons. Mem.: Okla. County Med. Soc.; Okla. State Med. Assn.; Am. Med. Assn.; Am. Cancer Soc.; A.A.A.S.; Am. Fed. for Clinical Rsch.; Wash. Inst. of Med. (Life); N. Y. Acad. of Sci.; Am. Geriatrics Soc.; Alumni Assn. of Loma Linda Univ.; Tulane Univ. Schl. of Med. and Okla. Univ. Schl. of Med.; Okla. Historical Soc.; Am. Red Cross; C. of C. Contbr. to: Arch. of Surgery; J.A.M.A.; Surg. Gen. Int.: Clinical Cancer Research Started as a Hobby in 1943 and Continued to the Present time with General Surgery. Areas of Rsch.: Factors which Influence Tumor Growth by the Way of the Sympathetic Nerves and Developing and Functional Arteries.



PAUL, Mary Frances (Crowell), (Mrs. Henry E.) (Ph.D.), Sr. Rsch. Assoc., The Norwich Pharmacal Co., Norwich, N. Y. Home Add.: 119 North Broad St., Norwich, N. Y. BIOCHEMISTRY, LIPID METABOLISM, DRUG ACTION ON ENZYME SYSTEMS. b. Farmington, N. Y., May 25, 1908. d. Beverly Randolph and Edith (Adams) Crowell. Edn.: B.S., William Smith Coll., 1928; Ph.D., Cornell Univ., 1935. Hon. Deg.: Sc.D., William Smith Coll., 1945. m. Dr. Henry E. Paul, Aug. 17, 1937. c.: Denny Kent; Barbara Jean; Ellen Crowell. Exp.: Rsch. Asst., Conn. State Board Fish and Game, 1928-30; Rsch. Asst., Cornell Univ., 1930-35; Rsch. Biochemist, The Norwich Pharmacal Col., 1935-53; Chf., Biol. Sect., ibid., 1953-59; Sr. Rsch. Assoc., ibid., 1959—. Mem.: Am. Chem. Soc.; Am. Soc. Biol. Chem.; N. Y. Acad. Sci.; Soc. Exptl. Biol. Med.; A.A.A.S.; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Sigma Delta Epsilon; Pi Lambda Theta; Zonta Internatl.; Round Table Club; P.T.A. Contbr. to: Jour. of Biological Chem.; Proc. Soc. for Exptl. Biol. and Med.; Physiological Zool.; Antibiotics and Chemotherapy; Jour. of Nutrition; Am. Jour. of Physiol.; Arch. Biochem. Biophys. Areas of Rsch.: Lipid Metabolism, Effects of Drugs on Enzyme Systems, Metabolism of Drugs (particularly nitrofurans), Nutritional Biochemistry.



PAULEY, Ernest Franklin (Mr.), Attorney at Law, 303 Peoples Bldg., Charleston, W. Va. Home Add.: 56 Lake Shore Dr., Charleston 2, W. Va. LEGAL MEDICINE AND MEDICO-LEGAL LITIGATION. b. Charleston, W. Va., Nov. 7, 1908. s. Jerry L. and Oliva Mae (Ogden) P. Edn.: B.S., Hampden-Sydney Coll., 1932; A.B., W. Va. Univ., 1945; LL.B., W. Va. Univ., 1945; Acad. of Internatl. Law, The Hague, 1960. m. Charlotte Humphries, May 20, 1933. c.: Geraldine, Charlotte Ann. Exp.: Secy.-Treas., Equity Savings and Loan Co., 1934-39; Insurance and other business (self-employed), 1939-44; Atty., Hodges and Revercomb, 1945-49; Atty., 1949; Instr., Morris Harvey Coll., 1945-48. Hon. Pos.: Trustee and Fellow, Am. Law Sci. Acad. Mem.: A.A.A.S.; Am. Assn. for Hist. of Med.; Internatl. Bar Assn.; Am. Bar Assn.; W. Va. Bar Assn.; Kanawha County Bar Assn.; Sigma Phi Epsilon; Civitan Club. Contbr. to: Am. Indusl. Banker; Credit World. Gen. Int.: Republican Nominee for Supreme Court of Appeals of W. Va. Areas of Rsch.: Medico-Legal Problems; Integration of the Law with the Physical, Medical, Psychological and Social Sciences.

PAULHUS, Joseph Louis Honore (Mr.), Chf., Cooperative Studies Sect., U. S. Weather Bureau, Washington 25, D. C. Home Add.: 4804 Park Ave., Washington 16, D. C. HYDRO-METEOROLOGICAL RESEARCH. b. Willimantic, Conn., Apr. 4, 1909. s. Joseph Felix and Marie Anne (Levesque) P. Edn.: B.S., Northeastern Univ., 1937; M.S., Calif. Inst. of Technol., 1942. m. Elizabeth A. Kruse, June 24, 1939. Exp.: Meteorologist, U. S. Weath. Bureau, Boston, Oklahoma City, Atlanta, San Juan, New Orleans, Los Angeles, Washington, D. C., 1930—. Mem.: Am. Meteorological Soc.; Am. Geophysical Union; Am. Soc. of Civil Engrs. Co-author: Applied Hydrology, 1949; Hydrology for Engineers, 1958. Contbr. to: Trans. Am. Geophysical Union; Jour. of Hydraulics Div., A.S.C.E.; Monthly Weather Rev. Areas of Rsch.: Hydrometeorological Rsch. for the Purpose of Providing Design Criteria for Dams, Levees, Highway Bridges and Culverts, Storm Sewers, Roof Loads. Studies Involve Estimates of Probable Maximum Precipitation, Rainfall-Frequency Data, Snowmelt Rates, Optimum Flood-Producing Situations, etc.

PAULING, Linus Carl (Ph.D.), Prof. of Chem., Calif. Inst. of Tech., Pasadena, Calif. CHEMISTRY. b. Portland, Ore., Feb. 28, 1901. s. Herman William and Lucy Isabelle (Darling) P. Edn.: B.S., Ore. State Coll., 1922; Ph.D., Calif. Inst. of Tech., 1925. Hon. Deg.: Sc.D., Ore. State Coll., 1933; Sc.D., Univ. of Chicago, 1941; Sc.D., Princeton Univ., 1946; Sc.D., Cambridge Univ., Univ. of London, 1947; Sc.D., Yale Univ., 1947; Sc.D., Oxford Univ., 1948; Brooklyn Polytech. Inst., 1955; M.A., Oxford Univ., 1948; D.-Hon. Caus., Univ. of Paris, 1948; Univ. of Toulouse, 1949; Univ. Liege, 1955; Dr. of Humanities, Univ. of Tampa, 1949; U.J.D., Univ. of New Brunswick, 1950; D.F.A., Chouinard Art Inst., 1958; Sc.D., Univ. of Montpellier, 1958; LL.D., Reed Coll., 1959. m. Ava Helen Miller, June 17, 1923. c.: Linus Carl, Jr.; Peter Jeffress; Linda Helen; Edward Crellin. Exp.: Full-time Assistant in Quantitative Analysis, Ore. State Coll., 1919-20; Part-time Assistant in Chemistry and in Mechanics and Materials, ibid., 1920-22; Grad. Asst., Calif. Inst. of Technology, 1922-23; Tchng. Fellow, ibid., 1923-25; Rsch. Assoc., ibid., 1925-26; Natl. Rsch. Fellow in Chem., ibid., 1925-26; Fellow, John Simon Guggenheim Memorial Fdtn., 1926-27; Asst. Prof. of Chem., Calif. Inst. of Tech., 1927-29; Assoc. Prof., ibid., 1929-31; Prof., ibid., 1931—; Chmn., Div. of Chem. and Chem. Engrng. and Dir. of Gates and Crellin Labs., 1936-58; Lectr. in Chem. and Physics, Univ. of Calif., 1929-33; George Fisher Baker Lectr. in Chem., Cornell Univ., 1937-38; Silliman Lectr., Yale, 1947; Treat B. Johnson Lectr., Yale, 1953; Foster Lectr., Univ. Buffalo, 1936, '53; Vanuxem Lectr., Princeton, 1954; Prather Lectr., Harvard, 1955; Geo. A. Miller Lectr., Univ. Ill., 1956; Avogadro Commemoration Lectr., Rome, 1956; Messenger Lectr., Cornell Univ., 1959. Hon. Pos.: Hon. Pres., Physical and Chem. Div., Internatl. Cong. of Pure and Applied Chem., London, 1947; Hon. Pres., Section on Biosynthesis of Proteins, 2nd Internatl. Cong. of Biochem., Paris, 1952. Mem.: Natl. Acad. Scis.; Am. Philos. Soc.; Am. Acad. Arts and Sci.; Acad. Polit. Sci.; Chem. Soc. London; Royal Institu-

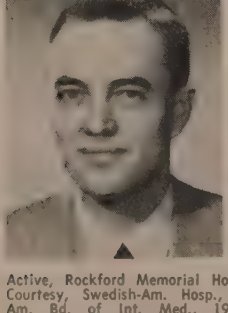
tion of Great Britain; Royal Soc. of London; Swiss Chem. Soc.; Accademia Benedettina, Bologna; Inst. of France, Acad. of Sci.; Indian Academy of Sci.; Royal Soc. Liege; Norwegian Academy of Science in Oslo; Royal Norwegian Academy of Science; Bavarian Academy of Sci.; Italian Chem. Soc.; Lisbon Acad. Sci.; Accademia Gioenia di Scienze Naturali di Catania, Sicily; Am. Chem. Soc.; A.A.A.S.; Gr. Officer of Order of Merit; Acad. of Scis. (U.S.S.R.); The Chem. Soc. of Japan; Royal Norwegian Scientific Soc., Trondheim; Natl. Inst. of Scis. of India; Tau Beta Pi; Sigma Tau; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Phi Kappa Phi; Scabbard and Blade; Delta Upsilon. Co-author: The Structure of Line Spectra, 1930; Introduction to Quantum Mechanics, 1935. Author: The Nature of the Chemical Bond, 1939, '40, '60; Gen. Chem., 1947, 1953; Coll. Chem., 1950, '55, '59, 62; No More War!, 1958. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Phys.; Phys. Rev.; etc. War Rec.: Mem., Div. 8, Natl. Defense Rsch. Com., West Advisory Com. of Committee on Med. Rsch.; Med. Advisory Com. in Preparation of Bush Report; Chmn., Ad Hoc Com. on Internal Ballistics, NDRC; Consultant, Div. 19, NDRC; Prin. Investigator on 14 OSRD Contracts; Mem. Rsch. Bd. for Natl. Security, 1945-46. Special Int.: Structure of Crystals by Diffraction of X-rays; Application of Quantum Mechanics to Physical and Chemical Problems; Structure of Metals and Intermetallic Compounds; Nature of the Chemical Bond; Determination of Structure of Gas Molecules by Diffraction of Electrons; Structure and Properties of Hemoglobin and Related Substances; Structure of Proteins; Structures of Antibodies and Nature of Serological Reactions; Discovery and Investigation of Abnormal Forms of Human Hemoglobin in Relation to Sickle Cell Anemia and other Diseases; Development of a Substitute (Oxypolgelatin) for Human Plasma; etc. Nobel Prize, Chem., 1954; Am. Chem. Soc. Award in Pure Chem. (Langmuir Prize), 1931; Davy Medal of the Royal Soc., 1947; Medal for Merit, 1948; Pasteur Medal, Biochem. Soc. of Fr., 1952; Avogadro Medal, Italian Acad. of Scis., 1956; Internatl. Grotius Medal, 1957.

PAXTON, Mary Davis (Miss), Asst., Barker Center, Tex. Univ., Austin, Tex. Home Add.: 1908 Whitis, Apt. 3, Austin 5, Tex.

GEOGRAPHY. b. McAllen, Tex., Apr. 9, 1934. d. James C. and Mary Frances (Davis) P. Edn.: B.S., Sou. Methodist Univ., 1955; Grad. Work, Northwestern Univ. Exp.: Editorial Staff, Denoyer-Geppert Co., Chicago, Ill., 1955-58; Schl. Tchr., Alamo Schl., Dallas, Tex., 1959-60; Asst., Tex. Univ., Barker Center, 1960—. Mem.: Assn. of Am. Geographers; Am. Geographical Soc.; A.A.A.S.; Gen. Int.: Recipient, Denoyer-Geppert Fellowship. Areas of Rsch.: Econ. Geography; Latin Am. Geography.

PAYNE, Charles Kenneth (Ph.D.), 155 Keil Ave., Butler, N. J. STATISTICS. b. Richland, Neb., Feb. 10, 1880. s. Robert Louis and Jennie (McKay) P. Edn.: A.B., Univ. of Nebr., 1905; M.B.A., N. Y. Univ., 1928; Ph.D., ibid., 1933. Exp.: U. S. Naval Acad., 1919-22; Staff, N. Y. Univ., 1925-50; Staff, Paterson State Coll. (part-time), 1959—. Areas of Rsch.: Statistics.

PAYNTER, Carmen Russell (M.D.), Internist, Gastroenterologist and Hematologist, 321 W. State St., Rockford, Ill. Home Add.: 2514 Crosby St., Rockford, Ill. INTERNAL MEDICINE, GASTROENTEROLOGY AND HEMATOLOGY. b. Plankinton, S. Dak., Dec. 23, 1916. s. James Russell and Rose M. (Katula) P. Edn.: B.S., Univ. Ill., 1944; M.D., ibid., 1946. m. Mary T. Power, June 11, 1949. c.: Mary; Patricia; John; James; Edmond. Exp.: Asst., Expt. Sta. Chem., Brookings, S. Dak., 1941-43; Intern, Harper Hosp., Detroit, Mich., 1946-47; Fellow, X-ray, ibid., 1949; Fellow, Int. Med., Mayo Fdtn., Rochester, Minn., 1950-53 (45 months); Asst. Med. (Gastroenterol.), Univ. Chicago, 1953-54; Instr., Gastroenterol., ibid., 1954-55; Practice, Int. Med., Gastroenterol. and Hematol., 1955—. Mem. of Med. Staff: Active, Rockford Memorial Hosp.; Courtesy, St. Anthony Hosp.; Courtesy, Swedish-Am. Hosp., Rockford, Ill. Mem.: Diplomate, Am. Bd. of Int. Med., 1954; Diplomate, Subspecialty Bd. of Gastroenterol., 1956; Assoc. Fellow, Am. College Physicians; Fellow, Am. Coll. Chest Physicians; Fellow, Am. Coll. Gastroenterol.; Fellow, Am. Coll. Angiology; Am. Med. Assn.; Am. Soc. for Gastrointestinal Endoscopy; Am. Assn. Study Liver Diseases; Fellow, A.A.A.S.; Am. Fed. Clin. Rsch.; Am. Soc. Hematol.; Am. Soc. Int. Med.; Fellow, Internatl. Soc. Hematol.; Internatl. Soc. Int. Med.; Fellow, Am. Soc. of Clinical Radiol.; Am. Psychosomatic Soc.; Am. Rheumatism Assn.; Am. Diabetes Assn.; Fellow, Am. Pub. Health Assn.; Am. Heart Assn.; Fellow, Am. Med. Writers' Assn.; Fellow, Am. Geriatrics Soc.; Nu Sigma Nu.



Contbr. to: Pharmacol. and Exptl. Therapeutics; Am. Jour. Me Scis.; Metabolism; Jour. Clin. Nutrition; Gastroenterol. Abstract for Gastoenterol., and for Bull. Am. Soc. for Gastrointestin Endoscopy. Serv. Rec.: 1947-49, 1st Lt. to Capt., U. S. Arm Med. Officer, Sect. of Clin. Invest., Army Med. Nutrition La (1948-49, Metabolic Ward, Rsch. and Ednl. Hosp., Univ. of Ill Areas of Rsch.: Selenium Toxicity; Gynecomastia in Cirrhosis the Liver; Metabolic and Clinical Effects of Treatment in Patien with Cirrhosis of the Liver; Lack of Avitaminosis Among Alc holics; Treatment of Nontropical Sprue with Prednisolone.

PAYNE, Nellie Maria de Cottrell (Ph.D.), Literature Chemis Velsicol Chemical Corp., 330 E. Grand Ave., Chicago 11, I

Home Add.: 2908 W. Fletche Chicago 18, Ill. ENTOMOLOG b. Cheyenne Wells, Colo., Dec. 1 1900. d. James Edward a Mary Emmeline (de Cottrell) Edn.: B.S., Kans. St. Coll., 192 M.S., ibid., 1921; Ph.D., Uni of Minn., 1925. Exp.: Asst., Kan St. Coll., 1918-21; Instr., Linde wood Coll., 1921-22; Asst. a Instr., Univ. of Minn., 1922-2 Scientific Staff, Biol. Abstract Philadelphia, Pa., 1927-30, 193 33; Lectr. and Instr., Univ. Minn., 1933-37; Asst. Rsch. E tomologist and Lit. Scientist, Ar Cyanamid Co., Stamford, Conn 1937-57; Lit. Chemist, Velsic Chem. Corp., Chicago, Ill., 1957- Mem.: Am. Chem. Soc.; Am. So Zoologists; Biometric Soc.; Ent mological Soc. of Am.; Phi Kappa Phi; Sigma Xi; Iota Sigma P Contbr. to: Jour. of Chemical Edn.; Jour. of Econ. Entomol Jour. of Morphol. Areas of Rsch.: Insect Physiol., Foreign Pate Terminology.

PEACH, Harry (Ph.D.), Instructor, 357 9th Street, Brooklyn, N. PHYSICS. b. Randolph, Mass., May 30, 1898. s. Henry a

Elizabeth (Schraut) P. Edn.: B.S M.I.T., 1918; M.A., N. Y. Univ 1929; Ph.D., ibid., 1933. Exp Rsch. Chem., duPont, 1918-2 Rsch. Chem., Beacon Blanke 1922-26; Tchr., Nashua, N. H High Schl., 1926-29; Instr., Phy ics., Brooklyn Coll., 1929—. Mem Am. Meterol. Soc.; A.A.A.S.; Am Assn. of Physics Tchrs. Contb to: Radio Electron.; Schl. a Soc.; Am. Jour. of Physics. Ph. Dissertation: Determination of Ar matic Hydrocarbons by Sulfon tion and Subsequent Hydrolysi Travel: World. Hobbies: Tenni Model Railroad. Listed in: A.M. Special Int.: Mechanics and Ele tronics.

PEACH, Paul (Ph.D.), Sr. Operations Rsch. Scientist, System D velopment Corp., Santa Monica, Calif. Home Add.: 2021 Californ Ave., Santa Monica, Calif. STATISTICS. b. St. Louis, Mo., Ju 15, 1902. s. Franz and Marie (Saar) P. Edn.: A.B., Univ. of Ari 1956; M.S., Case Inst. of Technol., 1958; Ph.D., ibid., 1961. Beatrice Brest, 1941. c.: Mark. Exp.: Assoc. Prof., N. C. Coll., 1945-50; Head, Assessment Div., Naval Ord. Test Sta., Chi Lake, Calif., 1950-54; Rsch. Assoc., Case Inst. of Technol., 195 59; Sr. Operations Rsch. Scientist, System Development Cor 1959—. Mem.: Scientific Rsch. Soc. of Am.; A.A.A.S.; Inst. Mgmt. Scis. Author: Industrial Statistics and Quality Contro 1948. Contbr. to: Annals of Math. Stat.; Industrial Quali Control; Jour. of the Am. Stat. Assn.; Mgmt. Sci. Areas Rsch.: Operations Rsch., Especially Optimum Maintenance Pr cedures; Design and Analysis of Large-Scale Computer-Based Ma Machine Systems; New Applications of Quality Control Tec niques; Machine Simulation of Systems.

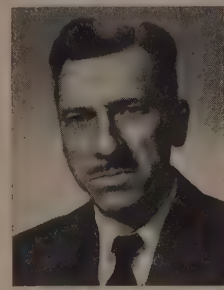
PEACH, William Nelson (Ph.D.), Prof. Econ., Univ. of Okl Norman, Okla. Home Add.: 528 Coll., Norman, Okla. EC NOMICS. b. Granite, Md., Oct. 21, 1912. s. Frank and Ma Anna (Nelson) P. Edn.: Ph.D., Johns Hopkins Univ., 1939. Dorothy Jean Hausman, Sept. 1, 1939. c.: Dorothy Jean; Jam Thos.; Jos. Wm. Exp.: Instr., Econ., Univ. of Tex., 193 42; Asst. Prof., Econ., Univ. of Tex., 1946-47; Assoc. Prof., Econ Syracuse Univ., 1947-49; Prof., Econ., Univ. of Okla., 1949 (On Leave of Absence, 1956-58 for Foreign Aid Assignment Pakistan); On leave 1961-62, Agency for International Develo ment. Hon. Pos.: Chmn., Dept. of Econ., Univ. of Okla., 195 56. Mem.: Am. Econ. Assn.; Am. Finance Assn.; Pakistan Eco Assn.; Sou. Econ. Assn.; Midwest Econ. Assn.; Southwest So Sci. Assn.; Beta Gamma Sigma; Lions Internatl. Author: T Security Affiliates of National Banks, 1941; Principles of Ec nomics, 1955, 2nd edition, 1960. Co-author: Basic Data of t American Economy, 1955; Basic Data of the Economy of Pakist 1959. Contbr. to: Jour. of Fin.; Southwest Soc. Sci. Quar Banking Law Jour.; Encyclopedia Americana. War Record: U. N.R., W. W. II. Areas of Rsch.: National Income; Financ State and Regional Economics.

PEARINCOTT, Joseph Verghese (Ph.D.), Rsch. Assoc., Dept. of Physiol. and Pharmacol., N. Y. Med. Coll., New York 29, N. Y. Home Add.: 1005 Esplanade, New York 61, N. Y. PHYSIOLOGY. b. Travancore, India, May 26, 1929. s. George Francis and Elizabeth (Kottakaram) P. Edn.: B.Sc., Travancore Univ., India, 1949; M.Sc., Aligarh Univ., India, 1951; Ph.D., Fordham Univ., 1959. m. Michaeleen Ferrara, May 1, 1958. c.: George Joseph. Exp.: Instr., Fordham Univ., 1952-56; Postdoctoral Fellow, Coll. of Phys. and Surgs., Columbia Univ., 1959-61; Rsch. Assoc., N. Y. Med. Coll., 1961—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Am. Soc. of Zoologists; N. Y. Entomological Soc.; Entomological Soc. of Am.; Sigma Xi. Contbr. to: Jour. of Cellular and Comparative Physiology. Areas of Rsch.: Lipid Metabolism; Microelectrophysiology; Cardiovascular Physiology; Experimental Production and Prevention of Cardiovascular Diseases; Production, Prevention and Therapy of Experimental Arteriosclerosis and Atherosclerosis; Carbohydrate, Protein and Fat Metabolism during Insect Metamorphosis.

PEARL, Richard Maxwell, Professor of Geol., Colorado College, Colo. Springs, Colo. MINERALOGY. b. New York, N. Y., May 4, 1913. s. Morse and Etta (Stocker) P. Edn.: B.A., Univ. of Colo., 1939; M.A., ibid., 1940; A.M., Harvard Univ., 1946. m. Mignon Wardell of Denver, Colo., 1941. d. William and Mignon W. Exp.: 1940, Instr. in Geol., Univ. of Colo.; 1941-42, Engr., duPont Co., Denver, Colo.; 1944, Geologist, Shell Oil Co., Tulsa, Okla.; Instr. in Geol., Colo. Coll., 1946-49; Asst. Prof. of Geol., ibid., 1949-56; Acting Hd. of Dept., ibid., 1951-52; Assoc. Prof., ibid., 1956-62; Professor of Geology, ibid., 1962—; Visiting Professor of Geology, Phoenix College Extension Courses, University of Colo., Denver University, Pueblo Coll. Hon. Pos.: Chmn., Sub-Com. on Earth Sci. Edn., Am. Geol. Inst.; Adviser in Mineral. and Gemol., Denver Pub. Lib.; Adviser, McGraw-Hill Book Co.; Editorial Staff, Earth Science Digest. Mem.: Am. Geographical Soc. (Fellow); Mineralogic and Petrographical Soc. of Switzerland; Mineralogic Soc. (Great Britain); Gemol. Assn. of Australia (Hon. V.P.); Gemol. Assn. of Gr. Britain (Fellow); Gemol. Assns. of Brazil, Netherlands, Norway; Mineralogic Soc. of Canada, Italy; New Zealand Geol. Soc.; A.A.A.S. (Fellow); A.I.M.E.; Am. Crystallographic Assn.; Geol. Soc. Am.; Am. Geophys. Un.; Meteoritical Soc. (Fellow); Seismological Soc. of Am.; National Association of Geology Teachers. Author: Nature as Sculptor; A Geologic Interpretation of Colorado Scenery, 1941; Art of Gem Cutting, 1945; Mineral Collectors Handbook, 1947; Popular Gemology, 1948; Guide to Geologic Lit., 1951; Colo. Gem Trails, 1951; How To Know the Minerals and Rocks, 1955; America's Mountain, 1955; Rocks and Minerals, 1956; Colo. Gem Trails and Mineral Guide, 1958; 1001 Questions Answered About the Mineral Kingdom, 1959; Geology, 1960; Successful Mineral Collecting, Prospecting, 1961; 1001 Questions Answered About Earth Science, 1962. Contbr. to: Econ. Geol.; Am. Mineral.; Jour. of Gemology; Mineralogist; Lapidary Jour.; Gems and Gemology; Gems and Minerals; Earth Science; Colo. Wonderland; World Book Ency.; Peoples Ency.; Colliers Ency. War Rec.: Corps of Engrs., U. S. Army, 1942-44. Listed in: W.W. in Am.; A.M.S.; Who Knows—and What; Dir. of Am. Scholars. Special Int.: Gems, Colo. Minerals.

PEARLMAN, Samuel (Ph.D.), Assoc. Prof., Brooklyn Coll., Brooklyn 10, N. Y. b. New York City, Nov. 28, 1911. s. Nathan and Sarah (Cheroff) P. Edn.: B.S.S., Coll. of the City of N. Y., 1932; Ph.D., N. Y. Univ., 1952. m. Selba Swerdloff, June 28, 1942. c.: Jay; Richard. Exp.: Instr., Townsend Harris Div., Coll. of the City of N. Y., 1933-37; Guid. Dir., ibid., 1937-42; Instr. and Asst. Prof., Brooklyn Coll., 1942-62; Assoc. Prof., ibid., 1962—. (On Milit. Leave of absence, 1943-46). Hon. Pos.: Chmn., Membership Com., N. Y. Soc. of Clin. Psychologist; Past Treas. and Exec. Secy., Pres.-elect, 1958-59, Pres., 1959-60, N. Y. Soc. of Clin. Psychol.; Diplomate, Clin. Psychol., Am. Bd. Exmrs. in Prof. Psychol.; Ctf., Psychol., N. Y. St.; Delegate, U. S. to Interamerican Cong. of Psychol., Mex. City; Exec. Secy. and Chmn., Membership Com., Interamerican Soc. of Psychol.; Chmn., Com. on Prof. Ethics, Exec. Secy., N. Y. State Psychol. Assn.; Treas., Municipal Coll. Pres. Assn. Mem.: Am. Psychol. Assn.; Am. Pers. and Guid. Assn.; Am. Coll. Pers. Assn.; Natl. Vocl. Guid. Assn.; Eastern Psychol. Assn.; N. Y. State Psychol. Assn.; Brooklyn Mental Health Assn.; N. Y. Soc. of Clinical Psychologists; Interamerican Soc. of Psychol.; Municipal Coll. Pers. Assn.; Brooklyn Psychol. Assn.; Am. Orthopsychiat. Assn. Ph.D. Dissertation: An Investigation of the Problem of Academic Underachievement Among Intellectually Superior Coll. Students. War Record: U. S. Army, 1943-46; U. S. Army Reserve, 344th Gen. Hosp., Brooklyn, N. Y., Clinical Psychol., 1946. Travel: Mex.

PEARSON, Donald Stuart (Ph.D.), Assoc. Prof., Elec. Engrng., Pa. State Univ., Univ. Park, Pa. ELECTRICAL ENGINEERING. b. Feb. 19, 1905, Cleveland, Ohio. s. David B. and Dorothy P. Edn.: B.S., Case Inst. of Technol., 1929; M.S., ibid., 1933; Ph.D., St. Andrews, 1958; Litt.D., ibid., 1960; P.E., Registered Prof. Engr., Ohio, Pa. m. Marian E. Gildard (dec., 1957), Nov. 30, 1935. Exp.: Engineer General Electric Co., 1929-32; Asst. to Dean, Hiram College., 1934-35; Prof. and Chmn., Elec. Engrng., Ohio Northern Univ., 1938-43; Asst. Prof., Elec. Engrng., Mich. State Univ., 1946-49; Assoc. Prof. Grad. Schl. Elec. Engrng., Pa. State Univ., 1949—; Prof. Phil., Sem. Epis. Ch. (Eng.) 1961—. Mem.: A.I.E.E., Chmn., Pittsburgh subsection, 1953-54; Natl. Tech. Comm. on Machinery, Transformers, Heating, 1952-55; Student Br. Counselor, 1938-43; A.S.E.E., Chmn., Mich. State University Br., 1948-49; A.A.U.P.; Newcomen Society, Academiae Palatino Honoris causa, Franklin Institute; Fellow, Ohio Northern University, St. Andrews; Eta Kappa Nu (life mem.); Nu Theta Kappa (Hon. mem.); Sigma Tau Delta; Theta Chi; F.&A.M., 32°. Contbr. to: Jour. of Engrng. Edn.; Electrical Engrng.; Design News; Tech. Jours.; Spring Anthology (verse); etc. Author: Experiments in Elec. Engrng., 1948, 1949; D. C. Machinery Experiments, 1948; Misc. Ext. Engrng. Courses P.S.N., 1952-54; Creative Image, 1959; Creativeness for Engrs., 1958, '59, '60 '61 4th ed.; Basic Energy Converters, 1962 (Text). War Rec.: (On leave absence) Lectr., Navy V-12 Pr., Univ. of Louisville, 1943-44; Westinghouse Elec. Corp., 1944-45, Army-Navy Award. Gen. Int.: Engrng. Examiner for the Ohio State Br. of Registration for Prof. Engrs., 1939-54; Recipient, Lee Gold Medal Award, 1958; Rsch. Project Supvr., Boeing Airplane Co., 1954-55.



PEARSON, Helen R. (Miss), Head, Math. Dept., Arlington H. S., Indianapolis, Ind. Home Add.: 6246 N. Olney St., Indianapolis 20, Ind. MATHEMATICS WRITING AND TEACHING. b. Amboy, Ind., Mar. 5, 1898. d. T. Carleton and Mary (Resler) P. Edn.: A.B., Ind. Univ., 1926; A.M., ibid., 1931. Exp.: Hartford City H. S., Hartford City, Ind., 1926-42; Arsenal Technical H. S., 1942-61; Hd., Math. Dept., Arlington H. S., Indianapolis, Ind., 1961—. Hon. Pos.: Natl. Treas., Pi Lambda Theta; State Corres. Secy., Delta Kappa Gamma; State Secy.-Treas., Ind. Coun. of Math. Tchrs. Mem.: A.A.A.S.; Natl. Coun. of Tchrs. of Math.; Ind. Coun. of Tchrs. of Math.; Central Assn. of Sci. and Math. Tchrs.; Phi Beta Kappa; Pi Lambda Theta; Delta Kappa Gamma; Ind. Schl. Women's Club. Co-author: Algebra, Book One, 1956; Algebra, Book One, Modern Edition, 1962; Algebra, Book Two, 1957; Algebra, Book Two, Modern Edition, 1962; Plane Geometry, 1958; Solid Geometry, 1959; Sets and the Structure of Algebra, 1958; Modern Trigonometry, 1962.

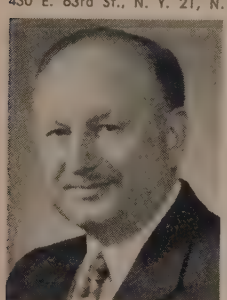
PEARSON, Olof Hjalmer (M.D.), Dir. of Clinical Labs., Univ. Hospitals of Cleveland, 2085 Adelbert Rd., Cleveland 6, Ohio. Home Add.: 14111 Larchmere Blvd., Cleveland 20, Ohio. INTERNAL MEDICINE. b. Boston, Mass., Feb. 7, 1913. s. Nils August and Esther (Sophia) P. Edn.: A.B., Harvard Coll., 1934; M.D., Harvard Med. Schl., 1939. m. Barbara Farr, Dec. 30, 1942. c.: Jane; Alan; Thomas; John. Exp.: Assoc. Prof. of Medicine, Cornell Univ., Schl. of Medicine, 1952-60; Assoc. Prof. of Medicine, Western Reserve Univ., Schl. of Medicine, 1960—. Mem.: Assn. of Am. Physicians; Am. Soc. for Clinical Investigation; Am. Soc. Biological Chemists; Fellow, Am. Coll. of Physicians; The Endocrine Soc.; The Harvey Soc.; The Ewing Soc.; A.M.A.; Phi Beta Kappa; Sigma Xi. Author: Hypophysectomy, 1957. Serv. Rec.: Pan American Airways, Army Air Transport Command, 1942-45. Gen. Int.: Alfred P. Sloan Award for Cancer Rsch. Areas of Rsch.: Rsch. in Endocrinology and Cancer.

PECK, Joseph Howard, Jr. (Mr.), Senior Museum Paleontologist, Univ. of Calif., Berkeley 4, Calif. Home Add.: 1700 Le Roy Ave., Berkeley 9, Calif. INVERTEBRATE PALEONTOLOGY. b. Salina, Utah, Aug. 16, 1918. s. Dr. Joseph H. and Ruth (Kearns) P. Edn.: A.B., Univ. of Mo., 1940; M.A., ibid., 1941. m. Mary Rose (Lane), April 5, 1947. Exp.: Museum Paleontologist, Univ. of Calif., Berkeley, Calif., 1950-55; Senior Museum Paleon-

tologist, ibid., 1955—. Mem.: Paleontol. Soc.; Amer. Assn. of Petroleum Geolst.; Geol. Soc. of Amer.; Acacia; Sigma Xi. Contbr. to: Jour. of Paleontol.; Bull. Geol. Soc. of Amer.; Jour. de Conchol. Serv. Record: U. S. Army, 1941-47. Areas of Rsch.: Invertebrate Paleontology (excluding Pleistocene) with Specialized Knowledge of Mollusca particularly Cephalopods.

PECHUMAN, LaVerne LeRoy (Ph.D.), Assoc. Prof., Cornell Univ., Ithaca, N. Y. Home Add.: 16 Lakeview Dr., Ludlowville, New York. ENTOMOLOGY. b. Lockport, N. Y., Oct. 18, 1913. s. Henry J. and Ann (Brege) P. Edn.: B.S., Cornell Univ., 1935; M.S., ibid., 1937; Ph.D., ibid., 1939. m. Berta Christman, Oct. 14, 1939. c.: Patricia A.; Jean K. Exp.: Rsch. Asst., Cornell Univ., 1935-39; Field Repr., Calif. Spray Chem. Corp., 1939-45; Br. Mgr., ibid., 1945-47; Dist. Mgr., ibid., 1947-61; Sr. Rsch. Scientist, Calif. Chem. Co., 1961-62; Assoc. Prof. and Curator, Cornell Univ. 1962—. Hon. Pos.: Director, Niagara County Hist. Society; Bd. of Mgrs., Buffalo Soc. of Natural Scis.; 'Distinguished Scientist' Citation, University of Buffalo, 1960. Mem.: Entomol. Soc. of Amer.; Entomological Soc. of Can.; Sociedade Brasileira de Entomologia; Brooklyn Entomological Soc.; Buffalo Soc. of Nat. Scis.; A.A.A.S.; N. Y. State Archaeological Assn.; Soc. for Pa. Archaeology; Sigma Xi. Author: Tabanidae of New York, 1957. Contbr. to: Jour. of Econ. Entomol.; Can. Entomol.; Revista de Entomologia; Jour. N. Y. Entomol. Soc.; Bull. Brooklyn Entomol. Soc.; Pan-Pacific Entomol.; Entomological News; Proc. Entomol. Soc. of Wash.; Psyche; Boletin de Entomologia Venezolana; Acta Zoologia Lilloana; Bull. N. Y. Archaeol. Assn.; Niagara Co. Hist. Soc. Areas of Rsch.: Taxonomy of Blood-Sucking Insects; Control of Insects of Agricultural Importance; History and Pre-History of Upstate New York.

PECK, Paul Norman (Ph.D.), Pres., Paul Peck, Inc. Home Add.: 430 E. 63rd St., N. Y. 21, N. Y. MEDICAL ART AND ANATOMY. b. Paris, France, Mar. 29, 1908. s. Jonah and Fannie (Babbitt) P. Edn.: B.Sc., N. Y. Univ., 1929; M.A., Columbia Univ., 1930; Graduate Studies in Anatomy, Johns Hopkins Medical School, 1930-32; Ph.D., N. Y. Univ., 1957. m. Libby Siegel, Mar. 4, 1942. Exp.: Head of Art Dept., Inst. of Adult Edn., N. Y. C., 1932-36; Inaugurated and Conducted Course in Medical Art, Hospital for Special Surgery, N. Y. C., 1932-36; Inaugurated and in Chg., Med. Art Instrn., N. Y. Univ., 1936-42; Assoc. Prof. of Anatomy, ibid., 1936-42; In Chg., Med. Art Instrn., Hunter Coll., 1946-50; Instr., Prof. of Anatomy, Pratt Inst., 1957—; Pres., Paul Peck, Inc., N. Y., N. Y., 1955—. Mem.: N. Y. Acad. of Sci.; N. Y. Microscopic Soc.; Phi Delta Kappa. Author: Atlas of Anatomy, 1955; Medical Profiles—An Atlas of Disease Studies, 1959. Atlas of Common Diseases, 1960; Surgical Profiles for the Physician, 1962. Serv. Rec.: Civ. Consult. to War Dept., 1942-46; Chief medical artist, Surgeon-General's Office War Dept., 1942-46; In charge, training of Medical Artists and Photographers for overseas service, U. S. Army Medical Corps, 1943-45; Member, Pathological Investigation Unit #1 U. S. Army Medical Corps, Army Institute of Pathology, 1945-46; Awarded Certificate of Merit for Outstanding Service to Office of Inter-American Affairs, 1946. Gen. Int.: Commissioned to do Series of Anat. Plates for Library of Congress, 1946; Medical Paintings Chosen for Permanent Exhibition. Smithsonian Inst., Washington, D. C., 1954; Invited by Pan-Am. Div., World Health Organization to Conduct Courses in Medical Art, 1955; Commissioned to do Series of Medical Mosaic Murals for Pharmaceutical Industries Bldg., N. Y. World's Fair, 1964. Areas of Rsch.: Anatomical Rsch.

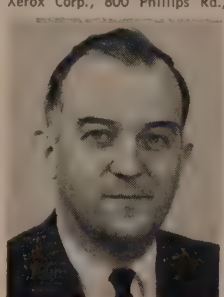


PECK, Samuel M. (M.D.), Dir. of Dermatol., Mount Sinai Hosp., N. Y., N. Y., Assoc. Clin. Prof. of Dermatol., Columbia Univ., N. Y., N. Y. Home Add.: 4 East 70th St., N. Y. 21, N. Y. DERMATOLOGY, MYCOLOGY AND ALLERGY. b. N. Y., N. Y., Oct. 15, 1900. s. Max and Rose (Dworkin) P. Edn.: B.S., Columbia Coll., 1922; M.D., Coll. of Physicians and Surgeons, Columbia Univ., 1924. m. Rheta Freind, 1950. Exp.: Dir. of Dermatol., Mt Sinai Hosp., N. Y. C., 1946 ; Assoc. Clin. Prof. of Dermatol., Columbia Univ., 1950 Hon. Pos.: Pres., Soc. of Investigative Dermatol.; Chmn., Dermatol. Assn., N. Y. Acad. of Med.; Pres., Reserve Officers Assn. of U.S.P.H.S.; Chmn., Assn. of Mycol., Acad. of Sci.; Pres., Am. Acad. of Compensation Med.; Ed., Jour. of Compensation Medicine. Mem.: A.D.A.; Am. Acad. of Allergy, Fellow; Am. Acad. of Dermatol., Fellow; Am. Acad. of Compensation Med. Fellow; Royal Soc. of Health, Fellow; Am. Coll. of Allergy; Manhattan Dermatol. Soc.; Swiss Dermatol. Soc.; Sigma Alpha Mu; Thi Epsilon Pi; Harmonie Club. Author: Cosmetics and Dermatitis, 1946; Occupational Dermatitis of the Skin, 1947; Therapy of Dermatologic Disorders, 1951; Practical Dermatology, 1956. Contbr. to: A.M.A. Arch. of Dermatol.; Investigative Dermatol.; Compensation Med.; N. Y. St. Med. Jour.; Practitioner; New England Med. Jour.; London Arch. of Pathol. Areas of Rsch.: Vitamin "A", Mycology, Allergy in the Field of Drug, Fungus and Bacteria Allergy, Occupational Diseases.

PEEPLES, William Dewey, Jr. (Ph.D.), Prof. of Math., Howard College, Birmingham, Ala. MATHEMATICS—ALGEBRA AND ALGEBRAIC GEOMETRY. b. Bessemer, Ala., Apr. 19, 1928. s. William Dewey and Thelma Jeannette (Chastain) P. Edn.: B.S., Howard Coll., 1948; M.S., Univ. of Wis., 1949; Ph.D., Univ. of Ga., 1951. m. Katie Ray Blackerby, Aug. 30, 1956. d. Lewis W. and Mary Blackerby. c.: Mary Jeannette; William D. III. Exp.: Rsch. Mathematician, Aberdeen Proving Grounds, Aberdeen, Md., summer, 1951; Asst. Prof. of Math., Howard Col., Birmingham, Ala., 1951-53; Assoc. Prof., Math., ibid., 1953-56 (on leave, Lt., Ord. Corps, U. S. Army, 1954-56); Asst. Prof., Math., Auburn University, Summer, 1956-59; Prof. of Math., Howard College, 1959—. Mem.: Am. Math. Soc.; Am. Math. Assn.; A.A.A.S.; Sigma Xi; Lambda Chi Alpha; Pi Mu Epsilon; Kappa Phi Kappa; Shriner. Contbr. to: Am. Math. Monthly; Proc. Amer. Math. Soc. Areas of Rsch.: Algebra; Number Theory; Algebraic Geometry.

PEIPER, Warren Schrader (M.D.), Radiologist, 1200 E. 5th Ave., 909 S. Miller St., Mitchell, S. D. Home Add.: 621 E. 5th Ave., Mitchell, S. D. RADIOLOGY. b. Chicago, Ill., Oct. 1, 1922. s. Herbert A. and Ellä (Schrader) P. Edn.: B.S., Northwestern Univ., 1945; M.D., ibid., 1948. m. Cecelia Holmgren, July 20, 1924. c.: Forrest; Nancy. Exp.: Fellow in Radiol., Northwestern Univ., 1948-51; Radiologist, Mem. Hosp., Arkansas City, Kans., 1951-53; Radiologist, St. Joseph's Hosp. and Methodist Hosp., Mitchell, S. D., 1953—. Hon. Pos.: Pres., S. D. Radiological Soc. Mem.: Radiological Soc. of N. Am.; A.M.A.; Am. Coll. of Radiol., Fellow; Rotary Internatl.

PELL, Erik Mauritz (Ph.D.), Mgr., Solid St. Physics Rsch. Dept., Xerox Corp., 800 Phillips Rd., Webster, N. Y. Home Add.: 697 Summit Dr., Webster, N. Y. SOLID STATE PHYSICS. b. Rattvik, Sweden, Sept. 22, 1923. s. Eric and Kerstin (Daniels) P. Edn.: B.E.E., Marquette Univ., 1944; Ph.D., Cornell Univ., 1951. m. Anne Hedger, Oct., 1951. c.: Terence John; Bartley George; Holly Kristina. Exp.: Rsch. Asst., Cornell Univ., 1946-51; Rsch. Assoc., Gen. Elec. Rsch. Lab., Schenectady, N. Y., 1951-61; Rsch. Mgr., Xerox Corp., Rochester, N. Y., 1961—. Mem.: Am. Physical Soc.; A.A.A.S.; Sigma Xi; Phi Kappa Phi; Tau Beta Pi; Eta Kappa Nu; Telluride Assn. Contbr. to: Physical Rev.; Jour. of Applied Phyiscs; Physics and Chem. of Solids; Rev. of Scientific Instruments. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Soft X-Ray Spectroscopy; Hall Measurements; Semiconductor Junction Phenomena; Diffusion in Solids; Photo Conductivity.



PELLA, Milton Orville (Ph.D.), Prof. of Sci. Edn., Univ. of Wis., Madison Wis. Home Add.: 135 Glenway St., Madison, Wis. TEACHING OF SCIENCE. b. Wilmot, Wis., Feb. 13, 1914. s. Charles A. and Ida (Pella). Edn.: B.E., Milwaukee St. Tchrs. Coll., 1936; M.S., Univ. of Wis., 1941; Ph.D., ibid., 1948. m. Germaine M. Reich, Dec. 9, 1944. Exp.: Tchr., Wyler Milit. Acad., Evansville, Wis., 1937-38; Tchr., Elem. Schl., Delavan, Wis., 1938-39 Tchr., Wis H S Univ of Wis Madison, Wis., 1939-42; Prof., Univ. of Wis., 1947—. Hon. Pos.: Pres., Central Assn. of Sci. and Math. Tchrs. Assn. Mem.: A.A.A.S.; Natl. Sci. Tchrs. Assn.; Natl. Assn. for Rsch. in Sci. Tchrs. Assn. for the Edn. of Tchrs. of Sci.; Natl. Soc. for the Study of Edn.; Wis. Edn. Assn ; Mason; Rotary. Author: Pella Elementary Science Charts, 1961. Co-author: Physical Science for Progress, 1959. Contbr. to: The Sci Tchr ; Sch Sci and Math.; Sci. Edn.; Jour. of Pharmaceutical Edn Serv Rec : U. S. Army, 1942 46 Gen Int.: Edn! Consultant to Turkey, 1959; Sci. Edn. Consultant to Iran, 1962 Areas of Rsch Tchng. of Sci.

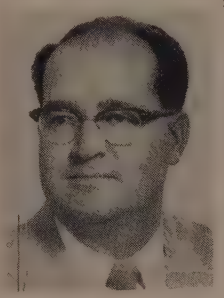
PELLER, Sigismund (M.D.), 164 E. 81st St., N. Y. 28, N. Y. Home Add.: 164 E. 81st St., N. Y. 28, N. Y. CANCER EPIDEMIOLOGY AND PATHOGENESIS, PRENATAL GROWTH AND PERINATAL MORTALITY, PROBLEMS OF HUMAN BIOLOGY. b. Tarnopol, Dec. 16, 1890. s. Meschulem Daniel and Esther (Grossmann) P. Edn.: Vienna Univ., M.U.Dr., 1914. m. Lili E. Roubicek, Aug. 31, 1933. Exp.: Epidemiology, Austrian Govt., 1914-16; Res. of Vienna Hosp., 1916-25; Dir., Bur. of Pub. Health, Zion Exec. for Palestine, 1926-28; Officer, Pub. Health Dept., Vienna, Austtria, 1929-33; Fellow, Johns Hopkins Univ., 1936-40; Rsch. Assoc., N. Y. University, 1940-43 Private Practice, 1944—. Mem.: Am. Assn. Adv. Sci.; Fellow, Am. Public Health Assn.; Am. Soc. Human Genetics; Fellow, Am. Geriatr. Soc.; Am. Stat. Assn.; Fellow, N. Y. Acad. of Med.; N. Y. Acad. of Sci.; Fellow, Royal Soc. Health; The Biometric Soc.; Inst. of Math. Statistics; Assoc. Mem., N. Y. Cardiol. Soc. Author: Fehlgeburt and Bevolkerungs-frage, 1930; Der Geburtstod, Mutter und Kind, 1936; Cancer in Man, 1952; Cancer in Childhood and Youth, 1960. Contbr. to: Am. Jour. of Med. Sci.; Am. Jour. of Hygiene; Surg. Gynecol. and Obst.; Cancer Rsch.; Pub. Health Reports; Jour. A.M.A.; N. Y. St. Jour. of Med.; Bull. Hist. Med.; Jour. Soc. Psychol.; Army Med. Bull.; Lancet; Sociol. Rev.; Jour. of Heredity; Am. Jour. of Public Health; Jour. Indian Med. Profession; Der Krebsarzt. Areas of Rsch.: Physiology of Embryonal and Postnatal Blood-circulation, History of Medicine, Demographic Analysis and History, Epidemiology of Infectious Diseases and Their Combat, Nutritional Surveys, Suicidal Attempts; Physiology in Tonsils, Cancer.

PELLETIER, S. William (Ph.D.), Prof. and Hd., Dept. of Chem., Univ. of Ga., Athens, Ga. Home Add.: 240-49 42nd Ave., Douglaston 63, N. Y. ORGANIC CHEMISTRY; NATURAL PRODUCTS; ALKALOIDS; TERPENS. b. Kankakee, Ill., July 3, 1924. s. Antoine Amos and Estella Edith (Hays) P. Edn.: B.S., Univ. of Ill., 1947; Ph.D., Cornell Univ., 1950. m. Leona Jane Bledsoe, June 18, 1949. c.: William Timothy; Jonathan Daniel; Rebecca Jane; Lucy Ruth; David Mark. Exp.: Instr. in Chem., Univ. of Ill., 1950-51; Asst., Rockefeller Inst., N. Y., 1951-54; Assoc., ibid., 1954-56; Asst. Prof., ibid., 1956-61; Assoc. Prof., ibid., 1961-62; Prof. and Hd., Dept. of Chem., Univ. of Ga., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Tau Beta Pi; Sigma Tau; Phi Eta Sigma. Contbr. to: Jour. Am. Chem Soc.; Journal of Org. Chemistry; Chem. and Ind.; Journal of the Chem. Soc.; Proceedings of the Chem. Soc.; Tetrahedron. Serv. Rec.: U.S.N. Gen. Int.: Lecturer, Am. Swiss Foundation for Scientific Exchange, 1960. Areas of Rsch.: Chemistry and Structure of Aconitum and Veratrum Alkaloids, Diterpenes, Natural Products.

PELNER, Louis (M.D.), Physician, 1352 Carroll Street, Brooklyn 13, N. Y. INTERNAL MEDICINE. b. Poland, Sept. 26, 1907. s. Jacob and Ida (Pietrokowsky) P. Edn.: B.S., N. Y. Univ., 1929; M.D., N. Y. Univ. Coll. Med., 1933. m. Lillian Rosen, Sept., 1936. c.: Madeline (Mrs. Cosman); Ruth; Ceil Michele. Exp.: Attending Physician, Swedish Hosp., 1944; Pres., Med. Bd., Swedish Hosp., 1960—; Physician, Brooklyn, N. Y., 1933—. Hon. Pos.: Pres., Med. Bd., Swedish Hosp. Fellow; Natl. Gastroenterol. Assn., (Now Am. Coll. of Gastroenterol.); Diplomate, Am. Bd. Int. Medicine. Mem.: Fellow, Am. Coll. of Gastroenterol.; Fellow, Am. Coll. of Cardiol.; Fellow, Am. Coll. of Allergists; Fellow, N. Y. Diabetics Assn.; Fellow, Am. Coll. of Geriatrics; Am. Fed. Clinical Rsch.; Am. Soc. History of Med.; Am. Psychosomatic Soc.; Alpha Omega Alpha; Diplomate, Am. Bd. Internal Med.; Trustee, Congregation Shaari Zedek. Author: The Diet Therapy of Disease, 1944; Management of Obesity, 1944; Gastroenterology in General Practice, 1947. Contbr. to: Med. Record; N. Y. State Jour. Med.; Am. Jour. Diseases of Children; Archives Pediatrics; Jour. Lab. and Clin. Med.; Am. Jour. Med. Scis.; Am. Jour. Ophthalmology; Jour. Am. Med. Assn.; Am. Jour. Digestive Diseases; Rev. Gastroenterology; Diseases Nervous System; Am. Jour. Surg.; Annals Allergy; Industrial Med.; Annals Internal Med.; Jour. Lacet; Am. Jour. Roentgenology and Radium Therapy; Expmtl. Med. and Surg.; Postgrad. Med.; Am. Practioner and Digest Treatment; Internatl. Record Med. Areas of Rsch.: Research in Internal Medicine; Cancer Research.

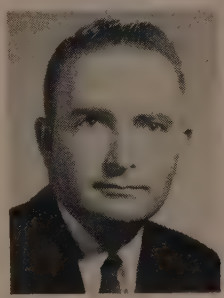
PEMRICK, Thomas Donald (M.D.), Surgeon, 25 Second St., Troy, N. Y. Home Add.: 257 Pawling Ave., Troy, N. Y. SURGERY. b. Troy, N. Y., Jan. 26, 1924. s. Thomas Joseph and Helen Frances (Stanton) P. Edn.: M.D., Albany Med. Coll., 1947. m. Alice Louise Simpson, Nov. 26, 1949. c.: Mary Lee; Donald Paul. Exp.: Asst. Surg., Albany Med. Coll., 1954; Attend. Surg., Samaritan Hosp., Troy, N. Y., 1960; Chief Surg., St. Mary's Hosp., ibid., 1961; Surgeon, Troy, N. Y., 1954. Mem.: Am. Coll. of Surg.; Am. Fed. for Clin. Rsch.; N. Y. Acad. of Sci.; Am. Assn. of Adv. of Sci.; C. of C. Contbr. to: Surg. Clinics of N. Am.; Exerpta Medica; Am. Jour. Clin. Pathol. Serv. Rec.: U. S. Army, 1943-61. Areas of Rsch.: General Surgery, Blood Clotting, Hemostasis.

PENDLETON, Robert Cecil (Ph.D.), Hd., Dept. of Radiation Safety, Univ. of Utah, Salt Lake City, Utah. Home Add.: 2959 Glenmare St., Salt Lake City, Utah. RADIATION ECOLOGY. b. Torrey, Utah, Nov. 5, 1918. s. Don Carlos and Mary Evelynn (Holt) P. Edn.: B.S., Univ. of Utah, 1946; M.S., ibid., 1947; Ph.D., ibid., 1952. m. Edith Woodbury, Dec. 26, 1941. c.: Andrea Rae; Robert Carl; Marian Carol. Exp.: Rsch. Assoc., U. S. Fish and Wildlife Serv., Brigham City, Utah, 1941; Instr. in Biol., Weber Coll., 1947-50; Chf., Design and Analysis Office, B. W. Assessment Labs., Dugway Proving Ground, Dugway, Utah, 1952-54; Biologist (Radiation Ecol.), Hanford Atomic Products Operation, G. E. Co., Richland, Wash., 1954-59; Hd., Dept. of Radiation Safety, Rsch. Assoc. Prof. of Environmental Radiation, Univ. of Utah, 1960—. Mem.: A.A.A.S.; Ecol. Soc. Am.; Am. Soc. Limnol. and Oceanog. Herp. League; Utah Acad. Sci., Arts, Letters; Sigma Xi; Phi Beta Kappa; Phi Sigma. Contbr. to: The Auk; Herpetologica; Ecol. Monographs; Ecology; Jour. Wildlife Mgmt.; Second U. N. Internatl. Conf. Peaceful Uses Atomic Energy; Nature. Serv. Rec.: U.S.N. Med. Corps, 1942-45. Areas of Rsch.: Accumulation of Fallout Nuclides in the Biosphere. Evaluation of Low-Level Radiation Effects on Organisms. Environmental Effects on Accumulation of Radioactive Isotopes in Foods of Man.



PENDLETON, Wesley William (Mr.), Rsch. Engr., Anaconda Wire and Cable Co., Muskegon, Mich. Home Add.: 1542 Clinton St., Muskegon, Mich. ELECTRICAL ENGINEERING, ELECTRICAL INSULATION, HIGH TEMPERATURE RESEARCH. b. Providence, R. I., Apr. 2, 1914. s. Percy Warren (dec.) and Annie (Richardson) P. Edn.: B.S., Univ. of R. I., 1936; M.S., Mass. Inst. of Technol., 1940. m. Marion J. Tymeson, July, 1939. c.: Wesley W., Jr.; Robert L.; Helen M.; Norman K. Exp.: Student Engr., Gen. Elec. Co., Schenectady, N. Y. and Pittsfield, Mass., 1936-38; Rsch. Asst., M.I.T., 1938-41; Rsch. Engr., Westinghouse Elec. Corp., E. Pittsburgh, Pa., 1941-49; Rsch. Engr., Gen. Cable Corp., Bayonne, N. J., 1949-50; Rsch. Engr., Anaconda Wire and Cable Co., Hastings-on-Hudson, N. Y. and Muskegon, Mich., 1950—. Hon. Pos.: Secy., A.I.E.E. Electrical Insulation Committee. Mem.: A.A.A.S.; Am. Ceramic Soc.; Natl. Rsch. Coun.; Western Mich. Chem. Soc.; Phi Kappa Phi; Sigma Xi. Contbr. to: Electrical Mfg.; Electrical Engrng.; Applied Physics; Chem. Abstracts; Industrial and Engrng. Chem.; Insulation. Areas of Rsch.: Electrical Insulation for Motors, Transformers, Solenoids, etc.; Especially for Higher Temperatures; Thermal Endurance of Magnet Wire.

PENICK, George Dial (M.D.), Assoc. Prof. of Pathol., Univ. of N. C. School of Medicine, Chapel Hill, N. C. Home Add.: Coker Dr., Chapel Hill, N. C. PATHOLOGY. b. Columbia, S. C., Sept. 4, 1922. s. Rt. Rev. Edwin A. and Carolina I. (Dial) P. Edn.: B.S., Univ. of N. C., 1944; M.D., Harvard Med. Schl., 1946. m. Marguerite M. Worth, Feb. 8, 1947. c.: George D., Jr.; H. Worth; David W.; Anderson H.; Marguerite W., Jr. Exp.: Instr., Univ. of N. C. Schl. of Med., 1949-53; Asst. Prof., ibid., 1953-56; Assoc. Prof., ibid., 1956—. Hon. Pos.: Markle Scholar in Medical Sci., 1953-58. Mem.: Am. Soc. for Exptl. Pathol.; Soc. for Exptl. Biol. and Med.; Sigma Xi; Am. Assn. of Pathol. and Bacteriol. Contbr. to: Fed. Proc.; Am. Jour. Physiol.; Proc. Soc. Exptl. Biol. Med.; Am. Jour. Pathol.; Current Therapy; USAF Schl. of Aviation Med.; Jour. Am. Med. Assn.; Am. Jour. Med. Sci. Serv. Rec.: Med. Corp, Army of U. S., 1947-49. Gen. Int.: Dir. of Thrombosis and Hemorrhage Research Program-Project, Univ. of N. C. Areas of Rsch.: Hemorrhagic and Thrombotic Diseases.



PENNER, Stanford S(olomon), (Ph.D.), Prof. of Jet Propulsion, Calif. Inst. of Technol., Pasadena, Calif. Home Add.: 2008

Oakdale St., Pasadena, Calif. APPLIED SCIENCE AND ENGINEERING. b. Germany, July 5, 1921. s. Henry and Regina (Saal) P. Edn.: B.S., Union Coll., 1942; M.S., Univ. of Wis., 1943; Ph.D., ibid., 1946. m. Beverly Preston, Dec. 20, 1942. c.: Merilynn Jean; Robert Clark. Exp.: Rsch. Assoc., Allegany Ballistics Lab., Cumberland, Md., 1944-45; Rsch. Asosc., Standard Oil Development Co., Esso Rsch. Lab., Elizabeth, N. J., 1946; Sr. Rsch. Engr., Jet Propulsion Lab., Calif. Inst. of Technol., 1947-50; Asst. Prof. of Jet Propulsion Lab., Calif. Inst. of Technol., 1950-53; Assoc. Prof., ibid., 1953-57; Prof., ibid., 1957 . Hon. Pos.: U. S. Mem., Advisory Group for Aeronautical Rsch. and Dev., A.G.A.R.D., N.A.T.O. Combustion Panel; Assoc. Editor, Jour. of Chem. Physics; Subcomm. on Combustion, Natl. Advisory Comm. for Aeronautics; Deputy Chmn., A.G.A.R.D., N.A.T.O., Combustion and Propulsion Panel; Consulting Editor, Space Sci. and Technol. Series, Addison-Wesley Publishing Co.; Chmn., A.G.A.R.D. Combustion and Propulsion Panel; Comm. on High Temperature Phenomena, Natl. Acad. of Scis., Natl. Rsch. Coun.; Exec. Comm., A.G.A.R.D. Combustion and Propulsion Panel; Chmn., Am. Rocket Soc. Propellants and Combustion Committee. Editor, Jour. of Quantitative Spectroscopy and Radiative Transfer. Mem.: A.C.S.; Am. Phys. Soc.; Am. Rocket Soc.; Internatl. Combustion Inst., A.A.A.S.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. of Chem. Physics; Jour. of Applied Physics; Jour. of Am. Rocket Soc.; Jour. of Optical Soc. of Am. Areas of Rsch.: Combustion and Propulsion Problems, Radiant Heat Transfer, Spectroscopic Investigations, Fundamental Studies in Chem. Physics.

PENNINGTON, William Herbert (Mr.), Asst. Mgr. for Technical Operations, N. Y. Office, U. S. Atomic Energy Commission, 376 Hudson St., N. Y. 14, N. Y. Home Add.: 3 Coursen Way, Morris Plains, N. J. NUCLEAR ENGINEERING, CHEMISTRY. b. Onida, S. Dak., July 19, 1919. s. Rohe V. and Stella Mae (Eller) P. Edn.: B.S., Franklin and Marshall Coll., 1940. m. Betty Jane Throckmorton, Oct. 2, 1943. c.: Stephen Phillip; W. H., Jr.; Susan Lee. Exp.: Chemist, E. I. duPont deNemours, Carneys Point, N. J., 1940-43; Sr. Engr., Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1943-51; Engr., Phillips Pet. Co., Idaho Falls, Idaho, 1951-55; Advisory Engr., Westinghouse Elec. Co., Pittsburgh, Pa., 1955-57; Scientific Repr., U.S.A.E.C., Tokyo, Japan, 1957-61; Asst. Mgr. for Technical Operations, N. Y. Office, U. S. Atomic Energy Commission, N. Y., N. Y., 1961—. Mem.: Am. Chem. Soc.; Am. Nuclear Soc.; Am. Assn. Adv. Sci.; Alpha Kappa Pi; Kiwanis; Boy Scouts of Am. Areas of Rsch.: Nuclear Reactors; Nuclear Fuels; Chemical Reprocessing of Nuclear Fuels; Radioisotope Production, Processing and Utilization.

PENNINGTON, William Alvin (Ph.D.), Prof. Chemical Engrng. Univ. of Md., College Park, Md. Home Add.: 7025 Longwood Dr., Bethesda 14, Md. METALLURGY, CHEMISTRY AND CHEMICAL ENGINEERING. b. Halls, Tenn., Dec. 9, 1904. s. Marvin and Minnie (Abernathy) P. Edn.: B.S., Union Univ., 1925; Ph.D., Iowa State Univ., 1933. Hon. Deg.: D.Sc., Union Univ., 1962. m. Jane Myer Mainfort of Ringgold, Va., May 25, 1954. d. Fred and Ida Myer. c.: Carolyn Palmer (by former marriage). Exp.: Grad. Asst., Iowa State Univ., 1929-33; Instr., Dept. of Chem., ibid., 1933-34; Hd., Dept. of Math., Union Univ., 1934-35; Rsch. Engr., Armco Steel Co., 1935-40; Indusl. Fellow, Mellon Inst., 1940-44; Chf. Chem. and Metallurgist, Carrier Corp., 1944-54; Prof. Metallurgy, Univ. of Md., 1954-62; Prof. of Chem. Engrng., ibid., 1962—. Hon. Pos.: Chmn., Publications Comm., Am. Soc. for Metals, 1951; Chmn., A.S.M. Finance Comm., 1953-55; Natl. Treas., A.S.M., 1935-55; Vice Pres., ibid., 1959-60; Pres., ibid., 1960-61; Chmn., 9 A.S.M. Comm. on Definitions, 1956-61; Chmn., 6 A.S.M. Comm. on Casting Design Manual; Chmn., Comm. on Pure Metals, 1957-61; Chmn., Comm. on Selection of Mild Steel for Corrosion Service, 1957-61. Mem.: Am. Soc. Metals; Am. Chem. Soc.; Am. Inst. Chem. (life fellow); Am. Inst. Chem. Engrs.; A.A.A.S. (fellow); Am. Soc. Engrng. Edn.; N. Y. Acad. Scis.; Wash. Acad. of Scis.; A.A.U.P.; Alpha Chi Sigma; Phi Lambda Upsilon; Sigma Xi; Alpha Sigma Mu; (Hon. Mem.) Natl. Pres., 1960-61; Mem. Bd. of Trustees, Am. Soc. Metals Found. Edn. and Rsch., 1960-65; Pres., ibid., 1961-62; Bd. of Governors, Acta Metallurgica, 1962-64; Mason. Contbr. to: Trans., A.S.M.; A.S.M. Handbook, Refrig. Engrng.; Ind. Engrng. Chem.; Anal. Chem.; Mod. Refrig.; World Refrig.; Air Conditioning, Heating, and Ventilating; The Encyc. of Chemistry. Ph.D. Dissertation: The Determination of the Rates of Graphitization at 925° in Tungsten-Manganese White Cast Iron. Travel: Can.; England; Europe. Gen. Int.: Awarded Henry Marion Howe Medal (A.S.M.), 1947; Sauveur Award, Boston Chapt., A.S.M., 1962; Inventor of Carrene-7, the first commercial azeotropic refrigerant. Hobbies: Handball; Gardening. Listed in: W.W. in the East; W.W. in —and What; Internatl. Yearbook and Statesman's Who's Who.

PEPE, Salvatore Aloysius (M.D.), Otolaryngologist, 1519 W. State St., Trenton, N. J. OTORHINOLARYNGOLOGY PLASTIC SURGERY. b. Trenton, N. J., Feb. 8, 1910. s. Raffaele and Serafina (Lorente) P. Edn.: B.S., Seton Hall Univ., 1933; M.D., Royal Univ. of Rome, Italy, 1937. m. Mary Caporusso, 1941. c.: Salvatore A., Jr. Exp.: Otolaryngologist, Grad. Schl. of Med., Univ. of Pa., 1948-49; Resident Otolaryngology, Grad. Hosp., ibid., 1949-50; Assoc. Staff, St. Francis Hosp., Trenton, N. J., 1953-62. Mem.: Am. Coll. of Surgeons, Fellow; Internatl. Coll. of Surgeons, Fellow; Am. Acad. of Opatholnology and Otolaryngology, Fellow; The N. J. Acad. of Ophthalmology and Otolaryngology, Fellow; Air Force Assn.; The Reserve Officers Assn.; Assn. of Military Surgeons of the U. S.; Veterans of Foreign Wars. Serv. Rec.: War Serv., 1940-45; 1950-52, Reserve Force Serv., 1940—; Col., USAF and Consultant, Dover Air Force Hosp., Dover Dela. Gen. Int.: Diploma in Hospital Administration in the Military Service, 1961. Areas of Specialized Knowledge: Diseases of Ear, Nose, Throat and Surgery of Ear, Nose, Throat; Military Hospital Administration.

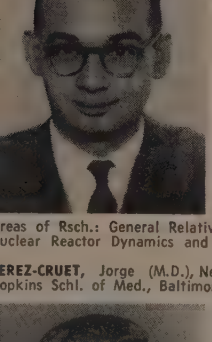
PEPER, Henry, Jr. (Mr.), Project Leader, Harris Rsch. Labs., Washington, D. C. Home Add.: Chevy Chase, Md. SURFACE AND COLLOID CHEMISTRY. b. New York, N. Y., May 18, 1922. s. Henry, Sr. and Meta (Huneke) P. Edn.: B.S., Univ. of Cincinnati, 1949; M.A., Williams Coll., 1951. m. Jean Buckley, 1952. c.: Henry III; Sam Hayes. Exp.: Asst., Williams Coll., 1949-51; Sr. Chemist, Lever Bros. Co., Edgewater, N. J., 1951-58; Project Leader, Harris Rsch. Labs., Washington, D. C., 1958—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; Am. Assn. Textile Chemical Colorists; A.A.A.S.; Beta Theta Pi; Phi Lambda Upsilon. Contbr. to: Jour. of Colloid Sci.; Jour. of Am. Oil Chemist's Soc. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Monomolecular Films; Industrial Surface and Colloid Chemistry.

PEPPER, Paul M(ilton) (Ph.D.), Asst. to the Dir., Ohio State Univ. Rsch. Fdtn., 1314 Kinnear Rd., Columbus 12, Ohio; Prof. of Indusl. Engrng., Ohio State Univ., Columbus 10, Ohio; Rsch. Scientist, Autometric Corp., 5626 N. High St., Worthington, O. Home Add.: 185 Rustic Pl., Columbus 14, O. MATHEMATICS. b. Kendallville, Ind., May 16, 1909. s. Byron J. and Louisa May (Dirrim) P. Edn.: A.B., Ind. Univ., 1931; A.M., ibid., 1932; Ph.D., Univ. of Cincinnati, 1937. m. Nellie M. Jacqmain, June 9, 1934. c.: Ronald P. Exp.: Taft Tchng. Fellow, Univ. of Cincinnati, 1932-37; Instr. in Math., ibid., 1937-38; Instr., Asst. Prof., Assoc. Prof. of Math., Univ. of Notre Dame, 1938-49; Assoc. Prof., Indusl. Engrng., Ohio State Univ., 1949-51; Assoc. Prof., ibid., 1956-60; Prof., ibid., 1960—; Assoc. Prof. of Math., ibid., 1953-59; Asst. to the Dir., Ohio State Univ. Rsch. Fdtn., 1951-53, 1957—; Dir., Mapping and Charting Rsch. Lab., Ohio State Univ., 1953-57; Rsch. Scientist, Autometric Corp., 1959— (on leave from Ohio State Univ. Rsch. Fdtn., 1959-60); Rsch. Fellow in Aeronautical Engrng., Harvard Univ., summer, 1947; Consult. to Air Force, Autometric Corp. and others, 1947—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; A.A.A.S. (Fellow); Am. Soc. of Tool and Mfg. Engrs.; Am. Soc. Engrng. Edn.; A.A.U.P.; Soc. Indusl. and Applied Math.; Am. Soc. of Photogrammetry; Am. Geophysical Union; Am. Ordnance Assn.; Natl. Geog. Soc.; Am. Astronautical Soc.; Sigma Xi; Phi Beta Kappa; Alpha Pi Mu; and others. Contbr. to: Reports of a Math. Colloquium; Annales Scientifiques de l'Ecole Normale Superieure; Proc. of Am. Math. Soc.; Practical Math.; Jour. Applied Physics; Photogrammetric Engrng.; and others. Areas of Rsch.: Mathematics, Geodesy, Photogrammetry; Indusl. Programming.

PEREIRA, John Winston (M.D.), Chief, Laboratory Serv., Kaiser ound. Hosp., 9961 Sierra Ave., Fontana, Calif. PATHOLOGY.

b. Lisbon, Portugal, Dec. 18, 1920. s. Joao Jose Farinha and Winifred Christina (Terry) P. Edn.: F.Q.N., Univ. of Lisbon, Faculty of Sci., 1942; M.D., Univ. of Lisbon, Fac. of Med., 1948. m. Lois Lee, Aug. 27, 1950. Exp.: Estagiario, Hospitais Civis de Lisboa, Lisbon, Portugal, 1948-49; Intern, Hollywood Presbyterian Hosp., L. A., 1949-50; Estagiario, Instituto Portugues de Oncologia, Lisbon, Port., 1950-51; Resident in Pathology, St. Lukes Hosp., San Francisco, 1951-53; Staff Pathologist, Armed Forces Inst. of Pathol., Washington, D. C., 1954-59; Pathologist, St. Elizabeths Hosp., Washington, D. C., 1959-61; Chief, Lab. Serv., Kaiser Found. Hosp., Fontana, Calif., 961—. Hon. Pos.: Diplomate, Am. Bd. of Pathol. in Pathologic natomy and Clinical Pathol. Mem.: Fellow, Coll. of Am. Pahologists; Fellow, Am. Soc. of Clinical Pathol.; Washington Soc. f Pathol.; Internatl. Acad. of Pathol.; District of Col. Med. oc.; Am. Med. Assn.; Assn. of Military Surgeons; Am. Med. Writers Assn.; Am. Heart Assn.; Am. Assn. Adv. Sci. Contbr. o: Med. Annals of the District of Columbia. Serv. Rec.: Portuuese Army, 1941-43. Areas of Rsch.: Dermopathology, Hematolgy, Cardiovascular Pathology.

PERES, Asher (Ph.D.), Assoc. Prof., Israel Inst. of Tech., Haifa, srael; Physics Dept., Syracuse Univ., Syracuse, N. Y. Home Add.: 56 Netiv Hen, Haifa, Israel. THEORETICAL PHYSICS. b. Beaulieu, France, Jan. 30, 1934. s. Salomon Pressman and Salomea (Schapira) P. Edn.: B.S., Israel Inst. of Tech., 1956; Ingenieur Genie Atomique, Inst. Nat. Sci. Techniques Nucleaires, Saclay, France, 1957; Ph.D., Israel Inst. of Tech., 1959. m. Aviva Grunspan, Aug. 24, 1958. c.: Lydia. Exp.: Visiting Rsch. Assoc., Syracuse Univ., 1962; Visiting Rsch. Assoc., Princeton Univ., 1961; Staff Mem., Israel Inst. of Tech., 1957—. Mem.: Israel Phys. Soc. Contbr. to: Ann. Phys.; Bull. Res. Council Israel; Compt. Rend. Acad. Sci.; Nuovo Cim.; Phys. Rev.; Phys. Rev. Letters; Prog. Theor. Phys.; Jour. Math. Mech.; Math. Rev. reas of Rsch.: General Relativity Theory, Quantum Field Theory, uclear Reactor Dynamics and Control.

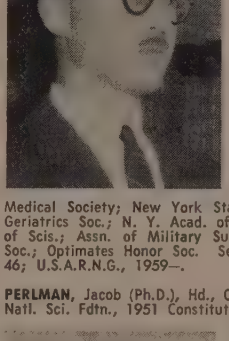


PEREZ-CRUET, Jorge (M.D.), Neuropsychiatry, Pavlovian Lab., Johns opkins Schl. of Med., Baltimore 5, Md. Home Add.: 525 Walker Ave., Baltimore 12, Md. NEUROPSYCHIATRY AND PSYCHOPHYSIOLOGY. b. Santurce, Puerto Rico, Oct. 15, 1931. s. Jose M. Perez-Vicente (dec.) and Emilia Cruet Burgos. Edn.: B.S., Univ. of P.R. (magna cum laude); M.D., ibid., Schl. of Med., 1957. m. Agnese Heimendinger, Oct. 4, 1958. c.: Antonio; Miguel Angel. Exp.: Rotating Intern, Michael Reese Hosp., Chicago, Ill., 1957-58; Fellow in Psychiatry, Johns Hopkins Hosp., Baltimore, Md., 1958-60; Collaborator at the Pavlovian Lab., Johns Hopkins Med. Schl., 1955, 1958-60 and the Psychophysiological Lab., Perry Point V.A. Hosp., Md., 1959-60; Neuropsychiatrist, Walter Reed Army Inst. of Rsch., Wash., D. C., 1960-62; Officer-Charge Psychosomatic Lab., Walter Reed Gen. Hosp., 1961-62; avlovian Lab., Johns Hopkins School of Medicine, 1962—. em.: N. Y. Acad. of Sci.; A.A.A.S.; Pavlovian Soc.; A.M.A.; sychophysiological Soc.; D. C. Chapter Am. Fed. Clin Rsch. ontbr. to: Bull. Assn. Med. P. R.; Fed. Proc.; Bull. Johns Hopns Hosp.; J. Exp. Anal. of Behavior; EPA and Pavlovian Soc. eetings. Serv. Rec.: Army Medical Corps, 1960-62. Gen. Int.: iz-Arnau Award, Coronas Award, Manuel Diaz-Garcia Award; plomate National Boards of Medical Examiners. Areas of Rsch.: europhysiology; Conditioning; Psychophysiology; Psychiatry; Neulogy and Cardiovascular Research.

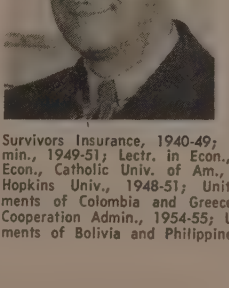
PERKINSON, Jesse Dean, Jr. (Ph.D.), Dir., Dept. of Scientific ffairs, Exec. Secy., Inter-Am. Nuclear Energy Comm., Pan Am. nion, Washington 6, D. C. Home Add.: 4510 Drummond Ave., hevy Chase 15, Md. BIOCHEMISTRY, SCIENCE ADMINISTRATION. Etowah, Tenn., Oct. 24, 1914. s. Jesse D., Sr. and Clara edell) P. Edn.: B.S., Univ. of Tenn., 1939; M.S., Univ. of ochester, 1942; Ph.D., ibid., 1943. m. Dorothy Brumby, Aug., 943. c.: Clara Bedell; Lula Brumby; Henrietta Palfrey. Exp.: llow, Univ. of Rochester, 1939-42; Rsch. Asst., ibid., 1942-43; Rsch. Assoc., Univ. of Ga., 1946-49; Sr. Scientist, Oak Ridge Inst. of Nuclear Studies, Oak Ridge, Tenn., 1949-52; Prof. of Biochem., Univ. of Tenn., 1952-57; Chf., Atomic Energy Comm., Washington, D. C., 1957-58; Dir. of Sci. Development, Exec. Secy., Inter-Am. Nuclear Energy Comm., Pan Am. Union, Washington, D. C., 1958—. Hon. Pos.: Bd. of Dirs., Les Passes Hosp., Consultant, Oak Ridge Inst. of Nuclear Studies; Consultant, Univ. of Fla., Atomic Energy Comm. Mem.: Alpha Kappa Sigma; Lambda Chi; Radiation Rsch. Soc.; Sigma Xi; A.C.S.; A.A.A.S., (Fellow); Cosmos Club. Contbr. to: Jour. of Biological Chemists; Jour. A.C.S.; Radiology; Radiation Rsch.; Am. Jour. of Physiol.; Cancer Rsch. Serv. Rec.: U. S. Naval Reserve, March, 1944-April, 1946. Areas of Rsch.: Research Administration, Science and Engineering Research and Administration in Latin America; Effects of Radiation on Enzyme Systems.

PERLIN, Seymour (M.D.), Chf., Div. of Psychiatry, Montefiore Hosp., New York 67, N. Y. Home Add.: 4555 Henry Hudson Parkway, Riverdale 71, N. Y. PSYCHIATRY. b. Passaic, N. J., Sept. 27, 1925. s. Samuel and Fanny G. (Gurewitz) P. Edn.: B.A., Princeton Univ., 1946; M.D., Columbia Univ., Coll. of Phys. and Surg., 1950. m. Ruth Rudolph, Aug. 28, 1958. c.: Jonathan. Exp.: Intern, Univ. of Mich. Hosp., Ann Arbor, Mich., 1951-52; Residency, N. Y. St. Psychiatric Inst., Manhattan St. Hosp., 1950-52; Asst. Physician, Presbyterian Hosp., N. Y., N. Y., 1954; Asst. Neuropsychiatrist, Home for Aged and Infirm Hebrews, N. Y., N. Y., 1954; Acting Chf., Psychosomatic Serv., N.I.M.H., Bethesda, Md., 1955; Chf., Sect. on Psychiatry, Lab. of Clin. Sci., ibid., 1955-59; Fellow, Ctr. for Advanced Study in the Behavioral Scis., Stanford, Calif., 1959; Chf., Div. of Psychiatry, Montefiore Hosp., N. Y., N. Y., 1960—. Mem.: A.A.A.S.; Am. Bd. of Psychiatry and Neurol.; Am. Psychiatric Assn., Fellow; Am. Psychosomatic Assn.; Assn. for Rsch. in Nervous and Mental Disease; Bronx Co. Soc. of Mental Health; Am. Psychiatric Assn., Bronx, N. Y. Dist. Br.; Gerontological Soc., Fellow; Med. Soc. of Co. of Bronx; Med. Soc. of St. of N. Y.; N. Y. Acad. of Med., Fellow; N. Y. Acad. of Scis.; Wash. Psychoanalytic Soc.; World Fed. for Mental Health; Phi Beta Kappa; Sigma Xi. Contbr. to: Annals, N. Y. Acad. of Sci.; A.M.A. Arch. Neurol. and Psychia.; Am. Jour. of Psychiatry; Geriatrics; Psychiatry; Arch. of Gen. Psychiatry. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: The Analysis of Differential Hospitalization for Psychiatric Patients; Social and Community Psychiatry.

PERLMAN, Bernard Benjamin (M.D.), Neurosurgeon, 47 E. 67th St., N. Y. 21, N. Y. Home Add.: 64-34 102nd St., Forest Hills 74, N. Y. NEUROSURGERY. b. Brooklyn, N. Y., May 23, 1927. s. David and Lillian (Reitman) P. Edn.: B.S., L. I. Univ., 1949; M.D., St. Univ. of N. Y., Coll. of Med., 1955. m. Trude Schwarz, **June 28, 1953.** c.: David; Elizabeth; Linda. Exp.: Surgical Interneship, St. John's Episcopal Hosp., Brooklyn, N. Y., 1955-56; Neurosurgical Residency, Bronx Veterans Hosp., 1956-61; Neurosurgeon, N. Y. C., 1961—; Hosp. Appointments: Mount Sinai; Hosp. for Joint Diseases; Jamaica; Flushing; Booth Memorial; Queens Hosp. Center; Kings County; St. John's Episcopal; St. Anthony's Hosp., Queeens; Harlem Eye and Ear. Hon. Pos.: Diplomate, Natl. Boards (D-NB). Mem.: Queens Co. Medical Society; New York State Medical Society; A.M.A.; Am. Geriatrics Soc.; N. Y. Acad. of Med.; A.A.A.S.; New York Acad. of Scis.; Assn. of Military Surgeons; Anatomy-Physiology Honor Soc.; Optimates Honor Soc. Serv. Rec.: Merchant Marine, 1944-46; U.S.A.R.N.G., 1959—.

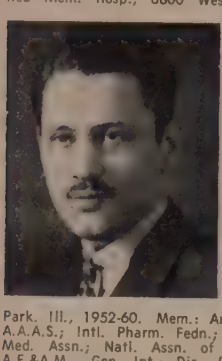


PERLMAN, Jacob (Ph.D.), Hd., Office of Econ. and Stattist. Studs., Natl. Sci. Fdtn., 1951 Constitution Ave., Wash., D. C. Home Add.: 9710 Singleton Dr., Bethesda 14, Md. ECONOMICS. b. Byelostock, Poland, May 10, 1898. s. Mark and Pauline (Blankstein) P. Edn.: B.A., Univ. of Wis., 1919; M.A., ibid., 1922; Ph.D., ibid., 1926. m. Helen Aronson, Apr. 3, 1935. c.: Matthew S.; Judith S. Exp.: Statistician, N. Y. State Labor Dept., 1919-21; Instr. of Econ., Univ. of Wis., 1921-25; Asst. Prof. of Econ., Northwestern Univ., 1926-27; Assoc. Prof. of Sociol., Univ. of N. D., 1928-33; Staff Mem., Com. on Government Stat. and Adv. Com. to U. S. Secy. of Labor, 1933-34; Chf., Wage Stat. Div., U. S. Bur. of Labor Stat., 1934-40; Chf. Economist and Asst. Dir., Analysis Div., Fed. Bur. of Old Age and Survivors Insurance, 1940-49; Liaison Officer, Soc. Security Admin., 1949-51; Lectr. in Econ., Amer. Univ., 1936-48; Lectr. in Econ., Catholic Univ. of Am., 1941-51; Lectr. in Econ., Johns Hopkins Univ., 1948-51; United Nations Adviser to Governments of Colombia and Greece, 1951-54; Economist, Internatl. Cooperation Admin., 1954-55; United Nations Adviser to Governments of Bolivia and Philippines, 1955-56; Study Dir., Office of



Spec. Studies, Natl. Sci. Fdtn., 1956-57; Hd., Office of Economic and Statistical Studies, ibid., 1957—. Hon. Pos.: Fellow, Soc. Sci. Rsch. Coun., 1927-28. Mem.: Am. Econ. Assn.; Am. Stat. Assn.; Artus; Alpha Phi Zeta. War Rec.: U. S. Army, W.W. I. Areas of Rsch.: Statistical Organization, Statistical Analysis, Economic Development, Rsch. and Devel. and its Impacts, etc.

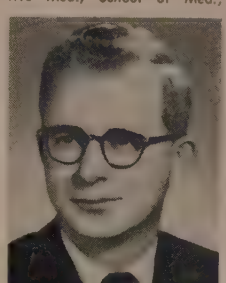
PERLMAN, Kalman Isadore (Mr.), Dir., Dept. of Pharmacy, Gottlieb Mem. Hosp., 8800 West North Ave., Melrose Park, Ill. Home Add.: 1748 Albion Ave., Chicago 26, Ill. HOSPITAL PHARMACY AND CHEMOTHERAPEUTICS. b. Chicago, Ill., May 27, 1915. s. Morris and Mary (Weiner) P. Edn.: B.S., Univ. of Ill., Coll. of Pharm., 1940; B.B.A., Northwestern Univ. Schl. of Bus., Evening Div., 1962. m. Ida Faye Bauer, July 2, 1939. Exp.: Pharmacist, Various Retail Drug Stores, 1932-44; Civilian Pharmacist with U. S. Army, 1944-46; Asst. Chief Pharmacist, Michael Reese Hosp., Chicago, 1946-47; Chief Pharmacist, Evangelical Hosp., Chicago, 1947-48; Owner and Operator, Retail Drug Store, Chicago, 1948-54; Dir., Dept. of Pharmacy, Highland Park Hosp. Found., Highland Park, Ill., 1952-60. Mem.: Am. Soc. Hosp. Pharmacists; Fellow, A.A.A.S.; Intl. Pharm. Fedn.; Am. Pharm. Assn.; Affiliate, Am. Med. Assn.; Natl. Assn. of Retail Druggists; C.R.D.A.; P.M., A.F.&A.M. Gen. Int.: Dir., Dept. of Pharmacy, Gottlieb Mem. Hosp., 1960—; Licensed in Ill., Ariz. and Calif. Areas of Rsch.: Pharmacodynamics of Toxicides; Radioisotope Scanning.



PERLMAN, Sol (Mr.), Staff Engr., U. S. Army Signals Radio Propagation Agency, Fort Monmouth, N. J. Home Add.: 174 Franklin Ave., Long Branch, N. J. RADIO COMMUNICATION, RADIO PROPAGATION AND ANTENNA THEORY. b. Brooklyn, N. Y., Apr. 22, 1906. s. Alexander and Anna (Marcus) P. Edn.: E.E., Polytechnic Inst. of Brooklyn, 1929; M.E.E., ibid., 1947. m. Judith Katz, Aug. 1, 1937. c.: Janet; David. Exp.: Electronic Engr., Mfgrs. Machine & Tool Co., Mt. Vernon, N. Y., 1947-49; Branch Chf., Rome Air Development Ctr., Griffiss A.F.B., Rome, N. Y., 1949-56; Div. Chief, U. S. Army Signals Radio Propagation Agency, Fort Monmouth, N. J., 1956-59; Staff Engr., ibid., 1959—. Mem.: Inst. of Radio Engrs.; Am. Inst. of Electrical Engrs.; Am. Geophysical Union. Contbr. to: I.R.E. Natl. Convention Record; I.R.E. Trans. on Communication Systems; I.R.E. Trans. on Military Electronics. Areas of Rsch.: Radio Propagation, Antenna Theory, Radio Communication and Electronic Circuitry.

PERRI, Joseph G. (Dr. Eng. Sc.), Staff Consultant, Burns and Roe, Inc., 160 W. Broadway, N. Y. 13, N. Y. Home Add.: c/o Arch. Gaetano Pagnotta, 2437 Benson Ave., Brooklyn 14, N. Y. ENGINEERING SCIENCE (VIBRATIONS, STABILITY OF HYPERSTATIC SYSTEMS AND METHODS OF ANALYSIS, SOIL MECHANICS, APPLIED PHYSICS AND MATHEMATICS). b. Aiello Calabro, Italy, July 4, 1907. s. Louis and Mary (Buffone) P. (both dec.). Edn.: B.C.E., Polytechnic Inst. of Brooklyn, 1937; M.C.E., ibid., 1939; Eng. Sc. Dr., N. Y. Univ., 1948; Dott. Ing., Univ. of Rome, Italy, 1956. Exp.: Asst. Head, The M. W. Kellogg Co., N. Y. C., 1941-49; Chf. Engr., Praeger-Maguire, N. Y. C., 1950-52; Chf. Engr., Ross and Co., N. Y. C., 1955; Tech. Consultant, Vitro Engrng. Co., N. Y. C., 1952-55; Rsch. F., Univ. of Rome, Italy, 1955-56; Tech. Consultant, Vitro Engrng. Co., N. Y. C., 1958-60; Tech. Consultant, Burns and Roe, Inc., N. Y. C., 1960-62; Staff Consultant, ibid., 1962 . Mem.: Am. Soc. of Civil Engrs., Fellow; A.A.A.S.; Am. Concrete Inst.; Am. Inst. of Mamt. Author: Vibration of Compressor Foundations, 1945; Modified Method of Moment Distribution for Analyzing Compression Members as Parts of Rigid Frames, 1948; Color in Science and in Art, 1957; Authoclave Explosion Investigation and Study, 1961. Contbr. to: Proc. and Trans. of A.S.C.E.; Column Rsch. Coun. Engrng. Fndn. Publns.; Engrng. Companies Interim Reports. Service Record: Italian Military Academy, 1928. Areas of Rsch.: Engineering Hyperstatic Confiurations; Stability of Ridig Frames; Vibration of Machinery Suppor's; Vibration of Structures; Scientific Approach in the Use of Color; Soil Mechanics; Pressure Vessels Configurations; Physics; Lunar Simulation Structurer; Explosion Investigations

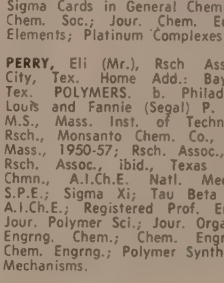
PERRIN, Edward Burton (Ph.D.), Asst. Prof., Dept. of Preventive Med., School of Med., Univ. of Wash., Seattle, Wash. Home Add.: 72 Foxboro Drive, Pitcairn, Pa. BIOSTATISTICS. b. Greensboro, Vt., Sept. 19, 1931. s. J. Newton and Dorothy (Willey) P. Edn.: B.A., Middlebury Coll., 1953; M.A., Columbia Univ., 1955; Ph.D., Stanford Univ., 1960. m. Carol A. Hendricks, Aug. 18, 1956. c.: Jenifer A. Exp.: Asst. Prof., Grad. Schl. of Publ. Health, Univ. of Pittsburgh, 1959-62; Asst Prof., Dept. of Preventive Med., Schl. of Med. Univ. of Wash., 1962—. Mem.: Am. Statistical Assn.; Biometrics Soc.; Inst. of Math. Statistics; Am. Assn. for Adv. of Sci.; Am. Publ. Health Assn.; Phi Beta Kappa; Sigma Xi; Theta Chi. Gen. Int. Fulbright Scholar, Edinburgh Univ., 1953-54. Areas of Rsch.: Quantitative Methods in the Biological and Medical Sciences.



PERROS, Theodore Peter (Ph.D.), Prof., Geo. Wash. Univ., Wash. 6, D. C. Home Add.: 5825 3rd Pl., N.W., Wash. 11, D. C. INORGANIC CHEMISTRY. b. Cumberland, Md., Aug. 16, 1922. s. Peter G. and Christina (Sioris) P. Edn.: B.S., Geo. Wash. Univ., 1946; M.S., ibid., 1949; Ph.D., ibid., 1952; NSF Fellow, Munich, 1959. Exp.: Rsch. Analyst, Naval Ord. Lab., White Oak, Md., 1943-45; Instr., Geo. Wash. Univ., 1948-52; Asst. Prof., ibid., 1952-56; Assoc. Prof., ibid., 1956-60; Prof., ibid., 1961—; Consult., Naval Ord. Lab., White Oak, Md., 1952-56. Mem.: Am. Chem. Soc.; Gesellschaft Deutscher Chemiker; Philosophical Soc. of Wash.; Wash. Acad. of Sci.; Alpha Chi Sigma; Sigma Xi. Co-Author: Experiments in General Chemistry, 1957; Sigma Cards in General Chemistry, 1960. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Edn. Areas of Rsch.: Rare Earth Elements; Platinum Complexes with Fluorine.

PERRY, Eli (Mr.), Rsch Assoc., Monsanto Chem. Co., Texas City, Tex. Home Add.: Bayou Shore Apt. #16, Galveston, Tex. POLYMERS. b. Philadelphia, Pa., Dec. 28, 1920. s. Louis and Fannie (Segal) P. Edn.: B.S., Univ. of Pa., 1942; M.S., Mass. Inst. of Technol., 1947. Exp.: Asst. Dir. of Rsch., Monsanto Chem. Co., Texas City, Tex. and Springfield, Mass., 1950-57; Rsch. Assoc., ibid., Zurich, Switzerland, 1960; Rsch. Assoc., ibid., Texas City, Tex., 1957—. Hon. Pos.: Chmn., A.I.Ch.E. Natl. Meeting. Mem.: A.C.S.; A.A.A.S.; S.P.E.; Sigma Xi; Tau Beta Pi; Pi Mu Epsilon; Sigma Tau; A.I.Ch.E.; Registered Prof. Engr., State of Tex. Contbr. to: Jour. Polymer Sci.; Jour. Organic Chem.; Jour. A.C.S.; Ind. and Engrng. Chem.; Chem. Engrng. Progress. Areas of Rsch.: Chem. Engrng.; Polymer Synthesis; Polymerization; Catalysts and Mechanisms.

PERRY, James Whitney (Mr.), Prof. Systems Engrng. Dept., Univ. of Arizona, Tucson, Ariz. Home Add.: 6702 Nasumpta Drive, Tuscon, Arizona. NON-NUMERICAL APPLICATIONS OF COMPUTERS. b. Grand Falls, N. B., Canada, Oct. 21, 1907. s. Herbert Judson and Lettie Leora (Andrus) P. Edn.: B.S., N. C. State, 1927; M.S., ibid., 1928; S.M., Mass. Inst. of Technol., 1931. m. Ruth Weber, Sept. 10, 1934. c.: Krista Ann; Marla Jean. Exp.: Rsch. Chemist, Natl. Anitine Div., Allied Chem., Buffalo, N. Y., 1933-42; Ballistician, Aberdeen Proving Ground, Md., 1942-45; Library Fellow, and Assoc. Prof., Mass. Inst. of Technol., Cambridge, Mass., 1945-52; Hd., Scientific Literature, Bjorksten Rsch. Labs., Madison, Wis., 1952-53; Consultant, Battelle Memorial Inst., Columbus, Ohio, 1953-55; Dir., Center for Documentation and Communication Rsch., Western Reserve Univ., Cleveland, Ohio, 1955-60; Prof., Systems Engrng. Dept., Univ. of Arizona, 1960—. Hon. Pos.: Chmn., Div. of Chem. Literature, Am. Chem. Soc., 1951; Pres., Am. Documentation Inst., 1957; Chmn., Comm. on Punched Cards, Later Comm. on Scientific Aids to Literature Searching, Am. Chem. Soc., 1947-54; Elected Hon. Fellow, Am. Inst. of Chemists, 1960. Mem.: Am. Inst. of Chemists; Am. Ordnance Assn.; Am. Soc. for Metals; Assn. of Tech. Writers and Editors; Am. Chem. Soc.; Modern Language Assn.; N. J. Law Inst.; Special Libraries Assn.; Assn. for Computing Machinery; A.A.A.S.; Deutsche Gesellschaft fur Dokumentation; Societe de Chimie Industrielle (Am. Sect.); Nachrichtentechnische Gesellschaft.; Phi Kappa Phi; Chemists Club (N. Y.). Author: Scientific Russian, 1st Ed., 1950; 2nd Ed., 1960. Co-Author: Surface Active Agents: Their Chemistry and Technology, 1949; Machine Literature Searching, 1956; Surface Active Agents and Detergents, Vol. II, 1958; Centralized Information Services, 1958. Co-Editor: Punched Cards: Their Application in Science and Industry, 1st Ed., 1951; 2nd Ed., 1958; Information Systems in Documentation, 1957; Tools for Machine Literature Searching, 1958. Contbr. to: Mem. of Rsch. Team Responsible for First Low-Cost Synthetic Detergent; Headed Development of Machine Searchable Encoded Abstracts in Inventor of Selector for Machine Literature Search-



ng; Developed Direct Methods for Learning Scientific Russian. Areas of Rsch.: Synthetic Detergents; Military Propellants; Scientific and Technical Russian; Non-Numerical Applications of Computers.

ERRY, Rachel Bryant (Mrs.), Oak Ridge Science Club Sponsor, ak Ridge Jr.-Sr. H. S., Orlando, Fla. Home Add.: 237 N. Blvd., DeLand, Fla. TEACHING.

b. Trenton, N. J., July 3, 1931. d. Willard Parker, II and Sarah Ann (Case) P. Edn.: B.S., Stetson Univ., 1952; M.S., ibid., 1953. m. Henry Jackson, June 28, 1962. c.: Donald; Dennis. Exp.: Chemical and Bacteriol., Golden Gift Fruit Co., DeLand, Fla., 1952-53; Sci. Tchr., Lake Placid H. S., Lake Placid, Fla., 1954-55; Asst. Prof. of Biol., Shorter Coll., 1955-57; Anatomy Instr., Ga. Bapt. Hosp., Atlanta, 1957; Biol. Instr., Emory-at-Oxford, 1957-58; Biol. Tchr., Edgewater H. S., Orlando, Fla., 1958-59; Chmn. of Sci. Dept., Oak Ridge Jr.-Sr. H. S., Orlando, Fla., 1959-61; Oak Ridge Sci. Club Sponsor, ibid., 1961—. Hon. Pos.: em., Exec. Comm., Orange Co. Sci. Tchrs. Assn.; Mem., Text ok Edn. Comm.; St. Membership Chmn. for NABT; Regional em. Chmn., Fla. Jr. Acad. of Scis. Mem.: A.A.A.S.; Am. sn. Biol. Tchrs.; Assn of Southeastern Biologists; Audubon c; N.A.S.T.; F.A.S.T.; A.I.B.S.; Fla. Acad. Sci.; Natl. Geographic c. (life mem.); Am. Assn. of Foresters; Fla. Audubon Soc.; n. Museum of Natural History; Central Fla. Museum; Georgia neral Soc.; Beta Beta Beta; Gamma Sigma Epsilon; Phi Delta lta; Sigma Delta Phi. Areas of Rsch.: Chitons of Alligator rbor, Fla., Cladocerans.

RRY, Robert William (Ph.D.), Chf., Re-Entry Sim. Lab., Republic iation Corp., Farmingdale, N. Y. Home Add.: 108 Fairfax Rd., ssapequa, N. Y. ENGINEERING PHYSICS. b. Niagara Falls, Y., Apr. 2, 1921. s. Robert W. and Marie (Hirschle) P. .: B.M.E., Cornell Univ., 1943; M.M.E., ibid., 1947; Ph.D., d., 1951. m. Esther Sheperdson, Apr. 21, 1945. c.: Robert III. Exp.: Rsch. Engr., E. I. Dupont, Wilmington, Del., 50-53; Mgr., Rsch. Branch, ARO, Inc., Tullahoma, Tenn., 1953- Chf., Re-entry Lab., Republic Aviation Corp., Farmingdale, Y., 1959—. Hon. Pos.: N.A.S.A. Rsch. Adv. Comm., 1959-60. m.: A.A.A.S.; Am. Phys. Soc.; Am. Soc. Mech. Engr.; Inst. rospace Scis.; Am. Rocket Soc.; Sigma Xi; Phi Kappa Phi. tbr. to: Jour. of Applied Physics; A.E.D.C. Tech. Reports. v. Rec.: U. S. Merchant Marine, 1944-46. Areas of Rsch.: tl. High-Temperature Gasdynamics.

RRY, Rosa Walker (Mrs.), Instr. of Biol., S. C. State Coll., ngeburg, S. C. Home Add.: 3112 W. 139th St., Robbins, Ill. PARASITOLOGY. b. Chicago, Ill., July 15, 1933. d. George Rial and Marie Odessa (Pilgrim) Walker. Edn.: B.S., St. Augustine's Coll., 1955; M.S., Howard Univ., 1957. m. Nathan Perry, Sept. 3, 1960. Exp.: Instr., Howard Univ., 1957-58; Instr., St. Augustine's Coll., 1958-59; Instr., S. C. St. Coll., 1959—. Mem.: Beta Kappa Chi; Alpha Kappa Mu; A.A.A.S.; Delta Sigma Theta. Contbr. to: A.A.A.S. Jour.; The Am. Museum of Natural Hist. Jour. Gen. Int.: Fellowship, Univ. of Ill., 1960-61. Areas of Rsch.: Caecal Coccidiosis of Chickens; Life Cycle Rsch. with Trichinella Spiralis; Life Cycle Rsch. on Rhabdias Ranae; Cytological Preparations of the Golgi Apparatus.

RYMAN, C. Richard (Ph.D.), Dir., Dept. of Radiol., Mercy ., Pittsburgh 19, Pa. Home Add.: 640 Osage Rd., Pittsburgh 16, Pa. RADIOLOGY AND RADIOBIOLOGY. b. Elliott, Iowa, Sept. 21, 1916. s. Raymond H. and Gertrude (Weir) P. Edn.: B.A., Dartmouth Coll., 1938; M.D., Cornell Univ. Med. Coll., 1942; D.Sc., Univ. of Pa., 1947. m. Charlene Omen, Aug. 23, 1940. c.: Charles Alexander; Richard Weir. Exp.: Asst. Prof., Radiol., Univ. of Pa., 1948-53; Radiologist to Baton Rouge General and Greenwell Springs Hospitals, 1951-52; Dir. of Mercy Schl. of X-ray Technique, Univ. of Pittsburgh, 1952—; Dir., New Philip Murray Radiation Center, ibid., 1954—; Assoc. Prof. of Radiol., ibid., 1956—. Hon. Pos.: Couns., Radiological Soc. of N. Am. Bd. of Dirs., Pa. Radiol. Soc. Mem.: Med. Assn.; Am. Radium Soc.; Am. Roentgen Ray Soc.; Am. of Radiol.; Radiol. Soc. of N. Am.; Soc. of Nuclear Med.; Soc. of Nuclear Med. of Pittsburgh; N. Y. Acad. of Sci.; Sigma Xi; Phi Sigma Kappa. Contbr. to: Am. Jour. of Roentgenology; Radiology; British Jour. of Radiol.; Proc. of the Soc. for Exptl. Biol. and Med. War Rec.: W.W. II. Areas of Rsch.: Fundamental Effects of Radiation Upon Human Tissue; Clinical Radiology; Clinical Use of Radio-active Isotopes in Medicine.

PESCADOR, Josephine Organo (Miss), Head, Therapeutic Dietitian, Youngstown Hosp. Assn., Northside Unit, Youngstown, Ohio. Home Add.: 800 Basilio Street, Sampaloc, Manila, Philippines. FOODS AND NUTRITION. b. Vigan, Ilocos Sur, Philippines, Mar. 19, 1926. d. Andres P. and Carmen (Organo) P. Edn.: B.S., Univ. of Sto. Tomas, Philippines, 1949; M.S., Ore. State Univ., 1959. Exp.: Home Econs. Tchr., Manila Pub. H. S., Philippines, 1953-55; Rsch. Asst., Nutrition, Ore. St. Univ., 1957-59; Dietitian, St. Univ. of Ia., Univ. Hosp., 1960; Hd. Therapeutic Dietitian, Youngstown Hosp. Assn., 1960—. Mem.: Assoc. Mem., Sigma Xi; A.A.A.S.; Am. Dietetic Assn.; Ohio Dietetic Assn. Areas of Rsch.: A Method for Determining Free and Total Cholesterol in the Red Cell and White Cell-Platelet Fractions in 0.4 Milliliters of Human Blood.

PESELNICK, Louis (Ph.D.), Physicist, U. S. Geological Survey, Dept. of Interior, Washington, D. C. Home Add.: 8725 Ewing Dr., Bethesda 14, Md. ELASTIC AND ANELASTIC PROPERTIES OF SOLIDS. b. N. Y. City, Mar. 31, 1924. s. Philip and Etta (Frusin) P. Edn.: B.E.E., Catholic Univ. of Am., 1950; M.S., ibid., 1952; Ph.D., ibid., 1957. m. Eleanora Friedman, Apr. 16, 1961. Exp.: Dir. of Lab., Power Condenser and Electronics Corp., Washington, D. C., 1952-57; Physicist, Physics Dept., Catholic Univ. of Am., 1955-57; Physicist, U. S. Geological Survey, Washington, D. C., 1957—; Lctr., Dept. of Electrical Engrng., Catholic Univ. of Am., 1957-62. Mem.: Acoustical Soc. of Am.; Am. Physical Soc.; Wash. Philosophical Soc.; Am. Geophysical Union; Geological Soc. of Wash.; Tau Beta Pi; Sigma Xi; Rockville Soc. Contbr. to: Jour. of Acoustical Soc. of Am.; Geophysics; Jour. of Geophysical Rsch.; Jour. of Applied Physics. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Ultrasonics, Physical Acoustics, Solid-State Physics (Elasticity).

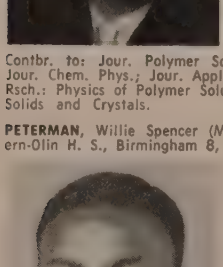
PESSIN, Samuel Benjamin (M.D.), Physician. Home Add.: 1610 N. Prospect Ave., Milwaukee 2, Wis. PATHOLOGY. b. Russia, Feb. 10, 1900. s. Samuel and Sarah Lea (Aidinoff) P. Edn.: M.D., Marquette Univ. Schl. of Medicine, 1928. m. Goldie Grossman, June 21, 1931. c.: James Irwin. Exp.: Dir. of Labs., St. Mary's Hospital, Madison, Wis., 1931-45; Sr. Pathologist, St. Lab. Hygiene Univ. of Wis., 1931-45; Dir. of Labs., St. Mary's Hosp., Milwaukee, Wis., 1945—; Assoc. Prof. of Pathol., Marquette Univ. Schl. of Med., 1945—. Hon. Pos.: Chf. of Staff, St. Mary's Hosp., Madison, Wis., 1943; Pres., Wis. Soc. of Pathologists. Mem.: Coll. Am. Pathol.; Am. Soc. Clin. Pathol.; Am. Assn. of Pathol. and Bacteriology; Am. Assn. of Med. Colls.; A.M.A.; St. of Wis. Med. Soc.; Wis. Soc. of Pathol.; Milwaukee Acad. of Med.; Am. Assn. of Blood Banks; A.A.A.S.; Milwaukee Co. Med. Soc.; Sigma Xi. Contbrng. Author: Lower Urinary Tract and Male Genitals in Anderson's Pathology, 1961. Contbr. to: Various Med. Jours. Serv. Rec.: U. S. Pub. Health Serv. Reserve, 1942—. Areas of Rsch.: Yeast-Like Fungi; Argentaffin Cells.

PESHKIN, M. Murray (M.D.), Physician, 450 West End Ave., New York City, N. Y. Home Add.: Westport, Conn. ALLERGY. b. N. Y. C., May 23, 1892. s. Zelick and Goldie (Feigen) P. Edn.: M.D., Fordham Univ. Schl. of Med., 1914. m. Lillian Rapaport, Oct. 9, 1921. Exp.: Asst. Pediatrician, Mt. Sinai Hosp., N. Y. C., 1915-25; Assoc. Pediatrician, ibid., 1942-52; Chief, Children's Allergy Clinic, ibid., 1926-52; Attending Allergist, Jewish Mem. Hosp., N. Y. C., 1938-40; Attending Allergist, Bronx Municipal Hosp. Center, 1954-60; Consulting Allergist, Mt. Sinai Hosp., 1952—; Chf. Med. Consult., Jewish Natl. Home Asthmatic Children, Denver, 1940; Chf., Med. Consult., Children's Asthma Rsch. Inst. and Hosp., Denver, 1958; Clin. Prof., Md. and Pediatrics for Allergy, Albert Einstein Coll. of Med., Yeshiva Univ., 1954-60. Hon.

Pos.: Diplomate, Am. Bd. Internatl. Med. and Allergy, 1942; Secy. and Trustee, Allergy Found. of Am., 1956; Hon. Pres., Music Lovers League, Inc.; Hon. Pres., Soc. for Aid of Crippled in Israel; Pres., Am. Coll. of Allergists, 1953-54; Treas., Acad. Psychosomatic Med., 1960—; Assoc. Ed., The Jour. of the Children's Asthma Rsch. Inst. and Hosp., 1961—. Mem.: Fellow, Am. Coll. of Physicians; Am. Coll. of Allergists; Am. Acad. of Allergy; Acad. Psychosomatic Med.; Hon. Mem., Fr. Allergy Soc.; Am. Assn. Adv. Sci.; Friar's Club; 50 Rod and Gun Club; Mason. Contbr. to: Annals of Allergy; Internatl. Archives of Allergy; Jour. Am. Med. Assn.; Jour. Childrens Asthma Rsch. Inst. and Hosp.; Psychosomatics; A.M.A. Jour. of Diseases of Children; Internatl. Archives Allergy and Applied Immunology; etc. Gen. Int.: Founded Rehabilitation Program and Introduced the Term "Parentectomy" for Intractable Asthmatic Children, Institutionalized at the Non-Sectarian, Jewish Natl. Home for Asthmatic Children, Denver, Colo., 1940. Areas Of Rsch.: Allergy, especially in Children; Chief Medical Consultant, Jewish Natl. Home for Asthmatic Children and Children's Asthma Rsch. Institute and Hospital at Denver, Colo.

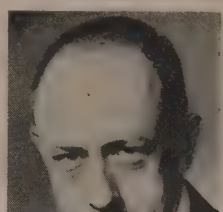
PETERLIN, Anton, (Ph.D.), Dir., Camille Dreyfus Lab., Rsch. Triangle Inst., Adjunct Prof., Duke Univ., Durham, N. C. Home Add.: 1212 Arnette Ave., Durham, N. C. PHYSICS OF POLYMERS. b. Ljubljana, Yugoslavia, Sept. 25, 1908. s. Anton and Sophia (Pucnik) P. Edn.: M.Sc., Univ., Ljubljana, Yugoslavia, 1930; Ph.D., Univ. of Berlin, Germany, 1938. m. Leopoldina Leskovic, Feb. 22, 1941. c.: Tanja; Matija. Exp.: Prof., Univ., Ljubljana, Yugoslavia, 1939-60; Dir., J. Stefan Inst., ibid., 1949-59; Prof., Inst. of Technol., Munich, W. Germany, 1960-61; Dir., Camille Dreyfus Lab., 1961—. Mem.: Am. Assn. Adv. Sci.; Am. Phys. Soc.; Am. Chem. Soc.; Kolloid Gessellschaft; German Phys. Soc.; Slovemian Acad. of Scis. and Arts. Author: Doppelbrechung, Insbesondere Kunstliche Doppelbrechung, 1943. Contbr. to: Jour. Polymer Sci.; Jour. Colloid Sci.; Z. Physik; Jour. Chem. Phys.; Jour. Appl. Phys.; Am. Jour. Phys. Areas of Rsch.: Physics of Polymer Solution, Rheology; Physics of Polymer Solids and Crystals.

PETERMAN, Willie Spencer (Mr.), Chmn., Dept. of Math., Western-Olin H. S., Birmingham 8, Ala. Home Add.: 12 Spring Haven Circle, S.W., Birmingham 5, Ala. MATHEMATICS. b. Cowarts, Ala., Nov. 3, 1928. s. Willis Elijah and Aquila Osceola (Horne) P. Edn.: B.A., Miles Coll., 1950; M.A., Univ. of Detroit, 1960. m. Willie Mae Austin, Aug. 1957. c.: Patricia Delores; Denise Yvonne. Exp.: Teacher, Ullman H. S., Birmingham, Ala., 1950-52; Math. Dept., Chmn., Western-Olin H. S., ibid., 1954—; Instr. of Math., Miles Coll., 1959—. Mem.: A.A.A.S.; N.C.T.M.; Ala. St. Tchrs. Assn.; Birmingham Progressive Edn. Assn.; Am. Tchrs. Assn.; Euclideans Math. Club; Phi Beta Sigma; West Center Civic League. Serv. Rec.: U. S. Army, 1952-54. Gen. Int.: N.S.F. Fellow, Shell Merit Fellow, Cornell Univ.; Tchr. of the Yr., Western-Olin H. S., 1959. Areas of Rsch.: Math.



PETERS, George Alfred (Mr.), Senior Rsch. Engr., Rocketdyne Div. of North American Aviation, Inc., Canoga Park, Calif. Home Add.: 943 Fourth St., Santa Monica, Calif. HUMAN FACTORS ENGINEERING, PSYCHOLOGY. b. Boston, Mass., Nov. 24, 1924. s. George A. and Mary Ellen (Edwards) P. Edn.: B.A., Univ. of Mass., 1949; M.A., Temple Univ., 1954. m. Roberta Bourasso, Mar. 20, 1948. c.: Cheri; Barbara. Exp.: Sr. Psychol., Alcholism Study Unit, Phila. Gen. Hosp., 1954-55; Rsch. Psychol., Picatinny Arsenal, 1956-57; Consult., Psychol. Rsch. Associates, 1958-59; Rsch. Engr., Douglas Aircraft Co., 1959-60; Sr. Rsch. Engr., Rocketdyne Div., N. Am. Aviation, Inc., Canoga Park, Calif., 1960—. Mem.: Fellow, A.A.A.S.; Am. Psychol. Assn.; Human Factors Soc.; Am. Inst. of Physics; Aeromedical Engrng. Soc.; Optical Soc. of Am.; Western Psychol. Assn.; Phi Kappa Phi. Contbrng. Author: Optimum Use of Engineering Talent, 1961. Contbr. to: Mech. Engrng.; Am. Psychol.; Physics Today; Arch. Am. Acad. Optometry; Jour. Consulting Psychol.; Personnel and Guid. Jour.; Jour. Clin. Psychol.; Jour. of Counseling Psychol.; Astronautical Scis. Rev.; Astronautics; Personnel Admin.; Internatl. Record of Med.; Operations Rsch.; Jour. of Engrng. Edn.; Group Psychotherapy; Human Factors; Personnel; Control Engrng.; Product Engrng.; Exceptional Children; Optometric Weekly; Industrial Labs.; Mgmt. Methods; Personnel Jour. Serv. Rec.: U. S. Army Corps of Engineers, W.W. II; Adjutant Generals Corps, Korean Conflict; also Army Reserve, 1946—. Gen. Int.: Certified Psychologist, St. of Calif. Areas of Rsch.: Man-Machine Systems, Management Organizations.

PETERS, Henry Nathaniel, Jr. (O.D.), 215 Madison Ave., Memphis, Tenn. Home Add.: 3225 James Rd., Memphis, Tenn. OPTOMETRY—CONTACT LENS THERAPY. b. Memphis, Tenn., Dec. 20, 1928. s. Henry N., Sr. and Sue Frances (Drumright) P. Edn.: B.A., Southwestern Coll., Memphis, Tenn., 1952; B.S., Sou. Coll. of Optometry, 1956; O.D., ibid., 1956. Exp.: Dr. of Optometry, Private Practice, Memphis, Tenn., 1956—; Prof. of Reading, Univ. of Tenn., Extension Div., 1960—; Dir. of Clinics, Sou. Coll. of Optometry, 1960; Dir. of Memphis Reading Clinic, Memphis, Tenn., 1960—. Hon. Pos.: Natl. Grand Pres., Omega Delta. Mem.: Am. Acad. of Optometry, Fellow; A.A.A.S., Fellow; Sigma Alpha Epsilon; Omega Delta; Beta Sigma Kappa. Areas of Rsch.: Contact Lens Therapy.



PETERS, Robert L. (Mr.), Pres., Space/Frontiers, Inc., Boston, Mass. and Aerospace Consultant, 105 W. 75th, New York, N. Y. and Pres., NEO Co., Canton, Mass. AEROSPACE TECHNOLOGY; APPLIED PHYSICS; MATHEMATICS. b. Boston, Mass., Dec. 7, 1925. s. George A. and Mary Ellen (Edwards) P. Edn.: B.A., Univ. of Mass., 1950. m. Elisabeth Jane Wheeler, June 20, 1959. Exp.: Design Engr., Hamilton Standard Div., Windsor Locks, Conn., 1952-53; Pres., NEO Co., 1953—; Devel. Engr., Aerojet Gen. Corp., Sacramento, Calif., 1959-60; Consult., R. L. Peters and Assocs., N. Y., 1960—; Rsch Scientist, N.A.S.A., Cleveland, O., 1961; Pres., Space/Frontiers, Inc., 1962—. Hon. Pos.: Chmn., Bd., Space/Frontiers, Inc., Boston, Mass. Mem.: Copley Soc.; 20th Cent. Assn.; Sigma Iota Xi; Mark Twain Soc.; Sacramento Civic Opera; San Fran. Arts Club. Author: The Design of Liquid, Solid and Hybrid Rockets, 1962; The Design of Space Vehicles, 1962; Space Age Management, 1962. Contbr. to: Space Aeron. Mag.; Scient. Lub. Mag.; Aircraft and Missiles Mag.; Elecronique; Missile Design and Devel. Mag.; Elect. Equip. Engrng.; Missiles and Space Mag.; Chem. Engrng. Mag.; Electl. Design News Mag.; Wire and Wire Prods. Mag.; Design News Mag.; Appl. Hydraulics and Pneumatics Mag.; Electro—Technol. Mag.; Groud Support Equipment Mag.; Milit. Systs. Mag.; Machine Design Mag.; Machinery Mag.; Prod. Design Mag. Gen. Int.: Autophageous Rockets; Computors and Other Inventions. Areas of Rsch.: Rocketry; Space Technol.; Computor Technol.; Automation; Electronics; Applied Physics.

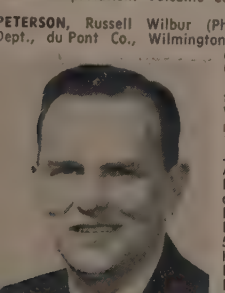
PETERSEN, Norman V. (Mr.), Tech. Dir., Air Force Flight Test Center, Edwards A.F.B., Calif. Home Add.: 5333 Candlewood Ave., Edwards, Calif. MECHANICAL ENGINEERING. b. West Branch, Iowa, April 9, 1921. s. Viggo and Marie M. (Paulson) P. Edn.: B.S., St. Univ. of Ia., 1949; M.S., ibid., 1950. m. Bonita M. Crees, Sept. 14, 1946. c.: V. Brian; T. Douglas. Exp.: Rsch. Engr., Midwest Rsch. Inst., Kansas City, Mo., 1950-52; Engr., Sperry Gyroscope Co., Great Neck, N. Y., 1952-56; Rsch. Engr., ibid., Sunnyvale Devl. Center, Sunnyvale, Calif., 1956-58; Rsch. Engr., Lockheed Missile and Space Div., Palo Alto, Calif., 1958-59; Chf., Astro Scis., Norair Div., Northrop Corp., Hawthorne, Calif., 1959-62; Tech Dir., Air Force Flight Test Ctr., Edwards A.F.B., Calif., 1962—. Hon. Pos.: Pres., Am. Astronautical Soc.; Editor, Astronautical Sci. Rev.; Editr, Proc. of the Am. Astronaut Soc.; Dir., ibid. Mem.: A.A.A.S.; Aerospace Med. Assn.; Am. Rocket Soc.; Inst. of Aerospace Scis. Contbr. to: Proc. of the Am. Astronautical Soc.; Am. Rocket Soc. Jour.; Astronautical Scis. Rev.; Proc. of the VII and VIII Internatl. Astronautical Congress; Inst. of Navigation; Jour. of Astronautical Scis.; Compton Encyc. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Astronautical Engrng.; Technical Mgmt. of Rsch. in the Astronautical Scis.; Preliminary Design of Space Vehicles and Devices; Conceptual Studies of Earth Orbital, lunar and Interplanetary Space Systems.

PETERSEN, Elmer Lee (Ph.D.), Dir. of Tobacco Rsch., Consolidated Cigar Corp., Glastonbury, Conn. Home Add.: 128 Hayden Sta. Rd., Windsor, Conn. TOBACCO PHYSIOLOGY AND GENETICS. b. Windsor, Conn., Dec. 8, 1912. s. Albert L. and Mabel (Tooker) P. Edn.: B.S., Ia State Univ., 1946; M.S., ibid., 1948; Ph.D., Yale Univ., 1951. m. Ethel Drake, Dec. 24, 1937. c.: Janet Drake. Exp.: Clerk, Conn. Mutual Life Ins. Co., Hartford, Conn., 1931-37; Farm Field Man, ibid., Ia., 1937-41; Asst. Geneticist, Conn. Agric. Expt. Sta., Windsor, Conn., 1951-53; Dir. of Tobacco Rsch., Consolidated Cigar Corp., Glastonbury, Conn., 1953—. Hon. Pos.: Governing Bd., Agric. Rsch. Inst., Natl. Rsch. Coun. Mem.: Genetics Soc.; Am. Soc. of Plant Physiologists; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Alpha Zeta; Torch Club of Conn. Valley. Contbr. to: Agronomy Jour.; Physiologia Plantarum; Tobacco Sci. Serv. Rec.: U. S. Navy, 1942-45. Areas of Rsch.: Tobacco Rsch.; Popcorn Breeding Rsch.

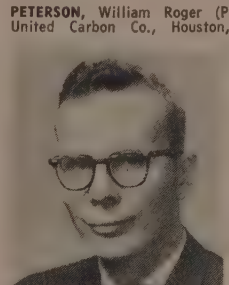
PETERSON, Howard Anderson (Mr.), Staff Asst., Office of the Dir. of Defense Rsch. and Engrng., Room 3D 1077, Pentagon, Wash. 25, D. C. Home Add.: 517 Southwick St., Rt. 3, Fairfax, Va. HYDRODYNAMICS, NAVAL ARCHITECTURE. b. Fargo, N. D., May 31, 1919. s. Adolph Sigvald and Mabel E. (Howe) P. Edn.: B.S., Univ. of Hawaii, 1941; M.S., Univ. of Mich., 1949. m. Teresa Antonou, June 19, 1953. c.: Howard Andrew, Jr.; Jeffery Lee. Exp.: Naval Architect, Scientific Br., Pearl Harbor Naval Shipyard Planning Dept., Hawaii, 1941-50; Superintending Marine Engr. for Military Sea Transportation Service, Yokohama, Japan, 1950-54; Staff Asst., Navy Dept., Bur. of Ships, Ship Tech. Div., Wash., D. C., 1954; Staff Asst., Off. of Asst. Secy. of Defense (Applications Engrng.), Pentagon, Wash., D. C., 1954-56; Staff Asst., Off. of Dir. of Defense Rsch. and Engrng., Pentagon, 1956—. Mem.: Soc. of Naval Architects and Marine Engrs.; Am. Assn. Adv. Sci.; Propeller Club of the U. S.; Registered Professional Engr., Wash., D. C. Gen. Int.: During the war, made engineering studies associated with salvage of ships sunk by Japanese Attack at Pearl Harbor. During the Korean War, was Superintending Marine Engr. for Milit. Sea Transportation Serv. at Yokohama, Japan, which was the focal point of almost all govt. shipping traffic. Areas of Rsch.: Research Associated with Naval Ship Design; Research for Hydrofoil Supported Craft; Specialize in Knowledge of Field of Ship Design, Naval Architecture and Marine Engineering.

PETERSON, Melvin Norman Adolph (Ph.D.), Asst. Rsch. Geologist, Univ. of Calif., San Diego, La Jolla, Calif. Home Add.: 441 Retaheim Way, La Jolla, Calif. SEDIMENTOLOGY, SEDIMENTARY PETROLOGY. b. Evanston, Ill., May 27, 1929. s. Fred G. W. and Norma A. (Johnson) P. Edn.: B.S., Northwestern Univ., 1951; M.S., Northwestern Univ., 1956; Ph.D., Harvard Univ., 1960. m. Margaret Stewart Forbes, 1958. c.: Katrina Elizabeth; John Frederick Forbes. Exp.: Asst. Rsch. Geologist, Univ. of Calif., 1960—. Mem.: Geol. Soc. of Am.; A.A.A.S.; Sigma Xi. Contbr. to: Jour. of Geol.; Am. Mineralogist; Jour. of Geophys. Rsch. Serv. Rec.: U. S. Navy, 1951-54. Areas of Rsch.: Mineralogy of Sediments, Specifically with Regard to Mineral Assemblages, the Chem. Principles of their Formation, and their Interpretation. Volcanic Contributions to Pelagic Sediments.

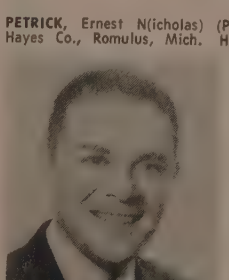
PETERSON, Russell Wilbur (Ph.D.), Tech. Dir., Textile Fibers Dept., du Pont Co., Wilmington, Del. Home Add.: 3701 Montchanin Rd., Wilmington 7, Del. CHEMISTRY. b. Portage, Wis., 1916. s. Anton and Emma (Anthony) P. Edn.: B.S., Univ. of Wis., 1938; Ph.D., ibid., 1942. m. E. Lillian Turner, June 30, 1937. c.: Russell Glen; Peter Jon; Kristin; Elin. Exp.: Tchng. Asst., Univ. of Wis., 1937-42; Rsch. Chem., Supvr., Manager, du Pont Expt. Sta., Wilmington, Del., 1942-51; Tech. Supt., du Pont Plant, Seaford, Del., 1951-52; Tech. Supt. du Pont Plant, Kinston, N. C., 1952-53; Asst. Plant Mgr., ibid., 1953-54; Rsch. Dir., du Pont Textile Fibers Dept., Wilmington, Del., 1954; Merchandising Mgr., ibid., 1955; Rsch. Dir., ibid., 1956-59; Dir., New Products Div., Du Pont Co., Wilmington, Del., 1959—. Hon. Pos.: Chmn. of Bd., Textile Rsch. Inst. Mem.: Textile Rsch. Inst.; Am. Chem. Soc.; Am. Assn. for Textile Technol.; Am. Assn. Adv. Sci.; Soc. of Chem. Industry, Great Britain; Textile Inst., Great Britain; Phi Beta Kappa; Phi Eta Sigma; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. of Physical Chem.; Textile Rsch. Jour.; Jour. of Textile Inst. Areas of Rsch.: Autoxidation, Polymer Chemistry, Synthetic Fibers.



PETERSON, Shailer A(lvarey) (Ph.D.), Dean, Coll. of Dentistry, Univ. of Tenn., 847 Monroe Ave., Memphis 3, Tenn. Home Add.: 1283 Hayne Rd., Memphis, Tenn. CHEMISTRY AND STATISTICS; DENTAL EDUCATION; ELECTRONICS AND RADIO. b. Albert Lea, Minn., Oct. 12, 1908. s. P. Augustus and Annie Christine (Olsen) P. Edn.: B.S., Univ. of Ore., 1930; M.A., ibid., 1932; Ph.D., ibid., 1944. m. Ella Cleone Devereaux, Nov. 1, 1935. c.: Devereaux Shailer. Exp.: Instr., Univ. of Minn. and Hd. Sci. Dept. of Univ. H. S., 1936-43; Assoc. Prof. and Dir. Edn. Rsch., S. D. State Coll. of Agri., 1943-44; Asst. Prof., Univ. of Chicago, 1944-46; Dir. Edn. Meas. Counc. Dental Edn., Am. Dental Assn., 1945-49; Secy., ibid., 1949-61; Asst. Secy., ibid., 1960—; Assoc. Prof., Chicago Coll. of Dental Surgery, Loyola Univ., 1958-61; Dean, Coll. of Dentistry, Univ. of Tennessee, 1961—; Consultant, Am. Dental Assn., 1961—. Hon. Pos.: Mem., Expert Comm. on Auxiliary Dental Personnel of World Health Organization; Mem., N.I.D.R. Train. Gr. Comm., 1958—; Mem., USPHS Auxil. Train. Comm., 1960—. Mem.: Fellow, Am. Coll. of Dentists; Fellow, Internatl. Coll. of Dentists; Fellow, Am. Assn. Adv. Sci.; Am. Stat. Assn.; Odontological Soc.; Psychometric Soc.; Biometric Soc.; Am. Edn. Rsch. Assn.; Am. Dental Assn.; Tenn. State Dental Assn.; Memphis Dental Soc.; N. Car. Dental Assn.; Chicago Dental Soc.; Phi Delta Kappa; Omicron Kappa Upsilon; Sigma Xi; Pi Mu Alpha. Author: How Well Are Indian Children Educated?, 1947; Clinical Dental Hygiene, 1959; The Dentist and His Assistant, 1961. Areas of Rsch.: Research and Publication in Field of Accreditation of Institutions of Higher Education; Research in Statistical Methods; Testing Equipment; Radio Antennas.



PETERSON, William Roger (Ph.D.), Manager of Rsch. Division, United Carbon Co., Houston, Tex. Home Add.: 510 Hallie, Houston, Tex. POLYMER CHEMISTRY. b. Racine, Wis., May 22, 1927. s. E. C. and E. A. (Nordrum) P. Edn.: A.B., Carroll Coll., 1949; Ph.D., Univ. of Ill., 1952. m. Caroline George, Dec. 21, 1946. c.: Thomas; Stephen; Mark; Nancy. Exp.: Rsch. Chemist, E. I. duPont de Nemours Co., Niagara Falls, N. Y., Kinston, N. C., 1952-57; Senior Rsch. Chem., (Basic Polymers Rsch. Lab.); Div. Consultant; Continental Can Co., Chicago, Ill.; Manager, Research Div., United Carbon Co., Houston, Tex., 1959—; Special Abstract Ed., McGraw-Hill Co., 1959—. Mem.: Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon; Delta Sigma Nu; Alpha Chi Sigma; Toastmasters. Contbr. to: Ind. and Eng. Chem.; Jour. Am. Oil Chem. Soc. Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Polymer Chemistry, Especially Coating Materials, Elastomers, and Textile Fibers.

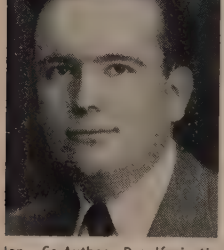


PETRICK, Ernest N(icholas) (Ph.D.), Chief Rsch. Engr., Kelsey-Hayes Co., Romulus, Mich. Home Add.: 1236 Glen Leven Rd., Ann Arbor, Mich. HEAT TRANSFER, PROPULSION DEVICES; GAS TURBINES, CHEMICAL AND ION ROCKETS. b. Taylor, Pa., Apr. 9, 1922. s. Aurelius A. and Ann (Kaschak) P. Edn.: B.S., Carnegie Inst. of Tech., 1943; M.S., Purdue Univ., 1948; Ph.D., ibid., 1955. m. Magdalene Simcoe, June 13, 1946. c.: Deborah; Katherine; Denise; Victoria. Exp.: Instr. and Res. Assoc., Purdue Univ., 1946-53; Chief Advanced Propulsion Sys., Curtiss-Wright Corp., Woodridge, N. J., and Quehanna, Pa., 1953-60; Chf. Res. Engr., Kelsey-Hayes Co., Detroit, Mich., 1960—. Mem.: Am. Rocket Soc.; Am. Soc. for Engr. Edn.; A.A.A.S.; Pi Tau Sigma; Sigma Xi; Phi Kappa. Contbr. to: A.S.M.E.; S.A.M.P.E.; A.R.S. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Heat Transfer and Fluid Flow; Gas Turbine Blade Cooling, High Energy Propellants for Chem. Rockets, and Cesium Ion Rockets; Research Management.

PETRIE, George W., III (Ph.D.), Program Dir., Exec. Schl., I.B.M. Corp., 10 Astor's Lane, Port Washington, Long Island, N. Y. Home Add.: 9700 Elrod Rd., Kensington, Md. APPLIED MATHEMATICS. b. Ingram, Pa., May 6, 1912. s. George W., Jr. and Mabel M. (Reilly) P., (both dec.). Edn.: B.S., Carnegie Inst. of Technol., 1933; M.S., ibid., 1936; Ph.D., Lehigh Univ., 1949. m. Dorothy M. Koeppen, May 28, 1944. c.: George W., IV; Charles R. Exp.: Assoc. Prof. of Math., S. D. Schl. of Mines, 1936-41; Special Engr., Bethlehem Steel Corp., Pittsburgh, Pa., 1945-47; Asst. Prof. of Math., Lehigh Univ., 1947-50; Staff, I.B.M. Corp., Washington, D. C. and N. Y., 1950-62; Program Dir., Exec. Schl., I.B.M. Corp., Port Wash., L. I., N. Y., 1962—. Hon. Pos.: Advry. Comm., Natl. Acad. of Scis. Mem.: A.A.A.S.; Am. Soc. for Engrng. Edn.; Assn. for Computing Machinery; Am. Math. Soc.; Inst. of Radio Engrs.; Math. Assn. of Am.; Inst. of Mgmt. Scis.; Sigma Xi. Serv. Rec.: U.S.N.R., 1942—. Areas of Rsch.: Computer Machine Programming, Information Retrieval, Intelligence Systems.

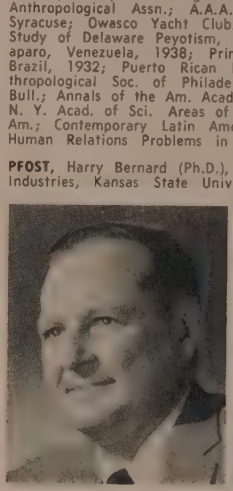
PETRO, Anthony James (Ph.D.), Rsch. Chemist, Esso Rsch. and Engrng. Co., Linden, N. J. Home Add.: 330 Seaton Ave., Roselle Park, N. J. PHYSICAL CHEMISTRY. b. Waterbury, Conn., Nov. 28, 1930. s. James and Florence (Spino) P. Edn.: B.S., Trinity Coll., 1952; M.S., ibid., 1954; M.A., Princeton Univ., 1956; Ph.D., ibid., 1957. m. Catherine Timmons, Nov. 21, 1959. Exp.: Rsch. Chemist, Esso Rsch. and Engrng. Co., Linden, N. J., 1957—. Mem.: A.C.S.; A.I.C.; A.A.A.S.; Sigma Xi. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Physical Chem.; Rev. of Lit. on Dielectrics. Areas of Rsch.: Dipole Moments; Microwave Dielectric Relaxation; Monodisperse Sulfur Hydrosols; Synthetic Rubber Latex.

PETTIT, George Robert (Ph.D.), Assoc. Prof. of Chem., Univ. of Maine, Orono, Maine. Home Add.: 2 Averill Ave., Orono, Maine. ORGANIC CHEMISTRY. b. Long Branch, N. J., June 8, 1929. s. George R. and Florence (Seymour) P. Edn.: B.S., Washington State Coll., 1952; M.S., Wayne State Univ., 1954; Ph.D., ibid., 1956. m. Margaret Jean Benger, June 20, 1953. c.: William Edward; Margaret Sharon; Robin Kathleen. Exp.: Rsch. Fellow, Wayne State Univ., 1954-56; Sr. Rsch. Chemist, Eaton Labs., Norwich Pharmacal Co., Norwich, N. Y., 1956-57; Asst. and Assoc. Prof., Univ. of Maine, 1957—. Hon. Pos.: Councilor, Main Sect., Am. Chem. Soc.; Chemn., Special Steroid Nomenclature Com., Natl. Academy of Science. Mem.: Am. Chem. Soc.; The Chem. Soc., London; Sigma Xi; Phi Lambda Upsilon. Co-Author: Desulfurization with Raney Nickel, 1962. Contbr. to: Jour. of Organic Chem.; Jour. of Medicinal and Pharmaceutical Chem.; Tetrahedron; Jour. Am. Chem. Soc.; Chemistry and Industry. Areas of Rsch.: Chemistry of Steroids and Triterpenes; Cancer Chemotherapy.



PETRULLO, Vincenzo (Ph.D.), Consulting Anthropologist, 729 Sumner Ave., Syracuse, N. Y. ANTHROPOLOGY. b. Sicily (Italy), Jan. 1, 1906. s. Francesco and Maria C. (Magro) P. Edn.: A.B., Univ. of Penn., 1927; Ph.D., ibid., 1934. m. Helen Batchelor, May 5, 1947. c.: Giannina B. Exp.: Instr. in Anthropology, Univ. of Pa., 1927-34; Ethnologist, Matto Grosso Expedition, 1930-31; Field Dir., South Am. Rsch., Univ. of Penn. Museum, 1931-35; Dir., 2nd Venezuelan Expedition, Univ. of Penn., 1933-34; Dir., Univ. of Penn. Museum, Columbia Univ. Guajira Expedition, 1935; Co-Dir., Latin Am. Inst. for Race and Culture Studies, Univ. of Penn. Museum, 1934-36; Coordinator non-Statistical Research Project, WPA, U. S. Govt., 1937-39; Rsch. Assoc., Natl. Resources Bd., 1937-41; Asst. Chief, Latin Am. Section, Div. of Rsch. and Analysis, OSS, 1941-42; Special Asst. to Dir. of Branch of Foreign Nationalities, OSS, 1942; Principal Field Representative to Brazil, Bd. of Economic Warfare, 1942-43; Deputy Coordinator of Italian Program, OWI, Overseas Branch, 1943; Hd., Book Div., Office of War Information, Overseas Branch, 1943-44; Office of the Government, Puerto Rico, Rsch., 1945; Rsch. in Italy, Fellow Werner-Gren Foundation, 1946-47; Lecturer on Race Relations, Univ. of Penn., 1947-48; Prof. of Internatl. Affairs and Dir. of Area Studies, Colgate Univ., 1950-53; Visiting Prof. of Anthropology, Univ. of Ala., 1953-54; Archaeologist, Univ. of Ga., 1954; Consulting Anthropologist, 1954—. Mem.: Am. Anthropological Assn.; A.A.A.S.; Civic Clubs; Univ. Club of Syracuse; Owasco Yacht Club. Author: The Biabolic Root, A Study of Delaware Peyotism, 1934; The Yaruros of the Capanaparo, Venezuela, 1938; Primitive Peoples of Matto Grosso, Brazil, 1932; Puerto Rican Paradox, 1947. Contbr. to: Anthropological Soc. of Philadelphia; Bureau of Am. Ethnology Bull.; Annals of the Am. Acad. of Political and Social Sciences; N. Y. Acad. of Sci. Areas of Rsch.: Primitive Peoples of Latin Am.; Contemporary Latin America; Southern Italy and Sicily; Human Relations Problems in American Business Organizations.

PFOST, Harry Bernard (Ph.D.), Prof. of Flour and Feed Milling Industries, Kansas State Univ., Manhattan, Kan. Home Add.: 2315 Glenwood, Manhattan, Kan. AGRICULTURAL ENGINEERING. b. Cowgill, Mo., Mar. 8, 1919. s. Harry B. and Fauna (Wells) P. Edn.: B.S., Univ. of Mo., 1940; M.S., Auburn Univ., 1948; Ph.D., Mich. State Univ., 1959. m. Marjorie Wilson, 1937. Exp.: Engr., Rural Electrification Adm., Wash., D. C., 1940-41; Assoc. Prof., Auburn Univ., 1941-48; Div. Engr. Mgr., Green Giant Co., Le-Sueur, Minn., 1952-56; Prod. Planning Analyst, Ford Motor Co., Detroit, Mich., 1956-57; Prof., Kansas State Univ., 1959—. Mem.: A.A.A.S.; Sigma Xi; Am. Soc. of Agric. Engrs.; Tau Beta Pi. Contbr. to: Agric. Engrng.; Jour. of Animal Sci.; Jour. of Am. Soc. of Heating, Ventilating, and Refrigerating Engrs. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: Agricultural Products Processing and Storage, Heat Transfer, Ultrasonics.



PFOUTS, Ralph William (Ph.D.), Prof. of Econs., Univ. of N. C., Chapel Hill, N. C. Home Add.: 502 Ransom St., Chapel Hill, N. C. MATHEMATICAL ECONOMICS. b. Atchison, Kans., Sept. 9, 1920. s. Ralph U. and Alice (Oldham) P. Edn.: B.A., Univ. of Kans., 1942; M.A., ibid., 1947; Ph.D., Univ. of N. C., 1952. m. Jane Hoyer, Jan. 30, 1945. c.: James William; Susan Jane; Thomas Robert; Elizabeth Ann. Exp.: Asst. Instr., Univ. of Kans., 1946-47; Part-time Instr., Univ. of N. C., 1947-50; Lctr., ibid., 1950-52; Assoc. Prof., ibid., 1952-58; Prof., ibid., 1958—. Hon. Pos.: Pres., N. C. Chapt., The Am. Statistical Assn., 1951; Vice-Pres., Sou. Econ. Assn., 1960-61. Mem.: Am. Econ. Assn.; Econometric Soc.; Am. Statistical Assn.; Regional Sci. Assn.; Southern Econ. Assn.; Fellow, Internatl. Inst. of Arts and Letters; Phi Beta Kappa; Pi Sigma Alpha; Alpha Kappa Psi. Editor: Techniques of Urban Economic Analysis, 1960; Essays in Economics and Econometrics, 1960. Contbr. to: Econometrica; Metroeconomica; Sou. Econ. Jour.; Math. Mag.; Waseda Econ. Papers; Rev. of Econs. and Statistics; Soc. Forces; Behavioral Sci. Serv. Rec.: U.S.N.R., 1942-46. Area of Rsch.: Mathematical Econs.

PHILLIPS, J. Neal, Jr. (Ph.D.), Physiologist, Panoramic Rsch., Inc., 3946 Fabian Way, Palo Alto, Calif. Home Add.: 116-A West 36th Ave., San Mateo, Calif. PHOTOSYNTHESIS AN DGENETICS. b. Jackson, Tenn., Nov. 18, 1920. s. Jesse Neal, Sr. and Grace Truman (Trenary) P. Edn.: B.S., Southwest Tex. St. Coll., 1947; M.A., ibid., 1948; Ph.D., The Univ. of Tex., 1952. c.: Robert Neal; Paula Tyre. Exp.: Microbial Geneticist, Bristol Labs., Inc., Syracuse, N. Y., 1954-59; Space Ecologist, U.S.A.F. Schl. of Aerospace Medicine, Brooks AFB, Tex., 1959-61; Physiologist, Panoramic Rsch., Inc., Palo Alto, Calif., 1961—. Mem.: Genetics Soc. of Am.; Phycological Soc. of Am.; Aerospace Med. Assn.; The Sigma Xi; Boy Scouts of Am. Author: Medical and Biological Aspects of the Energies of Space, 1961. Contbr. to: Genetics; Plant Physiology; Aerospace Med. Jour. Serv. Rec.: U. S. Army Air Force, 1940-44; U. S. Navy, 1944-45. Areas of Rsch.: Photosynthesis (cellular); Mechanisms of Gene Formation; Design of Closed Ecological Systems for Space Travel and Habitataion; Pharmacology and Physiology of C.N.S. Agents.

PHILLIPS, Ewing Lakin (Ph.D.), Chf. Psychologist, Natl. Orthopedic and Rehab. Hosp., 2455 Army-Navy Dr., Arlington, Va. Home Add.: 415 E. Jefferson St., Falls Church, Va. PSYCHOLOGY. b. Higginsville, Mo., Apr. 29, 1915. s. Charles B. and Martha (Lakin) P. Edn.: Ph.D., Univ. of Minn., 1949. m. Gloria Liebner, Apr. 30, 1949. c.: Charles; Piper; Bonnie; Kirk. Exp.: Bd. of Edn., St. Paul, Minn., 1946-47; Minneapolis Bd. of Edn. and Clinical Psychologist, Macalaster Coll., 1947-48; Asst. Prof., Psychol., Geo. Wash. Univ., 1948-53; Consultation to Govt., Arlington Co., Guid. Center, Va., 1949-55, Chf. Psychologist, Natl. Orthopedic and Rehab. Hosp., Arlington, Va., 1950—; Consultant to Schls., Pub. and Pvt., ibid., 1950—. Mem.: Amer. Psychol. Assn.; D. C. Psychol. Assn.; Southeastern Psychol. Assn.; Eastern Psychol. Assn.; Va. Acad. of Sci.; Psi Chi. Author: Psycho-

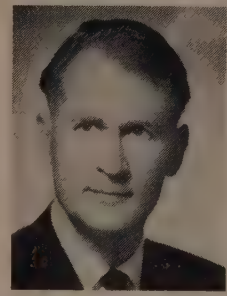
therapy: A Modern Theory and Practice, 1956. Co-Author: Psychology and Personality, 1957; Discipline, Achievement and Mental Health, 1960; Essentials of American and Government, 1962. Contbr. to: Jour. of Clin. Psychol.; Jour. of Gen. Psychol.; Jour. of Rehab.; Jour. of Gen. Psychol. Areas of Rsch.: Psychotherapy; Personality Theory; Learning and Communication Theory.

PHILLIPS, Jewell Cass (Ph.D.), Prof. of Polit. Sci., Univ. of Pa., Phila., Pa. Home Add.: 601 Beatty Rd., Springfield, Pa. POLITICAL SCIENCE (STATE AND LOCAL GOVERNMENT). b. Eldorado, Okla., Oct. 8, 1900. s. Jewell William and Mary Richie (Goar) P. Edn.: B.A., Univ. of Okla., 1921; M.A., ibid., 1929; Ph.D., Univ. of Pa., 1935. m. Winifred Sudderth, Dec. 28, 1922. Exp.: Supt. of Schls., Lexington, Okla., 1921-22; 1923-25; Prin., H. S., Parkerton, Wyo., 1922-23; Supt. of Schls., Calvin, Okla., 1925-28; Instr. in Govt., Univ. of Okla., 1928-30; Instr. in Polit. Sci., Univ. of Pa., 1930-37; Asst. Prof. of Polit. Sci., ibid., 1937-45; Assoc. Prof. of Polit. Sci., ibid., 1945-53; Prof. of Polit. Sci., ibid., 1945-53; Prof. of Polit. Sci., ibid., 1953—. Hon. Pos.: Chmn., Citizenship Clearing House, Eastern Dist. of Pa., 1954-56. Mem.: Amer. Polit. Sci. Assn.; Amer. Pub. Admin. Soc.; Natl. Municipal League; A.A.U.P., Pa Polit. Sci. and Pub. Admin. Assn.; Alpha Kappa Psi; Pi Gamma Mu; Pi Sigma Alpha; Phila. Com. of Seventy. Author: Coun. Manager Plan of Government in Oklahoma Cities, 1935; State and Local Government in America, 1954; Municipal Government and Administration in America, 1960. Contbr. to: Natl. Municipal Rev.; Annals Amer. Acad. of Polit. and Soc. Sci.; Natl. Tax Jour.; Temple Law Quart.; The Amer. City; Jour. of Land and Pub. Utility Econ.; Natl. Tax Jour.; Oregon Law Rev. Areas of Rsch.: State and Local Government; Municipal Corporations; Constitutional Law.

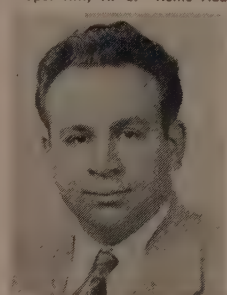
PHILLIPS, John Hunter, Jr. (M.D.), Asst. Prof. of Med., Tulane Univ., Schl. of Medicine, 1430 Tulane Ave., New Orleans, La. Home Add.: 6712 Glendale Ave., Metairie, La. INTERNAL MEDICINE, CARDIOLOGY, ANGIOLOGY, GERIATRICS. b. Houston, Tex., Nov. 2, 1930. s. John Hunter and Ida (Scholars) P. Edn.: B.S., Tulane Univ., 1952; M.D., ibid., 1955. m. Mary Jo Holland, Dec. 18, 1954. c.: Cynthia Kay; John Hunter; Virginia Minta. Exp.: Fellow in Medicine, Tulane Med. Schl., New Orleans, La., 1956-57; Asst. Instr., Tulane Med. Schl., ibid., 1956-57; Asst. Visiting Physician, Charity Hosp., ibid., 1956-61; Visiting Physician, ibid., 1961—; U. S. P.H.S. Rsch., Fellow of National Heart Inst., 1957-60; Instr., Tulane Med. Schl., ibid., 1957-62; Asst. Prof. of Med., ibid., 1962—; Med. Consult., Lallie Kemp Charity Hosp., Independence, La., 1957—; Clin. Asst., V. A. Hosp., N. Orleans, La., 1958-61; Chf., Cardiology Sect., ibid., 1961—; Med. Consult., Huey P. Long Charity Hosp., Pineville, La., 1959—; Spec. Med Consult. to the U.S.P.H.S. Natl. Hlth. Survey, Summer 1960; Attend. Physn., V.A. Hosp., Alexandria, La., 1960. Hon. Pos.: Asst. Editor of the Am. Heart Jour., 1959-61; Assoc. Editor, ibid., 1961—; Editorial Bd., Am. Jour. of Med. Scis., 1962—; Diplomate, Am. Bd. of Internal Med., 1962. Mem.: Am. Fdtn. for Clin. Rsch.; Am. Assn. Adv. Sci.; Sigma Xi; Fellow, Am. Geriatrics Soc.; Phi Beta Kappa; Alpha Omega Alpha; Sigma Pi Sigma; Omicron Delta Kappa; Nu Sigma Nu; Phi Kappa Sigma; Orleans Parish Med. Soc.; Am. Heart Assn.; La. Heart Assn.; Louisiana Thoracic Soc.; New Orleans Acad. of Internal Med. Contbr. to: Bull. of Tulane Med. Faculty; Jour. of Chronic Diseases; A.M.A. Arch. of Internal Med.; Circulation Rsch.; Am. Heart Jour.; Clinical Rsch.; Med.; Am. Jour. of Med.; Jour. of Am. Med. Assn.; Handbook of Physiol., Sect. on Peripheral Circulation. Serv. Rec.: U.S.N.R. Areas of Rsch.: Cardiology, Angiology.

PHILLIPS, Marcella Lindeman (Mrs.), Union Farm, Mt. Vernon, Va. IONOSPHERIC RADIO PROPAGATION. b. Cumberland, Iowa, Jan. 15, 1901. d. Frank and Maria (Marley) Lindeman. Edn.: B.A., State Univ. of Iowa, 1921; M.S., ibid., 1922. m. Maj. Gen. J. F. Phillips, U.S.A.F., June 27, 1927. c.: Laura Marley; Frederica Lindeman. Exp.: Grad. Asst., Undergrad. Asst., State Univ. of Iowa, 1919-20; Instr., Hunter Coll. of the City of N. Y., 1924-25; Engr., Edison Lamp Works, General Elec. Co., 1924; Physicist, Nela Park Labs. of General Elec. Co., Cleveland, Ohio, 1925-28; Physicist, Thomas and Hochwalt Labs., Dayton, Ohio, 1929-30; Prof. of Physics, Adamson Univ., Manila, Philippines, 1937-38; Physicist, Dept. Terrestrial Magnetism, Carnegie Inst. of Wash., 1940-42; Physicist, C.R.-P.L., Natl. Bureau of Standards, 1942-51; Physicist, Rsch. Lab. Electronics, Mass. Inst. Tech., Cambridge, Mass., 1951-53; Consultant, Physics, applied mathematics (Lincoln Lab., Mass. Inst. of Tech.), 1953—. Mem.: Inst. of Radio Engr. (S.M.); Am. Physical Soc.; Am. Geophys. Union; Philos. Soc. of Wash.; Wash. Acad. of Sci.; Sigma Xi. Co-author: Radio Spectrum Conservation, 1952. Contbr. to: Physical Rev.; Trans. Jour. Am. Geophysical Union; Jour. Geophysical Rsch.; Terrestrial Magnetism and Atmospheric Electricity; U.R.S.I. Proc.; Proc. I.R.E.; etc. Gen. Int.: Devel. of Prediction Methods of World-wide Useful Radio Frequencies for Operational Use, N.B.S., C.R.P.L. Special Int.: Ionospheric Radio Propagation; Nomography; Atmospheric Electricity; Radiation Properties of Incandescent Solids; Metallography of Tungsten, Molybdenum, and other Metals; Low-frequency Studies of Dielectrics.

PHILLIPS, Wendell (Dr.), Pres., American Fdtn. for the Study of Man, 2400 Kalakaua Ave., Honolulu, Hawaii. Home Add.: Diamond Head Apts., 2969 Kalakaua Ave., Honolulu, Hawaii. SOUTH ARABIAN EXPLORATION, ARCHAEOLOGY AND HISTORY. b. Oakland, Calif., Sept. 25, 1921. s. Merley H. and Sunshine (Chrisman) P. Edn.: A.B., Univ. of Calif., 1943. Hon. Degrees: Sc.D., Marietta Coll., 1952; Litt.D., Univ. of Redlands, 1954; J.D., Calvin Coolidge Coll., 1954; LL.D., Coll. of Emporia, 1961; L.H.D., Sterling Coll., 1961; Dr. of Commercial Science, Colo. State Univ., 1962; H.H.D., Trinity Univ., 1962. Exp.: (Leader) Univ. of Calif. African Expedition, 1947-49; Mt. Sinai Exp. with Library of Congress and Alexandria Univ., 1950; Arabian Exped. I-II with Carnegie Museum, 1950-51; Yemen Exped., 1951-52; Oman Exped., I-II, 1952-53; Oman-Sahar. Exped., 1958; Oman-Geog. Exped., 1960; Pres., Am. Fdtn. for the Study of Man, 1949—; Fellow: Royal Geographical Soc.; Royal Anthropol. Inst.; Am. Geog. Soc.; Royal Cent. Asian Soc.; Royal Asiatic Soc. Mem.; Oriental Soc.; A.A.A.S.; N. Y. Acad. of Scis.; Royal Archaeol. Inst.; Middle East Inst.; Soc. of Vertebrate Paleontology; Am. Anthropol. Assn.; Soc. of Am. Archaeol.; Explorers Club, Adventures Club of Honolulu; Inst. Internal. Chateauz Historiques, Switzerland; Jr. C. of C. (hon.); Dutch Treat Club of N. Y.; Alpha Gamma Nu (hon.); Circumnavigators Club; Ends of the Earth Club. Author: Qataban and Sheba, 1955. Contbr. to: Sci.; The Scientific Monthly; Man. Serv. Rec.: U. S. Merchant Marines, 1943-45. Gen. Int.: Organized and led largest scientific expedition to explore Africa. Microfilmed on behalf of Library of Congress, Ancient Library at Monastery of Saint Catherines, Mt. Sinai; Led first party of westerners to reach and excavate Queen of Sheba's Capitol City in Yemen. Areas of Rsch.: South Arabian Archaeology, South Arabian Geographical Exploration, Oman history.

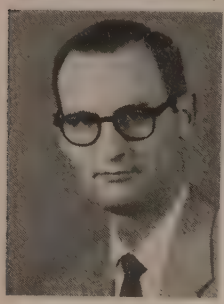


PIANTADOSI, Claude (Ph.D.), Assoc. Prof., Univ. of No. Carolina, Chapel Hill, N. C. Home Add.: 701 Kings Mill Rd., Chapel Hill, N. C. MEDICINAL CHEMISTRY AND BIOCHEMISTRY. b. Naples, Italy, Jan. 4, 1923. s. Joseph and Carmella (Saponare) P. Edn.: B.S., Brooklyn Coll. of Pharmacy, 1949; M.S., Columbia Univ., 1952; Ph.D., Univ. of N. C., 1956. m. Lucille Dipoto, Nov. 4, 1945. c.: Claude, Jr.; Steven; Lorene. Exp.: Asst. Prof., Butler Univ., 1955-56; Asst. Prof., Fordham Univ., 1956-57; Assoc. Prof., Univ. of N. C., 1957—. Mem.: Sigma Xi; Rho Chi; Am. Chem. Soc.; Am. Pharmaceutical Assn.; Elisha Mitchell Scientific Soc.; N. Y. Acad. of Sci.; Phi Delta Chi. Contbr. to: Jour. of Organic Chem.; Jour. Am. Chem. Soc.; Jour. of Pharmaceutical Scis.; Federation Proc. Serv. Rec.: U. S. Army Air Force, 1942-45. Gen. Int.: Received Coker award from Univ. of N. C. in 1956 for best Ph.D. Thesis in Sciences. Areas of Rsch.: Cancer Research, Lipid Chemistry; Physical Pharmacy.



PICKARD, Thomas Francis (Mr.), Asst. to the Prin. and Math. Instr., Tenn. Prep. Schl., Nashville 11, Tenn. MATHEMATICS b. Chicago, Ill., Dec. 27, 1921. s. Jerome M. and Claire (Percival) P. Edn.: B.A., Univ. of the So., 1950. m. Mary Rose Merchant, May 30, 1958. Exp.: Accountant, Mitchell Camera Comp., Los Angeles, Calif., 1940-42; Auditor, U. S. Army Vet. Admin., Los Angeles, Calif., 1946-57; Field Secy., Tenn. Soc. Crip. Childs., Nashville, Tenn., 1952-53; Instr., Tenn. Prep. Schl., 1953—. Hon. Pos.: Vice-Pres., 1939 and Pres., 1940, Chicago Mathl. Soc.; Chmn., Southeastern Region, Natl. Speleol. Soc., 1957. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Speleol. Soc.; Tenn. Edn. Assn.; Natl. Edn. Assn.; Phi Gamma Delta; Omicron Delta Kappa; Blue Key; Sigma Upsilon. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Platonic and Inscribable Archimedean Solids.

PICKETT, Bill Wayne (Ph.D.), Asst. Prof., Univ. of Conn., Storrs, Conn. Home Add.: Mulberry Rd., Mansfield Center, Conn. RE-

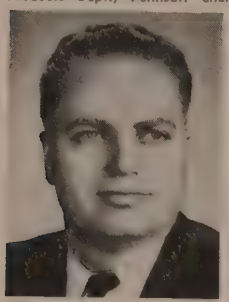


PRODUCTIVE PHYSIOLOGY. b. Cyril, Okla., Decfl. 14, 1930. s. H. W. and Susan (Bateman) P. Edn.: B.S., Okla. State Univ., 1952; M.S., Univ. of Mo., 1955; Ph.D., ibid., 1958. m. Joan Marvin, Dec. 17, 1955. c.: Robert Alan; David Marvin. Exp.: Asst. Prof., Univ. of Conn., 1957—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Dairy Sci. Assn.; Am. Soc. for Animal Production; Gamma Alpha; Alpha Zeta; Gamma Sigma Delta; Phi Kappa Phi. Contbr. to: Jour. of Dairy Sci. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Chem. of Mammalian Spermatozoa with Special Reference to Factors Affecting Low Temperature Preservation.

PIEKARZ, Josephine A. (Ph.D.), Assoc. Prof. of Edn. Psych., New York Univ., New York, N. Y. Home Add.: 200 West 16th St., New York 11, N. Y. REMEDIAL READING, EDUCATIONAL PSYCHOLOGY. b. Colchester, Conn., Feb. 14, 1921. d. Joseph S. and Anna (Przybos) P. Edn.: B.S., Tchrs. Coll. of Conn., New Britain, 1943; Ed.M., Boston, Univ., 1947; Ph.D., Univ. of Chicago, 1954. Exp.: Tchr., Elmwood Schl., West Hartford, Conn., 1943-46; Reading Supvr., Publ. Schls., Plainville, Conn., 1947-49; Asst. Dir., Reading Clinic, Univ. of Chicago, 1950-54; Assoc. Prof., Univ. of So. Calif., 1954-57; Assoc. Prof., New York Univ., 1957—. Mem.: Am. Assn. for Adv. of Sci.; Am. Psychol. Assn.; Natl. Soc. for Study of Edn.; N. Y. Acad. of Sci.; Natl. Coun. of Tchrs. of English; Natl. Edn. Assn.; Internatl. Reading Assn.; Am. Assn. of Univ. Prof.; Delta Kappa Gamma; Kappa Delta Pi; Pi Lambda Theta. Contbr. to: Univ. of Chicago Monographs; Edn. Mag.; Elementary Schl. Jour.; South Carolina Edn. Assn. Jour. Areas of Rsch.: Reading and Language Arts.

PIERCE, A. Keith, Astronomer.

PIERCE, Robert Raymond (Mr.), Gen. Mgr., Corrosion Engrng. Products Dept., Pennsalt Chemicals Corp., Natrona, Pa. Home Add.: R. D. 1, Banbury Lane, Natrona Heights, Pa. CORROSION PREVENTION AND CONTROL. b. Helena, Mont., Feb. 17, 1914. s. Raymond E. and Daisy M. (Brown) P. Edn.: B.S., Ore. St. Univ., 1937. m. Stella F. Kankos, June 12, 1938. c.: Keith; Patricia; Diana. Exp.: Process Supvr., Asst. Tech. Serv. Engr., Pennsalt Chemicals Corp., Portland, Ore. and Tacoma, Wash., 1941-47; Sales Mgr., ibid., Philadelphia, Pa., 1947-58; Gen. Mgr., ibid., Natrona, Pa., 1958—. Hon. Pos.: Chmn., Intersociety Corrosion Comm.; Dir., Natl. Assn. of Corrosion Engrs.; Sub Area Chmn., Am. Inst. of Chemical Engrs. Mem.: Am. Mgmt. Assn.; Pi Kappa Phi; Rotary. Contbrng. Author: Electroplaters Engineering Handbook, 1958, 1962. Contbr. to: Chem. Engrng.; Chem. Engrng. Progress; Corrosion; Werkstoff und Korrosion. Areas of Rsch.: Prestressed Ceramic, Carbon and Graphite Linings, Acid Proof Brickwork Construction, Protective Coatings, Chimney Linings, Corrosion Prevention and Control.



PIERCE, Joseph Alphonso (Ph.D.), Prof. of Math., Dean, Graduate School, Director of Summer School, Texas Southern Univ., Houston, Tex. MATHEMATICAL STATISTICS. b. Aug. 10, 1902, Waycross, Ga. s. Rev. Wm. Arthur and Fannie Luvicia (McGraw) P. Edn.: A.B., Atlanta Univ., 1925; M.S., Univ. of Mich., 1930; Ph.D., ibid., 1938. m. Juanita George of Ft. Worth, Tex., Oct. 15, 1933. d. Pearl Witherspoon and Cornelius N. George. c.: Joseph A., Jr. Exp.: Asst. Prof. of Math., Tex. Coll., Tyler, Tex., 1921-27; Chmn., Div. of Math., Wash. H. S., Atlanta, Ga., 1927-29; Prof. of Math., Wiley Coll., Marshall, Tex., 1930-38; Prof. of Math., Atlanta Univ., Atlanta, Ga., 1938-48; Prof. of Math., Tex. Southern Univ., Dean, Grad. Schl., Houston, Tex., 1948—; Proj. Supervisor, N. Y. A., Part-Time, 1939. Hon. Pos.: Edit. Bd., Jour. of Negro Bus.; Genl. Edn. Bd.; Fellow, 1937-38; Advisory Comm. on Statistics, So. Regional Edn. Bd., 1952-54; Admin. Com., So. Fellowships Fund, 1954—; Exec. Com., Conf. of Deans of So. Grad. Schls., 1954—. Mem.: A.M.S.; Inst. of Math. Statistics; Sigma Xi; Sigma Pi Phi; Alpha Phi Alpha. Author: Introductory Coll. Math., with Others; The Atlanta Negro; Negro Bus. and Bus. Edn. Contbr. to: Annals of Math. Stat.; Jour. of Amer. Stat. Assn.; Quart. Rev. of Higher Edn. Among Negroes; Morehouse Jour. of Sci. Ph.D. Dissertation: A Study of a Universe of Finite Populations with Application to Moment-Function Adjustments for Grouped Data. Special Int.: Rsch. in Math. Statistics; Mathematical Statistics, Surveys. Hobby: Athletics.

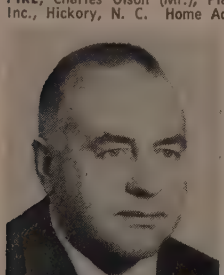
PIERCE, William Dwight (Ph.D.), Curator Emer. in Paleoentomology, Los Angeles Co. Museum, Los Angeles 62, Calif. Home Add.: 4025 Halldale Ave., Los Angeles, Calif. ENTOMOLOGY—CLASSIFICATIONS; PALEOENTOMOLOGY, MIOCENE TO PLEISTOCENE. b. Champaign, Ill., Nov. 16, 1881. s. John Larke and Margaret Hemphill (Harris) P. Edn.: B.A., Univ. of Nebr., 1904; M.A., ibid., 1907; Ph.D., Geo. Wash. Univ., 1917. m. Clara Virginia Loomis, Dec. 6, 1904. Exp.: Asst. State Entomol., Miss., 1904; Entomol., U. S. Bur. of Entomol., 1904-19; Consulting Entomol., 1919-27; Entomol., Victorias Milling Co., 1927-30; Editor on Biol. Abstracts, Phila., 1931-36; Entomol. Curator, Los Angeles Co. Museum, 1937-51; Emer., ibid., 1952. Hon. Pos.: Pres., Sou. Calif. Acad. Sci., 1943-45; Dir., ibid., 1939—; Treas., ibid., 1948—. Mem.: A.A.A.S.; Wash. Entomol. Soc.; Sou Calif. Acad. Scis.; Am. Inst. Biol. Sci.; Natl. Geog. Soc.; Entom. Soc. Am.; Sigma Xi; Phi Sigma; Geochem. Soc.; and others. Author: Sanitary Entomology, 1921; Jesus, Interpreter of the Eternal, 1957. Contbr. to: Bull., Sou. Calif. Acad. Scis.; Proc. Wash. Entomol. Soc.; and others. Areas of Rsch.: Classification of Strepsiptera and Rhynchophora; Paleoentomology; Atomic Structure (Polyhedral Nature); Biology of Philippine Island of Negros; Structural Pests; Genealogical History; Biblical Studies.

PIERPONT, Howard Clemeth (M.D.), Assoc. Prof. of Surg. and Dir. of the Surgical Rsch. Lab., The George Wash. Univ. Schl. of Med., 2300 K. St., N.W., Wash. 7, D. C. Home Add.: 2337 S. Pierce St., Arlington 2, Va. GENERAL SURGERY AND EXPERIMENTAL SURGERY. b. Marietta, Ohio, Dec. 19, 1917. s. Lloyd L. and Welea Ann (Kile) P. Edn.: A.B., Marietta Coll., 1939; M.D., C. M. McGill Schl. of Med., 1943. m. Irene (MacAllister), Oct. 1, 1946. c.: Christa Ann; David Lloyd; Helen Joan. Exp.: Dir., Surgical Rsch. Lab., Geo. Wash. Univ., 1952—; Clinical Instr. in Surgery, George Wash. Univ., 1952-55; Assoc. in Surgery, ibid., 1955-57; Asst. Prof. of Surgery, ibid., 1957-61; Assoc. Prof. of Surgery, ibid., 1961—; Consultant in Surgery, Natl. Inst. of Health, 1953-55; Consultant, St. Elizabeth Hosp., Wash., D. C., 1952-58. Hon. Pos.: Regional Comm. of Trauma, Am. Heart Assn., Wash. Heart Assn. Bd. of Dir. and Pres., 1962-63. Mem.: Am. Medical Assn.; Med. Soc. of the District of Columbia; A.A.A.S.; Delta Upsilon; Nu Sigma Nu; Beta Beta Beta. Contbrng. Author: Hypothermia in Surgical Diseases of the Chest, Brian Blades. Contbr. to: Surgery, Gynecology and Obstetrics; Jour. of Thoracic and Cardiovascular Surgery; Annals of Surgery; Am. Surgeon; Surgical Forum of the Am. Coll. of Surgery; Surgery; A.M.A. Arch. of Surgery. Serv. Rec.: U. S. A. Areas of Rsch.: Hypothermia, Blood Vessel Reconstruction, Extracorporial Circulation, Artificial Kidney Dialysis, Cancer Chemotherapy by Regional and Isolated Perfusion.

PIERSEL, William Guthrie (Ed.D.). Home Add.: 1137 S. Fourth St., Springfield, Ill. TRAFFIC SAFETY. b. Bloomington, Ill., March 25, 1899. s. Alba C. and Blanche (Smith) P. Edn.: A.B., Ohio Wesleyan Univ., 1920; A.M., Univ. of Chicago, 1926; Ed.D., Ind. Univ., 1938. m. Daltye Martha Cleveland, 1935. Exp.: Instr., Marietta Coll., 1929-33; Statistician, Ill. Dept. of Publ. Safety, Springfield, Ill., 1941-47; Chf. Statistician, Publ. Safety Div., Occupation of Japan, Tokyo, Japan, 1947-52; Personnel Dir., Horace Mann Cos., Springfield, Ill., 1952-55; Rsch. Analyst, Ill. Traffic Safety Div., Springfield, Ill., 1955-61. Mem.: A.A.A.S.; Phi Delta Kappa. Contbr. to: Schl. and Soc.; Soc. Forces. Serv. Rec.: Army, W. W. I. Areas of Rsch.: Application of Statistical Methods to Traffic Analysis; Mental Measurements.

PIERSON, William Russell (Ph.D.), Asst. Prof., Physiol., Calif. Coll. of Med., Los Angeles, Calif. Home Add.: 1900 Mission St., South Pasadena, Calif. PHYSIOLOGICAL PSYCHOLOGY AND PHYSICAL ANTHROPOLOGY. b. Grand Rapids, Mich., Apr. 3, 1922. s. William H. and Julia (Bates) P. Edn.: B.S., Mich. St. Univ., 1952; M.A., ibid., 1953; Ph.D., ibid., 1957. m. Ann Good, 1950. c.: Susan M.; W. Bruce; John R.; Cheryl A.; David L. Copeland. Exp.: Asst. Dir., Rsch. Lab., Calif. Coll. of Med., 1958—; Asst. Prof., ibid., 1958—; Assoc. Mem., Los Angeles Co. Gen. Hosp., Los Angeles, Calif., 1960—. Hon. Pos.: Assoc. Editor, Rsch. Quart., AAHPER; Cont. Editor, Jour. Assn. Phys. and Ment. Rehab.; Rsch. Council, AAHPER. Mem.: Am. Coll. Sports Med. (Fellow); Am. Assn. Health, P.E. and Rec.; Am. Soc. Photogrammetry; Sigma Xi; Psi Chi; Phi Epsilon Kappa; MSU Varsity Alum. Assn. Author: Longevity and Morbidity of College Athletes, co-author, 1957. Contbr. to: Jour. A.M.A.; Jour. Clin. Psy.; Jour. Geront.; Res. Quart.; Percept. Mot. Skills; Photogram. Eng.; Jour. Assn. Phys. Ment. Rehab.; Ergonomics; Int. Z. angw. Physiol. einschl. Arbeitphysiol.; Med. Del. Sport.; Sportartz. Praxis; Jour. Sport Med. Phys. Fit.; Jour. appl. Physiol.; Rev. Canad. de Biol.; Fed. Int. Ed. Phys.; Am. Jour. Clin. Nut. Serv. Rec.: U. S. Army, 1942-45; U.S.A.F., 1945-48; U.S.A.F.R., 1948—. Areas of Rsch.: Psychomotor Abilities, Psychopharmacology, and Photogrammetric Estimations in Physical Anthropology.

PIKE, Charles Olson (Mr.), Plant Mgr., Tape Div., Shuford Mills, Inc., Hickory, N. C. Home Add.: Rt. 3, Box 220, Newton, N. C. GENERAL ENGINEERING (CHEMICAL). b. Salisbury, Mass., Aug. 25, 1915. s. Charles M., Jr. and Ida Elise (Peterson) P. Edn.: B.S., Mass. Inst. of Technol., 1937. m. Hazel Edyth Howell, Sept. 9, 1950. c.: Charles O., Jr.; Nancy F.; Buford B.; Stephen M.; Jon Alan. Exp.: Rsch. Group Leader, Goodyear Tire & Rubber Co., Akron, Ohio, 1937-41; Rsch. Section Leader, Permacel Tape Corp., New Brunswick, N. J., 1941-49; Rsch. Mgr., Tape Div., Behr-Manning Corp., Troy, N. Y., 1950-54; Plant Mgr., Tape Div., Shuford Mills, Inc., Hickory, N. C., 1954—. Hon. Pos.: Chmn., Technical Comm., Pressure Sensitive Tape Coun.; Chmn., Tape Div., Symposia Bldg. Rsch. Inst. Mem.: Am. Chem. Soc.; Technical Assn. Pulp and Paper Industry; Am. Mgmt. Assn.; Pressure Sensitive Tape Coun.; Loyal Order of Moose; Hickory Astronomy Club. Areas of Rsch.: Rubber and Plastic Chem.; Packaging; Coating; Adhesives; Paper; Textiles; Management.



PIKUL, Walter A. (Mr.), Sci. Instr., Roycemore Schl., Evanston, Ill. Home Add.: 13205 S. Commercial Ave., Chicago, Ill. BIOLOGY AND CHEMISTRY. b. Chicago, Ill., Oct. 9, 1930. s. John L. and Caroline (Starzec) P. Edn.: B.S., Roosevelt Univ., 1954. Exp.: Sci. Instr., Roseland Hosp. Schl. of Nursing, Chicago, Ill., 1955-60; Sci. Instr., Roycemore Schl., Evanston, Ill., 1961—. Mem.: A.C.S.; A.A.A.S.; N.S.T.A.; Div. of Chemical Edn.; Ill. Acad. of Sci.

PINCUS, Irwin Jack (D.Sc.), Dir. of Med., Cedars of Lebanon Hosp., 4833 Fountain Ave., Los Angeles 29, Calif. Home Add.: 610 N. Roxbury Dr., Beverly Hills, Calif. PHYSIOLOGY AND GASTROENTEROLOGY. b. Braddock, Pa., Dec. 2, 1912. s. Jacob M. and Ethel (Broida) P. Edn.: B.A., Univ. of Pa., 1934; M.D., Jefferson Med. Coll., 1937; D.Sc., Univ. of Pa., 1951. m. Lena Magaziner, Sept. 24, 1939. c.: David; Robert; Carol. Exp.: Assoc. Prof. Physiol., Jefferson Med. Coll., 1946-56; Assoc. Prof. of Gastroenterol., Grad. Schl. of Med., Univ. of Pa., 1949-60; Assoc. Prof. of Med., Woman's Med. Coll., 1957-60; Dir. of Med., Cedars of Lebanon Hosp., Los Angeles, Calif., 1960—. Mem.: A.M.A.; Los Angeles Co. Med. Assn.; Am. Diabetes Assn.; Am. Gastroenterological Assn.; Am. Coll. of Physicians, Fellow; Am. Fed. for Clin. Rsch.; Soc. for Exptl. Biol. and Med.; Am. Physiological Soc.; Sigma Xi. Contbr. to: Am. Jour. of Physiol.; Arch. of Int. Med.; Proc. Soc. for Exptl. Biol. and Med.; Gastroenterol.; Diabetes; Metabolism. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Gastrointestinal Physiol.; Carbohydrate Metabolism.

PILLSBURY, Donald Marion (M.D.), Prof. of Dermatol., Chmn., Dept. of Dermatol., Duhring Labs., Univ. Hosp., Univ. of Pa., 36th and Spruce Sts., Philadelphia, Pa. Home Add.: 12 E. Amherst Rd., Bala Cynwyd, Pa. DERMATOLOGY. b. Omaha, Neb., Dec. 29, 1902. s. Marion A. and Amanda (Johnson) P. (dec.). Edn.: B.S., Univ. of Neb., 1923; M.A., ibid., 1925; M.D., ibid., 1926. Hon. Deg.: D.Sc., Univ. of Neb., Coll. of Med., 1955. m. Charlotte Denny, Sept. 3, 1929. c.: Mrs. Katherine P. Janeway; Donald Marion, Jr.; David Chamberlain. Exp.: Asst. Prof., Univ. of Pa., 1931-38; Assoc. Prof., ibid., 1938-45; Prof., Chmn., Dept. of Dermatol., ibid., 1945-. Mem.: A.M.A.; S.I.D.; Am. Dermatological Assn.; Am. Acad. of Dermatol. and Syphilology; Am. Clin. and Climatological Assn.; Assn. of Am. Physicians; Am. Coll. of Physicians; Assn. if Prof. of Dermatol.; XII Internatl. Cong. of Dermatol.; Sigma Xi; Alpha Omega Alpha. Co-author: Dermatology, 1956; A Manual of Cutaneous Medicine, 1961. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Dermatology.

PINCUS, Howard J. (Ph.D.), Prof. and Chmn., Dept. of Geol., The Ohio Sta. Univ., 125 So. Oval Dr., Columbus 10, Ohio. Home Add.: 224 Melbourne Pl., Worthington, Ohio. GEOLOGY (STRUCTURAL AND ENGINEERING); GEOPHYSICS. b. N. Y., N. Y., June 24, 1922. s. O. M. and Gertrude (Jankowsky, dec.) P. Edn.: B.S., City Coll., N. Y., 1942; A.M., Columbia Univ., 1948; Ph.D., ibid., 1949. m. Maud Roback, Sept. 6, 1953. c.: Glenn David; Philip Ethan. Exp.: Instr. to Prof. and Chmn. of Dept. Geol., The Ohio Sta. Univ., 1949—; Geolt., Ohio Dept. of Nat. Res., Columbus, Ohio, Summers, 1950-61; N.S.F. Sr. Postdoc. Fellow, Appl. Phys. Rsch. Lab., U. S. Bur. of Mines, Coll. Pk., Md., 1962. Mem.: Geol. Soc. of Am.; Am. Geophys. Union; Seismol. Soc. of Am.; European Assn. of Explorati. Geophysts.; Royal Astron. Soc., London.; Soc. of Exploration Geophysts.; Am. Stat. Assn.; Ohio Acad. of Sci.; A Natl. Assn. of Geol. Tchrs.; A.A.U.P.; Phi Beta Kappa; Sigma Xi; Am. Assn. United N. Editor: Great Lakes Basin, A.A.A.S. Contbr. to: Jour. of Geol.; Bull. Geol. Soc. of Am.; Procs. Am. Soc. of Civ. Engrng. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Deformation of Earth Materials; Bluff Failure and Shore Processes; Analysis of Rock Fracture; Statistical Analysis of Angular Variates in Geological Problems; Geophysical Surveys in Support of Structural and Engineering Geology.

PINE, Irving (M.D.), Psychiatrist, Riverside Med. Bldg., Columbus, Ohio. Home Add.: 234 Park Blvd., Worthington, Ohio. MEDICINE: PSYCHIATRY. b. Brooklyn, N. Y., May 5, 1909. s. Jacob and Dora (Katz) P. Edn.: M.D., N. Y. Med. Coll., 1932. m. Helen Margaret Lukas, Feb. 26, 1939. c.: Janet Helen; Evelyn Jean. Exp.: Instr. and Assoc. in Psychiatry, Duke Coll. of Med., 1949-52; Assoc. Prof. of Psychiatry, Ohio St. Univ., 1952—; Asst. Prof. of Med., ibid., 1959—. Mem.: A.M.A.; Am. Psychiatric Assn.; Am. Psychosomatic Assn.; Am. Group Psychotherapy Assn.; A.A.A.S.; N. Y. Acad. of Sci.; Coll. of Chest Physicians; Am. Thoracic Soc.; Faculty Club. Contbr. to: Jour. Nervous Mental Dis.; E.E.G. Jour.; Am. Rev. of T.B.C.; Psychosomatic Med. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch: Dreams During Psychotherapy.

PINE, Wilfred Harold (Ph.D.), Prof., Kans. St. Univ., Manhattan, Kans. Home Add.: 2024 Thackrey, Manhattan, Kans. ECONOMICS. b. Lawrence, Kans., Jan. 29, 1912. s. Clarence E. and Gertrude D. (Epley) P. Edn.: B.S., Kans. St. Univ., 1934; M.S., ibid., 1938; Ph.D., Univ. of Minn., 1948. m. Beatrice O. Lasswell, 1939. c.: Janet Helen; Stanley Wilfred. Exp.: Co. Agric. Agent, Ext. Serv., Labette Co., Kans., 1934-35; Prof., Kans. St. Univ., 1935—; Econ. Comm., Econ. Coop. Adm., Turkey, 1950-51; Consultant, Internatl. Coop. Adm., Surinam, 1960. Hon. Pos.: Governor's Tax Committee. Mem.: Soil Conservation Soc. of Am.; A.A.U.P.; Am. Farm Econs. Econs. Assn.; Farmhouse Fraternity; Phi Kappa Phi; Gamma Sigma Delta; Alpha Zeta; C. of C. Contbr. to: Jour. of Farm Econs.; Jour. of Farm Mgrs. and Rural Appraisers. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Land Tenure, Taxation, Credit, Conservation; Land Valuation; Land Utilization; Gen. Econs.

PIOTROWSKI, Zygmunt A. (Ph.D.), Diplomate of the Am. Bd. of Examiners in Clin. Psychol., 1950. Prof. of Psychol., Jefferson Med. Coll. of Phila., Phila., Pa.; Area Consultant, V. A.; Lectr., Temple Univ. Home Add.: 2200 St. James St., Phila. 3, Pa. EXPERIMENTAL PSYCHOPATHOLOGY. b. Poznan, Poland, Apr. 18, 1904. s. Edmund and Salomea (Jankowska) P. Edn.: Ph.D., Univ. of Poznan, 1927. Married, one child. Exp.: Sr. Asst. in Psychol., Univ. of Poznan, Poznan, Poland, 1927-28; Phychol. Asst., N. Y. State Psychiatric Inst., 1930-31; Instr. in Psychiatry, Columbia Univ., N. Y. C., 1931-43; Assoc. in Psychiatry, ibid., 1943-54; Lectr. in Psychol., N. Y. Univ., 1947-48; Adj. Asst. Prof. of Psychol., ibid., 1948-49; Adj. Assoc. Prof. of Psychol., ibid., 1949-53; Adj. Prof. Psychol., ibid., 1953-58; Prin. Rsch. Sci. in Psychol., N. Y. St. Dept. of Ment. Hyg., N. Y. C., 1948-54; Psycholst., 4th Serv. Comd. Rehab. Ctr., Ft. Jackson, S. C., 1943-44; Expert Consult. to Secy. of War, 1946-50; Consultant to Walter Reed Genl. Hosp., Washington, D. C., 1949-50; Consultant to Vet. Admin., 1947—; Rsch. Psychol., N. J. Dept. Instns. and Agencies, 1954-57; Rsch. Consult., E. N. Hay & Assoc., Phila., Pa.; Recipient of Several Rsch. Grants Incl. One from the U.S.P.H.S. Hon. Pos.: Past Pres., Rorschach Inst.; Mem. of Coun. and Chmn. of Psychol. Sect., N. Y. Acad. of Sci. Mem.: Am. Psychol. Assn., Fellow; N. Y. Acad. of Sci., Fellow; Fellow, Am. Orthopsychiat. Assn.; Charter Fellow, Soc. for Projective Tech.; Am. Psychopathol. Assn.; Eastern Psychol. Assn.; N. Y. Metropolitan Psychol. Assn.; N. Y. State Assn. for Clin. Psychol.; Hon. Mem., Soc. of Clin. and Applied Psychologists, Richmond, Va. Author of more than 60 Scientific Articles; and of PERCEPTANALYSIS, 1957. Contbr. to: The Psychiatric Qtrly.; Jour. of Nervous and Mental Disease; Rorschach Rsch. Exchange; British Jour. of Med. Psychol.; Psychoanalytic Review; Psychosomatic Med.; Jour. of Consulting Psychol.; Jour. of Psychol.; Am. Jour. of Psychiatry; Quart. Jour. of Child Behavior; Jour. of Abnormal and Soc. Psychol.; Nervous Child Assoc.; Am. Jour. Psychiatry; A.M.A. Rsch. Neurology and Psychiatry; Le test de Rorschach et la personnalite epileptique. Editor: Psychiatric Quart., 1944—; Rorschach Rsch. Exchange, 1941-43; Assoc. Ed., Rev. of Diagnostic Psych. and Personality Exploration, 1954—. Gen. Int.: Introduced New Diagnostic Preceptanalytic signs in Intracranial Pathol. and Epilepsy; Pioneer Work in Perceptanalytic Prognosis and Diagnosis in Schizophrenia; Rewrote and Improved Definitions of the Rorschach Method. Special Int.: Personality Tests and Psychopathol., Especially Problems of Diagnosis and Prognosis in Mental Diseases; Study of Sexual Criminals; Personality Studies of Top Managers and Top Management Teamwork.

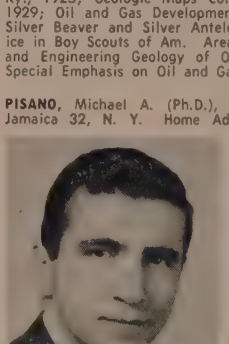
PIPER, Robert, Metallurgist.

PIPES, Louis A. (Ph.D.), Prof., Engrng., Univ. of Calif., Los Angeles 24, Calif. Home Add.: 2918 Fourth St., Santa Monica, Calif. APPLIED MATHEMATICS; ELECTRICAL ENGINEERING; DYNAMICS. b. Mexico City, Mex., Oct. 22, 1910. s. David F. and Marinela (de la Garza) P. Edn.: B.S., Calif. Inst. of Tech., 1933; M.S., ibid., 1934; Ph.D., ibid., 1936. m. Florence L. Stetson, Aug. 21, 1944. c.: Gerald T., Harold R. Exp.: Instr., Rice Inst., 1936-37; Alumni Rsch. Fellow, Univ. of Wis., 1937-38; Faculty Instr., Harvard Univ., 1938-42; Asst. Prof., ibid., 1942-46; Assoc. Prof., Univ. of Calif., Los Angeles, 1947—; Prof., ibid., 1950—. Hon. Pos.: Consultant, Douglas Aircraft Co., Santa Monica, Calif. Mem.: Fellow, Inst. Radio Engrs.; Am. Inst. Elec. Engrs.; Assoc. Fellow, Inst. of the Aeronautical Scis.; Am. Math. Soc.; Operations Rsch. Soc. of Am.; Tau Beta Pi; Sigma Xi. Author: Applied Math. for Engrs. and Physicists, 1946. Contbr. to: Jour. of Applied Physics; Jour. of the Franklin Inst.; Trans. of Am. Inst. of Elec. Engrs.; Trans. of Am. Inst. of Radio Engrs. Areas of Rsch.: Applied Math.; Nonlinear Mechanics; Dynamics; Electricity and Magnetism.

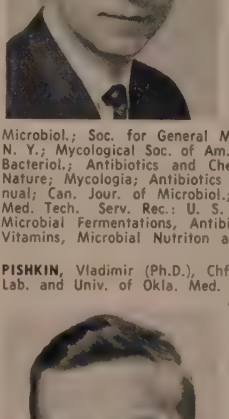
PIRONE, Pascal Pompey (Ph.D.), Plant Pathologist, N. Y. Botanical Garden, New York 58, N. Y. Home Add.: 1522 Dwight Place, N. Y. 65, N. Y. PLANT PATHOLOGY. b. Mt. Vernon, N. Y., Oct. 7, 1907. s. Domenico and Mary (Sirignano) P. Edn.: B.S., Cornell Univ., 1929; Ph.D., Cornell Univ., 1933. m. Loretta Kelly, Dec. 21, 1933. c.: Thomas; Mary; John; Joseph. Exp.: Asst. Plant Pathologist, A. A. Grinnell Co., Elba, New York, 1927-28; Fellow, Nassau Co., N. Y., Farm Bureau, 1929-33; Field Agent, U.S.D.A. Agric., 1933-34; Asst. Prof. Plant Pathol., Cornell Univ., 1934-38; Assoc. Prof. Plant Pathol., Rutgers Univ., 1938-47; Plant Pathologist, N. Y. Bot. Garden, 1947—. Mem.: Sigma Xi; Phi Kappa Phi; Pi Alpha Xi. Author: Maintenance of Shade and Ornamental Trees, 1941; Modern Gardening, 1952; What's New in Gardening, 1956; Tree Maintenance, 1959; Diseases and Pests of Ornamental Plants, 1960. Contbr. to: Phytopathology. Areas of Rsch.: Consultant on Air Pollution Damage and On Landscape Maintenance; Plant Disease Diagnostician.

PIRTLE, George William (Mr.), Consulting Geologist, 115 E. 2nd St., Tyler, Tex. GEOLOGY (PETROLEUM, STRUCTURAL). b. Cecilia, Ky., Nov. 1, 1902. s. Thomas L. and Laura (Shipley) P. Edn.: B.S., Univ. of Ky., 1924; M.S., ibid., 1925. m. El Freda Taylor, July 16, 1928. c.: George W., Jr. Exp.: Geologist, Ky. Geol. Survey, 1924-25; Partner, Hudnall and Pirtle, Consulting Geologists, Tex., 1925-29; Chief Geologist, Old Dutch Oil and Gas Co., 1929-32; Partner, Hudnall and Pirtle, Petroleum Consultants, exploration and appraisals of Oil and Gas properties, Tyler, Tex., 1932. Hon. Pos.: Trustee, Tyler Jr. Coll. Mem.: Sigma Xi; Geol. Soc. of Am.; Am. Assn. of Pet. Geologists; Omicron Delta Kappa; Tex. Acad. of Sci.; Rotary. Author: Michigan Structural Basin and its Relationship to Surrounding Areas, AAPG, 1932. Co-Author: Geology Jessamine County, Ky., 1925; Geologic Maps Coleman and Brown Counties, Texas, 1929; Oil and Gas Developments, East Texas, 1938. Gen. Int.: Silver Beaver and Silver Antelope Awards for distinguished service in Boy Scouts of Am. Areas of Rsch.: Specializing: Economic and Engineering Geology of Oil and Gas Fields of Texas, with Special Emphasis on Oil and Gas Geology of the East Texas Area.

PISANO, Michael A. (Ph.D.), Prof. of Biol., St. John's Univ., Jamaica 32, N. Y. Home Add.: 11 Lawrence Rd., Hempstead, L. I., N. Y. MICROBIOLOGY. b. Brooklyn, N. Y., Mar. 31, 1923. s. Michael and Mary (Esposito) P. Edn.: B.A., Brooklyn Coll., 1946; M.S., St. John's Univ., 1949; Ph.D., Mich. State Univ., 1953. m. Anne Salanitro, 1948. c.: Michael; Geralyn; Andrea; Lorraine. Exp.: Microbiolst., Mich. St. Dept. of Hlth., Lansing, Mich., 1951-53; Microbiolst., S. B. Penick and Co., Jersey City, N. J., 1953-55; Prof., Biol., St. John's Univ., 1955—. Hon. Pos.: Chmn., Mem. Comm. of Soc. for Industrial Microbiol.; Rsch. Assoc. at Mt. Sinai Hosp., N. Y. C.; Mem. of the Coun. of N. Y. C. Branch Am. Soc. for Microbiol. Mem.: Am. Soc. for Microbiol.; N. Y. Acad. of Scis.; Soc. of Industrial Microbiol.; Soc. for General Microbiol.; Med. Mycology Soc. of N. Y.; Mycological Soc. of Am.; Sigma Xi. Contbr. to: Jour. of Bacteriol.; Antibiotics and Chemotherapy; Bacteriological Proc.; Nature; Mycologia; Antibiotics Annual; Antimicrobial Agents Annual; Can. Jour. of Microbiol.; Jour. of Empire State Assn. of Med. Tech. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Microbial Fermentations, Antibiotics, Chem. Activities of Fungi, Vitamins, Microbial Nutriton and Cell Morphology.



PISHKIN, Vladimir (Ph.D.), Chf., Rsch. Psychol., V.A. Beh. Sci. Lab. and Univ. of Okla. Med. Ctr., Oklahoma City, Okla. Home Add.: 909 N.E. 18th, Oklahoma City, Okla. PSYCHOLOGY, EXPERIMENTAL AND CLINICAL RESEARCH; WITH SPECIAL INTEREST IN PSYCHOPATHOLOGY AND THINKING PROCESS. b. Belgrade, Yugoslavia, Mar. 12, 1931. s. Vasilije Ivanovich and Olga M. (Bartosh) P. Edn.: B.A., Mont. State Univ., 1951; M.A., ibid., 1955; Ph.D., Univ. of Utah, 1959. m. Dorothy L. Martin, Sept. 12, 1953. c.: Gayle Ann; Mark Vladimir. Exp.: Interpreter, U.N.R.R.A., Heidenheim, Germany, 1945-46; Psychol. and Philos. Instr., Mont. State Univ., 1954-55; Clin. Psychologist, Mont. State Hosp., 1955-56; U. S. Public Health Trng., Univ. of Utah, 1956-57; Clin. Psychol. Trainee and Internship, V. A. Hosp., Salt Lake City, Utah, 1957-59; Dir., Rsch. Lab., V. A. Hosp., Tomah, Wis., 1959-62; Chf., Rsch. Psychol., V. A. Beh. Sci. Lab. and Univ. of Okla. Med. Ctr., 1962—. Hon. Pos.: Pres., Mont. Chpt., Psi Chi; Pres., Mont. St. Univ. Chpt., Delta Sigma Phi. Mem.: Am. Psychol. Assn.; Wis. Psychol. Assn.; Fellow, A.A.A.S.; Midwestern Psychol. Assn.; Psi Chi; Delta Sigma Phi. Contbr. to: Jour. Exptl. Psychol.; Jour. of Nervous and Mental Disease; Jour. Consulting Psychol.; Jour. Clin. Psychol.; Am. Psychologist; Am. Jour. Psychiatry. Serv. Rec.: U.S.A.F., 1952-54. Areas of Rsch.: Concept Identification and Information Theory; Research on Effects of Psychopathology Process of Schizophrenia in Perception, Cognition and Chemotherapy.



PI-SUNYER, James (M.D.), Medical Dir., Winthrop Products, Inc., 1450 Broadway, N. Y., N. Y. Home Add.: 70 E. 10th St., Apt. 8E, N. Y. 3, N. Y. PHARMACEUTICAL PREPARATIONS AND DATA ON NEW DRUGS. b. Barcelona, Spain, Sept. 3, 1903. s. Augusto and Carmen (Bayo) P. Edn.: M.D., Univ. of Barcelona, 1925; Ph.D., Univ. of Madrid, 1929; H.D., Universidad Catolica de Chile, 1933. Hon. Deg.: Hon. Prof., Universidad de San Carlos de Guat., 1950. m. Mercedes Diaz, Nov. 30, 1929. c.: James August; Frances Xavier; Berta; Carolina; Luis. Exp.: Prof. of Physiol., Universidad Catolica, Santiago, Chile, 1931-33; Prof. of Physiol., Universidad de Santiago de Compostela, Spain, 1935; Medical Dir., Winthrop Products, Inc., N. Y. C., 1947—. Mem.: N. Y. Acad. of Sci., Fellow; Colegio de Mejico; Am. Soc. of Tropical Med. and Hygiene; Academia Medicina Barcelona. Author: Las Bases Fisiologicas de la Alimentacion, 1940; El Pensamiento Vivo de Claude Bernard, 1943. Co-author: Curso Practico de Fisiologia, 1935. Contbr. to: Am. Jour. of Physiol.; Revista Medica de Barcelona; Ciencia, Mexico; C. R. Soc. Biol., Paris. Serv. Rec.: Spanish Republican Army, 1937-39. Area of Rsch.: Applied Pharmacology.

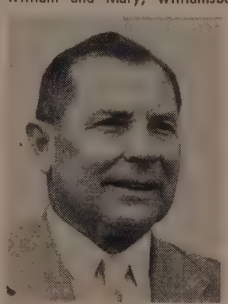
PITELKA, Frank Alois (Ph.D.), Prof. of Zool., Mus. of Vertebrate Zool., Univ. of Calif., Berkeley 4, Calif. Home Add.: 1345 Queens Rd., Berkeley 8, Calif. ANIMAL ECOLOGY. b. Chicago, Ill., Mar. 27, 1916. s. Frank Joseph and Frances (Laga) P. Edn.: B.S., Univ. of Ill., 1939; Ph.D., Univ. of Calif., 1946. m. Dorothy Riggs, Feb. 5, 1943. c.: Louis Frank; Wenzel Karl; Vlasta Kazi Helen. Exp.: Lectr., Univ. of Calif., 1944—; Prof., ibid., 1958—. Hon. Pos.: Chmn., Western Sect., Ecological Soc. of Am.; Chmn., Editorial Bd., Univ. of Calif. Press; Pres., Cooper Ornithol. Soc.; Adv. Panel, Environmental Biol., N.S.F.; Panel on Biol. and Med. Scis., Comm. on Polar Rsch., Natl. Acad. of Sci.; Assoc. Editor, Condor; Editorial Bd., Ecol., Ecol. Monographs, Systematic Zool. Mem.: A.A.A.S., Fellow; Calif. Acad. of Sci., Fellow; Arctic Inst. of N. Am., Fellow; Am. Ornithologists' Union, Fellow; British Ecological Soc.; Am. Soc. Mammalogists; Am. Soc. Zoologists; Western Soc. Naturalists; Soc. Study of Evolution; Soc. of Systematic Zool.; Phi Beta Kappa; Sigma Xi. Author: Geographic Variation and the Species Problem in the Shorebird Genus Limnodromus, 1950; Speciation and Ecologic Distribution in American Jays of the Genus Aphelocoma, 1951. Co-Author: Intertidal Invertebrates of the Central California Coast, 1954; AOU Check-list of North American Birds, 1957. Contbr. to: Condor; Ecology; Ecological Monographs; Auk; Wilson Bull. Gen. Int.: Guggenheim Fellow, 1949-50; Mercer Award, 1953; N.S.F. Sr. Postdoc. Fellow, Oxford Univ., 1957-58. Areas of Rsch.: Population Ecol.; Arctic Biology; Biology and Speciation of Birds; North Am. Biogeography.

PITTINGER, Charles Bernard (M.D.), Prof. and Chmn., Dept. of Anesthesiol., Vanderbilt Univ. Schl. of Med., Nashville, Tenn. Home Add.: 201 Vaughn's Gap Road, Nashville, Tennessee. ANESTHESIOLOGY. b. Akron, Ohio, Apr. 27, 1913. s. Charles B. and Mary (Leininger) P. Edn.: B.S., Univ. of Akron, 1935; M.D., Univ. of Cincinnati, 1949; M.S., St. Univ. of Ia., 1952. m. Gertrude Cramer, June 20, 1949. c.: Suzanne; Charles; Catherine. Exp.: Math. Tchr., South H. S., Akron, Ohio, 1936-37; Chemist, U. S. Army Air Corps, Wright Field, Dayton, Ohio, 1937-45; Assoc., Asst. Prof., Assoc. Prof., Prof., Coll. of Med., Univ. of Ia., 1952-62; Prof. and Chmn., Dept. of Anesthesiol., Vanderbilt Univ. School of Medicine, 1962—. Mem.: A.A.A.S.; Am. Chem. Soc.; A.M.A.; Am. Soc. for Pharmacol. and Exptl. Therap.; Am. Soc. of Anesth.; Assoc. of Univ. Anesthetists; Central Soc. for Clin. Rsch.; Central Surg. Soc.; Int. Anesth. Rsch. Soc.; Ia. Soc. of Anesth.; Ia. St. Med. Soc.; N. Y. Acad. of Sci.; Sigma Xi; Soc. for Exptl. Biol. and Med. Contbr. to: Jour. of Lab. and Clin. Med.; Jour. of Pharm. and Exptl. Therap.; Surg. Forum; Anesthesiol.; Am. Jour. of Ob. and Gyn.; Anesth. and Analg.; Arztliche Forschung; Neurol.; A.M.A. Arch. of Surg.; Fed. Proc.; Surgery; Antibiotics and Chemotherapy; Toxicol. and Applied Pharmacol.; Jour. Med. Edn.; Western Jour. of Surg.; Ob. and Gyn. Gen. Int.: Diplomate, Am. Bd. of Anesthesiol.; Fellow, The Am. Coll. of Anesthesiologists. Areas of Rsch.: Pharmacology of Anesthesia; Biologic Action of Inert Gases; Theories of Narcosis.

PITTMAN, James Allen, Jr. (M.D.), Assoc. Prof. of Med. and Dir. of Endocrinol. and Metab. Div., Dept. of Med., Univ. of Ala. Med. Center; Chief, Radioisotope Serv., Birmingham Veterans Adm. Hosp., Birmingham, Ala. Home Add.: 2770 Smyer Circle, Birmingham 16, Ala. ENDOCRINOLOGY, THYROID. b. Orlando, Fla., Apr. 12, 1927. s. James A. and Jean Channing (Garretson) P. Edn.: B.S., Davidson Coll., 1948; M.D., Harvard Med. Schl., 1952. m. Constance S., Ming Chung Shen, 1955. Exp.: Tchng. Fellow in Med., Harvard Med. Schl., Boston, Mass., 1953-54; Instr. in Med., George Washington Univ. Med. Schl., 1955-56; Attending Phys., Georgetown and George Wash. Univ. Med. Schls. Endocrine Clinics, D. C. Gen. Hosp., Washington, D. C., 1955-56; Instr. in Med., Univ. of Ala. Med. Coll., 1956-59; Chief, Radioisotope Serv., V.A. Hosp., Birmingham, Ala., 1958—; Attending Phys., Dept. of Med., Univ. of Ala. Med. Coll., 1958—; Asst. Prof. of Medicine, ibid., 1959-62; Assoc. Prof. of Medicine, ibid., 1962—. Mem.: Am. Coll. of Physicians; Am. Chemical Soc.; Soc. of Nuclear Medicine; Am. Thyroid Assn.; Endocrine Soc.; Am. Fed. for Clin. Rsch.; Sou. Soc. for Clin. Rsch.; Alpha Omega; Phi Beta Kappa; Gamma Sigma Epsilon; Alpha Omega Alpha; Boylton Soc. Contbr. to: Jour. of Clin. Endocrinol. and Metabolism; Endocrinol.; Biochem. and Biophys. Rsch. Communications; Metabolism; Annals of the N. Y. Acad. of Sci.; Clin. Rsch.; Am. Jour. of Med. Serv. Rec.: U. S. Pub. Health Serv., 1954-56. Areas of Rsch.: Thyroid Physiology and Disease.

PITTMAN, Don W. (Mr.), Prof. (Emeritus) Agronomy, Utah St. Univ., Logan, Utah. Home Add.: 1901 Alessandro Trail, Vista, Calif. SOIL SCIENCE. b. Bloomfield, Iowa, Feb. 10, 1891. s. Russell Warren and Lena (Brewster) P. Edn.: B.S., Iowa State, 1914; M.S., Utah State, 1916. m. Blanche Condit, 1919. Exp.: Instr. to Prof. of Agronomy and Soils, Utah State Univ., 1916-57; Agriculturist, Ching Beet Sugar Enterprise, Peiping, China, 1946; Foreign Technologist (Soils), Ministry of Agric., Iran, 1940-43. Mem.: Am. Soc. of Agron.; Am. Assn. Adv. Sci.; Utah Acad. Sci.; Gamma Sigma Delta; Phi Kappa Phi; Sigma Xi. Contbr. to: Jour. of Agronomy; Jour. of Soil Sci. Soc. Am. Areas of Rsch.: Irrigation; Dry Farming; Soil Fertility.

PITTMAN, Melvin Amos (Ph.D.), Chmn., Dept. Physics, Coll. of William and Mary, Williamsburg, Va. Home Add.: 106 Spring Rd., Williamsburg, Va. PHYSICIST, INFRA-RED SPECTROSCOPY. b. Chester Co., S. C., Aug. 4, 1905. s. William A. and Carrie Nancy (Nunnery) P. Edn.: B.S., The Citadel, 1925; M.S., Univ. of S. C., 1929; Ph.D., Johns Hopkins, Univ., 1936. m. Lorraine O'Hara, Oct. 2, 1943. c. Melvin Philip; Joyce Lorraine; William Pfund. Exp.: Hd. Dept. Phys., Univ. of Md., 1929-37; Hd. Dept. Phys., Madison Coll., 1937-42, 1946-55; Engr., Signal Corps Radar, Belmar, N. J., 1943-46; Hd., Dept. Phys., Coll. of William and Mary, 1955—. Mem.: Am. Phys. Soc.; Optical Soc. of Am.; Am. Assn. of Phys. Tchrs.; Sigma Xi; Masons. Contbr. to: Optical Soc. of Am. Jour.; Jour. Va. Acad. of Sci. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Infra-Red Spectroscopy.



PLATT, James Harvey (Ph.D.), Dir. of Spec. Edn., Eastern Mont. Coll. of Edn., Billings, Mont. Home Add.: 2925 E. MacDonald Dr., Billings, Mont. SPEECH PATHOLOGY AND COMMUNICATION METHODOLOGY. b. Marshall, Ill., July 26, 1916. s. William T. and Verna (Hendricks) P. Edn.: B.A., Bowling Green State Univ., 1940; M.A., State Univ. of Iowa, 1946; Ph.D., Univ. of Denver, 1954. m. Beth Lee of Belmond, Iowa, Sept. 17, 1940. d. Mr. and Mrs. Fay Snader. c.: Charles Lee; Jeanne Lee; William Lee; James Lee. Exp.: Grad. Asst., Bowling Green State Univ., 1940; Staff Announcer, Radio Station WTOL, Toledo, Ohio, 1941; Reservation Space Control Operator, United Air Lines, Inc., 1942-44; Instr. Speech, Asst. Dir. Speech Clinic, Dir. Radio Programs, Univ. of Maine, 1945-46; Asst. Prof., Mich. State Univ., 1946-58; Visiting Prof. of Speech Correction, Eastern Mont. Coll. of Edn., Summer of 1958; Prof. of Corrective Speech, State Tchrs. Coll., Kirksville, Mo., 1958-59. Hon. Pos.: Chmn., Comm. on Elem. and Sec. Schl. Programs; Natl. Soc. for Study of Communication, 1950-52; Chmn., Comm. on Communication Films, Natl. Soc. for Study of Communications, 1954-56. Mem.: Speech Assn. of Am.; Am. Speech and Hearing Assn.; Central States Speech Assn.; Natl. Soc. for the Study of Communication; Central Mich. Soc. for Study of Commun.; Pi Kappa Delta; Scouts; Pres., Local P.T.A., 1957-58; A.A.U.P. Contbr. to: Speech Jour.; Ednl. Theory; Occupations Jour.; Speech and Drama Jour. (England); Western Speech Jour.; Jour. of Higher Edn. War Rec.: W.W. II, 1942-43. Gen. Int.: Organized the Mich. State Univ. Basic Coll. Speech Improvement Serv. Hobbies: Model Bldg.,

Writing. Areas of Rsch.: Speech Pathol.; General Semantics; Ednl. Theory; Communication.

PLAUT, Berta Gertrud (Miss), Sr. Catalog Librarian, West Va. Univ. Library, Morgantown West Va. Home Add.: 487 High Str., Apt. #6, Morgantown, West Va. LIBRARY SCIENCE, RARE BOOKS, EARLY ENGLISH PRINTING. b. Ludwigsburg, Germany, June 20, 1898. d. Dr. Jakob and Julie (Spiegelthal) P. (dec.). Edn.: B.S., Columbia Univ., Schl. of Library Service, 1943. Exp.: Asst. Deutsches Ausland-Institut, Stuttgart, 1921-24; Cataloger, Columbia Univ. Libraries, 1943-44; Rsch. Asst., Tyce and Lynch, N. Y., N. Y., 1944-45; Cataloger, U. S. Armed Forces Medical Library, Washington, D. C., 1945-46; Hd. Librarian, Temple Emanu-El, New York, 1946-48; Cataloger, New York Public Library, 1948-51; Cataloger to Incunabula, Bryn Mawr Coll. Library, 1951-53; Sr. Catalog Librarian, West Va. Univ. Library, 1953—. Mem.: Am. Library Assn.; Special Libraries Assn.; West Va. Library Assn.; A.A.A.S.; Morgantown Art Assn; Women's Music Club; Am. Assn. of Univ. Women. Contbr. to: West Va. Libraries. Areas of Rsch.: Early English Printing, English Literature.

PLEASANTS, Elsie Marie (Ph.D.), Rsch. Scientist, Umbrian Farms, Lafayette, N. J. Home Add.: 27 Linden Terrace, Leonia, N. J. CHEMIST; BIOCHEMIST. b. Cincinnati, Ohio, Feb. 10, 1915. d. August and Mary (Leuschke) Walter. Edn.: Chem. Engr., Univ. of Cincinnati, 1938; M.A., Columbia Univ., 1943; Ph.D., ibid., 1946. m. Samuel Augustus Pleasants III, Sept. 22, 1947. c.: Ellen Lucinda; Elizabeth Anne; Samuel Augustus IV. Exp.: Rsch. Asst., Institutum Divi Thomae, Cincinnati, Ohio, 1938-50; Rsch. Worker, N. Y. Skin and Cancer Clinic in Cooperation with Institutum Divi Thomae, 1940-47; Rsch. Worker, St. Vincents Hosp., N. Y. C., 1947-53; Rsch. Scientist, Umbrian Farms, 1950—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Sigma Xi; Leonia Women's Club. Contbr. to: Jour. Am. Chem. Soc.; Proc. Soc. Exptl. Biol. and Med.; Arch. Dermatol. and Syph.; Arch. Biochem.; Jour. Invest. Dermatol.; Cancer. Gen. Int.: Treatment of Basal Cell Epithelioma with Tissue Extract; Enzyme Studies in Tissue Metabolism. Areas of Rsch.: Studies on Skin Cancer, Enzyme Studies in Tissue Metabolism, Animal and Plant Tissues, Extraction of Botanicals for New Drugs.

PLESSET, Milton Spinoza (Ph.D.), Prof. of Applied Mechanics, Calif. Inst. of Technol., Pasadena, Calif. Home Add.: 625 Landor Lane, Pasadena, Calif. THEORETICAL PHYSICS. b. Pittsburgh, Pa., Feb. 7, 1908. s. Benjamin M. and Anna (Schwartz) P. Edn.: B.S., Univ. of Pittsburgh, 1929; M.S., ibid., 1930; Ph.D., Yale Univ., 1932. m. Isabel Rosanoff, Mar. 28, 1934. c.: Michael; Jean; Marjorie; Judith. Exp.: Head, Analytic Group, Douglas Aircraft Co., Santa Monica, Calif., 1942-46; Assoc. Prof., Calif. Inst. of Technol., 1948-51; Prof., ibid., 1951—. Hon. Pos.: Sci. Adv. Bd., U.S.A.F., 1950-53; Mechanics Adv. Panel, Natl. Bur. of Standards; Chmn., Cavitation Comm., Am. Towing Tank Conf. Mem.: Am. Phys. Soc., Fellow; Inst. Aerospace Sci.; Am. Soc. of Mech. Engrs.; A.A.A.S.; Sigma Xi. Contbr. to: Physical Rev.; Physics of Fluids; Jour. of Applied Mechanics; Jour. of the Acoustical Soc. of Am.; Jour. of Chem. Physics. Areas of Rsch.: Theoretical Physics.

PLOCK, Henry John (Mr.), Prof., Head of Engrng., C. W. Post Coll., Brookville, N. Y. Home Add.: Oyster Bay Cove, N. Y. CIVIL ENGINEERING. b. N. Y. City, May 28, 1900. s. Henry and Wilhelmina (Schultz) P. Edn.: B.S., The City Coll. of N. Y., 1921; C.E., ibid., 1932. m. Evelyn C. Scheu, June 4, 1924. c.: Henry J., Jr.; Richard J. Exp.: Instr., Asst. Prof., The City Coll. of N. Y., 1921-25; Asst. Dist. Engr., Kalman Steel Co., N. Y. C., 1925-32; Assoc. Prof., Prof., The City Coll. of N. Y., 1932-61; Prof., Dir. of Engrng., C. W. Post Coll., 1961—. Hon. Pos.: Chmn., Dept. of Engrng. Drawing, The City Coll. of N. Y., 1950-52; Supvr., Special Engrng. Evening Courses, ibid., 1952-59; Chmn., Bldg. Comm., Ch. of the Transfiguration, Freeport, N. Y. Mem.: Am. Soc. of Civil Engrs.; N. Y. St. Soc. of Professional Engrs.; Am. Soc. for Engrng. Edn.; A.A.U.P.; A.A.A.S.; Chi Epsilon; Tau Beta Pi.

PLOTKIN, Stanley Alan (M.D.), Assoc. Member, Wistar Inst., Philadelphia 4, Pa. Home Add.: 1905 Wynnefield Terrace, Philadelphia 31, Pa. INFECTIOUS DISEASES. b. New York, N. Y., May 12, 1932. s. Joseph and Lee (Fishbein) P. Edn.: B.A., New York Univ., 1952; M.D., State Univ. of N. Y. Coll. of Med. at N. Y. C., 1956. m. Helen R. Ehrlich, June 10, 1956. Exp.: Intern, Cleveland Metropolitan Gen. Hosp., Ohio, 1956-57; Epidemiological Officer, U. S. Pub. Health Service, Wistar Inst., Philadelphia, 1957-60; Assoc. Mem., Wistar Inst., 1960; Res. Physician, Children's Hosp. of Philadelphia, 1961-62; Instr. in Pediatrics, Univ. of Pa., 1961—. Mem.: A.A.-A.S.; N. Y. Acad. of Sci.; Alpha Epsilon Pi; Phi Delta Epsilon; Beta Lambda Sigma. Contbr. to: Pediatrics; Jour. Am. Med. Assn.; Am. Jour. Hygiene; Bull. World Health Org.; Sci.; Lancet; Jour. Ped.; Acta Pediatrica. Areas of Rsch.: Poliomyelitis; Live Virus Vaccination, Virus Markers, Epidemiology. Anthrax: Isolation, Identification, Epidemiology.

PLOUTZ, Paul Frederick (Sc.D.), Coordinator of Sci. Edn., Livonia Pub. Schls., 15125 Farmington Rd., Livonia, Mich. Home Add.: 15616 Doris Ave., Livonia, Mich. BIOLOGY. b. Roxbury, N. Y., Mar. 30, 1931. s. George W. and Anna (Ruteshouser) P. Edn.: Adm. Accounting, Albany Bus. Coll., 1951; B.S., State Tchrs. Coll., Oneonta, N. Y., 1955; M.S., State Univ. Coll. of Edn., Oneonta, 1958; Dr. Sci., Colo. Sta. Coll., 1960. m. Geri Joyce Pecora, June 16, 1962. Exp.: Prof. of Sci., Colo. Sta. Coll., Greeley, Colo., 1958-60; Coord. of Sci. Edn., Livonia Pub. Schls., 1960-62; Dir. of Sci., Jefferson Co. Colo., 1962 . Mem.: Am. Assn. for the Adv. of Sci.; Natl. Assn. for Rsch. in Sci. Tchng.; Natl. Sci. Tchrs. Assn.; Natl. Sci. Supvrs. Assn.; Am. Chem. Soc.; Cent. Assn. Sci. and Math. Tchrs.; Natl. Edn. Assn.; Mich. Edn. Assn.; Mich. Sci. Tchrs. Assn.; Phi Delta Kappa; Mich. Assn. for Supvrn. and Curriculum Devel.; Sigma Tau Gamma; Kappa Delta Pi; Phi Delta Kappa; C. of C.; Jr. C. of C.; Boy Scouts of Am. Author: Singer Science Series, 1962. Contbr. to: The Science Teachers; Science Education; Science Supervision; Detroit Metropolitan Science Rev.; Schl. Sci.; and Math.; Elem. Schl. Sci. Bull. Gen. Int.: Editor, Science Supervision; Editorial Consult., Natl. Aeronauts. and Space Admin. Areas of Rsch.: Supervision of Science, Public Schools K-12, Laboratory Schools, College and University; Methods of Teaching Science.

PLUM, William B. (Ph.D.), Physicist, U. S. Naval Civil Engrng. Lab, Port Hueneme, Calif. Home Add.: 611 Colina Vista, Ventura, Calif. PHYSICS. b. Jackson, Minn., July 21, 1907. s. William O. and Margaret Della (Zufall) P. Edn.: A.B., Morningside Coll., 1930; A.M., Univ. of Mo., 1932; Ph.D., ibid., 1935. m. Esther L. Langenberg, May 27, 1936. c.: Charlotte Anne; Margaret Suzanne. Exp.: Prof. of Math. and Dean of Men, Tex. Wesleyan Coll., 1935-36; Assoc. Prof. of Math. and Dean of Men, Southwestern Coll., Winfield, Kan., 1936-38; Prof. of Phys. and Dean of Men, Ibid., 1938-42; Active duty as commissioned officer, U.S. Navy, Bur. of Ord., 1942-46; Present rank of Comdr., U.S N.R.-R.; Branch Hd., Rsch. and Devel., and Test Organization, U. S. Naval Ord. Test Sta., China Lake, Calif., 1945-50; Dir. of Edn., Ibid., 1950-53; Curator, Michelson Museum; Physicist, Hd., Thermal Radiation Br., U. S. Naval Radiological Defense Lab., San Francisco, Calif., 1953-59; Head, Applied Sci. Dept., U. S. Naval Civil Engrng. Lab., Port Hueneme, Calif. Hon. Pos.: Pres., China Lake Br., Scientific Rsch. Soc. of Am., 1952; Pres., Ventura Br., Scientific Rsch. Soc. of Am., 1959-60; China Lake Elem. Schl. Trustee, 1948-51. Mem.: Sigma Xi; Scientific Rsch. Soc. of Am.; Gamma Alpha; Am. Phys. Soc.; A.A.P.T.; Sigma Pi Sigma; Am. Soc. for Engrng. Edn.; A.A.A.S.; Masonic Lodge; Am. Ordnance Assn.; Soc. of Am. Milit. Engrs. Contbr. to: Jour. Chem. Phys.; Am. Jour. of Phys. Special Int.: Infrared Spectroscopy; Terminal Ballistics; Mechanics; Thermal Radiation and Weapons Effects.

PLUMMER, Louisa Greenleaf (Miss), Asst. Prof. of Chem., Beaver Coll., Glenside, Pa. Home Add.: 410 Linden St., Apt. 3, Jenkintown, Pa. CHEMISTRY. b. Milwaukee, Wis., Aug. 30, 1908. d. Edwin Lewis and Pauline (Briggs) P. Edn.: A.B.,

Hanover Coll., 1929; M.S., Univ. of Minn., 1932. Exp.: Tchr., Sage Coll., Teheran, Iran, 1932-35; Asst. Prof., Northern Mont. Coll., 1937-48; Acting Asst. Prof., Williamette Univ., 1944-45; Asst. Prof., West Liberty State Coll., 1948-52; Asst. Prof., Beaver Coll., 1952—. Mem.: A.C.S.; A.A.A.S.; Delta Kappa Gamma; Delta Epsilon; Iota Sigma Pi; A.A.U.W. Areas of Rsch.: Analytical Chem.

PLUMMER, Dirk Arnold (Mr.), Sen. Mem.-Tech. Staff, Radio Corporation of America, Burlington, Mass. Home Add.: 123 Highland Ave., Apt. 36, Somerville 42, Mass. ADVANCED PROPULSION SYSTEMS: CHEMICAL; NUCLEAR; ELECTRICAL. b. Stamford, Conn., Apr. 18, 1930. s. Charles Arnold and Edwina (Woodling) P. Edn.: S.B. in Chem Engr., Mass. Inst. Tech., 1952; B.S. in Elec. Engr., Univ. of Calif. at Berkeley, 1961. Exp.: Chem. Engr., Foster Wheeler Corp., N. Y., 1952; Engr., M. W. Kellogg Co., N. Y., 1954; Project Engr., Am. Machine and Foundr. Co., Greenwich, Conn., 1955-56; Des. Engr., Aerojet-General Corp., Azusa and Sacramento, Calif., 1956-57; Nuclear Engr., Aerojet-General Nucleonics, San Ramon, Calif., 1958; Devl. Engr., Aerojet-General Corp., Azusa, Calif, 1959-61; Sen. Mem.-Tech. Staff, Radio Corp. of Am., Burlington, Mass., 1961—. Mem.: A.A.A.S.; A.C.S.; Theta Chi; R.O.A. Serv. Rec: U S. Army Chem. Corps, 1952-54. Areas of Rsch.: Nuclear Rsch. Reactors.

PLUNKETT, Jerry Dee (Ph.D.), Vice Pres., Mgr. Materials Rsch. Dept., Dynatech Corp., 17 Tudor St., Cambridge 40, Mass. Home Add.: 25 Seagrave Rd., Cambridge 40, Mass. MATERIALS RESEARCH. b. Latour, Mo., Feb. 13, 1928. s. Charles A. and Ethyl (May) P. Edn.: B.S., Mo. Univ. Schl. of Mines and Metallurgy, 1953; M.S., ibid., 1954; Ph.D., Mass. Inst. of Technol., 1961. m. Virginia R. L. Wilson, June 27, 1954. Exp.: Rsch. Asst., Mass. Inst. of Technol., 1954-59; Dir. of Color Rsch., O. Hommel Co., Carnegie, Pa., 1959-60; Tech. Dir., Lexington Labs., Inc., Cambridge, Mass., 1960-61; Vice Pres., Mgr., Materials Rsch. Dept., Dynatech Corp., Cambridge, Mass., 1961—. Mem.: A.A.A.S.; A.C.S.; Am. Ceramic Soc.; Am. Opt. Soc.; Applied Spectroscopy Soc.; British Ceramic Soc.; Keramos; Soc. of Glass Tech.; Sigma Xi; Tau Beta Pi; Phi Kappa Phi; Sigma Gamma Epsilon. Serv. Rec.: U.S.A.F., 1945-48. Areas of Rsch.: High Temperature Materials; Optical Properties of Materials.

PLUNKETT, Roy J. (Ph.D.), Dir. of Rsch., E. I. duPont de Nemours and Co., Wilmington, Del. Home Add.: Seven Stars, Woodstown, N. J. CHEMISTRY. b. New Carlisle, Ohio, June 26, 1910. s. J. H. and Bessie (Garst) P. Edn.: A.B., Manchester Coll., 1932; M.S., Ohio St. Univ., 1933; Ph.D., ibid., 1936. m. Dorothy E. Detrick, Aug. 16, 1935. c.: Michael; Patrick. Exp.: Rsch. Chemist, Jackson, Lab., E. I. duPont de Nemours and Co., 1936-39; Chief Chemist, Chambers Works Tetraethyl Lead Plant, ibid., 1939-45; Production Supvr., (T.E.L.), ibid., 1945; Supt., Tetraethyl Lead Area, ibid., 1945-49; Supt., "Ponsol" Colors Area, ibid., 1949-50; Asst. Works Mgr., Chambers Works, ibid., 1950-51; Mgr., Chem. Devel., Orchem., Wilmington, Del., 1952-53; Asst. Mgr., Plants Technical Sect., Orchem., ibid., 1953-57; Mgr., Plants Technical Sect., Orchem., ibid., 1957-60; Dir. of Rsch., "Freon" Products Rsch. Sect., Jackson Lab., ibid., 1960—. Mem.: A.C.S.; A.I.Ch.E.; A.A.A.S.; Phi Lambda Upsilon; Sigma Xi. Gen. Int.: John Scott Award, 1951. Areas of Rsch.: Fluorine Chem.; Lead Alkyls.; Organic Intermediates; Mgmt.

PODOLSKY, Boris (Ph.D.), Prof. of Theoretical Phys., Xavier Univ., Cincinnati 7, Ohio. Home Add.: 615 McAlpin Ave., Apt 5C, Cincinnati 20, Ohio. THEORETICAL AND MATHEMATICAL PHYSICS. b. Taganrog, Russia, June 29, 1896. s. Y. B. and Elizabeth B. (Parnoch) P. Edn.: B.S., Univ. of Sou. Calif., 1918; M.A., 1926; Ph.D., Calif. Inst. of Tchnol., 1928. m. B. Polly Edelman, Aug., 1937. c.: Robert Earl. Exp.: Tchng. Fellow, Calif. Inst. Technol., Pasadena, Calif., 1926-28; Natl. Rsch. Fellow, Univ. of Calif., Berkeley, 1928-29; Internation Rsch. Fellow, Leipzig, Germany, 1929-30; Fellow Inst. Adv. Study, Princeton Univ., Princeton, N. J., 1934-35; Prof. of Mathl. Phys. and Fellow of the Grad. Schl., Univ. of Cincinnati, Ohio, 1935-61; Prof., Theoretical Phys., Xavier Univ., 1961—. Mem.: Fellow Am. Phys. Soc.; Fellow, Ohio Acad. of Sci.; S.I.A.M.; Sigma Xi; Phi Kappa Phi; English Speaking Union; Am. Ordn. Assn. Contbr. to: Physical Rev.; Jour. of Appl. Maths.; Philos. Mag.; Procs. of Natl. Acad. of Sci. Serv. Rec.: U. S. Army, 1917-19. Areas of Rsch.: Relativity, Quantum Mechanics, Statistical Mechanics, Electrodynamics; Servomechanisms; Plasma Research; Magnetohydrodynamics.

PO-CHEDLEY, Donald Stephen (Ph.D.), Prof. of Biol., Head, Biol. Dept., D'Youville Coll., Buffalo, N. Y. Home Add.: 63 Tennyson Ave., Buffalo 16, N. Y. INSECT PHYSIOLOGY. b. Buffalo, N. Y., Aug. 30, 1917. s. Stephen and Agnes (Wallenhorst) P. Edn.: B.S., Canisius, 1942; M.A., Univ. of Buffalo, 1949; Ph.D., Fordham Univ., 1956. m. Grace Phillips, Oct. 6, 1945. c.: Donald Stephen, Jr.; Kevin; Pamela; Judith; David; Patrice. Exp.: Instr., D'Youville Coll., 1948-52; Instr., Fordham Univ., Coll. of Pharm., 1955-56; Prof., D'Youville Coll., 1956—. Mem.: A.A.-A.S.; Sigma Xi; N. Y. Acad. of Scis.; Buffalo Zoological Soc.; Alpha Theta; United Fund of Buffalo. Contbr. to: Nature; A.A.-A.S.; Jour. of Mammalogy; Jour. Text. Rsch.; Jour. N. Y. Entomol. Soc. Serv. Rec.: U. S. Army, 1942-44; Medical Administration, 1944-46. Gen. Int.: Fellow, Am. Physiol. Soc., 1959, 1960; A.E.C. Grant, 1961. Areas of Rsch.: Effects of X-irradiation on Mealworm, Tenebrio Molitor Ova with Particular Emphasis on Amino Acid-Protein Responses.

POE, Robert Hilleary (M.D.), Chf., Adaptation Branch, Army Rsch. Inst. of Environmental Medicine, Natick, Mass. Home Add.: 91 Bishop Dr., Framingham, Mass. ENVIRONMENTAL MEDICINE. b. Cincinnati, Ohio, Apr. 29, 1934. s. Hilleary W. and Louise Grace (Stark) P. Edn.: B.S., Univ. of Cincinnati, 1955; M.D., ibid., Coll. of Med., 1959. Exp.: Intern, Walter Reed Gen. Hosp., Washington, D. C., 1959-60; Rsch. Physician, Army Med. Rsch. Lab., Ft. Knox, Ky., 1960-62; Chf., Adaptation Br., Army Rsch. Inst. of Environmental Med., Natick, Mass., 1962—. Mem.: N. Y. Acad. of Scis.; A.M.A.; A.A.A.S.; Lambda Chi Alpha; Nu Sigma Nu. Contbr. to: Military Medicine; Arch. of Environmental Med.; Am. Jour. of Physiol. Serv. Rec.: U. S. Army, 1960—. Gen. Int.: Med. Student Fellow, Natl. Foundation for Infantile Paralysis, 1957; Medical Student Fellow in Nutrition, Cincinnati General Hospital, 1959. Areas of Rsch.: Endocrine influences in Cold Acclimatization.

POGGE, Raymond Charles (M.D.), Med. Dir., Dorsey Labs., Lincoln 1, Neb. Home Add.: 5344 Fairdale, Lincoln, Neb. PHARMACEUTICAL MEDICINE. b. Chicago, Ill., Jan. 15, 1917. s. Raymond Carl and Esther A. (Anderson) P. Edn.: B.S., Northwestern Univ., 1938; M.D., ibid., 1942; M.B., ibid., 1941. m. Shirley E. Loescher, Apr. 6, 1943. c.: Raymond David. Exp.: Physician, Merck and Co., Inc., Rahway, N. J., 1946-50; Dir. Med. Rsch., Wm. S. Merrell Co., Cincinnati, Ohio, 1950-60; Med. Dir., Dorsey Labs., Lincoln, Neb., 1960—. Hon. Pos.: Secy., Med. Sect., Pharmaceutical Mfgrs. Assn.; Former Editor, Bull. of Am. Med. Writers' Assn. Mem.: A.M.A.; Am. Med. Writers' Assn., Fellow; Am. Federation for Clinical Rsch.; Alpha Kappa Kappa. Contbr. to: Applied Therapeutics; Clinical Medicine; Public Health Reports; Internatl. Jour. of Leprosy; Internatl. Med. Record; Jour. of Abdominal Surg.; Jour. of Albert Einstein Med. Ctr.; Neb. St. Med. Jour.; New Orleans Med. and Surgical Jour. Serv. Rec.: U. S. Marine Hosp., 1946-50. Areas of Specialized Knowledge: Pharmaceutical Medicine.

POHL, Herbert Ackland (Ph.D.), Prof. of Materials Science, Dept. of Chemistry, Polytechnic Institute of Brooklyn, Brooklyn 1, New York. Home Address: 338 Franklin Ave., Princeton, N. J. PHYSICAL CHEMISTRY. b. Lisbon, Portugal, Feb. 17, 1916. s. Lucian Charles and Emily May (Williams) P. Edn.: B.S., Duke Univ., 1936; Ph.D., ibid., 1939. m. Eleanor Rich, Aug. 27, 1941. c. Douglas; Patricia; Elaine; Charles; William. Exp.: Fellow, of Rsch., Med. Schl. and Chem. Engrng. Dept., Johns Hopkins Univ., 1939-42; Naval Rsch. Lab., Anacostia, D. C., 1942-45; Visiting Lectr., Univ. of Dela., 1948-52; Rsch. Assoc., DuPont Co., Wilmington, Del., 1945-57; Sr. Rsch. Assoc., Plastics Lab., Princeton Univ., 1957-62; Prof. of Materials, Dept. of Chem., Polytech. Inst. of Brooklyn, 1962—; Lectr., Elect. Engrng. Dept., ibid., 1957—. Hon. Pos.: Pres., U.W.F., Princeton Chapt.; Pres., Wilmington Club; Chmn., Korean and Hungarian Clothing Drives; Asst. Dist. Comnr., BSA; Chmn., Or-

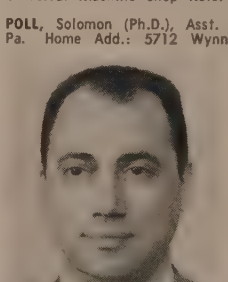
ganic Semiconductors Sympos. Mem.: Am. Chem. Soc.; A.A.A.S.; Electrochem. Soc.; Am. Soc. Engrng. Edn.; Am. Soc. Univ. Profs.; Sigma Xi; Phi Beta Kappa; Pi Sigma Pi; Chemists Club; United World Federalists; Am. Assn. United Nations. Author: Semiconduction in Molecular Solids, 1960; Organic Semiconductors, 1962. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Electrochem. Soc.; Science; S.P.E. Jour.; Jour. Applied Physics; Jour. Polymer Sci.; Anal. Chem.; Jour. Chem. and Engr. Data; Ind. Engr. Chem.; Fundamentals. Areas of Rsch.: Organic Semiconductors, Solid state, high polymers, dielectrics, nouniform field effects, polymer melt flow. Thermal feedback in counter-current systems.

POINDEXTER, Hildrus Augustus (M.D.), Regional Malariologist, Sub-Sahara-Africa, Office of Public Health-Aid, U. S. Dept. of St., Wash. 25, D. C. Home Add.: 513-23rd Place, N.E., Wash. 2, D. C. PUBLIC HETLTH-EPIDEMIOLOGY-MALARIOLOGY. b. Memphis, Tenn., May 10, 1901. s. Fred Poindexter and Luvenia (Clarke) P. Edn.: A.B., Lincoln Univ., 1924; M.D., Dartmouth-Harvard, 1929; A.M., Ph.D., Columbia Univ., 1932; M.P.H., ibid., 1937. Hon. Deg.: D.Sc., Lincoln Univ., 1946; Dartmouth Coll., 1956; Howard Univ., 1961. m. Ruth Viola Grier, June, 1924. c.: Patchechole Beatrice. Exp.: Asst., Assoc. Prof., Dept. of Microbiol. and Preventive Medicine, Howard Univ., 1931-34; Prof., Head, Dept. of Microbiol. and Preventive Med., ibid., 1934-46; Div. Chf., Head, Dept. of I.C.A. or Aid, Dept. of St., Liberia, Libya, Iraq, Vietnam, Lais, Suriname, 1947—. Mem.: A.M.A.; Assn. Military Surgeons of U. S.; A.A.A.S.; A.P.H.A.; Soc of Microbiologist; N. Y. Acad. of Sci.; Natl. Citizens Comm for the World Health Organization; Commissioned Officers Assn. of U.S.P.H.S.; Med. Soc. of D. C.; Royal Soc. of Tropical Med. and Hygiene; Am. Soc. of Tropical Medicine and Hygiene. Serv. Rec.: U. S. Army, 1943-47. Areas of Rsch.: Tropical Medicine; Epidemiology, Malariology, Microbiology, Pathology—Gross and Microscopic.

POLACHEK, Harry (Ph.D.), Technical Dir., Applied Math. Lab., David Taylor Model Basin, Washington 7, D. C. Home Add.: 8510 16 St., Silver Springs, Md. MATHEMATICS. b. Lida, Poland, June 1, 1913. s. Solomon and Anna (Rubinchek) P. Edn.: B.A., Yeshiva Univ., 1934; M.A., Columbia Univ., 1935; Ph.D., ibid., 1947. m. Blanche Katz, Dec. 21, 1940. c.: Solomon William; Linda Avis. Exp.: Mathematician, Navy, Bureau of Ordnance, Wash., D. C., 1943-47; Mathematician, Naval Ordnance Lab., White Oak, Md., 1947-52; Assoc. Prof., Univ. of Md., 1950-51. Hon. Pos.: Chmn., Editorial Comm., Math. of Computation. Mem.: Am. Phys. Soc.; Am. Math. Soc.; Wash. Philos. Soc.; A.A.A.S.; Soc. for Industrial and Applied Math.; Assn. Comp. Machinery. Author: Fundamentals of Gas Dynamics, Shock Wave Interactions, 1958. Contbr. to: Phys. Rev.; Jour. of Applied Phys.; Math. of Computation. Areas of Rsch.: Applied Math., High-Speed Calculators, Shock Wave Phenomena, Ballistics.

POLAND, Lloyd Orville (Ph.D.), Prof. of Pharm. Chem., Ferris Inst. Schl. of Pharm., Big Rapids, Mich. Home Add.: 120 N. Warren, Big Rapids, Mich. INORGANIC CHEMISTRY, BIOCHEMISTRY; ENZYME CHEMISTRY. b. Fairland, Ind., Apr. 22, 1904. s. Albert and Melvina (Ellis) P. Edn.: A.B., Butler Univ., 1927; M.A., Syracuse Univ., 1930; Ph.D., Cornell Univ., 1933; B.S., Butler Univ., 1952. m. Berneice Seymour, Nov. 25, 1939. c.: Albert Lloyd; Robert Manford. Exp.: Instr., Syracuse Univ., 1927-30; Instr., Cornell Univ., 1930-32; Rsch. Asst., ibid., 1932-33; Tchr., Nottingham H. S., Syracuse, N. Y., 1933-42; Dir. of Labs., Oberderfer Foundries, Inc., Syracuse, New York, 1942-44; Assoc. Prof. of Chem., Ill. St. Normal Univ., 1944-47; Prof. of Pharm. Chem., Butler Univ., 1947-54; Prof. of Pharm. Chem., Ferris Inst., 1956—. Mem.: Am. Chem. Soc.; Am. Pharm. Assn.; Sigma Xi; Rho Chi; Pi Mu Epsilon; Phi Kappa Phi. Areas of Rsch.: Inorganic Chem.; Biochem.; Enzyme Chem.

POLIAKOFF, Rouvime B. (Mr.), Engrng. Consultant and Vice Pres., V. P. Seamless Products Co., Inc., 126-11th Ave., N. Y. 11, N. Y. Home Add.: 15 Wilshire Court, Freeport, L. I., N. Y. METAL WORKING. b. Leningrad, Russia, Feb. 20, 1880. s. Benjamin and Sarah (Cranin) P. Edn.: Mechanical Engr., Technical Inst., Moscow, Russia; Special Student, Municipal Schl. of Technology, Manchester, England. m. Rosalie Vermele, (dec.), June 23, 1906. c.: Mrs. V. Mansvetov; Mrs. H. Boltrek. Exp.: Foreman, Machine Shop, Khamovnitschevsky Machine and Fdry. Co., Moscow, Russia; Asst. to Vice Pres. of Prod. and Mfg., Moscow RR Car Works, ibid.; Consult. Engr. for Mechanical Equipment of the Wissotsky Tea Co., ibid.; Dir. of Bd. and Supt., Tube Rolling Mills, ibid; Asst. Prof. of Mechanical Technol., Tech. Int., ibid.; Chief, Machine Tool and Machinery Dept., Russian Govt. Supply Comm., W.W. I; Managing Trustee, Russian Remington Rifle Contract Trustees, N. Y.; Dir. of Bd., Eddystone Ammunication Co., Eddystone, Pa.; Consult Engr. to Associated Foundries and Manufacturers, W.W. II; Consulting Engr. to Standard Engrng. and Manufacturing Co., ibid.; Chief Consultant, Engrng. Serv., Foreign Economic Admin., Wash., D. C., W.W. II; Engrng. Consultant, Vice Pres., Seamless Products Co., Inc., N. Y., 1936—. Mem.: Am. Ordnance Assn.; Am. Rocket Soc., Inc.; Am. Soc. of Mechanical Engrs.; Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; A.A.A.S. Author: Textbook of Mechanical Technology, 1909; Tool Steel and its Hardening, 1910; Experiments upon the Forces acting on Twist Drills when operating on Cast Iron and Steel (in association with Dempster Smith, Prof. of Municipal Schl. of Technol., Manchester, England); Translator: On the Art of Cutting Metals; Metal Cutting Tools. Contbr. to: Bulletins of the Polytechnical Soc., Die Werkstattstechnik, Zeitschrift fuer Metallkunde, Engineer, Proc. of the Inst. of Mechanical Engrs., Proc., Manchester Assn. of Engrs., in U. S. A., Am. Machinist, Machinery The Iron Age, Transactions of the Am. Soc. of Mechanical Engrs., Mechanical Engrng. Areas of Rsch.: Mechanical Technology of Steel; Invented, Milling Machine Dynamometer; Universal Machine Shop Rule.



POLL, Solomon (Ph.D.), Asst. Prof., Univ. of Pa., Philadelphia, Pa. Home Add.: 5712 Wynnefield Ave., Philadelphia 31, Pa. SOCIOLOGY. b. Austria, Feb. 26, 1921. s. Erno and Leah (Lipschutz) P. Edn.: B.S., Temple Univ., 1955; M.A., Univ. of Pa., 1957; Ph.D., ibid., 1961. m. Ruth Zweig, 1950. c.: Leah P.; Erno C.; Seema B. Exp.: Instr., Soc. Dept., Univ. of Pa., 1957-60; Rsch. Assoc., Greenfield Ctr. for Human Relations, Univ. of Pa., 1960-61; Asst. Prof. of Sociol., Rutgers the State Univ., 1961 (Spring Term); Asst. Prof., Dept. of Human Relations, Univ. of Pa., 1961—. Mem.: Am. Sociol. Assn.; Eastern Sociol. Soc.; Am. Acad. for Polit. and Social Sci.; Am. Assn. Adv. Sci; Pi Gamma Mu. Author: The Hasidic Community of Williamsburg, 1962. Areas of Rsch.: Race and Ethnic Relations; The Economic Organization of a Religious Community.

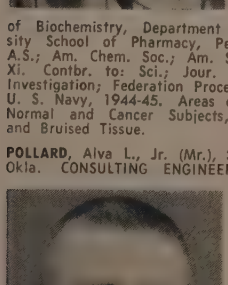
POLLACK, Morris (Ph.D.), Asst. Staff Specialist, Agric. Rsch. Service, Product and Process Evaluation Staff, Wash. 25, D. C. Home Add.: 1701 Sixteenth St., N.W., Wash. 9, D. C. ORGANIC CHEMISTRY, ALIPHATIC CHEMISTRY, PLASTICS AND SYNTHETIC RESINS, INDUSTRIAL UTILIZATION OF ARGICULTURAL RAW MATERIALS. b. New York, N. Y., July 24, 1924. s. Isaac and Mary (Hoffman) P. Edn.: B.S., Purdue Univ., 1945; M.S., Polytechnic Inst. of Brooklyn, 1950; Ph.D., Purdue Univ., 1953. Exp.: Hd. of Mitin Dept., Geigy Rsch. Labs., Bayonne, N. J., 1946-50; Group Leader, Glyco Products, Williamport, Pa., 1953; Sr. Rsch. Chmst., Columbia Sou. Chem. Corp., Barberton, Ohio, 1953-56; Sr. Devel. Chemist, Curon Div., Curtiss-Wright Corp., Quehanna, Pa., 1956-60; Asst. Staff Specialist, Product and Process Evaluation Staff Agric. Rsch. Serv., Wash., D. C., 1960—. Mem.: Am. Chem. Soc.; Chem. Soc. of London; A.A.A.S.; Coun. for Agric. and Chem Rsch; Tau Epsilon Phi; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Chem. Abstracts. Areas of Rsch.: Aliphatic Chem., Plastics and Synthetic Resins, Industrial Utilization of Agric. Raw Materials.

POLLACK, Abou David (M.D.), Pathologist in Chief, Balt. City Hosps. and Assoc. Prof. of Pathol., Johns Hopkins Univ., Balt., Md. Home Add.: Rt. 2, Frederick Md. and 6204 Chinquapin Pkwy., Balt. 12, Md. PATHOLOGY-MEDICINE. b. N. Y., N. Y., Feb. 26, 1908. s. Harry and Anna Ethel (Samuels) P. Edn.: A.B., Cornell Univ., 1929; M.D., Univ. of Rochester, 1933. m. Leona P. Pearlstien, 1929. c.: Adam E.; Matthew. Exp.: Pathologist in Chief, Baltimore City Hosps. and Assoc. Prof. of Pathol., Johns Hopkins Univ. Mem.: Harvey Soc.; Alpha Omega Alpha; Sigma Xi. Serv. Rec.: U. S. Army, Reserve, (Ret.). Areas of Rsch.: General Pathology.

POLLACK, Max Fritz (Mr.). Home Add.: 211 E. Vine St., Stockton 3, Calif. MATHEMATICS. b. Schieroth, Germany, Nov. 6, 1889. s. Adolf and Ernestine (Cohn) P. Edn.: Univ. of Berlin (Eisenstein Prize), Techn. Univ. Charlottenburg, District Seminary Berlin, Central Inst. Ed. and Instr. Berlin, Univ. Goettingen; Univ. of the Pacific, Stockton, Calif., Ed. Assessor, 1917; Ed. Councilor, 1919. m. Melanie Ida Dickmann, July 22, 1920. c.: Mrs. Aenne Ruth P. Kahn; Mrs. Ursula Esther P. Thalheimer. Exp.: Ed. Assoc. and Counc. German Higher Schls.: Berlin, Wittenberge-Elbe, Seesen-Harz, Hindenburg-Upper Silesia, 1915-34; Principal, Angerschule, Breslau, 1937-39; Asst., Phys. Dept., Univ. of Houston, Tex., 1947; Science Instr., Stockton Coll., 1950-51; Union H. S., Linden, Calif., 1951-52. Mem.: A.A.A.S.; Math. Assn. of Am.; Am. Math. Soc. Areas of Rsch.: Math., Theory of Functions; Philosophy.

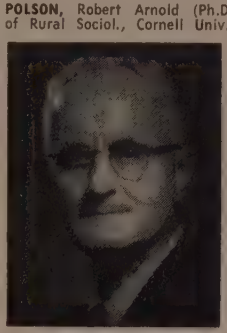
POLLACK, Robert Leon (Ph.D.), Assoc. Prof. of Biochemistry, Dept. of Biochemistry, Temple University Schl. of Pharmacy, Philadelphia 40, Pa. Home Add.: 8442 Chippewa Rd., Philadelphia 28, Pa. BIOCHEMISTRY; CELLULAR METABOLISM; NUTRITION. b. Philadelphia, Pa., Apr. 29, 1926. s. Louis A. and Mary (Davis) P. Edn.: B.Sc., Philadelphia Coll. of Pharm. and Sci., 1948; B.Sc., ibid., 1949; M.Sc., ibid., 1950; Ph.D., Univ. of Tenn. Med. Units Div., 1954. m. Lydia Aureli, June 22, 1952. c.: Janine R.; Linda G. Exp.: Instr. in Chem., Philadelphia Coll. of Pharm. and Sci., 1948-49; Instr. in Bacteriol., ibid., 1949-50; Teaching Fellow in Biochem., Univ. of Tenn., 1950-52; Instr. in Biochem., ibid., 1952-54; Rsch. Scientist, Eastern Regional Rsch. Lab., U. S. Dept. of Agric., 1954-62; Assoc. Prof. of Biochemistry, Department of Biochemistry, Temple University School of Pharmacy, Pennsylvania, 1962—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Soc. of Plant Physiologists; Sigma Xi. Contbr. to: Sci.; Jour. Natl. Cancer Inst.; Jour. Clinical Investigation; Federation Proceedings; Food Technol. Serv. Rec.: U. S. Navy, 1944-45. Areas of Rsch.: Nutrition, Metabolism of Normal and Cancer Subjects, Cellular Metabolism of Normal and Bruised Tissue.

POLLARD, Alva L., Jr. (Mr.), 3612 N.W. 47th St., Oklahoma City, Okla. CONSULTING ENGINEER. b. Lawton, Okla., Sept. 26, 1922. s. Alva L. and Alta B. (Rainwater) P. Edn.: A.S., Cameron Coll., 1942; B.S., Univ. of Okla., 1944. m. Wynell Wagnon, May 21, 1942. c.: Linda Kay; Kathleen Lorraine. Exp.: Chief Computor, Atlantic Refining Co., Seimic Div., Dallas, Tex., 1944; Vice Pres., Cabeza Petroleum Corp., Okla., 1946-61; V.-Pres., Secondary Recovery Engrng. Corp., Okla., 1959—; Pres., Alpoc., Inc., Okla., 1961—. Mem.: Natl. Soc. of Profl. Engrs.; Okla. Soc. of Profl. Engrs.; Am. Water Wks. Assn.; Am. Oil Producers Assn.; A.A.A.S.; Aircraft Owners and Pilots Assn.; Am. Radio Relay League; Natl. Rifle Assn.; Okla. City C. of C. Contbr. to: System and Factory Textbooks. Serv. Rec.: U. S. Army, Cavalry Br., 1944-46. Gen. Int.: Recognized Mid-Continent Area Authority on Ground Water Study and Investigations; Complete Research, Study and General Supervision of Largest Secondary Recovery Petroleum Projects yet Completed. Areas of Rsch.: Ground Water Study and Hydraulics, and Its Application to Industry.



POLONSKY, Dimitri (Mr.), Clin. Psychologist II, Psychol. Dept., Pacific St. Hospital, Box 100, Pomona, Calif. PSYCHOLOGY. b. Los Angeles, Calif., July 6, 1925. s. Joseph B. and Olga (Valcovitch) P. Edn.: A.B., Univ. of Calif., Los Angeles, 1950; A.B., ibid., 1951; M.A., ibid., 1956. m. Zelda Eskoff, Mar. 1958. Exp.: Clinical Psychol. Trainee, U. S. Veterans Admin., Los Angeles, Calif., 1952-55; Clinical Psychol., Psychiatric Clinic, Los Angeles Co. Juvenile Hall, Los Angeles, Calif., 1955-56; Supvng. Psychol., Pacific St. Hosp., Pomona, Calif., 1956-62; Chief Psychologist, Calif. Youth Authority, Norwalk, Calif., 1962—. Mem.: A.A.A.S.; Am. Assn. on Ment. Deficiency; Am. Psychological Assn.; Soc. for General Systems Rsch. Contbr. to: Am. Jour. of Mental Deficiency. Serv. Rec.: U. S. Army, 1944-46. Gen. Int.: Holder of Two Rsch. Grants Awarded by the Calif. St. Dept. of Mental Hygiene, 1959 and 1961. Areas of Rsch.: Rsch. in Clinical Psychol.; Mental Retardation, and Opinion and Attitude Change.

POLSON, Robert Arnold (Ph.D.), Prof. of Rural Sociol., Dept. of Rural Sociol., Cornell Univ., Ithaca, N. Y. Home Add.: 105 Eastwood Ave., Ithaca, N. Y. RURAL SOCIOLOGY. b. Nova Scotia, Can., July 6, 1905. s. William and Margaret (Matheson) P. Edn.: B.S., Univ. of Wis., 1927; M.S., ibid., 1928; Ph.D., ibid., 1932. m. Ruth Corp, June 14, 1930. c.: Margaret Ruth; Marion Ella. Exp.: Asst. Rural Organization Specialist, Va. Agri. Extension Service, 1930-31; Asst. Rural Sociologist, Va. Agricl. Expt. Station, 1930-31; Extension Instr., Rural Soc. Organization, Cornell Univ., 1931-33; Extension Asst. Prof., ibid., 1933-41; Extension Assoc. Prof., ibid., 1941-47; Field Staff, N. Y. St. War Coun., 1942-43; State Supvr., Emergency Farm Labor Program, N. Y. St. Cooperative Extension Service, Ithaca, N. Y., 1944-45; Prof. of Rural Sociol., Cornell Univ., 1947—; Acting Head, Dept. of Rural Sociol., ibid., 1948-50; Head, Dept. of Rural Sociol., ibid., 1950-57; Fulbright Prof., Silliman Univ., Philippines, 1952-53; Training Consultant Philippine Community Devel. Prog., Philippines, 1956—; I.C.A. Community Devel. Consultant, North Africa and Asia, 1959-60. Hon. Pos.: Past Pres., Vice Pres., Secy., Mgng. Editor, Rural Sociological Soc. Mem.: Am. Sociological Soc.; Soc. for Applied Anthropology; Am. Acad. of Polit. and Soc. Sci.; Phi Kappa Phi; Alpha Zeta; Alpha Gamma Rho; Ithaca Rotary Club; Ithaca Y.M.C.A. Co-Author: Rural Community Organization, 1939. Contbr. to: Rural Sociol. Areas of Rsch.: Rural Community Studies; Comparative Studies in the Adoption of Innovations.



POMMER, Alfred Michael (Ph.D.), Chemist, Div. of Human Nutrn. Rsch., Agricl. Rsch. Ctr., Beltsville, Md. Home Add.: 3117 Fayette Road, Kensington, Md. CHEMISTRY. b. Vienna, Austria, July 9, 1916. s. Erwin and Cecylia (Schmeidler) P. Edn.: A.B., Grinnell Coll., 1941; M.S., State Univ. of Iowa, 1947; Ph.D., Georgetown Univ., 1956. m. Agnes K. Lawson, Nov. 3, 1949. c.: Donald Lawson; Sharon Dawn. Exp.: Chem., Natl. Bur. of Standards, Wash., D. C., 1947-53; Chem., Diamond Ord. Fuze Labs., Wash., 1953; Chem., U.S. Geological Survey, 1953-62; Div. of Human Nutrition Research, Agricultural Research Center, Beltsville, Md., 1962—; Asst. in Pediatrics, Georgetown Univ., part-time, 1958-60; Rsch. Assoc. in Pediatrics, ibid., 1960—. Hon. Pos.: Mem., Adv. Coun., Retarded Children's Clinic, Georgetown Univ.; Chmn., Biochem. Analysis Comm., Bio-Med. Div., Instrument Soc. of Am. Mem.: Fel., A.A.-A.S.; Fellow, Am. Inst. of Chem.; Fellow, Chem. Soc., London; Am. Chem. Soc.; Washington Acad. of Sciences; Geo-chem Soc.; Geol. Soc. of Wash.; Am. Pub. Health Assn.; Am. Assn. Mental Deficiency; Assn. of Milit. Surgeons of the U. S. Co-Author: Geochemistry and Mineralogy of the Colorado Plateau Uranium Ores, 1959. Contbr. to: Geochemica et Cosmochimica Acta; Am. Mineralogist; Analytical Chemistry; Am. Jour. of Mental Deficiency; Nature. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Geochemistry, Mineral Synthesis, Role of Organic and Biological Material in Distribution of Elements, Electroanalytical Techniques, Membrane Electrodes, Research in Mental Retardation, Electrophoresis, Clay Acids, Radioactive Waste Disposal, Experimental Nutrition.

POLSTER, Norman Edwin (Mr.), Rsch. Scientist, Leeds and Northrup, North Wales, Pa. Home Add.: 855 Woods Rd., Southampton, Pa. ELECTRICAL ENGINEERING, PHYSICS. b. Cleveland, Ohio, Mar. 12, 1918. Edn.: B.S:E.E., Case Inst. of Technol., 1941. m. Elizabeth Henshaw, Aug. 17, 1946. c.: Sarah; David; Alan; Celia. Exp.: Rsch. Scientist, Leeds and Northrup Co., North Wales, Pa., 1941—. Contbr. to: Natl. Electronic Conference. Gen. Int.: Fallout Survey Coordinator for the Soc. for Soc. Responsibility in Sci. Areas of Rsch.: Dielectrics, Thermometry, Spectroscopy, Solid State Circuitry, Electronic Recorders, Radiological Health.

PONZONI, George Bernard (Mr.), Rsch. Chemist, Maxwell House, Hoboken, N. J. Home Add.: 11 Hudson St., Nutley 10, N. J. FOOD AND BEVERAGE RESEARCH. b. Jersey City, N. J., Nov. 23, 1931. s. George B. and Veronica (Gilbert) P. Edn.: B.S., Fairleigh Dickerson Univ., 1956; M.S., ibid., 1960. m. Phyllis Valentino, Sept. 11, 1955. c.: George Robert. Exp.: Skilled Technical Asst., Central Rsch. Labs., Gen. Foods Corp., Hoboken, N. J., 1954-56; Technical Asst., Bell Telephone Labs., Murray Hill, N. J., 1956-57; Rsch. Chemist, Maxwell House Div. Rsch. Labs., Gen. Foods Corp., Hoboken, N. J., 1957—. Hon. Pos.: Chmn., Local Chapt., Am. Inst. of Quality Control. Mem.: Am. Chem. Soc.; Inst. of Food Technologists; Am. Inst. of Chem. Engrs.; Am. Inst. of Quality Control; Nutley Little League. Author: Problems of General Foods Corporation in Maintaining its Competitive Position, 1960. Contbr. to: Food Engrng. Service Rec.: U. S. Air Force, 1952-54. Gen. Int.: Co-author, Process for Producing Coffee Flavor Buds, 1960; U. S. Patents, Process for incorporating regular coffee co-dried with soluble coffee. Areas of Rsch.: Food and Food Research; Beverage products; Coffee by-products.

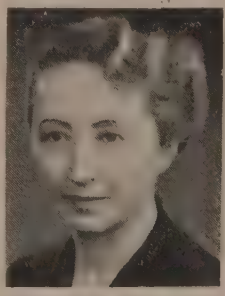
POOLE, Charles P., Prof. of Psychology, Central Mich. Univ., Mt. Pleasant, Mich. Home Add.: 901 Watson Road, Mt. Pleasant, Mich. PSYCHOLOGY. b. Lynn, Ala., Jan. 20, 1893. s. Ephraim Bailey and Mary Caroline (Reynolds) P. Edn.: B.Litt., Lipscomb Coll., 1917; A.B., ibid., 1918; M.A., Clark Univ., 1920; A.M., Harvard, 1925; Ph.D., Univ. of Wash., 1948. m. Laverne Gossum, Feb. 22, 1936. c.: Charles; Morgan; Stanley. Exp.: Prof. of Sci., Lipscomb Coll., 1925-28; Prof. of Psychol., Murray State Coll., 1928-36; Prof. of Psychol. and Edn., Whitworth Coll., 1939-42; Prof. of Psychol. and Edn., Univ. of Alaska, 1943-46; Assoc. Prof. of Psychol. and Edn., Central Mich. Univ., 1947-52; Prof., Psychol., ibid., 1952—. Mem.: A.P.A.; Midwest Psychol. Assn.; So. Soc. for Philos. and Psychol.; Fellow, Am. Assn. on Mental Deficiency; World Fed. for Mental Health; A.A.A.S.; Mich. Psychol. Assn.; Rotary; and others. Author: Two Centuries of Edn. in Alaska; Children in The Land of The Midnight Sun; Theories of Evolution. Contbr. to: Mich. Edn. Jour.; Farthest North Collegian. Gen. Int.: Responsible for founding of Isabella Day Center for Retarded Children; Founder and First Pres. of Isabella Assn. for Retarded Children. Areas of Rsch.: Carbon Dioxide Narcosis Therapy; IQ's of Eskimos and Children in the U. S.—a comparative study; Localization of Functions.

POPE, Joseph Horace (Mr.), Physicist, Natl. Bur. of Standards, Boulder, Colo. Home Add.: 4500 Hanover Ave., Boulder, Colo. GEOPHYSICS, PHYSICS. b. Salem, Mass., Mar. 29, 1928. s. Dr. Horace E. and Katherine (Merrill) P. Edn.: B.S., Univ. of Alaska, 1953; M.S., Ore. State Coll., 1955. m. Helen Jivok, June 25, 1950. c.: Josephine. Exp.: Physicist, Geophysical Inst., College, Alaska, 1953-54; Instr. of Geophysical Rsch., ibid., 1955-61; Physicist, Natl. Bur. of Standards, Boulder, Colo., 1961—. Mem.: A.G.U.; Internatl. Scientific Radio Union, Natl. Acad. of Science; A.A.A.S.; Aircraft Owners and Pilots Assn.; Sigma Pi Sigma. Contbr. to: Nature; Jour. of Geophysical Rsch. Areas of Rsch.: Naturally Occurring Very Low Frequency Electromagnetic Radiations.

POPE, Michael (Mr.), Partner, Pope, Evans and Robbins, Consulting Engrs., 11 E. 36th St., N. Y. 16, N. Y. Home Add.: 711 Bleeker Ave., Mamaroneck, N. Y. INDUSTRIAL UTILITIES. b. New York, N. Y., May 16, 1924. s. Philip and Anna (Frimet) P. Edn.: B.E.E., City Univ. of N. Y., 1944. m. Barbara W. Illig, Nov. 7, 1957. c.: Barbara Lisa; Joseph David; Jackson Elliot; Michelle Burton. Exp.: Consulting Engr., Myers and Addington, N.Y.C., 1946-51; Partner, ibid., 1951-53; Partner, Pope, Evans and Robbins, N. Y. C., 1953—. Mem.: Am. Inst. of Consulting Engrs.; Am. Soc. of Mech. Engrs.; Am. Inst. of Elec. Engrs.; Am. Inst. of Iron and Steel Engrs.; Tech. Assn. of Pulp and Paper Industries; Engrs. Club of N. Y.; Engineers, N. Y.; Commodore Yacht Club of Ocean Beach, L. I. Author: Operation and Maintenance of Central Power Plants, 1963; Operation and Maintenance of Heating Plants, 1963. Contbr. to: Iron Age; Industry and Power; The Paper Industry. Serv. Rec.: U. S. Maritime Serv., 1944-46. Areas of Rsch.: Specialist in the Engrng. and Design of Industrial Power Facilities.

POPOVIC, Nenad Dushan (Mr.), Visiting Prof., Maxwell Schl. of Citizenship, Syracuse Univ., Syracuse 10, N. Y. Home Add.: 843 Sumner Ave., Syracuse 10, N. Y. INTERNATIONAL ECONOMY, ECONOMIC DEVELOPMENT PLANNED AND STATE ECONOMIES. b. Sremska Mitrovica, Yugoslavia, June 17, 1909. s. Dushan Lj. and Angelina S. (Yovanovic) P. Edn.: Dipl. of Law and Soc. Sciences, Univ. of Belgrade, 1932. m. Tatyana V. Popovic, Mar. 23, 1948. c.: Deyan; Gina; Sanya. Exp.: Econ. Editor, Daily "Vreme", Belgrade, Yugoslavia, 1935-37; Rsch. Asst., Natl. Bank of Yugoslavia, ibid., 1930-37; Rsch. Asst., Agrarian Bank of Yugoslavia, ibid., 1938-41; Vice Pres., Plan. Commission, Serbia, ibid., 1946-50; Exec. Dir., IMF, Washington, D. C., 1950-52; Alt. Exec. Dir., IBRD, ibid., 1952-53; Vice Gov., Natl. Bank of Yugoslavia, Belgrade, Yugoslavia, 1953-55; Asst. State Secy., Foreign Trade, ibid., 1956-59; Plenipotentiary Minister, Foreign Office, ibid., 1960-61; Visiting Prof., Maxwell Schl. of Citizenship, Syracuse Univ., 1961—. Author: The Control of the Foreign Payments, 1936; Lectures on Statistics, 1946; Lectures on the Economic Planning, 1948; The Truth about Abyssinia, 1934. Contbr. to: Arch. of Judicial and Soc. Sciences; The Lawyer; The Econ. Thought; Ekonomist; Nasha Stvarnost; Politika; Internatl. Affairs, Belgrade; Yugoslovenski Pregled; Incontri Mediterranei, Roma; La Socialisme, Paris. Areas of Rsch.: Soviet type economies; Economic planning, national and international financing of economic development, international trade.

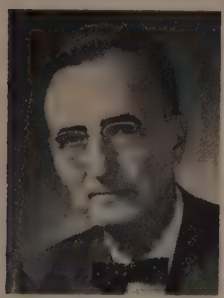
POPOVICI, Antoinette Fabini (M.D.), 1835 Eye St., N.W., Wash. 6, D. C. Home Add.: 2801 Quebec St., N.W., Wash. 8, D. C. INTERNAL MEDICINE; RHEUMATOLOGY. b. Berlin, Germany, Apr. 27, ——. d. Nicholas and Antoinette (Fabini) P. Edn.: M.O., Univ. of Bucharest, Romania, 1936. Exp.: Intern, Bucharest, Romania, 1932-36; Resident, ibid., 1937-43; Internatl. Med. Specialty Bds., Bucharest, Romania, 1944; Medic Primar, bid., 1944-46; Fellow, Georgetown Univ. Med. Schl., 1948-49; Rsch. Assoc. in Path., ibid., 1949-54. Mem.: N.Y.A.S.; A.A.A.S.; A.M.A.; A.R.A.; A.H.A. Contbr. to: Archive of Internal Med.; Soc. Exptl. Biol. and Med.; Bull. Georgetown Univ. Med. Ctr.; Jour. Organic Chem.; Jour. Am. Chem. Soc.; Presse Med., Paris; Paris Medical. Areas of Rsch.: Research in Hypertension, Cardiology, Rheumatology, Internal Medicine.



POPP, Henry Wm. (Ph.D.), Emer. Prof. of Bot., Pa. State Univ., Univ. Park, Pa. Home Add.: 417 E. Adams Ave., State College, Pa. PLANT PHYSIOLOGY, GENERAL BOTANY. b. Millvale, Pa., Nov. 19, 1892. s. William and Emelie (Trautvetter) P. Edn.: B.S., Pa. State Univ., 1917; M.S., ibid., 1922; Ph.D., Univ. of Chicago, 1926. m. Margaret P. McElhaney, July, 1919. c.: Mary-Jean P. Smeal; Kathryn P. Lehman; Ruth P. Mosch. (dec.). Exp.: Analytical Chemist, Crucible Steel Co., Pittsburgh, Pa., 1912-14; Asst. Zool. and Entomol., Pa. State Univ., 1916-17; Head, Dept. of Biol., Central St. Tchrs. Coll., Lock Haven, Pa., 1917-20; Instr., Bot., Pa. State Univ., 1920-23; Assoc. Plant Physiol. and Biochem., Boyce Thompson Inst. for Plant Rsch., Yonkers, N. Y., 1923-25; Asst. Prof., Pa. State Univ., 1925-30; Assoc. Prof., ibid., 1930-37; Prof., ibid., 1937-58; Hd., Dept. Bot. and Plant Pathol., ibid., 1950-58; Emer. Prof., ibid., 1958—. Hon. Pos.: Mem., Natl. Rsch. Coun., Div. of Physical Sci., 1924-30; Mem., Natl. Rsch. Coun., Div. of Biol. and Agri., 1929-39; Chmn., Comm. on Sectional Structure, Bot. Soc. of Am., 1939-40; Chmn., Physiol. Sect., ibid., 1942; Chmn., N.E. Sect., ibid., 1957. Mem.: Fellow, A.A.A.S.; Am. Soc. Plant Physiol.; Bot. Soc. of Am.; Torrey Bot. Club; Pa. Acad. Sci.; Wildlife Soc.; Gamma Sigma Delta; Phi Kappa Phi; Sigma Xi; Phi Epsilon Phi; Mason. Co-Author: Chemistry in Agriculture, 1926; Biological Effects of Radiation, 2 Vols., Assoc. Editor, 1936; Botany, a Textbook for Colleges, 1936, rev., 1950, 1960; Frear's, Agricultural Chemistry, 1950. Contbr. to: Botanical Gazette; Am. Jour. of Bot.; Torrey Bot. Club Bull.; Proc. Pa. Acad. Sci.; Encyl. Brit.; Trans. Illuminating Engrs. Soc. Serv. Rec.: U. S. Med. Corps, 1918. Gen. Int.: On two different occasions was selected by whole student body of Pa. State Univ. as one of three best teachers on the campus. Areas of Rsch.: Effects of Radiation on Plants.

POPPER, Hans (M.D., Ph.D.), Pathologist-in-Chief, The Mt. Sinai Hosp., N. Y. 29, N. Y., Prof. of Pathol., Columbia Univ., N. Y., N. Y. Home Add.: 3135 Johnson Ave., Riverdale 63, N. Y. PATHOLOGY, PARTICULARLY OF LIVER. b. Vienna, Austria, Nov. 24, 1903. s. Carl and Emma (Gruenbaum) P. Edn.: M.D., Univ. of Vienna, 1928; M.S., Univ. of Ill., 1941; Ph.D., ibid., 1944. m. Lina Billig, 1942. c.: Frank J.; Charles W. Exp.: Scientific Dir., Hektoen Inst. for Med. Rsch., Chicago, Ill., 1943-56; Dir. of Pathol., Cook Co. Hosp., Chicago, Ill., 1946-56; Prof. of Pathol., Northwestern Univ., 1950-56; Pathologist-in-Chief, The Mt. Sinai Hosp., N. Y. C., 1957—. Hon. Pos.: Secy., N. Y. Pathol. Soc.; Vice Pres., Am. Assn. for the Study of Liver Diseases; Pres., Internatl. Assn. for the Study of Liver. Mem.: Harvey Soc.; A.M.A.; Am. Coll. of Physicians; Am. Soc. of Clin Pathol.; Coll. of Am. Pathologists; N. Y. Acad. of Medicine; Am. Assn. of Pathol. and Bacteriol.; Am. Soc. of Exptl. Pathol.; A.G.A.; Sigma Xi. Co-Author: Clinical Pathologic Conferences of Cook Co. Hosp., 1954; Liver, Structure and Function, 1957. Co-Editor: Progress in Liver Diseases, 1961. Contbr. to: Am. Jour. of Pathol.; Lab. Investigation; Gastroenterology; Jour. of the A.M.A.; Cancer Rsch.; Proc. of the Soc. for Exptl. Biol. and Med.; Arch. of Pathol.; Jour. of Lab. and Clinical Med.; Cancer; Jour. of the Mt. Sinai Hosp.; Am. Jour. of Med.; Jour. of Exptl. Medicine. Serv. Rec.: U. S. Army, 1944-46. Areas. of Rsch.: Pathology of Liver Disease.

PORSCHE, Jules D. (Ph.D.), Pres., Jules D. Porsche and Assocs., 138 Oxford Ave., Clarendon Hills, Ill. Home Add.: 138 Oxford Ave., Clarendon Hills, Ill. ORGANIC AND BIOCHEMISTRY. b. London, England, July 7, 1909. s. Jules F. and Gertrude (Downes) P. Edn.: B.S., Univ. of Chicago, 1930; Ph.D., ibid., 1933. m. Mary-Ellen Malloy, May 4, 1935. c.: Michael; Mary-Kay; Beatrice. Exp.: Head, Lab. for Clinical Chem., Municipal Tuberculosis Sanitarium, Chicago, Ill., 1933-35; Rsch. Chemist, Armour and Co., Chicago, Ill., 1935-39; Head, Biological Section, Chemical Rsch. Dept., ibid., 1939-42; Technical Dir., Armour Plasma Fractionation Prog., ibid., 1942-46; Asst. Dir., Chemical Rsch. and Devel., ibid., 1946-50; Dir., Rsch. and Devel., Chemicals and By-Products Dept., ibid., 1950-52; Dir., Central Rsch., 1952-56; Asst. to Vice Pres. for Rsch., ibid., 1956-61; Pres., Jules D. Porsche and Assocs., Clarendon Hills, Ill., 1961—. Hon. Pos.: Chmn., Chicago Sect., Am. Chem. Soc.; Chmn., Comm. on Rsch. Personnel, Industrial Rsch. Inst., Bd. of Dirs., Chicago Sect. Am. Chem. Soc. Mem.: Am. Oil Chemists Soc.; Inst. of Food Technologists, A.A.A.S.; Soc. of Chemical Industry; A.C.S.; A.I.C.; Epsilon Alpha; Phi Beta Kappa; Sigma Xi. Contbrng. Author: Management's Stake in Research, 1958. Contbr. to: Jour. of Organic Chemistry; Arch. of Pathol.; Am. Jour. of Med. Sci.; Jour. of the Am. Chemical Soc.; Industrial and Engrng. Chemistry. Areas of Rsch.: Fractionation of Blood Plasma; Chemistry of Natural Products; Sunthetic Organic Chemicals; Industrial Rsch. Administration; Creativity of Industrial Rsch. Scientists.

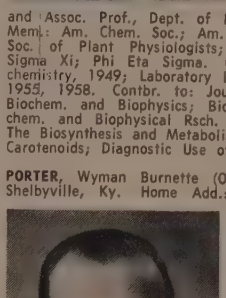


PORTE, William Solomon (Mr.), Sr. Pathologist, U. S. Dept. of Agric., Beltsville, Md. Home Add.: 8 Magnolia Pkwy., Chevy Chase 15, Md. PLANT PATHOLOGY, WITH EMPHASIS ON DEVELOPING TOMATO VARIETIES THAT POSSESS RESISTANCE TO DISEASES. b. Sergeantsville, N. J., Feb. 4, 1891. s. John William and Clara Isabelle (Fowler) P. Edn.: B.S., Rutgers Univ., 1915. m. Meredith Lyon, Aug. 30, 1916. c.: William Lyon; Esther Meredith; Frances Roberta. Exp.: Rsch. Asst., Rutgers Univ., 1915-16; Sci. Tchrs., Sr. H. S., Somerville, N. J., 1916-18; Jr. Pathologist, U. S. Dept. of Agric., Wash., D. C., 1918-25; Asst. Pathologist, ibid., 1925-39; Assoc. Pathologist, ibid., 1939-44; Pathologist, U. S. Dept. of Agric., Beltsville, Md., 1944-59; Sr. Pathologist, ibid., 1959—. Hon. Pos.: Moderator, Wash. Brethren Church, Wash., D. C. Mem.: Am. Phytopathological Soc.; A.A.A.S.; Natl. Geographic Soc.; Phi Beta Kappa Soc.; Alpha of N. J. Chapter, Rutgers Univ.; Fellow, A.A.A.S. Contbr. to: Jour. of Agric. Rsch.; Phytopathology; U.S.D.A. Circ.; U.S.D.A. Yearbook. Areas of Rsch.: Plant Pathology, Physiology, Genetics, and Horticulture.

PORTER, Richard W. (Ph.D.), Consultant, Advanced Development, Engrng. Servs., Gen. Elec. Co., 570 Lexington Ave., N. Y. 22, N. Y. Home Add.: Cat Rock Rd., Cos Cob, Conn. SPACE RESEARCH. b. Salina, Kans., Mar. 24, 1913. s. Thomas F. and Dora M. (Schermerhorn) P. Edn.: B.S., Univ. of Kans., 1934; Ph.D., Yale Univ., 1937. Hon. Deg.: D.Sc., Yale Univ., 1947. m. Edith K. Kelly, 1946. c.: Susan Jane; Mary Elizabeth; Thomas Andrew. Exp.: Engr., Gen. Elec. Co., Schenectady, N. Y., 1935-50; Mgr., Guided Missiles Dept., ibid., 1950-55; Consultant, Engrng. Servs., ibid., N. Y. C., 1955—. Hon. Pos.: Chmn., Internatl. Relations Comm., Space Sci. Bd., U. S. Natl. Acad. of Sci.; Vice Pres., Comm. on Space Rsch.; Internatl. Coun. Scientific Unions; Consultant, U.S.A.F. Sci. Adv. Bd. Geophysics Panel.; Bd. of Advisors, Geoph. Inst., Univ. of Alaska; Past Pres., A.R.S. Mem.: U. Y. Acad. of Scis.; Am. Geoph. Union; A.A.A.S.; I.R.E.; I.A.S.; Cosmos Club; Tau Beta Pi; Sigma Tau; Sigma Xi; Eta Kappa Nu. Contbrng. Author: Space Technology, 1959. Contbr. to: Jour. Geophysical Rsch.; Electrical Engrng.; Weltraumfahrt; Franklin Inst. Monograph Series; Am. Scientist; Proc. Natl. Acad. of Scis. Serv. Rec.: U. S. Army, 1945. Areas of Rsch.: Electronics, Rocket Propulsion, Geophysics, Space Physics and Biology.

PORTER, John Willard (Ph.D.), Asst. Dir., Radioisotope Service and Prof., Dept. of Physiological Chemistry, Univ. of Wisconsin, Madison, Wis. Home Add., 1710 Baker Ave., Madison, Wis. BIOCHEMISTRY; BIOSYNTHESIS AND METABOLISM OF LIPID COMPOUNDS. b. Mukwonago, Wis., June 12, 1915. s. Willard G. and Josephine E. (Gunderson) P. Edn.: B.S., Univ. of Wis., 1938; Ph.D., ibid., 1942. m. Helen Reynolds, June 12, 1941. c.: John W., Jr.; Mary Grace; Susan Ann. Exp.: Grad. Student, Univ. of Wis., 1938-42; Assoc. Chemist, Dept. of Agril. Biochem., Purdue Univ., 1942-49; Sr. Scientist, Biol. Sect., Hanford Atomic Products, Gen. Elec. Co., Richland, Wash., 1949-54; Fellow, Natl. Heart Inst., Enzyme Inst., Univ. of Wis., 1954-56; Asst. Dir., Radioisotope Serv., V.A. Hosp. and Assoc. Prof., Dept. of Physiological Chem., ibid., 1956—. Mem.: Am. Chem. Soc.; Am. Soc. of Biological Chemists; Am. Soc. of Plant Physiologists; Radiation Rsch. Soc.; A.A.A.S.; Sigma Xi; Phi Eta Sigma. Co-Author: Plant and Animal Biochemistry, 1949; Laboratory Experiments in Biochemistry, 1948, 1955, 1958. Contbr. to: Jour. of Biological Chem.; Arch. of Biochem. and Biophysics; Biochimica et Biophysica Acta; Biochem. and Biophysical Rsch. Communications. Areas of Rsch.: The Biosynthesis and Metabolism of Fatty Acids, Cholesterol and Carotenoids; Diagnostic Use of Radioistopes in Medicine.

PORTER, Wyman Burnette (O.D.), Optometrist, 403 Sixth St., Shelbyville, Ky. Home Add.: Plainview Dr., Shelbyville, Ky. OPTOMETRY. b. Central City, Ky., Nov. 16, 1922. s. Edgar D. and Mollie (Roby) P. Edn.: O.D., Sou. Coll. of Optometry, 1947. m. Ann Newton, Nov. 22, 1952. c.: Dennis Scott. Hon. Pos.: Pres., Ky. Optometric Assn., 1958-59; Pres-elect, ibid., 1957-58; Vice Pres., ibid., 1956-57; Secy.-Treas., ibid., 1955-56; Ky. Bd. of Optometric Examiners, 1959-63; Vice Pres, ibid., 1962; Pres., Shelby Co. C. of C., 1955 and 1961. Mem.: Ky. Optometric Assn.; Louisville Optometric Soc.; Blue Grass Optometric Assn.; Eastern Ky. Optometric Soc.; Sou. Coun. of Optometrists; Am. Optometric Assn.; Am. Acad. of Optometry; Am. Soc. Acad. of Sci.; Tau Kappa Epsilon; Omega Delta; F. and A.M. and R.A.M. Masons; Sons of Am. Revolution; Ky. Historical Soc.; Kiwanis. Contbr. to: Ky. Optometrist; Sou. Optometrist. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Bacterial Infections of War Wounds, Differential Diagnosis in Orthoptics; Visual Screening of School Children.

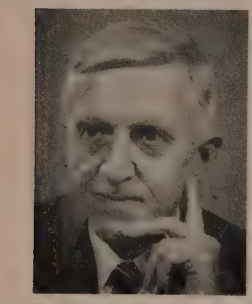


POSKANZER, David Charles (M.D.), Rsch. Assoc. in Epidemiology, Harvard Schl. of Pub. Health, Boston, Mass.; Asst. in Neurol., Mass. Gen. Hosp., Peter Bent Brigham Hosp., Boston, Mass. Home Add.: 18 West Cedar St., Boston, Mass. NEUROLOGY AND PREVENTIVE MEDICINE. b. Albany, N. Y., Mar. 5, 1929. s. Samuel I. and Adele (Kerman) P. Edn.: A.B., Harvard Univ., 1950; M.D., ibid., 1954; M.P.H., ibid., 1962. m. Joan Thomson, 1957. Exp.: Resident in Neurol., Mass. Gen. Hosp., Boston, Mass., 1957-59; Moseley Traveling Fellow, Harvard Univ., 1959-61; 1st Asst. in Neurol., King's Coll. Med. Schl., Univ. of Durham, 1960-61; Research Associate in Epidemiology, Harvard Schl. of Pub. Health; Asst. in Neurol., Mass. Gen. Hosp. and Peter Bent Brigham Hosp., Boston, Mass., 1961—. Mem.: Am. Fed. for Clin. Rsch.; Royal Soc. of Med.; N. Y. Acad. of Scis.; Assn. for Rsch. in Nervous and Mental Diseases; Aesculapian Club of Boston. Contbr. to: Brain; Lancet; Am. Jour. of Med.; Pub. Health Reports; Neurology; Am. Jour. of Pub. Health; Pediatrics; N. England Jour. of Med.; Trans.

Am. Neurol. Assn. Serv. Rec.: U. S. Pub. Health Serv. Epidemic Intelligence Officer, 1955-57. Areas of Rsch.: The epidemiology and prevention of diseases of the nervous system particularly multiple sclerosis, Parkinson's disease and diseases of viral etiology.

POSTLETHWAIT, Samuel Noel (Ph.D.), Assoc. Prof., Purdue Univ., Lafayette, Ind. Home Add.: 2506 Rainbow Dr., Lafayette, Ind. PLANT MORPHOLOGY. b. Willeysville, W. Va., Apr. 16, 1918. s. Frank and Mary Etta (Mason) P. Edn.: Ph.D., State Univ. Iowa, 1949. m. Sara Cover, Mar. 22, 1942. c.: John; Robert. Exp.: Instr., State Univ. Iowa, 1948-49; Asst. Prof., Purdue Univ., 1949-55; Assoc. Prof., ibid., 1956—. Mem.: Bot. Soc. Am.; Sigma Xi; A.A.A.S.; A.I.B.S.; Internatl. Soc. Plant Morph.; Internatl. Soc. Stereo.; Am. Soc. College Biology; Lambda Delta Lambda; Kappa Delta Pi. Contbr. to: Am. Jour. Bot. Serv. Rec.: U.S.N.R., Lt., W.W. II. Areas of Rsch.: Growth and Development, Especially in Maize and Ferns.

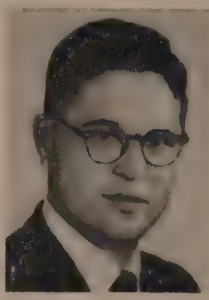
POTAPENKO, Gennady W. (Ph.D.), 1718 Oakdale St., Pasadena, Calif. PHYSICS AND GEOPHYSICS. b. Kimry, Russia, Mar. 25, 1894. s. Wasily O. and Lubov M. (Mesniankina) P. Edn.: C.Sc., Univ. of Moscow, Russia, 1917; Ph.D., ibid., 1920. m. Catherine Sinelschikova, Feb. 8, 1924. Exp.: Rsch.: Fel., Univ. of Moscow, Russia, 1917-20; Docent, ibid., 1920-30; Prof. of Physics, Mining Ac., Moscow, Russia, 1921-30; Rsch. Fellow, Calif. Inst. of Tech., 1930-32; Assoc. Prof. of Physics, ibid., 1932-62; Ret., 1962; Techn. Dir., Aircrafts Specialties Co., Los Angeles, Calif., 1943-45. Mem.: Am. Phys. Soc., Fellow; S. Explor. Geophys.; Geophys. Union; A.A.-A.S.; Sigma Xi. Author: Parallaxes of Stars, 1914; El. Oscillations a. Waves, 1926; El. Spectra of Dielectrics, 1926; El. Log Interpretation, 1960. Contbr. to: Jour. Russ. Chem. Soc.; Proc. Moscow Astr. Soc.; Brit. Jour. of Photogr.; f.s. Wiss. Photogr.; f.s. f. Phys.; Bull. Fr. Photo. S.; Verh Mosc. Inst. Phys.; f.s. Techn. Phys.; Phys. Rev.; Nature; Phil. Mag.; f.s. Anorg. Ally. Chem.; Naturwiss; Science; Phys. f.s.; Rev. Mod. Phys.; Arch. f. Fysik. Gen. Int.: Silver Med., Univ. of Moscow, 1914; Prize in Phys., Russia Sci. Coun., 1928; Golden Cross of Commodore, Ord. Cyprus and Jerusalem, 1955. Areas of Rsch.: Color Filters, El. Spectra of Dielectrics, Micro-radio Waves, Radar, Heat Transfer, Geophys. Prospecting, Well Logging, Aerosols, Aseptic Air.



POTE, Alfred J. (Mr.), Sr. Vice Pres. and Asst. to the Pres., Page Communications, Engrs., Inc., 2001 Wis. Ave., N.W., Wash., D. C. Home Add.: 1536 32nd St., N.W., Wash., D. C. COMMUNICATIONS-ELECTRONICS. b. Boston, Mass., Feb. 9, 1904. s. Salvatore and Gaetana (LaMagna) P. Edn.: B.S., Mass. Inst. of Technol., 1926. m. Ann Morris. Exp.: Pres., Northern Corporation, 1934-42; Group Leader. Radiation Lab., M.I.T., 1942-46; Rsch. Fellow, Harvard, 1946-55; Grp. Ldr., Lincoln Lab., M.I.T., 1955-59; Pres., Hermes Electric Company, 1959-61; Vice Pres., Itek Corp., 1961-62; Sr. Vice Pres. and Asst. to Pres., Page Communications, Engrs., Wash., D. C., 1962—. Mem.: Am. Assn. for the Adv. of Sci.; Sigma Xi. Co-Author: A Debiasing System for a Frequency Modulated Cyclotron Review of Scientific Instruments, 1951; Radio Frequency for Syncrocyclotron Electronics, 1961; Folded Unipole Antennas PGAG, 1954; Designing Over Horizon Communication Links, 1955. Contbr. to: Procs. of the I.R.E.; Rad. Lab. Series.

POTTENGER, Francis Marion (M.D.), Founder and former Med. Dir., The Pottenger Sanatorium and Clinic for Diseases of the Chest, Monrovia, Calif. MEDICINE (DISEASES OF THE CHEST). Home Add.: 1055 So. Arroyo Blvd., Pasadena, Calif. b. Sater, O., Sept. 27, 1869. s. Thomas and Hannah Ellen (Sater) P. Edn.: Ph.B., Otterbein Coll., 1892; Ph.M., ibid., 1897; A.M., ibid., 1905; M.D., Cincinnati Coll. of Med. and Surg., 1894. Hon. Deg.: LL.D., Otterbein Coll., 1909; M.A.-C.P., Amer. Coll. of Phys., 1952. m. Carrie Burtner, 1894 (dec., 1898). 2nd m. (Adelaide Gertrude Babbitt, Aug. 29, 1900. c.: Francis Marion; Robert Thomas; Adelaide Marie. 3rd m. Caroline Lacy, Sept. 15, 1917. c.: Caroline L. Exp.: Asst., Chair of Surgery, Cincinnati Coll. of Med. and Surgery, 1894; Med. Dir., Pottenger Sanatorium and Clinic for Diseases of the Chest, 1903-58; Lectr. on Diseases of the Chest and Climatology, Univ. of Sou. Calif., 1903-04; Prof. of Clin. Med., ibid., 1905-09, 1914-20, 1931-42; Prof. of Med., Emer., 1942—; Consultant, Collis P. and Howard Huntington Memorial Hosp., Pasadena, Calif., 1936—. Hon. Pos.: Founder and Pres., Sou. Calif. Antituberculosis League, 1902-06; Corr. Mem., First Internatl. Central Com. to Combat Tuberculosis, Berlin, 1902, Delegate, Vth Internatl. Tuberculosis Cong. in Paris, 1905; Pres., Los Angeles Co. Med. Assn., 1906-07; Pres., Amer. Therapeutic Soc., 1914-15; Councillor, ibid., 1906-50; Delegate, VIth Internatl. Tuberculosis Cong., Wash., 1908; Delegate XVIth Internatl. Med. Cong., Budapest, 1909; Pres., Los Angeles Clin. and Pathol. Soc., 1912-13; Pres., Miss. Valley Med. Assn., 1917-19; Regent, Amer. Coll. of Physicians, 1917-39; Pres., ibid., 1932-33, Master, 1953; One of the Founders of the Assn. for the Study of Internal Secretions, (Endocrinology Soc.,, 1917, Secretary, 1918-35, President, 1935-37; Chairman, Tuberculosis Advisory Com., Dept. of Charities, Los Angeles County, 1934—; Chmn., Pacific Interurban Clin. Club, 1931-32; Vice-Pres., Calif. State Bd. of Pub. Health, 1940-43; Consult. in Tuberculosis, ibid., 1943—. Mem.: Amer., Calif. and Los Angeles Trudeau Socs.; Natl. and Internatl. Tuberculosis Assns. (Dir. of Natl., 1930-34); L. A. Co. Tuberculosis and Health Assn. (Bd. of Dirs., 1924-46; Pres., 1938-41; Pres. Emer., 1946); Calif. Tuberculosis and Health Assn. (Bd. of Dirs., 1930-34; Pres., 1931-32); Calif. Sanatorium Assn.; Fellow, A.M.A.; Amer. Pub. Health Assn.; The Gerontological Soc.; Calif. Med. Assn.; Amer. Acad. of Polit. and Soc. Sci.; Amer. Eugenics Soc.; Amer. Assn. for the United Nations; A.A.A.S.; Founding Fellow, Internatl. Psychosomatic Soc.; World Med. Assn.; New Century Fdn.; Inst. of Pacific Relations; Iowa Clin. Med. Soc.; St. Louis Med. Soc.; (Hon. Mem., Sect. of Chest Dis.), Pan Amer. Med. Assn. Author: Pulmonary Tuberculosis, 1908; Muscle Spasm and Degeneration in Intrathoracic Inflammation and Light Touch Palpation, 1913; Tuberculin in Diagnosis and Treatment, 1913; Clinical Tuberculosis, 1917; Symptoms of Visceral Disease, 1919; Tuberculosis and How to Combat It, 1921; Tuberculosis in the Child and Adult, 1934; Tuberculosis, 1948; The Fight Against Tuberculosis, 1952. Gen. Int.: In Clin. Rsch., Discovered (1909) that the Pulmonary Reflexes Through the Sympathetic System Take Place in the Central Cervical Segments of the Cord, Particularly the IIId, IVth and Vth, Causing Spasm of the Muscles of the Shoulder Girdle and the Crus and Central Tendon of the Diaphragm When the Disease in the Lung is Active, and Causing Degeneration of these Muscles When the Disease is Chronic; Also Degeneration of the Superficial Tissues in the Areas Supplied by these Same Cervial Segments, including the Soft Tissues of the Neck and Chest Above the Second Rid Anteriorly and the Spine of the Scapula Posteriorly; and Sensory Changes in these Areas; Also showed that Parasympathetic Reflexes Take Place Through the Various Branches of the Vagus, and in the Vth, VIIth and IXth Cranial Nerves; In 1909 Described the Ability to Delimit Organs Such as the Heart and Structures of Different Density Within the Chest by Light Touch Palpation, A Touch so Light that it Barely Indents the Skin; Described the Pleural Reflexes which Take Place Through the Intercostal Nerves; They Show as Tension in the Intercostal Muscles When the Disease is Active, and Degeneration of These Muscles and Other Intercostal Tissues, and Also of the Soft Tissues Covering the Area Involved in a Short Time After the Disease Has Been Present and Remains So Thereafter; The Threshold for Pain in These Nerves is Lowered and They May Show Pain Any Time Thereafter Under Conditions of Stress Such as Overwork, Tiring, Worry, Menstruation, Weather Changes, or Anything That Lowers the Resistance of the Patient and Calls Upon Him for Special Response; These Reflexes are Especially Valuable Because the X-rays May Not Give Any Indication of Former Pleurisy; in 1913, Described the Motor and Trophic Reflexes from the Kidney as shown in the Lumbar Muscles; in 1913, Offered a Classification of Symptoms of Tuberculosis According to Their Etiology; in 1946, Suggested a New Conception of the Respiratory Murmur, Namely, that it is caused by the Entire Respiratory Mechanism (Muscles, Bony Cage, Pulmonary Tissue, Bronchi, Air Cells, and the Air Current) Rather Than by the Air Current Passing Through the Larynx and into the Lower Respiratory Tract, Dilating the Bronchi and Air Cells as Suggested by Laennec and Beau. Special Int.: Pulmonary Tuberculosis; Its Immunological, Pathol. and Clin. Aspects; Also the Vegetative Nervous System.

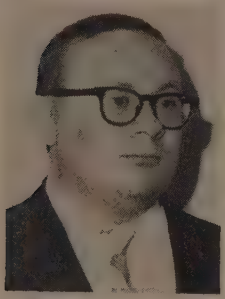
POTTENGER, Robert Thomas, Jr. (M.D.), 1060 E. Green St., Pasadena, Calif. Home Add.: 1095 Chula Vista Pl., Pasadena, Calif. INTERNAL MEDICINE; SPECIAL INTEREST IN CHRONIC DISEASE, ALLERGIES, RHEUMATIC DISEASES AND THE USE OF NUTRITION IN TREATMENT. b. San Francisco, Calif., June 22, 1928. s. Robert T. and Helen Cornell (Powers) P. Edn.: A.B., Princeton Univ., 1950; M.D., Columbia Univ., Schl. of Med., 1954. m. Thea Giorloff, Mar. 29, 1953. c.: Bruce Robert; Keith Cumming; Maile Ann Ruth. Exp.: M.D., Med. Serv., U.S.A.F., Castle AFB, Atwater, Calif., 1955; M.D., Surgical Serv., ibid., 1955-57; M.D., Stanislaus Co. Hosp., Modesto, Calif., 1957-58; M.D., Pepeekeo Clinic, Pepeekeo, Hawaii, 1958-60; M.D., Pasadena, Calif., 1961 — Mem.: Internatl. Coll. of Nutrition; Endocrine Soc.; A.M.A.; Am. Acad. of Applied Nutrition; N. Y. Acad. of Sci.; Am. Geriatric Soc.; Pasadena Found. for Med. Rsch.; Internatl. Coll. of Applied Nutrition. Serv. Rec.:



U.S.A.F., 1955-57. Areas of Rsch.: Black Test; Studies in Weight Reduction; Bacterial Allergies through Autogenous Vaccine; Cytotoxic Effect on Food Allergens on Leukocytes.

POTTER, Andrey A., (Dr. Engrng.), Dean, Emeritus of Engrng., Purdue Univ., Lafayette, Ind. Home Add.: 517 Russell St., W. Lafayette, Ind. STEAM-ELECTRIC POWER PLANTS; HEAT TRANSFER AND THERMODYNAMICS. b. Vilna, Lithuania, Aug. 5, 1882. s. Gregor and Rivza (Pelonsky) P. Edn.: B.S., Mass. Inst. of Tech., 1903. Hon. Deg.: Dr. of Engrng., Kans. St. Univ., 1925; D.Sc., Northeastern Univ., 1936; LL.D., Norwich Univ., 1944; D.Sc., Alfred Univ., 1947; Dr. of Engrng., Rose Polytechnic Inst., 1947; Dr. of Engrng., S. D. Schl. of Mines, 1949; D.Sc., Northwestern Univ., 1953; Dr. Engrng., Purdue Univ., 1955; Dr. of Engrng., Mich. St. Univ., 1956. m. Eva Buther, June 28, 1906. c.: James G.; Helen C. Exp.: Engr., Gen. Elec. Co., Schnectady, N. Y., 1903-05; Asst. Prof., Prof. and Dean, Kans. St. Univ., 1905-20; Engr., Gen. Elec. Co., Lynn, Mass., 1913; Dean, Purdue Univ., 1920-53; Pres., Bituminous Coal Rsch., Pittsburgh, Pa., 1950-60. Hon. Pos.: Pres., Am. Soc. of Engrng. Edn.; Pres., Am. Soc. of Mechanical Engrs.; Pres.; Am. Engrng. Coun.; Bd., Air Univ., 1955-58; Bd., N.S.F., 1950-58; Exec. Dir., Natl. Patent Planning Comm. Mem.: A.S.M.E., Fellow and Hon. Mem.; A.A.A.S., Fellow; Inst. of Traffic Engrs.; Natl. Soc. of Professional Engrs.; Acacia; Triangle; Eta Kappa Nu; Tau Beta Pi; Pi Tau Sigma; Sigma Kappa Sigma; Sigma Tau; Scabbard and Blade; Sigma Xi; Rotary; Mason, 33°. Author: Farm Motors, 1913; Power Plants, 1920; Thermodynamic, 1920. Contbr. to: Am. Soc. of Mechanical Engrs. Jour.; Jour. of Am. Soc. of Engrng. Edn.; Jour. of Power & Industry. Gen. Int.: U.S.N. Distinguished Publ. Serv. Medal; Washington Award; Americanism Award; Cyrus McCormick Medal; N.S.P.E. Award; Midwest Citation of Honor. Areas of Rsch.: Ultra High Temperature and Pressure Steam; Coal and Heat Transfer.

POTTS, Rinehart Skeen (Mr.), Chf. Librn., Aero Serv. Corp., Div. of Litton Indust., Phila. 20, Pa. Home Add.: 76 Marshall Lane, Levittown, N. J. DOCUMENTATION IN SCIENTIFIC LITERATURE. b. Phila., Pa., July 13, 1927. s. Joseph Harrison and Jean (Chapman) P. Edn.: A.B., Temple Univ., 1953. m. Grace Louise Moore, Dec. 11, 1954. c.: Elizabeth Ann; Kenneth Chapman. Exp.: Chf. Librn., Aero Serv. Corp., Phila., Pa., 1953—. Positions: Deputy Dir. of Civil Defense, Levittown, N. J., 1960—; Trustee and Secy. of the Bd. Pub. Libr. of Levittown, N. J., 1960—; Chmn., Citizens Assn. for Public Schls., Levittown, N. J., 1961-62. Mem.: Am. Libr. Assn.; Spec. Librs. Assn.; Am. Documentation Inst.; Am. Astronaut. Fed.; Soc. for Adv. of Space Travel; Pres., Libr. Assn., Levittown, N. J., 1962. Contbr. to: Libr. Jour.; Bulls. of Geog. and Map Div. and Sci. Technol. Div., Spec. Librs. Assn.; Jour. of Space Flight; Frontier; Bull., Spec. Librs. Coun. of Phila. Serv. Rec.: U. S. Air Force, 1945-49; U. S. Air Force Reserve, 1949-53. Areas of Rsch.: Technical Information Problems of Scientific Researchers Especially in Astronautic Areas.



POUGH, Richard Hooper (Mr.), Pres., Natural Area Coun., Inc., 205 East 42nd St., New York, N. Y. Home Add.: 33 Highbrook Ave., Pelham, N. Y. ECOLOGY. b. Brooklyn, N. Y., Apr. 19, 1904. s. Francis Harvey and Alice (Beckler) P. Edn.: B.S., Mass. Inst. of Technol., 1926. m. Moira Flannery, Dec. 3, 1937. c.: Edward Warren; Tristram Hooper. Exp.: Rsch. Assoc., Natl. Audubon Soc., N. Y., 1936-48; Chmn., Dept. of Conservation, Am. Museum of Natural History, 1948-56; Pres., Natural Area Coun., Inc., N. Y. C., 1956—. Mem.: Ecological Soc. of Am.; Am. Ornithological Union; The Wildlife Soc.; Am. Soc. of Mammalogists; Linnaean Soc. of N. Y.; British Ornithologists' Union; British Ecological Soc.; Alpha Tau Omega; Alpha Chi Sigma; Tau Beta Pi; M.I.T. Club of N. Y.; Men's Garden Club of N. Y.; Huguenot Yacht Club; Boone and Crockett Club. Author: Audubon Bird Guides, 1946, 1951, 1957. Service Rec.: Officer's Reserve Corps, 1921-36. Gen. Int.: Frances K. Hutchinson Medal. Areas of Rsch.: Ornithol., Ecology, Conservation.

POTTER, Mary Athena (Miss), Consultant in Mathematics, 1533 College Avenue, Racine, Wis. MATHEMATICS. b. Bristol, Wis., January 4, 1889. d. E. C. and Emma (Huntley) P. Edn.: B.A., Lawrence Coll., 1913; Harvard Summer Schl., 1921; M.A., Univ. of Wis., 1930. Exp.: Tchr., Elem. Schl., Waupun, Wis., 1908-09; Lockland, Cincinnati, Ohio, 1909-11; Math., H. S., Marshfield, Wis., 1913-14; Racine, 1914-18; Hd. Dept., 1918-22; Supvr., 1922-54; Math. Inst., summers, at Duke, 1948, 49, 50, 51; at Wellesley, 1949; at Wis., 1948, 49, 51; at La. State Univ., 1950, 51, 56, 58; at Oneonta, New York, 1957; Asst. Prof. Math., Western Ill. State Univ., Macomb, Summer, 1955. Mem.: Phi Beta Kappa; Pi Lambda Theta; Delta Gamma; Amer. Edn. Rsch. Assn.; Natl. Council of Tchrs. of Math., (2nd Vice-Pres., 1932-33; 1st Vice-Pres., 1933-34; Pres., 1940-42); Central Assn. Sci. and Math. Tchr. (Sec., Math Sec., 1930-31); Dir., 1944-47, 1949-51; Vice-Pres., 1948, 50. Author: Instl. Tests in Arith. for Grades 5, 6, 7, 8, (with Schorling-Clark), 1928; Arith. Test (with Schorling-Clark), 1927; Useful Math., (with Dunn-Allen-Goldthwaite), 1937; Useful Math. Workbook, 1939; Learning to Compute (with Schorling-Clark-Deady), 1940; Hundred Problem Arithmetic Test (with Schorling-Clark), 1944; Math. for Everyone (with Beck), 1945; Math. Everyday (with Beck), 1945; Math. to Use (with Dunn-Allen-Goldthwaite), 1954; Math. for Success (with Neitzel, Root, Enright), 1951; Math. to Use Workbook, 1955; Education in Math. for the Slow Learner (with Mallory), 1958; Math. to Use, Revised, 1962; Math. for Success, New Edition, (with Neitzel, Root, Enright), 1960; Mag. Articles in Prof. Jours. Rsch.: Errors in Computational Arith. Made by Pupils of High and Low Intelligence. Spec. Int.: Math. for Slow Learners, Visual Aids and Edn. Supvrn.

POULOS, Evangeline Soutsos (Mrs.), Assoc. Prof., Univ. of N. C. Schl. of Nursing, Chapel Hill, N. C. Home Add.: 2927 Isaac's Pl., Greensboro, N. C. PSYCHIATRIC NURSING. b. Boston, Mass., Dec. 21, 1929. d. George and Anna (Xipolitaki) P. Edn.: R.N., Boston City Hosp.; B.S., Boston Univ., 1952; M.S., ibid., 1953. m. Peter George P., May, 1959. c.: George; Anna. Exp.: Staff Nurse, Boston City Hosp., 1947-49; Chf., Maternity Dept., Audubon Hosp., Boston, Mass., 1949-50; Staff Mem., Multiphasic Clinic, Mass. Dept. of Publ. Hlth., Boston, Mass., 1950-52; Assoc. Prof., Univ. of N. C. Schl. of Nursing, 1953—. Hon. Pos.: Repr. on N. C. Mental Health Coun. Mem.: A.A.U.P.; A.A.U.W.; Am. Nurses' Assn.; Natl. League for Nursing; Sigma Theta Tau; League of Women Voters. Contbrng. Co-Author: Unity of Nursing Care, 1960. Contbr. to: Nursing Rsch. Gen. Int.: Faculty Award, Univ. N. C. Schl. of Nursing, 1961. Areas of Rsch.: Needed Aspects of Social and Psychological Scis. in Nursing Edn.; Survey of Patterns of Psychiatric Nursing in N. C.

POWELL, Charles H. (Sc.D.), Environmental Health Engr., USPHS Occ. Hlth. Rsch. and Trng. Facility, Cincinnati, O. Home Add.: 77 Palmerston Street, Cincinnati, Ohio. INDUSTRIAL HYGIENE. b. Alton, Ill., July 19, 1926. s. Herbert S. and Floy L. (Meyer) P. Edn.: B.S., Shurtleff Coll., 1949; M.S., Univ. of Cincinnati, 1959; Sc.D., ibid., 1960. m. Margaret R. Andereck, Jan. 1, 1948. c.: Pamela A.; Charles J. Exp.: Chemist, Superior Labs., Sandoval, Ill., 1949-52; Deputy Chf., Regional Environmental Health Lab., Wright-Patterson A.F.B., Ohio, 1952-57; Chf., Regional Environmental Health Lab., McClellan A.F.B., Calif., 1959-62; Sr. Scientist USPHS Occ. Hlth. Rsch. and Trng. Facility, Cincinnati, Ohio. Mem.: A.C.S.; Am. Industrial Hygiene Assn.; A.A.A.S.. Serv. Rec.: See Positions. Areas of Rsch.: Industrial Hygiene of Rockets and Missiles.

POWELL, Eugene Loren (Ph.D.), Assoc. Dir. of Rsch., Am. Maize-Products Co., Roby, Ind. Home Add.: 10501 S. Christiana Ave., Chicago 55, Ill. FOOD CHEMISTRY AND NUTRITION. b. Hallsville, Mo., Nov. 19, 1913. s. Fabian E. and Maud H. (Loren) P. Edn.: A.B., Univ. of Mo., 1938; A.M., ibid., 1939; Ph.D., ibid., 1942. m. Helen M. Ruskamp, Aug. 15, 1943. c.: Edith V. Exp.: Asst. Instr., Univ. of Mo., 1940-42; Chemist, Assoc. Dir., Maize-Products Co., Roby, Ind., 1946—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; Inst. of Food Tech.; Am. Assn. of Cereal Chemists; A.A.A.S.; Alpha Chi Sigma; Sigma Xi; Gamma Alpha. Contbr. to: Jour. of Biol. Chem.; Univ. Microfilms. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Proteins; Amino Acids; Vitamins; Carbohydrates.

POWELL, Marvin (Ph.D.), Prof., Dept. of Grad. Programs in Edn., Northern Ill. Univ., DeKalb, Ill. Home Add.: 1114 Holmes Pl., DeKalb, Ill. EDUCATIONAL PSYCHOLOGY. b. Syracuse, N. Y., May 5, 1924. s. William and Gussie (Chainov) P. Edn.: A.B., Syracuse Univ., 1947; M.S., ibid., 1949; Ph.D., ibid., 1952. m. Rita Cohen, June 17, 1951. c.: Jeffrey; Linda; Laura. Exp.: Asst. Prof., Western Reserve Univ., 1952-61; Dir., Psychological Serv., Willoughby-Eastlake City Schls., Willoughby, Ohio, 1955-61; Prof., Dept. of Grad. Programs in Edn., Northern Ill. Univ., 1961—. Mem.: A.A.A.S., Fellow; Am. Psychological Assn.; Am. Personnel and Guidance Assn.; Natl. Vocational Guidance Assn; Am. Edn. Rsch. Assn.; Phi Delta Kappa; Bnai Brith. Contbr. to: Psychological Monographs; Genetic Psychol. Monographs; Jour. of Edn. Psychol.; Jour. of Edn. Rsch.; Exceptional Child; Vocational Guidance Quart.; Edn. and

Psychological Measurement. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Ednl. Psychol; Child and Adolescent Development; Schl. Psychol.

POWELL, Thomas Edward, III (M.D.), Tchng. Fellow in Biol., Biological Labs., Harvard Univ., 16 Divinity, Cambridge 38, Mass. Home Add.: Haggard Ave., Elon Coll., N. C. MEDICAL AND BIOLOGICAL RESEARCH. b. Alamance Co., N. C., Aug. 1, 1936. s. Thomas Edward, Jr. and Sophia Maude (Sharpe) P. Edn.: B.A., Va. Military Inst., 1957; M.D., Duke Univ., 1961. Exp.: Tchng. Fellow in Biol., Biol. Labs., Harvard Univ., 1961—. Mem.: Soc. of Protozoologists; A.A.A.S.; Phi Chi Medical Fraternity. Contbr. to: Clinical Rsch. Serv. Rec.: U. S. Army, 1957—. Areas of Rsch.: Medical and Biological Rsch.

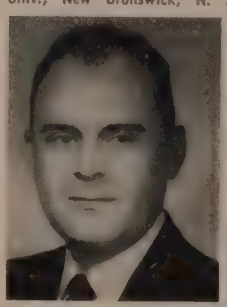
POWERS, Harold Oren (Ph.D.), Chmn., Sci. Dept., St. Univ. Coll., Oswego, N. Y. Home Add.: 23 Draper St., Oswego, N. Y. PLANT SCIENCES. b. Girard, Pa., July 14, 1920. s. William A. and Hazel E. (Bogart) P. Edn.: B.S., State Tchrs. Coll., Edinboro, Pa., 1942; M.S., Syracuse Univ., 1949; Ph.D., ibid., 1960. m. Leora DeLelys, 1944, (dec.). c.: Marjorie, Robert. Exp.: Tchr., Bd. of Edn., Rochester, N. Y., 1946-48; Instructor to Prof., State Univ. Coll., Oswego, New York, 1948—. Mem.: Am. Assn. Adv. Sci., Fellow; Botanical Soc. of Am.; N. Y. Acad. of Scis.; Sigma Xi; Sigma Zeta. Serv. Rec.: U.S.A.F., 1942-46. Areas of Rsch.: Plant Anatomy.

POWERS, John Edward (Ph.D.), Prof., Schl. of Chem. Engrng., Univ. of Okla., Norman, Okla. Home Add.: 1551 Mason, Dearborn, Mich. CHEMICAL ENGINEERING. b. Wilkensburg, Pa., Oct. 12, 1927. s. Rolla E. and Agnes E. (Friel) P. Edn.: B.S., Univ. of Mich., 1951; Ph.D., Univ. of Calif., Berkeley, 1954. m. Harriet Ann Fenske, Jan. 2, 1951. c.: Marguerite Eileen; Patrick Michael; Judith Lynn. Exp.: Rsch. Engr., Shell Devel. Co., Emeryville, Calif., 1954-56; Prof., Univ. of Okla., Norman, Okla., 1956 . Hon. Pos.: Mem. at Large, Gordon Rsch. Confs. Coun.; Chmn., 1960 Gordon Rsch. Conf. on Separation and Purification. Mem.: Sigma Xi; A.I.Ch.E.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Phi Kappa Phi; Tau Beta Pi; Phi Lambda Upsilon. Author: An Introduction to Thermodynamics, 1962. Contbr. to: Indust. and Engrng. Chem.; A.I.Ch.E. Jour.; Jour. of Chem. Phys.; Jour. of Phys. Chem.; Chem. Engrng. Prog.; Oil and Gas Jour. Serv. Rec.: Corps of Engrs., 1946-47. Areas of Rsch.: Thermal Diffusion, High Pressure Phase Behavior, Sepn. and Purification.

POWERS, Wilbur Emmett (Mr.), Secy. Natl. Pharmaceutical Council, 610 5th Ave., N. Y. 20, N. Y. Home Add.: 603 E. Howell St., Trenton 10, N. J. PHARMACY AND CHEMICAL ENGINEERING. b. Denver, Colo., July 9, 1913. s. Emmett and Bertha (Guido) P. Edn.: B.S., Chem. Engrng., Univ. of Denver, 1937; B.S., Pharmacy, Univ. of Mich., 1939. m. Jane Biddle, June 18, 1939. c.: Robert Emmett; Carol Ann. Exp.: Pharmaceutical Chemist, United Western Lab., Denver, Colo., 1939-40; Asst. to the Secy., New Jersey St. Bd. of Pharmacy, Trenton, N. J., 1940-45; Secy. and Chief Chemist, ibid., 1945-55; Secy. Natl. Pharmaceutical Coun., N. Y., N. Y., 1954—. Hon. Pos.: Pres., Natl. Assn. of Boards of Pharmacy, 1955-56; Vice-Pres., House of Delegates, Am. Pharmaceutical Assn., 1959-60; Pres., Soc. of Mercer County Pharmacists, 1957-58, Treas., ibid., 1959—; Chmn., Rutgers Univ. Pharmaceutical Conference, 1960; Pres., Southern N. J. Branch Am. Pharmaceutical Assn., 1959-60; Pres., Northern N. J. Br., Am. Pharmaceutical Assn., 1961-62. Mem.: Am. Pharmaceutical Assn.; Natl. Assn. of Retail Druggists; Soc. of Pharmacists in Industry; Am. Chem. Soc., Soc. of Mercer County Pharmacists; Am. Inst. of the History of Pharmacy; A.A.A.S.; Natl. Assn. of Bd. of Pharmacy; Colo. Pharmacal Assn.; N. J. Pharmaceutical Assn.; Theta Chi; Alpha Chi Sigma; Kappa Psi; Omicron Delta Kappa; Phi Kappa Phi; Rho Chi; Sigma Pi Sigma; Phi Lambda Upsilon. Contbr. to: Pharmaceutical journals. Gen. Int.: Finalist in Nationwide Contest as 1954 Drug Man of the Year by Am. Druggist Mag. Areas of Rsch.: Pharmacy Law.

PRADOS, John William (Ph.D.), Assoc. Prof. of Chem. Engrng., Dept. of Chem. and Met. Engrng., Univ. of Tenn., Knoxville 16, Tenn. Home Add.: 3106 Sandalwood Rd., Knoxville 21, Tenn. CHEMICAL ENGINEERING. b. Spring Hill, Tenn., Oct. 12, 1929. s. Gustav O. and Elizabeth (Branham) P. Edn.: B.S., Univ. of Miss., 1951; M.S., Univ. of Tenn., 1954; Ph.D., ibid., 1957. m. Ruth Lynn Baird, Sept. 2, 1951. c.: Elizabeth Pauline; Laura Lynn; Anne Caroline. Exp.: Rsch. Asst., Univ. of Tenn., 1954-55; Instr., ibid., 1955-56; Asst. Prof., ibid., 1956-59; Assoc. Prof., ibid., 1959—. Hon. Pos.: Chmn., Knoxville-Oak Ridge Sect., A.I.Ch.E.; Chmn., Univ. of Tenn. Branch, A.S.E.E. Mem.: A.C.S.; Simulation Councils, Inc.; Alpha Tau Omega; Alpha Chi Sigma; Tau Beta Pi; Phi Kappa Phi; Omicron Delta Kappa; Sigma Xi. Contbr. to: A.I.Ch.E. Jour.; Chem. Engrng. Progress; Nuclear Safety; Trans. of Am. Soc. for Artificial Internal Organs. Serv. Rec.: U.S.A.F., 1951-53. Areas of Rsch.: Studies of Dynamics, Control and Computer Simulation of Chem. Processing Units and Systems.

PRAMER, David (Ph.D.), Prof. of Agric. Microbiol., Rutgers Univ., New Brunswick, N. J. Home Add.: 37 Grant Ave., Highland Park, N. J. MICROBIOLOGY. b. Mt. Vernon, N. Y., Mar. 25, 1923. s. Coleman and Ethel (Toback) P. Edn.: B.Sc., Rutgers Univ., 1948; Ph.D., ibid., 1952. m. Rhoda Lifschutz, Sept. 6, 1950. c.: Andrew; Stacey. Exp.: Visit. Investigator, Imperial Chem. Industries, Ltd., Welwyn Herts, Eng., 1952-54; Asst. Prof., Rutgers Univ., 1954-57; Assoc. Prof., ibid., 1957-60; Prof. of Agric. Microbiol., ibid., 1960—. Hon. Pos.: Mem., Subcomm. on Antibiotics and Systemic Pesticides, Natl. Acad. of Sci.; Chmn., Comm. on Awards and Grants, Soc. for Indust. Microbiol.; Mem., Bd. of Dirs., New Brunswick Scientific Co., Inc. Mem.: Am. Soc. for Microbiology; Am. Academy of Microbiol.; Soc. for Gen. Microbiol.; Soc. for Indust. Microbiol.; Am. Assn. Univ. Profs.; Theobald Smith Soc.; Phi Beta Kappa; Sigma Xi; Alpha Zeta; Jr. C. of C. Contbng. Author: Advances in Applied Microbiology, 1959; Plant Pathology, 1959; Recent Advances in Botany, 1961. Contbr. to: Jour. of Bacteriol.; Applied Microbiol.; Science; Arch. of Biochem. and Biophysics; Nature; Jour. of Exptl. Botany; Biochemica et Biophysica Acta. Serv. Rec.: U. S. Army Air Force, 1943-46. Gen. Int.: Consultant to various industries and governmental agencies. Areas of Rsch.: Agricultural and aquatic microbiology; Antibiotics; Microbial interrelationships; Chemical transformation resulting from microbial activity.



PRATT, V. Lorraine (Miss), Mgr., Libr. Services Dept., Stanford Rsch. Inst., Menlo Park, Calif. Home Add.: 1019 Los Trancos Rd., Menlo Park, Calif. LIBRARY SCIENCE. b. Trenton, Mich., June 15, 1919. d. Harry G., Sr. and Gladys (Harvey) P. Edn.: B.S., Wayne Univ., 1942; B.S.L.S., Univ. of Denver, 1944. Exp.: Asst. Librarian, United Aircraft Corp., East Hartford, Conn., 1944-45; Jr. Librarian, Redwood City Pub. Library, Redwood City, Calif., 1945-48; Asst. Libr., Stanford Rsch. Inst., Menlo Pk., Calif., 1948-50; Libr., ibid., 1950-57; Mgr., Library Servs. Dept ibid., 1957—. Mem.: A.A.A.S.; Special Libraries Assn.; Assn. of Special Libraries and Information Bureaus; Am. Documentation Inst.; Am. Chem. Soc., Chem. Lit. Div. Areas of Rsch.: Information Processing.

PRENTICE, Donald Bishop (D.Sc.), Dir.-Treas., Scientific Rsch. Soc. of Am., New Haven, Conn. Home Add.: 204 Edgehill Rd., Hamden, Conn. MECHANICAL ENGINEERING. b. Hartford, Conn., Apr. 27, 1889. s. Charles Hills and Kate Bacon (Bishop) P. Edn.: Ph.B., Yale Univ., 1910; M.E., Yale Univ., 1914; M.A., Lafayette Coll., 1926. Hon. Deg.: LL.D., Wabash Coll., 1932; Sc.D., Lafayette Coll., 1936; Dr. Eng., Rose Polytechnic Inst., 1948. m. Mary Louise Farnham, June 20, 1912 (dec. 1961). c.: Mrs. Katherine P. Best; Mrs. Mary P. Colby; Mrs. Barbara P. Broad. Exp.: Asst. Instr., Yale Univ., 1912-14; Instr., ibid., 1914-17; Asst. Prof., Lafayette Coll., 1917-18; Prof., ibid.,

1918-31; Dean, ibid., 1924-31; Pres., Rose Polytechnic Inst., 1931-48; Dir.-Treas., Scientific Rsch. Soc. of Am., New Haven, Conn., 1948—. Hon. Pos.: Dir., Merchants Natl. Bank, Terre Haute, Ind., 1941-48; Pres., Terre Haute Y.M.C.A.; Chmn., New Haven Chapt., Am. Red. Cross; Pres., Assn. Church and Independent Colls., Ind.; Pres., Am. Soc. Engr. Edn. Mem.: Sigma Xi; Tau Beta Pi; A.S.E.E.; A.S.M.E., Fel.; A.A.A.S., Fel.; Kappa Delta Rho; Alpha Phi Omega; Blue Key; Rotary. Contbr. to: Schl. and Soc.; Engrng. Edn.; Mechanical Engrng.; Am. Yearbook.

PRAY, Alfred R. (Ph.D.), Assoc. Prof. Chem., Pratt Institute, Brooklyn 5, N. Y. Home Add.: 178 Emerson Pl., Brooklyn 5, N. Y. INORGANIC AND PHYSICAL CHEMISTRY. b. Poughkeepsie, N. Y., Mar. 30, 1913. s. Alfred R. and Rose (Bonar) P. Edn.: B.S., Case Schl. of Applied Sci., 1941; M.S., ibid., 1942; Ph.D., Syracuse Univ., 1946. m. Maria Carmen Paz, 1959. Exp.: Instr., Univ. of Minn., 1946-48; Asst. Prof., ibid., 1948-55; Visiting Investigator, Rockefeller Inst., 1955-56; Rsch. Assoc., ibid., 1956-59; Project Leader and Rsch. Chemist, U. S. Plywood Corp., 1959-61; Assoc. Prof., Pratt Institute, 1961—. Mem.: A.C.S.; A.A.A.S.; A.A.U.P.; Sigma Xi; Appalachian Mountain Club. Author: Non-aqueous Media, vol. V, Pt. 2 of Sneed and Brasted's Comprehensive Inorganic Chemistry, 1956. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Phys. Chem.; Inorganic Syntheses; Nuevo Cimento. Areas of Rsch.: Non-aqueous Chemistry; Precision Coulometry; Batteries.

PREMACHANDRA, B. N. (Ph.D.), Rsch. Assoc., Inst. of Exptl. Path., The Jewish Hosp., St. Louis, Mo. Home Add.: 9067 W. Swan Circle, Brentwood, St. Louis 17, Mo. PHYSIOLOGY, ENDOCRINOLOGY. b. Bangalore, India, May 17, 1930. s. B. Narasimhaiengar and Seshammal P. Edn.: B.Sc., Univ. of Mysore, India, 1950; M.Sc., Univ. of Bombay, India, 1955; Ph.D., Univ. of Mo., 1958; ARIC, Royal Inst. of Chem., London, U. K., 1959. Exp.: Rsch. Assoc., Asst. Prof., Univ. of Mo., 1956-60; Rsch. Assoc., The Jewish Hosp., St. Louis, Mo., 1960—. Mem.: The Endocrine Soc.; The Physiological Soc.; Animal Sci. Soc.; Poultry Sci.; A.A.A.S.; Royal Inst. of Chemistry, London, U. K.; Sigma Xi; Indian Dairy Sci. Assn.; Y.M.C.A.; Y.W.-C.A. Contbr. to: Endocrinology; Sci.; Animal Sci.; Poultry Sci.; Am. Jour. of Physiol.; Jour. of the Royal Inst. of Chemistry; Proc. Soc. of Exptl. Biol. and Med. Areas of Rsch.: Physiology and Biochemistry.

PRESS, Frank (Ph.D.), Dir., Seismological Lab., Calif. Inst. of Technol., 220 N. San Rafael Ave., Pasadena, Calif. Home Add.: 1972 Skyview Dr., Altadena, Calif. GEOPHYSICS. b. Brooklyn, N. Y., Dec. 4, 1924. s. Solomon and Dora (Steinholz) P. Edn.: B.S., Coll. of the City of N. Y., 1944; M.A., Columbia Univ., 1946; Ph.D., ibid., 1949. m. Billie Kallick, June 6, 1946. c.: William; Paula. Exp.: Assoc. Prof., Columbia Univ., 1952-55; Prof. of Geophysics, Calif. of Technol., 1955—; Dir., Seismological Lab., ibid., 1957—. Hon. Pos.: Pres., Sci. Advisory Comm.; Bd. of Dirs., United Electro Dynamics. Mem.: Natl. Acad. of Scis.; Royal Astronomical Soc.; Am. Physical Soc.; Seismological Soc. of Am.; Geological Soc. of Am.; Acoustical Soc. of Am. Co-Author: Elastic Waves in Layered Media, 1957. Contbr. to: Jour. of Geophysical Rsch.; Sci.; Bull. of the Seismological Soc. of Am. Gen. Int.: Calif. Scientist of the Year, 1960. Areas of Rsch.: Crustal and Mantle Structure; Earthquakes and Seismology; Exploration Geophysics; Planetary Physics; Submarine Geology; Theory of Elastic Wave Propagation.

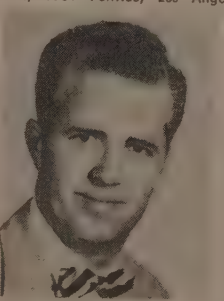
PRESTON, Dudley A. (Ph.D.), Assoc. Prof., San Diego State Coll., San Diego 15, Calif. Home Add.: 3213 Bramson Pl., San Diego 4, Calif. PLANT PATHOLOGY, AIR POLLUTION DAMAGE TO CROPS, PALYNOLOGY, MYCOLOGY. b. Spokane, Wash., Jan. 6, 1910. s. Junius W. and Mabel (Stanwood) P. Edn.: B.S., Wash. State Univ., 1933; M.S., Univ. of Minn., 1940; Ph.D., ibid., 1947. m. Evelyn MacManigal, Aug. 1, 1941. Exp.: Rsch. Asst., Univ. of Minn., 1938-42; Instr., Ala. Polytechnic Inst., 1942-43; Assoc. Mycologist, U.S.D.A., Emergency Plant Disease Prevention, Stillwater, Okla., 1943-45; Asst. Prof., Okla. A. and M. Coll., 1945-48; Asst. Prof., San Diego State Coll., 1948-55; Assoc. Prof., ibid., 1955—. Mem.: A.A.U.P.; A.A.A.S.; A.I.B.S.; Mycol. Soc. of Am.; Am. Phytopathol. Soc.; West. Soc. Naturalists; Air Pollution Control Assn; Theta Chi; Alpha Sigma Eta; Alpha Phi Omega; Phi Sigma; Lions Internatl. Contbr. to: Phytopathol.; Plant Disease Reporter. Areas of Rsch.: Field Problems in Plant Pathol.; Rusts of Malvaceae; Air Pollution Damage to Crops; Palynology.

PRICE, Albert Thomas (D.Sc.), Prof. Appl. Math., Univ. of Exeter, Devon, England. Home Add.: Vermont, 20 W. Garth Rd., Exeter, Devon, Eng. MATHEMATICS. b. Nanwich, Cheshire, Jan. 30, 1903. s. Albert Thomas and Marie Lavinia (Light) P. Edn.: Monmouth Schl.; D.Sc., Manchester Univ., 1951. m. Rose Ann Waterman, Mar. 29, 1947. Exp.: Asst. in Pure Math., Q.U.B., 1925-26; Asst. Lectr., Imperial Coll. of Sci. and Technol., London, 1926-30; Lectr., ibid., 1930-46; Asst. Prof. and Univ. Reader in Appl. Math., ibid., 1946-51; Prof. and Hd. of Math. Dept., Roy. Tech. Coll., Glasgow, 1951-52; Consult. to Admiralty, 1942-45; Guest Invest., Dept. of Terrestrial Magnetism, Carnegie Inst., Inst. of Geophys., Univ. of Calif., 1952; Dean, Fac. of Sci., Exeter Univ., 1954-58; Prof. of Appl. Math., ibid., 1952—. Hon. Pos.: Coun. of Roy. Astron. Soc., 1956-60; Natl. Comm. for Geomagnetism and Aeronomy, 1946—; Natl. Adv. Coun. in Edn. for Indust. and Commerce, 1957—; Reg. Coun. for Further Edn. for the S.W., 1953—; IGY Rsch. Assoc. of Natl. Acad. of Scis., U. S. Coast and Geodetic Survey, Wash., 1961-62. Contbr. to: Philos. Trans.; Proc. Roy. Soc.; Proc. London Math. Soc.; Qtrly. Jour. Mech. and Appl. Math.; Jour. of Geophys. Rsch. Areas of Rsch.: Applied Mathematics and Geomagnetism.

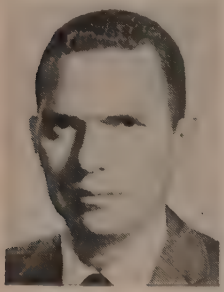
PRICE, Bronson (Ph.D.), Survey Statistician, U. S. Office of Edn., Dept. of Hlth., Edn. and Welfare, Wash., D. C. Home Add.: 5813 Temple Hills Rd., S.E., Wash. 22, D. C. PSYCHOLOGY AND BIOSTATISTICS. b. Freeport, Ill., Mar. 24, 1905. s. Orlo Josiah and Eva Bronson (Graves) P. Edn.: B.S., Antioch Coll., 1929; Ph.D., Stanford Univ., 1934. m. Helen Green, 1934. Exp.: Fellow, Social Sci. Rsch. Council in Russia, 1934-36; Instr. in Psychol., Ohio State Univ., 1936-41; Personnel Technician, A.G.O., War Dept., Wash., D. C., 1941-42; Communications Analyst, O.W.I., Wash., D. C., 1942-45; Statistician, Natl. Office of Vital Stat., 1945-47; Statistician, Dept. of Health, Edn. and Welfare, 1947—. Mem.: Genetics Soc. of Am.; Am. Soc. Human Genetics; Biometrics Soc.; Population Assn. of Am.; Am. Psychol. Assn.; Sigma Xi; Phi Delta Kappa. Author: School Health Services, 1957. Contbr. to: Am. Jour. Human Genetics; Genetic Psychol. Monographs; Annals of Eugenics. Areas of Rsch.: Human Twins.

PRICE, Emmett William (Ph.D.), Prof. of Biol., Jacksonville State Coll., Jacksonville, Ala. PARASITOLOGY. b. Clover Lick, W. Va., Jan. 30, 1896. s. John Calvin and Mary Ann (Williams) P. Edn.: D.V.M., George Wash., 1918; M.S., Am. Univ., 1931; Ph.D., Geo. Wash., 1935. m. Mary Tutt Freeman, June 3, 1920. c.: Rosemary; Margaret Anne. Exp.: Assoc. Prof., Pathol. and Hd. of Dept., A. and M. Coll. of Tex., 1919-26; Assoc. Parasitologist, Zoological Div., Bur. of Animal Indus., U. S. Dept. of Agric., 1926-29; Parasitologist, 1929-36; Sr. Parasitologist, ibid., and Asst. Chief, Zool. Div., ibid., 1936-46; Principal Zoologist and Asst. Chief, Zoological Div., and in charge of Division's Stat., Agric. Rsch. Center, Beltsville, Md., 1946-55; Agric. Adminstr. and Hd. of Helmith Parasite Sect. An. Dis. and Paras. Rsch. Br., Agric. Rsch. Serv., 1955-56; Retired, 1956; Assoc. Prof. of Biol., Jacksonville State Coll., Ala., 1957-61; Prof. of Biolog., ibid., 1961—. Mem.: A.A.A.S.; Am. Soc. of Parasitol.; Am. Veterinary Med Assn.; Am. Mic. Soc.; Soc. Syst Zool.; Biol. Soc., Wash.; Helminthol. Soc. of Wash.; Wash. Acad. of Sci.; Ala. Acad. of Sci.; Zool. Soc. India; Sigma Xi. Contbr. to: Jour. Parasitol.; Jour. Wash. Acad. of Sci.; Proc. of Helminthol. Soc. of Wash.; Encyclopedia Brit. War. Rec.: W.W. I. Special Int.: Parasites and Parasitoses of Domestic Animals; Trematodes, Both Monogentic and Digenetic.

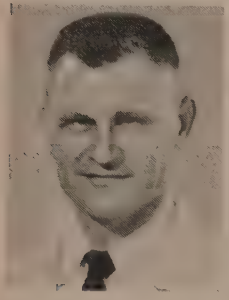
PRICE, Oliver Ray (Ph.D.), Dir. of Rsch., Electro-Sonic Systems, Inc., 1931 Pontius, Los Angeles 25, Calif. Home Add.: 1248 Princeton St., Santa Monica, Calif. NUCLEAR PHYSICS AND ULTRASONICS. b. Springfield, Mo., Aug. 24, 1924. s. Oliver Horace and Myrtle Della (Dodson) P. Edn.: B.S., Calif. Inst. of Tech., 1953; M.S., Univ. of Calif. at Los Angeles, 1956; Ph.D., ibid., 1958. m. (div.). c.: Oliver Ray, II. Exp.: Res. Physicist, Univ. of Calif., 1955-58; Mem. of Tech. Staff, Hughes Aircraft Co., Culver City, Calif., 1954-55, 1958-61; Dir. of Rsch., Electro-sonic Systems, Inc., Los. Angeles, Calif., 1961—. Hon. Pos.: Past-Pres., Sigma Pi Sigma. Mem.: Am. Physical Soc.; Sr. Mem. of Inst. of Radio Engr.; Sigma Xi. Contbr. to: Phys. Rev.; Phys. Rev. Letters; Proceedings of IRE. Serv. Rec.: U.S.N.R., Aviator, 1942-45. Areas of Rsch.: Nuclear Physics; K Mesons; High Energy Physics; Microwave Phys.; Theoretical and Experimental Electromagnetics; Antennas; Ultrasonics.



PRICE, William James (Ph.D.), Chf. Scientist, Aeronautical Rsch. Lab., Wright-Patterson AFB, Ohio. Home Add.: 409 Bayonne, Vandalia, Ohio. NUCLEAR INSTRUMENTATION AND RESEARCH ADMINISTRATION. b. Alexandria, Ohio, Dec. 3, 1918. s. Lewis John and Mary (Wright) P. End.: A.B., Denison Univ., 1940; M.S., Rensselaer Polytechnic Inst., 1941; Ph.D., ibid., 1948. m. Betty Kistler, Aug., 1943. c.: Mary Barbara; Sarah Margaret; Lewis Charles. Exp.: Proj. Engr., Bendix Av. Corp., Teterboro, N. J., 1942-45; Rsch. Physicist, Battelle Mem. Inst., Columbus, Ohio, 1948-49; Prof., Dept. Head, A.F. Inst. of Tech., Wright-Patterson AFB, Ohio, 1949-57; Branch Chf., Modern Phys., Aeronautical Rsch. Lab., ibid., 1957-59; Chf. Scientist, ibid., 1959—. Mem.: A.F. Coun. of Scientists; Am. Physical Soc.; Kappa Sigma; Sigma Xi; Phi Beta Kappa; Tau Beta Pi. Author: Nuclear Radiation Detection, 1958. Contbr. to: Physical Rev.; Jour. of the Acoustical Soc. Areas of Rsch.: Nuclear Instrumentation; Ultransonic Properties of Solids; Physical Electronics.



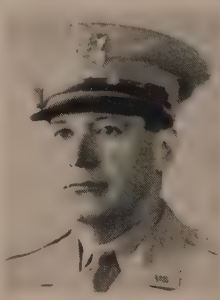
PRICE, Zane H. (Mr.), Asst. Rsch. Microbiol.; Chf. Div. of Microbiologic Cytology, Dept. of Infectious Diseases, Univ. of Calif. Schl. of Med., Los. Angeles 24, Calif. Home Add.: 12424 Everglade, Los Angeles 66, Calif. ELECTRON MICROSCOPY, BIOLOGICAL AND MEDICIAL RESEARCH. b. Otoe, Nebr., June 17, 1922. s. Frank and Carrie (Benner) P. Edn.: B.A., Walla Walla Coll., 1950. m. Maxine Fitzgerald, Sept. 26, 1943. c.: Peggy. Exp.: Rsch. Asst., Univ. of Calif., Los Angeles, 1950-53; Grad. Research, Microbiol., 1953-56; Special Rsch. Fellow, Los Angeles Co. Heart Association, 1956-57; Jr. Research Microbiol., 1957-59; Asst. Rsch. Microbiol., 1959—. Mem.: Biol. Photographic Assn.; So. Calif. Soc. for Electron Microscopy; Electron Microscope Soc. of Am.; A.A.A.S.; Electron Microscope Soc. of Japan. Contbr. to: Jour. of Bacteriol.; Mikroskopie; Circulation Rsch.; Jour. of Biol. Photographic Assn.; Am. Rev. of Tuberculosis and Pulmonary Diseases. Serv. Rec.: U. S. Marines, W.W. II. Areas of Rsch.: Infectious Diseases.



PRINCE, Jack Harvey (Mr.), Assoc Prof., Dept. of Ophthalmology, Inst. for Rsch. in Vision, Ohio State Univ., Columbus, Ohio. Home Add.: 329 Lenappe Dr., Columbus 14, Ohio. COMPARATIVE ANATOMY OF THE EYE, LEGIBILITY STUDIES, EXPERIMENTAL OPHTHALMIC SCIENCES. b. London, England, Nov. 10, 1908. s. Thomas Harvey and Louisa Grace Mary (Taylor) P. Edn.: Northampton Coll. of Advanced Tech., 1928. m. Mariam Elizabeth Meader, May 27, 1960. Exp.: Consult. and Unsponsored Rsch., 1928-40; Rsch. in Night Vision, Royal A. F. Projects, 1941-44; Biol. Rsch., Australian Museum, Taronga Zoo Park, Sydney Univ., Univ. Coll. London, Trans-Australia Biol. Expendition, 1946-48; Prosthetic Sydney, Australia, 1949-51; Assoc. Prof., Dept. of Ophthalmol., Inst. for Rsch. in Vision, Ohio State Univ., 1952—. Hon. Pos.: Council Mem., Assn. of Optical Practitioners; Acting Dir., Inst. for Rsch. in Vision, Ohio State Univ. Mem.: Sigma Xi; Royal Microscopical Soc.; Zool. Soc. of London; Br. Optical Assn.; Am. Assn. Adv. Sci.; A.A.U.P.; Assn. Am. Med. Colls.; Am. Acad. Optometry; Assn. for Rsch. in Ophthalmol.; Ohio State Soc. for Clin. Rsch. Author: Ocular Prosthesis, 1946; Visual Development, 1949; Recent Advances in Ocular Prosthesis, 1950; Comparative Anatomy of the Eye, 1956; Visual Acuity and Reading in Relation to Letter and Word Design, 1960; Anatomy and Histology of the Eye and Orbit in Domestic Animals, 1960. Contbr. to: Jour. of Com. Neurol.; Am. Jour. of Ophthal.; Tex. Reports on Biol. and Med.; Br. Jour. Physiol. Optics; Jour. of Am. Acad. of Optometry; Jour. Royal Microscopical Soc.; A.M.A. Archives of Ophthal.; New England Jour. of Med. Gen. Int.: Made Histological and Fundus Sequences for Eye Sect. of Film "Gateways to the Mind" by Bell Science Series; Brit. Optical Assn's. Rsch. Medal, 1958. Areas of Rsch.: Comparative Anatomy of the Eye, Ophthalmic Experimentation, Legibility of Print and Highway Signs, etc.; Television Ophthalmoscopy, Retinal Photography.

PRINCE, David Chandler (D.Sc.), Consulting Engr., 50 Washington Ave., Schenectady 5, N. Y. Fla. Add.: Hibiscus Way, Ocean Ridge, Fla. ELECTRICAL AND MECHANICAL ENGINEERING. b. Springfield, Ill., Feb. 5, 1891. s. Arthur E. and Charlotte (Hitchcock) P. Edn.: B.S., Univ. of Ill., 1912; M.S., ibid., 1913. Hon. Deg.: D.Sc., Union Coll., 1943. m. Winifred Notman, May 14, 1918. c.: David C., Jr.; George N.; Mrs. Winifred P. Hyson; Edward. Exp.: Engr. on Staff, Publ. Utilities Comm. of Ill., 1914-17; Engr., Radio Dept., Gen. Elec. Co., Schenectady, New York, 1919-23; Engr., Switchgear Dept., ibid., 1931-40; Mgr., Commercial Engr., ibid., 1940-41; Vice Pres., Gen. Engrng. and Consulting Lab., ibid., 1945-51. Hon. Pos.: Bd. of Dirs., Pres., A.I.E.E. Mem.: Am. Inst. Consulting Engrs.; A.S.M.E.; I.A.E.; S.A.E.; I.R.E.; A.A.A.S.; Chi Psi; Eta Kappa Nu; Tau Beta Pi; Sigma Xi; Mohawk Club; Mohawk Golf Club; Univ. Club, N. Y. C. Author: Principles of Mercury Arc Rectifiers and Their Circuits, 1927; Vacuum Tubes as Oscillation Generators, 1923. Contbr. to: Am. Helicopter; Gas Turbine Publications; Inst. of Aeronautical Scis.; Am. Aacd. for Polit. and Soc. Sci.; Inst. of Radio Engrs.; Soc. of Automotive Engrs.; Am. Inst. of Consulting Engrs.; I Men's Assn.; N. Y. St. Soc. of Professional Engrs.; Am. Soc. of Mechanical Engrs.; Convertible Aircraft Pioneers; A.A.A.S.; Am. Rocket Soc.; Inst. of Electrical Engrs. Serv. Rec.: U. S. Air Force, 1917. Areas of Rsch.: Electrical and Mechanical Engrng.; Application of Atomic Power and Jet-engine Development; Novel Propulsion Equipment for the Helicopter XH17.

PRITIKIN, Roland I. (M.D.), Eye Surgeon, Expert in Eye Surgery of Mass Casualties, 1211 Talcott Bldg., Rockford, Ill. Home Add.: 3505 Highcrest Rd., Rockford, Ill. EYE SURGERY OF MASS CASUALTIES. b. Chicago, Ill., Jan. 9, 1906. s. Edward and Bluma (Saval) P. Edn.: B.S., Loyola Univ. Schl. of Med., 1928; M.D., Stritch Schl. of Med., Loyola Univ., 1930. m. Jeanne Dupre Moore, May 25, 1940. c.: Gloria Anne; Karen. Exp.: Faculty, Stritch Schl. of Med. of Loyola Univ., 1930-48; Attending Staff, Ill. Eye and Ear Infirmary, 1939-48; Consult. to Rockford Industries and Private Practice of Ophthalmology, 1946—; Rsch. and Dev. Sect., SGO-USAR-DA, 1950—. Hon. Pos.: Pres., Henry Holland Hospital Alumni Assn. and Fund, 1957—; Pres., Winnebago Co. Hosp. Staff, Rockford, Ill., 1950; Mem., Bd. Dirs., Winnebago Co., Ill. Chapt. Am. Red Cross. 1953-59; Treas., Winnebago Co. Med. Soc., 1961—; Secy., Rock River Valley Eye, Ear, Nose and Throat Soc., 1962. Mem.: C. of C.; Univ. Club, Rockford, Ill.; Am. Med. Assn.; Am. Coll. of Surgeons, Fellow; Fellow, Internatl. Coll. of Surgeons and Ent. Sec. and Oph. Surg.; World Med. Assn.; Natl. Soc. for the Prevention of Blindness; Fellow, Industrial Med. Assn.; Fellow, Am. Assn. Adv. Sci.; Fellow, Am. Med. Writers Assn.; N. Y. Acad. Sci.; Fellow, Soc. for Academic Achievement, 1962; Ophthal. Soc. of United Kingdom; Am. Nuclear Soc.; Soc. of Milit. Ophthal.; Sigma Xi; Natl. Med. Found. for Eye Care; Am. Med. Authors, and many others. Contbr. to: Ill. Guardsman; Milit. Surgeon; Ill. Med. Jour.; Jour. Lab. and Clin. Med.; Jour. Int. Coll. of Surg.; Armed Forces Mgmt.; EENT Monthly; Am. Jour. Oph.; Excerpta Medica; Med. Trial Technique Quart.; Mil. Med. Author: Textbook—Essentials of Ophthalmology, 1950; Sect. in Ophthal., Encyl. Americana Supplements, 1946—; Chapt. in War Med., 1942. Serv. Rec.: U. S. Natl. Guard, 1930-41; U. S. Army, 1941-46; U. S. Army Reserve, 1946—. Gen. Int.: Recd. Bronze Plaque by Lions Internatl. for Community Service to the Blind and Partially Sighted, 1960; Expert in Eye Surgery of Mass Casualties; Inventor of Diagnostic and Operating Instruments and Equipment for Eye Examination and Treatment of Mass Eye Casualties; Filming of Teaching Films for SGO-WRGH Eye Clinic. Areas of Rsch.: Research and Development Project—USAX-DA-SGO. Eye Surgery of Mass Casuaties.



PROCTOR, Charles Darnell (Ph.D.), Dir., The Lab. of Chem. Pharmacol., McCrone Rsch. Inst., 451 E. 31st St., Chicago, Ill. Home Add.: 7657 S. Indiana Ave., Chicago 19, Ill. PHARMACOLOGY AND TOXICOLOGY. b. St. Louis, Mo., Sept. 10, 1922. s. Charles Edward and Bessie (Bland) P. Edn.: B.A., Fisk Univ., 1943; M.A., ibid., 1946; Ph.D., Loyola Univ., 1950. m. Ella Parham, Aug., 1950. c.: Evelyn Dolores; Sharon Rose; Jean Elizabeth; Cynthia Diane. Exp.: Ordnance Metallurgist, St. Louis Ordnance Proj., St. Louis, Mo., 1943; Asst. Instr. of Chem., Fisk Univ., 1944-46 Rsch. Asst. in Pharmacol., Univ. of Ill., 1946-47; Sr. Toxicological Chemist, Cook Co., Ill., 1947-50; Instr. in Pharmacol. and Therapeutics, Loyola Univ. Schl. of Medicine, 1950-53; Asst. Prof. of Pharmacol. and Therapeutics, Stritch Schl. of Med. and Grad. Schl., ibid., 1953-56; Assoc. Prof., ibid., 1956-62; Dir., The

Lab. for Chemical Pharmacol., The McCrone Rsch. Inst., Chicago, Ill., 1962—. Hon. Pos.: Chmn., Chem. Sect., Ill. Acad. of Scis. Mem.: Am. Soc. for Pharmacol. and Exptl. Therapeutics; A.C.S.; Am. Inst. of Chemists, Fellow; A.A.A.S., Fellow; The Walter Reed Soc., Fellow; Am. Heart Assn.; Soc. for Exptl. Biol. and Medicine; Sigma Xi; N. Y. Acad. of Scis.; Am. Soc. for Toxicol. Contbr. to: Arch. of Biochem. and Biophysics; Am. Jour. of the Med. Scis.; Jour. of Forensic Medicine; Annals of N. Y. Acad. of Scis.; Trans. of the Ill. Acad. of Scis.; Fed. Proc. Areas of Rsch.: Application of Polarographic Technique of Analysis to Biological Problems; Mechanism of Drug Action and the Relationship of Chemical Structure to Drug Action; Chemical Analytical Methods in Toxicol.

PROCTOR, Donald Frederick (M.D.), Assoc. Prof. Laryngology, Asst. Prof. Physiology, The Johns Hopkins Schl. of Med., Baltimore, Md. Home Add.: 1110 Hollins Lane, Baltimore 9. Md. OTOLARYNGOLOGY, BRONCHOESOPHAGOLOGY, RESPIRATORY PHYSIOLOGY. b. Red Bank, N. J., Apr. 19, 1913. s. Frederick R. and Gertrude (Chauncey) P. Edn.: A.B., Johns Hopkins Univ., 1933; M.D., ibid., 1937. m. Janice Carson, 1937. c.: Douglas; Nan. Exp.: Assoc. Prof., Laryngology and Otology, Johns Hopkins Univ., 1946-51, 1957—; Prof. Anesthesiology, ibid., 1951-55; Asst. Prof., Physiology, ibid., 1955—. Mem.: Am. Physiol. Soc.; Am. Coll. of Surgs.; Acad. Otolaryngology; Sigma Xi; Phi Beta Pi; Hamilton St. Club. Author: Anesthesia and Otolaryngology, 1957; The Tonsils and Adenoids in Childhood, 1961; The Nose, Paranasal Sinuses and Ears in Childhood, 1962. Contbr. to: Am. Jour. of Physiology; Jour. Applied Physiol.; Annals Otology; Rhinology; Laryngology; Am. Rev. of Tuberculosis. Areas of Rsch.: Respiratory Physiology, Respiratory Infection, Otolaryngology, Bronchoesophagology, Voice Production, Conservation of Hearing and Prevention of Deafness.

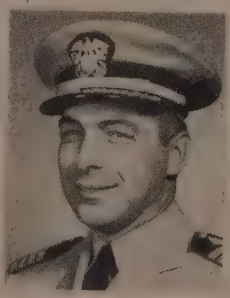
PROCTOR, Paul Wainwright (Ph.D.), Asst. Dir. and Sr. Psychologist, N. Y. Univ. Testing and Advisement Center, Wash. Square, N. Y. 3, N. Y. Home Add.: 44 West 10th St., N. Y. 11, N. Y. PSYCHOLOGY; EDUCATIONAL AND VOCATIONAL GUIDANCE. b. Kansas City, Mo., Sept. 14, 1915. s. Paul Bullard and Jessie Elizabeth (Wainwright) P. Edn.: B.S., Wash. Univ., 1936; M.A., Columbia Univ. Tchrs. Coll., 1945; Ph.D., N. Y. Univ., 1952. m. Shizu Asahi, 1944. Exp.: Tchr., Baltimore Friends Schl., Baltimore, Md., 1945-47; Tchr., The Slade Schl., Olney, Md., 1947-48; Psychologist, N. Y. Univ. Reading Inst., N. Y. C., 1948-50; Sr. Psychologist, N. Y. Univ. Testing and Advisement Ctr., New York City, 1950—; Asst. Dir., ibid., 1958—. Hon. Pos.: Chmn., Ethical Practices Comm., N. Y. C. Personnel and Guid. Assn., 1957-58. Mem.: Am. Psychological Assn.; N. Y. State Psychol. Assn.; N. Y. Soc. for Clin. Psychol.; Soc. for Projection Techniques; Natl. Vocl. Guid. Assn.; Am. Pers. and Guid. Assn.; N. Y. C. Pers. and Guid. Assn.; A.A.A.S.; Am. Assn. of Univ. Profs.; Sigma Nu; Kappa Delta Pi. Areas of Rsch.: Galvanic Skin Response; Reading Difficulties; Ednl. and Vocl. Planning.

PROEBSTING, Edward Louis, Sr. (Ph.D.), Prof. of Pomol., Univ. of Calif., Davis, Calif. Home Add.: 612 Miller Dr., Davis, Calif. POMOLOGY (PLANT PHYSIOLOGY, MINERAL NUTRITION AND ORCHARD SOIL MANAGEMENT). b. Philipsburg, Mont., June 24, 1897. s. Edward L. and Charlotte Anne (Heine) P. Edn.: B.S., Univ. of Calif., 1918; M.S., Cornell Univ., 1921; Ph.D., ibid., 1924. m. Dorothy Critzer, Jan. 3, 1924. c.: Edward Louis, Jr.; Mrs. Dorothy May P. Wellman. Exp.: Instr. in Hort., Univ. of Minn., 1918-19; Asst. in Botany, Cornell Univ., 1921; Instr. in Botany, ibid., 1921-23; Instr. in Pomol., Univ. of Calif., 1923-26; Asst. Prof., ibid., 1926-30; Assoc. Prof., ibid., 1930-43; Prof., ibid., 1943-62; Prof. Emeritus, ibid., 1962—. Mem.: A.A.A.S., Fellow; Am. Soc. Horticultural Science; Am. Soc. of Plant Physiology; Botany Soc. Am.; West. Soc. Soil Science; Int. Hort. Soc.; Ore. St. Hort. Soc.; Wash. St. Hort. Assn.; S.A.E.; Sigma Xi; Alpha Zeta; Phi Kappa Phi; Commonwealth Club of Calif.; Rotary; Farm Bureau. Contbr. to: Proc. Am. Soc. Hort. Sci.; Sci.; Bot. Gaz.; Jour. Pom. and Hort. Sci.; Soil Sci.; Proc. Int. Hort. Cong. Gen. Int.: Natl. Rsch. Coun., Fellow, England, 1931-32. Areas of Rsch.: Cambial Activity in Apple; Histology of Graft Unions; Orchard Soil Management; Mineral Nutrition of Fruit Trees; Maintenance of Orchard Soil Fertility.

PROSSER, C(lifford) Ladd (Ph.D.), Prof. of Physiol., Head, Dept. of Physiol., Biophys., Univ. of Ill., 524 Burrill Hall, Urbana, Ill. Home Add.: 205 E. Michigan, Urbana, Ill. PHYSIOLOGY, ZOOLOGY. b. Avon, N. Y., May 12, 1907. s. Clifford James and Izora (Ladd) P. Edn.: A.B., Univ. of Rochester, 1929; Ph.D., Johns Hopkins Univ., 1932. m. Hazel Blanchard, Aug. 25, 1934. c.: Jane Ellen; Nancy Ladd; Loring Blanchard. Exp.: Rsch. Fellow, Harvard Univ. and Cambridge Univ., 1932-34; Asst. Prof., Clark Univ., 1934-39; Asst. Prof. to Full Prof., Univ. of Ill., 1939—; Head, Dept. Physiol. Biophysics, ibid., 1960—. Mem.: Am. Soc. of Zoologists; Am. Physiological Soc.; Soc. of General Physiologists. Co-Author: Comparative Animal Physiology, 1961. Contbr. to: Am. Zoologist; Am. Jour. of Physiol.; Proc. Soc. Exptl. Biol. and Med. Gen. Int.: Fellow, Am. Acad. of Arts and Scis., 1957. Areas of Rsch.: Nerve and Muscle Physiology; Comparative Animal Physiol.; Drug Action on Hearts; Radiation Biol.; Physiological Adaptation.

PROSKY, Leon (Ph.D.), Biochemist, U. S. Army Med. Rsch. Nutr. Lab., Fitzsimons Gen. Hosp., Denver, Colo. Home Add.: Post-Doctoral Fellow, Washington Univ. Schl. of Med., St. Louis, Mo. AMINO ACIDS, PROTEIN METABOLISM AND NUTRITION NUCLEIC ACIDS IN LIVER. b. New York City, Aug. 2, 1933. s. Myer and Beckie (Prosk) P. Edn.: B.S., Brooklyn Coll., 1954; M.S., Rutgers Univ., 1955; Ph.D., ibid., 1958. Exp.: Tchng. Asst., Rutgers Univ., 1955-58; Rsch. Asst., ibid., 1955-58; Biochemist, U.S.A., Denver, 1958-60; Post-Doctoral Fellow, Wash. Univ., 1960—. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; A.C.S.; Sigma Xi. Contbr. to Jour. Nutrition; Am. Assn. for Cancer Rsch. Serv. Rec.: U.S.A. Areas of Rsch.: Effect of Methionine on Nucleic Acid Synthesis in Liver, Algae as A Potential Food for Overpopulated Areas and Space Travel, Transaminase Pyridoxal and Isoniazid Interrelationships, Flavorproteins.

PRUETT, Carl Eugene (M.D.), Capt., MC, U.S.N., Staff Specialist, Office of Rsch., DDR & E, Pentagon, Wash., D. C. Home Add.: 4809 Layman St., McLean, Va. AEROSPACE MEDICINE. b. Kinmundy, Ill., June 17, 1920. s. Walter S. and Bertha W. (Steuber) P. Edn.: B.M.S. and M.D., Univ. of Ill. Coll. of Med., 1943. m. Jean Kepley, Mar. 28, 1943. c.: Merry Carol; Richard Kepley; Roberta Lynn. Exp.: Phys. Qualification Sect., Aviation Med. Div., Bureau of Med. and Surgery, 1952-53; Hd., Aero-Med. Br., Flight Safety Div., C.N.O., 1953-55; Med. Officer, USS Philippine Sea (CVA-47), 1955-57; Chf., Biomedical Div., USAF Aero-Med. Lab., WADC, Dayton, Ohio, 1957-58; Bio-Sci. Officer, Pacific Missile Range, Pt. Mugu, Calif., 1958-62; Staff Specialist, Office of Rsch., DDR & E, Pentagon, Wash., D. C., 1962—. Hon. Pos.: Past Pres., PMR Sect., Am. Rocket Soc.; Life Sciences Com., Aero-Space Med. Assn.; Biostronautics Com., Am. Rocket Soc. Mem.: Fellow Aerospace Med. Assn.; Am. Med. Assn.; Assn. of Milit. Surgeons; Am. Assn. Adv. of Sci.; Sr. Mem., Am. Rocket Soc.; Am. Forestry Assn.; Natl. Geographic Soc.; Rsch. Soc. of Am.; Alpha Sigma Phi; Alpha Kappa Kappa; Omega Beta Pi. Serv. Rec.: (See positions above.). Gen. Int.: Certified by Am. Bd. of Preventive Medicine in Aviation Medicine; Medical Monitor-NASA Project Mercury. Areas of Rsch.: Aerospace Medicine.



PRUGH, Byron Jonathan (Mr.), Pres., Prugh and Associates, Inc., 3417 S. Lois Ave., Tampa 9, Fla. Home Add.: 3510 Kensington Ave., Tampa 9, Fla. SOIL MECHANICS AND FOUNDATION ENGINEERING. b. Plainfield, N. J., Oct. 1, 1917. s. Byron Mitchell Prugh and Mae (Hoagland) Pearsall. Edn.: B.S., Rutgers Univ., 1938. m. Eugenie Dilts, Dec. 12, 1942. c.: Byron J. Jr.; Peter Eugene; Merry Lynn. Exp.: Installation and Exploration Engr., Moretrench Corp., N. Y. C., 1938-46; Design Engr., ibid., Rockaway, N. J., 1946-50; Asst. Chief Engr., ibid., 1950-53; Asst. and Chf. Engr., Am. Dewatering Corp., Rockaway, N. J., 1953-60; Dir. of Rsch., Moretrench Corp., Tampa, Fla., 1954-61; Dir. of Rsch., Am. Dewatering Corp., 1950-61; Pres., Prugh and Associates, Tampa, Fla., 1961—. Hon. Pos.: Consultant, Hydrochemical Rsch., Inc. and Soil Compactors, Inc., Tampa, Fla., Strachem-MacKoe Corp, N. Y. C.; Consultant, MacKoe Corp., N. Y. C. Mem.: A.A.A.S.; A.S.C.E.; A.S.T.M.; N.S.P.E.; F.E.S.; G.A.S.; Tau Beta Pi; Pi Kappa Alpha. Contbr. to: Civil Engrng.; Engrng. News Record; A.S.C.E. Proceedings. Serv. Rec.: Major, Infantry, BQMD, 1942-44; Okinawa, 1945, Korea (USAMGIK), 1946. Gen. Int.: Exsiccation by Vacuumization and Electro-Osmosis of Fine Grained Soils, Vibrational Compaction by Explosives of Soils, Dewatering with wells and wellpoints. Areas of Rsch.: Investigation of Physical Properties of Soils for Dewatering, Consolidation, Compaction, Stabilization and Water Supply.

PRUITT, Clarence M. (Ph.D.), 407 S. Delaware, Tampa, Fla. CHEMISTRY. b. Jan. 30, 1898, Birdseye, Ind. s. John L. and Martha Jane (Sanders) P. Edn.: A.B., Ind. Univ., 1919; M.A., ibid., 1925; Ph.D., Columbia Univ., 1935. m. Fredonia Marie Dillard of Birdseye, Ind., June 23, 1920. d. Chas. L.

and Emma Dillard. Exp.: Elem. Schl. Tchr., Ind., 1915-17; H. S. Tchr.: Berne, Ind., 1919-20; Fort Madison, Iowa, 1920-21; Great Falls, Mont., 1921-25; Clayton, Mo., 1925-26; Tchr., Summer Session, N. C. State Coll., 1928; Tchr., Ind. S. T. C., 1928; Assoc. Prof., Univ. of Ala., 1928-33; Tchr., Pa. State Coll., 1935; Tchr., Univ. of Ala., 1928-33; Ariz. State Coll., Flagstaff, 1950—; San Jose State, 1950—; Ore. State Coll., 1954—; Instr., N. Y. Univ., 1933-35; Instr., Colo. State Coll. of Edn., 1935-36; Instr., Evansville Coll., 1937-38; Instr., Okla. A. and M. Coll., 1938-44; Scholarship, Tchrs. Coll., Columbia Univ., 1926-28; Instr., A.S.T.P. Physics and Geog., Univ. of Ill., Urbana, 1944-46; Assoc. Prof., Okla. A. and M. Coll., Stillwater, Okla., 1938-51; Visiting Prof. Edn., Univ. of Miami, Coral Gables, Fla., 1951-52; Univ. of Tampa 1954—. Mem.: Fellow, A.A.A.S.; Kappa Delta Pi; Phi Delta Kappa; Natl. Assn. for Rsch. in Sci. Tchng.; Natl. Sci. Tchrs. Assn.; Natl. Assn. of Biol. Tchrs.; The Coun. of Elem. Sci. Internatl. Contbr. to: Sci. Edn. Ph.D. Dissertation: An Analysis Synthesis and Evaluation of Subject Matter Concepts in Chem. War Rec.: W.W. I, 1918. Travel: U. S.; Can. Gen. Int.: Bus. Mgr., Abstract and Book Rev. Ed.; Sci. Edn., 1933—; Ed., Sci. Edn., 1946—; Secy.-Treas., Natl. Assn. for Rsch. in Sci. Tchng., 1946-60; Hon. Pres., N.A.R.S.T., 1960. Hobbies: Sports; Sci. Books. Listed in: A.M.S.; Who's Who in S. and S.W.; Who's Who in Am.; Ind. Scientists; Ldrs. in Edn.; Who's Who in Edn. Special Int.: Sci. Edn. and Sec. Edn.

PRUSER, Etha Marie (Miss), Asst. Prof. of Geography, Newark St. Coll., Union, N. J. Home Add.: 6 Cedar Trail, Fayson Lake, Kinnelon, P.O. Butler, N. J. GEOGRAPHY, NATURAL SCIENCE. b. N. Y. C., Jan. 5, 1929. d. Ernest J. and Karola (Rohlfs) P. Edn.: B.A., Drake Univ., 1950; M.A., Clark Univ., 1954; M.A., Columbia Univ., 1955. Exp.: Rsch., Map Intelligence, Army Map Serv., Washington, D. C., 1951-52; Rschr. Engrs. Strategic Intelligence, ibid., 1952-53; Tchr., Butler H. S., Butler, N. J., 1955-58; Instr., Hunter Coll., 1958-59; Asst. Prof., Newark St. Coll., 1959—. Mem.: Assn. of Am. Geographers; Am. Geographical Soc.; Phi Beta Kappa; Kappa Delta Pi; Pi Lambda Theta; Delta Phi Alpha. Areas of Rsch.: Physical Geography.

PRUZANSKY, Samuel (D.D.S.), Prof. of Dentistry, Assoc. Dir., Cleft Palate Ctr., Univ. of Ill., 808 S. Wood St., Chicago 12, Ill. Home Add.: 425 Locust Rd., Wilmette, Ill. ORTHODONTICS, ORAL PHYSIOLOGY, FACIAL MALFORMATIONS. b. New York, N. Y., Sept. 10, 1920. s. Philip and Eva (Pasternak) P. Edn.: D.D.S., Univ. of Md., 1945; B.S., Coll. of the City of N. Y., 1947; M.S., Tufts Univ., 1949. m. Donna Jean Schlarbaum, June 29, 1952. c.: Elysa Louise; Marya Beth. Exp.: Instr., Tufts Dental Schl., 1946-47; Acting Dir., Clinical Investigations Branch, Natl. Inst. of Dental Rsch., Bethesda, Md., 1954-55; Prof., Coll. of Dentistry, Univ. of Ill., 1961—. Hon. Pos.: Pres., Am. Assn. for Cleft Palate Rehabilitation; Secy., Treas., Internatl. Soc. for Cranio-Facial Biol. Mem.: Am. Dental Assn.; Am. Publ. Health Assn.; A.A.A.S.; Internatl. Assn. Dental Rsch.; Teratology Soc.; Am. Assn. Orthod.; Am. Assn. for Electromyography and Electrodiagnosis; Sigma Xi. Editor: Congential Malformations of the Face and Associated Structures, 1961. Contbr. to: Am. Jour. Orthodontics; Jour. Dental Rsch.; Jour. Am. Dental Assn.; Oral Surg.; Oral Med. and Oral Path.; Plastic and Reconstructive Surgery; Pediatrics; Jour. Prosth. Dentistry; Angle Orthodontist; Jour. Internatl. Coll. Surgeons; Jour. Dent. Child.; Am. Jour. Publ. Health; Jour. Dental Edn. Serv. Rec.: A.S.T.P., 1943-44; U.S.P.H.S., 1954-55. Areas of Rsch.: Orthodontics; Cleft Palate; Teratology; Oral Physiology; Roentgencephalometry.

PRYOR, Carlon Winston (Mr.), Chmn., Assoc. Prof., Dept. of Biol., Fla. Agric. and Mechanical Univ., Tallahassee, Fla. Home Add.: 3119 Arch St., Little Rock, Ark. ZOOLOGY, BACTERIOLOGY. b. Little Rock, Ark., Oct. 31, 1925. s. Elbert Alonzo (dec.) and Rosa Johnson (Merritt) P. Edn.: B.A., Univ. of Kans., 1947; M.A., ibid., 1952. Exp.: Instr., Tuskegee Inst., Tuskegee, Ala., 1948-49; Instr., Philander Smith Coll., 1949-51; Asst. Prof., Assoc. Prof., Fla. A. and M. Univ., 1954—; Academic Leave, Univ. of Kans., 1960-62. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Kans. Acad. of Sci.; Fla. Acad. of Sci.; Omega Psi Phi; Sigma Xi; Phi Sigma; Beta Kappa Chi; Alpha Phi Omega. Contbr. to: Biological Bull.; Bull. Serological Museum, Rutgers Univ.; Jour. Elisha Mitchell Scientific Soc.; Fla. A. and M. Univ. Rsch. Bull. Gen. Int.: Natl. Men's Crochet Champion. Areas of Rsch.: Virology—Tissue Culture; Invertebrate Serology.

PTACEK, Paul Henry (Ph.D.), Prof. of Speech Pathol. and Audiol., Western Reserve Univ., Cleveland 6, Ohio. Home Add.: 320 Corning Dr., Cleveland 8, Ohio. SPEECH PATHOLOGY AND AUDIOLOGY. b. Denver, Colo., July 23, 1918. s. Henry J. and Bessie (Dolezal) P. Edn.: B.A., Univ. of Colo., 1940; M.A., Univ. of Denver, 1947; Ph.D., Univ. of Minn., 1953. m. Pat Stahl, Jan. 17, 1946. c.: Pamela Pat; Paul Brent. Exp.: Asst. Prof. of Speech, Tex. Coll. of Arts and Industries, 1947-48; Asst. Prof. of Speech, Drake Univ., 1948-49; Assoc. Prof. of Speech, Univ. of Minn., 1949-57; Prof. of Speech Pathol. and Audiol., Western Reserve Univ., 1957—. Mem.: Am. Speech and Hearing Assn.; Am. Psychological Assn.; Sigma Xi; Acoustical Soc. of Am.; A.A.A.S.; Internatl. Soc. for General Semantics; Inst. for Gen. Semantics; Ohio Speech and Hearing Assn.; Delta Sigma Phi. Contbr. to: Jour. of Speech and Hearing Disorders; Speech Monographs; Jour. of Higher Edn.; Western Speech; Gen. Semantics Bull. Serv. Rec.: U. S. Air Force, W.W. II. Areas of Rsch.: Voice Sci., (Phonation); Audition (Dichotic Stimulation; Discrimination of Simulated Speech Parameters); Speech Pathol., (Stutterng).

PUCHTLER, Holde (Dr. Med.), Asst. Rsch. Prof., Dept. of Pathol., Med. Coll. of Ga., Augusta, Ga. HISTOCHEMISTRY; HISTOCHEMISTRY OF PROTEINS, CHEMICAL BASIS OF HISTOLOGICAL STAINING TECHNICS, DEVELOPMENT OF NEW STAINING METHODS). b. Kleinlosnitz, Germany, Jan. 1, 1920. s. Gottfried and Gunda (Thoma) P. Edn.: Abitur, Realgymnasium Nurnberg, Germany, 1940; Dr. Med., Univ. of Koeln, Germany, 1951. Exp.: Rsch. Assoc., Dept. of Med., Univ. of Koeln, Germany, 1949-51; Rsch. Assoc., Dept. of Pathol., ibid., 1951-55; Rsch. Fellow, Dept. of Anatomy, McGill Univ., Can., 1955-59; Asst. Rsch. Prof., Dept. of Pathol., Med. Coll. of Ga., 1959—. Mem.: Am. Histochem. Soc.; Arbeitsgemeinschaft fuer Histochemie; Internatl. Acad. of Pathol.; Am. Soc. for Cell Biol.; Am. Assn. of Anatomists; Sou. Soc. of Anatomists; A.A.A.S. Contbr. to: Jour. Histochem. Cytochem.; A.M.A. Arch. Path.; Stain Technol.; Am. Jour. Anat.; Nature; Virchows Arch. Areas of Rsch.: Histochemistry of proteins, dye chemistry, Chemistry of fiixation and histological staining methods, development of new staining technics.

PUCKETT, Allen Emerson (Ph.D.), Vice Pres., Aerospace Group Exec., Hughes Aircraft, Culver City, Calif. Home Add.: 5716 Corning Ave., Los Angeles 56, Calif. AERODYNAMICS AND RESEARCH AND DEVELOPMENT. b. Springfield, Ohio, July 25, 1919. s. Roswell C. and Catherine C. (Morrill) P. Edn.: B.S., Harvard Coll., 1939; M.S., ibid., 1941; Ph.D., Calif. Inst. of Tech., 1949. c.: Allen W.; Nancy L.; Susan E. Exp.: Rsch. Consultant, Calif. Inst. of Technol., 1941-45; Lectr., Chf., Wind Tunnel Sect., Jet Propulsion Lab., ibid., 1945-49; Technical Consultant, Wind Tunnel Design, Pittsburgh-Des Moines Steel Co., Aberdeen, Md., 1943-45; Technical Consultant, U. S. Army Ordnance, Aberdeen Proving Ground, Md., 1945—; Head, Aerodynamics Dept., Guided Missile Lab., Hughes Aircraft Co., Culver City, Calif., 1949-54; Dir. of Advanced Planning, Rsch. and Development Labs., ibid., 1954-55; Dir. of Operations, Weapon Systems Development Labs., ibid., 1955-57; Assoc. Dir., Systems Development Labs., ibid., 1957-59; Vice Pres., Dir. of Aerospace Engrng. Div., ibid., 1959-61; Vice Pres., Asst. Group Exec., Aerospace Group, ibid., 1961-62; Group Exec., ibid., 1962—. Mem.: Inst. of the Aerospace Sciences, Am. Rocket Soc.; Am. Ordnance Assn. Co-Author: Introduction to Aerodynamics of a Compressible Fluid, 1947; Guided Missiles Engineering, 1959. Areas of Rsch.: Gas Dynamics, Guided Missile performance.

PUCKETT, Howard Louis (M.D.), Physician, 1601 W. Ninth St., Stillwater, Okla. Home Add.: 924 Walnut St., Stillwater, Okla. GENERAL SURGERY. b. DeKalb Co., Tenn., May 23, 1903. s. N. B. and Martha (Young) P. Edn.: B.S., Univ. of Mich., 1927; M.D., ibid., 1931. m. Elizabeth Clarkson, June 29, 1929. c.: Barbara; Martha; Richard; Howard, Jr. Exp.: Physician, 1931—; Chief-of-Staff, Stillwater Municipal Hospital, 1961—. Hon. Pos.: Past Pres., Payne-Pawnee Co. Med. Soc.; Bd. Mem., Am. Cancer Soc. Mem.: Okla. Med. Assn.; A.M.A.; A.A.A.S.; Mass. Medical Soc.; Int. Coll. of Surgeons; Am. Soc. of Abdominal Surg.; Am. Geriatrics Soc.; Phi Rho Sigma; Kiwanis Club; C. of C. Contbr. to: U. S. Naval Med. Bull.; Biol. Chem.; Jour. of Okla. Med. Soc.; Jour. of Internatl. Coll. of Surg.

Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Wound Healing; Bone Infections; Fracture Healing.

PUHARICH, Henry Karl (M.D.), Rsch. Consultant, 171 E. 77th St., N. Y. 21, N. Y. Home Add.: 87 Hawkes Ave., Ossining, N. Y. PHYSIOLOGY, MEDICAL RESEARCH, PARAPSYCHOLOGY. b. Chicago, Ill., Feb. 19, 1918. s. Frank A. and Rose (Capuder) P. Edn.: A.B., Northwestern Univ. Coll. of Liberal Arts, 1942; M.B., Northwestern Univ., Grad. Schl., 1946; M.D., Northwestern Univ. Med. Schl., 1947. m. 1st, Virginia Jackson (dec.), Sept. 19, 1943; 2nd, Huberta Hermans, Dec. 19, 1959. c.: Svetlana; Danica; Illyria; Yvonne; Andrija. Exp.: Interne, Permanente Hosp., Oakland, Calif., 1946-47; Sr. Res. in Med. Rsch., Permanente Rsch. Found., Oakland, Calif., 1947-48; Dir. of Rsch., Round Table Found., Glen Cove, Me., 1948-58; Chf., Outpatient Dept., U. S. Army Chem. Center, 1953-55; Consult. Mycology, U. S. Army Hosp., Fort Ord, Calif., 1958—; Inde-

pendent Rsch. Consult., 1958—; Pres., Intelectron Corp. Mem.: Am. Assn. Adv. Sci.; N. Y. Acad. Scis.; A.M.A.; Mycol. Soc. of San Francisco; Audubon Soc.; Pan Am. Med. Assn.; Theta Xi; Nu Sigma Nu; Am. Legion; Mason. Author: The Sacred Mushroom, 1959; Beyound Telepathy, 1962. Contbr. to: Permanente Med. Bull.; Tomorrow Mag.; Bull. of Mycological Soc. of San Francisco. Serv. Rec.: U. S. Army, 1942-46; U. S. Army Med. Corps, 1953-55. Gen. Int.: Has Am., Belgian, and French Patents for Medical Prosthetic Devices. Areas of Rsch.: Parapsychology-Studies in Telepathy; Physiology-Prosthetic Devices for Hearing; Mycology-Hallucinogenic Mushrooms.

PURDOM, Martha Elda (Ph.D.), Assoc. Prof., Foods and Nutrition, Schl. of Home Econ., North Tex. St. Univ., Denton, Tex. Home Add.: 16 E. Harbine Ave., Xenia, Ohio. NUTRITION; BIOCHEMISTRY. b. Xenia, Ohio, March 24, 1908. d. Charles David and Stella (Smith) P. Edn.: B.S., Ohio State Univ., 1933; M.S., Univ. of Calif., Los Angeles, 1945; Ph.D., Ohio State Univ., 1958. Exp.: Tchng. Fellowship and Assoc. Instr., Dept. of Home Econs., Univ. of Calif., Los Angeles, 1940-43; Asst. Prof. of Foods and Nutrition, Wash. State Coll. Schl. of Home Econs., 1943-44; Assoc. Prof. of Nutrition Foods and Institution Mgmt., Dept. of Home Econs., Bowling Green State Univ., 1944-52; Asst. Prof., Foods and Nutrition, Coll. of Home Econs., Mich. State Univ., 1952-58; Vet. Admin., Brooklyn, N. Y., 1960-61; Nutrition Consultant, Greene Meml. Hosp., Xenia, Ohio, 1961-62; Assoc. Prof., Foods and Nutrition, Schl. of Home Economics, North Texas St. Univ., 1962—. Hon. Pos.: Mem. of Constitution Comm., Am. Dietetic Assn., 1952; Co-Chmn. of Program Comm. of Toledo Home Econ. Assn., 1947. Mem.: Am. Dietetic Assn.; Am. Home Econ. Assn.; Am. Assn. Adv. Sci.; A.A.U.P.; A.A.U.W.; Phi Mu; Omicron Nu; Sigma Delta Epsilon; etc. Areas of Rsch.: Nutrition—Animal and Human.

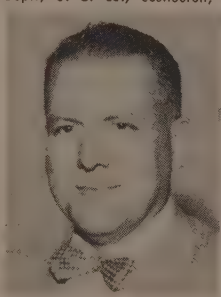
PURLEE, E. Lee (Ph.D.), Pres., Arcon Labs., Inc., Tallahassee, Fla. Home Add.: 1445 Mitchell Ave., Tallahassee, Fla. PHYSICAL CHEMISTRY. b. Salem, Ind., Aug. 8, 1922. s. L. Edward and Anna (Cauble) P. Edn.: B.S., Ball State Tchrs. Coll., 1948, M.S., Univ. of N. Mex., 1952; Ph.D., Penn. State Univ., 1954. m. Vera Owens, Dec. 18, 1949. c.: Abigale Owens. Exp.: Rsch. Assoc., The Fla. State Univ., 1954-56; Operations Analyst, Physical Chemist, Technical Operations, Inc., Burlington, Mass., 1956-58; Rsch. Assoc., Fla. State Univ., 1958-59; Operations Analyst, Physical Chemist, Technical Operations, Inc., Burlington, Mass., 1959-60; Assoc. Prof., Winthrop Coll., 1960-61; Pres., Arcon Labs., Inc., Tallahassee, Fla., 1961—. Mem.: Am. Chemical Soc.; A.A.A.S.; Sigma Xi; Kappa Delta Pi; Sigma Beta; Phi Lambda Upsilon; Amer. Ordance Assn. Contbr. to: Jour. of Am. Chemical Soc.; Jour. of Physical Chemistry; Jour. of Chemical Physics. Serv. Rec.: U.S.A. Areas of Rsch.: Chemical Kinetics and Mechanisms of Reactions in Solutions, Electrolyte Solutions, Solvent Isotope Effects of D_2O, Water Soluble Vitamins, Military Operations Research.

PURPURA, Dominick Paul (M.D.), Assoc. Prof., Neurol. Surg., Columbia Univ. Coll. of Physns. and Surgeons, 630 W. 168 St., New York City, N. Y. Home Add.: 56 Lakeview Terrace, Ramsey, N. J. NEUROPHYSIOLOGY. b. N. Y. City, Apr. 2, 1927. s. John R. and Rose (Ruffino) P. Edn.: A.B., Columbia Coll., 1949; M.D., Harvard Med. Schl., Manga cum Laude, 1953. m. Florence M. Williams, May, 1948. c.: Craig; Kent; Keith; Allyson. Exp.: Assoc. Prof., Coll. of Physns. and Surgeons, Columbia Univ., 1958—. Hon. Pos.: Editorial Bd., Jour. Neurophhrmacol.; Med. Advry. Bd., Natl. Neurol. Dis. Fdtn. Mem.: Am. Physiol. Soc.; Am. Neurol. Assn.; Am. EEG Soc.; Am. Acad. of Neurol.; Internatl. Brain Rsch. Organization; UNESCO; Alpha Omega Alpha. Contbr. to: Am. Jour. Physiol.; Jour. Neurophysiol.; EEG Jour.; Int. Rev. Neurobiol.; Arch. Neurol. and Psychiat.; Jour. Neurochem.; Exptl. Neurol.; Jour. Comp. Neurol.; Jour. Neuropath. and Exptl. Neurol.; Jour. Gen. Physiol.; Neurol.; Anns. N. Y. Acad. of Sci.; World Neurol.; Epilepsia; Cent. Nervous Syst. and Behavior. Serv. Rec.: U. S. Army Air Force, World War II. Gen. Int.: Cressy-Morrison Award in Natural Sciences, N. Y. Acad. of Sci., 1961. Areas of Rsch.: Neurophysiological, Neuroanatomical and Neuropharmacological Research.

PURVES, William Kirkwood (Ph.D.), Asst. Prof. of Botany, Dept. of Biological Scis., Univ. of Calif., Santa Barbara, Calif. Home Add.: 6812 Pasado Rd., Goleta, Calif. PLANT PHYSIOLOGY. b. Sacramento, Calif., Oct. 28, 1934. s. William K. and Dorothy (Brandenburger) P. Edn.: B.S., Calif. Inst. of Technol., 1956; M.S., Yale Univ., 1957; Ph.D., ibid., 1959. m. Jean McCauley, June 9, 1959. c.: David William. Exp.: N.S.F. Postdoctoral Fellow, Eberhard-Karls Univ., Tuebingen, Germany, 1959-60; N.I.H. Postdoctoral Fellow, U.C.L.A., 1960-61; Asst. Prof., Univ. of Calif., 1961—. Mem.: Am. Soc. Plant Physiologists; Botanical Soc. of Am.; Scandinavian Soc. for Plant Physiol.; Japanese Soc. Plant Physiologists; A.A.A.S.; Sigma Xi. Contbr. to: Annual Rev. of Plant Physiol.; Nature; Physiologia Plantarum; Am. Jour. of Botany; Planta. Areas of Rsch.: Chemical and Physical Control of Plant Growth and Development; Plant Metabolism.

PYATT, Edwin Eugene (Dr.), Sr. Rsch. Engr., The Travelers Rsch. Ctr., Inc., 650 Main St., Hartford 3, Conn. ESTUARINE POLLUTION, WATER RESOURCES PLANNING AND DEVELOPMENT. b. Bloomington, Ill., May 13, 1929. s. Edwin Hulett and Florence Irene (DeVore) P. Edn.: B.S., Calif. Inst. of Technol., 1951; M.S., Univ. of Calif., Berkeley, 1953; Dr. Eng., Johns. Hopkins Univ., 1959. m. Carol Jean Collar, Feb. 25, 1961. c.: Dale Hulett. Exp.: Rsch. Engr., Pomeroy and Assocs., Pasadena, Calif., 1955-56; Instr., Johns Hopkins Univ., 1958-59; Asst. Prof., Northwestern Univ., 1959-62; Sr. Rsch. Engr., The Trevelers Rsch. Ctr., Inc., Hartford, Conn., 1962—. Mem.: Am. Soc. of Civil Engrs.; Am. Water Works Assn.; Water Pollution Control Fed.; Am. Geophysical Union; Am. Soc. for Engrng. Edn.; Chi Epsilon; Sigma Xi; Tau Beta Pi. Contbr. to: Jour. Am. Publ. Health Assn.; Professional Papers of U. S. Geological Survey. Serv. Rec.: U. S. Air Force, 1953-55. Areas of Rsch.: Capacity of Tidal Estuaries to Assimilate Organic Pollutants; Benefit-Cost Computations for Publ. Health Programs.

PYLE, James Johnston (Ph.D.), Mgr., R/D Laminated Products Dept., G. E. Co., Coshocton, Ohio. Home Add.: Bayberry Lane, Coshocton, Ohio. POLYMERS—PLASTICS (THERMOSETTING). b. Calgary, Alberta, Can., Apr. 26, 1914. s. Frederick George and Carolyn Elizabeth (Johnston) P. Edn.: B.A., Univ. of British Columbia, 1935; M.A., ibid., 1937; Ph.D., McGill Univ., 1939. m. Margaret Scott Arthur, May 1, 1935. c.: Derick Ross; Bryan Arthur; Kevin James. Exp.: Rsch. Chemist, Group Leader, Gen. Electric Co., Pittsfield, Mass., 1939-43; Pres., Chem. and Grp. Ldr., ibid., 1939-43; Dir., Plastics Lab., ibid., 1943-49; Mgr., R/D Laminated Products Dept., Gen. Elec. Co., Coshocton, Ohio, 1949—. Mem.: A.A.A.S.; A.C.S.; N. Y. Acad. of Sci.; Ohio Acad. of Sci.; Sigma Xi; Rotary; Red Cross; United Fund; C. of C. Contbr. to: Jour. of Am. Chem. Areas of Rsch.: Cellulose; Lignin; Thermo-setting Plastics; Laminated Plastics.

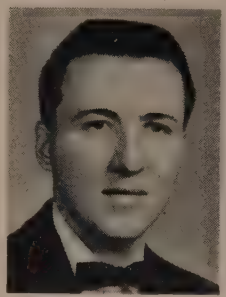


QUADT, Raymond A. (Mr.), Vice-Pres., Special Metals Div., Bridgeport Brass Co., 30 Grand St., Bridgeport, Conn. Home Add.: 25 Cartwright Street, Bridgeport, Conn. PHYSICAL METALLURGY. b. Perth Amboy, N. J., Apr. 16, 1916. s. Adolph and Florence (MacCracker) Q. Edn.: B.S., Rutgers University, 1939; M.S., Stevens Inst. of Tech., 1947; M.A., Columbia Univ., 1943. m. Helen Desmarias, Nov., 1940. c.: Brian Travers. Exp.: Mgr., Alum. Dev., Amer. Smleting and Refining Co., 1942-50; Vice-Pres., Rsch. and Dev., Hunter Douglas Alum. Co., 1950-58; Vice-Pres., Rsch. and Dev., Bridgeport Brass Co., Bridgeport, Conn., 1958-60; Vice-Pres., Special Metals Div., ibid., 1960—. Hon. Pos.: Chmn., ASTM Subcom., B-7, Aluminum Ingot. Mem.: A.I.M.M.E.; A.S.M.; A.S.T.M.; A.F.S.; Phi Beta Kappa. Contbr. to: S.A.E. Trans.; A.S.T.E. Trans.; A.S.M. Trans.; Jour. Mod. Metals; Light Metal Age; A.S.T.M. Bull.; Design News. Gen. Int.: Received Meritorious Pub. Serv. Citation from U. S. Navy, 1956 for Contributions in Aluminum Metallurgy and Fabrication. Areas of Rsch.: Development of New Aluminum Alloys; Development of Precision Cold Extrusion Processes for Alumninum Steel; Molybdenum; Titanium; and reactive Metals used in the Nuclear Field.

QUERRY, John William, Chf. Applied Math. Div., A. F. Office of Scientific Rsch., Washington 25, D. C. Home Add.: Huntsville, Tex. MATHEMATICS. b. Pattonsburg, Mo., Oct. 10, 1903. s. William A. and Cora (Teague) Q. Edn.: B.S., Northwest Mo. State Tchrs. Coll., 1926; M.S., State Univ. of Iowa, 1931; Ph.D., ibid., 1934. m. Hazel Pixler, July 12, 1924. Exp.: Prin., High Schl., Hopkins, Mo., 1923-26; Supt. Schls., Chula, Mo., 1926-28; Supt. Schls., Meadville, Mo., 1928-30; Instr. Math., Univ. Iowa, 1930-34; Prof., Hd. Dept. Math., Sam Houston State Tchrs. Coll., Huntsville, Tex., 1934-42; Prof. and Hd. Dept. Math., ibid., 1946-51; Assoc. Prof. Math., Air Force Acad., 1954-61; Chf., Applied Math. Div., A. F. Office of Scientific Rsch., Washington, D. C., 1961—. Mem.: Math. Assn. Amer.; Amer. Math. Soc.; Sigma Xi. Contbr. to: Amer. Math. Monthly; Skandinavisk; Aktuariatidskrift. War Record: U. S. Army Air Corps, 1942-46; Lt. Col., U. S. Air Force, 1951—. Areas of Rsch.: Mechanical Quadrature; Modern Geometry.

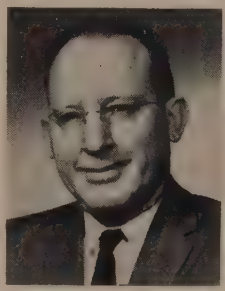
QUILICI, Robert Ernest (Mr.), Nuclear Engr., Aerojet, General Nucleonics, P.O. Box 77, San Ramon, Calif. Home Add.: 5600 Coronado Court, Concord, Calif. NUCLEAR, ENGINEERING, EXPERIMENTAL. b. San Francisco, Calif., July 20, 1931. s. Albert and Marianna (Quilici) Q. Edn.: B.S., Mich. Coll. of Mining and Tech., 1954. m. Alice H. Karkosch, Sept. 5, 1959. c.: Alexander. Exp.: Chemist, Atlas Power Co., Tamaqua, Pa., 1954; Engr., Am. Standard, Mountain View, Calif., 1956-58; Nuclear Engr., Aerojet-General Nucleonics, San Ramon, Calif., 1958—. Mem.: A.C.S.; A.I.Ch.E.; A.M.A.; A.A.A.S.; A.N.S. Contbr. to: Industrial and Engrng Chem. Serv. Rec.: U.S.A.F., 1954-56. Areas of Rsch.: Experimental Development In Reactor Design.

QUINTANA, Ronald Preston (Ph.D.), Asst. Prof. of Pharmaceutical and Med. Chem., Dept. of Pharm. and Med. Chem., Univ. of Tenn., Coll. of Pharmacy, Memphis, Tenn. Home Add.: 1866 Downing St., Memphis 17, Tenn. SYNTHETIC ORGANIC MEDICINAL CHEMISTRY. b. New Orleans, La., Feb. 23, 1936. s. Robert R. and Clara (Schneider) Q. Edn.: B.S., Loyola Univ. of the South, 1956; M.S., Univ. of Wis., 1958; Ph.D., ibid., 1961. m. Alma Fuxan, Sept., 1957. c.: Ronald Preston, Jr. Exp.: Instr., Univ. of Tenn. Coll. of Pharm. Memphis, Tenn., 1960-61; Asst. Prof., ibid. 1961—. Mem.: Am. Chem. Soc.; Am. Pharmaceutical Assn.; Rho Chi; Phi Lambda Upsilon; Sigma Xi; Alpha Sigma Nu. Areas of Rsch.: Synthetic Medicinal Chemistry; Isolation of plant antibiotics; Use of Nuclear magnetic resonance in structure elucidation.



QUINTON, Wayne E., Engr., Univ. of Wash., Seattle, Wash.

QUISENBERRY, John Henry (Ph.D.), Head of Poultry Sci. Dept., A. and M. Coll. of Tex., College Station, Tex. Home Add.: 1006 Puryear E., College Station, Tex. POULTRY SCIENCE WITH SPECIAL EMPHASIS ON BREEDING AND NUTRITION. b. Gainesville, Texas, June 25, 1907. s. W. H. and Nancy (Lane) Q. Edn.: B.S., Tex. A. & M. Coll., 1931; M.S., Univ. of Ill., 1933; Ph.D., ibid., 1937. m. Pearl Clara Buzy, 1936. c.: Alex John; Judith Ann. Exp.: Asst. in Animal Genetics, Univ. of Ill., 1931-36; Assoc. Prof. of Genetics, Tex. A. and M. Coll., 1936-45; Head of Dept. of Poultry Husbandry, Univ. of Hawaii, 1945-46; Hd., Dept. Poultry Sci., Tex. A. and M. Coll., 1946—. Hon. Pos.: Mem., Bd. of Dirs., Poultry Sci. Assn., 1951-58; Pres., ibid., 1955-56; Poultry Consultant with Technological Research Institute of Mexico City. Mem.: Poultry Sci. Assn.; World's Poultry Sci. Assn.; Soc. for Expmtl. Biol. and Med.; Genetics Soc. of Amer.; Amer. Genetics Assn.; Amer. Assn. Adv. of Sci.; Amer. Assn. Adv. of Edn.; Tex. Acad. of Sci.; Tex. Agri. Workers Assn.; A.A.U.P.; Tex. Assn. of Classroom Tchrs.; Amer. Poultry Hist. Soc.; Sigma Xi; Gamma Sigma Delta; Phi Kappa Epsilon; Phi Kappa Phi; Phi Sigma; Gamma Alpha; Kiwanis. Contbr. to: Poultry Science Jour.; Jour. of Nutrition; Jour. of Experimental Biology and Medicine; Jour. of Experimental Zoology. Areas of Rsch.: Breeding for Better Meat Type; Increased Egg Production and Livability of Poultry; Use of Hormones in Poultry Production; Water Metabolism; Nutrition of Laying Birds; Theoretical Genetics; Genetics of Disease Resistance; Inheritance of Size and Growth Factors.

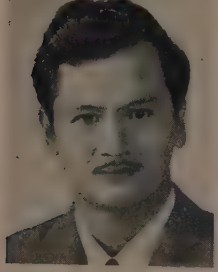


RAACH, John Howard II (M.D.), Ed., Jour. of The Am. Med. Assn. and Dir., Dept. of Rsch. and Documentation, A.M.A., 535 N. Dearborn St., Chicago 10, Ill. Home Add.: Hickory Shaw, Rt. #1, Marengo, Chicago 11, Ill. b. Wheaton, Ill., June 19, 1912. s. John H., Sr. and Clida M. (Fisher) R. Edn.: B.A., Beloit Coll., 1934; M.A., The Univ. of Chicago, 1935; Ph.D., Yale Univ., 1941; M.D., Northwestern Univ. Med. Schl., 1944. m. Dr. Mary Taylor (div.), June 14, 1941. c.: George T.; Gretchen E.; Stephanie A. Exp.: Grad. Asst., Dept of Hist., Yale Univ., 1937-40; Lab. Instr., Dept. of Chem., Univ. of Ill. Schl. of Med., 1944-45; Private Prac. of Med., Wheaton, Ill., 1945-60; Ed., Jour. of The A.M.A., 1960—; Dir., Dept. of Rsch. and Documentation, A.M.A., 1960—. Hon. Pos.: Mem., Wheaton Ill. Bd. of Edn., 1950-54; Pres., DuPage Sect., Am. Acad. of Gen. Prac., 1960-61. Mem.: Phi Beta Kappa; Am. Acad. of Gen. Prac.; A.M.A.; A.A.A.S.; A.A.U.P.; Sigma Chi; Phi Rho Sigma; Sigma Delta Chi. Author: A Directory of English Country Physicians, 1603-16. Contbr. to: Bull. of the Hist. of Med.; Jour. of A.M.A.; Yale Jour. of Biol. and Med. Ph.D. Dissertation: The English Country Doctor in the Province of Canterbury, 1603-1643. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Medicine; History of Medicine; English History. Listed in: W. W. in Am.; Dir. of A.M.A.; W. W. in Am. Edn.

RABE, Charles C. (Mr.), Pres., St. Louis Coll. of Pharm., 4588 Parkview Pl., St. Louis 10, Mo. Home Add.: 530 Flanders, St. Louis 22, Mo. PHARMACY AND PHARMACY ADMINISTRATION. b. Steeleville, Ill., July 14, 1916. s. Charles H. and Emma Louise (Castens) R. Edn.: B.S., St. Louis Coll. of Pharm., 1939; M.S., Mass. Coll. of Pharm., 1950. m. Martha V. Zority, June 12, 1948. c.: Constance Anne; Pamela Martha. Exp.: Asst. Prof. of Pharm., St. Louis Coll. of Pharm., 1942-48; Tchng. Fellow, Mass. Coll. of Pharm., 1948-50; Assoc. Prof. of Pharm. Administration, St. Louis Coll. of Pharm., 1950-54; Asst. to Secy., Am. Pharmaceutical Assn., 1954-57; Professional Relations Mgr., J. B. Roerig and Co., Div. of Chas. Pfizer & Co., inc., 1957-61; Pres., St. Louis Coll. of Pharm., 1961—. Hon. Pos.: Secy., Sect. of Pharmaceutical Econs. of the Am. Pharmaceutical Assn.; Committee on Social Econ. Relations, Committee, Student Branches, Am. Pharmaceutical Assn.; Past Chmn., Sect. of Tchrs. of Pharmacy Administration, Am. Assn. of Colls. of Pharm. Mem.: A.Ph.A.; A.A.A.S.; Am. Soc. of Hosp. Pharmacists; Am. Coll. of Apothecaries; Am. Inst. of Hist. of Pharm., Kappa Psi; Rho Chi. Contbr. to: Jour. of the Am. Pharmaceutical Assn.

RABINOWITZ, Seymour (Mr.), Pres., Technicraft Assoc., Newark, N. J. Home Add.: 130 Knoll Terrace, W. Caldwell, N. J. ELECTRONICS-INSTRUMENTATION-ATOMIC ORDNANCE. b. Brooklyn, N. Y., April 8, 1918. s. Abraham and Sarah (Halpern) R. Edn.: B.E.E., Coll. of City of N. Y., 1939. m. Ethelea Holzman, Aug. 10, 1947. c.: Sherrie; Allan; Maxine. Exp.: Consultant, N. Y., N. Y., 1946-48; U. S. Gov. (Atomic Energy Commn., Branch Chf.; Dept. of Defense; Chf., Product Engrng., Atomic Engrng. Branch, Picatinney Arsenal) 1948-57; Mgr. Rsch. and Advanced Dev., Dir. of Engrng., Avine, Inc., Woodside, N. Y., 1957-59; Pres., Technicraft Assoc., Newark, N. J., 1959—. Mem.: I.A.S.; A.R.S.; I.S.A.; A.A.A.S. Areas of Rsch.: Atomic Ordnance; Reliability; Instrumentation for Missiles, Aircraft and Industry; Servomechanisms; Radar.

RABOR, Dioscoro S. (Mr.), Prof. of Biol. and Hd. of Biol. Dept., Silliman Univ., Dumaguete City, Negros Oriental, Philippines. ORNITHOLOGY, MAMMALOGY, HERPETOLOGY. b. Cebu, Cebu, Philippines, May 18, 1911. s. Valeriano and Asuncion (Siarot) R. Edn.: B.S.E., Univ. of the Philippines, 1931; B.S., ibid., 1932; M.S., ibid., 1934. m. Lina Florendo, Apr. 16, 1936. c.: Valfredo; Iole; Alectis; Nectarinia; Ardea; Karl. Exp.: Jr. Ornithologist, Fish and Game Admin., Manila, 1936-38; Asst. Ichthyologist, Div. of Fisheries, Manila, 1939-41; Ornithologist, Philippine Natural Hist. Museum, Manila, 1946-47; Assoc. Prof. of Biol., Silliman Univ., 1947-52; Prof. of Biol., ibid., 1952—. Fulbright Scholar, 1950-51; John Simon Guggenheim Memorial Foundation Fellow in Zoology, 1950-51, 1957-58; Chicago Natural Hist. Museum Rsch. Fellow in Zool., 1957-58; Yale Natural Preserve Fellow, 1957-58. Hon. Pos.: Assoc., Chicago Natural Hist. Museum; Rsch. Assoc. of Yale Peabody Museum of Natural Hist.; Corresponding Fellow, Am. Ornithologists' Union. Mem.: Am. Soc. of Ichthyologists and Herpetologists; Am. Soc. of Mammalogists; Cooper Ornithological Soc.; A.A.A.S. Contbr. to: Philippine Jour. of Sci.; Copeia; The Auk; The Condor; Miscellanea. Gen. Int.: Life Histories of Common Philippine Birds. Special Int.: Biology and Ecology of Birds, Mammals, Amphibians and Reptiles of the Philippines; Ranges and Distributions of the Land Vertebrate Fauna of the Philippines.



RABOURN, Warren Joseph, Jr. (Ph.D.), Senior Rsch. Chemist, The Dow Chem. Co., Freeport, Tex. Home Add.: 532 Wisteria, Lake Jackson, Tex. CAROTENOIDS AND NATURAL POLYENES, ORGANIC NITROGEN COMPOUNDS, AND CHROMATOGRAPHY: ORGANIC CHEMISTRY. b. Indianapolis, Ind., Nov. 21, 1921. s. Warren Joseph, Sr. and Mary Olive (Rothenbush) R. Edn.: B.S., Purdue Univ., 1949; M.S., ibid., 1950; Ph.D., ibid., 1953. m. Marybelle Dickerson, May 31, 1946. c.: Tommy Lee; Trudy Lynn; Luana Marie; Rickie Jay. Exp.: Instr., Univ. of Pittsburgh, 1953-54; Post Doctoral Asst., Purdue Univ., 1954-55; Asst. Prof., ibid., 1955-57; Rsch. Chemist, The Dow Chemical Co., Freeport, Tex., 1957—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. of Sci.; Sigma Xi; Phi Lambda Upsilon; U. S. Jr. C. of C.; Am. Legion; Toastmasters Internatl. Contbr. to: Arch. of Biochem. and Biophysics. Serv. Rec.: U. S. Navy, 1940-45. Areas of Rsch.: Carotenoids and Natural Polyenes, Organic Nitrogen Compounds, and Chromatography.

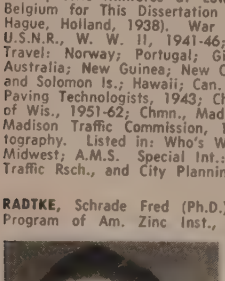
RACE, George Justice (M.D.), Dir. of Labs. and Pathologist in Chf., Baylor Univ. Medical Center, Dallas 10, Tex. Home Add.: 3508 Princeton, Dallas 5, Tex. PATHOLOGY. b. Everman, Tex., Mar. 2, 1926. s. Claude Earnest and Lila Eunice (Bunch) R. Edn.: M.D., Univ. of Tex., Southwestern Med. Schl., 1947; M.S., in Pub. Health, Univ. of N. C., 1953. m. Anne Rinker, Dec., 1946. c.: George William Daryl; Jonathan Clark; Mark Christopher; Jennifer Anne; Elizabeth Margaret. Exp.: Intern in Surgery, Boston Mass. City Hosp., 1948-49; Intern in Pathology to Asst. Resident of Pathol., Duke Univ., N. C., 1947-53; Asst. Pathologist, Peter Bent Brigham Hosp., Boston, Mass., and Instr. in Pathol., Harvard Med. Schl., 1953-54; Pathol., St. Anthony's Hosp., Fla., 1954-55; Assoc. Pathol., Terrell Labs., Ft. Worth, Tex., 1956-57; Staff Pathol., Texas Children's Hosp., Dallas, Tex., 1955—; Consulting Pathol., V. A. Hosp., Dallas and McKinney, Tex., 1955—; Asst. Prof. Path. to Clin. Assoc. Prof. Pathol., Univ. of Tex. Southwestern Med. Schl., 1955—; Prof. Microbiol., Baylor Univ., Grad. and Dent. Schl., 1962—; Dir. of Labs., Baylor Univ. Med. Center, Dallas, Tex., 1959—. Hon. Pos.: Secy. Exec. Comm. of Med. Staff, Baylor Univ. Med. Center, 1961; Vice-Pres., Tex. Soc. Pathologists, 1962. Mem.: Am. Med. Assn.; Tex. Med. Assn.; Dallas Co. Med. Soc.; Coll. of Am. Pathol.; Am. Soc. of Clin. Pathol.; A.A.A.S.; Am. Assn. of Pathol. and Bacteriol.; Sigma Xi; Dallas Southern Clin. Soc.; N. Tex. Soc. of Pathol.; Tex. Soc. of Pathol.; Am. Bd. of Pathol., Pathol. Anatomy and Clin. Pathol., Certified Diplomate, 1953. Author: Atypical Tuberculous Infections, 1960; Estimating Time of Death, 1961. Contbr. to: Jour. Inf. Dis.; Arch. Path.; Endocrin.; Arch. Int. Med.; Circulation; Am. Jour. of Pathol.; Circulation Rsch. Serv. Rec.: U.S.A.F., 1950-51. Areas of Rsch.: Adrenal Gland Rsch.; Hypertension and Cardiovascular Dis.; Whale Heart.

RACHBACH, Howard Leonard, Chem. Tchr., Wm. C. Bryant High Schl., 48-10 31st Ave., L.I.C., 3, N. Y. City, N. Y. Home Add.: 2760 Jerome Ave., New York 68, N. Y. CHEMICAL EDUCATION; ORGANIC CHEMISTRY. b. Bronx, N. Y., June 21, 1932. s. Abraham and Lillie (Wechsler) R. Edn.: B.S., City Coll. of N. Y., 1953; M.A., ibid., 1961. Exp.: Lab. Asst., Wm. C. Bryant H. S., L. I. City 3, N. Y., 1956-58; Chem. Tchr., ibid., 1958—; Instr., L. I. Univ. Schl. of Edn., Brooklyn, N. Y., 1961—. Mem.: Am. Chem. Soc.; Am. Chem. Soc. of N. Y.; A.A.A.S.; N.S.T.A.; Chem. Tchrs. Club of N. Y. Contbr. to: Jour. of Chem. Edn. Serv. Rec.: AUS, 1953-55. Areas of Rsch.: Oxidation of Phenols; Chemistry of Ortho-Quinones.

RACHELSON, Morton H., (M.D.), Physician, 109 Smull Ave., West Caldwell, N. J. PEDIATRICS. b. Brooklyn, N. Y., Dec. 31, 1927. s. William and Ethel (Peltz) R. Edn.: B.A., Syracuse Univ., 1946; M.D., Tulane Univ., 1950. m. Natalie Gutterman, May, 1952. c.: Marjorie; Barbara. Exp.: Rotating Intern, Queens Gen. Hosp., Jamaica, N. Y., 1950-51; Resident, Willard Parker Hosp., N. Y., N. Y., 1951-52; Intern in Pediatrics, Jewish Hosp. of Brooklyn, N. Y., 1952; Asst. Resident, Childrens Med. Center, Boston, Mass., 1955; Visiting Fellow, Babies Hosp., N. Y., N. Y., 1955-56; Asst. in Pediatrics, Columbia Univ., Coll. of Physicians and Surgeons, N. Y., N. Y., 1956; Asst. Attending in Pediatrics, Mountainside Hospital, Montclair, N. J., 1959—. Mem.: A.M.A.; N. J. State Soc. Med.; Essex Co. Med. Soc.; Am. Acad. of Pediatrics; N. J. Acad. of Pediatrics; Acad. of Med. of N. J.; Am. Heart Assn.; N. Y. Acad. of Sci.; Am. Soc. for Adv. of Sci.; Phi Beta Kappa; Phi Lambda Kappa. Contbr. to: Am. Jour. of Med.; Am. Jour. of Disease of Children; Jour. of Pediatrics; U. S. Armed Forces Med. Jour. Serv. Rec.: U.S.A.F., 1953-55. Areas of Rsch.: Pediatrics.

RADER, Lloyd F. (Ph.D.), Prof. of Civil Engrng., Univ. of Wis., Madison, Wis. HIGHWAY ENGINEERING; CITY PLANNING; MATERIALS OF CONSTRUCTION. b. October 8, 1902, Lincoln, Nebr. s. Geo. and Lula Edith (Tyler) R. Edn.: B.S.E., with Honors, Univ. of Mich., 1924; M.S.E., ibid., 1925; Ph.D., ibid., 1938; Roy D. Chapin Fellow in Highway Engrng., 1924-25; U. S. Naval Acad., 1919-22; Ind. Univ., Summers, Grad. Schl., 1929-32. m. Helen Waters of Lincoln, Nebr., Sept. 3, 1932. d. Frank and Margaret Waters. Exp.: Resident Engr., St. Construction, Beech Grove, Ind., Summer, 1922; Pa. St. Hwy. Dept., Sr. Inspectr., Summers, 1924, '25, '27; Nebr. St. Hwy. Dept., Engr., Summers, 1926, '28; Univ. of Nebr., Instr., Civil Engrng., 1925-28; Poly. Inst. of Brooklyn, Asst. Prof. and Assoc. Prof. of C.E., 1928-40; Univ. of Wis., Prof. of C.E. (In charge of hwy. engrng. and city planning), 1940—; Registered Professional Engr. in N. Y. and Wis. Mem.: A.S.C.E.; A.S.T.M.; Soc. Amer. Milit. Engr.; A.S.E.E.; Inst. of Traffic Engr.; Wis. Soc. of Profes. Engr.; Natl. Soc. of Profes. Engr.; Hwy. Rsch. Bd.; Assoc. of Wis. Planners; Sigma Xi; Tau Beta Pi; Chi Epsilon; Tech. Club, Madison; Univ. Club; Univ. W. End Club, Madison; Kiwanis, Madison West. Contbr. to: Engr. Proceedings and Publications on Hwy. and Traffic Engrng. Subjects. Co-author: Materials of Constrn., 6th Ed., 1955; Contributor on Engrng. Materials to Collier's Encyclopedia. Ph.D. Dissertation: Investigations of the Phys. Properties of Asphaltic Mixtures at Low Temperatures (Awarded Prize of Belgium for This Dissertation at Internatl. Rd. Congress at The Hague, Holland, 1938). War Record: Comdr., Civil Engr. Corps, U.S.N.R., W. W. II, 1941-46; U. S. and Pacific Ocean Areas. Travel: Norway; Portugal; Gibraltar; Morocco; Panama; Cuba; Australia; New Guinea; New Caledonia; New Hebrides; Admiralty and Solomon Is.; Hawaii; Can. Gen. Int.: Pres., Assn. of Asphalt Paving Technologists, 1943; Chmn., Com. on Civil Defense, Univ. of Wis., 1951-62; Chmn., Madison Civil Defense Commn.; Chmn., Madison Traffic Commission, 1960-61. Hobbies: Motoring; Photography. Listed in: Who's Who in Engrng.; Who's Who in the Midwest; A.M.S. Special Int.: Bituminous Pavement Rsch., Hwy. Traffic Rsch., and City Planning Edn. and Rsch.

RADTKE, Schrade Fred (Ph.D.), Dir. of Rsch., Expanded Rsch. Program of Am. Zinc Inst., Inc., Lead Industries Assn., 292 Madison Ave., New York 17, N. Y. Home Add.: Soundview Lane, New Canaan, Conn. INORGANIC CHEMISTRY AND METALLURGY. b. Minneapolis, Minn., Aug. 21, 1919. s. Fred and Adelheid (Schrade) R. Edn.: B.S., Mass. Inst. of Tech., 1940; Ph.D., ibid., 1949. m. Genevieve Nix, Apr. 18, 1942. c.: Schrade F., Jr.; Mark L. Exp.: Tchng. Fellow, M.I.T., 1940-41; Tech. Asst., Vice-Pres. and Gen. Mgr., N. C. Shipbldg. Co., Wilmington, N. C., 1941-42; Tchng. Fellow, M.I.T., 1946-49; Rsch. Supvr., Pigments Dept., E. I. duPont deNemours and Co., Inc., Newport, Del., 1949-53; Dir., Metallurgical Rsch. Labs., Reynolds Metals Co., Richmond, Va., 1953-58; Dir. of Rsch. Expanded Rsch. Program of Am. Zinc Inst., Inc., and Lead Industries Assn., 1958—. Hon. Pos.: U. S. Rubber Fellow, Mass. Inst. of Technol., 1948-49; Founding Chmn., Richmond Chapt., Am. Soc. for Metals. Mem.: Am. Inst. Mining and Metallurgical Engrs.; Am. Inst. Elec. Engrs.; Am. Ord. Assn.; Am. Chem. Soc.; Am. Instt. Chem.; A.A.A.S.; Assn. Iron and Steel Engrs.; Tau Beta Pi; Sigma Xi, and others. Contbr. to: Ind. and Eng. Chem.; The Chemist; Jour. of Metals. War Record: U. S. Army, 1942-46. Areas of Rsch.: Rarer Metals.



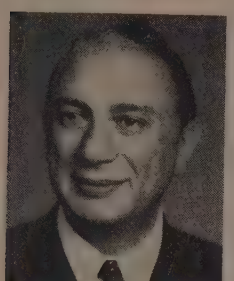
RADO, Sandor (M.D.), Physician, 235 E. 73rd St., N. Y. 21, N. Y. Home Add.: 25 E. 86th St., N. Y. 28, N. Y. PSYCHIATRY. b. Hungary, Jan. 8, 1890. s. Adolph and Cornelia (Rado) R. Edn.: D. Pol. Sci., Univ. of Budapest, 1911; M.D., ibid., 1915. m. Emmy Krissler, dec. c.: George T.; Peter T. Exp.: Faculty Mem., Berlin Psychoanalyt. Instit., Berlin, Germany, 1923-31; Edntl. Dir., N. Y. Psychoanalyt. Inst., N. Y. City, 1931-41; Dir., Psychoanalyt. Clinic for Trng. and Rsch., Columbia Univ., N. Y. City, 1944-55; Dir., Schl. of Grad. Psych., Sta. Univ. of N. Y., 1956-58; Pres. and Dean, The N. Y. Schl. of Psychiat., N. Y. City, 1958—. Mem.: Am. Psychiat. Assn.; N. Y. Acad. of Med.; Am. Assn. for the Adv. of Sci.; Acad. of Psychoanalysis; Am. Psychoanalytic Assn.; N. Y. Acad. of Scis. Author: Psychoanalysis of Behavior; Collected Papers, Vol. I, 1956; Vol. II, 1962. Editor: Changing Concepts of Psychoanalytic Medicine, 1956. Contbr. to: Comprehensive Psychiat.; Am. Jour. of Psychiat.; The Psychiat. Quarterly. Serv. Rec.: U. S. Army, 1943-47. Areas of Rsch.: Psychodynamics and Psychoanalysis.

RAE, John, Jr. (Ph.D.), Personnel Representative, Shell Development Co., P. O. Box 481, Houston 1, Tex. Home Add.: 209 Warrenton Dr., Houston 24, Tex CHEMISTRY. b. Glen Ridge, N J., Feb., 17, 1917. s. John and Helen (Cortelyou) R. Edn.: B S., Rollins Coll., 1940; M.S., Univ. of Wis., 1942; Ph.D., ibid., 1943. m. Dorothy Swift, June 10, 1942. c.: Sharon; David Stewart; Linda; Malcolm Ronald. Exp.: Chemist, Shell Develop. Co., Emeryville, Calif., 1943-47; Chemist, ibid., Houston, Tex., 1947-61; Personnel Representative, ibid., 1961—. Hon. Pos.: General Chmn., Am. Chem. Soc. Symposium on Hydrocarbon Reactions, 1955. Mem.: A.A.A.S.; Am. Petroleum Inst.; Soc. of Sigma Xi; Am. Chem. Soc. Contbr. to: Analytical Chem. Areas of Rsch.: Analytical Methods Development.

RAEDER, Oscar Jacobus (M.D.), Psychiatrist, 45 Bay State Rd., Boston 15, Mass. Home Add.: 39 Court St., Dedham, Mass. PSYCHIATRY. b. St. Louis, Mo., Apr. 10, 1886. s. Oscar W. and Augusta (Wetzel) R. Edn.: M.D., Wash. Univ., St. Louis Mo., 1908. m. (1st) Gladys Lowden, May 28, 1923 (dec. 1927). m. (2nd), Mildred Munro Woodsum, Apr. 11, 1929. c.: John L. (dec.); Anne; Elizabeth; Dorothy; William Munro; James Hamilton. Exp.: Interne, St. Louis Hosps., 1908-10; Surgeon, Pacific and Frisco R.R. Hosps., Mo., 1910-12; Resident Physician and Asst. Supt., St. Louis City Sanatorium, Mo., 1912-17; Asst. Pathologist, Mass. Dept. of Mental Diseases, 1917-20; Private Practice of Neuro-psychiatry, Boston, Mass., 1923—; Committing Psychiatrist for City of Boston, Boston, Mass, 1952—. Hon. Pos.: Secy., Sect. on Child Psychiatry, Am. Psychiatric Assn., 1935-47; Chmn., ibid., 1948; Pres., Mass. Psychiatric Soc., 1937. Mem.: Am. Assn. Adv. Sci.; Am. Med. Assn.; A.P.A.; Natl. Assn. for Mental Health; N.E. Soc. of Psychiatry; Mass. Psychiatric Soc.; Boston Soc. of Psychiatry and Neurol.; Mass. Soc. of Rsch. in Psychiatry; Paris, France Neurol. Soc.; Mason; Harvard Club, Boston. Co-Author with Howard Root of Paper: Periarteritis Nodosa in Diabetes, 1955. Contributing Author: Electroconvulsive Treatment in General Hospitals, 1955. Serv. Rec.: USNR, 1934-38.

RAFFENSPERGER, Eugene Elmer (Mr.), Hd. Sci. Dept., Ridgewood H. S., Ridgewood, N. J. Home Add.: 49 Harreton Rd., Allendale, N. J. BIOLOGY, ANATOMY, PHYSIOLOGY. b. Elliottsburg, Pa., Jan. 19, 1898. s. A. G. Curtin and Margaret (Thomas) R. Edn.: A.B., Albright Coll., 1925; A.M., Columbia Univ., 1928. m. Jessie Baker, June 30, 1928. c.: Joanne; Shirley L. Exp.: Elem. Schl., Perry, Pa., 1916-19; Sci. Dept. Hd., Halifax High, Pa., 1921-22; Supvr. Prin. of Hazelhurst High, Pa., 1922-23; Elizabeth High, Sci. Dept. Hd., 1924-25; Sci. Dept. Hd., Ridgewood High, 1926—. Hon. Pos.: Chmn of the Northern Division and Fellow, N. J. Science Teachers Assn.; Chmn. of the Biology Div., of the N. J. Sci. Tchrs. Assn. Mem.: N. J. Acad. of Sci.; N. J. Sci. Tchrs. Assn., Natl. Sci. Tchrs. Assn.; A.A.A.S. Serv. Rec.: U.S.A.

RAGINSKY, Bernard B. (M.D.), Physician, 376 Redfern Ave., Montreal 6, Que., Can. Home Add.: 220 Chester Ave., Montreal 6, Que., Can. MEDICINE AND PSYCHIATRY. b. Russia, Oct. 10, 1902. s. A. and Rena (Ratchefsky) R. Edn.: M.D., C.M., McGill Univ., 1927. m. Helen Steinkopf, May 31, 1938. c.: Nina Barbara. Exp.: Natl. Pres., Soc. for Clin. and Expmtl. Hypnosis, U.S.A., 1955-59; Natl. Pres. of the Acad. of Psychosomatic Med., U.S.A., 1957-58; Pres., Internatl. Soc. for Clin. and Exptl. Hypnosis, 1958-60; Pres., Sect. on Clin. Hypnosis, Pan-Am. Med. Assn., 1959-60; Assoc. Editor, Jour. for Clin. and Expmtl. Hypnosis, U.S.A., 1953—; Dir., Inst. for Rsch. in Hypnosis, U.S.A., 1956—. Hon. Pos.: Foreign Corresponding Mem. of the French Soc. of Anesthesia and Analgesia, France; Fellow, Acad. of Psychosomatic Med.; Fellow, A.A.A.S.; Fellow, Soc. for Clin. and Exp. Hypnosis; Fellow, Am. Coll. of Cardiol.; Fellow, Internatl. Coll. of Anesthesia; Fellow, Am. Med. Writers Assn. Hon. Mem., Portland Academy of Hypnosis, 1962. Mem.: Am. Acad. of Psychotherapists; Am. Medical Writers Assn.; Amer. Heart Assn.; Amer. Dental Editors; Amer. Med. Editors and Authors Assn.; Amer. Psychosomatic Soc.; Canadian Med. Assn.; Amer. Med. Assn.; Phi Delta Epsilon; Tau Epsilon Phi; Omega Pi; Sigma Xi. Contbr. to: Jour. Amer. Med. Assn.; British Jour. Anesthesia; Jour. Can. Dent. Assn.; N. Y. Jour. of Dentistry; Annals of Dentistry; Jour. Pharmacology & Exptl. Therapeutics; Assoc. Ed., Intern. Jour. Clin. and Exptl. Hypnosis, 1953—; Contrbng. Ed., Jour. Psychosomatics, 1960; Foreign Ed., Acta Latinamerica Hypnolgie, 1960. Gen. Int.: Gold Medal for Distinguished Professional Contributions to Scientific Hypnosis, 1958; Award of the Acad. of Psychosomatic Med., 1958; Secy-Treas., Am. Bd. of Med. Hypnosis, 1958-60; The Jules Weinstein Annual Award, 1961. Author: Psychosomatic Medicine; Its History, Development and Teaching, 1948; Hypnosis in Internal Medicine, 1953; Psychosomatic Aspects of General Anesthesia, 1954; Hypnosis in Dentistry, 1955. Areas of Rsch.: Anesthesia, Artificial Heart Conditioned Reflexes, Hypnotic Deafness, Psychosomatic Medicine. Honors: The Bernard B. Raginsky annual award for Leadership and Achievement created by the Soc. for Clin. and Exptl. Hypnosis, 1959; Awarded Pan-Am. Med. Assn. Med. Ambassador of Good Will, 1962; First Prize in World Competition for Best Clin. Papers on Hypnotherapy, 1962; Bronze Plaque Presented by 24 Countries Constituting the I.S.C.E.H. in Recognition as Founding President, 1960.



RAISZ, Erwin (Ph.D.), Visiting Prof., Univ. of Fla. Schl. of Geography, Gainesville, Fla. Perm. Add.: 107 Washington Ave., Cambridge 40, Mass. CARTOGRAPHER; GEOGRAPHER; PHYSIOGRAPHER. b. Locse, Hungary, Mar. 1, 1893. s. Josephus and Rose (Balla) R. Edn.: A.M., Columbia Univ., 1924; Ph.D., ibid., 1929. m. Marie Georgette Patai on Dec. 24, 1924. c.: Lawrence Gideon. Exp.: Architect, Budapest, 1918-23; Asst. in Physiography, Columbia Univ., 1925; Instr .in Cartography, ibid., 1927-31; Lectr. in Cartography, Inst. of Geog. Exploration, Harvard Univ., 1931-51; Acting Prof., Va. Geog. Inst., Univ. of Va., Charlottesville, Va., 1951—. Hon. Pos.: Chmn., Cartography Section of the Assn. of Am. Geographers. Mem.: Am. Geog. Soc.; Natl. Council of Geog. Edn.; Sigma Xi. Author: The Scenery of Mt. Desert, Maine, 1929; General Cartography, 1939; Atlas of Global Geography, 1944; Principles of Cartography, 1962. Contbr. to: Geog. Rev.; Jour. of Geog.; Isis. Special Int.: Cartography.

RAKOFF, Henry, Assoc. Prof. of Chem., Agric. and Mech. Coll. of Tex., College Station, Tex. ORGANIC CHEMISTRY. b. Brooklyn, N. Y., Nov. 13, 1924. s. Joseph and Anna (Schor) R. Edn.: B.S., Coll. of the City of N. Y., 1944; M.S., Purdue Univ., 1948; Ph.D., ibid., 1950. m. Mary Ella Miller, Oct. 21, 1950. c.: Alan Craig; Steven Bryan. Exp.: Rsch. Fellow, Purdue Rsch. Fdtn., 1948-50; Petroleum Rsch. Chemist, N.R.R.I., Univ. of Wyo., 1950-52; Sr. Rsch. Chemist, Velsicol Corp., Chicago, Ill., 1952-53; Asst. Prof. of Chem., A. & M. Coll. of Tex., 1953-57; Assoc. Prof. of Chem., ibid., 1957—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. of Sci.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Organic Chem. War Record: U. S. Navy, 1944-46. Areas of Rsch.: Synthetic Organic Chemistry.

RAITHEL, Albert Lawrence, Jr., Lcdr., U. S. Navy, Meteorologist-Oceanographer, U.S.S. Hornet (CVS-12), F.P.O. San Francisco, Calif. Home Add.: Indian Rocks, Fla. METEOROLOGY, OCEANOGRAPHY. b. York, Nebr., July 4, 1929. s. Albert L., Sr. and Dorothy (Kitchens) R. Edn.: B.Sc., U. S. Naval Acad., 1951; B.Sc., U. S. Naval Postgraduate Schl., 1961. m. Charlotte Crawford, July 3, 1952. c.: Albert L., III; Charlotte. Exp.: Naval Officer, U. S. Navy, 1947—. Mem.: Am. Geophysical Union; Explorers Club; Natl. Geographic Soc. Contbr. to: Explorers Jour. Gen. Int.: Navy Commendation Medal for Flights to Establish Amundsen-Scott I.G.Y. South Pole Station; Antarctic Medal. Areas of Rsch.: Meteorology; Oceanography (Bathy Thermometry); Antarctic Meteorolgy and Geography.

RAMSEY, Jerry Warren (Mr.), Instr. of Org. Chem., Pottsville Ctr., The Penn. Sta. Univ., Pottsville, Pa. Home Add.: RD. #3, Pottsville, Pa. PHYSICAL-ORGANIC AND ANALYTICAL CHEMISTRY. b. Springfield, Ill., June 30, 1932. s. Herman E. and Eleanor (Luttrell) R. Edn.: A.B., Ill. Coll., 1956; M.S., A. and M. Coll. of Tex., 1958. m. Joanne Huffman, Nov. 27, 1952. c.: Katherine Julia; Warren Howard; Ellen Marie. Exp.: Instr., Tex. Western Coll., El Paso, Tex., 1958-59; Chemist, (part-time), El Paso Nat. Gas Co., 1958-59; Instr., The Penn. Sta. Univ., 1959—; Chemist, Gen., (part-time), Anthracite Rsch. Ctr., U. S. Bur. of Mines, Schuylkill Haven, Pa., 1960—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Museum of Nat. History; Pa. Assn. of Jr. Coll. Tchrs.; Sigma Xi. Contbr. to: Jour. Chem. Edn.; Quarterly Reps. of A.R.C. Serv. Rec.: U. S. Army, 1952-54. Gen. Int.: First Isolation and Identification of Benzene Polycarboxylic acids (mellitic and Benzene Pentacarboxylic) from Anthracite Oxidation. Areas of Rsch.: Structure and Chemical Properties of Anthracite; Analytical Reagents; Synthesis of New Aliphatic Alcohols.

RAMSEY, Norman Foster, Jr. (Ph.D.), Prof. of Physics, Lyman Lab., Harvard Univ., Cambridge, Mass. Home Add.: 55 Scott Rd., Belmont, Mass. PHYSICS. b. Washington, D. C., Aug. 27, 1915. s. Norman Foster and Minna (Bauer) R. Edn.: A.B., Columbia Univ., 1935; B.A., Cambridge Univ., England, 1937; Ph.D., Columbia Univ., 1939. Hon. Deg.: M.A., Harvard Univ., 1947; Sc.D., Cambridge Univ., 1953. m. Elinor Jameson, June 3, 1940. c.: Margaret Foster; Patricia Gale; Winifred Bauer; Janet Carter. Exp.: Rsch. Assoc., Mass. Inst. of Tech., Radiation Lab., 1940-43; Physics Tchr., Columbia Univ., 1941-47; Physics Prof., Harvard Univ., 1947—. Hon. Pos.: General Advisory Comm. of Atomic Energy Comm., 1960—; Sci. Advisor to NATO, 1958-59; Chief Scientist of Atomic Energy Lab. at Tinian, 1945; Trustee, Carnegie Endowment for Internatl. Peace. Mem.: Am. Phys. Soc.; Am. Acad. of Arts and Scis.; Sigma Xi; Phi Beta Kappa; Natl. Acad. of Sci.; Am. Philos. Soc. Author: Experimental Nuclear Physics, 1953; Nuclear Moments, 1953; Molecular Beams, 1956. Contbr. to: Physical Rev.; Am. Scientist. Gen. Int.: Lawrence Award, 1960. Areas of Rsch.: Thermodynamics Systems at Negative Absolute Temperatures, Hydrogen Masers, Molecular Beams, Nuclear Interaction in Molecules interactions of Elementary Particles at High energy; Electron Accelerators.

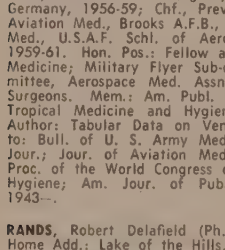
RANBY, Bengt Gustaf (Ph.D.), Prof. of Polymer Tech., Royal Inst. of Tech., Stockholm 70, Sweden. Home Add.: Stenbocksvagen 21, Djursholm 1, Sweden. PHYSICAL CHEMISTRY, POLYMER CHEMISTRY, CELLULOSE CHEMISTRY. b. Niemisel, Ranea, Sweden, Apr. 5, 1920. s. Anders Gustaf and Berta Maria (Ling) R. Edn.: B.S., Univ. of Uppsala, Sweden, 1940; M.S., ibid., 1945; Fil.lic., ibid., 1950; Ph.D., ibid., 1952. m. Aina Hultcrantz, 1945. c.: Mats Gustaf; Magda Birgitta; Hans Einar. Exp.: Docent, Univ. of Uppsala, Uppsala, Sweden, 1953-556 Rsch. Specl., Am. Viscose Corp., Marcus Hook, Pa., 1956-59; Rsch. Prof., State Univ. Coll. Forestry, Syracuse, N. Y., Dir., Empire St. Paper Res. Inst., 1959-61; Royal Inst. of Tech., Stockholm, Sweden, 1961—. Mem.: Am. Chem. Soc.; Swedish Chem. Soc.; Faraday Soc., England; Royal Acad. of Sci.; Sigma Xi. Author: Structure and Reactions of Native Cellulose, 1952. Contbr. to: Polymer Processes, Intersci., 1956; Handbuch der Pflanzenphysiologie, Band VI, Springer-Verlag, 1958. Serv. Rec.: Swedish Army, 1940-41, 1944. Areas of Rsch.: Polymer Chem., Cellulose Chem., Electron Microscopy, X-Ray and Electron Diffraction, Crystallization of Polymers.

RAND, Austin Loomer (Ph.D.), Chief Curator of Zool., Chicago Natural Hist. Museum, Roosevelt Rd. and East Lake Shore Dr., Chicago 5, Ill. Home Add.: 403 W. Lincoln, Chesterton, Ind. ORNITHOLOGY; VERTEBRATE ZOOLOGY. b. Kentville, Nova Scotia, Canada, Dec. 16, 1905. s. Stanley B. and Carrie (Forsythe) R. Edn.: Ph.D., Cornell Univ., 1932. Hon. Deg.: D.Sc., Acadia Univ., 1961. m. Rheua Medden, 1931. c.: Stanley; William. Exp.: Rsch. Assoc., Am. Museum of Natural Hist., New York, N. Y., 1929-42; Acting Chief Biologist, Natl. Museum of Canada, Ottawa, Can., 1942-47; Chief Curator of Zoology, Chicago Natural Hist. Museum, Chicago, Ill., 1947—. Mem.: Am. Ornithologists' Union; Soc. of Mammalogists; Wilson Ornithol. Soc. Author: A Mid-

western Almanac, 1961; American Water and Game Birds, 1956; Birds of El Salvador, 1955; Birds from Liberia, 1951; Distribution and Habits of Madagascar Birds, 1936. Contbr. to: The Auk; Wilson Bull.; Condor; Arctic; Audubon Mag. Areas of Rsch.: Birds.

RANDEL, Hugh Wayne (M.D.), Dir., Aerospace Med., Headquarters Aerospace Medical Division, Brooks A.F.B., Texas. Home Add.: 510 E. Hathaway Dr., San Antonio, Tex. MEDICINE, AVIATION MEDICINE, PREVENTIVE MEDICINE, PUBLIC HEALTH. b. Ponca City, Okla., Nov. 12, 1920. s. Hugh and Nellie Irene (Lionberger) R. Edn.: B.S., Univ. of Okla., 1942; M.D., George Washington Univ., 1946; M.P.H., Harvard Schl. of Public Health, 1952. m. Gloria B. Porter, Sept. 26, 1946. c.: Gloria Irene; Carolyn Porter; Hugh Wayne, Jr. Exp.: Primary Course in Aviation Med., Schl. of Aviation Med., Randolph Field, Tex., 1947; Asst. Flight Surgeon, Albrook A.F.B., Canal Zone, 1948; Base Surgeon and Flight Surgeon, Seymour Island, Galapagos Group, Ecuador, 1948; Base Surgeon and Flight Surgeon, Albrook A.F.B., Canal Zone, 1948-51; Chf., Epidemiol. Sect., Dept. of Preventive Med., U.S.A.F. Schl. of Aviation Med., Gunter A.F.B., Ala., 1952-53; Chf., Dept. of Aviation Med., ibid., 1953-56; Chf., Preventive Med. Div., Consultant in Public Health and Aviation Med., Office of the Surgeon, Hq. U.S.A.F., Europe, Wiesbaden, Germany, 1956-59; Chf., Preventive Med. Br., U.S.A.F. Schl. of Aviation Med., Brooks A.F.B., Tex., 1959; Chf., Dept. of Aviation Med., U.S.A.F. Schl. of Aerospace Med., Brooks A.F.B., Tex., 1959-61. Hon. Pos.: Fellow and Regent, Am. Coll. of Preventive Medicine; Military Flyer Sub-committee, Safety and Health Committee, Aerospace Med. Assn.; Treas., Soc. of U.S.A.F. Flight Surgeons. Mem.: Am. Publ. Health Assn.; A.M.A.; Am. Soc. of Tropical Medicine and Hygiene; Royal Soc. of Health, Fellow. Author: Tabular Data on Venomous Caterpillars, 1962. Contbr. to: Bull. of U. S. Army Med. Dept.; U. S. Armed Forces Med. Jour.; Jour. of Aviation Medicine; U.S.A.F. Med. Serv. Digest; Proc. of the World Congress of Prophylactic Medicine and Social Hygiene; Am. Jour. of Public Health. Serv. Rec.: U.S.A.F., 1943—.

RANDS, Robert Delafield (Ph.D.), Rubber Plantation Consultant. Home Add.: Lake of the Hills, Lake Wales, Fla. PLANT PATHOLOGY, HEVEA AGRONOMY; PAST SPECIALTIES, DISEASES OF HEVEA RUBBER, CINNAMON AND SUGAR CANE. b. Falmouth, Ky., Nov. 19, 1890. s. Robert and Frances Jane (Winn) R. Edn.: B.S., Univ. Nebr., 1913; M.S., Univ. Wis., 1915; Ph.D., ibid., 1917. m. Minnie Coffield Frost, Dec. 25, 1915. C.: Frances Eleanor; Robert Delafield, Jr.; Phyllis Elizabeth; Mary Audrey. Exp.: Insttr., Bot., L.S.U., Baton Rouge, La., 1913-14; Asst. Prof., Plant Pathology, Cornell Univ., 1917-18; Botanist, Dutch East Indies, Dept. of Agric. Bogor, 1919-22; Plant Path., U. S. Dept. Agric., Wash., D. C., 1923-39; Principal Pathologist, ibid., 1940-47; Hd. Agriculturist in Charge, Rubber Div., ibid., 1948-52; Rubber Plantation Consult., Lake Wales, Fla., 1952—. Hon. Pos.: U. S. Delegate, Fourth Pacific Sci. Cong. and Phyto-sanitary Conferences, S.E. Asia. Mem.: (Fellow) A.A.A.S.; Am. Phytopath. Soc.; Wash. Acad. Sci.; Wash. Bot. Soc.; Internatl. Soc. Sugarcane Technologists; Sigma Xi. Contbr. to: Archief voor de Rubbercultuur; Phytopathology; Sci.; Jour. Agr. Res.; Sugar Bull.; Jour. Econ. Entomology; India Rubber World. Gen. Int.: Successful Establishment of Rubber Production in cooperation with 9 Latin Am. Governments. Areas of Rsch.: Pathology and Agronomy of Sugarcane and Plantation Rubber, Periodic Technical Guidance on Rubber in West Africa, The Philippines and Latin America.

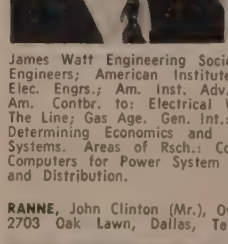


RANKIN, A. Donald (D.V.M.), Assoc. Clin. Rsch. Dir., Squibb Inst. for Med. Rsch., New Brunswick, N. J. Home Add.: 137 Mali Dr., N. Plainfield, N. J. VETERINARY MEDICINE; PHYSIOLOGY; PHARMACOLOGY; CLINICAL INVESTIGATION. b. Troy, N. Y., July 5, 1916. s. Alexander, Jr. and Melissa (Speidel) R. Edn.: D.V.M., Cornell Univ., 1939; M.S., ibid., 1940. m. E. Maedean, 1943. c.: Lauralie G.; Melissa D.; Alexa D. Exp.: Assoc. Prof., Dept. Physiol., Colo. State Univ., 1947-48; Prof. and Hd. Dept. Physiol., ibid., 1948-53; Visit. Prof. Physiol. Dept., Cornell Univ., 1953-54; Prof. and Hd. Dept. Physiol., Colorado State Univ., 1954-56; Assoc. Med. Dir. E. R. Squibb and Sons, Div. Olin Mathieson Chem. Corps., 1956-60; Assoc. Clin. Rsch. Dir., ibid., 1960—. Hon. Pos.: Pres., Industrial Veterinarian's Assn.; Pres., Ind. Vet. Assn., 1960-61; Pres., A.S.V.P.P., 1962-63. Mem.: N. J. Vet. Med. Assn.; A.A.A.S.; Sigma Xi; N. Y. Acad. Scis.; A.V.M.A.; A.S.V.P.P.; Phi Kappa Phi; Phi Zeta. Pres, 1956-57. Co-Author: A Laboratory Outline for Physiology, 1955; A Laboratory Outline for Pharmacology, 1954. Contbr. to: Jour. of Am. Vet. Med. Assn.; Vet. Med. War Record, U. S. Army, W.W. II. Areas of Rsch.: Physiology of the Rumen; Neuromuscular Paralyzants in Large Animals; Hormone Implants in Ruminants.

RANEY, (Dr.), Richard Beverly, Prof. of Orthopaedic Surgery, Univ. of N. C., Schl. of Med., Chapel Hill, N. C. Home Add.: Rte. #3, Farrington Rd., Chapel Hill, N. C. ORTHOPAEDIC SURGERY. b. Raleigh, N. C., July 21, 1906. s. Richard Beverly and Kate Whiting (Denson) R. Edn.: B.A., Univ. of N. C., 1926; Harvard Med. Schl., 1930. m. Carolyn Haldane Fuller, Feb. 5, 1938. c.: Richard Beverly, Jr.; Thomas Blount Fuller. Exp.: Intern in Surg., Univ. of Rochester, 1930-31; Asst. Res. in Surg. Path. and Exptl. Surg., ibid., 1931-32; Asst. Res. in Surg., ibid., 1932-33; Res. in Orthopaedic Surg., ibid., 1933-34; Res. in Orthopaedic Surg., Duke Hosp., 1934-37; Assoc. in Orthopaedic Surg., ibid., 1937-48; Asst. Prof., ibid., 1948-52; Prof., Orthopaedic Surg., Univ. of N. C. Schl. of Med., 1952—; Consult. in Orthopaedic Surg. for Local Installations of U.S.N. and Vets. Admin., 1957—. Hon. Pos.: Pres., N. C. Orthopaedic Assn., 1951-52; Chmn., Sect. on Orthopaedic and Traumatic Surg., So. Med. Assn., 1954. Mem.: Am. Med. Assn.; Am. Acad. Orthopaedic Surgeons; Am. Orthopaedic Assn.; Am. Coll. Surgeons; Societe Internationale de Chirurgie Orthopedique et de Traumatologie; Orthopaedic Rsch. Soc.; Piedmont Orthopaedic Soc.; Orthopaedic Forum Club; Alpha Tau Omega; Phi Beta Kappa; Nu Sigma Nu. Co-Author: Handbook of Orthopaedic Surgery, 5 editions, 1937-57; A Primer on the Prevention of Deformity in Childhood, 1941. Editor: Instructional Course Lecture Volumes of Am. Acad. of Orthopaedic Surgeons, 1954-57. Contbr. to: Jour. of Bone and Joint Surg.; Cyclopedia of Med., Surg. and the Specialties; and others.

RANKINE, Ludovic John (Mr.), Mktng. Mgr., Pub. Utilities, c/o I.B.M., 112 E. Post Rd., White Plains, N. Y. Home Add.: 7 Glenwolde, Tarrytown, New York. DIGITAL COMPUTERS AS APPLIED TO ECONOMIC DISPATCH, TURBINE GENERATOR CONTROL AND ENGINEERING APPLICATIONS IN PUBLIC UTILITIES. b. Lisbon, Portugal, March 16, 1928. s. Alexander and Bethia Wotherspoon (Hill) R. Edn.: B.Sc., Glasgow Univ., Scotland, 1950. m. Joan Elaine Biddlecombe, 1951. c.: Joan Louise; Jennifer Elaine. Exp.: Electrical Design Engr., Harland Engrng. Co., London, Eng. and Montreal, Can., 1950-52; Electrical Design Engr., Am. and Foreign Power Co., 1952-56; Appd. Sci. Repr., I.B.M., 1956-57; Utility Industry Mktg. Representative, ibid., 1957—. Hon. Pos.: Hon. Life Mem., James Watt Engineering Society. Mem.: Institute of Electrical Engineers; American Institute of Physics; American Inst. of Elec. Engrs.; Am. Inst. Adv. of Sci.; Operns. Rsch. Soc. of Am. Contbr. to: Electrical World; Electric Light and Power; The Line; Gas Age. Gen. Int.: Developed Original Techniques for Determining Economics and Location of Capacitors on Power Systems. Areas of Rsch.: Computer Programming and Use of Computers for Power System Planning, Generation, Transmission and Distribution.

RANNE, John Clinton (Mr.), Owner, Medical Center Clinical Lab., 2703 Oak Lawn, Dallas, Tex. Home Add.: 14040 Stardust, Dallas, Tex. MEDICAL TECHNOLOGIST. b. McKinney, Tex., Oct. 29, 1924. s. M. C. and Ada (Templeman) R. Edn.: Brady H. S., 1941. m. Myrna Erisman, 1960. c.: Jerry Leon; Jo Ann; Janice B.; Linda Louise; Kyle Ray. Exp.: U.S.N. Hosp. Corps Schl., San Diego, Calif., 1942-43; Lab., U.S.N. Hosp., Bremerton, Wash., 1943; Lab., U.S.N. Hosp., Pearl Harbor, T. H., 1943-44; Lab and X-ray, U.S.S. Freemount, APA 44, 1944-45; Owner, Medical Center Clin. Lab., 1946-60. Hon. Pos.: Chmn. Bd. TSSAMT; Tex. Assn. Clinical Lab.; Pres., Dallas Assn. Med. Tech. Mem.: Am. Assn. of Bionanalysts; Coun. Bioanalysts; Tex. Assn. of Clinical Lab.; Am. Med. Tech.; Am. Coll. of Med. Tech.; A.A.A.S.; Tex. S.A.M.T.; Tex. Soc. of X-ray Tech. Serv. Rec.: U.S.N. Gen. Int.: Distinguished Achievement Award, Tex. AMT, 1959. Areas of Rsch.: Private Laboratory Research and Consultant.

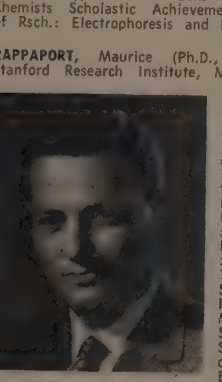


RANSDELL, Herbert T., Jr. (M.D.), Associate Professor, Thoracic Surg., Univ. of Louisville, Louisville, Ky. Home Add.: 1701 Tartan Way, Louisville 5, Ky. THORACIC SURGERY. b. Louisville, Ky., Dec. 22, 1916. s. Herbert T. and Agnes (Long) R. Edn.: B.A., Univ. of Louisville, 1938; M.D., ibid., 1941. m. Nellie Dora Cassity, May 30, 1941. c.: Herbert, III; Janet Lee. Exp.: Res. and Asst. Chf., Res. Gen. Surg., Vet. Hosp., Louisville, Ky., 1946-49; Res. Thoracic Surg., Battey State Hosp., Rome, Ga. and Univ. Hosp., Augusta, Ga., 1949-51; Assoc. Chf., Chf. Surg., Battey State Hosp., 1951-53; Chf. of Surg., Waverly Hills Sanatorium, Louisville, Ky., 1953-60; Asst. Prof., General and Thoracic Surgery, Univ. of Louisville, 1953-62; Associate Prof., ibid., 1962—; Acting Chief Thoracic Surgeon, Vets. Hospital, Louisville, Ky.; Consultant, Thoracic Surgeon, State T.B. Hospital, Jewish Hospital and Methodist Hospitals; Active Staff Thor. Surg., Louisville Children's and Louisville Gen. Hospital; Courtesy Staff, Thor. Surg., Mortons Memorial Hospital, Kentucky Baptist Hospital, St. Marys and Elizabeth Hospital, St. Anthony Hospital and St. Joseph Infirmary. Mem.: Diplomate, Am. Board of General Surg. and Am. Board of Thoracic Surg.; Sou. Thor. Assn.; Am. Thor. Assn.; Am. Trudeau Soc.; Am. Coll. of Surgeons; Louisville Surgical Soc.; Am. Med. Assn.; Ky. State Med. Assn.; Theta Nu Epsilon; Phi Beta Pi; and others. Contbr. to: Jour. of Thoracic Surg.; Am. Surgeon; Jour. of Ky. State Med. Assn.; Jour. of Ga. State Med. Assn.; Sou. Med. Jour.; Am. Jour. Surg.; Jour. of Occupational Medicine. War. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Tuberculosis; Cardio Vascular Surgery, Tracheostomy, and Mechanical Respirators.

RAPAPORT, Ionel Florian (M.D.), Sr. Rsch. Scient. (Med. Genetics) N. Y. St. Psychiat. Inst., N. Y. 32, N. Y. Home Add.: 645 W. 160th St., N. Y. 32, N. Y. MENTAL DEFICIENCY. b. Buzeu (Rounanie), March 30, 1909. s. Florian and Elise (Goldstein). Edn.: M.D., Univ. of Paris, Medical Schl., 1937; D.U.P., Sorbonne, 1945. m. Marjorie O'Brien, 1951. c.: Gilberte; Pola. Exp.: Med. Dir., Medico-Social Center, Gennevilliers, France, 1946-48; Private Practice, Clichy, France, 1946-54; Lectr., Prof., French Schl. of Anthropol., Paris, 1946-54; Project Assoc., Psychiatric Inst., Univ. of Wis., 1954-59; Asst. Prof., Univ. of Wis., 1959-61; Sr. Rsch. Scient., N. Y. Psychiat. Inst., 1961—. Mem.: Am. Eugenics Soc.; Am. Soc. of Human Genetics; A.A.A.S.; Am. Assn. on Mental Deficiency; N. Y. Acad. of Sci. Author: Introduction A la Psychopathologie Collective, 1949. Contbr. to: Bull. Academie Nationale de Medicine, Paris; Encephale, Paris; Revue Anthropologique, Paris; Annali di Neuropsichiatria e Psicoanalisi, Italy; Medicina Universalis. Serv. Rec.: French Army. Gen. Int.: Organized the first International collection and exhibit of Art of the Retarded. Areas of Rsch.: Mental Deficiency; Physical and Mental Dev.; Clinical Epidemiological and Genetic Studies in Causes of Mental Retardation.

RAPP, Robert Dietrich (Mr.), Biochemist, The Reading Hosp., W. Reading, Pa. Home Add.: 302 Jefferson Blvd., Lincoln Park, Reading, Pa. BIOCHEMISTRY. b. Reading, Pa., Dec. 21, 1930. s. Theodore A. and Rachael (Dietrich) R. Edn.: B.S., Tufts Univ., 1955. m. Grace M. Miller, Dec. 25, 1953. c.: Ilsa Grace; Johanna Rachael. Exp.: Chemist, The Glidden Co., Reading, Pa., 1955-57; Chemist, The Polymer Corp., ibid., 1957; Biochemist, The Reading Hosp., W. Reading, Pa., 1957—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; A.A.A.S.; Sigma Xi. Contbr. to: Am. Jour. Clin. Path.; Clin. Chem. Serv. Rec.: U. S. Navy, 1949-51. Gen. Int.: Recipient of Am. Inst. of Chemists Scholastic Achievement Award, Tufts, 1955. Areas of Rsch.: Electrophoresis and Proteins.

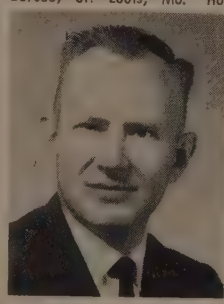
RAPPAPORT, Maurice (Ph.D., M.D.), Research Psychologist, Stanford Research Institute, Menlo Park, Calif. Home Add.: 3645 Ramona St., Palo Alto, Calif. PSYCHOLOGY. b. N. Y., N. Y., Feb. 9, 1926. s. Philip and Nora (Wolfson) R. Edn.: B.S., City Coll. of N. Y., 1950; M.A., Ohio State Univ., 1951; Ph.D., ibid., 1954; M.D., Stanford Univ., 1962. c.: Marc; Idona; Sherry; Caron; Michelle. Rsch. Assoc., Ohio St. Univ., 1951-54; Rsch. Psychol., Stanford Rsch. Inst., Menlo Park, Calif., 1954-55; Head, Engrng. Psychol., ibid., 1955-57; Coordinator, Behavioral Scis. Rsch., ibid., 1957—. Hon. Pos.: Secy., Local RESA Branch. Mem.: Am. Psychol. Assn.; Rsch. Soc. of Am.; N. Y. Acad. of Scis.; Aero Med. Assn.; Ergonomics Soc. Contbr. to: Jour. of Expti. Psychol.; IRE Trans. War Rec.: U.S.A.F., 1944-46. Areas of Rsch.: Engineering Psychol.; Perception; Physiol. Psychol.; Motivation Research; Aviation Psychol.; Psycho. Pharmacology.



RAPPAPORT, Sheldon R. (Ph.D.), Clinical Psychologist, 290 Linden Lane, Merion, Pa. CLINICAL PSYCHOLOGY. b. Jacksonville, Fla., Apr. 19, 1926. s. Maurice and Fay (Farber) R. Edn.: A.B., Temple Univ., 1946; A.M., ibid., 1947; Ph.D., Wash. Univ., 1950. m. Florence Ward, Mar. 2, 1950. c.: Bruce Ward; Lisa Lynn. Exp.: Supvng. Psycholst., Alton State Hosp., Ill., 1948-51; Consult. Psycholst., Sklar Schl., Phila., 1951-56; Psycholst., Dept. of Psychiat., Albert Einstein Med. Center, Sou. Div., Phila., 1951-55; Rsch. Assoc. in Psychiatry, Hahnemann Med. Coll. and Hosp., Phila., 1955-60; Med. Rsch. Scientist II, Children's Sect., Eastern Pa. Psychiatric Inst., 1960—; Dir., The Pathway School, Narberth, Pa., 1961—; Private Practice, Merion, Pa., 1951—. Mem.: Diplomate in Clinical Psychology; Am. Board of Examiners in Professional Psychology; Fellow, Am. Psychological Assn.; Fellow, Soc. for Projective Techniques; Fellow, A.A.A.S.; Fellow, Pa. Psychological Assn.; Fellow, Am. Orthopsychiatric Assn.; Am. Acad. of Psychotherapists; Sigma Xi. Contbr. to: Jour. of Consulting Psychol.; Jour. of Clin. Psychol.; Am. Jour. of Psychotherapy; Jour. of the Albert Einstein Med Center; The Psychoanalytic Study of the Child. Serv. Rec.: U.S.C.G.R.T., 1945-46. Areas of Rsch.: The Epigenesis of Ego Functions in Brain-Damaged, Autistic, and Sensory-Deprived Children; Specialized Knowledge: Diagnosis and Treatment of Brain-Damaged Children; Psychoanalytically-Oriented Psychotherapy with Children and Adolescents.

RASH, J. Keogh (Mr.), Chmn., Dept. of Health and Safety, Schl. of Health, Physical Edn. and Recreation, Indiana Univ., Bloomington, Ind. Home Add.: 1415 E. Hunter, Bloomington, Ind. HEALTH AND SAFETY EDUCATION. b. New Providence, Ia., Oct. 5, 1906. s. Junius D. and Matilda Jane (Chance) R. Edn.: A.B., William Penn Coll., 1928; M.A., YMCA Grad. Schl., 1933; H.S.D., Ind. Univ., 1949; M.P.H., Univ. of Calif., 1957. m. Faye Wood (dec.), 1928. c.: Marjorie F., Mrs. James Miller; William E. 2nd m.: Mary S. Fulivider, 1962. Exp.: Instructor, Berea College, 1928-31; Instructor, State Training School for Boys, Eldora, Iowa, 1933-34; Physical Director, YMCA, Burlington, Ia., 1934-35; Instr., Coach, William Penn. Coll., 1935-37; Ath. Dir., Pikeville Coll., 1937-42; Prof. Bus. Mgr., Wilmington Coll., 1942-47; Assoc. Prof. and Chmn., Dept. of Health, Safety, Ind. Univ., 1949—. Hon. Pos.: Pres., Am. Schl. Health Assn., 1962; Pres., Ind. Council on Family Relation, 1960-62; Pres., Ind. Health Council, 1960-61. Mem.: Am. Schl. Health Assn.; Am. Publ. Health Assn.; A.A.-A.S.; Royal Soc. of Health; Am. Acad. of Social and Polit. Sci.; Delta Omega; Phi Delta Kappa; Phi Epsilon Kappa; Lions Club. Author: Health Education, contbr., 1961; Standards for Facilities in Health, Physical Education and Recreation, contbr., 1957. Contbr. to: World Book Encyclopedia; Monthly Bull.; Ind. St. Bd. of Health; Jour. of Schl. Health; Jour. of Health, Phys. Edn., Recreation; The Physical Educator. Areas of Rsch.: A Comparative Study of Intramural Programs in the Coll. and in the YMCA; An Analysis of the Duties in Professional Health Educators; Recommended Areas of Preparation for Coll. Health Educators.

RASMUSSON, Eugene Martin (Mr.), Meteorologist, U. S. Weather Bureau, St. Louis, Mo. Home Add.: 1553 Tryon Dr., Creve Coeur 41, Mo. METEOROLOGY-HYDROLOGY. b. Lindsborg, Kan., Feb. 27, 1929. s. Martin E. and Alma S. (Nelson) R. Edn.: B.S., Kans. St. Univ., 1950. m. Georgene Sachtleben, Aug. 7, 1960. Exp.: Civil Engr., St. of Kans., Topeka, Kans., 1950-51; Meteorologist, U. S. Weather Bureau, St. Louis, Mo., 1956—. Mem.: Am. Meteorological Soc.; Am. Geophysical Union; Sigma Tau. Contbr. to: Internatl. Assn. of Sci. Hydrology. Serv. Rec.: U. S. Air Force, 1951-55. Areas of Rsch.: River Forecasting; Dynamic and Synoptic Meteorology.



RASOF, Bernard (Ph.D.), Lecturer in Engrng., Univ. of Calif. Los Angeles, Calif. Home Add.: 878 Oreo Place, Pacific Palisades Calif. APPLIED MATHEMATICS. b. New York, N. Y., Jan 5, 1918. s. Henry and Rose (German) R. Edn.: B.S., III Inst. of Tech., 1941; M.S., Calif. Inst. of Tech., 1944; Ph.D. ibid., 1950. m. Beatrice Leplin, Feb., 1946. c.: Henry. Exp.: Prof. of Math., St. Univ. of N. Y., L. I. Center, Oyster Bay, N. Y., 1958-60; Lecturer in Engr., Univ. of Calif., Los Angeles, Calif., 1960 -. Mem.: Am. Soc. for Engrng. Edn.; Mathl. Assn. of Am.; Tau Beta Pi; Sigma Xi. Areas of Rsch.: Vibrations, Jet Propulsion, Conductive Heat Transfer, Linearized Supersonic Aerodynamics, Theory of Water-Entry Impact, Particle Dynamics, Laplace Transforms, Use of Computers in Engineering Education, Non Linear Differential Equations.

RATH, Gustave Joseph (Ph.D.), Mgr., Behavioral Tech., Raytheon Equipment Div., Box 520 Waltham 54, Mass. Home Add.: 6 Dexter Rd., Lexington 73, Mass. PSYCHOLOGY (MAN-MACHINE SYSTEMS, TEACHING MACHINES.). b. New York, N. Y., May 19, 1929. s. Gustavo Jules and Margaret Rose (Payor) R. Edn.: B.S., Mass. Inst. of Tech., 1952; M.S., Ohio State Univ., 1955; Ph.D., ibid., 1953. c.: Gustave Alexander; 1957. m. Clouia Poock, July, Christopher Kent. Exp.: Staff Psychologist, IBM Rsch. Center, Yorktown Heights, N. Y., 1957-59; Chf. Operations Rsch., Admiral Corp., Chicago, Ill., 1959-60; Mgr. Govt. Financial Analysis, Exec. Offices Raytheon, Lexington, Mass., 1960-61; Mgr., Behavioral Tech., ibid., 1961—. Hon. Pos.: Treas., NEREM, 1962. Mem.: Am. Psychol. Assn.; N. England Psychol. Assn.; Inst. of Management Sci.; Operations Rsch. Soc. of Am.; Inst. Radio Engr.; A.A.A.S.; Sigma Xi. Co-Author: Automatic Teaching: The State of Art, 1959; Rand ECM Stmposion, 1953. Contbr. to: Proc. Inst. of Enviornmental Scis. Serv. Rec.: USAF, 1952-54. Areas of Rsch.: Systems Research and Development, Lexical Processing, Automated Teaching, Human Decision Processes.

RATNER, Sidney (Ph.D.), Prof. of Hist., Rutgers Univ., New Brunswick, N. J. Home Add.: 11 Cleveland Lane, Princeton, N. J. ECONOMICS AND POLITICAL SCIENCE. b. New York, N. Y., June 18, 1908. s. Israel and Olga (Handman) R. Edn.: B.A., City Coll. of N. Y., 1930; M.A., Columbia Univ., 1931; Ph.D., ibid., 1942. m. Louise M. Rosenblatt, June 16, 1932. c.: Jonathan. Exp.: Instr., Sarah Lawrence Coll., 1938-39; Instr. and Lecturer, Cooper Union Inst. of Tech., 1938-41; Lecturer, New Schl. for Social Rsch., 1940; Asst. Prof., Rutgers Univ., 1946-48; Assoc. Prof., ibid., 1948-57; Prof., ibid., 1957—. Hon. Pos.: Chmn., Conf. on Methods in Philosophy and the Scis., New York, N. Y.; Chmn., Natl. John Dewey Centennial Comm.; Mem., Comm. of the A.A.A.S. for Prize in Social Theory, Washington, D. C. Mem.: A.A.A.S.; Am. Econ. Assn.; Am. Hist. Assn.; Am. Political Sci. Assn.; Econ. Hist. Assn.; Royal Econ. Soc.; Am. Studies Assn. Editor: The Philosopher of the Common Man, 1940; New Light on the History of Great American Fortunes, 1953; Vision and Action, 1953; Inquiry into Inquiries, 1954. Author: American Taxation: Its History as a Social Force in Democracy, 1942. Contbr. to: Am. Econ. Rev.; Am. Hist. Rev.; Jour. Hist. of Ideas; Harvard Law Rev.; Am. Political Sci. Rev.; Jour. of Philosophy; Philos. of Sci; British Jour. of Sociology; Political Sci. Quart.; Antioch Rev. Areas of Rsch.: Public Finance; War Economics; Economics of Growth, Political Theory, Social Science Methodology, Pressure Politics, Econ. and Intellectual Hist.

RAV, Yehuda (Mr.), Instr. in Math., Hofstra Coll., Hempstead, N. Y. Home Add.: 329 West 4th St., New York 14, N. Y. MATHEMATICS. b. Vienna, Austria, Apr. 11, 1930. s. Dr. Simon and Albine C. (Hirschl) R. Edn.: B.S., Columbia Univ., 1954. m. Lynn Thatcher, May 7, 1956. Exp.: Lecturer, Columbia Univ., 1954-55; Sr. Engr., Curtiss-Wright Corp., Wood-Ridge, N. J., summer, 1956; Instr., Hofstra Coll., 1956—. Mem.: Am. Math. Soc.; A.A.A.S. Areas of Rsch.: Algebraic Number Theory, Math. Biophysics.

RAUB, Harry Lyman, III (Ph.D.), Prof. of Phys., Muhlenberg Coll., Allentown Pa. Home Add.: 1541 S. Jefferson St., Allentown, Pa. PHYSICS. b. Lancaster, Pa., Oct. 22, 1919. s. Harry Lyman, Jr. and Eleanor V. (Gerhart) R. Edn.: B.S., Franklin and Marshall Coll., 1941; Ph.D., Cornell Univ., 1947. m. Sedora Locke, Aug. 30, 1947. c.: Thomas G.; David A. Exp.: Tchng Asst., Cornell Univ., 1941-46; Rsch. Asst., ibid., 1946; Asst. Prof. to Prof., Muhlenberg Coll., 1947—. Mem.: Sigma Xi; Phys. Club of Lehigh Valley; Am. Assn. Phys. Tchrs. Contbr. to: Jour. App. Phys. Areas of Rsch.: Ultrasonics; Physical Properties of High Polymers.

RAVEN, Clara (M.D.), Deputy Medical Examiner, Wayne Co., 400 E. Lafayette, Detroit 26, Mich. Home Add.: 8114 St. Paul, Detroit 14, Mich. FORENSIC PATHOLOGY; CLINICAL AND ANATOMIC PATHOLOGY; BACTERIOLOGY. b. White Russia. d. Morris (dec.) and Lillian (Greenfield) R. Edn.: B.A., Univ. of Mich., 1927; M.S., ibid., 1928; B.M., Northwestern Univ. Med. Schl., 1936; M.D., Ibid., 1938. Exp.: Rsch. Bacteriologist, Detroit Dept. of Health, Hermann Kiefer Hosp., Detroit, Mich., 1928-29; Rsch. Bacteriologist, Cousins Fund, University of Mich., 1929-30; Rsch. Bacteriologist, Dept. of Med., Univ. of Chicago, 1930-31; For. Abstracts, Jour. A.M.A., Chicago, Ill., 1931-34; Rsch. Bacteriol., Northwestern Univ. Med. Schl., 1933-35; Instr. of Pathol., Univ. of Ill. Med. Schl., 1936-37; J. W. Garrett Int. Fellow, Univ. of Liverpool, England, 1938-39; Assoc., Tchng. Staff, Women's Med. Coll. of Pa., 1939-40; Chf., Lab. Serv., Scranton St. Gen. Hosp., Scranton, Pa., 1941-43; Chf. of Lab. Servs., U. S. Army, N. D. Baker Gen. Hosp., 1943; The 239th Gen. Hosp., France, 1944-45, 101st Gen. Hosp., Berlin, Germany, 1945-46; Tissue Pathologist, Armed Forces Inst. of Pathol., Washington, D. C., 1946; Chf., Lab. Serv., Tripler Gen. Hosp., Hawaii, 1946-47; Dir. of Labs., V. A. Ctr., Dayton, Ohio, 1947-51; Tissue Pathologist, Armed Forces Inst. of Pathol., Wash., D. C. and 406th Gen. Lab., Japan, 1951-52; Chf., Lab. Serv., Osaka Army Hosp., Osaka, Japan, 1952-54; Tissue Pathologist, Armed Forces Inst. of Pathol., Wash., D. C., 1954-55; Chf. of Lab. Serv., Army Hosp., Ft. Rucker, Ala., 1955-57; Chf. of Lab. Serv., Army Hosp., Ft. Sill, Okla., 1957-59; Deputy Med. Examiner, Wayne Co., Detroit, Mich., 1959—. Hon. Pos.: Military Affairs Committee, R.O.A.; Civilian Defense Coun., Wayne Co., Detroit, Mich.; Delegate, Intergroup Coun. for Women as Public Policy Maker. Mem.: Diplomate, Am. Bd. of Pathol.; Am. Soc. Pathol. and Bacteriol.; Am. Soc. Clin. Pathol.; Am. Coll. of Pathol.; Am. Soc. Trop. Med. and Hygiene; Internatl. Assn. of Pathol.; A.A.A.S.; A.M.A.; Am. Med. Womne's Assn.; Assn. Military Surgeons; Reserve Officer's Assn.; Nu Sigma Phi; Sigma Delta Epsilon; Am. Acad. Forensic Scis.; Women's Overseas Serv. League. Co-Author: Japanese Textbook of Histopathology, 1956. Contbr. to: Proc. Exper. Med. and Biol.; Jour. of Infectious Diseases; British Jour. Path. and Bact.; Ohio St. Med. Jour.; Jour. Am. Med. Women's Assn.; Japanese Pathological Assn. Trans.; Military Medicine. Serv. Rec.: U. S. Army, 1943-47; 1951-58; U. S. Army Reserve, 1947-51; 1958—. Areas of Rsch.: Leptospirosis; Gonococcus; Teratoma of Mediastinum; Epidemic Hemorrhagic Fever; Parasitism in the Army; Virus Pneumonitis; Sudden Deaths in Infants.

RAW, Cecil John Gough (Ph.D.), Assoc. Prof. of Physical Chem., St. Louis Univ., St. Louis, Mo. Home Add.: 8315 Delmar Blvd., University City 24, Mo. PHYSICAL CHEMISTRY. b. Ixopo, Natal, S. Africa, Oct. 20, 1929. s. Cecil H. and Beryl N. (Gough) R. Edn.: B.Sc., Univ. of Natal, S. Africa, 1951; M.Sc., ibid., 1952; Ph.D., ibid., 1956; F.R.I.C., Royal Inst. of Chem., London, 1959. m. Gillian C. Galt, Jan., 1956. c.: Jeremy John; Timothy Thomas; Matthew James. Exp.: Lecturer, Univ. of Natal, S. Africa, 1954-57; Sr. Lecturer, ibid., 1958-59; Rsch. Assoc. and Visiting Asst. Prof., Univ. of Minn., 1959-60; Asst. Prof., St. Louis Univ., Mo., 1960-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Chem. Soc.; Royal Inst. of Chem.; A.A.A.S.; A.A.U.P.; Sigma Xi. Contbr. to: Jour. of Chem. Physics; Tran. of the Faraday Soc.; Nature; Jour. of S. African Chem. Inst.; Jour. of Chem. Edn.; Jour. of Chem. Soc., London; S. African Industrial Chemist. Areas of Rsch.: Molecular Dynamics, Transport Phenomena and Equations of State of Gases and Liquids, Intermolecular Forces.

RAVITZ, Leonard J. (M.D.), Consult., Neurol. and Psychiat., Voc Rehab. Serv., Va. Dept. of Edn. and the Norfolk Div. of Alcoho Studies and Rehab., Va. Dept. of Hlth., Norfolk 7, Va. Mail Add.. 807 Med. Tower, 400 Gresham Dr., Norfolk 7, Va. Home Add.: 1459D Little Bay Ave., Willoughby Spit, Norfolk 3, Va. PSYCHIATRY; NEUROLOGY. b. Cuyahoga Co., Ohio, Apr. 17, 1925. s. Leonard R., Sr. and Esther Evelyn (Skerball) R. Edn.: B.S., Adelbert Coll., 1944; M.D., Wayne Univ., Coll. of Med., 1946; M.S., Sheffield Scient. Schl., Yale Univ., 1950. Exp.: Asst. Psychiat. and Ment. Hyg., Yale Univ., Schl. of Med., New Haven, Conn., 1947-49; Rsch. Asst., Sect. of Neuro-Anat., ibid., 1950; Instr., Neuro psychiat., Duke Univ., Schl. of Med., Durham, N. C., 1950-52; Assoc., ibid., 1952-53; Visit. Asst. Prof., Meharry Med. Coll., 1953; Asst. Dir., Profl. Edn., Vet. Admin. Hosp., Downey, Ill., 1953-54; Assoc. Psychiat., Univ. of Pa., Schl. of Med., Phila., Pa., 1955-58; Dir. Trng. and Rsch., Eastern Sta. Hosp., Williamsburg, Va., 1958-60; Lectr., Sociol., Norfolk Coll. of William and Mary, 1961—; Staff, Norfolk Gen. Hosp. and De Paul Hosp., Norfolk, Va.; Staff, Williamsburg Community Hosp., Williamsburg, Va., 1961. Hon. Pos.: Pres., Comm., Employ. of the Handicapped; Advry. Bd., Assn. for Rsch. in Ment. Hlth.; Rsch. Comm. Assn. for Phys. and Ment. Rehab.; Neuropsychiat. and Rsch. Consult., Natl. Rehab. Work Shop; Pres., Va. Soc. of Clin. Hypn., 1959—; Secy.-Treas., Euclid Ninety-Seventh St. Clinic, Inc., 1957—; Edit. Consult., The Beachcomber, 1961—; Dipl., Am. Bd. of Psychiat. and Neurol., Inc.; Editor, From Francis to Ironbound and Beyond, 1959-60; Bus. Mgr. and Editor-in-Chf., Black and Gold, 1939-40; Advry. Bd., Assn. for Rsch. in Ment. Hlth; Rsch. Comm., Assn. for Phys. and Ment. Rehab. Mem.: Fellow, Am. Psychiat. Assn.; Fellow, Am. Assn. for the Adv. of Sci.; Charter Fellow, Am. Soc. of Clin. Hypnosis; Sigma Xi, Hon.; Nu Sigma Nu; N. Y. Acad. of Scis.; S. Med. Assn.; World

Med. Assn.; World Fed. for Ment. Hlth.; N. C. Neuropsychiat. Assn.; Williamsburg-James City Co. Med. Soc.; Norfolk Co. Med. Soc.; Am. Soc. of Human Genets. Contbrng. Author: History, Measurement, and Applicability of Periodic Changes in the Electromagnetic Field in Health and Disease, 1962. Contbr. to: Anns. N. Y. Acad. of Sci.; Jour. of Clin. Exp. Psychopath.; Sci.; Am. Jour. of Psychiat.; Am. Med. Assn. Archs.; Yale Jour. of Biol. and Med.; Conn. Sta. Med. Jour.; Arch. de Med. Inter. y Antib. y Quimiot.; S. Med. Jour.; Jour. of Nerv. and Ment. Dis.; Am. Jour. of Clin. Hypnosis. Serv. Rec.: Army, U. S., 1946. Areas of Rsch.: The Electrodynamic Field Theory in Biology, Neuropsychiatry, Medicine and Hypnosis; Discovered Electromagnetic Field Correlates of Hypnotic States and Electrocyclic Phenomena in Human Beings, with Correlates of State Changes Produced Thereby; Application of Field Physics to Basic Problems in Neurology, Psychiatry and Medicine; Hypnosis; Electroencephalography; Neuroanatomy; Neurophysiology; Neuropsychiatry.

RAWSON, Rulon Wells (M.D.), Prof. of Med., Cornell Med. Coll., N. Y.; Chmn., Dept. of Med., Sloan-Kettering Memorial Cancer Centre, 444 E. 68th St., N. Y., N. Y. Home Add.: 131 Corona Ave., Pelham, N. Y. INTERNAL MEDICINE AND ENDOCRINOLOGY. b. Idaho Falls, Idaho, Sept. 28, 1908. s. Wilford Woodruff and Eugenia (Lefgren) R. Edn.: M.B., Northwestern Univ., 1937; M.D., ibid., 1938. m. Jane Young, Aug. 21, 1940. c.: James R. Y.; Elizabeth Jane; Daniel Y. Exp.: Rsch. Fellow, Harvard Med. Schl., 1938-42; Asst. Physician, Collis P. Huntington Mem. Hosp., 1938-41; Am. Coll. of Physicians' Fellowship, Mass. Gen. Hosp., 1941-42; Grad. Asst., ibid., 1941-42; Instr. and Henry P. Walcott Fellow in Clin. Med., Harvard Med. Schl., 1942-45; Asst. in Med., Mass. Gen. Hosp., 1946-47; Assoc. in Med., Harvard Med. Schl., 1945-47; Asst. Physician, Mass. Gen. Hosp., 1946-47; Asst. Prof. in Med., Harvard Med. Schl., 1947-48; Assoc. Physician in Med., Mass. Gen. Hosp., 1947-48; Mem. and Chf., Div. of Clin. Invest., Sloan-Kettering Inst., 1947—; Assoc. Prof. of Med., Cornell Univ. of Med. Coll., 1948-51; Attending Physician and Co-Chf., Dept. of Med. Mem. Hosp., 1948-59; Exec. Officer, Dept. of Med., Memorial Center, 1948-59; Visiting Physician, James Ewing Hosp., 1948—; Prof. of Med., Sloan-Kettering Div. of Cornell Univ. Med. Coll., 1951-55; Consultant, Dept. of Med., Strang Clinic, Memorial Center, 1954-55, 1957—; Attending Physician, ibid., 1955-57; Prof. of Med., Cornell Univ. Med. Coll., 1955—; Attending Physician and Chmn., Dept. of Med., Memorial Center, 1959—; Visiting Physician, Second Med. Div., Bellevue Hosp., 1959—. Hon. Pos.: Pres., Am. Goiter Assn., 1955-56; Vice-Pres., Endocrine Soc., 1957-58; Chmn., Publications Comm. of Endocrine Soc., 1957—; Secy., Harvey Soc., 1955-56; Mem., Committee on Personnel for Rsch., Am. Cancer Soc., 1957—; Chmn., ibid., 1958—; Mem., Advisory Comm. Med. Uses of Isotopes, Atomic Energy Comm., 1959—; Mem., Cancer Program Project Committee, Publ. Health Serv., 1961—. Mem.: Am. Med. Assn.; Am. Physiological Soc.; A.A.A.S.; Mass. Med. Soc.; Assn. of Am. Physicians; Fellow, N. Y. Acad. of Med.; N. Y. County Med. Soc.; N. Y. State Med. Soc.; Am. Goiter Assn.; Endocrine Soc.; Am. Soc. for Clin. Invest.; Am. Assn. for Cancer Rsch.; Harvey Soc.; Am. Coll. of Physicians (Fellow); Exec. Comm., Silvanoy Coun., Boy Scouts of Am. Consbring. Author: The Thyroid and Its Diseases, 1948; Hormones, 1955; Diseases of Metabolism, 1959. Contbr. to: Endocrinol.; Jour. of Clin. Endocrinol. and Metabolism; Jour. of Clin. Invest.; Trans of Assn. of Am. Physicians. Gen. Int.: Recipient of Annual Award from Am. Goiter Assn. for Meritorious Service, 1959; Centennial Award from Northwestern Univ. Med. Schl., 1959. Areas of Rsch.: Endocrinology and Thyroidology.

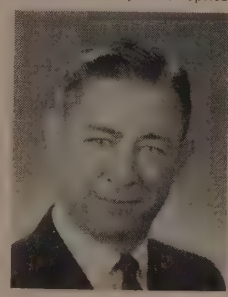
RAYBURN, Willie Ray Wrenn (Mrs.), Assoc. Prof. of Sci., Martin Coll., Pulaski, Tenn. Home Add.: 600 W. Madison, Pulaski, Tenn. INORGANIC AND ORGANIC CHEMISTRY (EDUCATION). b. Nashville, Tenn., Mar. 16, 1927. d. William Anderson and Ethel (Ray) Wrenn. Edn.: B.S., George Peabody Coll. for Tchrs., 1948; M.A., ibid., 1949; Mont. State Coll. m. Mathew McCauley Rayburn of Pulaski, Tenn., Sept. 11, 1951. c.: William Elbert. Exp.: Instr., Jr. Agric. Coll., Central, Ark., 1949-50; Assoc. Prof. of Sci., Martin Coll., 1950—. Mem.: Regional Advisor, Tenn. Jr. Acad. of Sci.; Tenn. St. Chmn. of the Health Edn. Comm.; Natl. Assn. of Biol Tchrs.; Am. Chem. Soc.; A.A.A.S.; Tenn. Acad. of Sci.; Kappa Delta Pi; Beta Beta Beta; The Mag. Club.

RAY, Wilbert Scott (Ph.D.), Chmn., Dept. of Psychol., Bethany Coll., Bethany, W. Va. Home Add.: Bethany, W. Va. PSYCHOLOGY. b. Rochester, Pa., July 21, 1901. s. James F. and Elnora Jane (Sturgeon) R. Edn.: A.B., Washington and Jefferson Coll., 1923; M.A., Univ. of Wis., 1929; Ph.D., ibid., 1930. m. Dorothy Philips Clark, 1928. c.: Mrs. Susan R. Marquardt; David Scott. Exp.: Prof., Hillside Coll., 1937-44; Assoc. Prof., Adelphi Coll., 1944-45; Instr., Shrivenham Am. Univ., Shrivenham, England, 1945; Asst. Prof. Trinity Coll., 1946-51; Rsch. Psychologist, U. S. Air Force, San Antonio, Tex., 1951-56; Prof., Bethany Coll., 1956—; Visit. Prof., Univ. of Mich., 1960; Visit. Prof., Univ. of Reading (Engl.), 1962-63. Mem.: Am. Psychol. Assn.; A.A.A.S.; A.A.U.P. Author: Laboratory Manual for Social Psychology, 1951. Contbrng. Author: Undergraduate Curricula in Psychology, 1961. Contbr. to: Am. Jour. of Psychol.; Psychological Bull.; Psychological Rev.; Jour. of Psychol.; Jour. of Gen. Psychol. Areas of Rsch.: Human Problem Solving and Reasoning.

RAYMOND, Malcolm Love (M.D.), Pres., Raymond Hosp. and Clin, Inc., 88 Osborne St., Johnstown, Pa. SURGERY AND CANCER RESEARCH. b. Waverly, N. Y., July 17, 1891. s. George W. and Ida Jane (Thomas) R. Edn.: M.D., Univ. of Pa., 1918. m. Marion V. Sickenberger, Jan. 14, 1922. c.: Ida Virginia; Patricia Ann; Marilyn Ella; Marcia Jane. Exp.: Pres., Raymond Hosp. and Clinic, Inc., 1945—. Mem.: A.M.A.; A.A.A.S.; Pa. Med. Soc.; Cambria Co. Med. Soc.; C. of C. Contbr. to: Pa. Med. Jour.; Am. Jour. of Surg. Gen. Int.: Founder of Raymond Hosp. and Clinic, Inc.; Have Emphasized for Years the Importance of Aiding Production of Immunity in Cancer Host; Holder of Several U. S. Patents. Areas of Rsch.: Cancer Research; Determination of the Complement Content in the Sera of Human Cancer Hosts compared with normal Controls; Determination of the Lipid (cholesterol) Content in the Sera of Human Cancer Hosts.

READ, Harold James (Ph.D.), Prof. of Physical Metall., Penn. St. Univ., Univ. Park, Pa. Home Add.: 124 N. Patterson St., St. Coll., Pa. METALLURGY. b. Dubuque, Ia., Feb. 14, 1911. s. George William and Estella Mae (Taylor) R. Edn.: B.S., Univ. of Ill., 1934; M.S., ibid., 1935; Ph.D., Univ. of Penn., 1939. m. Catherine Price Braungard, Sept. 17, 1938. Exp.: Instr., Univ. of Penn., 1939-40; Indust. Fellow, Mellon Inst., Pittsburgh, Pa., 1940-45; Assoc. Prof., Penn. St. Univ., 1945-51; Prof., ibid., 1951—. Mem.: Am. Chem. Soc.; Am. Soc. for Metals; Am. Electroplaters Soc.; Electrochem. Soc.; Brit. Inst. Metals; Nat. Assn. Corrosion Engrs.; Sigma Xi. Author: Hydrogen Embrittlement in Metal Finishing, 1961. Contbr. to: Jour. Electrochem. Soc.; Proc. Am. Electroplaters Soc.; Plating; Metal Finishing; Indl. and Engrng. Chem.; Metalloberflaeche. Gen. Int.: Awarded Proctor Mem. Leadership Award of Am. Electroplaters' Soc., 1961. Areas of Rsch.: Electrodeposition; Corrosion; Metallography; Extractive Metallurgy of Nonferrous Elements.

READ, Louis Blackwell (Mr.), Technical Representative, Scientific Instrument Div., Am. Optical Co., Houston, Tex. Home Add.: 8010 Sharondale Dr., Houston 33, Tex. INVERTEBRATE ZOOLOGY. b. Gorman, Tex., Apr. 30, 1920. s. Louis Phillip and Edna (Crawford) R. Edn.: B.S., Sou. Meth. Univ., 1952; M.S., ibid., 1953. m. Hazel Gilley, Jan. 5, 1946. c.: Virginia Ann; Louis Phillip (dec.); Phillis Louise; Deborah Jean. Exp.: Entomologist, Dept. of Pub. Health, Dallas, Tex., 1949-51; Instr. of Zool., Sou. Meth. Univ., 1951-53; Biologist, Dept. of Pub. Health, Dallas, 1953-55; Tech. Representative and Consult., Scientific Instrument Div., Am. Optical Co., 1955—. Mem.: A.A.A.S.; Am. Pub. Health Assn.; Tex. Pub. Health Assn.; Tex. Acad. Sci.; La. Acad. Sci. Contbr. to: Field and Laboratory; Public Works. Serv. Rec.: U. S. Army, W.W. II, 1939-46. Areas of Rsch.: Stream Pollution Ecology, General Public Health Biology, Bio-Mathematics.



REAGAN, Reginald Lee (Major), Electron Microscopist, National Cancer Institute, Bethesda, Maryland. VIROLOGY, ELECTRON MICROSCOPY, AND MEDICAL TECHNOLOGY. b. Broad Ford, Pa., July 19, 1910. s. James Blaine and Helen A. (McLaughlin) R. Edn.: Ph.D., Md. Univ., 1955. 1st. m. Marie Johnson, 1932. c.: Nelda; Helen; William Olsen; Elsie. Exp.: Asst. Prof. to Prof., Univ. of Md., College Park, Md., 1946-61; Chf. Virologist, Jen-Sal. Lab., Kansas City, Mo., 1961-62; Virologist, Hazleton Labs., Falls Church, Va., 1962; Bacteriologist, Suburban Hosp., Bethesda, Md., 1962; Electron Microscopist, Natl. Cancer Inst., Bethesda, Md., 1962 . Mem.: Soc. Exptl. Biology and Med.; Am. Microscopic Soc.; A.A.A.S.; Elect. Microscopic Soc. of Am.; Am. Soc. Clin. Pathologists; A.A.U.P.; National Soc. Register. Contbr. to: Am. Microscopical Soc.; Political Science; The Southwestern Vet.; Veterinary Medicine; Am. Jour. of Veterinary Research; Proc. Soc. for Exptl. Biology and Medicine; A.M.A. Arch. of Pathol.;

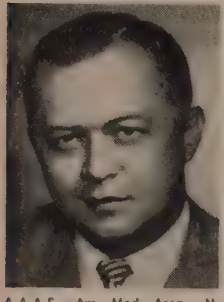
Am. Jour. of Pathol.; Am. Jour. of Tropical Med. and Hygiene; The Cornell Vet.; Jour. of Gen. Microbiol. Serv. Rec.: U. S. Army, 1928-46; Lt. to Major. Areas of Rsch.: Virology; Electron Microscopy; Medical Technology.

READ, Robert Emms (Ph.D.), Rsch. Chem., Jackson Lab., E. I. duPont de Nemours Co., Inc., P. O. Box 232, Penns Grove, N. J. Home Add.: Pike Creek Rd., R.D. #3, Newark, Del. ORGANIC CHEMISTRY. b. Stoke-on-Trent, Eng., Jan. 30, 1933. s. Bernard Emms and Katherine L. (Henderson) R. Edn.: B.S., Harverford Coll., 1955; M.S., Univ. of Del., 1957; Ph.D., ibid., 1960. m. Marjory H. Fair, Sept. 9, 1955. c.: One. Exp.: Rsch. Chem., Jackson Lab., E. I. duPont de Nemours Co., 1960—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Alpha Chi Sigma. Contbr. to Jour. Org. Chem.; Jour. Am. Chem. Soc. Areas of Rsch.: Synthesis and Reactions of Substituted Carbamates; Thermal Degradation of N-1-Naphthyl Carbamates and Related Compounds.

REAMS, Gerald Brock (M.D.), Major, U.S.A.F. Med. Corps, U.S.A.F. Hosp., K.A.F.B., Miss. Home Add.: 211 Second St., Harlan, Ky.

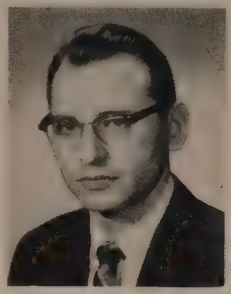
GENERAL AND THORACIC SURGERY. b. Lexington, Ky., Sept. 17, 1929. s. George Elbert and Nelle (Brock) R. Edn.: B.S., Univ. of Ky., 1948; M.D., Northwestern Univ., 1952. m. Karolyn Spillman, June 20, 1950. c.: Gerald B.; Mary Martha; Mark Thomas; Carol Anne. Exp.: Interne, Charity Hosp., New Orleans, La., 1952-53; Surgical Resident, Univ. of Miami Schl. of Med., Jackson Mem. Hosp., Miami, Fla., 1953-57; Chf., Surg. Services, U.S.A.F. Hosp., Cambridge, England, 1957-60; Deputy Chf. of Surg., U.S.A.F. Hosp., Keesler AFB, Miss., 1960—. Hon. Pos.: Gen. Surgical Consultant to Air Force Surgeon General; Air Force Liason Representative, Comm. on Tissue Transplantation, Natl. Acad. of Scis., Natl. Rsch. Coun. Mem.: Phi Beta Kappa; Am. Bd. of Surgery; Am. Coll. of Surgeons; A.A.A.S.; Southeastern Surgical Cong.; Am. Federation for Clin. Rsch.; Phi Delta Theta; Phi Chi; Toastmasters Club. Contbr. to: Am. Jour. of Surgery; Am. Surgeon; Am. Jour. of Nursing; Jour. of Thoracic and Cardiovascular Surgery; Arch. of Surgery; Arch of Internal Medicine; The Lancet; Pediatrics; Proc. of the Am. Fed. for Clin. Rsch. Serv. Rec.: See positions. Areas of Rsch.: Tissue Transplantation.

REAS, Herman Walter (M.D.), Pediatrician, 6500 Chippewa, St. Louis 9, Mo. Home Add.: 511 Hollywood Place, Webster Groves 19, Mo. PEDIATRICS; PULMONARY PHYSIOLOGY. b. Edgerton, Ohio, Aug. 23, 1928. s. Walter W. and Clementine M. (Herman) R. Edn.: B.S., St. Joseph's Coll., 1949; M.D., St. Louis Univ., 1952. m. Mary Catherine Sheahan, 1952. c.: Mary Margaret; Elizabeth Ann; William Walter; Catherine Louise; John O'Fallon. Exp.: Mead Johnson Fellow in Pediatrics, St. Louis Childrens Hosp., 1956-57; Tchng. Fellow in Pediatrics, Jewish Hosp. of St. Louis, Mo., 1957-59; Instr. in Clinical Pediatrics, Wash. Univ., Schl. of Med., St. Louis, Mo., 1957—. Hon. Pos.: Med. Dir., St. Louis Cystic Fibrosis Rsch. Program. Mem.: Am. Assn. of Med. Colls.; Am. Acad. of Pediatrics; A.A.A.S.; Am. Med. Assn.; N. Y. Acad. of Sci.; Sou. Med. Assn. Contbr. to: Annals of N. Y. Acad. of Sci.; Jour. of Pediatrics. Serv. Rec.: AUS, 1953-55. Areas of Rsch.: Microbiology; Pulmonary Physiology.



REBERT, Richard Ross (Ph.D.), Med. Rsch. Repr., Merck, Sharp and Dohme Res. Labs., Div. of Merck and Co., Inc., West Point, Pa. Home Add.: 11015 Renwick Dr., Houston 35, Tex. ANATOMY, BIOCHEMISTRY. b. Wash., D. C., May 16, 1920. s. Nelson Taylor and Pearl Rebecca (Francis) R. Edn.: B.A., Geo. Wash. Univ., 1941; B.A., ibid., 1947; M.A., ibid., 1948; Ph.D., Vanderbilt Univ., 1952. m. Beryl Jacqueline Holland, Nov. 8, 1946. c.: Priscilla Hope; Prudence Joy; James Marshall. Exp.: Assoc. in Zool., Geo. Wash. Univ., 1947-49; Fellow, Natl. Cancer Inst. (State Univ. of N. Y.), 1949-50; Instr. in Anatomy, La. State Univ., 1951-53; Assoc. Med. Dir., Mead Johnson and Co., Evansville, Ind., 1953-54; Med. Rsch. Repr., Merck and Co., Inc., 1954—. Hon. Pos.: Pres., New Orleans Writers, 1952-53; Historian, World War II Army Unit. Mem.: Sigma Xi; Am. Assn. of Anatomist; N. Y. Acad. of Sci.; Phi Beta Pi; Exec. Comm., Microcirculatory Conf. Author: Is This It?, 1946. Contbr. to: Jour. of Comp. Neurology. War Rec.: U. S. Army, 1941-45. Areas of Interest in Rsch.: Structure of Proteins; Embryological Origin of Ganglia; Action of Agents on Growth.

RECHCIGL, Jr., Miloslav (Ph.D.), Rsch. Chemist, Biochem., Sect. on Tumor-Host Relations, Lab. Biochemist, Natl. Cancer Inst., Natl. Inst. Health, Bethesda, Md. Home Add.: 1703 Mark Lane, Rockville, Md. BIOCHEMISTRY AND NUTRITION. b. Mlada Boleslav, Czechoslovakia, July 30, 1930. s. Miloslav and Marie (Rajtr) R. Edn.: B.S., Cornell Univ., 1954; M.N.S., ibid., 1955; Ph.D., ibid., 1958. m. Eva Marie Edwards, Aug. 29, 1953. c.: John Edward; Karen Marie. Exp.: Tchng. Asst., Cornell Univ., 1952-57; Grad. Rsch. Asst., Grad. Schl. Nutrition, Cornell Univ., 1957-58; Rsch. Assoc., Dept. of Biochem, ibid., 1958; Pub. Health Serv. Rsch. Fellow, Lab. Biochem., Natl. Cancer Inst., 1958-60; Biochemist, Lab. Biochem., ibid., 1960—. Hon. Pos.: Secy., Program Committee, 1st Congress of the Czechoslovak Soc. of Arts and Scis. in Am.; Chmn., Publication Comm., ibid. Mem.: Fellow, A.A.A.S.; Am. Chem. Soc.; Am. Inst. Biological Scis.; N. Y. Acad. Scis.; Am. Soc. Animal Production; Am. Assn. for Cancer Rsch.; Am. Inst. of Nutrition; Soc. Exptl. Biol. and Med.; Soc. for Biological Rhythm.; Czechoslovak Soc. Arts and Scis. in Am.; Phi Kappa Phi; Hist. Science Soc.; Am. Assn. Adv. Slavic Studies; Sigma Xi. Contbr. to: Jour. Biological Chemistry; Archives Biochem. and Biophys.; Jour. Nutrition; Proc. Soc. Expmtl. Biol. Med.; Cancer Rsch.; Sci.; Nature; Biochem. Biophys. Acta; Surg.; Experientia; Jour. Natl. Cancer Inst.; Metabolism; Abstractor of Chemical Abstracts. Areas of Rsch.: Biochemistry and Metabolism of Cancer; Tumor Host Relationship; Protein and Amino Acid Metabolism and Nutrition; Biochem. of Starvation and Cachexia; In Vivo Kinetics of Protein (Enzyme) Synthesis and Destruction; Protein-Vitamin Relationship.



RECHTIN, Eberhardt (Dr.), Jet Propulsion Lab.

RECKZEH, John Karl (Ph.D.), Prof. of Math., Jersey City State Coll., Jersey City, N. J. MATHEMATICAL ANALYSIS. b. Chicago, Ill., Jan. 6, 1913. s. Karl O. and Linnie (Sutherland) R. Edn.: A.B., Western Ky. State Coll., 1935; M.A., Univ. of Ky., 1939; Ph.D., ibid., 1950. Exp.: Tchr., Rockfield H. S., Rockfield, Ky., 1935-37; Tchr., Mayslick H. S., Mayslick, Ky., 1937-40; Math. Tchr., Lake Forest Acad., Lake Forest, Ill., 1940-41; Instr., W. Va. Inst. of Tech., Montgomery, W. Va., 1941-42; U. S. Navy, 1942-46; Asst. and Assoc. Prof. of Math., Jersey City State Coll., Jersey City, N. J., 1946-57; Prof. of Math., ibid., 1957—; Lectr. in Natl. Sci. Fdtn. Inst. at Rutgers Univ., summers of 1958, 1959, 1960. Mem.: Math. Assn. Am.; Natl. Coun. of Math. Tchrs.; N. J. Assn. of Math. Tchrs.; Am. Math. Soc.; Phi Beta Kappa; Pi Mu Epsilon. Special Int.: Systems of Curves and Their Characteristics; Modification of the First Necessary Condition in the Calculus of Variation for the Parametric Non-Homogeneous Case. Co-Author: Developing Mathematical Understanding in the Upper Grades, 1957; Investigating Mathematics, 1962; Moving into Mathematics, 1962; Discovering Structure in Algebra, 1962.

RECORD, Paul Riddle (Ph.D.), Rsch. Dir., Security Mills, Inc., Knoxville, Tenn. Home Add.: 7100 Rockingham Dr., Knoxville 19, Tenn. POULTRY NUTRITION. b. Kasota, Minn., Jan. 8, 1899. s. James F. and Margaret E. (Bell) R. Edn.: B.S., Pa. State Univ., 1921; M.S., Univ. of Ky., 1929; Ph.D., Iowa State Univ., 1941. m. Lillian R. Robinson, 1926. Exp.: Sales, 1921-28; Grad. Asst., Univ. of Ky., 1928-29; Asst. in Poultry, Ohio Agril. Expt. Sta., 1929-42; Dir. of Nutrition, A. E. Staley Mfg. Co., Decatur, Ill., 1942-46; Rsch. Dir., Security Mills, Inc., Knoxville, 1946—. Hon. Pos.: Past Chmn., Soybean Rsch. Coun.; Past Chmn., Nutrition Coun. Am. Feed Mfgs. Assn. Mem.: Chem. Soc.; A.A.A.S.; Poultry Sci. Assn.; Dairy Sci. Assn.; Am. Soc. of Animal Prod.; Alpha Gamma Rho; Sigma Xi; Gamma Sigma Delta. Areas of Rsch.: Poultry and Animal Nutrition.

REDEMSKE, Ralph, Servomechanisms, Inc., Santa Barbara, Calif.

REDISCH, Walter (M.D.), Assoc. Prof. of Med., N. Y. Univ. Schl. of Med., New York, N. Y. Home Add.: 101-06 67 Dr., Forest Hills, N. Y. PHYSIOLOGY AND CLINIC OF CIRCULATION OF THE BLOOD. b. Prague, Czechoslovakia, Sept. 26, 1898. s. I. M. and Aurelia (Baderle) R. Edn.: M.D., Univ. Med. Schl., Prague, 1922. m. Marianne Benedict, Apr. 18, 1935. c.: Monica Ruth; Margery Pauline. Exp.: Assoc. Prof. of Med. N. Y. Univ., Coll. of Med., 1949—. Mem.: A.M.A.; Am. Fedn. for Clin.

Rsch.; Am. Physiological Soc.; Federation of Med. Societies for Experimental Biology; Am. Coll. of Physicians; N. Y. Acad. of Med.; N. Y. Acad. of Sci.; Am. Gerontol. Soc.; Harvey Soc.; Royal Soc. Encouragements of Arts; N. Y. Univ. Club. Author: Circulation in Health and Disease, 1957. Contbr. to: Circulation; Annals of Internal Med.; Jour. Clin. Investigation; Clin. Rsch.; Am. Jour. Med. Scis.; Fed. Proc. Serv. Rec.: U. S. Army, W.W. II. Areas of Rsch.: Internal Medicine; Blood Circulation.

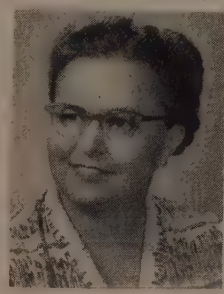
REDETZKI, Helmut M. (M.D.), Assoc. Prof., Dept. of Pharmacology, La. State Univ., Med Schl., New Orleans, La. Home Add.: 2107 Pine Street, New Orleans, La. PHARMACOLOGY, MEDICINE. b. Memel, Lithuania, Sept. 23, 1921. s. Emil and Hedwig (Preising) R. Edn.: M.D., Univ. of Hamburg Med. Schl., Germany, 1947. m. Joyce Ehman, 1957. Exp.: Internship, Med. Schl., Univ. of Hamburg, 1947-48; Rsch. Assoc., Biochemistry, Med. Schl., ibid., 1948-51; Rsch. Assoc., Virology, Med. Schl., ibid., 1951-52; Assistanzarzt, Internal Med., St. Georg Hosp., Hamburg, Germany, 1952-56; Postdoctoral Fellow, McLaughlin Foundation, Univ. of Tex. Med. Branch, Galveston, Tex., 1956-59; Instr., Dept. of Pharmacology, ibid., 1959-60; Asst. Prof., Dept. of Pharm., ibid., 1960-61; Assoc. Prof., Dept. of Pharm., La State Univ., Med. Schl., New Orleans, La., 1961—. Mem.: Sigma Xi; Am. Assn. for Cancer Rsch.; Am. Soc. Pharmacol. Exptl. Therap. Contbr. to: Klin. Wschr.; Dtsch. Z. f. gerichtl. Med.; Dtsch. med. Wschr.; Biochem. Z.; Arch. Toxikol.; Nature; Proc. Exptl. Biol. and Med.; Arch. Internatl. Pharmacodyn; Internatl. Jour. Radiobiol.; Biochem. Pharmacol.; Jour. Pharmacol. Exptl. Therap.; Tex. Report Biol. and Med. Serv. Rec.: German Navy, 1940-45. Gen. Int.: Establishment of a specific enzymatic method for determination of blood alcohol used in forensic medicine. Areas of Rsch.: Pharmacology; Drug-enzyme interactions, Antimetabolites.

REED, Charles Eli (Sc.D.), Vice-Pres. and Gen. Mgr., Chemical and Metallurgical Div., Gen. Electric Co., Bridgeport, Conn. Home Add.: 25 Cartright St., Bridgeport 4, Conn. CHEMISTRY, CHEMICAL ENGINEERING. b. Findlay, Ohio, Aug. 11, 1913. s. Joseph O. and Kathryn (Switzer) R. Edn.: B.S., Case Inst. of Technol., 1934; Sc.D., Mass. Inst. of Technol., 1937. Exp.: Asst. Prof. of Chem. Engrng., Mass. Instt. of Tech., 1937-42; Rsch. Assoc., Gen. Elec. Rsch. Lab., 1942-45; Engrng. Mgr., Chem. Div., Gen. Elec. Co., 1945-52; Gen. Mgr., Silicon Prod. Dept., ibid., 1952-59; Gen. Mgr., Metallurgical Prod. Dept., ibid., 1959-60; Gen. Mgr., Chem. and Metallurgical Div., ibid., 1960—; Vice-Pres., ibid., 1961—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; A.A.A.S.; Tau Beta Pi; Sigma Xi; Beta Theta Pi; Alpha Chi Sigma; Univ. Club of Bridgeport, Conn. Brooklawn Country Club, Bridgeport, Conn.; Chemists Club, N. Y. City. Co-author: Applied Mathematics in Chemical Engineering, 1957. Gen. Int.: Marburg Lecture, Am. Soc. for Testing Materials, 1956. Areas of Rsch.: Colloid Chemistry, High Polymers, Chemical Engineering (Distillation).

REDHEFFER, Raymond Moos (Ph.D.), Prof. Mathematics, Univ. at Los Angeles. Home Add.: 176 North Kenter Ave., Los Angeles 49, Calif. MATHEMATICS. b. Chicago, Ill., Apr. 17, 1921. s. Raymond L. and Elizabeth (Moos) R. Edn.: S.B., Mass. Inst. Tech., 1943; S.M., ibid., 1946; Ph.D., ibid., 1948. m. Heddy Gross Stiefel, Aug. 25, 1951. c.: Peter Bernard. Exp.: Rsch. Assoc., M.I.T., Radiation Lab., 1942-46; Rsch. Assoc., ibid., Rsch. Lab. Electronics, 1946-48; Instr., Harvard Univ. and Radcliffe Coll., 1948-50; Instr., Univ. Calif., Los Angeles, 1950-51; Asst. Prof., ibid., 1951-56; Assoc. Prof., ibid., 1956-60; Prof. of Math., ibid., 1960—. Hon. Pos.: Benjamin Pierce Instr., Harvard, 1948-50; N.S.F. Sen. Postdoctoral Rsch. Fellow, Gottingen, Germany, 1956; Fulbright Rsch. Fellow, Vienna, Austria, 1957; Fulbright Rsch. Fellow, Hamburg, Germany, 1961-62. Mem.: Sigma Xi; Am. Math. Soc.; Am. Math. Assoc.; I.R.E.; A.A.A.S. Contbrng. Author: Radiation Laboratory, 1945-46; Modern Mathematics for the Engineer, 1960. Co-author: Mathematics of Physics and Modern Engineering. Contbr. to: Trans. Am. Math. Soc.; Proc. Natl. Acad. Scis.; Jour. Math. and Mechanics; Proc. Am. Math. Soc.; Pacific Jour. Math.; Am. Math. Monthly; Quart. Applied Math.; Jour. Math. and Physics; Jour. Applied Physics; Annals Math. Statistics; Duke Math. Jour.; Jour. Rational Mech. and Analysis; Inst. Radio Engrs. Trans.; Mathematische Annalen; Rev. Scientific Instruments; Monatshefte fur Mathematik (Vienna); Oesterreichische Akademie der Wissenshaften. Areas of Rsch.: Invarian Imbedding and its Application to Transmission-Line Problems, Probability, and Hilbert Space; Nonlinear Partial Differential Equations; Classical Complex Analysis; Microwave Optics and Microwave Measurement Techniques.

REED, Clyde Theodore (Mr.), Assoc. Prof. of Biol., Dept. Biol., Univ. of Tampa, Tampa, Fla. Home Add.: 3202 No. Rome Ave., Tampa 7, Fla. BOTANY AND MARINE BIOLOGY. b. Neosho, Mo., Sept. 12, 1891. s. Frank S. and Lucy (Turner) R. Edn.: A.B., Campbell Coll., 1914; M.S., Washington Coll., 1918; M.S., Cornell Univ., 1937. m. Mildred Brooks, 1944. c.: Max; Frank; Billie Jean. Exp.: Hd. Div. of Sci., Graceland Coll., 1914-16; Asst. in Chem. and Biol., Parsons Coll., 1916-18; Prof., Biol., Washington Coll., 1918; Hd. Dept., Biol., Muhlenberg Coll., 1918-19; Assoc. Prof., Physics, Robert Coll., Turkey, 1919-21; Chmn., Dept. of Sci., Tex. Womans Coll., 1921-24; Hd. Dept. of Biol., Tex. Coll. of Arts and Industries, 1921-37; Prof. of Chem., Marion Inst., 1939-40; Prof., Chem., Lambuth Coll., 1940-42; Prof. Biol., Presbyterian Coll., 1942-43; Lectr. in Physics, Ark. A. and M., 1943-44; Assoc. Prof., Biol., Univ. of Tampa, 1944—; Hd. Dept. of Biol., ibid., 1944-60. Hon. Pos.: Chmn., Biol. Sect., Fla. Acad. Scis.; Pres., Texas Acad. Sci.; Pres., Fla. Assn. of Sci Tchrs.; 1st Vice President, Am. Nature Study Soc. Mem.: Fellow, A.A.A.S.; Assn. of Sou. Eastern Biologists; Amer. Soc. of Systematic Zoologists; Torch Internatl. Author: Marine Life of Texas Waters, 1941. Contbr. to: Journals and Edntl. Mag. Gen. Int.: Organized Texas Acad. of Sci.; Tex. Jr. Acad. of Sci.; Texas Assn. of Sci. Tchrs., also Fla. Assn. of Sci. Tchrs. Areas of Rsch.: Marine Biology; Taxonomic Botany and Science Education.

REED, Helen Evelyne (Miss), Science Dept., Biology Teacher, Emmerich Manual Training High Schl., 2405 S. Madison Ave., Indianapolis, Ind. Home Add.: 1070 W. Maple St., Greenwood, Ind. BIOLOGY; BOTANY. b. Clinton, Ind., Mar. 16, 1908. d. Joseph and Nellie Alice (Johnson) R. Edn.: A.B., Ind. St. Tchrs. Coll., 1928; A.M., Ind. Univ., 1956. Exp.: Tchr., Westervelt, Ill., Comm. H. S., 1928-31; Tchr., Oakland, Ill. High Schl., 1931-33; Tchr., Clinton, Ind., H. S., 1933-38; Tchr., Brookville, Ind., H. S., 1938-44; Tchr., Noblesville, Ind., H. S., 1944-49; Tchr., Attica, Ind., H. S., 1949-52; Tchr., Lebanon, Ind., Jr.-Sr. H. S., 1952-57; Lebanon Jr. H. S., 1957-62. Hon. Pos.: Pres., Biol. Sect., Ind. State Tchrs. Assn., 1959; State Membership Chmn., Natl. Assn. Biol. Tchrs., 1956-61; Mem., Sr. Coun., Ind. Jr. Acad. of Sci., 1962-67; Secy., Secondary Sect., Central Division, Indiana State Teachers Assn. Mem.: Indiana Acad. of Science; National Assn. of Biology Teachers; A.A.A.S.; Natl. Sci. Tchrs. Assn.; N.E.A.; C.T.A.; I.E.A.; Ind. State Tchrs. Assn.; Ind. Schl. Librns. Assn.; Delta Kappa Gamma; Alpha Beta Alpha. Areas of Rsch.: Plant Anatomy. Rsch. Participation: Plant Taxonomy and Genetics.

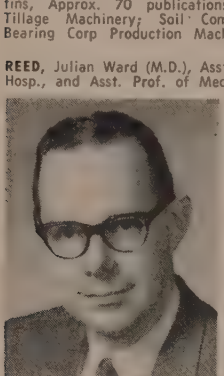


REED, Homer B. (Ph.D.), Emer. Prof. of Psychol., Ft. Hays, Kan. State Coll., Hays, Kan. PSYCHOLOGY. b. Youngstown, Ohio, Aug. 16, 1886. s. Elias W. and Mary D. (Blosser) R. Edn.: Goshen Coll., 1905-07; A.B., and A.M., Ind. Univ., 1909; Ph.D., Univ. of Chicago, 1912; Columbia Univ., 1913-14. m. 1st, Anna Dale Cole of Huntington, Ind., Jan. 1, 1912; m. 2nd: Elma Carey of Council Bluffs, Iowa, Nov. 6, 1922. d. James P. and Mary Ryan Carey. c.: Mary Elizabeth; Kathryn Jean; Esther Margaret; Anne Cole; James Carey; Homer Blosser Carey. Exp.: Instr. in Psychol., Univ. of Ill., 1914-15; Asst. Prof. of Psychol., Univ. of Idaho, 1915-21; Asst. Prof. of Psychology, Colo. Coll. of Edn., 1921-24; Asst. Prof. of Psychol., Univ. of Pittsburgh, 1924-28; Prof. of Psychol., Western State Coll., 1928-29; Prof. of Psychol., Fort Hays Kan. State Coll., 1929-56; Visit. Prof., Univ. of N. M., 1956-57; Coll. of Wooster, 1957-58; Univ. of Istanbul (Turkey), 1958-61. Hon. Pos.: Pres. of Kan. Psychol. Assn. Mem.: Amer. Psychol. Assn.; Educational Rsch. Assn.; Kan. Academy of Sci.; Kan. Psychol. Assn.; Phi Delta Kappa; Phi Kappa Phi; Rotary International. Author: Psychology of Elementary Schl. Subjects, 1st edition, 1927, 2nd edition, 1938; Psychol. and Pedagogy of Secd. Schl. Subjects, 1939; Morals of Monopoly and Competition, 1917; Psicologia De Las Materias De Ensenanza Primaria, 1942. Contbr. to: Jour. of Edntl. Psychol.; Jour. of Expml. Psychol.; Psychological Rev.; Jour. Edn. Rsch.; Jour. of Philos; Jour. of Genetic Psychol. Ph.D. Dissertation:

Morals of Monopoly and Competition. War Record: Civilian Psychologist of U. S. Army, 1942. Hobbies: Hunting, Gardening. Listed in: A.M.S.; Who's Who in the Central States. Special Int.: Learning, Thinking, Clinical Psychology.

REED, Irvin Fay (Mr.), Agril. Engr., Tillage Machinery Lab., Box 792, Auburn, Ala. Home Add.: 454 Pinedale Rd., Auburn, Ala. TILLAGE AND TRACTION MACHINERY. b. Orchard, Nebr., Sept. 15, 1903. s. Robert R. and Mildred M. (Meuret) R. Edn.: B.S., Univ. of Nebr., 1926; M.S., Ohio State Univ., 1929; A.E., Univ. of Nebr., 1941. m. Beatrice Samson, June 11, 1927. c.: Mary Jo. Exp.: Asst. Agril. Engr., U.S.D.A., Toledo, Ohio, 1928-33; Asst. and Assoc., Agril. Engr., U.S.D.A., Tillage Mach. Lab., Auburn, Ala., 1933-42; Agril. Engr., ibid., 1942—. Mem.: Am. Soc. of Agril. Engrs.; Sigma Tau; Gamma Sigma Delta; Sigma Xi. Contbr. to: Agricultural Engineering; S.A.E.; U.S.D.A. Bulletins, Approx. 70 publications, and others. Areas of Rsch.: Tillage Machinery; Soil Compaction; Tires and Tracks; Oil Bearing Corp Production Machinery.

REED, Julian Ward (M.D.), Asst. Dir., Med. Clinics, Johns Hopkins Hosp., and Asst. Prof. of Med., Johns Hopkins Hosp. and Univ., Schl. of Med., Balt. 5, Md. Home Add.: 2203 Park Ave., Balt. 17, Md. INTERNAL MEDICINE, PSYCHIATRY, PSYCHOSOMATIC MEDICINE; CLINICAL RESEARCH STUDIES IN THE TREATMENT OF BRONCHIAL ASTHMA, IN REHABILITATION OF PATIENTS WITH INCAPACITATING CHRONIC DISEASES, PSYCHOSOMATIC ILLNESSES AND MENTAL ILLNESS. b. Frederick, Md., Dec. 29, 1926. s. Earl Kirby and Fern Jeanette (Kaetzel) R. Edn.: B.S., Univ. of Md., 1948; M.D., ibid., 1952. m. Corrine S. Webb, Aug. 28, 1949. Exp.: Intern, St. Albans Naval Hosp., St. Albans, L. I., N. Y., 1952-53; Fellow Med., Johns Hopkins Univ. and Hosp., 1954-57; Instr., Univ. of Md., Balt., Md., 1957-59; Instr., Psychiat., Johns Hopkins Univ., Balt., Md., 1959-60; Asst. Prof., ibid., 1960—; Asst. Dir., Med. Clins., Johns Hopkins Hosp. and Asst. Prof. of Med., Johns Hopkins Hosp. and Univ., 1961—. Hon. Pos.: Vice Pres., Metropolitan Balt. Assn. for Mental Hlth.; Vice Pres., Jr. Assn. of Commerce, Balt.; Dir., Md. Sta. Conf. of Social Welfare; Med. Advry. Bd., Md. Soc. for Crippled Children and Adults, Natl. Rehabilitation Assn. Mem.: Am. Assn. for Univ. Profs.; Am. Psychosomatic Soc.; Acad. of Psychosomatic Med.; Am. Fed. for Clin. Rsch.; Balt. City Med. Soc.; Med. and Chirurgical Faculty of Md.; Assn. of Am. Med. Colls.; Md. Assn. for Med. Rsch.; Natl. Assn. for Mental Hlth.; Internatl. Fed. for Mental Rsch.; Natl. Assn. for Mentl. and Phys. Hlth.; Md. Psychiat. Soc.; Am. Psychiat. Soc. Contbr. to: Psychosomatics, Jour. of the Acad. of Psychosomatic Med.; The Jour. of Chronic Diseases; Geriatrics. Serv. Sec.: U. S. Naval Reserve, Active, 1945-46; 1952-54; Inactive, 1954—. Gen. Int.: Balt. City and Md. Sta. Jr. Chamber of Commerce, Dist. Comm. Serv. Award, 1960-61. Areas of Rsch.: Intensive Studies in the Rehabilitation of Chronically Incapacitated Medical and Psychiatric Outpatients; Psychosomatic Medicine, Especially the Comprehensive Treatment of Bronchial Asthma (Medical and Psychiatric Treatment) Long Range Research (Clinical) Studies on the Importance of the Role of Emotional and Psychological Factors in Endocrine Disorders and Collagen Vascular Diseases.



REED, Rufus D. (Ph.D.), Chmn. of Div. of Sci. and Math., Salem Coll., Salem, W. Va. CHEMISTRY. b. Sept. 12, 1894, Blanchester, Ohio. s. William B. and Emma J. (Barry) R. Edn.: B.S., Wilmington Coll., 1919; M.A., Ohio St. Univ., 1920; Ph.D., ibid., 1928. m. Pearl Vandervort, Blanchester, Ohio, 1920. d. James Vandervort and Lucretia V. c.: Russell Francis Reed. Exp.: Tchr. in Rural Schls., Clinton Co., Ohio, 1912-16; Tchr. of Sci., Lakewood, Ohio, H. S., 1920-29; Asst. Prof., Montclair St. Tchrs. Coll., 1929-37; Assoc. Prof. of Chem., 1937-47; Prof. of Chem., 1947—; Chmn., Sci. Dept., 1952-60; Prof. Emer., 1960—. Hon. Pos.: Pres., N. J. Sci. Tchrs. Assn., 1937-39; Mem., Test Comm., Div. Chmn., Edn. Mem.: Am. Inst. of Chem.; A.C.S.; Natl. Sci. Tchrs. Assn.; N. J. Sci. Tchrs. Assn.; A.A.A.S.; Phi Lambda Epsilon; Sigma Xi. Author: Gen. Coll. Chem. for the Lab. Contbr. to: Jour. of Chem. Edn.; Jour. Am. Chem. Soc. Ph.D. Dissertation: Potassium-zirconium Reactions. Achievements of Gen. Int.: Survey of Sci. Tchng. and Tchng. of Sci. Conditions in N. J. Recreations: Farming, Automobile Touring. Special Int.: Tchng. of Chem.

REED, Luton Raymond (Mr.), Instr. of Sci., Whitesboro Cent. Schl., Whitesboro, N. Y. Home Add.: 129 Standart St., Syracuse 10, N. Y. BIOPHYSICS. b. Portland, Ore., May 22, 1926. s. Luton H. and Teresa (Nevins) R. Edn.: B.A., Univ. of Vt., 1949; M.Ed., ibid., 1951; M.S., Syracuse Univ., 1962. m. Bertha Pieper, Dec. 27, 1958. Exp.: Asst. Supt. of Prod., Penick and Ford Ltd., Inc., Burlington, Vt., 1953-54; Instr. of Sci., Charlotte Valley C. Schl., Davenport, N. Y., 1954-57; Instr. of Sci., Whitesboro C. Schl., Whitesboro, N. Y., 1957—. Mem.: N. Y. Tchrs. Assn.; N. Y. St. Sci. Tchrs. Assn.; Am. Phys. Soc.; Am. Assn. of Physics Tchrs.; A.A.A.S.; Kappa Phi Kappa. Serv. Rec.: U. S. Navy, W. W. II; U S. Army, Korea; Captain, U.S.A.R.

REED, William Doyle (Mr.), Entomologist, Dept. of Army, Office of Chief of Engrs., Washington 25, D. C. Home Add.: 3609 Military Rd., N.W., Washington 15, D. C. ZOOLOGY AND ENTOMOLOGY. b. Eupora, Miss., Sept. 25, 1897. s. James W. and Ophelia C. (Riddell) R. Edn.: B.S., Miss. State Univ., 1922. m. Louise Pope, May, 1926. Exp.: Asst. Prof., Clemson Coll., Clemson, S. C., 1924-26; Entomologist, U. S. Dept. of Agric., Wash., D. C., 1926-42; Entomologist, Dept. of Army, Washington, D. C., 1943 –. Hon. Pos.: Govg. Bd., E.S.A.; Pres., Entomology Soc. of Wash.; Chmn., Armed Forces Pest Control Bd.; Food Protection Comm., N.R.C.; Chmn., Interdepartmental Comm. on Pest Control. Mem.: A.A.A.S.; Wash. Acad. of Scis.; Va. Acad. of Sci.; Entomological Soc. of Am.; Am. Pub. Health Assn.; Am. Soc. of Military Engrs.; Cosmos Club. Contbr. to: Jour. of Econ. Entomology; Annals of Entomological Soc. of Am.; Proc. of Entomol. Soc. of Wash.; The Military Engr. Serv. Rec.: A.U.S., W.W. I and W.W. II. Gen. Int.: Army Commendation Ribbon; Army Meritorious Civilian Service Award; Army Award for Special Acts and Services. Areas of Rsch.: Medical Entomology; Control of Stored Product Pests; Control of Pests of Lumber and other Forest Products.

REEVES, David Lander (M.D.), 316 W. Junipero St., Santa Barbara, Calif. Home Add.: 595 Picacho Lane, Montecito, Santa Barbara, Calif. NEUROLOGICAL SURGERY. b. Salt Lake City, Utah, Dec. 31, 1904. s. John Alfred and Emma Belle (Bowers) R. Edn.: A.B., Leland Stanford Univ., 1926; M.D., Johns Hopkins Med. Schl., 1930. m. Marjorie Murphy, Mar. 21, 1942. c.: Marjorie Lander; Elizabeth Patton. Exp.: Asst. Demonstrator Neuro-surgery, McGill Univ., Montreal, 1937-38; Instr. in Surgery (Neurosurgery), Univ. of Sou. Calif., 1938-41; Chf. of Staff, Santa Barbara Cottage Hosp., Santa Barbara, Calif., 1951-53; Priv. Practice, 316 W. Junipero St., 1953—. Hon. Pos.: Past Pres., Am. Acad. of Neurological Surgery; Secy.-Treas., Harvey Cushing Soc., 1952-59; Pres., Harvey Cushing Soc., 1962; Pres. and Founding Mem., Western Neurological Soc., 1955-56; Mem. of Editorial Bd. of Jour. of Neurosurgery, 1957—. Mem.: Sigma Xi; Phi Beta Kappa; Alpha Omega Alpha. Author: "Cranioplasty," American Lecture Series Monograph, 1950; "Cranioplasty," Surgery in World War II; Neurosurgery, Vol. 1 Chapter 12, 1958; "Craniofacial Dysostosis of Crouzon, The Surgical Treatment of Craniostenosis," Practice of Pediatrics, Vol. IV, Chapter 25A, 1944; "Spina Bifida and Cranium Bifidum," Cyclopedia of Medicine, Surgery and Specialities, Vol. 14, 104-132, 1941. Contbr. to: The Am. Jour. of Surgery; The Western Jour. of Surgery, Obstetrics and Gynecology; Bull. of the Los Angeles Neurological Soc.; Archives of Neurology and Psychiatry; The Am. Jour. of Roentgenology and Radium Therapy; Jour. of Neurosurgery; Archives of Surgery; Bull. of the Johns Hopkins Hosp.; Archives of Internal Med.; Archives of Pediatrics; Archives of Ophthalmology; Surgery, Genecology and Obstetrics; Medicine; The Am. Jour. of Physiology; Bull. of the Johns Hopkins Hosp.; Archives of Neurology and Psychiatry; Arch. Int. Med.; The Jour. of Laryngology and Otology. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Neurological Surgery.

REEVES, Corwin C., Jr. (Mr.), Asst. Prof., Geol., Tex. Tech. Coll., Lubbock, Tex. Home Add.: 5412 29th St., Lubbock, Tex. GEOLOGY. b. Cincinnati, Ohio, May 19, 1930. s. Corwin and Mary (Beech) R. Edn.: B.S., Univ. of Okla., 1955; M.S., ibid., 1957. m. Rosemary Butts, June 1, 1956. c.: Renee; Lesy; Jody. Exp.: Geol., Texaco, Inc., Ardmore, Okla., 1956-57; Instr., Tex. Tech. Coll., 1957-62; Asst. Prof., ibid., 1962—. Mem.: Am. Assn. Petr. Geol.; Geol. Soc. Am.; Yellowstone-Bighorn Rsch. Assn.; Sigma Gamma Epsilon; Sigma Xi. Contbr. to: Bull. Am. Assn. Petr. Geol.; Jour. Sed. Petrol.; Oil and Gas Jour.; World Oil; Water Well Jour.; Econ. Geol.; Petrol. Interam.; Sci. World. Areas of Rsch.: Geology of Petroleum; Economic Deposits in General; Subsurface Structure; Field Interpretations.

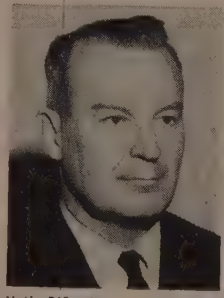
REEVES, James Albertson, Jr. (Mr.), Elect. Engr., Retired, Rural Rt. #2, West Terre Haute, Ind. EFFECTS OF POLAR MIGRATION FORCES ON MOUNTAIN BUILDING, FORMATION OF COAL, FLINT LIMESTONE, LEAD AND ZINC ORES. b. Joplin, Mo., April 6, 1882. s. James Albertson and Helen (Farnsworth) R. Edn.: B.S., Univ. of Mo., 1907; E.E., Westinghouse Engr. Apprenticeship Course, 1909. m. Amy Rose, June, 1909. c.: Charles; Helen; James; Kathryn. Exp.: Elec. Engr., Westinghouse, Elec. and Mfg. Co., E. Pittsburg, Pa., 1907-15; E.E., DuPont Co., Wilmington, Del., 1916-21; E.E., Kansas City Pr. and Light Co., Kansas City, Mo., 1921-22; E.E., Harlem Valley Elec. Co., Brewster, N. Y., 1922-24; E.E., Alabama Power and Light Co., Birmingham, Ala., 1924-33; E.E., Woodward Iron Co., Woodward, Ala., 1933-36; E.E., Keystone Steel and Wire Co., Peoria, Ill., 1936-37; E.E., du Pont Paint Mill, Ft. Madison, Ia., 1937-38; E.E., Ill. Power Co., Decatur, Ill., 1940-42; E.E., Oak Ordnance, Shell loading Plant, Illiopolis, Ill., 1942-43; E.E. Garfield Atom Bomb Plant, Decatur, Ill., 1943-45; E.E., Badger Powder Mill, Baraboo, Wis., 1945-46. Mem.: A.A.A.S.; Ind. Acad. of Sci. Gen. Int.: Spent 3 years Designing, Building and Operating 22 du Pont War Plants, W. W. I; Spent 4 years in W. W. II, Designing and Building 3 big War Plants; Increased Carneys Point Powder Mill Daily Production from 10000 lb. to a million, by electrifying it. Replaced Platinum Catalyst by Powerful Electric arc Which Changed SO2 to Sulphuric Acid for Old Hickory Powder Mill in Tenn. when World Supply of Platinum ran out. Areas of Rsch.: Electrification of Steam Railroads; The effects of the increasing % of Carbon Dioxide in the air; New figure for the Age of Man on the Earth, 245 Million Years; Trying to find ways of exposing Treason and Corruption by Left Wingers in our Gov't.

REEVES, John Dudley, Jr. (M.D.), Prof., Chmn., Dept. of Radiol., Coll. of Medicine, Univ. of Fla., Gainesville, Fla. Home Add.: 1716 N.W. 3rd Ave., Gainesville, Fla. MEDICINE: RADIOLOGY. b. Ft. Worth, Tex., Sept. 12, 1924. s. John Dudley, Sr. and Hazel (Bristow) R. Edn.: B.S., Univ. of Ark., Schl. of Medicine, 1946; M.D., ibid., 1947. c.: John Dudley, III; Barbara Jean. Exp.: Radiologist, Natl Cancer Inst., 1951-55; Assoc. Radiol., Mass. Gen. Hosp., Boston, Mass., 1955-58; Instr., Harvard Med. Ctr., 1955-58; Prof., Chmn., Dept. of Radiol., Univ. of Fla., Coll. of Medicine, 1958—. Hon. Pos.: Chancellor, Am. Coll. Radiol.; Chmn., Comm. on Rad. Units, Standards and Protection, A.C.R.; Chmn., Ref. Courses Comm., R.S.N.A.; Fla. Nuclear Comm.; Natl. Comm. on Radiation Protection. Mem.: Am. Coll. Rad.; Rad. Soc. of N. Am.; A.M.A.; Soc. Nuclear Med.; Am. Roentgen Ray Soc.; Am. Radium Soc.; Assn. of Pendergrass Fellows; Sou. Radiological Conf.; Sou. Med. Assn.; Assn. of Univ. Radiologists; New England Roentgen Ray Soc.; Phi Chi. Contbr. to: Acta Endocrinologica; New England Jour. of Med.; Sou. Med. Jour.; Radiol.; Jour. of Am. Med. Assn.; Am. Jour. Roent.; Rad. Ther. & Nuclear Medicine; Sou. Med. Jour. Serv. Rec.; U.S.N.R., 1943-45; U.S.P.H.S., 1951-55. Areas of Rsch.: Nuclear Medicine; Radiation Protection and Effects of Radiation; Radium and Supervoltage Radiotherapy; Diagnostic Studies of Vascular Disease.

REVY, (Stefan) William Robert (Ph.D.), Assoc. Chf. Psychologist, St. of Columbia, Gen. Hosp., 19th and E Sts., S.E., Wash., D. C. Home Add.: 4845-B S. 28th St., Arlington 6, Va. CLINICAL PSYCHOLOGY; PSYCHOLOGY. b. Dobsina, Czechoslovakia, Feb. 3, 1922. s. Stefan Jan and Maria (Sholtis) Revay. Edn.: B.A., Stanford Univ., 1946; Ph.D., Penn. St. Univ., 1954. m. Carole May Hughes, June, 1960. c.: Anthony William. Exp.: Assoc. Prof. of Psychol., Richmond Profl. Inst. of Coll. of William and Mary, Richmond, Va., 1954-55; Inst. to Asst. Prof., DePaul Univ., Chicago, Ill., 1955-57; Asst. Prof. of Psychol. and Counselor, Sacramento State Coll., Sacramento, Calif., 1957-60; Assoc. Prof. of Psychol., Tex. Tech. Coll., Lubbock, Tex., 1960-61; Dir. of Studies, Northern Va. Mental Health Project, Dept. of Mental Hygiene and Hospital, Falls Church, Va., 1961-62; Assoc. Chief Psychologist, District of Columbia General Hospital, Washington, D. C., 1962—. Mem.: Acad. of Political Science; Acad. of Religion and Mental Health; Acad. of Psychology and Marital Counseling; Am. Acad. of Political and Social Science; Am. Assn. of Marriage Counselors; Am. Psychological Assn.; Am. Soc. for Aesthetics; Am. Sociol. Assn.; Natl. Coun. on Family Relations; N. Y. Acad. of Sci.; Soc. for Applied Anthropology; Soc. for Sci. Study of Sex; Phi Beta Kappa; Psi Chi. Contbr. to: Encyclopedia of Sexual Behavior; Marriage and Family Living. Serv. Rec.: U.S.A.A.F., 1942-43. Gen. Int.: Grant Fellow, Marriage Counseling Service and Training Program, Menninger Found., 1953-54. Areas of Rsch.: Counseling and Psychotherapy; Human Sexual behavior; Language as an indicator of Personality, Personality dynamics and human motivation.

REGAGNON, Paul (Mr.), Lab. Dir., The Eddy Clinic, Hays, Kan. Home Add.: 1115 Downing Ave., Hays, Kan. BIOANALYSIS. b. Mex., D. F., Mex., Nov. 5, 1916. s. Antoine and Ana (Rangel) R. Edn.: B.S., Colegio Frances de La Salle, Mex., 1935; Att. Escuela Nacional de Medicina y Ciencias Biologicas, 1936, 1938-43. m. Opal McHenry, July 25, 1949. c.: Donna M.; Thomas; Peggy D.; Paulette; Diana; Daniel P. Exp.: Instr., Physiol., Escuela Nacional de Medicina y Ciencias Biologicas, 1941-42; Chem., Analyst, Sid Richardson Refining Co., Texas City, Tex., 1948-49; Lab. Dir., The Eddy Clinic, 1953—. Hon. Pos.: Mem., Elections and Nomination Comm., 1959-60; Am. Assn. of Bioanalysts. Mem.: A.A.A.S.; Service Rec.: U. S. Army, 1944-47, 1949-53. Areas of Rsch.: Human and Veterinarian Parasitology (Proto and Metazoological Endo Parasites); Immunology (Allergy); Steroid and Protein Fractionation.

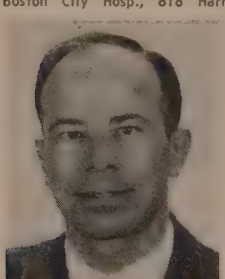
REID, Evans Burton, (Ph.D.), Merrill Prof. of Chem., Head, Chem Dept., Colby Coll., Waterville, Maine. Home Add.: West River Rd., R.F.D. 1, Waterville, Maine. ORGANIC CHEMISTRY. b. Brock Twp., Ontario, Can., March 29, 1913. s. William Thomas (dec.) and Ethel Elizabeth (Burton) R. Edn.: B.Sc., McGill Univ., Can., 1937; Ph.D., ibid., 1940. m. Isabel Sue Lewin, April 2, 1942. c.: Nicholas Evans David. Exp.: Rsch. Chemist, Dominion Tar & Chem. Co., Montreal, Que., Can., 1940-41; Instr. and Asst. Prof., Middlebury Coll., Vt., 1941-46; Asst. Prof., The Johns Houkins Univ., 1946-54; Prof. and Head, Dept. of Chem., Colby Coll., 1954—. Hon. Pos.: Chmn., Maine Sect., Am. Chem. Soc., 1956; 1962. Mem.: Am. Chem. Soc.; The Chem. Soc., London; Sigma Xi; McGill Graduates Soc.; Mason; Natl. Rifle Assn.; Colby Community Symphony. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Soc., London; Jour. Organic Chem. Gen. Int.: Dir., N.S.F. Summer Sci. Inst., Colby Coll.; Smith-Mundt Visiting Prof. of Chem., Univ. of Baghdad, Baghdad, Iraq, 1960-61. Areas of Rsch.: Small Ring Compounds; Terpenes; Structure and Synthesis of Natural Products; Tetronic Acids; Mould Metabolites.



REIFENSTEIN, Edward Conrad, Jr. (M.D.), Sr. Assoc. Med. Dir., The Squibb Inst. for Med. Rsch., New Brunswick, N. J. Home Add.: 50 Hoot Owl Terrace, Smoke Rise, Butler, N. J. ENDOCRINOLOGIST. b. Syracuse, N. Y., Dec 7, 1908. s. Edward C., Jr. and Florence (Kappesser) R. Edn.: A.B., Syracuse Univ., 1930; M.D., ibid., 1934. m. Esther Claire Tilden, June 9, 1934. c.: Edward C., III; Susan T. Exp.: Instr. in Med. and Psychiatry, Syracuse Univ., Coll. of Med., 1937-40; Rsch. Fellow in Med., Harvard Med. Schl., 1940-46; Clinical Rsch. Consultant, Ayerst McKenna and Harrison Ltd., N. Y. City, 1946-49; Exec. Dir., Med. Rsch. Div., ibid., 1949-50; Prof. of Rsch. Med., Univ. of Okla. School of Medicine, 1950-53; Director, Oklahoma Medical Rsch. Inst. and Hosp., Oklahoma City, Okla., 1950-53; Hd., Sect. on Endocrinol., ibid., 1950-63; Dir., Biol. and Therapeutic Division, Schering Corporation, Bloomfield, N. J., 1953-54; Medical Consultant, Bone Density Research and Evaluation Center, College of Chemistry and Phys., The Pennsylvania State Univ., 1954-57; Asst. Clin. Prof. of Medicine, N. Y. Med. Coll., 1954—; Sr. Assoc. Med. Dir., Dept. of Clin. Rsch., The Squibb Inst. for Med. Rsch., Olin Mathieson Chem. Corp., E. R. Squibb and Sons Div., N. Y., 1954—; Sr. Assoc. Med. Dir., ibid., New Brunswick, N. J., 1962—. Hon. Pos.: 2nd Vice-Pres., Am. Therapeutic Soc., 1958; Mem.: Fellow, Am. Coll. of Physicians; Am. Psychiatrics Assn.; N. Y. Acad. of Med.; N. J. Acad. of Med.; N. Y. Acad. of Sci.; N. J. St. Med. Assn.; Essex Co. Med. Soc.; Am. Assn. for Cancer Rsch.;

Am. Med. Assn.; Am. Fed. for Clin. Rsch.; Am. Geriatric Soc.; Am. Soc. for Clin. Invest.; Am. Soc. for Study of Biol. and Med.; Am. Therapeutic Soc.; Sou. Med. Assn.; Alpha Omega Alpha; Sigma Xi; Alpha Kappa Kappa; Phi Kappa Phi; Pi Delta Epsilon; Psi Upsilon. Author: The Parathyroid Glands and Metabolic Bone Disease, 1948. Contbr. to: Progress in Gyncol.; Am. Acad. of Orthopedic Surgeons; Trans. of Conf. on Bone and Wound Healing, editor; Trans. of Conf. on Bone and Wound Healing, editor; Trans. of Conf. on Metabolic Aspects of Convalescence, editor. Serv. Rec.: O.S.R.D., W.W. II. Areas of Rsch.: Endocrinology, Metabolism, Metabolic Bone Disorders.

REIF, Arnold Eugene, (D.Sc.), Asst. Prof., Surg., (Biochem.), Boston City Hosp., 818 Harrison Ave., Boston, Mass. Home Add.: 70 Elmwood Rd., Wellesley, Mass. ONCOLOGY; BIOCHEMISTRY; IMMUNOLOGY. b. Vienna, Austria, July 15, 1924. s. Henry and Margaret (Gestetner) R. Edn.: B.A., Clare Coll., Univ. of Cambridge, 1945; M.A., ibid., 1949; B.Sc., Univ. of London, 1946; M.S., Carnegie Inst. of Tech., 1949; D.Sc., ibid., 1950. m. Jane C. Chess, Jan. 10, 1950. c.: Bertrand Paul; John Henry; Joseph Peter. Exp.: Fellow in Oncol., McArdle Mem. Lab. for Cancer Rsch., Univ. of Wis., Madison, Wis., 1950-53; Rsch. Assoc., Dept. of Biochem., Lovelace Found., Albuquerque, New Mex., 1953-57; Asst. Prof. Surg. and Biochem., Tufts Univ. Schl. of Med., Boston City Hosp., 1957—. Hon. Pos.: Secy.-Treas., N. Mex. Soc. for Biol. and Med. Rsch. Mem.: Sigma Xi; Am. Chem. Soc.; Soc. for Exptl. Biol. Med.; N. Y. Acad. Sci.; Hlth. Phys. Soc.; Am. Assn. of Clin. Chemists; Am. Chemical Soc.; The Biochem. Soc. of Great Brit. Contbr. to: Nature; Sci.; Cancer Rsch.; Jour. Biol. Chem.; Arch. Biochem. and Biophys.; Rev. Sci. Instr.; Am. Med. Assn. Arch.; Ind. Hlth.; Endocrinol.; Ann. Allergy; Jour. Invest. Dermatol. Areas of Rsch.: Immunological Aspects of Cancer, Radiation Carcinogenesis, Research and Clinical Biochemistry.



REIMANN, Guenter (Ph.D.), Editor, President "International Reports, Inc., 200-4th Ave., N. Y. 3, N. Y. Home Add.: 4216-80th St., Elmhurst, L. I., N. Y. INTERNATIONAL FINANCE, WORLD ECONOMICS, FOREIGN TRADE; STATE CONTROLLED ECONOMIES. b. Germany, Nov. 13, 1904. s. George and Heddwig (Isaac) R. Edn.: Ph.D., Berlin Univ., Schl. of Econ., 1925. m. Miriam Deber, 1945. c.: Peggy; Johnny. Exp.: Editor and Financial Writer, Berlin, Germany, 1927-31; Dir. of Internatl. Rsch., Editor, Internatl. Stat. Bur., Inc., Empire State Bldg., New York, N. Y., 1941-48; Editor, Pres., "International Reports, Inc.," N. Y., 1948—. Mem.: Am. Econ. Assn. Author: The German Economic Miracle, 1930; The Vampire Economy, 1940; The Myth of the Total State, 1942; The Black Market and the Statis Economy, 1948. Contbr. to: The Analyst, Harper Mag. Areas of Rsch.: World Economics, State Controlled Economy, State Capitalism, Foreign Trade, Internatl. Finance.

REIMANN, Stanley Philip (Sc.D.), Dir. Emeritus, The Inst. for Cancer Rsch., 7701 Burholme Ave., Fox Chase, Pa.; 123 S. Broad St., Philadelphia 9, Pa. Home Add.: 703 W. Phil-Ellena St., Philadelphia 19, Pa. PATHOLOGY AND ONCOLOGY. b. Philadelphia, Pa., Oct. 13, 1891. s. Louis Philip and Jeanette (Tag) R. Edn.: M.D., Univ. of Pa., 1913; Sc.D., Hahnemann Med. Coll. and Philadelphia Coll. of Pharm., 1946. m. Elsie B. Bein, 1918. c.: Elizabeth J.; Pauline B. Exp.: Res. Pathologist, Lakeside Hosp., Cleveland, 1914-16; Pathologist, Lankenau Hosp., Overbrook, Pa., 1918-47; Prof. Emeritus of Oncology, Univ. of Pa., Prof. Emeritus, Hahnemann Med. Coll. and Hospital, Philadelphia, Pa., 1957—. Hon. Pos.: Past Pres., Am. Soc. Clin. Path.; Past Pres., Am. Assn. Can. Rsch.; Chmn., Council Scientific Assembly, A.M.A. Mem.: Am. Coll. of Physicians; Am. Assn. of Cancer Rsch.; Sigma Xi. Author: Translator Kaufmann's Special Pathology, 1928; Excursions into Surgical Subjects, 1930. Contbr. to: Jour. A.M.A.; Arch. Path.; Cancer Rsch. Serv. Rec.: U. S. Army, W. W. I. Areas of Rsch.: Pathology and Oncology.

REINER, Leopold (M.D.), Pathologist and Dir. of Labs., The Bronx Hosp., 1276 Fulton Ave., New York 56, N. Y. Home Add.: 277 Old Colony Rd., Hartsdale, N. Y. PATHOLOGIC ANATOMY; CARDIOVASCULAR DISEASE. b. Leipzig, Germany, Jan. 22, 1911. s. Joel and Golda R. (Michlewitsch) R. Edn.: M.D., Univ. of Vienna, 1936. m. Lillian Myers, Sept. 22, 1946. Exp.: Resident, Internal Med., Rothschild Hosp., Vienna, 1936-38; Resident and Asst. Pathologist, West Jersey Hosp., Camden, N. J., 1941-46; Resident in Pathology, Asst. Pathologist, Assoc. Pathol., Acting Pathol., Beth Israel Hosp., oBston, Mass., 1946-56; Instr. and Clinical Assoc. in Pathol., Harvard Med. Schl., Boston, Mass., 1950-56; Visiting Assoc. Prof. of Pathol., Albert Einstein Coll. of Med., N. Y., 1956—; Pathol. and Dir. of Labs., The Bronx Hosp., 1956—. Mem.: Am. Assn. of Pathologists and Bacteriologists; Internatl. Acad. of Pathol.; Histochemical Soc.; N. Y. Pathol. Soc.; A.A.A.S.; N. Y. Acad. of Med. Contbr. to: Arch. Pathol.; Am. Jour. Pathol.; Labor. Investigation; Arch. Int. Med.; Am. Jour. Physiol.; Jour. Clin. Endocrinol. and Metabol.; New England Jour. of Med.; Circulation; Jour. Exptl. Med.; Cancer; Surgery; Gastroenterology; Proc. Exptl. Biol. and Med. Areas of Rsch.: Arteriosclerotic Heart Disease; Cardiac Hypertrophy; Histochemistry of Myocardium; Mesenteric Arterial Circulation.

REINER, William B. (Ph.D.), Rsch. Assoc., N. Y. City Bd. of Edn., 110 Livingston St., Brooklyn 1, N. Y. Home Add.: 81 Ocean Parkway, Brooklyn, N. Y. EDUCATIONAL RESEARCH, SCIENCE. b. New York, N. Y., May 23, 1910. s. Meyer and Mollie (Silver) R. Edn.: B.S., City Coll. of N. Y., 1931; M.S., ibid., 1932; Ph.D., N. Y. Univ., 1942. m. Jeannette Ender, 1935. c.: Albey M. Exp.: Lecturer, Brooklyn Coll., 1946-61; Adjunct Assoc., Prof., L. I. Univ., 1949-61; Rsch. Assoc., N. Y. City Bd. of Edn., Brooklyn, N. Y., 1949—. Hon. Pos.: Rsch. Comm., Chmn., Natl. Sci. Tchrs. Assn. Mem.: Fellow, A.A.A.S.; A.E.R.A.; N.S.T.A.; N.C.M.E.; N.E.A.; Doctorate Assn. of N. Y. Educators; N. Y. Soc. for Exp. Study of Edn.; A.A.U.P.; Phi Delta Kappa; Masons. Author: The Flying Rangers, 1953. Contbr. to: Sci. Edn.; Edn. Schl. Sci. and Math.; The Sci. Tchr.; Rev. of Edn. Rsch. Areas of Rsch.: Test Construction, Critical Thinking in Sci. Edn., Rsch. Techniques.

REINERTSEN, Peter Amos (dec.), Staff, Readiness Areas of Office of Minerals Mobilization, in the Office of the Asst. Secy. for Minerals, U. S. Dept. of Interior, Interior Bldg., Washington, D. C. Residence: 3500 39th St., N.W., Washington 16, D. C. ECONOMICS: INVESTMENT BANKING; CORPORATION FINANCE; GOVERNMENT CONTROLS AND WAR TIME OPERATIONS (PRICES AND RELATED POLICIES); STRATEGIC MINERALS AND METALS INCL., FERRO-ALLOYS. b. Leland, Ill., Dec. 6, 1887. s. Rev. Peter Ingbart and Bertine (Johnson) R. Edn.: A.B., Augustana Coll., (Rock Island, Ill.), 1908; A.M., ibid., 1910. m. Mabel C. Carlson, Sept. 20, 1923. c.: Philip James; John Allan. Exp.: City Supt. of Schls., Cottonwood, Minn., 1911-14; City Supt. of Schls., Rushford, Minn. and Associated Schls., 1914-17; Investment Banking, Chicago, Ill., 1921-42; Asst. Mgr. Bond Dept., Paine Webber and Co., 1921-26; Asst. to the Pres., Lawrence Stern and Co., 1926-27; Vice Pres., Sales, Bartlett and Gordon, Inc., 1927-31; P. A. Reinertsen, 1932-42; Consumer Finance, Secy.-Treas.-Dir., Liberty Loan Corp., Chicago, Ill., until 1942; Secy.-Treas.-Dir., Central States Finance Corp., Chicago, Ill., until 1942. U. S. Govt.: Head Tungsten and Molybdenum Units, OPA, Wash., D. C., 1942-44; Acting Chief, Ferro Alloys Sec., ibid., 1944-46; Field Staff Dir., War Assets Admin., ibid., 1946-48; Spec. Asst. to Dept. Dir., Iron and Steel Div., Natl. Production Authority, ibid., 1950-53; Office of Asst. Secy. for Minerals, Staff, Readiness area in Minerals Mobilization Office, Dept. of Interior, ibid., 1955-62. Hon. Pos.: Exec. Secy. and Consultant, Econ. Advisory Group to the Natl. Republic of China, Formosa, 1954. Mem.: Am. Econ. Assn.; Am. Soc. for Metals; Phi Kappa Sigma; Delta Theta Phi; Former Dir., South Shore YMCA, Chicago. Author: Acolytes and Altar Guilds, 1960. Areas of Rsch.: History, Economics and Liturgics; Ferro-Alloys.

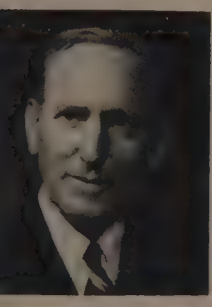
REINKING, Otto August (Ph.D.), Prof. Emer., N. Y. State Agril. Exptl. Sta., Cornell Univ., Ithaca, N. Y. Home Add.: 5213 Worthington Dr., Wash. 16, D. C. PLANT PATHOLOGY; MYCOLOGY; FUSARIA, CYLINDROCARBONS, CYLINDROCARBONS, PHYTOPHTHORS; DISEASES OF TROPICAL PLANTS. b. Madison, Wis., Feb. 11, 1890. s. John Juergin and Lydia (Bierbach) R. Edn.: B.S.A., Univ. of Wis., 1912; M.S., ibid., 1915; Ph.D., ibid., 1922. m. Addie E. Piehl, July 22, 1940. Exp.: Dir. of Agri., Mid-Pacific Inst., Honolulu, Hawaii, 1912-13; Instr., Colo. Agri. Coll. and Asst. Botanist, Exptl. Sta., 1915-16; Asst. Prof., Prof. and Hd. of Dept. of Plant Pathol. and Plant Path., Agri. Expt. Sta., Coll. Agri. Univ. of Philippines, 1916-21; Pathologist, ibid., 1922-27; Pathologist and Dir., Trop. Rsch., United Fruit Co., Central Am. and Boston, 1922-32; Guest Scientist, Biologische Reichsanatalt fur Land und Forst-Wirtschaft, Berling, Germany, 1932-35; Consult., United Fruit Co., Cent. Am., 1935-36; Prof., Plant Pathol. and Hd., Div. Plant Pathol., N. Y. State Agri. Exptl. Sta., Cornell Univ., 1936-50; Agriculturist, Foreign Agri. Adviser, Rsch. Admin. Office Foreign Agri. Relations, U.S.D.A., Manila, P. I., 1950-52; E.C.A. and Foreign Operations Administrator, Washington, D. C., 1952-55; Special Consultant, United Fruit Co., Boston and Cent. Am., 1956-59, Special Consultant, Coconut Diseases, Territory of Guam, 1961. Hon. Pos.: Mem., Tropical Comm., Natl. Rsch. Coun., 1921; Plant Pathol. Bd., Trop. Plant Rsch. Fdtn., 1922; Chmn., Fusarium Conf., Madison, Wis., 1924; Special Assignment, U.S.D.A., U. S. State Dept. and Bd. Econ. Warfare to Cooperate with Latin Am. Dev. Prog. and to Report on Utilization of Copper Sulfate in Agri., 1942-43. Mem.: Fellow, A.A.A.S.; Am. Phytopathol. Soc.; Bot. Soc. Am.; Sigma Xi; Phi Sigma; Alpha Zeta; Cosmos Club, Wash., D. C.; Explorers Club. Author: Philippine Economic Plant Diseases, 1918; Tropical Fusaria, 1927; Die Fusarien Ihre Beschreibung, 1935. Contbr. to: Philippine Jour. Sci.; Jour.

Agri. Rsch.; Phytopathol.; Mycologia; Jour. Hered.; Zeitschr. Parasitenk; Zentralble. Bakt. Abt. II; Plant Disease Reporter; N. Y. State Agri. Exptl. Sta. Tech. Bull.; Colo. Agril. Coll. Exptl. Sta. Bull. Gen. Int.: Recd. U. S. Dept. of Agri. Superior Serv. Award, 1952. Areas of Rsch.: Tropical Plant Diseases, Banana Wilt; Abaca Mosaic; Fusaria Studies; Mycology, Fusaria, Cylindrocarbons, Phytophthoras; Plant Explorations (tropical); Effect of Environment on Plant Disease.

REISIG, Gerhard Herbert Richard (Mr.), Scientific Advisor, N.A.-S.A. Marshall Space Flight Ctr., Huntsville, Ala. Home Add.: 306 White Circle S.E., Huntsville, Ala. MISSILE PHYSICS, ATMOSPHERIC PHYSICS. b. Leipzig, Germany, Mar. 3, 1910. s. Richard F. G. (dec.) and Frida (Haupt) R. Edn.: M.Sc., Inst. of Technol., Dresden, Germany, 1934. m. Gisela Haenichen, Aug. 3, 1937. c.: Mrs. Gerlinde R. Talbot; Godela. Exp.: Chf., Missile Measuring Branch, German Missile Development Ctr., Peenemuende, Germany, 1937-45; Rsch. Physicist and Chief, Aero and Geophys. Branch, Army Ballist. Missile Agency, Ft. Bliss, Tex., Redstone Arsenal, Ala., 1946-60; Dir., Rsch. Lab., ibid., 1960-62. Hon. Pos.: Chmn., Libr. Advisory Bd., Army Ballistic Missile Agency. Mem.: Am. Physical Soc.; Am. Geophysical Union; Huntsville Chamber Music Guild. Contbr. to: Zeitschrift fuer Hals-, Nasen- und Ohrenheilkunde; Jour. of Meteorol. Serv. Rec.: German Missile Forces, 1944-45. Areas of Rsch.: Missile Measuring Techniques and Missile Flight Analysis; Physics of the Upper Atmosphere; Acoustical Phenomena of Missile Power Plants.

REITAN, Phillip Jennings (Ph.D.), Assoc. Prof. and Hd., Dept. of Biol., Luther Coll., Decorah, Iowa. Home Add.: 606 Center St., Decorah, Iowa. ZOOLOGY. b. Grove City, Minn., July 14, 1929. s. Ernest Adolph and Caren Helene (Jensen) R. Edn.: B.A., Concordia Coll., Minn., 1952; M.S., Univ. of Wis., 1954; Ph.D., ibid., 1958. m. Ruth Elsie Grefthen, 1953. c.: Carol; Eric; Peter. Exp.: Instr., Wagner Coll., 1957-58; Asst. Prof., ibid., 1958-61; Assoc. Prof., ibid., 1961-62; Assoc. Prof., Luther Coll., 1962—; Head, Dept. of Biol., ibid., 1962—. Mem.: Am. Assn. Adv. Sci.; N. Y. Acad. of Sci.; Sigma Xi; Phi Sigma; Beta Beta Beta. Contbr. to: D.I.S.; Records of the Genetics Soc. of Am. Listed in: W. W. in Am. Colls. and Univs. Areas of Rsch.: Drosophila Development.

REISS, Frederick (M.D.), Assoc. Clin. Prof. of Dermatology and Syphilology, N. Y. Univ., 870 5th Ave., New York, N. Y. DERMATOLOGY; SYPHILOLOGY; MYCOLOGY AND TROPICAL DERMATOLOG. b. Edelsthal, Austria, Oct. 12, 1891. s. Sigismund and Helena (Knopfmacher) R. Edn.: M.D., Royal Hungarian Univ., 1914. m. Clara Zimmerman, Aug. 1935. Exp.: Lectr. in Dermatology and Syphilology, Dung Dai Med. Coll., Shanghai, 1923-28; Hd. of the Dept. and Clin. Prof. of Dermatology of the Natl. Med. Coll., Shanghai, 1936—; Prof. of Dermatology at St. John's Univ., Shanghai, 1929-41; Prof. of Dermatology at Women's Christian Med. Coll., Shanghai; Consulting Dermatol., Lester Chinese Hosp., St. Elizabeth Hosp., Am. Red. Cross Hosp., Shanghai Pub. Hosp., for Children, 1929-41; Intr. in Dermatology, Cornell Univ. Coll. of Medicine, 1942-46; hief of Dermatology Serv., Montefiore Hosp., 1944—; Consult. o the Surgeon Gen., U. S. Army, 1946—; Assoc. Prof. of Clin. ermatol. and Syphilol., N. Y. Univ. Post. Grad. Med. Schl., 946—; Assoc. Attending Dermatologist, Bellevue Hosp., 1946-1; Assoc. Attending Dermatologist, Univ. Hosp., 1950-51; Chf. ermatology Skin Clinic, Manhattan Eye, Ear and Throat Hosp., 950—. Hon. Pos.: Secy.-General, Internatl. Soc. of Tropical ermatology; Pres., Div. of Mycology, N. Y. Acad. Sci., 1949-50; orr: Mem. French, Austrian, Italian, Hungarian and Portuguese ermatological Soc.; Hon. Mem., Greek, Iranian and Mexican ermatological Soc.; Past Pres., Shanghai Med. Soc.; Past Vice-res., Chinese Dermatol. Assn. Mem.: Sigma Xi; Fellow, N. Y. cad. Sci.; Hon. Consult. to the United Nation's Health Center. iem. Ed. Bd. of: Dermatologica (Internatl. Jour. of Dermatol.); Mycopathol. and Mycologia Applicata; Mykosen (Jour. Exptl. and Clin. Mycol.); Excerpta Medica (Dermatology). Contbr. to: Chinese Med. Jour.; Trans. Far East Assn. of Trop. Med.; Jour. Investig. Dermatology; Archives of Dermatology. War Rec.: Consultant to the Surgeon Gen., U. S. Army, 1946—. Special Int.: Dermatology, Mycology and Biochem. Rsch. in Dermatology and Mycology.



REITERS, Ludvigs Osvalds (Mr.), Devel. Engr., Baldwin-Lima-Hamilton Corp., Electronics Div., Waltham 54, Mass. Home Add.: 32 Howard Street, Newton, Massachusetts. SEMICONDUCTING MATERIALS AND CHEMISTRY. b. Latvia, May 28, 1910. s. Emils Augusts and Alvine (Kazoks) R. Edn.: B.Sc., Univ. of Latvia, Riga, 1939. m. Austra Dikmanis, Oct. 22, 1949. c.: Janis. Exp.: Chf. Chem. Asst., Fortiphone Ltd., London, England, 1951-55; Chemist in Chg., Ardente Acoustic Lab., Ltd., London, England, 1955-57; Devel. Engineer, C.B.S. Electronics, Inc., Lowell, Mass., 1957-60; Devel. Engr., Baldwin-Lima-Hamilton Corp., Waltham, Mass., 1960—. Mem.: Am. Chem. Soc.; A.A.A.S.; Common. of Mass. Reg. Profl. Engr. Contbrng. Author: Circum Polar Arctic Flora, 1959. Co-Author: Bakelite Backed Semi-conductor Strain Gages, 1961. Areas of Rsch.: Solid State Diffusion, Crystal Growth, Surface Chem. and Semiconductor Strain Gages.

REITZ, Henry Charles (Ph.D.), Asst. Prof., Chem. Dept., Purdue Univ., Lafayette, Ind. Home Add.: 701 Sugar Hill Dr., W. Lafayette, Ind. BIOCHEMISTRY. b. Springfield, Mo., 1906. s. P. J. and Mildred (Littlemeyer) R. Edn.: B.S., Univ. of Ill., 1927; M.S., Univ. of Md., 1931; Ph.D., Univ. of Minn., 1938. m. Lois Lindgren, Aug. 18, 1937. c.: Richard; Frank; Kathleen. Exp.: Asst. Prof., Univ. of Minn., 1937-40; Asst. Chemist, Western Regional Rsch. Lab., Albany, Calif., 1941-45; Hd., Ag. Chem., Univ. of Fla., 1945-46; Asst. Prof., Purdue Univ., 1946—. Hon. Pos.: Vice Chmn., Purdue Sect., Am. Chem. Soc.; Pres., Parents' Group, W. Lafayette Boy Scouts of Am. Mem.: Am. Chem. Soc.; A.A.A.S.; Am. Assn. Univ. Prof.; Sigma Xi; Alpha Chi Sigma; Phi Lambda Upsilon. Author: Introduction to Organic and Biological Chemistry, 1949; Lecture and Recitation Manual for General Chemistry, 1961. Contbr. to: Jour. of Am. Chem. Soc.; Arch. Biochem. Biophysics; Biochem. Zeit.; Ind. Eng. Chem.; Cereal Chem. Areas of Rsch.: Sulfated Proteins and Amino Acids, Blood Anticogulants, Chem. of Wheat Proteins, Protein Derivatives as Healing Agents.

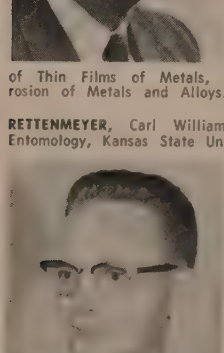
REMICK, Forrest Jerome (Mr.), Acting Dir., Nuclear Reactor Facility, The Pa. State Univ., University Park, Pa. Home Add.: 455 East Foster Ave., State College, Pa. NUCLEAR ENGINEERING. b. Lock Haven, Pa., March 16, 1931. s. Forrest J., Sr. and Ruth B. (Saiers) R. Edn.: B.S., Pa. State Univ., 1955; M.S., ibid., 1958; Dipl., Oak Ridge Schl. of Reactor Tech., 1956. m. Grace Louise Grove, June 7, 1953. c.: Beth Ann. Exp.: Student Engr., N. Y. and Pa. Co., Inc., Paper Mills, Lock Haven, Pa., Summers, 1952, 1953; Mech. Engr., Bell Telephone Rsch. Labs., Whippany, N. J., 1955-56; Rsch. Assoc., Nuclear Reactor Facility, The Pa. State Univ., 1956-59; Acting Dir., Nuclear Reactor Facility, ibid., 1959—; Acting Dir., Curtiss-Wright Nuclear Rsch. Lab., ibid., 1960—. Hon. Pos.: Mem., Reactor Safeguards Com., The Pa. State Univ., 1961—; Mem., Rsch. Com., Coll. of Engrng. and Arch., Pa. State Univ., 1959-62. Mem.: Phi Kappa Phi; Tau Beta Pi; Pi Tau Sigma; Am. Nuclear Soc.; Fellow, Atomic Energy Commission; Fellow, Natl. Sci. Fdtn. Co-author: Critical Tests of Fuel Elements for the University of Sao Paulo, Brazil Research Reactor, 1957; Research and Teaching with a University-Owned Research Reactor, 1958; Temperature Coefficient at Low Temperatures in a Heterogeneous Light Water Moderated Reactor, 1958; Basic Principles of Nuclear Science and Reactors, 1960. Contbr. to: Nucleonics; ANS Annual Meeting; Capitol Radio Engrng. Inst.; Plant Engrng. Mag.; The Lutheran. Serv. Rec.: U. S. ArmyNG, 1951-52. Areas of Rsch.: Reactor Operations; Heat Transfer and Fluid Flow; Industrial Utilization of Radioisotopes.

REMSEN, John Garretson (Mr.), Dir. of Sci. Chem. Engrng. Schls., Inter. Corresp. Schl., Scranton, Pa. Home Add.: Box 309, Waverly, Pa. CHEMIST AND CHEMICAL ENGINEER. b. Jamica, L. I., N. Y., Apr. 1, 1916. s George M. and Sara (Garretson) R. Edn.: B.Ch.E., Pratt Inst., 1938. m. Marion R. Martin, 1945. c.: John G., Jr.; James N. Exp.: Control Chem., Verona Chem. Co., Newark, N. J., 1938-40; Developt. Chem., Borden Co., Brooklyn, New York, 1940-42; Prod. Supvr., Burroughs Wellcome and Co., Tuckahoe, N. Y., 1942-46; Chf. Chem., Taylor-Reed Corp., Mamaroneck, N. Y., 1946-47; Dir. Sci. and Chem. Engr., Inter. Corresp. Schl., Scranton, Pa., 1948—. Hon. Pos.: Treas., Boy Scout Comm. and PTA. Mem.: Am. Inst. of Chem. Engineers; Am. Chemical Soc.; A.A.A.S.; Soc. of Tech. Writers and Publishers. Author: Unit Operations and Equipment, 1955; Foundry Chemistry, 1955. Co-Author: Chemistry for Engineers, 1956-61; Principles and Uses of Nuclear Energy, 1963. Areas of Rsch.: Creation of new Technical courses, revision of existing courses; specialized knowledge in technical writing, technical editing, and in corresp. schl. adminis.

RENNIE, Robert A. (Dr.), Vice-Pres., Rsch., Nationwide Ins. Companies, Columbus, Ohio. Home Add.: 2583 Wexford Rd., Columbus 21, Ohio. ECONOMICS. b. Blackstone, Mass., May 13, 1917. s. Arnold G. and Gertrude (Fitts) R. Edn.: A.B., Wesleyan Univ., 1939; M.A., Harvard Univ., 1941; Ph.D., 1947. m. Ysabel Fisk, May 24, 1943. c.: Alice; Mark; Ann; Eric. Exp.: Federal Reserve Bd., Economist 1946-48, Asst. Prof. of Polit. Economy, Johns Hopkins Univ., 1948-51; Dir. of Rsch., Nationwide Ins. Cos., Columbus, Ohio, 1951-55; Vice-Pres. Rsch., ibid., 1956—. Mem.: Am. Risk and Insur. Assn.; Phi Beta Kappa. Contbr. to: The Economy of Turkey; Inter-Am. Economic Affairs; Jour. of Insurance; All Lines Insurance. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Risk and Uncertainty.

RENZEMA, Theodore Samuel (Ph.D.), Chmn., Dept. of Phys., Clarkson Coll. of Technol., Potsdam, N. Y. Home Add.: 56 Leroy St., Potsdam, N. Y. PHYSICS. b. Grand Rapids, Mich., July 12, 1912. s. Richard J. and Dora (Dreyer) R. Edn.: A.B., Hope Coll., 1934; M.S., Rutgers Univ., 1937; Ph.D., Purdue Univ., 1948. m. Tena H. Havinga, Aug. 22, 1939. c.: Marc W.; Susan (dec.). Exp.: Instr., Purdue Univ., Lafayette, Ind., 1942-48; Assoc. Prof., Clarkson Coll. of Technol., 1948-50; Prof. and Dept. Chmn., ibid., 1950—. Hon. Pos.: Chmn., N. Y. Sta. Sect., A.P.S., 1959-61; Exec. Comm., NYSSAPS, 1955—. Mem.: Am. Phys. Soc.; Am. Assn. of Phys. Tchrs.; Am. Crystallographic Assn.; Sigma Xi; Sigma Pi Sigma. Contbr. to: Jour. of Appl. Phys. Areas of Rsch.: Electron Diffraction Investigations of Thin Films of Metals, Semi-Conductor Surfaces, and Corrosion of Metals and Alloys.

RETTENMEYER, Carl William (Ph.D.), Asst. Prof., Dept. of Entomology, Kansas State Univ., Manhattan, Kans. Home Add.: 1530 Coll. Ave., Manhattan, Kans. ECOLOGY, INSECT BEHAVIOR. b. Meriden, Conn., Feb. 10, 1931. s. Frederick W. and Gertrude E. (Mielke) R. Edn.: B.A., Swathmore Coll., 1953; Ph.D., Univ. of Kans., 1962. m. Marian E. Wolf, June 26, 1954. Exp.: Asst. Prof., Kans. State Univ., 1960—. Mem.: A.A.A.S.; Soc. Study Evolution; Ecological Soc. Am.; Entomological Soc. Am.; Soc. Systematic Zool.; Internatl. Union Study Social Insects; Sigma Xi; Phi Sigma. Contbr. to: Univ. Kans. Sci. Bull.; Insects Sociaux. Areas of Rsch.: Insect Behavior; Ants and Myrmecophiles; Army Ant Behavior; Insect Photography.



RENAU, Jacques (Ph.D.), Prin. Physicist, Cornell Aeronautical Lab., Cornell Univ., 4455 Genesee St., Buffalo 21, N. Y. INTERACTION OF ELECTROMAGNETIC WAVES WITH IONIZED GASES. b. Beirut, Lebanon, Mar. 15, 1925. s. George and Rose (Sarkissian) R. Edn.: B.S., Univ. of Chicago, 1954; M.S., ibid., 1955; Ph.D., Cornell Univ., 1960. m. Christa, Dec. 28, 1961. Exp.: From Assoc. Physicist to Prin. Physicist, Cornell Aeronautical Lab., Cornell Univ., 1959—. Mem.: Am. Geophys. Union; Sigma Xi. Contbr. to: Journal of Geophysical Research. Areas of Rsch.: Interaction of Electromagnetic Waves with Ionized Gases; The Phys. of the Ionosphere and Related Problems.

RESNIK, Frank E. (Mr.), Sr. Chemist, Philip Morris Rsch. Ctr., Richmond, Va. Home Add.: 10024 Hobby Hill Rd., Richmond, Va. SPECTROSCOPY. b. Pleasant Unity, Pa., Oct. 14, 1928. s. Vincent and Augusta (Mauser) R. Edn.: B.S., St. Vincent Coll., 1952; M.S., Univ. of Richmond, 1955. m. Elizabeth Patterson, June 21, 1952. c.: David A.; Mary A. Exp.: Chemist, Philip Morris, Inc., 1952-54; Gp. Leader, Mass Spectrometry, ibid., 1954-56; Asst. Supvr., Instrument Sect., ibid., 1956-57; Supver., Instrument Sect., ibid., 1957-59; Sr. Supvr., Research Div., ibid., 1959-60; Tech. Asst. to Rech. Mgr., ibid., 1960—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; A.A.A.S.; A.S.T.M.; A.P.I.; Soc. of Applied Spectroscopy; Coblentz Society; Optical Soc. of Am.; Knights of Columbus. Contbr. to: The Ecyc. of Spectroscopy; Analytical Chem.; Science; Tobacco Science. Serv. Rec.: U. S. Army, 1946-48, 1951. Areas of Rsch.: Tobacco Rsch.; Applied Spectroscopy; Gas Chromatography (also Paper and Column Chromatography); Flavor Development.

REUSZER, Herbert William (Ph.D.), Assoc. Microbiologist, Dept. of Agronomy, Purdue Univ., Lafayette, Ind. Home Add.: 1222 N. Salisbury St., W. Lafayette, Ind. SOIL MICROBIOLOGY. b. Jamestown, Mo., Aug. 4, 1903. s. John Rudolph and Emma Elizabeth (Kuhn) R. Edn.: B.S., Univ. of Mo., 1925; M.S., Rutgers Univ., 1930; Ph.D., ibid., 1932. m. Leora Margaret Fischer (dec.), July 7, 1935. c.: John Henry; Margaret Leora. Exp.: Rsch. Specialist, Rutgers Univ., 1929-33; Assoc., Bacteriologist, Colo. State Univ., 1933-40; Soil Scientist, U. S. Dept. of Agric. and Ala. Poly. Tech. Inst., 1940-47; Assoc. Microbiologist, Purdue Univ., 1947—. Mem.: A.A.A.S., Fellow; Biochem. Soc.; Soil Sci. Soc. of Am.; Am. Soc. of Agronomy; Soc. of Am. Microbiology; Sigma Xi; Alpha Zeta; Alpha Gamma Sigma. Contbr. to: Soil Sci; Proc. Soil Sci. Soc. of Am. Areas of Rsch.: Nature and Significance of Soil Organic Matter, Microbial. Decomposition of Cellulose, Microbial Nitrogen Fixation, Axenic Culture of Plants.

REX, Daniel Ferrell (Ph.D.), Acting Asst. Dir., Natl. Ctr. for Atmospheric Rsch., Boulder, Colo. Home Add.: 106 E. Kirke St., Chevy Chase 15, Md. METEOROLOGY. b. Wichita, Kans., Dec. 4, 1916. s. Loren Edgar and Leda Marie (Ferrell) R. Edn.: B.S., in E.E., Mass. Inst. of Tech., 1939; M.S., Univ. of Tenn., 1941; Fil. Lic., Univ. of Stockholm, Sweden, 1951; Ph.D., ibid., 1951. m. Mary Emory Hill, Oct. 13, 1942. c.: Anne Loren; Aline Beverley; Lloyd Ferrell. Exp.: Tchng. Fellow, Univ. of Tenn., Knoxville, Tenn., 1940-41; Asst. Chf. (Acting), U. S. Weather Bureau, Wash., D. C., 1959-60; Dir., Office of Forecast Devel., U. S. Weather Bureau, 1960-61; Acting Asst. Dir., Natl. Ctr. for Atmospheric Rsch., 1962—. Hon. Pos.: Coun. Mem., Am. Meteorol. Soc., 1954-57; Coun. Mem., ibid., 1961—. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; Royal Meterol. Soc.; U. S. Naval Inst.; Tau Omega; Cosmos Club, Wash., D. C.; Army and Navy Club, Wash., D. C. Author: A Study of Atmospheric Blocking Action, 1951. Contbr. to: Tellus; Am. Meteorol. Soc. Jours.; Geofysica. Serv. Rec.: U. S. Navy, 1941—. Gen. Int.: First American to Receive an Earned Ph.D. Degree from a Scandinavian University. Areas of Rsch.: Dynamic Climatology; Atmospheric Electricity; Tropical Meteorology.

REYNOLDS, Bruce Dodson, Jr. (Capt.), Assoc. in Math., La. St. Univ., New Orleans, La. Home Add.: 4501 Duplessio, New Orleans, La. MATHEMATICS. b. Fayetteville, Ark., Nov. 20, 1923. s. Bruce D., Sr. and Katharine (Grason) R. Edn.: B.A., Univ. of Va., 1943; LL.B., ibid., 1948. m. Jane R. Monroe, Dec. 2, 1944. c.: Bruce D., III; Mary G.; Katharine G.; Virginia M.; Jane B. Exp.: Instr., Hargrave Military Acad., Chatham, Va., 1958-62; Assoc. in Math., La .St. Univ., New Orleans, La., 1962—. Mem.: Natl. Coun. of Tchrs. of Math.; A.A.A.S.; Pi Delta Epsilon. Serv. Rec.: U. S. Naval Reserve, W.W. II. Gen. Int.: U. S. Jr. C. of C. Outstanding Natl. Chmn. Award; N.S.F. Fellow, Univ. of Ga. Areas of Rsch.: Math.

REYNOLDS, Herbert Hal (Ph.D.), Chf. Rsch. and Trng., Comparative Psychol. Br., Aeromedical Rsch. Lab., Holloman AFB N. Mex. Home Add.: 2845 Quay Loop, Holloman A.F.B., N. M. EXPERIMENTAL PSYCHOLOGY. b. Frankston, Tex., Mar. 20, 1930. s. Herbert Joseph and Avanell (Taylor) R. Edn.: B.S., Trinity Univ., 1952; M.S., Baylor Univ., 1958; Ph.D., ibid., 1961. m. Joy Myrla Copeland, June, 1950. c.: Kevin Hal; Kent Andrea; Rhonda Sheryl. Exp.: Instr., Tech. Adv., and Pers. O., USAF, ZI and Overseas, 1948-56; Asst. Prof., Baylor Univ., Waco, Tex., 1956-59; Rsch. Fellow, ibid., 1959-61; Chf., Rsch. and Training, Comparative Psychol. Br., Aeromedical Rsch. Lab., Holloman AFB, N. M., 1961—. Mem.: A.A.A.S.; A.A.U.P.; Aerospace Med. Assn.; Am. Psychol. Assn.; Sigma Xi; Alpha Chi.; W. W. Am. Coll. and Univ. Contbr. to: Jour. Consulting Psychol. Assn.; Jour. of Comparative and Physiol. Psychol.; Jour. Aerospace Med. Serv. Rec.: U.S.A.F., 1948—. Areas of Rsch.: General-Experimental Psychol.; Comparative and Physiological Psychol.; Psychopharmacology.

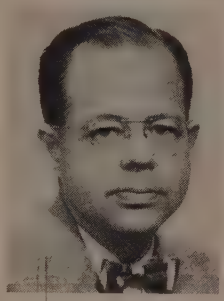
REYNOLDS, Leslie Boush, Jr. (Ph.D.), Asst. Prof. Physiol., Northwestern Univ. Med. Schl., 303 E. Chicago Ave., Chicago 11, Ill. Home Add.: P. O. Box 33, Waucondo, Ill. RESPIRATION PHYSIOLOGY, NEUROPHYSIOLOGY. b. Lakeland, Fla., Aug. 16, 1923. s. Leslie Boush, Sr. and Verna (Powell) R. Edn.: B.S., Randolph-Macon Coll., 1949; M.S., Ga. Inst. of Technol., 1951; Ph.D., Med. Coll. of S. C., 1961. m. Alma Carter, Oct. 24, 1947. c.: Alma Mary; Margaret Mary. Exp.: Rsch. Lab. Supvr., E. I. duPont de Nemours, Kinston, N. C., 1951-58; Asst. in Physiol., Med. Coll. of S. C., 1959-61; Asst. Prof., Northwestern Univ. Med. Schl., 1961—. Mem.: Am. Chemical Soc.; A.A.A.S.; Kappa Alpha; Phi Lambda Upsilon; Chi Beta Phi; Toastmasters Internatl.; Boy Scouts of Am. Contbr. to: Am. Jour. of Physiol.; Jour. of Applied Physiol.; Jour. of the Am. Chemical Soc. Serv. Rec.: U.S.N.R., 1941-45. Areas of Rsch.: Respiratory Reflexes, Mechanical Parameters of Mammalian Lungs.

RHEINFRANK, John Jacob (Mr.), Rsch. Adv., Battelle Memorial Inst., 505 King Ave., Columbus, Ohio. Home Add.: 96 Meadowlark Lane, Columbus 14, Ohio. PHYSICS. b. Piketon, Ohio, Feb. 17, 1919. s. John Jacob and Mary (Leist) R. Edn.: B.S., Ohio St. Univ., 1941; M.S., Ohio Univ., 1943. m. Mary Doll, Apr. 2, 1943. c.: John Jacob, III; James Philip; Kathy Doll; Lisa Ann. Exp.: Physicist, Eastman Kodak Co., Rochester, N. Y., 1943-46; Instr., Univ. of Rochester, 1946-47; Rsch. Engr., Applied Physics Div., Battelle Mem. Inst., Columbus, Ohio, 1947-54; Project Ldr., ibid., 1954-59; Asst. Chief, ibid., 1959-62; Rsch. Adv., Engrng. Physics Dept., ibid., 1962—. Mem.: Am. Assn. Adv. Sci.; Tech. Assn. of the Graphic Arts; Phi Delta Kappa; Phi Eta Sigma; PTA. Contbr. to: TAGA; Penrose Ann.; Internatl. Electronics; Battelle Tech. Rev. Gen. Int.: Conducted and supervised research on electrostatic photography (xerography), 1947—; Holder of patents in field of xerography. Areas of Rsch.: Electrostatic Photography; Graphic Arts; Research Administration.

RHOAD, Albert Oliver (dec.), Rsch. Consultant and Geneticist, King Ranch, Kingsville, Tex. Home Add.: King Ranch, Kingsville, Tex. ANIMAL HUSBANDRY. b. Mt. Airy, Phila., Pa., Sept. 26, 1902. s. Robert Daniel and Carrie Virginia (Nickum) R. Edn.: B.S., Penn. State Univ., 1926; M.S., Cornell Univ., 1928. m. Hendrika W. Van Egmond, Nov. 1950. c.: Richard H.; Albert Dirk. Exp.: Prof. and Hd. of Dept., Escola Superior de Agric., Vicosa, Minas Gerais, Brazil, 1929-36; Supt. in Charge, Iberia Livestock Exp. Farm, USDA, Jeanerette, La., 1936-45; Prof. and Hd. of Dept., Inter American Inst. of Agric. Sci., Turrialba, Costa Rica, 1945-51; Geneticist, King Ranch, Kingsville, Tex., 1951-62. Hon. Pos.: Chmn., Natl. Acad. of Sci., Natl. Rsch. Coun.; Natl. Conf. Beef for Tomorrow. Mem.: Am. Soc. Animal Sci.; Am. Genetics Soc.; Agri. Rsch. Inst.; A.A.A.S.; Sigma Xi; Gamma Alpha; Delta Upsilon. Author: Breeding Beef Cattle for Unfavorable Environments, 1955. Contbr. to: Jour. of Am. Scl.; Jour. Heredity; Empire Jour. Agri. Sci. Areas of Rsch.: Animal Husbandry of Tropical Areas. Animal Breeding, Physiology Heat Tolerance in Cattle.

REZLER, Julius (Ph.D.), Prof. of Industrial Relations, Grad. Schl., 820 N. Michigan Ave., Loyola Univ., Chicago 11, Ill. LABOR RELATIONS, COMPARATIVE ECONOMIC SYSTEMS. b. Miskolc, Hungary, May 31, 1911. s. R. Gyula and Kozma (Ilona) R. Edn.: M.A., Univ. of Budapest, 1935; Ph.D., Univ. of Szeged, Hungary, 1938; Dr. of Polit. Sci., Univ. of Pecs, Hungary, 1941. m. Graig, Agnes, 1954. Exp.: Dir. Hungarian Inst. of Labor Sci., 1943-45; Econ. Policy Adviser to the Minister of Reconstruction, Hungary, 1945-48; Guest Prof., Univ. of Texas, Austin, Tex., 1952-53; Assoc. Prof., St. Francis Coll., 1954-57; Fulbright Prof. in India, 1961-62. Mem.: Am. Econ. Assn.; IRRA. Author: Development of the Hungarian Industrial Workers, 1938; Introduction to Soc., 1948. Contbr. to: Elements of Am. Business Phil., Iowa Bus. Digest; Impact of Automation on Stability of Employment, Current Econ. Comment; Labor Experts on Pending Labor Legislation; Rsch. Series, Loyola Univ.; Current Issues of Labor Econ. in the U. S. A., Int. Soc. Sci. Jour.; Union Growth Reconsidered, Kossuth Found. Areas of Rsch.: Internatl. Labor Rel.; Factors of Union Growth; Philosophy of American Labor Movement.

RHODES, William Hudson (Mr.), Principal Staff Scientist, Aircraft Armaments, Inc., Cockeysville, Md. Home Add.: 6902 Marlborough Rd., Baltimore 12, Md. DYNAMIC GAMING USING REAL-TIME SIMULATION IN OPERATIONS RESEARCH STUDIES AND TRAINING SYSTEMS. b. Adams Co., Pa., May 16, 1918. s. Edgar N., Sr. and Sarah (Mellor) R. Edn.: A.B., Gettysburg Coll., 1939. m. Helen Annan, Nov. 26, 1945. c.: Elizabeth; Edgar; William, Jr. Exp.: Jr. Test Engr., Pa. Water and Power Co., Holtwood, Pa., 1939-41; Group Engr. Elect. Analysis, Glenn L. Martin Co., Baltimore, Md., 1947-51; Principal Staff Scientist, Aircraft Armaments, Inc., Cockeysville, Md., 1951—. Mem.: Am. Geophysical Union; Inst. of Radio Engrs.; Am. Rocket Soc.; Registered Professional Engr.; Alpha Tau Omega. Serv. Rec.: U. S. Army, 1941-47. Areas of Rsch.: Use of Dynamic Gaming in Development of Management Tactics through Real-time Simulation.



RICE, Frederica Young (Ph.D.), Clin. Psychologist, George Jr. Republic, Freeville, N. Y. Home Add.: 76 Ringwood Rd., Ithaca, N. Y. PSYCHOLOGY. b. Wash., D. C., Feb. 14, 1925. d. Samuel P. and Geneva A. (Sharper) Young. Edn.: B.S., Howard Univ., 1947; M.S., ibid., 1948; Ph.D., Cornell Univ., 1956. Exp.: Clerk, Natl. Roser of Scientific and Specialized Personnel, Washington, D. C., 1942-46; Intern, St. Hosp., Middletown, Conn., 1948-49; Instr., Howard Univ., 1951-53; Geo. Junior Republic, Freeville, N. Y., 1955-60; Instr., Cortland Tchrs. Coll., N. Y., 1956-57; Psychol., Elmira Psychiatric Clinic, 1960—. Hon. Pos.: Bd. Mem. of Children and Family Serv., Ithaca, N. Y. Mem.: A.A.A.S.; Am. Psychol. Assn.; N. Y. State Psychol. Assn.; Eastern Psychol. Assn.; Internatl. Coun. of Psychologists; Psi Chi; Phi Lambda Theta. Listed in: Am. Men of Sci. Areas of Rsch.: Social and Emotional Problems in Children and Adolescents.

RICE, John Sidney (M.D.), Chief, Dermatology Serv., Womack Army Hosp., Fort Bragg, N. C. Home Add.: 20 Hunt St., Fort Bragg, N. C. DERMATOLOGY. b. Dover, Ohio, June 6, 1914. s. John A. and Mae (Belknap) R. Edn.: B.A., Ohio St. Univ., 1936; M.A., ibid., 1936; M.D., ibid., 1940. m. Sara Hatcher, May 23, 1936. c.: Sally Anne; John Sidney, Jr.; James Hatcher; Philip Walter. Exp.: Internship, U. S. Marine Hosp., Baltimore, Md., 1940-41; U. S. Army, 1941—; Resident in Dermatol. and Syphilology, Walter Reed Gen. Hosp., Wash., D. C., 1947-50; Chief of Dermatol. Serv., Madigan Gen. Hosp., Ft. Lewis, Wash., 1950-53; Div. Surgeon, 7th Infantry Div., Korea, 1953-54; Chief of Dermatol. Serv., Ryukyus Army Hosp., Okinawa, 1954-58; Chief of Dermatol. Serv., Womack Army Hosp., Fort Bragg, N. C., 1958—. Hon. Pos.: Consultant in Dermatol., Okinawa Cent. Hosp., Koza City, Okinawa, to U. S. Civil Admin., Ryukyus Islands, and to MAAG, Taiwan, 1954-58; Vis. Instr. in Dermatol., Duke Univ., 1958—; Diplomate, Am. Bd. of Dermatol. and Syphilol., 1950. Mem.: Am. Med. Assn.; Fellow, Am. Acad. of Dermatol., Inc.; Am. Coll. of Physicians; A.A.A.S.; Char. Mem., Internat. Soc. of Trop. Dermatol.; S. E. Dermatol. Assn.; Car. Dermatol. Assn.; Assn. of Mil. Dermatologists; Phi Beta Kappa; Alpha Omega Alpha; Phi Chi. Contbr. to: Jour. Am. Med. Assn.; A.M.A. Archives of Dermatol. Serv. Rec.; U. S. Army, 1st Lt.-Col., 1941—. Gen. Int.: Bronze Star Medal; Am. Defense Medal; Am. Campaign Medal; EAME Medal with 5 bronze battle stars; W. W. II Victory Medal; Army of

Occupation Medal; Korean Serv. Medal; Nat. Defense Serv. Medal; U. N. Serv. Medal; Korean Presidential Unit Citation; Meritorious Unit Serv. Award. Areas of Rsch.: Dermatology; Syphilology.

RICE, Murray John (Ph.D.), Chmn. Dept. of Physical Sci., N. Y. State Coll. of Ceramics, Alfred, N. Y. Home Add.: 133 N. Main St., Alfred, N. Y. CERAMIC CHEMISTRY. b. Flint, Mich., July 11, 1898. s. Frank and Rose (Lowell) R. Edn.: B.S., Kalamazoo Coll., 1919; A.M., Clark Univ., 1920; Ph.D., State Univ. of Iowa, 1926. m. Doris Powell, June 30, 1921. c.: Sarah Louise; Murray John, Jr. Exp.: Prof. Chem., Georgetown Coll., 1921-24; Chmn., Dept. of Physical Scis., N. Y. State Coll. of Ceramics, 1927—. Mem.: Am. Ceramic Soc.; Am. Chem. Soc.; A.A.U.P.; Gamma Alpha. Co-Author: Popoffs Quantitative Analysis, 1935. War Rec.: U. S. Army, 1919. Areas of Rsch.: Analysis of Silicates.

RICE, Stuart Arthur (Ph.D.), Pres., Surveys and Rsch. Corp., 1010 Vermont Ave., Washington 5, D. C. Home Add.: 307 Little Falls St., Falls Church, Va.

SOCIOLOGY AND STATISTICS. b. Wadena, Minn., Nov. 21, 1889. s. Edward Myron and Ida Emmeline (Hicks) R. Edn.: A.B., Univ. of Wash., 1912; A.M., ibid., 1915; Ph.D., Columbia Univ., 1924. m. Sarah Alice Mayfield, May 21, 1934. c.: Stuart Arthur, Jr. Exp.: Instr. and Asst. Prof. of Sociol., Dartmouth Coll., 1923-26; Prof. of Sociol., later Sociol. and Statistics, Univ. of Pa., 1926-40; Asst. Dir., U. S. Bureau of the Census, 1933-35; Chmn., U.S. Cent. Stat. Bd., 1935-40; Asst. Dir. for Stat. Standards, Bureau of Budget, 1940-55; Pres., Surveys and Rsch. Corp., Wash., D. C., 1955—. Hon. Pos.: Pres., Am. Stat. Assn., 1933; Pres., Internatl. Stat. Inst., 1947-53; Hon. Pres., ibid., 1953—; Chmn., Organizing Com., Inter. Am. Stat. Inst., 1st Vice Pres., ibid., circa 1938-42; First Chmn., UN Stat. Com. and US Repr. until 1955; Mem., Contributions Com. of U.N. Gen. Assembly, 1952-55; Ch. Sec., K, A.A.A.S., 1937, 1957. Mem.: A.A.A.S., Am. Stat. Assn.; Am. Sociol. Soc.; Internatl. Pop. Union; Internatl. Stat. Inst.; Inter. Am. Stat. Inst.; Phi Beta Kappa; Cosmos Club. Author: Farmers and Workers in American Politics, 1924; Quantitative Methods in Politics, circa, 1928. Edtor: Methods in Social Science—a Case Book, 1932. Gen. Int.: Aided in the Development of Internatl. Statistics and Natl. Statistical Coordination in the U. S., Japan and currently Korea. Areas of Rsch.: Public Opinion; Statistical Organization and Administration.

RICH, Harold M. (Ph.D.), Dir. of Rsch., Kitchens of Sara Lee, 5353 Elston, Chicago, Ill. Home Add.: 6930 South Shore Dr., Chicago, Ill. FOOD TECHNOLOGY. b. Pontiac, Ill., Dec. 21, 1924. s. John and Rachel (Ruth) R. Edn.: B.S., Mass. Inst. of Tech., 1951; Ph.D., ibid., 1957. m. Cornelia Bell, 1952. c.: Cornelia Rachel. Exp.: Staff, Arthur D. Little, Inc., Cambridge, Mass., 1957-60; Dir. of Rsch., Design Tech., Chicago, Ill., 1960-61; Dir. Rsch., Kitchens of Sara Lee, Chicago, Ill., 1961—. Hon. Pos.: Edntl. Comm., Inst. of Food Tech. Mem.: Soc. Am. Bact.; Inst. of Food Tech.; Am. Soc. Cereal Chem.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon; Phi Tau Sigma; Masons; Kiwanis. Contbr. to: Food Industries; Food Tech. Serv. Rec.: AUS, 1952-54. Areas of Rsch.: Radiation Technology; Freezing and Cooking Technology; Microbiological Analysis.

RICH, Stanley R., Pres., Teknika, Inc., Hartford, Conn. Home Add.: 363 N. Quaker Lane, W. Hartford, Conn. APPLIED PHYSICS; ULTRASONIC ACOUSTICS, MEDICAL PHYSICS, ELECTRONICS. b. New York, N. Y., Oct. 21, 1917. s. Morris and Minnie (Lazareff) R. Edn.: B.E.E., Schl. of Tech., City Coll. N. Y., 1938. m. Shirley Cohen, 1939. c.: Julie; Eugenia; Laurie. Exp.: Rsch. Assoc., Harvard Underwater Sound Lab., Mass., 1943-45; Rsch. Dept. Hd., Ultrasonics, Raytheon Mfg. Co., Mass., 1945-50; Pres., Ultra-Viscoson Corp., Hartford, Conn., 1950-54; Pres., Gen. Ultrasinics, 1954-59; Pres. and Tech. Dir., Am. Thermoelectrics, Inc., 1959-61; Pres., Teknika, Inc., Hartford, Conn., 1961—. Hon. Pos.: Mem., Natl. Rsch. Coun. Comm., Intravenous Feeding; Chmn., Ultrasonics Mfg. Assn. Comm. Ultrasonic Cleaning. Mem.: Am. Assn. Adv. Sci.; Am. Acoustical Soc.; Am. Physical Soc.; Sigma Xi. Contbr. to: Proc., Inst. Radio Engrs.; Jour. of Applied Physics; Yale Jour. of Biol. and Med.; Electronics; Jour. of Rsch. and Engrng. Gen. Int.: Has over 30 issued U. S. Patents in Ultrasonics, Electronics, Non-Destructive Testing Electromech. Devices. Areas of Rsch.: Applied Ultrasonics, Medical Physics, Acoustics, Electronics, Electromechanical Devices.

RICHARDS, Clyde Rich. (Ph.D.), Principal Animal Nutritionist, Cooperative St. Expt. Station Serv., U.S.D.A., Washington, D. C. DAIRY HUSBANDRY. b. Paris, Idaho, June 9, 1921. s. Clyde Randall and Myrtle (Rich) R. Edn.: B.S., Utah State Agril. Coll., 1943; M.S., Cornell Univ., 1949; Ph.D., ibid., 1950. m. Carrol Maughan, July 18, 1946. c.: Russell Clyde; Keith Maughan; Debra Elaine. Exp.: Grad. Asst., Animal Husb. Dept., Cornell Univ., 1946-50; Fulbright Lectr. in Animal Breeding, Superior Schl. of Agri., Athens, Greece, 1950-51; Asst. Prof. of Animal and Poultry Sci., Univ. of Del., Newark, Del., 1951-57; Assoc. Prof., ibid., 1957-61; Prin. Animal Nutritionalist,, CSESS, U.S.D.A., Wash. 25, D. C., 1961. Mem.: Am. Dairy Sci. Assn.; Am. Soc. Animal Prod.; Am. Inst. of Nutrition; Sigma Xi; Alpha Zeta; Blue Key. Contbr. to: Jour. Dairy Sci. and Jour. Animal Sci. War Rec.: U. S. Navy, 1943-46. Special Int.: Ketosis, Roughage Digestibility and Pasture Evaluation Techniques.

RICHARDS, Max DeVoe (Ph.D.), Prof. and Hd., Div. of Mgt., The Pa. Sta. Univ., Univ. Pk., Pa. Home Add.: 625 E. Waring Ave., Sta. Coll., Pa. MANAGEMENT, ADMINISTRATION, ORGANIZATION AND DECISION-MAKING. b. Nova, Ohio, May 23, 1923. s. Paul L. and Dorothy Charlotte (Daniels) R. Edn.: M.B.A., Harvard Univ., 1947; Ph.D., Univ. of Ill., 1955. m. Winona Marie Peterson, 1950. c.: Cassandra; Elizabeth. Exp.: Indust. Engr., U. S. Steel Corp., McKeesport, Pa., 1948-49; Instr., Univ. of Ill., Urbana, Ill., 1949-54; Dept. Hd., Univ. of Wichita, Wichita, Kans., 1954-56; Div. Hd., Penn. Sta. Univ., 1956—. Hon. Pos.: Order of Artus, Sigma, Iota Epsilon, Chmn. Mem., Acad. of Mgt. Mem.: Inst. of Mgt. Scis.; Acad. of Mgt.; Sigma Nu; Elks. Author: Readings in Management, 1956. Key; Pa. Bus. Survey. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: Decision Simulations and Experimentation.

RICHARDS, Victor (M.D.), Clin. Prof. of Surg., Stanford Univ., Stanford, Calif.; Chf. of Surg., Presby. Med. Ctr., and Chf. of Surg., Children's Hosp., San Francisco, Calif. Home Add.: 2714 Broadway, San Francisco 15, Calif. SURGERY. b. Fort Worth, Texas, June 4, 1918. s. Julius K. and Minnie (Cambert) R. Edn.: A.B., Stanford Univ., 1935; M.D., ibid., 1939. m. Jennette O'Keefe, June 7, 1941. c.: Lane; Victoria; Victor; Peter. Exp.: Resident in Surgery, Stanford, Calif., 1942-43; Instr. in Surgery, Stanford Univ., 1943-48; Asst. Prof. of Surgery, ibid., 1948-52; Assoc. Prof. of Surg., ibid., 1952-55; Prof. and Chmn., Dept. of Surg., ibid., 1955-59; Clin. Prof. of Surg., ibid., 1959—. Hon. Pos.: Special Consultant, U.S.P.H.S., Comm. on Hospitals; Publication Comm., Soc. of Univ. Surgeons, 1958-60; Trauma and Cancer Comm., Am. Coll. of Surgeons; Editorial Bds. of Calif. Med., Am. Jour. Surg., Gen. Practitioner. Mem.: Alpha Omega Alpha; Sigma Xi; Assoc. of Univ. Profs.; Soc. Biol. and Med.; Calif. Med.; Am. Med.; Pac. Coast Surgical; Soc. of Univ. Surgeons; Am. Surgical; Am. Thoracic; Internal. Surgical Soc. Author: Surgery for General Practice, 1955. Co-Author: Abdominal Pain, 1958. Contbr. to: Annals of Surg.; Am. Jour. of Surg.; Surg.; Calif. Med.; Proc. Soc. Exptl. Biol. & Med.; Cancer Rsch. Serv. Rec.: Consultant, U.S.P.H.S. Hosp., San Francisco; Consultant, Letterman Hosp., San Francisco, Calif.; Consultant, Travis Air Force Base. Areas of Rsch.: Cancer and Tissue Transplantation; Cardio-Vascular Surgery; Cold Temperature Biology.

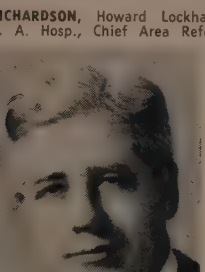
RICHARDS, Richard K(ohn), (M.D.), Director of Experimental Therapy, Abbott Labs., North Chicago, Ill.; and Prof. of Pharmacol., Northwestern Univ., Chicago, Ill. Home Add.: 1534 Alexander Ct., Waukegan, Ill. PHARMACOLOGY, CLINICAL THERAPEUTICS, TOXICOLOGY. b. Lodz (now Poland), June 16, 1904, s. s. A. S. S. and Johanna (Nachmann) R. Edn.: Cert. of Acad. Maturity, Hamburg, 1923; M.D., Hamburg, 1931. m. Erika Nord, 1946. c.: Evelyn Jean. Exp.: Asst. in Pharmacol., Univ. of Hamburg, 1931-33; Assoc. in Med., Hamburg, 1934-35; Fellow in Gastroenterol., Chicago, Ill., 1935-36; Clin. Asst., Cook Co. Hosp., Clinics, Chicago, Ill., 1941-44; Prof. Pharmacol., Northwestern Univ., 1959—; Consult., St. Francis Hosp., Evanston, Ill.,

1959—; Pharmacologist, Abbott Labs., No. Chicago, Ill., 1936—; Dir. Expmtl. Therapy, ibid., 1957—. Hon. Pos.: Past Pres., Soc. Exptml. Biol. & Med., Ill. Sect.; Dir., Ill. Soc. for Med. Rsch. Mem.: Am. Coll. of Phys.; Am. Pharm. Soc.; Am. Physiol. Soc.; Cent. Soc. for Clin. Rsch.; French Therap. Soc.; Swiss Soc. of Physiol.; Chaos Club. Contbrng. Author: Therapeutics in Internatl Med., 1951; 1953. Contbr. to: Jour. Pharmacol.; J. Am. M. A.; Jour. Lab. & Clin. Med.; Anesthesiology; Arch. Inter. de Pharmacol.; Anes. and Analgesia; Proc. Soc. Exptl. Biol. and Medicine. Gen. Int.: Discovery of Anticonvulsants, Contributions to Mechanism of Drug Action. Areas of Rsch.: Pharmacology, Hypnotics and Anesthetics, Central Nervous System, Clinical and Experimental Toxicology, Internal Medicine.

RICHARDSON, Albert Edward, (Ph.D.), Assoc. Prof., Chem., N. Mex. State Univ., University Park, N. Mex. Home Add.: 1050 Calle Del Encanto, Las Cruces, N. Mex. PHYSICAL CHEMISTRY, RADIOCHEMISTRY. b. Lovelock, Nevada, Feb. 4, 1929. s. James Harold and Mary Lorraine (Ostberg) R. Edn.: B.S., Univ. of Nev., 1950; Ph.D., Ia. State Univ., 1956. m. Shirley Arlene Dial, June, 1959. c.: Corinne; Elizabeth; David; Margaret; Anne. Exp.: Rsch. Asst., Ia. State Univ., Ames, Ia., 1950-55; Asst. Prof., N. Mex. State Univ., University Park, N. Mex., 1955-60; Assoc Prof., ibid., 1960—. Hon. Pos. Chmn., Southern N. Mex. Sec. of Am. Chem. Soc., 1962. Mem.: Am. Chem. Soc.; A.A.U.P.; A.A.A.S.; Sigma Xi; N. Mex. Acad. of Sci.; Phi Kappa Phi; Phi Lambda Upsilon; Alpha Chi Sigma; Sigma Pi Sigma; Theta Chi; Blue Key. Contbr. to: Jour. of Chem. Physics; Nucleonics. Areas of Rsch.: Chemical Effects of Nuclear Transformations, Application of Radioactivity to Chemistry.

RICHARDSON, Harry Duchesne (Mr.), Prof. and Dir., Nuclear Sci. Ctr., La. St. Univ., Baton Rouge, La. Home Add.: 2355 Heinert, Baton Rouge, La. MECHANICAL ENGINEERING AND NUCLEAR SCIENCE. b. Itta Bena, Miss., Sept. 23, 1919. s. Harry Martin and Bertha Lillian (Duchesne) R. Edn.: B.S., La. Poly. Inst., 1941; M.S., Univ. of Ala., 1950. m. Maxine Sawyer, May 23, 1948. c.: Raneta Joy; Harry D., Jr. Exp.: Mechanical Engr., E. I. duPont de Nemours and Co., Inc., Wilmington, Dela., 1941-56; Assoc. Prof., La. Poly. Inst., 1946-53; Assoc. Prof., Univ. of Ala., 1955-56; Pres., Gamma Industries, Inc., Baton Rouge, La., 1953—; Prof., La. St. Univ., 1957—. Hon. Pos.: Pres., Monroe Sect., La. Engr. Soc. Mem.: A.S.M.E.; S.N.T.; A.S.E.E.; A.N.S.; Sigma Xi; Tau Beta Pi; Pi Tau Sigma; Lions Club Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Industrial Applications of Atomic Energy.

RICHARDSON, Howard Lockhart (M.D.), Chf. of Lab., Cochran V. A. Hosp., Chief Area Reference Labs., 915 N. Grand Blvd., St. Louis 6, Mo. Home Add.: 8133 Gannon St., University City, St. Louis 30, Mo. PATHOLOGY, CLINICAL AND ANATOMICAL; CYTOLOGY-CLINICAL DIAGNOSTIC AND EXPERIMENTAL CARCINOGENESIS. b. Amity, Ore., May 9, 1915. s. Mr. and Mrs. Theodore Lockhart, adopted son of Charles A. and Mabel E. Richardson. Edn.: B.S., Coll. of Puget Sound, 1936; M.A., Univ. of Ore. Schl. of Med., 1940; M.D., ibid., 1940. m. Mary Elizabeth Dolch, 1955. c.: Thomas Lockhart. Exp.: Student Rsch. Asst., Chem., Coll. of Puget Sound, 1934-36; Rsch. Asst., Biochem., Univ. of Ore. Med. Schl., 1936-40; Path. Capt., U. S. Army Inst., Field and Hosp. Trngs. Programs, 1941-45; Dir. Crim. Lab., Ore. State Police; Univ. of Ore. Med. Schl., 1946-; Res. Trng., Inst. in Dept. of Path., ibid., 1946-47; Asst. Prof. Path., ibid., 1948-52; Assoc. Prof. of Path., Sloan-Kettering Inv. of Cornell Med. Coll., N. Y., 1952-54; Asst. Clin. Prof. of Pharmacol., Univ., of Wash. Med. Schl., 1955-59; Assoc. Consult. Path., Physicians and Surgeons Hosp., Portland, Ore., 1951-52; Anatomical and Clin. Path., Hollywood X-ray and Med. Lab., Private Practice, Portland, Ore., 1951-52; Dir. of Cytology, Mem. Inter, Strange Lab., N. Y., 1952-54; Asst. Attending Path., Bd. Hosp., Mem. Hosp., Ewing Hosp., N. Y., 1952-54; Path. Clinical and Anatomical; Private Practice, Yakima Mem. Hosp. and St. Elizabeth's Hosp., Yakima Med. Center, Wash., 1954-55; Pathologist, Diagnostic Surgical, Anatomical, Clin. Rsch., Private Practice, Seattle Gen. Hosp., Ballard Gen. Hosp., Ballard Gen. Hosp., Seattle, Wash., 1955-60; Chf. of Lab., Cochran Veterans Administration Hosp., St. Louis 6, Mo. Mem.: Am. Assn. for Cancer Rsch.; A.A.A.S.; Am. Soc. Clin. Path.; Am. Soc. Path. and Bacteriol.; Am. Bd. of Legal Med.; Am. Med. Assn.; Assn. of Am. Med. Colls.; N. Y. Acad. Sci.; Internatl. Acad. Path.; Sigma Xi; Portland Acad. of Med. Contbr. to: Wash. State Med. Assoc.; Proc. Am. Assn. Cancer Rsch.; Symposium; Acta Cytologica; Am. Jour. Clin. Path.; Proc. Am. Assn. for Cancer Rsch.; Cancer; Proc. Fifth Ann. Meeting of Inter-Cytology Council; Cancer Rsch. Proc.; Jour. Natl. Cancer Inst.; and many others. Serv. Rec.: Maj., U. S. Army, U. S. Med. Corps, W. W. II. Gen. Int.: Licensed to practice medicine in Ore., Wash., Calif., N. Y.; Certified by Am. Bd. of Path., Path., Anatomy, 1948, Clinical Pathology, 1949. Areas of Rsch.: Cytology, Carcinogenesis.

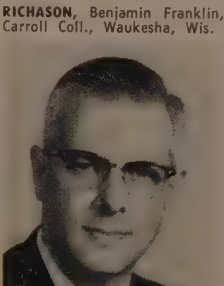


RICHARDSON, Lehman G. (Mr.), Chem. Instr., Odessa Coll., Odessa, Tex. Home Add.: 2201 Santa Monica, Odessa, Tex. CHEMISTRY-COMPLEX IONS. b. Hamlin, Tex., Feb. 28, 1927. s. David W. and Maye (Branscum) R. Edn.: B.A., Hardin Simmons Univ., 1949; M.A., Univ. of Tex., 1959. m. Mary Arnett, June, 1950. c.: Paul D.; Cellia Jo. Exp.: Jr. Engr., Tex. Electric Serv. Co., Morgan Creek Power Pl., Colo., Tex., 1951-53; Chem. Tchr., Snyder H. S., Snyder, Tex., 1953-58; Chem. Instr., Odessa Coll., Odessa, Tex., 1959—. Hon. Pos.: Chmn., Scis. Snyder Pub. Schls., Tex.; Chmn., Chem., Odessa Coll., Odessa, Tex. Mem.: Am. Asssn. of Sci.; Am. Chem. Soc.; Phi Beta Kappa. Serv. Rec.: A.U.S., 1944-46. Areas of Rsch.: Complex ions; Soil Chemistry.

RICHARDSON, Martha (Ph.D.), Nutrition Spec., Agric. Rsch. Serv., Beltsville, Md. Home Add.: 7302 Yale Ave., College Park, Md. ENERGY EXPENDITURE OF WOMEN (NUTRITION). b. Noble, La., Apr. 22, 1917. d. Alexander Monroe and Olive (Barlow) R. Edn.: A.B., Univ. of Mo., 1938; M.S., Kans. St. Univ., 1939; Ph.D., Univ. of Mo., 1953. Exp.: Dietitian, Newton Mem. Hosp., Winfield, Kans., 1940-42; Diet., Molly Stark San., Canton, Ohio, 1942-47; Instr., Home Econ., Univ. of Mo., 1947-53; Hd. of Foods and Nutr., Univ. of Utah, 1953-55; Nutr. Spec., Agric. Rsch. Serv., Beltsville, Md., 1955—. Mem.: Am. Diet. Assn.; Am. Home Econ. Assn.; Am. Med. Writers Assn.; A.A.A.S.; Sigma Xi; Gamma Sigma Delta; Phi Upsilon Omicron; Sigma Delta Epsilon; Am. Assn. Univ. Women. Contbr. to: Jour. Am. Med. Women's Assn.; Jour. Home Econs.; U.S.D.A. Pub. Areas of Rsch.: Energy Expenditure of Women in the Performance of Household Tasks.

RICHARDSON, Marvis Anne (Ph.D.), Assoc. Prof., Rsch., Mich. State Univ., E. Lansing, Mich. Home Add.: Rt. #1, Box 469, E. Lansing, Mich. MICROBIOLOGY. b. Me., Sept. 18, 1910. d. Herman Jordan and Viola H. (Bell) R. Edn.: B.S., Simmons Coll., 1932; Ph.D., Mich. St. Univ., 1950. Exp.: Biochem., N. Y. Skin and Cancer Rsch. Lab., 1933-35; Biochem. with Dr. H. O. Mosenthal, N. Y., N. Y., 1935-37; Biochem., Harper Hosp., Detroit, Mich., 1937-41; Bacteriologist, Prod. of biologics, Mich. Dept. Health Lab., 1941-46; Assoc. Prof., Rsch., Mich. St. Univ., 1950—. Mem.: Soc. Am. Microbiologist; Tissue Culture Assoc., A.A.A.S., Sigma Xi; Sigma Delta Epsilon. Contbr. to: Jour. of Bacteriol.; Arch. Biochem. and Biophysics; Mich. Exptl. Sta. Bull. Areas of Rsch.: Brucella; Tissue Culture; Biological Products.

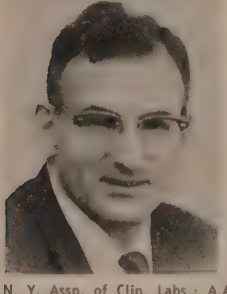
RICHASON, Benjamin Franklin, Jr. (Ph.D.), Prof. of Geography, Carroll Coll., Waukesha, Wis. Home Add.: 1011 E. Lafin Ave., Waukesha, Wis. PHYSICAL GEOGRAPHY. b. Logansport, Ind., July 24, 1922. s. Benjamin F., Sr. and Mary Ruth (Tremps) R. Edn.: A.B., Ind. Univ., 1948; M.A., ibid., 1949; Ph.D., Univ. of Neb., 1960. m. Beverly Elder, July 21, 1946. c.: Benjamin F., III. Exp.: Tchng. Asst., Ind. Univ. Extension, Indianapolis, Ind., Summer, 1949; Instr., Morton Jr. Coll., 1949-51; Asst. Prof. to Prof., Carroll Coll., 1952—; Visiting Prof., Univ. of Nebr., Summer, 1961. Hon. Pos.: Chmn.-Elect, Wis. Coun. of Conservation Edn.; Student-Div. Advisor, Natl. Coun. for Geographic Edn.; Chmn.-Technical Advisory Comm. on Natural Resources and Environmental Design. Mem.: Am. Assn. of Geographers; Natl. Coun. for Geographic Edn.; Am. Geographical Soc.; Can. Geographical Soc.; Am. Soc. of Photogrammetry; Am. Congress on Surveying and Mapping; Am. Assn. of Univ. Prof.; Wis. Acad. of Scis.; Arts and Letters; Ind. Acad. of Sci.; Sigma Xi; Beta Theta Pi; Gamma Theta Upsilon; Rotary Club. Contbr. to: Jour. of Geography; Wis. Conservation Bull.; Proc. of Ind. Acad. of Sci. Serv. Rec.: U. S. Air Force, 1943-46. Areas of Rsch.: Wetlands of Wis. Drift; Land Utilization of Flood Plains.



RICHARDSON, Moses (Ph.D.), Prof. of Math., Brooklyn Coll., Brooklyn 10, N. Y. Home Add.: 1337 E. 26th St., Brooklyn 10, N. Y. MATHEMATICS. b. Brooklyn, N. Y., Sept. 23, 1911. s. Isaac M. and Rebecca (Smolen) R. Edn.: B.A., Coll. of City of N. Y., 1930; M.A., Columbia Univ., 1931; Ph.D., ibid., 1936. m. Eda Simon, Jan. 14, 1933. c.: Naomi R.; Leonard F. Exp.: Tchr. of Math., Various H. S., New York, N. Y., 1932-36; Fellow, Inst. for Advanced Study, Princeton, N. J., 1936-38; Tutor, Brooklyn Coll., 1931-36, 1938-39; Instr., ibid., 1940-45; Asst. Prof., ibid., 1946-51; Assoc. Prof., ibid., 1952-55; Prof., ibid., 1955—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; S.I.A.M.; A.A.U.P.; A.A.A.S.; Sigma Xi; Pi Mu Epsilon. Author: Fundamentals of Mathematics, 1941, 1958; College Algebra, 1947, 1958; Plane and Spherical Trigonometry, 1950. Contbr. to: Annals of Math.; Proc. of Am. Math. Soc.; Proc. Natl. Acad. of Sci.; Canadian Jour. of Math.; Duke Math. Jour.; Bull. Am. Math. Soc.; Am. Math. Monthly; Naval Rsch. Logistics Quart. Areas of Rsch.: Theory of Games, Topology.

RICHEY, W. Clyde (Mr.), Retired Tchr., 2114 E. 32nd St., Tucson, Ariz. ZOOLOGY, EVOLUTION; HISTORY OF MATHEMATICS, ARABIC NUMERALS. b. Plumer, Venango Co., Pa., Jan. 15, 1892. s. Dr. W. J. and Grace (McQueen) R. Edn.: B.S., Allegheny Coll., 1917. m. Jennie Margaret Foster (poet and short story writer), June 5, 1917 (dec.). c.: Eugene Foster; Kathryn Grace Hartung; Rosemary Lee Dailey. Exp.: Prin., Plum Twp. H. S., Pa., 1911-14; Sci. Tchr., Warsaw H. S., Ill., 1917-18; Chemist and Open Hearth Worker, Youngstown Sheet & Tube, Ohio, 1918-21; Prin., Polk H. S., Polk, Pa., 1921-22; Sci. and Math. Tchr., Franklin H. S., Franklin, Pa., 1922-26; Math., Physics, and Chem. Tchr., Washington Vocational H. S., Pittsburgh, Pa., 1926-58, Retired 1958—. Mem.: Pa. Acad. of Sci.; Ariz. Acad. of Sci.; Natl. Assn. of Biol. Tchrs.; A.A.A.S.; Pueblo Gardens Assn. Contbr. to: Proc. of the Pa. Acad. of Sci. Hobbies: Mathematics, Music and Art. Areas of Rsch.: Evolution: In a series of papers the theory is developed that the chordate, arthropod, and mollusk have been derived from a colonial scyphozoan. The echinoderm is shown to have evolved from an early chordate.

RICHHEIMER, Ralph (Mr.), Pres. and Dir. of B-R Analytical Rsch. Labs., Inc., 216 East 70th St., New York 21, N. Y. Home Add.: 45-10 Kissena Blvd., Flushing, L. I. BIO-CHEMISTRY; MEDICAL EQUIPMENT. b. Stuttgart, Germany, Feb. 4, 1924. s. Ferdinand and Hedwig (Beckhard) R. Edn.: Queens Coll., 1943; N. Y. Univ., 1947; City Coll. of N. Y., 1952. m. Belle Lefkowitz, Nov. 1949. c.: Alan Frederick; Michael Steven. Exp.: Dir., Pres., B-R Analytical Rsch. Labs., Inc., New York, N. Y., 1949—; Dir. of Rsch. and Pres., Belray Chem. Co., Inc., N. Y., N. Y., 1956—; Owner, Penthouse Printers, N. Y., N. Y., 1957—; Owner, Richheimer Realty, N. Y., 1960—. Mem.: N. Y. Acad. of Sci.; N. Y. Microscopic Soc.; Am. Chem. Soc.; N. Y. State Registry of Med. Technologists; N. Y. State Soc. of Bioanalysts; N. Y. Assn. of Clin. Labs.; A.A.A.S. Serv. Rec.: U.S.M.C., 1943. Gen. Int.: Patents in Med. and Lab. Equipment; Development of new Diagnostic Reagents. Areas of Rsch.: Biological Stains; Diagnostic Reagents; Medical and Lab. Equipment.



RICHIE, Richard Frank (M.D.), Chief of Psychiatry, Memorial Med. Center, Williamson, W. Va. Home Add.: S. Williamson, Pike Co., Ky. PSYCHIATRY. b. Derrick City, McK. Co., Pa., Aug. 22, 1902. s. Alonzo and May (Calkins) R. Edn.: M.D., Univ. of Buffalo, 1927. m. Asta Boe, Nov. 5, 1927. c.: R. Martin; Thomas K. Exp.: Child Psychiatry Fellowship and Experience, Nebr. and N. C., 1935-42; Chief, N-psychiatry, V. A. Br., Office #3, Philadelphia, Pa., 1946-49; Chief of N-psychiatry, V. A. Hosp., Lebanon, Pa., 1949-53; Chief, Acute I T and Dir. Prof. Services, VAH, Coatesville, Pa., 1953-57; Chief of Psychiatry, Memorial Med. Center, Williamson, W. Va., 1957—. Mem.: Am. Med. Assn.; A. Psychiatric Assn.; Am. Orthopsychiatric Assn.; Am. Assn. for Adv. of Sci.; Am. Assn. on Mental Deficiency; Am. Geriatrics Soc.; Nu Sigma Nu. Serv. Rec.: U. S. Army, 1942-46; Army of U. S.-Ret. Areas of Rsch.: Mental Health.

RICKELS, Karl (M.D.), Asst. Prof. of Psychiatry, Hosp. of the Univ. of Pa., 205 Piersol Bldg., Philadelphia, Pa. Home Add.: 540 Scott Rd., Gladwyne, Pa. PSYCHIATRY, PSYCHOPHARMACOLOGY. b. Wilhelmshaven, Germany, Aug. 17, 1924. s. Dr. Karl, Sr. and Stephanie (Roehrhoff) R. Edn.: M.D., Univ. of Muenster, 1951. m. Crista E. Loessin, Apr. 2, 1953. c.: Laurence. Exp.: Resident in Pathol., Universities of Erlangen and Frankfurt and City Hosp. of Kassel, Kessel, Germany, 1952-54; Psychiatric Residency, Mental Hlth. Inst., Cherokee, Iowa, 1954-55; Fellow in Psychiat., Hosp. of the Univ. of Pa., 1955-57; Instr., Psychiat., ibid., 1957-59; Assoc., Psychiat., ibid., 1959-60; Asst. Prof., Psychiat., Hosp. of the Univ. of Pa., 1960—. Mem.: Am. Coll. of Neuropsychopharmacol.; Am. Med. Assn.; Am. Psychiatric Assn.; Am. Psychosomatic Soc.; Collegium Internationale Neuro-Psychopharmacologicum; Philadelphia Physiol. Soc.; Soc. for Psychophysiol. Rsch.; Assn. Adv. of Psychotherapy. Contbr. to: Am. Jour. of Med. Sci.; Am. Jour. of Psychiatry; Jour. Am. Med. Assn.; Jour. Clin. and Expmtl. Psychopathol.; Jour. Psychol.; Neuro-Psychopharmacol.; Jour. of Psychosomatic Rsch.; Zbl. Bakter O.; Psychosomatics; Diseases of the Nervous System. Areas of Rsch.: Human Psychopharmacology; Psychophysiology; Main area of research; The study of factors other than drugs which influence drug therapy.

RICKERMAN, J. Herman (Mr.), Mgr., Mechanical Devel. Div., The M. W. Kellogg Co., 711 Third Ave., N. Y. 17, N. Y. Home Add.: 276 Monmouth Ave., New Milford, N. J. PETROLEUM EQUIPMENT—HIGH-TEMPERATURE PROBLEMS. b. Eureka, Mo., Oct. 11, 1905. s. J. Henry and Mary G. (Grummel) R. Edn.: B.S., Univ. of Ill., 1933. m. Charlotte M. Kilgore, Apr. 30, 1932. c.: J. Herman, Jr. Exp.: Steam Engr., Commercial Solvents, Terre Haute, Ind., 1933-36; Furn. Designer, M. W. Kellogg Co., N. Y. C., 1936-44; Asst. Ch. M.E., ibid., 1944-48; Ch. Stds. Engr., ibid., 1948-61; Mgr., Devel. Engr., ibid., 1961—. Hon. Pos.: Chmn., A.S.M.E. Heat Trans. Div.; Chmn. ,A. P. I. Designers Subc. for Inspect. of Refinery Equipment. Mem.: A.A.A.S.; Phi Eta Sigma; Pi Tau Sigma; Tau Beta Pi. Contbr. to: Oil and Gas Jour.; Trans. of A.S.M.E. Areas of Rsch.: High Temperature and Radiant Heat Transfer; High Temperature-High Pressure Mechanical Design.

RICKHER, Charles Joseph, Midwest Division Mgr., The Torsion Balance Co., 224 So. Michigan Ave., Chicago 4, Ill. Home Add.: 437 No. Butrick St., Waukegan, Ill. MICROBIOLOGY. b. Breese, Ill., Sept. 13, 1914. s. E. T. and Mary Pauline (Heinzmann) R. Edn.: B.S., Univ. of Ill., 1938; M.S., ibid., 1939. m. Elizabeth Ann Krikorian, 1961. c.: Chas. Jos. III (1st m.) 2nd m. Barbara; John. Exp.: Rsch. Bacteriologist, Abbott Labs., North Chicago, Ill., 1947-58; Mgr. Sci. Div., Cadillac Assoc., Chicago, Ill., 1959-61; Midwest Reg. Mgr., The Torsion Balance Co., Chicago, Ill., 1961—. Hon. Pos.: Exec. Secy. for Soc. of Ill. Bacteriologists, Inc., 1953-63. Mem.: A.A.A.S.; Am. Soc. for Microbiology; Am. Pub. Health Assn.; A.C.S.; Soc. of Ill. Bacteriologists; Ill. Pub. Health Assn.; Ill. Soc. for Med. Rsch.; Gamma Alpha; Sigma Xi. Contbr. to: Antibiotics Annuals. Serv. Rec.: A.U.S., 1942-47. Areas of Rsch.: Bacteriology; Virology; Experimental Chemotherapy.

RIDDLE, Matthew Casey (M.D.), Assoc. Prof., Univ. of Ore. Med. Schl., 3181 S.W. Sam Jackson Park Rd., Portland 1, Ore. Home Add.: 2557 S.W. Vista Ave., Portland 1, Ore. INTERNAL MEDICINE, HEMATOLOGY, BIOLOGY. b. Riddle, Ore., Sept. 1, 1896. s. George Rice and Marguerite Ellen (Casey) R. Edn.: B.A., Reed Coll., 1917; M.A., Univ. of Ore., 1922; M.D., Harvard Med. Schl., 1926. m. Katharine Hope, Sept. 3, 1924. c.: Elizabeth Kerr Jackson; Florence Kerr; Matthew Casey, Jr. Exp.: Instr. in Biol., Reed Coll., 1920-21; Instr., Biol., Univ. of Ore., 1922-23; Asst. Prof., ibid., 1923-24; Instr. in Med., Univ. of Mich., 1929-30; Clinical Assoc., Univ. of Ore. Med. Schl., 1932-38; Asst. Prof., ibid., 1938-41; Assoc. Prof., ibid., 1941—. Hon. Pos.: Trustee, Reed Coll., 1952-56; Natl. Dir., Am. Iris Soc., 1948-60. Mem.: Portland Acad. of Med.; North Pacific Soc. of Internal Med.; A.A.A.S.; Am. Soc. Nuclear Med.; Sigma Xi; Alpha Kappa Kappa. Author: Manual for Patients with Pernicious Anemia, 1929. Contbr. to: Am. Jour. of Med. Scis.; Jour. of General Physiol.; Archives of Internal Med.; Annals of Internal Med.; Jour. of Clin. Investigation; The Med. Sentinel. Serv. Rec.: U. S. Army, 1917-19. Areas of Rsch.: Internal Med.; Hematology, Isotope Med., General Biol., Tropical Med., Invertebrate Embryology.

RIDGWAY, James Stratman (Ph.D.), Rsch. Chemist, Chemstrand Rsch. Ctr., P. O. Box 731, Durham, N. C. Home Add.: 4814 Brentwood Rd., Durham, N. C. ORGANIC CHEMIST. b. Paintsville, Ky., July 27, 1936. s. James Franklin and Mary Catherine (Stratman) R. Edn.: B.S., Univ. of Louisville, 1958; M.S., ibid., 1959; Ph.D., ibid., 1961. m. Bernice Therese Schmitt, Aug. 29, 1959. c.: Keith Stratman; Brian Conrad. Exp.: Girdler Co., Louisville Ky., Summer Student, (1957); Rsch. Chemist, Chemstrand Rsch. Ctr., Durham, N. C., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Sigma Xi; Pi Kappa Phi; Sigma Pi Sigma; Omicron Delta Kappa; Phi Lambda Upsilon; Chem. Hon. Soc. Contbr. to: Jour. of Organic Chem. Areas of Rsch.: Synthesis and Study of Amide Derivatives, Especially those Related to Polyamides.

RIESENFELD, Alphonse (Ph.D.), Asst. Prof. of Anthropol., Hunter Coll., N. Y., N. Y. Home Add.: 77-10, 34 Ave., Jackson Heights, L. I., N. Y. PHYSICAL ANTHROPOLOGY. b. Myslowitz, Germany, Nov. 30, 1911. s. Heinrich and Augusta (Lachmann) R. Edn.: Ph.D., Univ. of Vienna, 1937; Post-doctoral Studies and Rsch., Univ. of Geneva, Switzerland, 1939-48. m. Bertha Schaechter, 1938. c.: Vivian G. Exp.: Rsch. Assoc., Wenner-Gren Fdtn. for Anthropological Rsch., N. Y., N. Y., 1948-49; Rsch. Assoc. Dept. of Anthropol., Am. Museum of Natural Hist., N. Y., 1949-55; Asst. Prof. of Anthropol., Hunter Coll., 1956—; Instr., Anthropol., Brooklyn Coll., 1951—. Mem.: Am. Assn. of Physical Anthropologists. Author: The Megalithic Culture of Melanesia, 1950. Contbr. to: Jour. Anthropol. Inst.; Internatl. Archives f. Ethnography; Amer. Jour. Physical Anthrop.; Comptes rend. des Seances de la Soc. de Physique et d'Histoire Naturelle de Geneve; Bull. de la Soc. Suisse d'Anthrop. et d'Ethnographie; MAN; Jour. of Amer. Folklore; The Far Eastern Quart.; Natural Hist. Areas of Rsch.: Anthropology of the Pacific Area; Problems of Human Evolution; Biology of Human Races.

RIESS, John Karlem (Ph.D.), Assoc. Prof. of Physics, Tulane Univ., New Orleans, La. Home Add.: 17 Audubon Blvd., New Orleans, La. PHYSICS. b. New Orleans, La., Apr. 17, 1913. s. John and Alma Mary (Sirera) R. Edn.: B.S., Tulane Univ., 1933; M.S., ibid., 1935; Ph.D., Brown Univ., 1943. Exp.: Instr., Brown Univ., 1942-43; Asst., Assoc. Prof., Tulane Univ., 1943—. Mem.: Omicron Delta Kappa; Am. Phys. Soc.; Am. Chemical Soc.; Am. Math. Soc.; Am. Crystl. Soc.; Math. Assn. Am.; Phi Beta Kappa; N.E.A.; Sigma Xi; Phi Eta Sigma; Sigma Pi Sigma. Hon. Pos.: Pres., N. O. Acad. of Sci.; Past Pres., Tulane Chapter, Sigma Xi; Past Pres., Tulane Chapter, Phi Beta Kappa; Secy., South Central Dist., Phi Beta Kappa; Past Natl. Treas., Omicron Delta Kappa. Contbr. to: Am. Jour. Phys.; Am. Biol. Tchr. Areas of Rsch.: Electromagnetic Waves.

RIGAS, Demetrios A. (Ph.D.), Assoc. Prof. of Biochem. and Exp. Med., Univ. of Ore. Med. Schl., Portland, Ore. Home Add.: 9605 S. W. Inglewood St, Portland 25, Ore. PHYSICAL AND BIOCHEMISTRY. b. Andros, Greece, Feb. 2, 1921. s. Anton and Vasiliki A. (Kritikou) R. Edn.: Ch.E., Greek Inst. of Tech., 1941; Ph.D., ibid., 1943. m. Chrysiis D. Eginitou, Apr. 28, 1955. c.: Anna Maria; Vasiliki Diane. Exp.: Chem. Engr., Dambergis Pharmaceutical Co., Greece, 1943-45; Rsch. Asst., Univ. of Ore. Med. Schl., 1947-49; Rsch. Assoc., Univ. of Ore. Med. Schl., 1949-53; Asst. Prof., ibid., 1953-56; Assoc. Prof., ibid., 1956—. Hon. Pos.: Vice Pres. of Northwest Chapter, Soc. of Nuclear Med., 1959—. Mem.: Fellow, Am. Inst. of Chemists; Fellow, Internatl. Soc. of Hematol.; Am. Soc. of Biol. Chem.; Am. Chem. Soc.; A.A.A.S.; Biophysical Soc.; Am. Nuclear Soc.; N. Y. Acad. of Sci.; Soc. of Nuc. Med.; Am. Soc. Hematol.; Am. Fed. for Clin. Rsch.; West. Soc. for Clin. Rsch.; N. W. Soc. for Clin. Rsch.; Portland Acad. of Med.; Sigma Xi; City Club of Portland; AHEPA. Contbr. to: Jour. Biol. Chem.; Bull. Math. Biophys.; Sci.; Jour. Clin. Invest.; Lab. Clin. Med.; Am. Jour. Med. Sci.; Rev. d'hematol.; Ann. N. Y. Acad. Sci.; Hum. Genet.; Proc. Intern. Soc. Hematol.; Am. Jour. Med.; Blood. Serv. Rec.: Greek Navy. Areas of Rsch.: Hemoglobins; Protein Hormones; Protein Chemistry and Structure; Cellular Metabolism and Physiology.

RIGGSBY, Ernest Duward (Mr.), Assoc. Prof., Sci. and Sci. Edn., Troy St. Coll., Troy, Ala. Home Add.: 1205 17th Ave., S., Nashville 12, Tenn. PHYSICAL SCIENCE AND SCIENCE EDUCATION. b. Nashville, Tenn., June 12, 1925. s. James Thomas Riggsby and Mrs. Anna Pearl (Turner) Durham. Edn.: B.S., Tenn. Polytechnic Inst., 1948; B.A., George Pabody Coll., 1955; M.A., ibid., 1956; Ed.S., ibid., 1958. Exp.: Tchnical Lctr., U.S.A.E.C., Oak Ridge, Tenn., Paducah, Ky., 1944-52; Asst. Prof., Troy St. Coll., 1956-62; Instr., Univ. of the South, 1955-56; Guest Prof., George Peabody Coll., summer, 1959, 1960, 1961; Assoc. Prof., Troy St. Coll., 1962—. Co-Author: Teacher's Question and Answer Book in Science. Mem.: A.A.A.S.; Ala. Acad. of Sci.; Instrument Soc. of Am.; Pi Kappa Delta; Phi Delta Kappa. Serv. Rec.: U. S. Air Force, 1944-45; U.S.A.F.R., 1954—. Areas of Rsch.: Sci. Edn., Social Functions of Sci.; Tchng. Mach. and Sci. Programmed Materials.

RIGBY, Malcolm (Mr.), Editor, Meterological and Geoastrophysical Abstracts, Box 1736, Washington 13, D. C. Home Add.: 5816, 22nd St., N., Arlington 5, Va. METEOROLOGY; GEOPHYSICS. b. Hartford, Wash., Oct. 26, 1909. s. William E. and Laura (McFadden) R. Edn.: Wash. St. Univ.; Univ. of Wash.; Alaska Univ.; Whitworth College; Spokane Jr. Coll.; Great Falls Coll. of Edn., Dept. of Agri. Grad. Schl. m. Marian K. Smith, June 17, 1933. c.: David John; Carolyn Louise. Exp.: Cooperative Weather Observer, Everett, Wash., 1927; Aerol. in Charge, Airway Stas., U. S. Weather Bureau (Pacific N. W. and Alaska), 1928-42; Anal., (Climatol.), U. S. Air Force, 1942-46; Founder and Ed., Meterol. Abstracts and Bibliography, 1949-59; Ed., Meteorological and Geoastrophysical Abstracts, 1960—. Hon. Pos.: Chmn., Auxiliary Publications Comm., Am. Documentation Inst.; Dir. and Treas., N. Va. Assn. for Retarded Children, Va. Chmn., Subcomm. on Universal Decimal Class, System for U. S. Natl. Comm. on Int. Fed. of Documentation of U. S. Natl. Acad. Scis., 1961—; Exec. Comm. U. S. Conference on Scientific Manuscripts, 1961—; Dir., Natl. Fed. of Sci. Abstracting and Indexing Serv., 1962—. Mem.: A.A.A.S.; Am. Meteorol. Soc.; Royal Meteorol. Soc.; Am. Geophys. Union; Hist. of Sci. Soc. Contbr. to: Bull. Am. Meteorol. Soc.; Weatherwise; World Meteorol. Organization Bull.; Meteorol. Abstracts. Serv. Rec.; Natl. Guard, 1927-38. Gen. Int.: Founder or Instigator of 3 Workable and Surviving Projects in Meteorol. of Internal. Interest: Climatic Data for the World, 1948—, Published by U. S. Weather Bureau for World Meteorol. Organization; Proposal for Method Adopted by World Meteorol. Orgn. for Publication of Voluminous IGY data for Entire World on Microcards, 1957—, Also for World Data Center at Geneva; Meteorol. Abstracts and Bibliog., now Meteorological and Geoastrophysical Abstracts, 1950—; an Internatl. Rev. of Meteorol. and Related Literature, 1960. Areas of Specialized Knowledge: Climatology; Aerology; Aeronomy; Bibliography; Documentation; Data Cntrol; Languages: Russian, German, French, Italian, Spanish, Dutch, Etc.

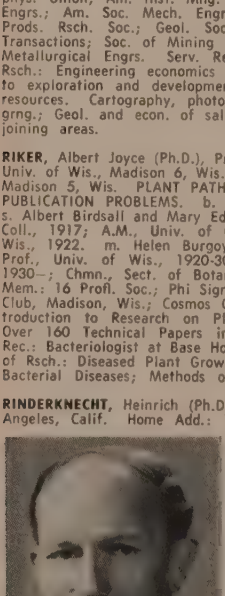
RIGDON, Raymond Harrison (M.D.), Prof. of Pathol., Univ. of Tex. Med. Branch, Galveston, Tex. Home Add.: 1328 Ball, Galveston, Texas. PATHOLOGY-EXPERIMENTAL PATHOLOGY. b. Musella, Ga., July 30, 1905. s. William C. and Mary (Harrison) R. Edn.: B.S., Emory Univ., 1929; M.D., ibid., 1931. m. Margaret Britt, June, 1932. c.: Mary Virginia; Anita Louise. Exp.: Instr. to Asst. Prof., Vanderbilt Univ., Nashville, Tenn., 1935-39; Asst. Prof., Univ. of Tenn. Med. Schl., Memphis, Tenn., 1939-43; Prof., Univ. of Ark. Schl. of Med., Little Rock, Ark., 1944-47; Prof., Univ. of Tex. Med. Branch, Galveston, Tex., 1947—. Hon. Pos.: Chmn., Sec. on Pathol., Southern Med. Assn., 1938-44; Chancellor, Law Sci. Acad., 1959; Pres., Tex. Soc. of Pathologists, 1961. Mem.: A.M.A.; St. Med. Assn.; Soc. Exptl. Path.; Am. Assn. Path. and Bact.; A.A.A.S.; Soc. Exprntl. Biol. and Med.; Southern Med. Assn.; Royal Soc. Trop. Med. and Hyg.; Mu Delta; Sigma Xi; Phi Beta Pi. Author: Capillary Permeability in Areas of Inflammation in the Mechanism of Inflammation, 1953. Contbr. to: Medical Publishers; Medical Cyclopedia; Arch. Path.; Tex. Rpts. Biol. and Med.; Am. Jour. Path.; Am. Jour. Vet. Rsch.; Poultry Sci.; Cancer Rsch. Jour.;

Am. Jour. Opthalmology; Arch. Dermatol.; Southern Med. Jour.; Surg. Gyn. Obst.; Jour. Am. Med. Assn.; Cancer; Jour. Natl. Cancer Inst.; Proc. Soc. Expmtl. Biol. and Med.; Am. Jour. Surg.; Am. Jour. Clin. Path. Areas of Rsch.: Experimental study of cancer in the white Pekin duck-Muscular dystrophy in the fowl-Forensic Pathology.

RIGGS, William Adams (Mr.), Engr., Resources and Industrial Devel., Gulf, Mobile and Ohio Railroad, Mobile, Ala. Home Add.: 2215 Lourasant Dr., Mobile, Ala. ENGINEERING (MINING AND INDUSTRIAL) AND GEOLOGY. b. Washington, D. C., Feb. 5, 1914. s. William Canby and Margaret (Adams) R. Edn.: B.S., George Washington Univ., 1934. m. Fern Storey, July, 1937. c.: Virginia Fern. Exp.: Asst. Mng. Engr., Anaconda Copper Mining Co., Butte, Mont., 1936-37; Asst. Ch. Engr., S. American Devel. Co., Ecuador, 1937-39; Engr., Pittsburgh Limestone Corp., New Castle, Pa., 1939-41; Engr., Republic Mining and Mfg. Co., Bauxite, Ark., 1941-42; Supvng. Engr., Mining Section, Reconstruction Finance Corp., Little Rock, Ark.; 1942-43; Ordnance Engrng. Officer, U.S.N.R., N. Y., N. Y., 1943-46; Indusl. Geologist, Atlantic Coast Line R.R., Wilmington, N. C., 1946-48; Indusl. Engr., Gulf, Mobile and Ohio R. R., Mobile, Ala., 1948-59; Engr., Resources and Indusl. Devel., ibid., 1959—. Hon. Pos.: Chmn., Gulf Coast Sec., Am. Soc. Mech. Engrs., 1957; Vice-Chmn., Indl. Minls. Div., Soc. of Mining Engrs. of A.I.M.E., 1960. Mem.: Am. Assn. Petrol. Geol.; Am. Geophys. Union; Am. Inst. Mng. and Met. Engrs.; Am. Soc. Civil Engrs.; Am. Soc. Mech. Engrs.; Am. Soc. Photogram.; Forest Prods. Rsch. Soc.; Geol. Soc.; A.A.A.S. Contbr. to: Mining Transactions; Soc. of Mining Engrs. of Am. Inst. of Min. and Metallurgical Engrs. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Engineering economics and economic geology as applied to exploration and development of mineral deposits and other resources. Cartography, photogrammetry and transportation engrng.; Geol. and econ. of salt deposits of S.E. states and adjoining areas.

RIKER, Albert Joyce (Ph.D.), Prof. of Plant Pathol. and Forestry, Univ. of Wis., Madison 6, Wis. Home Add.: 211 N. Spooner St., Madison 5, Wis. PLANT PATHOLOGY, RESEARCH METHODS, AND PUBLICATION PROBLEMS. b. Wheeling, W. Va., Apr. 3, 1894. s. Albert Birdsall and Mary Edith (Davis) R. Edn.: A.B., Oberlin Coll., 1917; A.M., Univ. of Cincinnati, 1920; Ph.D., Univ. of Wis., 1922. m. Helen Burgoyne, Apr. 8, 1953. Exp.: Fellow Prof., Univ. of Wis., 1920-30; Prof. of Plant Pathol., ibid., 1930—; Chmn., Sect. of Botany, Natl. Acad. of Sci., 1959-62. Mem.: 16 Profl. Soc.; Phi Sigma Gamma Alpha; Sigma Xi; Univ. Club, Madison, Wis.; Cosmos Club, Wash., D. C. Co-author: Introduction to Research on Plant Diseases, 1936. Contbr. to: Over 160 Technical Papers in Various Botanical Jours. Serv. Rec.: Bacteriologist at Base Hosp., #25, A.E.F., 1917-18. Areas of Rsch.: Diseased Plant Growth; Tree Diseases, Tissue Cultures; Bacterial Diseases; Methods of Research; Publication Problems.

RINDERKNECHT, Heinrich (Ph.D.), Dir. of Rsch., Calbiochem., Los Angeles, Calif. Home Add.: 1069 Dolores Dr., Altadena, Calif. BIO-ORGANIC AND MEDICINAL CHEMISTRY. b. Zurich, Switzerland, Jan. 21, 1913. s. Heinrich and Pauline (Rebmann) R. Edn.: Dipl. Sc., Swiss Federal Inst. of Technol., 1936; Ph.D., Univ. of London, England, 1939. m. Peggy Wark, 1939. c.: Margaret Pauline; H. Robin; John Frederick; Yvonne Susan. Exp.: Rsch. Chem., Roche Products, Ltd., Welwyn Garden City, England, 1939-46; Dir. of Rsch., Aligena, A. G., Basel, Switzerland, 1946-49; Rsch. Fellow, Calif. Inst. of Tech., Pasadena, Calif., 1949-54; Dir. of Organic Rsch., The Crookes Labs., London, England, 1954-55; Dir. of Rsch., Calbiochem., Los Angeles, Calif., 1955—. Mem.: Am. Chem. Soc.; Swiss Chem. Soc.; British Biochem. Soc.; A.A.A.S. Contbr. to: Anales de la Asociacion Quimica Argentina; Biochim. et Biophys. Acta.; Brit. Jour. of Pharmacol. and Chemother.; Chem. and Ind.; Emile Christoph Barell Jubilee Vol., 1946; Experientia; Food Rsch.; Jour. Am. Chem. Soc.; Jour. Chem. Soc.; Jour. Endocrinology; Jour. Org. Chem.; Jour. Physiol.; Nature; Proc. Soc. Exper. Biol. Med.; The Lancet; Pharm. Jour.; Science. Serv. Rec.: Swiss Army, 1933-40. Areas of Rsch.: Synthetic Analgesics; Amino Acids, Nucleotides, New Ultrarapid Method for Fluorescent Labelling of Proteins.



RINES, Robert Harvey (Mr.), Partner, Rines and Rines, 10 Post Office Sq., Boston, Mass. Home Add.: 25 Shady Brook Lane, Belmont, Mass. PHYSICS, ELECTROMAGNETIC WAVES; LAW. b. Boston, Mass., Aug. 30, 1922. s. David and Lucy L. (Sandberg) R. Edn.: B.S., Mass. Inst. of Technology, 1942; L.L.B., Georgetown Univ., 1947. m. Dorothy Ann Kay, Nov. 29, 1945. c.: Robert Louis; Suzi Kay Ann. Exp.: Radar Engrng. Officer, U. S. Army, Dtchd. Service Royal Artillery, European Theater, 1942-43; Radar Lecturer, Technical Officer, Army Air Forces Tactical Center, Orlando, Fla., 1943-44; Special Radar Representative of Chief Signal Officer, Saipan and Pacific Ocean Areas, 1944-45; Head, Design and Specification Branch, Mark V IFF Army Interconnection Equipment Program, Bureau of Ships, Navy Dept. and Commanding Officer Assoc. Army Program At Fort Drum, Naval Rsch. Lab., 1945-46; Asst. Exam. U. S. Pat. Off., 1946; Supervisor, Rsch. Project, H. H. Scott, Inc., Cambridge, Mass., Office of Naval Rsch. Contract, 1951-52; Lecturer, Harvard Univ., Patent Law, 1956 ; Lecturer, M.I.T., Inventions, Patents and Creativity, 1962—; Partner, Rines and Rines, 1947—. Mem.: Inst. of Radio Engr.; Am. Bar Assn.; Am. Patent Law Assn.; Canadian Patent Law Assn.; Bars of Mass., D. C., U. S. Supreme Court; A.A.A.S.; Sigma Xi; Scientific Rsch. Soc. of Am.; Rotary Club; MIT Faculty Club; Harvard Club of Boston; Belmont Dramatic Club. Author: Principles and Problems of Patent Law, 1962. Contbr. to: Transactions Inst. of Radio Engr.; N. E. Chemical Soc. Jour.; Am. Patent Law Assn. Jour.; The Chemist. Serv. Rec.: U. S. A. Areas of Rsch.: Production of Visual Likenesses from Radio and Sound Fields; Light Communication.

RINFRET, Arthur Piers (Ph.D.), Supv. Rsch. Lab., Linde Co., Div. of Union Carbide Corp., Tonawanda, N. Y. Home Add.: 28 Meadowview Place, Buffalo 14, N. Y. BIOCHEMISTRY, BIOPHYSICS. b. Boston, Mass., Oct. 14, 1913. s. Arthur and Julia (Carlay) R. Edn.: B.A., N. Y. Univ., 1947; Ph.D., Stanford Univ., 1951. m. Marian Landis, 1934. c.: Germaine. Exp.: Rsch. Project Hd., Stanford Univ., 1950-53; Hd., Biochem. Rsch. Group, Metabolic Rsch. Unit, Univ. of Calif. Med. Schl., 1953-56; Supv. Rsch. Lab., Linde Co., Div. of Union Carbide Corp., 1956—. Mem.: Soc. Exptl. Biol. and Med.; N. Y. Acad. of Scis.; A.A.A.S.; Sigma Xi; Am. Chem. Soc. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Endocrinology; Metabolism; Cancer Rsch.; Stanford Med. Bull.; Ciba Fdtn. Colloquia; N. Y. Acad. of Sci.; Biochem. Biophysica Acta; Nature. Service Rec.: U. S. Army, 1942-46. Gen. Int.: First Observation of Acth Activity in Infant Mammalian Pituitary Gland, Fish Pituitary Gland. Areas of Rsch.: Cryobiology, Biological Effects of Rare Gases, Pituitary Hormones, Action of Ribonuclease.

RINGS, Roy Wilson (Ph.D.), Assoc. Chmn., Dept. of Zool. and Entomology, Ohio Agr. Exp. Sta., Wooster, Ohio State Univ., Columbus, Ohio. Home Add.: 2438 Christmas Run Blvd., Wooster, Ohio. ENTOMOLOGY. b. Columbus, Ohio, Aug. 15, 1916. s. John Jacob and Blanche Elizabeth (Tipton) R. Edn.: B.Sc., Ohio State Univ., 1938; M.Sc., ibid., 1940; Ph.D., ibid., 1946. m. Virginia M. Thalgott, Nov., 1942. c.: Gary Wayne; Steven Edward; Cynthia Marie. Exp.: Asst. Prof., Ohio Agr. Exp. Sta., Wooster, Ohio, 1947-53; Assoc. Prof., Ohio State Univ., ibid., 1953-61; Prof. and Assoc. Chmn., ibid., 1961—. Hon. Pos.: Chmn., North Central Branch, Entomological Soc. of Am.; Ohio Acad. Sci. Fellow. Mem.: Ent. Soc. Am.; Ohio Acad. Sci.; Am. Soc. Zool.; Am. Assn. Adv. Sci.; Ohio State Horticultural Soc.; Am. Mosquito Cont. Assn.; Sigma Xi; Gamma Sigma Delta. Contbr. to: Jour. Econ. Entomol.; Annals of the Entomological Soc. of Am.; Proc. N. Central Branch; E.S.A.; American Fruit Grower; Proc. Am. Pomological Soc.; Mosquito News; Ohio Jour. Sci. Serv. Rec.: A.U.S., 1942-46. Gen. Int.: Pioneered in use of radioisotopes as tracers for studying insect behavior. Areas of Rsch.: Biology and Control of Insects affecting deciduous tree fruits; Mosquito Taxonomy; Use of Radioisotopes as Tracers in Studying insect Behavior.

RINSE, Jacobus (Ph.D.), Dir.-Owner, Chemical Rsch. Associates, Inc., Bernardsville, N. J. Home Add.: 77 Anderson Rd., Bernardsville, N. J. CHEMISTRY (PAINTS, PLASTICS, AND METAL ORGANICS). b. Amsterdam, Netherlands, April 4, 1900. s. Jacob and Henriette Marg. (Van Gendt) R. Edn.: Ph.D., Univ. of Amsterdam, 1927. m. Marg W. Kutsch Lojenga, Sept. 10, 1931. c.: Joanne C.; Henriette P.; Marg. Wietske. Exp.: Instr., Univ. of Amsterdam, Amsterdam, Neth., 1923-27; Rsch. Chem., International. Paper Co., Glens Falls, N. Y., 1928; Chief, Chem., N. V. Pieter Schoen a. S., Zaandam, Neth., 1928-38; Dir., Chem. Techn. Adv. Bur., Haarlem, Neth., 1938-49; Dir., Chem. Rsch. Assoc., Inc., Bernardsville, N. J., 1950—. Mem.: Am. Chem. Soc.; Am Oil Chem. Soc.; Kon. Ned. Chem. Ver.; Oil a Colour Chem. Assn., Assn. of Cons. Chem. a. Chem. Eng.; N. Y. Acad. of Sci.; Neth Club. Co-author: Chem. u Techn. der Kunstharze, 1939, 1942 1952, 1962. Serv. Rec.: Royal Guards Regiments, Netherland, 1923-55. Areas of Rsch.: Paint Oils, Resins, Metal-organics, Pigments, Atherosclerose.

RINSLEY, Donald Brendan (M.D.), Supervising Psychiatrist, Menninger Schl. Psychiatry; Staff Psychiatrist and Asst. Chief, Adolescent Unit, Kansas Treatment Center for Children Div., Topeka State Hosp., Topeka, Kansas. Home Add.: 1519 Western Ave., Topeka, Kansas. MEDICINE; PSYCHIATRY. b. New York, N. Y., Jan. 31, 1928. s. Louis and Annamay (Hindie) R. Edn.: A.B., Harvard Univ., 1949; M.D., Washington Univ. Schl. Med., 1954. m. Jacqueline Louk, 1955. Exp.: Asst., Pediatrics, Washington Univ. Schl. Med., 1954-55; Fellow, Psychiatry, Menninger Foundation and Resident Psychiatrist, Topeka State Hosp., 1955-56 and 1958-60; Sr. Asst. Surgeon (R), U.S.P.H.S. and Staff Psychiatrist, U. S. Med. Center for Fed. Prisoners, Springfield, Mo., 1956-58; Supvng. Psychiatrist, Menninger Schl. Psychiatry, 1960—; Staff Psychiatrist and Asst. Chief, Adolescent Unit, Kansas Treatment Center for Children Div., Topeka State Hosp., 1960—. Mem.: Fellow, A.A.A.S., Founding Fellow, Am. Geriatrics Soc.; Sigma Xi; N. Y. Acad. of Scis.; Am. Psychiatric Assn.; Am. Med. Assn.; Kansas Med. Soc.; Alpha Kappa Kappa; Diplomate in Psychiatry Certified by the Am. Board of Psychiatry and Neurology. Contbr. to: Jour. Nervous and Mental Disease; Psychiatric Quarterly; Bulletin of the Menninger Clinic; Jour. Clin. and Expmtl. Psychopathology; Jour. Soc. Therapy; Internatl. Record Med.; A.M.A. Archives of General Psychiatry. Serv. Rec.: U.S.P.H.S., Sr. Asst. Surgeon (R), 1956—. Areas of Rsch.: Psychopathology of Prisoners; Peripheral Vasculature in Neurodemratitis; Milieu Treatment, esp. of adolescents; Correctional Psychiatry; Ego Psychology and Self Theory; Psychiatric Education.

RIORDAN, Hugh Ernest (Mr.), Hd. Advanced Devel., Gyrodynamics, Kearfoot Div., GPI, 1150 McBridge Ave., Little Falls, N. J. Home Add.: 366 Thomas Pl., Wyckoff, N. J. ANALYTICAL AND EXPERIMENTAL MECHANICS. b. Brooklyn, N. Y., July 23, 1923. s. Hugh D. and Frances (Morche) R. Edn.: B.M.E., Rensselaer Poly. Inst., 1944; M.M.E., ibid., 1947. m. Ethel Cornes, 1945. c.: Eileen; Brian; Janet. Exp.: Rsch. Eng., Curtiss Wright Corp., Columbus, O., 1948-50; Sr. Engr., Applied Physics Lab., Johns Hopkins Univ., Silver Spring, Md., 1950-58; Sec. Hd., Kearfott Div., GPI, Little Falls, N. J., 1958—. Mem.: A.A.-A.S.; Audio Engr. Soc. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Inertial Guidance Equipment, Pneumatic Computers and Sensors.

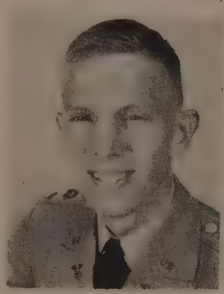
RIPLEY, S(idney) Dillon, 2nd, (Ph.D.), Dir., Peabody Museum Nat. Hist., Prof., Zool. Dept., Yale Univ., New Haven, Conn. Home Add.: 860 Prospect St., New Haven 11, Conn. ZOOLOGY, ORNITHOLOGY. b. New York, N. Y., Sept. 20, 1913. s. Louis Arthur and Constance (Baillie) R. Edn.: B.A., Yale Univ., 1932; Ph.D., Harvard Univ., 1943. m. Mary M. Livingston, Aug. 18, 1949. c.: Julie Dillon; Rosemary Livingston; Sylvia MacNeill. Exp.: Tchng. Fellow, Harvard Univ., 1941-42; Asst. Curator, U. S. Natl. Museum, Washington, D. C., 1942-43; Prof., Zool. Dept., Yale Univ., 1946—; Dir., Peabody Museum Natl. Hist., New Haven, Conn., 1959. Mem.: Fellow, A.A.A.S.; Am. Ornith. Union; Zool. Soc. India; Am. Natural.; Brit. Orn. Union; Sigma Xi. Author: The Trail of the Money Bird, 1942; Search for the Spiny Babbler, 1952; A Paddling of Ducks, 1957; A Synopsis of the Birds of India and Pakistan, 1961; Ornithological Books in the Yale Library, co-author, 1961. Contbr. to: Auk, Condor, Evolution, Ecology, Ibis, Am. Naturalist, Willson Bull., Jour. Bombay Nat. Hist. Soc. Serv. Rec.: O.S.S., 1942-45.

RISSER, Hubert E(lias) (Ph.D.), Prin. Mineral Economist, Ill. State Geological Survey, Urbana, Ill. Home Add.: 808 West Nevada, Urbana, Ill. MINERAL ECONOMICS - MINING ENGINEERING. b. Kansas City, Kan., Apr. 28, 1914. s. Elmer B. and Della (Rowlen) R. Edn.: Engr. of Mines, Colo. Schl. of Mines, 1937; M.S., Univ. of Kan., 1953; Ph.D., ibid., 1956. m. Sarah Griffith, June, 1939. c.: Nancy Arleen; Rita Ann. Exp.: Mining Engr., Ala. By Products Corp., Birmingham, Ala., 1937-41; Staff Engr., Natl. Safety Coun., Chicago, Ill., 1946-47; Mine Supt., Ala. By-Products Corp., Birmingham, Ala., 1947-50; Assoc. Prof., Mining Engrng., Univ. of Kans., Lawrence, Kan., 1950-57; Mining Consultant, Kan. Geol. Survey, Lawrence, Kan., 1953-57; Mineral Economist, Ill. St. Geol. Survey, Urbana, Ill., 1957-60; Prin. Min. Econ., Ill. St. Geol. Survey, ibid., 1960—; Prof. Min. Economics, Univ. of Ill., Urbana, Ill., 1960—. Hon. Pos.: Chmn., St. Louis Sec., A.I.M.E. Mem.: G.S.A.; A.I.M.E.; A.A.A.S.; Theta Tau; Sigma Tau; Sigma Xi; Tau Beta Pi; Kiwanis. Author: The Economics of the Coal Industry, 1958. Contbr. to: Mines Magazine; Ill. Engr.; Ill. State Geol. Survey Publication. Serv. Rec.: A.U.S., 1941-45. Areas of Rsch.: Economic Aspects of the Mineral Industries; Interrelation Between Minerals and Other Aspects of Modern Industrial Economy; Technological and Other Trends Affecting Availability and Utilization of Mineral Resources, esp. Energy Resources.

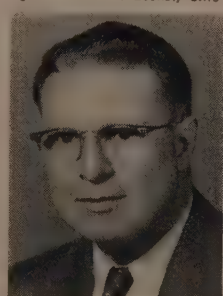
RISS, Eric (Ph.D.), Chmn. of Bd., Scientific Introduction Serv., Inc., 186 E. 73 St., N. Y. 21, N. Y. PSYCHOTHERAPY; SCIENTIFIC MATE SELECTION; SEXOLOGY. b. Vienna, Austria, Oct. 10, 1929. s. David S. and Rebecca (Schneider) R. Edn.: B.A., Brooklyn Coll., 1950; Ph.D., N. Y. Univ., 1958. m. Miriam Schoen, July 22, 1956. Exp.: Pvt. Pract. of Psychotherapy and Marriage Counseling, 1952—; Sr. Psychologist, N. Y. City Diagnostic Ctr., 1954-57; Consult., Scientific Introduction Serv., N.Y.C., 1956-58; Dir. of Pub. Edn., ibid., 1960—; Chmn. of the Bd., ibid., 1961—; Lectr., Brooklyn Coll., 1955-62; Consult., Fordham Hosp., 1956—; Psychotherapist, N. Y. Neuropsychiatric Ctr., 1958-60; Psychotherapist, Comm. Guid. Serv., 1958-61; Mem., Adv. Bd. Inst. for Rational Liivng, 1960—. Mem.: Am. Acad. Psychotherapy; Am. Sociol. Soc.; Am. Soc. for Aesthetics; A.A.-A.S.; N. Y. Acad. Scis.; Soc. for Scientific Study of Sex; Natl. Com. on Art Edn.; Internatl. Soc. for Gen. Semantics; Am. Soc. of Criminology; Soc. for Gen. Systems Rsch. Contbr. to: Psychological Record; Jour. of Psychology. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Scientific Mate Selection; Behavioral Changes in Psychotherapy; Evaluation of Current Psychotherapies; Psychological Bases of Sexual Attraction; Creative Process in Original Behavior.

RITCHEY, Beryl Thomas (D.D.S.), Dentist, 629 No. Nevada Ave., Colorado Springs, Colo. Home Add.: 525 Penrose Blvd., Colorado Springs, Colo. PERIDONTIST. b. New London, Ia., May 27, 1908. s. Carl Elmer and Mary Estella (Giese) R. Edn.: B.S., D.D.S., Univ. of Sou. Calif., 1932. m. Georgie Evelyn Danks, Sept., 1929. c.: Marion Lucile. Exp.: Dentist, Colorado Springs, Colo., 1932—. Hon. Pos.: Mem. 1st Comm. on Dentistry, Natl. Rsch. Coun.; Secy. and Treas., Colo. Dental Foundation; Dental Consultant, Air Force Acad. Mem.: Am. Coll. of Dentists; Diplomate, Am. Acad. of Periodontology; Internatl. Assn. for Dental Rsch.; A.A.A.S.; Am. Acad. of Oral Roentgenology; Oral Pathology and Endodontics. Contbr. to: Jour. of Dental Rsch.; Jour. Oral Surgery, Oral Medicine and Oral Pathology; Jour. Periodontology; Jour. Am. Dental Assn. Serv. Rec.: A.A.F., 1942-46. Areas of Rsch.: Oral Pathology; Oral Roentgenology.

RITCHEY, Charles Robert (Capt.), 34th Gen. Hosp., Orleans, France. Home Add.: 443 Inst. Hill, Lexington, Va. CHEMISTRY. b. Champaign, Ill., Dec. 15, 1933. s. Herbert E. and Mary Louise (Kirk) R. Edn.: B.S., Va. Milit. Inst., 1955. m. Margaret Inez Bishop, 1958. c.: Charles Robert, Jr.; Geoffrey Walter. Exp.: U. S. Army, 1957—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Calif. Acad. of Scis. Gen. Int.: Abstractor for "Chemical Abstracts." Areas of Rsch.: Pathological Chemistry.



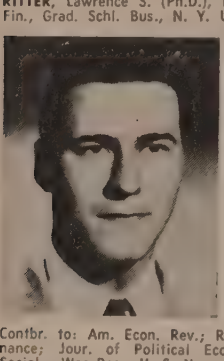
RITCHIE, Austin Everett (Ph.D.), Asst. Dean and Secy., Coll. of Agric. and Home Econs., Ohio St. Univ., 2120 Fyffe Rd., Columbus 10, Ohio. Home Add.: 5609 Hayden Run Rd., Amlin, Ohio. AGRICULTURAL EDUCATION AND COLLEGE ADMINISTRATION. b. Van Wert Co., Ohio, Feb. 3, 1918. s. Lucius D. and Emma Pearl (Kerns) R. Edn.: B.S., The Ohio St. Univ., 1946; M.S., ibid., 1951; Ph.D., ibid., 1955. m. Helen Catherine Drake, Oct. 31, 1942. c.: Patricia Ann; William Paul; Barbara Sue; Martha Lou. Exp.: Tchr., Voc. Agric., Gibsonburg Schl., Gibsonburg, Ohio, 1947-48; Instr., The Ohio St. Univ., Columbus and Hilliards, Ohio, 1948-50; Asst. Prof., ibid., 1950-57; Asst. Prof. and Asst. Dean and Secy., The Ohio St. Univ., 1957-58; Assoc. Prof. and Asst. Dean and Secy., ibid., 1958—. Mem.: Gamma Sigma Delta; Phi Delta Kappa; A.A.A.S. Co-author: A University Department Evaluates Its Curriculum, 1958. Contbr. to: Agricl. Edn. Mag.; Editor, Ohio Voc. Assn. Reporter. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Pre-Service and In-Service Education for Teachers of Vocational Agric.; Curriculum and Counseling in Higher Edn.; Improvement of College Level Instruction.



RITTER, John Joseph (R.N.), Assoc. Hosp. Adm., Fordham Hosp., Bronx, N. Y. Home Add.: 17 Lehigh Place, Glen Rock, N. J.

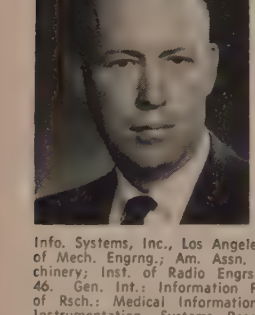
HOSPITAL ADMINISTRATION. b. Paterson, N. J., Jan. 10, 1907. s. John J. and Clara (Buschmann) R. Edn.: R.N., Bellevue Div., N. Y. Univ., 1930. m. Ruth Dwight, Mar., 1931. c.: Robert; Barbara. Exp.: Supv. Soc. Hygiene, Harlem Hosp., N.Y.C., 1930-40; Assoc. Hosp. Admin., Fordham Hosp., Bronx, N. Y., 1947—. Hon. Pos.: Chmn., Workmans Comp. Comm., Occupational Health Sec., A.P.-H.A. Mem.: Fellow, Am. Acad. Med. Adm.; Fellow, Am. Pub. Health Assn.; Fellow, A.A.A.S.; Royal Soc. of Health; Military Surgeons; Med. Libr. Assn.; N. J. Acad. of Sci.; Alpha Omega Rho; Boers. Serv. Rec.: A.U.S., 1940-46. Areas of Rsch.: Medical Administration; Hosp. Adm.; Workmans Compensation.

RITTER, Lawrence S. (Ph.D.), Prof. of Finance and Chmn., Dept. Fin., Grad. Schl. Bus., N. Y. Univ., N. Y. 6, N. Y. ECONOMICS.



b. N.Y.C., N. Y., May 23, 1922. s. Irving and Bella (Gerwitz) R. Edn.: B.A., Ind. Univ., 1942; M.A., Univ. of Wis., 1948; Ph.D., ibid., 1951. m. Claire Fliess, 1942 (div. 1953). c.: Stephen. Exp.: Instr., Dept. of Econ., Mich. St. Univ., 1949-51; Asst. Prof., Dept. of Econ., ibid., 1951-55; Economist, Fed. Res. Bank of N.Y., 1955-58; Chf., Domestic Rsch. Div., ibid., 1958-59; Economist, Comm. on Money and Credit, 1959-60; Visiting Assoc. Prof. of Economics, Yale Univ., 1960; Prof. of Finance, N. Y. Univ., 1960—; Assoc. Ed., Jour. of Fin., 1962—. Mem.: Am. Econ. Assn.; Am. Finance Assn.; Royal Econ. Soc. Author: Money and Economic Activity, 1952, second ed., 1961. Contbr. to: Am. Econ. Rev.; Rev. of Econ. Studies; Jour. of Finance; Jour. of Political Economy; Am. Jour. of Econ. and Sociol. War Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Income and Employment Theory; Money and Banking; Monetary and Fiscal Policy.

ROACH, Charles Joseph (Mr.), Dir., Med. Info. Systems, Adv. Info. Systems, Inc., Los Angeles, Calif. Home Add.: 11 Santa Bella Rd., Rolling Hills Est., Calif. SYSTEMS ENGINEERING; RESEARCH IN ELECTRONIC DATA PROCESSING IN MEDICINE. b. Shullsburg, Wis., May 30, 1921. s. Andrew A. and Rose E. (Ertmer) R. Edn.: B.S., Univ. of Ill., 1946; M.S., Ill. Inst. of Tech., 1951. m. Janet B. Moesges, Oct. 22, 1949. c.: Brian C.; Joyce B.; Teresa E. Exp.: Product Engr., Western Elec. Co., Chgo., Ill., 1946-52; Staff Mem., Rsch. and Dev. Labs., Hughes Aircraft Corp., Culver City, Calif., 1952-56; Mem. of Tech. Staff, Space Technol. Corp., Inglewood, Calif., 1956-57; Rsch. Staff, RAND Corp., Santa Monica, Calif., 1957; Staff Mem., Center for Rsch. in System Dev., System Dev. Corp., ibid., 1957-62; Dir., Adv. Info. Systems, Inc., Los Angeles, Calif., 1962—. Mem.: Am. Soc. of Mech. Engrng.; Am. Assn. Adv. Sci.; Assn. of Computer Machinery; Inst. of Radio Engrs. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Information Processing and Automation. Areas of Rsch.: Medical Information Processing Systems, Automation, Instrumentation, Systems Research.



ROACH, Charles David (Mr.), Technical Director U. S. Army Transportation Research Command, Fort Eustis, Pa. Home Add.: 279 Richneck Road, Denbigh, Va. NAVAL ARCHITECTURE AND MARINE ENGINEERING (HYDRODYNAMIC). b. Okmulgee, Okla., June 2, 1916. s. Charles and Mary Alliene (Cobb) R. Edn.: B.S., Univ. of Mich., 1939. m. Helen Annette Wails, September 10, 1941. c.: John Charles; David Wails; Karen Annette; Peter Lee; Linda Louise. Exp.: Marine Engr., Miami Shipbuilding Corp., Miami, Fla., 1939-41; Vice-Pres. and Naval Architect, Dooleys Basin and Dry Dock, Inc., Ft. Lauderdale, Fla., 1941-43; Instr. in Marine Engrng., Univ. of Fla. Ext. at Univ. of Miami, 1940-44; Dir. of Rsch., Columbian Bronze Corp., Freeport Long Island, 1943-46; Pres., Charles D. Roach, Inc., Consulting Engrs., Ft. Lauderdale, Fla., 1946-49; Chf. Marine Br., U. S. Army Transportation Bd., Brooklyn, N. Y., 1949-51; Dir. of Surface Mobility, U. S. Army Transportation Rsch. Command, Ft. Eustis, Va., 1951-60; Mem., Long Range Technical Forecast Office, ibid., 1960—. Hon. Pos.: Mem., Hydrodynamics Subcomm. H-2 Rsch. and Tech.-Comm., Soc. of Naval Architects and Marine Engrs.; Mem., Marine Rev. Panel on Rsch. and Dev., Dept. of Defense, 1955-56. Mem.: Soc. of Naval Architects and Marine Engrs.; N. E. Coast Inst. of Engrs. and Shipbuilders; Am. Assn. Adv. Sci.; Kappa Sigma; Quarterdeck Soc.; etc. Contbr. to: Soc. of Naval Architect and Marine Engrs.; Soc. of Automotive Engrs.; Natl. Defense Transportation Assn. Jour. Gen. Int.: Recd. Citation for engineering achievements in the field of Transportation, Convocation of Univ. of Mich., 1957; Recd. Meritorious Civilian Serv. Award, 1958; Recd. Pres. Award of Soc. of Naval Architects, 1954.

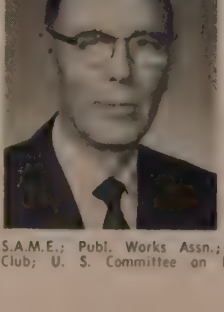
ROBBIN, Lewis (M.D.), East Gate Road, Ho-Ho-Kus, N. J. PEDIATRICS. b. Harrisburg, Pa., Apr. 21, 1892. s. Joseph and Elizabeth (Foreman) R. Edn.: Ph.B., Lafayette Coll., 1914; M.D., Columbia Univ. Coll. of Physicians and Surgeons, 1918. m. Helen White Beugler, 1920. c.: Jonathan E.; Mrs. James Lee Dover. Exp.: Res. Babies' Hosp., N.Y.C., 1919-20; Res. in Chf., N. Y. Nursery and Childs Hosp., 1918-19; Physician, Out-Patient Dept., Babies' Hosp., N.Y.C., 1920-25; Physician in Chf., Irvington Gen. Hosp., 1939-52; Consult., Devereus Schls., Devon, Pa., 1939—; Med. Dir., East Side Day Nursery and Shelter, 1921-52. Mem.: Fellow, A.M.A.; Am. Acad. of Pediatrics; N. Y. Acad. of Med.; A.A.A.S.; Licentiate Am. Bd. of Pediatrics; Baltusrol Golf Club. Contbr. to: Am. Jour. Diseases of Children; Archives of Pediatrics; Urologic and Cutaneous Rev.; Jour. State of N. J. Serv. Rec.: Med. Enlisted Res. Corps, 1917-19. Gen. Int.: Recd. Lounsbury Prize in English Lit., Lafayette Coll., 1914. Areas of Rsch.: Genetics.

ROBBINS, Samuel D. (L.H.D.), Dir., Inst. for Speech Correction, 168 Beacon St., Boston 16, Mass. Home Add.: 711 Pleasant St., Belmont 78, Mass. PSYCHOLOGY AND SPEECH THERAPY. b. Belmont, Mass., Dec. 28, 1887. s. Chandler and Maria Wellington (Mead) R. Edn.: A.B., Harvard Coll., 1911; A.M., ibid., 1919. Hon. Deg.: L.H.D., Emerson Coll., 1955. m. Rosa Margaret Seymour, July 10, 1917. c.: Chandler Seymour; Roger Wellington; Samuel Dowse, Jr. Exp.: Dir., Inst. for Speech Correction, Boston, Mass., 1916—; Speech Therapist, Mass. Gen. Hosp., Boston, 1919-43; Sup. in Edn., Mass. Div. Mental Hygiene, Boston, 1927-57; Prof. of Psychol., Then Speech Therapy, Emerson Coll., Emeritus, 1935-53. Hon. Pos.: Secy., Am. Speech and Hearing Assn., 1931-40; Pres., ibid., 1941-42; Chmn., Nomenclature Comm. Trustee, Belmont Savings Bank; Belmont, Mass., Town Meeting Mem. Mem.: Fellow, A.A.A.S.; Fellow, Am. Psychological Assn.; Fellow, Am. Speech and Hearing Assn. Author: Stammering and Its Treatment, 1926; Correction of Speech Defects of Early Childhood, 1937; A Dictionary of Speech Pathology and Therapy, 1951; Robbins Speech Sound Discrimination and Verbal Imagery Type Tests, 1958. Contbr. to: Jour. of Speech and Hearing Disorders. Areas of Rsch.: Clinical Psychology and Speech Pathology.

ROBERTS, Edith Adelaide (Ph.D.), Rsch. Guest, Mass. Inst. Tech., Cambridge, Mass. Home Add.: 17 Dearborn St., Salem, Mass.

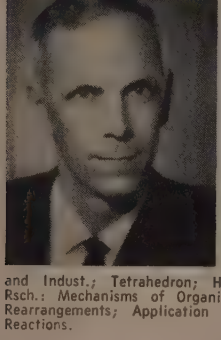
ELECTRON MICROSCOPE STUDIES OF LEUCOPLASTS: CHLOROPLASTS AND STARCH GRAINS. b. Rollinsford, N. H., Apr. 28, 1881. d. Joseph D. and Adelaide (Littlefield) R. Edn.: B.A., Smith Coll., 1905; M.S., Univ. of Chicago, 1911; Ph.D., ibid., 1915. Exp.: Instr. and Assoc. Prof., Mt. Holyoke Coll., So. Hadley, Mass., 1915-17; Ext. Work Women, Dept. Agric., Wash., D. C., 1917-19; Assoc. Prof., Vassar Coll., Poughkeepsie, N. Y., 1919-21; Prof., Dept. Plant Sci., ibid., 1921-50; Rsch. Guest, Mass. Inst. of Tech., Cambridge, Mass., 1950—. Mem.: Phi Beta Kappa; Sigma Xi; A.A.-A.S.; Sigma Delta Epsilon. Author: The Microstructure of Starch Grains, 1956. Contbr. to: Sci.; Plant Physiology; Food Rsch.; Am. Jour. of Botany; Bull. of Electron Microscope Soc. of Am. Areas of Rsch.: Effect of High Energy Cathode Rays upon Plant Structures and Substances.

ROBERTS, Howard Hill (Mr.), Sr. Vice Pres., Nance Engrng., Inc. 1512 Davenport, Omaha, Neb. Home Add.: 5202 Underwood, Omaha 32, Neb. CIVIL ENGINEERING. b. Columbia, Tenn., May 29, 1895. s. Thomas Wesley and Eva (Foster) R. Edn.: B.E., Vanderbilt Univ., 1916. m. Florence Hooks, 1922. c.: Howard Hill, Jr.; Robert Wesley. Exp.: Asst. Engr., City of Miami, Fla., 1916-18; Asst. Chf. Engrng. Div., Corps of Engrs., Florence, Ala., 1919-25. Mem.: Firm, Huff and Roberts, Miami, Fla., 1925-28; Chf. Engrng. Div. and Consultant, Corps of Engrs., Kansas City, Mo. and Omaha, Neb. 1928-59; Sr. Vice Pres., Nance Engrng., Inc., Omaha, Neb., 1959 . Hon. Pos.: Past Pres., Omaha Post Soc. of Am. Military Engrs.; Various Committees, ASCE, NSPE and SAME. Mem.: A.A.A.S.; Fellow; A.S.C.E., Fellow; N.S.P.E.; S.A.M.E.; Publ. Works Assn.; Neb. Engr. Soc.; Omaha Engrs. Club; U. S. Committee on Large Dams of Internatl. Comm.



on Large Dams; U. S. Natl. Comm. of Internatl. Comm. on Irrigation and Drainage. Contbr. to: A.S.C.E.; Civil Engrng.; Rural Rds.; Trans. Serv. Rec.: U. S. Army, 1918-19, 1942-46, Lt. Col., Res., Ret. Areas of Rsch.: Design and Construction of Large Dams; Improvement of Rivers for Navigation and Control of Floods.

ROBERTS, Royston Murphy (Ph.D.), Prof. of Chem., Univ. of Tex., Austin, Tex. Home Add.: 841 E. 38th St., Austin 5, Tex. ORGANIC CHEMISTRY. b. Sherman, Tex., June 11, 1918. s. C. Stanly and Leska (Murphy) R. Edn.: B.A., Austin Coll., 1940; M.A., Univ. of Ill., 1941; Ph.D., ibid., 1944. m. Phyllis Benson, Sept. 18, 1943. c.: Richard R.; David M.; C. Stanly, III; Jean Ellen. Exp.: Chemist, Merck, Co., Inc., Rahway, N. J., 1945-46; Rsch. Fellow, U.C.L.A., 1946-47; Asst. Prof., Univ. of Tex., 1947-50; Assoc. Prof., ibid., 1951-60; Prof., ibid., 1961—. Mem.: Am. Chem. Soc.; Chem. Soc., London; Sigma Xi; Alpha Chi Sigma; Phi Lambda Upsilon. Contbrng. Author: Friedel Crafts and Related Reactions, 1962, 1963. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Org. Chem.; Chem. and Indust.; Tetrahedron; Helvetica Chimica Acta. Areas of Rsch.: Mechanisms of Organic Reactions, Particularly Molecular Rearrangements; Application of Isotopes to Study of Organic Reactions.



ROBERTS, Thomas Livingstone (Mr.), Microbiologist, USAF Schl. of Aerospace Medicine, Brooks AFB, Tex. Home Add.: 3327 K. St., San Antonio, Tex. MICROBIOLOGY. b. Key West, Fla., Apr. 17, 1932. s. James David, Jr. and Learline (Edwards) R. Edn.: B.A., Talladega Coll., 1957; M.S., Trinity Univ., 1961. m. Marjorie J. Norton, 1957. c.: Kevin D. Exp.: Rsch. Asst., Univ. of Tex. Med. Branch, Galveston, Tex., 1957-58; Microbiologist, U.S.A.F. Schl. of Aerospace Med., Brooks Air Force Base, Tex., 1959—. Mem.: A.A.A.S.; Am. Soc. for Microbiology; Tex. Branch, ASM; Kappa Alpha Psi; Elks; Masons. Contbr. to: Jour. of Bacteriology; Bacteriological Proc.; Tex. Reports on Biol. and Med.; USAF Schl. of Aerospace Med. Reports. Serv. Rec.: U. S. Army Med. Dept., 1952-55. Areas of Rsch.: Clostridium spore physiology; space microbiology; radiation biology.

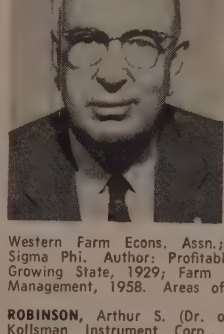
ROBERTS, William John (Ph.D.), Dir. of Rsch., Summit Rsch. Labs., Celanese Corp. of Am., Summit, N. J. Home Add.: 407 Lantern Lane, Leopard Lake, Berwyn, Pa. ORGANIC CHEMISTRY. b. Philadelphia, Pa., June 5, 1918. s. William G. and Olive Elizabeth (Schoppe) R. Edn.: A.B., Univ. of Pa., 1942; M.S., ibid., 1944; Ph.D., ibid., 1947. m. Eleanor Florence Kennedy, Oct. 2, 1948. c.: John William; Wendy Eleanor. Exp.: Asst. Chem., United Gas Improvement Co., Philadelphia, Pa., 1936-41; Rsch. Chem., ibid., 1941-44; Asst. to Mgr., ibid., 1944-45; Asst. Instr., Univ. of Pa., 1942-44; Asst. to Dir., Pa. Indl. Chem. Corp., Chester, Pa., 1946-47; Asst. Dir. of Rsch., ibid., 1948-55; Dir. of Rsch., ibid., 1955-57; Dir. of Rsch., Summit Rsch. Labs., Celanse Corp. of Am., Summit, N. J., 1957—. Mem.: Am. Chem. Soc.; Soc. of Chem. Ind.; Am. Ord. Assn.; Indl. Rsch. Inst.; Gordon Rsch. Confs. Coun.; Text. Rsch. Inst.; Pi Mu Epsilon; Sigma Xi. Co-Author: Styrene, 1949. Contbr. to: Encyclo. of Chem. Tech.; Jour. Am. Chem. Soc. Areas of Rsch.: Hydrocarbon Chemistry; Petrochemicals; Monomers and Polymers; Synthetic Fibers; Plastitcs; Cellulosics; Research Administration and Management.

ROBERTSON, Bennett Eugene (Ph.D.), Asst. Prof. of Physics, Harvey Mudd Coll., Claremont, Calif. NUCLEAR ENGINEERING. b. Guthrie, Okla., Oct. 13, 1920. s. Edward and Mary Elizabeth (Wallace) R. Edn.: B.A., Okla. Univ., 1941; Ph.D., Ohio State Univ., 1950. m. Gloria M. Fernandez, Mar. 24, 1946. Exp.: Project Engr., N.E.P.A., Div., Fairchild Aviation Co., Oak Ridge, Tenn., 1949-51; U.S.A.F. Liaison Officer, Oak Ridge Natl. Lab., 1951; Chf., Nucleonics Br., Materials Lab., W.A.D.C., 1952-54; Chief, Analysis and Measurements Br., Materials Lab., 1954; Asst. Prof., Assoc. Prof. of Physics, A.F. Inst. of Tech., Wright-Patterson AFB, Ohio, 1955-57; Prof. of Physics and Dept. Hd., U.S.A.F. Acad., Colo., 1957-59; Chf., Reactor and Adv. Systems Div., Directorate of Nuclear Safety Rsch., U.S.A.F., Kirtland A.F.B., N. M., 1959-61; Asst. Prof. of Physics, Harvey Mudd Coll., 1962—. Mem.: Am. Physical Soc.; Am. Nuclear Soc.; Am. Assn. Physics Tchrs.; Am. Soc. for Engrng. Edn.; A.A.U.P.; A.A.A.S.; Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon; Sigma Pi Sigma. Contbr. to: Physical Rev. Serv. Rec.: U.S.A.F., 1941-61. Areas of Rsch.: Radioactivity, Radiation Effects on Materials, Radiation Shielding, Reactor Safety.

ROBERTSON, George Leven (Ph.D.), Prof. and Head, Animal Sci. Dept., La. State Univ., Baton Rouge 3, La. Home Add.: 7017 Perkins Rd., Baton Rouge 8, La. PHYSIOLOGY OF REPRODUCTION. b. Alexandria, La., Feb. 7, 1921. s. Ernest E. and Cornelia (LaCroix) R. Edn.: B.S., La. State Univ., 1941; M.S., Tex. A. and M. Coll., 1947; Ph.D., Univ. of Wis., 1951. m. Florence Horne, Feb. 7, 1943. c.: Linda; Malcolm Ernest; Judy Elaine. Exp.: Instr., Animal Husbandry, Tex. A. and M. Coll., 1946-48; Asst. Prof., ibid., 1948-51; Assoc. Prof., ibid., 1951-55; Prof. and Hd. Dept., La. State Univ., 1955—. Hon. Pos.: Chmn., Tchr. Comm., Am. Soc. of Animal Sci., 1960. Mem.: Am. Soc. of Animal Production; Sigma Xi; Alpha Zeta; Phi Kappa Phi; Gamma Sigma Delta. Contbr. to: Jour. of Animal Sci. Gen. Int.: Outstanding Tchr. Areas of Rsch.: Physiology of Reproduction in Farm Animals.

Serv. Rec.: U.S.A., 1942-46. Award, Tex. A. and M. Coll.

ROBERTSON, Lynn Shelby (Ph.D.), Campus Coordinator, Purdue-Brazil Technical Training Program, Purdue Univ., W. Lafayette, Ind. Home Add.: 726 Vine St., W. Lafayette, Ind. AGRICULTURAL ECONOMICS. b. Glenville, Minn., Jan. 11, 1890. s. William and Eva (Loomis) R. Edn.: B.S., Univ. of Minn., 1914; M.S., Purdue Univ., 1930; Ph.D., Cornell Univ., 1937. m. Adella Pettersen, July 15, 1915. c.: Lynn S., Jr.; Eva B.; John W.; Howard E.; David E. Exp.: Agril. Extn. Economist, Purdue Univ., 1914-28; Asst. Hd., Agril. Econ. Dept., ibid., 1928-58; Chief of Purdue Party in Brazil, 1958-61; Campus Coordinator, Purdue-Brazil Technical Training Program, ibid., 1960—; Prof., Biarritz Am. Univ., France, 1944-45; Visiting Prof., Coll. of Agri., Univ. of Philippines, 1953-54. Mem.: Am. Farm Econs. Assn.; Western Farm Econs. Assn.; Sigma Xi; Alpha Zeta; Epsilon Sigma Phi. Author: Profitable Farm Management in the Corn-Growing State, 1929; Farm Business Management, 1946; Farm Management, 1958. Areas of Rsch.: Farm Management.



ROBINSON, Arthur S. (Dr. of Engrng. Sci.), Dir., Rsch. Div., Kollsman Instrument Corp., 80-08 45th Ave., Elmhurst 73, N. Y. Home Add.: 19 Collingwood Dr., S. Huntington, N. Y. ELECTRICAL ENGINEERING. b. New York City, Sept. 26, 1925. s. Jacob C. and Sara Ann (Schnoll) R. Edn.: B.S., Columbia Univ., 1948; M.S., N. Y. Univ., 1951; Dr. of Engrng. Sci., Columbia Univ., 1957. m. Barbara Knight, Sept. 7, 1953. c.: Dara; Lisa; Jonathan. Exp.: Engr., Hazeltine Electronics, Little Neck, N. Y., 1948-51; Engr., W. L. Maxson Corp., N. Y. C., 1951-52; Group Leader, Columbia Univ. Electronic Rsch. Labs., 1952-56; Dir., Advanced Electronics Lab., Bendix Aviation Corp., Teterboro, N. J., 1956-60; Dir., Rsch. Div., Kolisman Instrument Corp., Elmhurst, N. Y., 1960—. Hon. Pos.: Chmn., 1962 Joint Automatic Control Conf.; Vice Chmn., Computer and Logic Devices Sub-Comm. of the A.I.E.E. Feedback Control Systems Comm. Mem.: Inst. of Radio Engrs.; Am. Inst. of Electrical Engrs.; Assn. for Computing Machinery; A.A.A.S.; Inst. of the Aerospace Scis.; Tau Beta Pi; Assn. of the U. S. Army; Columbia Engrng. Schl. Alumni Assn. Contbr. to: Trans. of the I.R.E. Professional Group on Electronic Computers; Trans. of the I.R.E. Convention Record; Proc. of the A.I.E.E. Computer Control Conf.; Proc. of the Eastern Joint Computer Conv.; Proc. of the A.S.M.E. Design Engrng. Conf.; Trans. of the I.R.E. Professional Group on Automatic Control; A.I.E.E. Applications and Industry. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Coherent Optical-Electronic Components and Systems; Space Instrumentation; Medical Physics; Automatic Control Systems; Real Time Digital Data Processing Systems; Digital Control Computers.

ROBIN, Michael (Mr.), Group Leader, Chemicals, Catalin Corp. of America, Fords, N. J. Home Add.: 2 Kilmer Drive, Colonia, N. J. CHEMISTRY. b. New York, N. Y., May 17, 1919. s. Jacob and Lena (Kalaika) R. Edn.: B.S., City Coll. of N. Y., 1940; Ch.E., N. Y. Univ., 1944; M.S., Brooklyn Coll., 1950. m. Beatrice Janoer, June 26, 1943. c.: Tina Ellen; Alan Lee. Exp.: Sr. Organic Chemists, Nepera Chem. Co., Inc., Nepera Park Yonkers, N. Y., 1946-51; Sr. Res. and Dev. Chemist, Nuodex

Prod. Co., Inc., Elizabeth, N. J., 1951-53; Chief Chemist, Simpson Labs. Div., Simpson Coal and Chem. Corp., Newark, N. J., 1953-56; Group Leader Chemicals, Catalin Corp. of Am., Fords, N. J., 1956—. Mem.: Am. Chem. Soc.; A.A.A.S. Contbr. to: Jour. A.C.S.; Mod. Plastics Encyc. Serv. Rec.: U.S.A., 1941-45. Areas of Rsch.: Fine Organic and Pharmaceutical Product and Process Rsch. and Development; Organic Synthesis, Metallic Soaps, Antioxidants, Bacteriostats.

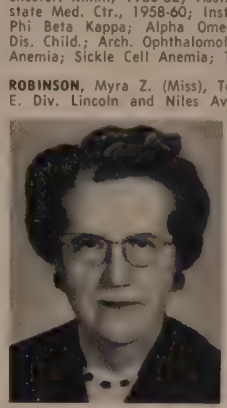
ROBINS, S. Raymond (Mr.), Pres., Hydroponics Internatl., Inc., Lehigh Acres, Fla. Home Add.: 5901 N. Bayshore Dr., Miami, Fla. HYDROPONICS (CHEMISTRY: PLANT PHYSIOLOGY). b. Charleston, S. C., Apr. 23, 1920. s. Morris and Oida (Cohn) R. Edn.: A.B., The Johns Hopkins Univ., 1941. m. Sylvia Friedlander, May 14, 1953. c.: Claudia; Deborah. Exp.: Inspector, Wolf Creek Ord. Plant, Milan, Tenn., 1941-42; Pres., Robins Farms, Inc., Vega Alta, Puerto Rico, 1951-56; Pres., Robins Farms, Internatl., Aruba, Neth., West Indies, 1956—; Pres., Hydroponics Internatl., Lehigh Acres, Fla., 1961—. Mem.: Internatl. Soc. for Horticultural Sci.; Am. Chem. Soc.; I.W.O.S.C.; Am. Assn. for the Adv. of Sci.; Epsi on Tau Alpha; Rotary Internatl. Contbr. to: Pros., 15th Internatl. Hort. Congress, Nice. Serv. Rec.: Lt., U. S. Naval Reserve, 1942-46.

ROBINSON, Herbert William (Ph.D.), Pres., CEIR, Inc., 1200 Jefferson Davis Hwy., Arlington, Va. Home Add.: 4201 Cathedral Ave. N.W., Washington, D. C. b. Hull, Yorkshire, England, Jan. 2, 1914. s. Herbert and Mary Elizabeth (Ellis) R. Edn.: Ph.D., (Econ.), London Schl. of Econs., 1937; D.Phil. (Oxon), Balliol Coll., 1939. m. Elsie Roenfeldt, May 8, 1948. c.: Denise Patricia; Keith Brian. Exp.: Sr. Lectr., Univ. Coll., Hull, England, 1939; Asst. to Lord Cherwell, Personal Scientific and Statistical Advisor to Prime Minister Churchill, 1939-42; Asst. to Lord Layton, Dir. of Programs and Planning, and Personal Advisor to Lord Beaverbrook, Ministry of Production, 1942-43; British Staff Mem., Combined (U. S., United Kingdom and Can.) Production and Resources Bd., 1943-44; Deputy Dir. of Stat., Econ. and Statistics Div., Ministry of Agric. and Fisheries, 1945; Chf., Econ. Trends, V. A. 1946; Chf., Operational Analysis Div., UNRRA Mission to Poland, 1946-47; Staff Mem., Loan and Econs. Dept., Internatl. Bank for Reconstruction and Dev., 1947-51; Deputy Div. Dir., Office of Programs and Requirements, Defense Production Admin., 1951-53; Pres., CEIR, Inc., 1954—; Pres. and Dir., Automation Shares, Inc., 1957-59; Dir., Automation Shares Mgmt. Corp., 1957-59; Vice Pres. and Dir., Automation Shares, Inc., 1959—; Pres., Greater Wash. Indusl. Coun., 1960. Mem.: Fellow, Royal Stat. Soc.; Am. Stat. Assn.; Am Econ Assn.; Fellow, Assn. of Incorp. Statisticians; A.A.A.S.; Inst. of Mgmt. Sci.; Natl. Acad. of Econ. and Polit Sci; Soc for Indust and Applied Math.; The Econometric Soc.; Operations Rsch. Soc. of Am.; Cosmos Club; Greater Wash. Indusl. Coun.; Acad. of Polit. Sci.; Am. Mgmt. Assn.; Wash. Housing Bur.; Metro. Wash. Sci. Bur.; Alpha Kappa Psi. Pubs.: The Econs. of Building; Britain in Recovery; Operational Analysis Reports on Poland. Contbr. to: Oxford Studies; Rev. of Econ. Studies; Mod. Law Rev.; Econometrica; The Econ. Jour.; Oxford Econ. Papers; and many others. Serv. Rec.: U.S.A. Areas of Rsch.: Economics; Econometrics; Operations Rsch.: Logistics; Statistics; Marketing; Data Processing.

ROBINSON, L. Vernon (Ph.D.), Scientist, Wright-Patterson A.F.B., Ohio. Home Add.: 925 Grafton Ave., Dayton 5, Ohio. ASTRONOMY; MATHEMATICS. b. Beech Grove, Tenn., Feb. 8, 1898. s. William H. and Myrtle (Warrick) R. Edn.: B.A., Univ. of Tex., 1921; M.A., ibid., 1922; Ph.D., Harvard Univ., 1931. m. (div.). Exp.: Instr. of Math., Meridian Coll., Tex., 1922-23; Rsch. Asst., McCormick Obs., Univ. of Va., 1923-24; Asst. Prof. of Math., Okla. City Univ., 1924-25; Prof. of Astron., Acting Dir., Schl. of Correspondence Study, ibid., 1925-26; Adjunct Prof. of Math., Tex. Tech. Coll., 1926-30; Instr. of Astron., Radcliffe Coll., 1930-31; Astronomer, Harvard Coll. Obs., 1931-32; Asst. Soil Conservationist, U.S.D.A., 1934-37; Instr. of Math., Amarillo Coll., 1937-40; Asst. Prof. of Math., Univ. of Miss., 1940-43; Assoc. Prof. of Physics, Marshall Coll., 1943-44; Assoc. Prof. of Math., Emory Univ., 1944-45; Assoc. Prof. of Math., Univ. of S. C., 1945-50; Mathematician, Aberdeen Proving Ground, Md, 1950-52; Scientist, Wright-Patterson AFB, Ohio, 1952—. Mem.: Am. Math. Soc.; Math Assn. Am.; Soc. of Industrial and Applied Math.; A.A.A.S; Am. Astron. Soc.; Astron. Soc. of the Pacific; Royal Astron. Soc., London. Contbr. to: Harvard Bulletin; Harvard Annals Scientific Monthly; Annual Report of Smithsonian Institution; Popular Astron.; Natl. Math. Mag.; Math. Monthly. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Cepheid Variable Stars; Operator Methods for Solving Partial Differential Equation (and Generalized Calculus).

ROBINSON. Margaret Glasgow (M.D.), Instr. in Pediatrics, St. Univ. of N. Y., Downstate Med. Ctr., Brooklyn 3, N. Y Home Add.: 615 Ave. L, Brooklyn 30, N. Y. PEDIATRIC HEMATOLOGY. b. Schenectady, N. Y., Jan. 24, 1928. d. Lawrence T. and Anne (West) R. Edn.: B.A., Univ. of Minn., 1950; M.D., ibid., 1956. m. Gordon La Flash, June 16, 1956. Exp.: Chem. and Bact. Instr., Kahler Schl. of Nursing, Rochester. Minn., 1950-52; Asst. Instr., St. Univ. of N. Y., Downstate Med. Ctr., 1958-60; Instr. Pediatrics, ibid., 1960—. Mem.: Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Am. Jour. Dis. Child.; Arch. Ophthalmology. Areas of Rsch.: Megaloblastic Anemia; Sickle Cell Anemia; Thalassemia, and Genetics.

ROBINSON, Myra Z. (Miss), Tchr., Biol. Scis., Niles Twp. H. S., E. Div. Lincoln and Niles Aves., Skokie, Ill. Home Add.: Box 35, 1718 Waukegan Rd., Glenview, Ill. ZOOLOGY; BIOLOGY. b. Nebo, Ill. d. R. K. (dec.) and Minnie Louisa (Gheen) (dec.) R. Edn.: A.B., Colo. Coll., 1926; A.M., Cornell Univ., 1935; 2½ yrs. Grad. Study under Fellowships: Westinghouse (M.I.T.); Gen. Elec. (Case Inst. Technol.; Univ. Chicago); Am. Assn. Adv. Sci. and Natl. Sci. Found. (Colo. Coll., Duke Univ., Univ. Wis., Wash. Univ., Ind. Univ.). Exp.: Tchr., H. S., Minot, N. Dak.; Tchr., Eveleth, Minn.; Gary, Ind., Ind. Univ., Gary, Ind., Skokie, Ill. Hon. Pos.: Pres., Biol.-Gen. Sci., Minn. Edn. Assn.; Chmn., Sci. Sect., Schimen's. Week., Phila., Pa.; Secty-Treas., Sci. Tchrs. League, Mesaba Iron Range, Minn.; Past Mem. and Treas., A.A.U.W. Mem.: Tau Kappa Alpha; Phi Lambda Theta; A.A.A.S.; Natl. Assn. Biol. Tchrs.; Natl. Assn. Sci. Tchrs. Contbr. to: Ednl. Method; Prog. Edn.; Curr. Jour.; Schl. Rev.; Jour. of Ednl. Rsch.; Rsch. in Morphol.; Grad. Edn.; Adolescent Growth and Devel.; Evaluation.



ROBINSON, Trevor (Ph.D.), Asst. Prof., Chem. Dept., Univ. of Mass., Amherst, Mass. Home Add.: 65 Pine St., N. Amherst, Mass. BIOCHEMISTRY. b. Chicopee, Mass., Feb. 20, 1929. s. Thomas F. and Helen (Dalton) R. Edn.: A.B., Harvard Univ., 1950; M.A., ibid., 1951; M.S., Univ. of Mass., 1953; Ph.D., Cornell Univ. 1956. m. Laura Barme, May 30, 1952. c.: June; Heather. Exp.: Rsch. Assoc., Syracuse Univ., 1956-60; Asst. Prof., Univ. of Mass., 1961—. Mem.: Sigma Xi; A.A.A.S.; Am. Soc. Plant Physiol.; Phi Kappa Phi. Author: The Organic Constituents of Higher Plants, 1963. Contbr. to: Nature; Biochim. et Biophys. Acta; Chymia; Jour. of Chem. Edn. Areas of Rsch.: Biochemistry of Higher Plants; Alkaloids; History of Science (Biology and Chemistry).

ROCHEN, Leo Kant (Ph.D.), Pres., Arenol Chem. Corp., 4033 23rd St., Long Island City, N. Y. Home Add.: 4 Hampton Rd., Lynbrook, N. Y. ORGANIC CHEMISTRY. b. New York, N. Y., Oct. 9, 1913. s. Isadore and Mamie (Kantrowitz) R. Edn.: B.S., City Coll. of N. Y., 1933; Ph.D., Northwestern Univ., 1940. m. Phoebe Elkan, June 15, 1941. c.: Donall Michael; Jeffrey David. Exp.: Rsch. Chem., Lucidol Corp., Buffalo, N. Y., 1940-43; Rsch. Chem., Wallace and Tiernan Co., Belleville, N. J., 1943-44; Tchr. Dir., Empire Findings Co., Inc., New York, N. Y., 1944-46; Chf. Chem., Keto Chem., Co., Inc., L. I. City, N. Y., 1946-49; Pres., Arenol Chem. Corp., Long Island City, N. Y., 1949—. Mem.: Am. Assn. Adv. Sci.; Am. Chem. Sci.; Am. Pharm. Assn.; N. Y. Acad. of Sci.; Sigma Xi Areas of Rsch.: Dioxanes, Organic Peroxides, Pharmaceuticals, Enzymes, Vitamins, Microbiological Chemistry.

ROCHOW, Eugene George (Ph.D.), Prof. of Chem., Harvard Univ., Cambridge, Mass. Home Add.: 37 Squire Rd Winchester Mass. INORGANIC CHEMISTRY. b. Newark, N. J., Oct. 4, 1909. s. Theodore Charles and Mary (Lieberman) R.) Edn.: B.Chem., Cornell, 1931; Ph.D., ibid., 1935. Hon. Deg.: M.A., Harvard, 1948. m. 1st.: Priscilla George Ferguson, 1935. 2nd m. Helen Louise Smith, 1951. c.; Stephen; Jennifer; Eugene, Jr. Exp.: Rsch. Assoc., Gen. Elec. Co., Schenectady, N. Y., 1935-48; Prof., Harvard Univ., Cambridge, Mass., 1948 -. Mem.: Editorial Bd. Jour. Inorg. Nuclear Chem.; Editor, Inorganic Syntheses. Mem.: Am. Acad. of Arts and Scis.; Am. Chem. Soc.; Chem. Soc., London; Am. Inst. of Chemists; Soc. de Chimie Industrielle; Sigma Xi; Tau Beta Pi; Alpha Chi Sigma. Author: An Introduction to the Chemistry of the Silicones, 1946; 2nd Edn., 1951. Co-Author: General Chemistry, A Topical Introduction, 1954; The Chemistry of Organometallic Compounds, 1957. Contbr. to: Jour. Am. Chem. Soc.; Jour. Inorg. Nuclear Chem.;

Jour. Org. Chem.; Jour. Appl. Physics; Jour. Polymer Sci.; Trans. Electrochem. Soc.; Jour. Phys. and Colloid Chem.; Chem. Revs.; Spectrochimica Acta; Jour. Chem. Edn.; Chemie et Industrie. Areas of Rsch.: Inorganic and Organometallic Chemistry, Silicones.

ROCKIE, William Allan (Mr.), Fulbright Lecturer in Soil Conservation, Univ. of Istanbul, Turkey. Home Add.: Rt. 1, Box 704, Wilsonville, Ore. SOIL CONSERVATION, GEOMORPHOLOGY, AGRICULTURAL GEOGRAPHY. b. Fremont, Neb., Mar. 17, 1890. s. David Walter and Annie Harriet Amelia (Dorward) R. Edn.: B.S., Univ. of Neb., 1914. m. Edith Shank, Dec. 27, 1916. c.: Dwain Allan; John Doward. Exp.: Scientist in Soil Survey, U. S. Dept. of Agric., Washington, D. C., 1914-18; Assoc. Prof. of Geography, Univ. of Neb., 1918-20; Asst. Ecologist, U. S. Dept. of Agric., Spokane, Wash., 1922-30; Soil Conservationist, U. S. Soil Conservation Serv., Pullman, Wash., 1930-33; Regional Dir., ibid., Spokane, Wash., 1933-38; Alaska Rsch. Proj., Soil Cons. Serv., ibid., 1938-42; Chf. of Proj. Plans, Pacific Coast Reg., Soil Conservation Serv., Portland, Ore., 1942-52; Land Use Specialist, UNESCO Sahara Scient. Exped., Africa, 1953-54; Conservation Engr. to Jamaica, Food and Agric. Org., Rome, Italy, 1954-56; Lectr. in Geography, Portland State Coll., 1959-61; Lectr. in Geography, Univ. of Ore., 1962; Fulbright Lectr. in Soil and Water Conservation, Univ. of Istanbul, Turkey, 1962-63. Hon. Pos.: Pres., Northwest Scient. Assn., 1935; Trustee, ibid., 1937-55; Hon. Life Mem., 1958; Pres., Assn. Pac. Coast Geographers, 1952-53; Elected Fellow, SCSA, 1958. Mem.: A.A.A.S.; Soil Cons. Soc. of Am.; Assn. Am. Geographers; Am. Geographical Soc.; Northwest Sci. Assn.; Sigma Xi; Mason; Alpha Zeta. Contbr. to: Geographical Rev.; Jour. of Soil and Water Conservation; Soil Conservation; Jour. of Geography; Econ. Geography. Areas of Rsch.: Geography and Soil Conservation in Palouse, Alaska, Pacific Northwest, Sahara, Jamaica and New Zealand.

ROCKSTEIN, Morris (Ph.D.), Prof. of Physiol., Univ. of Miami, Schl. of Med., 1600 N.W. 10th Ave., Miami 36, Fla. Home Add.: 2508 DeSoto Blvd., Coral Gables 34, Fla. PHYSIOLOGY. b. Toronto, Can., Jan. 8, 1916. s. David and Mina (Segal) R. Edn.: A.B., Brooklyn Coll., 1938; A.M., Columbia Univ., 1941; Ph.D., Univ. of Minn., 1946. m. Elaine Soffer, Dec. 23, 1941. (dec.). c.: Susan Margaret; Madelaine Jo. Exp.: Assoc. Prof., St. Univ. of Wash., 1948-53; Assoc. Prof. of Physiol., N. Y. Univ., Schl. of Med., 1953-61; Prof. of Physiol., Univ. of Miami, Schl. of Med., 1961—. Mem.: Fellow, A.A.A.S.; Am. Physiol. Soc.; Am. Soc. of Zoologists; Soc. of General Physiologists; Sigma Xi; The Harvey Soc.; Marine Biol. Lab. Corp., Lr., ibid., 1962-65. Fellow, Gerontol. Soc.; Fellow, Entomol. Soc. of Am.; Phi Beta Kappa. Contbr. to: The Biol. of Aging; Smithsonian Miscell. Publs.; Sci.; Nature; Biol. Bull.; Comparative Physiol.; Psychol. Zool.; Proc. Soc. of Exptl. Biol. and Med.; Jour. of Gerontology; Gerontologia; Annals of the Entomol. Soc. of Am.; Bull. Bklyn. Entomological Soc.; Annual Rev. of Entomoogy; Ciba Colloquium on Ageing.; Editor, "Physiology of Insecta." Serv. Rec.: U. S. Air Force, 1942-46; U.S.P.H.S. Commissioned Corps Scientist) (Res.), 1951—. Areas of Rsch.: Gerontology; Physiol. Basis of the Aging Process in Invertebrates and Mannals; Insect Physiology; Comparative Enzymology.

RODENBERGER, Charles Alvard (Mr.), Assoc. Prof., Dept. of Aerospace Engrng., A. & M. Coll. of Tex., College Station, Tex. Home Add.: 508 Crescent Dr., Bryan, Tex. AEROSPACE ENGINEERING — STRUCTURAL DESIGN. b. Muskogee, Okla., Sept. 11, 1926. s. Darcy O. and Kathryn (Percival) R. Edn.: B.S., Okla. St. Univ., 1948; M.S., Sou. Meth. Univ., 1959. m. Lou Halsell, Sept. 3, 1949. c.: Kathryn Sue; Charles Mark. Exp.: Jr. Petr. Engr., Pan Am Prod. Corp., Levelland, Tex., 1948-51; Chief Engr., McGregor Bros., Inc., Odessa, Tex., 1953-54; Sr. Design Engr., General Dynamics of Ft. Worth, Tex., 1954-60; Assoc. Prof., Dept. of Aero Engrng., A. & M. Coll. of Tex., 1960—; Sr. Design Engr., Gen. Dynamics Astronautics, San Diego, Calif., s.s., 1961; Design Specialist, Hexcel Products, Inc., Berkeley, Calif., s.s., 1962. Mem.: Inst. of Aerospace Scis.; Natl. Soc. of Prof. Engrs.; Tex. Soc. of Prof. Engrs.; Am. Soc. for Engrng. Edn.; Am. Soc. for Testing Materials; Sigma Xi; Chi Epsilon. Serv. Rec.: U. S. Army Air Force, 1945; Officer, U.S.A.F., 1951-53. Gen. Int.: Faculty Distinguished Achievement Award, 1962, Tex. A. & M. College. Areas of Rsch.: Design of lightweight structures, particularly bonded and brazed sandwich construction. Design of structure for sonic vibrations.

RODDIS, Louis Harry (M.D.), Retired Captain Med. Corps, U. S. Navy, 4420 Braeburn Rd., San Diego 16, Calif. TROPICAL MEDICINE, MEDICAL HISTORY. b. Cherokee Co., Ia., Feb. 16, 1887. s. Henry and Clara Eva (Schlinger) R. Edn.: M.D., Univ. of Minn., 1913. m. Winifred Emily Stiles, Sept. 27, 1916. c.: Louis H., Jr.; Richard S. L. Exp.: Lect. Med. Hist., Naval Med. P. G. Schl., Washington, D. C., 1933-37; Edn. U. S. Naval Med. Bull., Washington, D. C., 1933-37; Exec. Officer, Naval Hosp., Pearl Harbor, T.H., 1937-39; Chief Publications, Bull. Med. and Surg., Washington, D. C., 1941-42, 1945-48. Hon. Pos.: Mem. Subcommittee Med. Hist., Natl. Rsch. Coun., 1941-42, 1945-48. Mem.: Am. Med. Assn.; Fellow, Am. Coll. of Physicians; Assn. of Military Surgs.; A.A.A.S.; Bd. of Int. Med. Minn. Hist. Soc.; Theta Kappa Psi. Author: A Short History of Nautical Medicine, 1941; Indian Wars of Minnesota, 1956. Contbr. to: Jour. A.M.A.; Annals of Internal Med.; Military Med.; Naval Med. Bull.; U. S. Naval Inst.; Minn. Hist.; Current Med. Digest; Am. Scandinavian Rev. Serv Rec.: U. S. Army, W. W. II. Gen. Int.: Recipient of Sir Henry Wellcome Gold Medal and Prize in Military Med., 1943; Outstanding Achievement Award, Univ. of Minn., 1957. Areas of Rsch.: Medical History and Biography. Tropical Med. Extensive Exeprience as a Medical Editor and as a Book Reviewer.

RODGERS, Andrew Denny, III (Litt.D.), Author, 30 S. Dawson Ave., Bexley, Columbus 9, Ohio. BIOGRAPHY IN AMERICAN SCIENCES. b. Columbus, Ohio, Jan. 19, 1900. s. Andrew Denny, Jr. and Mary Louise (Price) R. Edn.: A.B., Ohio Wesleyan Univ., 1922; LL.B., Ohio State Univ., 1925; Grad. Study, Northwestern Univ., 1933-35. Hon. Deg.: Litt.D., Ohio Wesleyan Univ., 1946. m. Elinor Chase Rogers, Oct. 15, 1934. Exp.: Practice of Law, Henderson, Burr, Randall and Porter, Columbus, Ohio, 1926-33; Author and Teacher; Fellow, Internatl. Inst. of Arts and Letters. Mem.: Am. Assn. Adv. Sci.; Hist. of Sci. Soc.; Sigma Alpha Epsilon; Delta Sigma Rho; Phi Delta Phi; Toastmasters Soc. Author: "Noble Fellow" William Starling Sullivant, 1940; John Torrey, A Story of North Am. Botany, 1942; John Merle Coulter Missionary in Science, 1944; American Botany, 1873-1892, Decades of Transition, 1944; Liberty Hyde Bailey, A Story of American Plant Sciences, 1949; Bernhard Eduard Fernow, A Story of North American Forestry, 1951; Erwin Frink Smith, A Story of North American Plant Pathology, 1952; etc. Contbr. to: Am. Jour. of Botany; Various Historical Soc. Publications. Serv. Rec.: Students Army Trng. Corps, 1918. Gen. Int.: Recd. Cert. of Merit, Bot. Soc. of Am., 1956. Areas of Rsch.: Am. Botanical History; Reclamation and Irrigation Development of Lands West of 98th Meridian; Ohio History.

RODGERS, Jack P. (Mr.), Geologist, 3505 Sentinel, Midland, Tex. EXPLORATION GEOLOGY. b. Clarendon, Tex., Jan. 18, 1922. s. James P. and Clara (Simmons) R. Edn.: B.S., Univ. of Tex., 1946; M.A., ibid., 1947. m. Patricia Rawlings, July, 1945. c.: Dianne; James; Peggy; Patrick. Exp.: Asst. Geol., Standard of Tex., Midland, Tex., 1947-48; Geologist, Lario Oil and Gas Co., ibid., 1948-49; Consultant, Independent, ibid., 1949—. Mem.: A.A.A.S., (Fellow); Am. Assn. Pet. Geol.; Am. Geophysical Union; Seismological Soc. of Am.; Geochem. Soc.; Soc. Econ. Paleo. and Mineralogists. Serv. Rec.: U. S. Army, 1942-44. Areas of Rsch.: Sedimentation.

ROEMER, Frederick Joseph (M.D.), Private Practice, 680 Broadway, Bedford, Ohio. Home Add.: 5430 Brainard Rd., Solon 39, Ohio. SURGERY GYNECOLOGY AND OBSTETRICS. b. Columbus, Ohio, May 25, 1910. s. Maximillian E. Roemer and Anna (Hunter) R. Edn.: A.B., Cornell, 1932; M.A., ibid., 1934; M.D., Western Reserve, 1937. m. Irene Jacobson, July 3, 1938. c.: Toby; Judith; Peter. Exp.: Private Practice, Bedford, Ohio, 1946—. Mem.: Fellow, Am. Coll. of Surgeons; Fellow, Internatl. Coll. of Surgeons; Phi Kappa Sigma. Contbr. to: Jour. of Am. Med. Assn.; Am. Jour. Obstet. and Gynecol.; Am. Jour. of Surg. Areas of Rsch.: Statistical Analyses in Obstetrics.

ROGERS, David Elliott (M.D.), Prof. of Med. and Hd. of the Dept., Vanderbilt Univ. Schl. of Med., Nashville 5, Tenn. Home Add.: 1163 Gateway Lane, Nashville, Tenn. INTERNAL MEDICINE. b. New York City, N. Y., Mar. 17, 1926. s. Carl R. and Helen M. (Elliott) R. Edn.: M.D., Cornell Univ. Med. Coll., 1948. m. Corajane Baxter, Aug. 13, 1946. c.: Anne Baxter; Gregory Baxter; Julia Cushing. Exp.: Interne, Asst. Res., Johns Hopkins, 1948-50; Res., N. Y. Hosp., 1950-52; Asst. Prof. of Med., The N. Y. Hosp.-Cornell Med. Center, 1954-56; Chf., Div. of Infectious Dis., ibid., 1955-59; Assoc. Prof. Med., Cornell

Univ. Med. Coll., 1956-59; Prof. of Med. and Hd. of the Dept., Vanderbilt Univ. Schl of Med., 1959 -. Mem.: Am. Fed. Clin. Rsch.; Am. Soc. Clin. Invest.; Assn. Am. Phys.; Assn. Prof. Med.; Sigma Xi; A.O.A.; Fellow, N. Y. Acad. Med.; Fellow, N. Y. Acad. Scis.; Harvey Soc.; Interplantary Soc.; Nashville Acad. Med. and Davidson Co. Med. Soc.; Nashville Soc. Internists; A.M.A. Contbr. to: Jour. Exptl. Med.; Jour. Clin. Invest.; New England Jour. Med.; Ann. Int. Med.; Ann. N. Y. Acad. Sci. Serv. Rec.: U.S.N.R., 1952-54. Areas of Rsch.: Fundamental Work on Basic Host Mechanisms Operative in Human Infections, Particularly Staphylococcal Disease.

ROGERS, Dorothy (Ph.D.), Prof. of Psychology, State Univ. of New York, Oswego, N. Y. Home Add.: R.D. 3, Oswego, N. Y.

EDUCATIONAL PSYCHOLOGY, CHILD DEVELOPMENT. b. Ashburn, Ga., May 31, 1914. d. Edwin A. (dec.) and Ella Mae (Evans) Rogers. Edn.: A.B., Univ. of Ga., 1934; M.A., ibid., 1936; Ph.D., Duke Univ., 1947. Exp.: Tchr., Birmingham, Ala. Public Schls., 1935-44; Instr., Psychol., Tchrs. Coll., State Univ. of N. Y., 1946-48; Asst. Prof., Psychol., 1948-50; Prof. of Psychol. and Coord. of Child Devel., ibid., 1950–. Mem.: Am. Psychol. Assn.; N. Y. State Psychol. Assn.; Phi Beta Kappa; Phi Kappa Phi; Kappa Delta Pi. Author: Mental Hygiene in Elem. Edn., 1958; Jeopardy and a Jeep, 1958. Contbr. to: Jour. of Edn.; Peabody Jour. of Edn.; Jour. of Edn'l. Sociol.; Jour. of Edn'l. Rsch.; Elem. Schl. Jour.; Jour. of Bus. Edn. Areas of Rsch.: Edn'l. Psychol.; Child Dev.

ROGERS, Fred Baker (M.D.), Prof. of Preventive Med., Temple Univ. Schl. of Med., Phila. 40, Pa. Home Add.: 301 W. State St., Trenton 8, N. J. PREVENTIVE MEDICINE. b. Trenton, N. J., Aug. 25, 1926. s. Dr. Lawrence H. and Eliza Charlotte (Thropp) R. Edn.: A.B., Princeton Univ., 1947; M.D., Temple Univ., 1948; M.S., Univ. of Pa., 1954; M.P.H., Columbia Univ., 1957; Special Student, Johns Hopkins Univ., 1962. Exp.: Instr. in Med., Temple Univ., Schl. of Med., 1954-56; Asst. Prof., Prev. Med., ibid., 1956-57; Assoc. Prof. Prev. Med., ibid., 1957-60; Prof., ibid., 1960–. Lectr. in Epidemiology, Columbia Univ. Schl. of Pub. Health, 1957. Mem.: Am. Coll. of Physicians; Assn. of Tchrs. of Prev. Med.; Am. Med. Assn.; Am. Pub. Health Assn.; Coll. of Physicians of Phila.; Royal Soc. of Health (London); Alpha Omega Alpha; Phi Rho Sigma; Sigma Xi. Contbr. to: Transactions and Studies, Coll. of Physicians of Phila.; Jour. of the Med. Soc. of N. J.; Jour. of Hist. of Med. and Allied Sci. Author: A Syllabus of Medical History, 1958; Help-Bringers: Versatile Physicians of New Jersey, 1960; Epidemiology and Control of Communicable Diseases, 1961. War. Rec.: U. S. Naval Reserve, Korean Service, 1950-53. Travel: Europe; Far East. Hobbies: Americana; Nature Study. Listed in: Dir. of Med. Specialists; Am. Men of Sci.; Am. Men of Med. Areas of Rsch.: Epidemiology, Communicable Disease Control.

ROGERS, John James William (Ph.D.), Assoc. Prof., Geol., Rice Univ., Houston, Tex. Home Add.: 3608 Plumb St., Houston, Tex. GEOLOGY. b. Chicago, Ill., June 27, 1930. s. E. James and Josephine (Dickey) R. Edn.: B.S., Calif. Inst. Tech., 1952; M.S., Univ. of Minn., 1952; Ph.D., Calif. Inst. of Tech., 1955. m. Barbara Bongard, Nov. 30, 1956. c.: Peter. Exp.: Instr., Rice Inst., Houston, Tex., 1954-55; Asst. Prof., ibid., 1955-60; Assoc. Prof., ibid., 1960–. Mem.: Geol. Soc. of Am.; Soc. of Econ. Paleontols. and Mineralos.; Am. Assn. of Petrol. Geols.; Mineralo Soc. of Am.; Assn. of Geol. Tchrs.; Geochem. Soc.; Am. Geophys. Union; Am. Assn. for the Adv. of Sci.; Tex. Acad. of Sci.; Sigma Xi; Sigma Gamma Epsilon. Contbr. to: Jour. of Sed Petrol.; Geol. Soc. of Am. Bull.; Geochimica et Cosmochimica Acta; Am. Mineralogist; Am. Jour. of Sci.; Tex. Jour. of Sci.; Calif. Div of Mines Bull.; Sci.; Trans. Gulf Coast Assn of Geol. Socs.; Internatl. Geol. Congress; N. Y. Acad. of Sci. Annals. Areas of Rsch.: Geochemistry; Igneous and Metamorphic Petrology; Sedimentation and Sedimentary Petrology.

ROGERS, Marguerite Moilliet (Ph.D.), Head, Air-to-Surface Weapons Div., Weapons Development Dept., U. S. Naval Ordnance Test Station, China Lake, Calif. Home Add.: P.O. Box 804, Ridgecrest, Calif. WEAPONS SYSTEMS DEVELOPMENT AND EVALUATION, FIRE CONTROL; TERMINAL BALLISTICS AND WARHEAD EFFECTIVENESS; PHYSICS OF METALS. b. Minatitlan, Vera Cruz, Mex., Nov. 6, 1915 d. Alexander Keir, M.D., and Odo (Surratt) Moilliet. Edn.: B.A., Rice Univ., 1937; M.A., ibid., 1938; Ph.D., ibid., 1940 m. Fred Terry Rogers, Jr., (dec.), June 10, 1936. c.: Alexander Keir; Fred Terry, III; Charles Galton; Robert Barclay; Alison Margaret. Exp.: Instr., Univ. of Houston, 1940-43; Head, Optics Sect., Naval Ordnance Plant, Indianapolis, Ind., 1943-45; Rsch. Assoc., Univ. of N. C., 1947-48; Sr. Physicist, Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1948-49; Rsch. Physicist, U. S. Naval Ordnance Test Station, China Lake, Calif., 1949-53; Prof., Head, Sci. Dept., Columbia Coll., 1954-56; Lectr., Royal Technical Coll., Salford, Lancs. England, 1956-57; Head, Analysis Branch, Aviation Ordnance Dept., U. S. Naval Ordnance Test Station, China Lake, Calif., 1957-62; Head, Air-to-Surface Weapons Div., Weapons Development, Dept., ibid., 1962–. Mem.: Phi Beta Kappa; Sigma Xi; Am. Physical Soc.; A.A.A.S.; Tex. Acad. of Sci., Fellow; Southeastern Sect., Am. Physical Soc.; Sci. Rsch. Soc. of Am. Contbr. to: Physical Rev.; Bur. of Naval Weapons, NAV-WEPS Publications. Areas of Rsch.: Nuclear Physics; Terminal Ballistics; Physics of Metals; Weapons Technol. Operational Analysis.

ROGERS, William Patrick (Ed.D.), Jr. H. S. Prin., Eastern Junior High, Porter St., Lynn, Mass. Home Add.: 63 Fernwood Ave., East Lynn, Mass. SCIENCE EDUCATION. b. Lynn, Mass., Aug. 23, 1906. s. William M. and Mary F. (Murray) R. Edn.: B.S., Colby Coll., 1930; M.A., Boston Univ. Grad. Schl., 1934; Ed.D., ibid., Schl. of Edn., 1956. m. Genevieve C. Buckley, June 28, 1935. c.: William Joseph; Gertrude Mary. Exp.: Gen. Sci. Tchr., Breed Jr. H. S., 1930-57; Jr. H. S. Prin., Eastern Jr. High, 1957–. Mem.: Natl. Assn. of Secd. Schl. Prins.; Mass. Jr. H. S. Prins. Assn.; Coun. for Elem. Sci. Internatl.; Natl. Sci. Tchrs. Assn.; Natl. Assn. for Rsch. in Sci. Tchng.; A.A.A.S.; Lambda Chi Alpha; Kappa Phi Kappa; Phi Delta Kappa; Lynn Tchrs. Union; Am. Legion; Knights of Columbus. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Science Edn., Science Misconceptions of High Schl. Students in the United States.

ROLFE, Daniel Thomas (M.D.), Chmn., Dept. of Physiol., Meharry Med. Coll., Nashville, Tenn. Home Add.: 2007 Murphy Ave., Nashville 4, Tenn. PHYSIOLOGY. b. Tampa, Fla., Mar. 1, 1902. s. Everett Richard and Carrie (Thomas) R. Edn.: B.S., Fla. A. and M. Coll., 1922; M.D., Meharry Med. Coll., 1927. m. Birdie Lucile Scott, Aug. 9, 1952. Exp.: Prof. of Physiol., Meharry Med. Coll., 1930-38; Chmn., Dept of Physiology and Pharmacology, Meharry, 1938-52; Acting-Chairman, Dept. of Anatomy, ibid., 1950-52; Chmn., Dept. of Physiol., ibid., 1952–; Dean, Schl. of Med., ibid., 1952–. Hon. Pos.: Advisor to Veterans Administration Hosp., Tuskegee, Ala. Mem.: Am. Physiol. Soc.; A.A.A.S.; A.M.A.; Tenn. St Med. Assn.; Nashville Acad. of Med; Tenn. Acad. of Sci.; Natl Med. Assn.; Volunteer State Med. Assn.; R. F. Boyd Med. Soc.; Kappa Alpha Psi; Alpha Omega Alpha; Apollo Club; The Agora Assembly. Author: A Laboratory Manual for Physiology, 1951. Contbr. to: Jour. of Natl. Med. Assn., Federation Proceedings. Gen. Int.: As Executive Secy of Meharry Alumni Assn., Headed Successful Drive for $200,000 for Alumni Hall. Areas of Rsch.: Physiology, Vital Capacity; Absorption from Urinary Bladder; Petrines; Heat Control.

ROMAN, Nancy (Dr.), U. S. Naval Rsch. Lab., Washington, D. C

ROMANOFF, Alexis Lawrence (Ph.D.), Prof. Emeritus of Chem. Embryol., Rice Hall, Cornell Univ., Ithaca, N. Y. CHEMICAL EMBRYOLOGY. b. May 17, 1892, St. Petersburg, Russia. s. Lawrence M. and Daria K. (Petroff) R. Edn.: St. Petersburg Tchrs. Coll., Russia; Tomsk Univ., 1918-19; Vladivostok Polytech. Inst., 1919-20; Cornell Univ., B.S., 1925; M.S., ibid., 1926; Ph.D., ibid., 1928 m. Anastasia J. Sayenko of Warsaw, Poland, Sept. 1, 1928. d. Jacob O. and Julia V. Slauta Sayenko. Exp.: Rsch. Asst., Cornell Univ., 1924-28; Rsch. Instr., ibid., 1928-32; Rsch. Asst. Prof., ibid., 1932-43; Assoc. Prof., ibid., 1943-48; Prof., ibid., 1948-60; Prof. Emeritus, ibid., 1960–; Harvard Univ., 1939-40 (as Rsch. Fellow in Biol.); Rsch. Fellow, Yale Univ., 1940-41; Rsch. Assoc. in Phys., Univ. of Fla., 1942; Recipient Borden Award and Gold Medal in Avian Embryology, 1950. Mem.: Fellow, A.A.A.S.; Mem. of Soc. Experimental Biol.

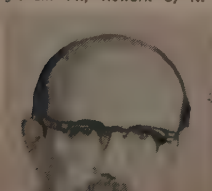
and Med.; Am. Physiol. Soc.; Am. Soc Zool.; A.C.S.; Fellow, N. Y. Acad. Sci.; Sigma Xi; Fellow, Polit. Sci. Assn.; Rotary Club. Author of Book, The Avian Egg, 1949; Book, The Avian Embryo, 1960; Book, The University Campus, 1960, Book, Ithaca, 1962; Sect. on Eggs in Encyclopedia Chemical Technology, Vol. 5, 1950. Contbr. to: Jour. of Expti. Zool.; Jour. Morph. and Physiol.; Anat. Rec.; Biochem. Jour. Brit.; Ind. Engrng. Chem.; Jour. Cell. and Comp. Physiol.; Proc. Natl. Acad. Sci.; et cetera. Ph.D. Dissertation: Effect of Humidity on the Growth and Calcium Metabolism of Chick Embryol. War Rec.: Russian Army as Lt. of Engr. Corps. Received Trng. at: St. Petersburg Officers' Engrng. Schl., Officers' Schl. of Chem. Warfare, Kazan Univ. Travel: Europe; England; France; Germany; Denmark; Poland; Russia; Siberia; Orient; China; Japan; Am. Cont.: Panama; Mex.; Can.; U. S.; Once Around World Including Philippine Islands; Hawaiian Islands. Achievements of Gen. Int.: Produced Moving Picture, "Where Chick Life Begins"; Sketching, Painting and Invention of Sci. Apparatus (U. S. Patent, July 14, 1931, no. 1,813,959, Gas Conditioning Apparatus; U. S. Patent, Nov. 14, 1944, No. 2,362,774, Egg Sorting Method and Mechanism). Listed in: A.M.S.; Who's Who in N. Y.; Who's Who in the East; Who Knows—and What; Who's Who in Am. Special Int.: Physiology of Avian Embryo.

ROMANOFF, Anastasia J. (Ph.D.), Rsch. Assoc., Cornell Univ., Ithaca, N. Y. Home Add.: Belleayre Apts., 700 Stewart Ave., Ithaca, N. Y. MEDICO-BIOLOGICAL SCIENCES. b. Warsaw, Poland, Jan. 4, 1905. d. Jacob O. Sayenko and Julia V. (Slauta) S. Edn.: B.S., Philadelphia Coll. of Pharm. and Sci., 1927; M.Ed., Cornell Univ., 1954; Ph.D., Mich. State Univ., 1961. m. Alexis Lawrence, Sept. 1, 1928. Exp.: Rsch. Assoc., Univ. of Md., 1946-48; Rsch. Analyst, Library of Congress, Washington, D. C., 1948-51; Rsch. Collaborator, Cornell Univ., 1952—. Mem.: Fellow, A.A.A.S.; Am. Chem. Soc.; Sigma Delta Epsilon; Am. Assn. of Univ. Women. Author: The Avian Egg, co-author, 1949. Contbr. to: Anat. Record; Jour. Biol. Chem. Areas of Rsch.: Physico-chemical and Biological Aspects of the Avian Egg.

ROMBERG, Frederick Ernst (Mr.), Chief Geophysicist, Geoscience Dept., Texas Instruments, Dallas, Tex. Home Add.: 8911 Guernsey Lane, Dallas 20, Tex. GEOPHYSICS, GEOPHYSICAL EXPLORATION. b. Austin, Tex., Nov. 27, 1910. s. Arnold and Margaret (King) R. Edn.: B.A., Univ. of Tex., 1929; A.M., Harvard, 1932. m. Marcia Todd, Feb. 4, 1934. c.: Arnold; Lucia; Thomas; James. Exp.: Observer, Computer, Humble Oil Ref. Co., Houston, Tex., 1929-30; Asst., Harvard Univ., 1931-33; Computer, Party Chief, Geophysical Service, Inc., Dallas, Tex., 1933-41; Lab. Supt., LaCoste & Romberg, Austin, Tex., 1941-51; Div. Mgr., Gravity Mgr., Geophysical Service, 1951-59; Chief Scientist, Geoscience Dept., Tex. Instruments, Dallas, Tex., 1959-61; Chf. Geophysicist, ibid., 1961—. Mem.: Soc. of Exploration Geophyiscist; Am. Geophysical Union, Geological Soc. of Am., Fellow; Phi Beta Kappa; Sigma Xi. Contbr. to: Geophysics; Bull. Geol. Soc.; Seismol. Soc. Am. Bull. Gen. Int.: Innovations in interpretations of gravity data. Areas of Rsch.: Seismology, Gravimetry, Geophysical Prospecting.

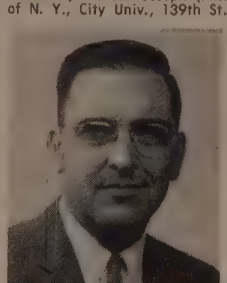
ROMBERGER, John Albert (Ph.D.), Plant Physiologist, U.S.D.A.-Forest Serv., Forest Physiol. Lab., Plant Industry Sta., Beltsville, Md. Home Add.: 2005 Forest Hill Dr., Silver Spring, Md. PLANT PHYSIOLOGY, PLANT BIOCHEMISTRY, FOREST PHYSIOLOGY. b. Klingerstown, Pa., Dec. 25, 1925. s. Ralph T. and Carrie (Bahner) R. Edn.: B.A., Swarthmore Coll., 1951; M.S., Penn. St. Univ., 1953; Ph.D., Univ. of Mich., 1958. m. Margery Davis, 1951. c.: Ann I.; Daniel D. Exp.: Rsch. Fellow, Calif. Inst. of Tech., Pasadena, Calif., 1957-59; Plant Physiologist, U.S.D.A.-Forest Serv., 1959-61; Plant Physiologist, ibid., Forest Physiol. Lab., Plant Industry Sta., Beltsville, Md., 1961—. Mem.: Am. Soc. of Plant Physiologists; Botanical Soc. of Am.; Scandinavian Soc. for Plant Physiology. Contbr. to: Plant Physiology, Serv. Rec.: U. S. Army, 1945-46. Areas of Rsch.: Physiology of Growth and Dormancy in Woody Plants, Physiological Phenomena Accompanying Morphogenetic Cycles, Respiratory Mechanisms, Terminal Oxidation.

ROMMER, Jack Jay (M.D.), Physician (Neuropsychiatrist), 25 In graham Pl., Newark 8, N. J. Home Add.: 448 Harding Dr., So. Orange, N. J. NEUROPSYCHIATRY. b. N.Y.C., Mar. 1, 1909. s. Adolf and Rose (Winograd) R. Edn.: Ph.G., Rutgers Univ., 1931; A.B., Upsala Coll., 1934; M.D., Hahnemann Med. Coll. and Hosp., 1938. m. Claire Streit, Dec. 23, 1931. c.: Adrienne Rommer Parker; Barbara Ruth. Exp.: Intern, Passaic, N.J., Gen. Hosp., 1937; St. Barnabas Hosp., Newark, N. J., 1938-39; Preceptorship Surgery, Gynecology, 1941-46; Practice of Gynecology, Treatment of Sterility, 1942-50; Res. in Psychiatry, U. S. V.A. Hosp., Lyons, N. J., 1950-52; Res. in Neurology, Bellevue Hosp., N.Y.C., 1952-53; Private Practice Neurology - Psychiatry, Newark, 1950—; Chief, Psychosomatic Gynecologic and Obstet. Serv. and Clinic, N. Y. Med. Coll.—Met. Med. Center; Chmn., Comm. Med. Edn., N. J. Neuropsych. Assn.; Formerly Member Advisory Coun., Upsala Coll.; Assoc. Attending Psychiatrist, Bird S. Coler Hosp., N.Y.C.; Assoc. Attend. Psychiatrist, Metro. Hosp., N.Y.C.; Mem., Attending



Psychiatrist, Staff, Newark, N. J., Beth Israel Hosp.; Clara Maas Hosp.; Flower-Fifth Ave. Hosp.; Consultant Psychiatrist, U. S. V.A. Hosp., Lyons, N. J.; Con. Psychiatrist, Family Counselling Serv. of Belleville; Con. Psychiatrist, Belleville Police Dept.; Teaching: Assoc. in Psychiatry, N. Y. Med. Coll., Flower-Fifth Ave. Hosp., 1955-57; Asst. Clin. Prof. Psychiatry, 1957—; Psychiatric Consultant, Dept. Gynecology and Obstet., N. Y. Med. Coll., Flower-Fifth Ave. Hosp., 1955—; (Fellow) Am. Psychiat. Assn.; Am. Geriatrics Assn.; A.A.A.S.; Am. Acad. Psychosomatic Med.; N. J. Acad. Med.; Am. Assn. Psychother.; N. J. Acad. Sci.; N. Y. Acad. Sci.; N. J. Acad. Obsts. and Gynecol.; Internatl. Coll. Surgs.; A.A.U.P.; Diplomate, Am. Bd. of Psychiatry and Neurol.; Am. Assn. Med. Colls.; A.M.A.; Am. Soc. Study Sterility; Am. Genetic Assn.; Am. Acad of Neurol.; N. J. Neuropsych. Assn.; Internatl. Fertility Assn.; Essex Co. Med. Soc.; N. J. St. Med. Soc.; Essex County Anat. and Pathol. Soc.; Am. Med. Writers' Assn.; Am. Physicians Art Assn.; Delta Sigma Theta; Phi Beta Phi. Author: Sterility, Its Cause and Treatment, 1952; La Personalidad de la Mujer Esteril, 1956; Numerous Medical Articles. Gen. Int.: Licensed, Md., N. Y., N. J., Pa., Psychiatrist. Areas of Rsch.: Supervisor Rsch., Psychosomatic Aspects of Gynecologic and Obstetric Conditions, N. Y. Med. Coll., Flower-Fifth Ave. Hosp.

ROMMER, Richard Joseph (Ph.D.), Lctr., Dept. of Geol., City Coll. of N. Y., City Univ., 139th St. and Convent Ave., N. Y. 31, N. Y. Home Add.: 32 Chestnut St., Pearl River, N. Y. SYNOPTIC METEOROLOGY, WEATHER FORECASTING, OCEANOGRAPHY PHYSICAL GEOLOGY. b. Brooklyn, N. Y., Apr. 3, 1920. s. Richard August and Hessie Jane (Cornish) R. Edn.: B.S., City Coll. of N. Y., 1946; M.S., N. Y. Univ., 1948; Ph.D., ibid., 1963. m. Lenore Agnes McCaffery, Mar. 22, 1942. c.: Judith Jane; Patricia Lenore; Robert James; Richard Dennis; Carol Enid. Exp.: Prof., John Marshall Coll., part-time, 1947; Tutor, City Coll. of N. Y., 1947-54; Instr., Rsch. Asst. and Assoc., N. Y. Univ. and Columbia Univ., part-time, 1947-54, 1958—; Prof., Orange Co. Community Coll., part-time, 1955; Lectr., City Coll. of N. Y., 1954—; Asst. Prof., ibid., 1963—. Hon. Pos.: N.S.F. Visiting Scientist for Am. Met. Soc., 1962; Advisor to Student Chap., Am. Meteorological Soc.; Secy., Sect. of Oceanog. and Meteorol., N. Y. Acad. Sci., 1954-55, 1955-56. Mem.: Am. Geophys. Union; Assn. of Geol. Tchrs.; A.A.A.S.; Air Force Assn. Contbr. to: Bull. of Am. Meteorological Soc. Serv. Rec.: U. S. A.A.F., 1940-45, U.S.A.F.R., Maj. Gen. Int.: N.S.F. Sci. Faculty Fellow, 1962-63. Areas of Rsch.: Weather Forecasting, Synoptic Meteorol., Squall Lines; Oceanography and Limnology, Effects of Storms on Levels of Great Lakes, Storm Surges.



RONDESTVEDT, Christian Scriver, Jr. (Ph.D.), Rsch. Chemist, E. I. DuPont de Nemours, Jackson Lab., Box 525, Wilmington 99, Del. Home Add.: 2547 Deepwood Dr., Foulk Woods, Wilmington 3, Del. ORGANIC CHEMISTRY; POLYMER CHEMISTRY. b. Minneapolis, Minn., July 13, 1923. s. Christian S., Sr. and Stella (Robertson) R. Edn.: B.Chem., Univ. of Minn., 1943; Ph.D., Northwestern Univ., 1947. m. Estelle Sloman, Oct. 10, 1944. c.: Karen Anne; Nancy Carol. Exp.: Rsch. Fellow, Univ. of Minn., Minneapolis, Minn., 1944-45; NRC Fellow, Northwestern Univ., Evanston, Ill., 1946-47; Instr., Univ. of Mich., Ann Arbor, Mich., 1947-52; Asst. Prof., ibid., 1952-56; Guggenheim Fellow, Univ. of Munich, Germany, 1956-57; Rsch. Chemist, DuPont, Jackson Lab., Wilm., Del., 1957—. Mem.: Am. Chem. Soc.; Chem. Soc., London; Am. Assn. for the Adv. of Sci.; Alpha Chi Sigma; Phi Lambda Upsilon; Phi Beta Kappa; Sigma Xi. Contbrng. Author: The Meerwein Arylation Reaction. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Organic Chem.; Chem. and Industry, London; Chemische Berichte. Areas of Rsch.: Olefin Chemistry; Free Radical Reactions; Polymer Chemistry.

ROONEY, Lawrence Frederick (Ph.D.), Hd. Indust. Minerals Sect., Ind. Geological Surv., Bloomington, Ind. GEOLOGY; SEDIMENTATION AND STRATIGRAPHY. b. Conrad, Mont., Nov. 21, 1926. s. Charles Lemuel and Marie (Berger) R. Edn.: B.A., Mont. St. Univ., 1948; M.A., ibid., 1950; Ph.D., Ind. Univ., 1956. m. Rosalia Rey, Jan. 28, 1956. c.: Sean Timothy. Exp.: Geologist, Mobil Oil of Can., Ltd., Tripoli, Libya, 1956-58; Asst. Prof., Univ. of Tex., 1958-59; Explor. Geologist, Humble Oil and Ref. Co., Mattoon, Ill., 1959-62. Mem.: Am. Assn. Pet. Geologists; Geol. Soc. of Am.; A.A.A.S.; Ill. Geol. Soc.; Mont. Hist. Soc. Contbr. to: Bull. of Am. Assn. of Petroleum Geologists; Jour. of Sedimentary Petrology. Areas of Rsch.: Physical Stratigraphy of Eastern Interior U. S.; Physical Stratigraphy of the Phosphoria Formation, Southwestern Mont.; Regional Geology of Libya.

ROOT, Clinton William (Ph.D.), Assoc. Prof., Syracuse Univ., 107 Lyman Hall, Syracuse, N. Y. Home Add.: 613 University Ave., Syracuse 10, N. Y. ZOOLOGY; PHYSIOLOGY. b. Fort Wayne,

Ind., Jan. 23, 1900. s. William Herbert and Josephine E. (Tilden) R. Edn.: A.B., Oberlin Coll., 1927; A.M., ibid., 1930; Ph.D., Princeton Univ., 1934. Exp.: Tchng. Fellow, Western Reserve Univ., 1929-30; Instr., Princeton Univ., 1930-32, 1933-34; Instr., Dartmouth Coll., 1932-33; Instr., Hamilton Coll., 1934-35; Instr. to Prof., Syracuse Univ., 1935—; Chmn., Gen. Studies Program, ibid., 1958—. Hon. Pos.: Student Guidance Counselor, Syracuse Univ.; Faculty Advisor, Alpha Epsilon Delta; Mem., Exec. Com., Phi Beta Kappa. Mem.: N. Y. Acad. of Sci.; Am. Men. of Sci.; Am. Soc. of Zoologists; Am. Assn. Adv. Sci.; Am. Assn. Univ. Prof.; Phi Beta Kappa; Sigma Xi; Morning Musical; Republican. Author: Laboratory Outlines in General Physiology, 1940. Co-Author: Laboratory Manual for Elementary Human Anatomy, 1938; Laboratory Exercises for Zoology I, 1953. Contbr. to: The Jour. of Lab. and Clinical Med.; Jour. of Cellular and Comparative Physiology; Am. Jour. of Anatomy. Gen. Int.: Received citation by the Trustees of Syracuse Univ. for 25 years of Edni. Serv., 1960. Areas of Rsch.: Blood Chemistry, Bioluminescence, Hormones; and General Physiology. Listed in: Who's Who in the East.

ROOT, William Lucas (Ph.D.), Prof. of Instrumentation, Dept. of Aero. Engrng., Univ. of Mich., Ann Arbor, Mich. Home Add.: 3451 Daleview Dr., Ann Arbor, Mich. COMMUNICATION THEORY. b. Des Moines, Ia., Oct. 6, 1919. s. Frank S. and Helen (Lucas) R. Edn.: S.B., Ia. St. Coll., 1940; S.M., Mass. Inst. of Tech., 1943; Ph.D., ibid., 1952. m. Harriett Johnson, Sept., 1940. c.: William L., Jr.; Wendy E. Exp.: Staff Mem., Mass. Inst. of Tech., Lincoln Lab., Lexington, Mass., 1952-61; Prof. of Instr., Univ. of Mich., 1961—. Hon. Pos.: Assoc. Editor, Jour. of the Soc. of Ind. and App. Math. Mem.: Am. Math. Soc.; Inst. of Radio Engrs., Sr. Mem.; Am. Assn. for the Adv. of Sci.; Soc. of Indust. and App. Math.; Phi Kappa Phi; Tau Beta Pi; Sigma Xi; Eta Kappa Nu. Co-Author: Introduction to the Theory of Random Signals and Noise, 1958. Contbr. to: Jour. of the Soc. for Ind. and App. Math.; Information and Control; Jour. of Math. and Phys.; Annals of Math. Statistics. Serv. Rec.: U. S. Marine Corps Reserve, 1943-46. Areas of Rsch.: Applications of Probability Theory and Statistics to Theory of Communications.

ROSA, Leslie Michael (M.D.), Asst. Prof. of Med. and Cardiovascular Rsch., Div. of Cardiovascular Rsch., The Chicago Med. Schl. Home Add.: 1062 W. Glenlake Ave., Chicago 40, Ill. CARDIOLOGY-PULSATORY MECHANICS. b. Szeged, Hungary, 1906. s. Ernest and Ida (Rozsa) R. Edn.: M.D., Royal Hungarian Pazmany Peter Univ. Med. Schl., 1930; M.D., Munich, 1958. m. Mary Helen Wiener, 1936. c.: Maria Clara; Frank Albert. Exp.: Resident, Univ. Budapest Med. Schl., Dept. of Med., 1930-34; Asst. Prof. of Med., Univ. Budapest, 1934; Head, Biolectric Rsch. Inst., Pajor's San., Budapest, 1934-48; Head, National Cardiology Center, Szolnok, Hungary, 1948-51; Dir., Dept. of Rad. and Cardiol., County Hosp., Tatabanya, 1951-56; Asst. Prof. of Med., Div. of Cardiol., The Chicago Med. Schl., 1958; Asst. Prof. of Med. and Cardiovascular Rsch., ibid.:, 1961—. Mem.: Fellow, Am. Coll. of Cardiol.; Chicago Heart Assn.; A.A.A.S.; A.A.U.P.; Deutsche Gesellschaft fuer Kreislaufforschung. Author: ABC of Electrocardiography; Outlines of Short Wave Therapy; Einfuehrung in Die Ballistische Kardiographic. Co-Author: Treatment of Cardiovascular Emergencies; Manuale Di Medicina Interna. Contbr. to: Cardiologia; Zeitschrift fuer Kreislaufforschung; Am. Jour. of Cardiology; Klinische Wochenschrift; Zeitschrift fuer die Ges. Exp. Medizin; Zeitschrift F. D. Ges. Innere Med.; Exp. Med. Surg.; Pfluger's Archiv.

ROSA, Nicholas A. (Mr.), Operations Analyst, Stanford Rsch. Inst., Menlo Park, Calif, Assoc. Editor, "Science World" Bull., Scholastic Magazines, Inc., 33 W. 42nd St., New York 36, N. Y. Home Add.: Menlo Park, Calif. EARTH-OCEANS-SPACE. b. Stamford, Conn., Jan. 15, 1926. s. Peter A. (dec.) and Rose Mary (Pavia) R. Edn.: B.S., Fairfield Univ., 1952. m. Pamela Fitz Gerald Demms, Apr. 23, 1960. c.: Francesca. Exp.: Assoc. Editor, Electronics World, N. Y., N. Y., 1952-53; Science Curator, Stamford Museum and Nature Ctr., Inc., Stamford, Conn., 1954-56; Rsch. Asst., Woods Hole Oceanographic Inst., Woods Hole, Mass., 1956-60; Assoc. Editor, Science World, Scholastic Mag., Inc., N. Y., N. Y., 1960-62; Operation Analyst, Stanford Rsch. Inst., Menlo Park, Calif., 1962—. Mem.: A.A.A.S.; Darien Showcase. Serv. Rec.: U. S. Army Air Force, 1943-44. Areas of Rsch.: Ecology, Conservation, Nuclear Discoveries as they Impinge on These; History; Oceanography and Marine Invertebrate Biology.

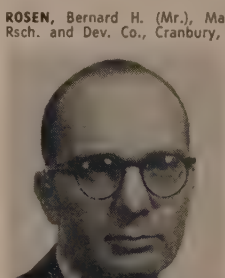
ROSCOE, Charles William (Ph.D.), Asst. Prof. and Chmn., Dept. of Pharcaceut. Chem., Univ. of the Pacific, Stockton, Calif. Home Add.: 5608 Doncaster Way, Stockton, Calif. PHARMACEUTICAL CHEMISTRY. b. Pocatello, Ida., Nov. 22, 1924. s. E. E. and Emma K. (Patt) R. Edn.: B.S., Ida. State Coll., 1948; M.S., Univ. of Wash., 1954; Ph.D., ibid., 1958. m. Harriette Dore, 1954. c.: Donald M.; John D.; William I. Exp.: Asst. Prof., Mont. State Univ., 1958-62; Asst. Prof. and Chmn., Dept. of Pharmaceut., Univ. of the Pacific, 1962—. Hon. Pos.: Fellow, Am. Found. Pharmaceut. Edn.; E. Mead Johnson Mem. Fellow; Rsch. Supvr., Natl. Sci. Found. Undergrad. Rsch. Partic. Prog. 1960-62. Mem.: Sigma Xi; Rho Chi; Phi Sigma; Am. Chem. Soc.; Phi Delta Chi. Contbr. to: Jour. Org. Chem.; Jour. of Pharmaceut. Scis. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Organic Chemistry of Natural and Synthetic Drug Products.

ROSE, David John (Ph.D.), Prof., Mass. Inst. of Tech., Cambridge, Mass. Home Add.: 45 Ridge Rd., Waban, Mass. NUCLEAR ENGINEERING, PLASMA DYNAMICS. b. Victoria, B. C., Canada, May 8, 1922. s. David A. and Nora (Birkett) R. Edn.: B.A.Sc., Univ. of British Columbia, 1947; Ph.D., Mass. Inst. of Tech., 1950. m. Vivienne Rose Fox, 1948. c.: Elizabeth; Victoria; Hugh; Andrew. Exp.: Rsch. Physicist, B. C. Rsch. Coun., Vancouver, B.C., 1950-51; Mem., Tech. Staff, Bell Telephone Labs., Murray Hill, N. J., 1951-58; Prof., Mass. Inst. of Tech., 1958—. Mem.: Fellow, Am. Physical Soc.; Fellow, Am. Acad. of Arts and Sci.; Sigma Xi. Author: Plasmas and Controlled Fusion, co-author, 1961. Contbr. to: Phys. Rev.; Jour. of Applied Phys.; Physics of Fluids; Phys. Today; Encycl. Brit. Serv. Rec.: Canadian Army, 1942-45. Areas of Rsch.: Plasma Dynamics, Controlled Thermonuclear Fusion Rsch.

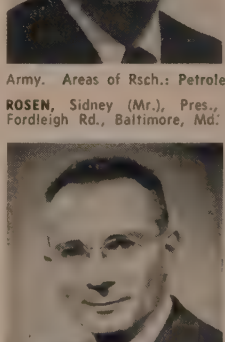
ROSE, Guenter Herbert (Mr.), Rsch. Asst., Brain Rsch. Inst., Psychol. Div., U.C.L.A., Los Angeles, Calif. Home Add.: 7354 Manchester Ave., Los Angeles 45, Calif. PSYCHOLOGY AND NEUROPHYSIOLOGY. b. Englewood, N. J., May 6, 1935. s. John P. and Elly M. (Winkler) R. Edn.: B.S., Tufts Univ., 1958; Sc.M., Brown Univ., 1960. m. Deborah E. Jenkins, Aug. 27, 1960. c.: Mark Jenkins. Exp.: Rsch. Asst., Brown Univ., 1958-59; Teaching Asst., ibid., 1959-60; Rsch. Asst., Mass. Inst. of Technol., summer, 1960; Tchng. Asst., U.C.L.A., 1960; Research Asst., ibid., 1961—. Mem.: A.A.A.S.; Western Psychological Assn.; Psi Chi. Areas of Rsch.: Physiological Psychol.; Developmental Neurophysiol.; Early Experience, Animal Infancy, Vision, Perceptual Processes, Psychophysics.

ROSE, Mason (Ph.D.), Psychoanalyst, 1312 N. Stanley Ave., Hollywood 46, Calif. Home Add.: 7425 Franklin Ave., Los Angeles 46, Calif. PSYCHOANALYSIS. b. Charlevoix, Mich., July 5, 1915. s. Mason and Catharine (Deibel) R. Edn.: M.S., Sequoia Univ., 1948; Ph.D., ibid., 1951. m. Laura Lea Rose (div.), 1962. c.: Mason V. Exp.: Psycho-Analyst, Hollywood, Calif., 1942—; Board for California Inst. for Adv. Studies. Mem.: Fed. Am. Sci. Soc.; Soc. Respon. in Sci.; Greater Los Angeles Press Club; Am. Assn. for Adv. of Sci.; A.C.L.U.; N.A.-A.C.P. Author: You and Your Personality, 1949; Sex Education from Birth to Maturity, 1952. Gen. Int.: Columnist.

ROSEN, Bernard H. (Mr.), Manager, Cranbury Lab., Cities Serv. Rsch. and Dev. Co., Cranbury, N. J. Home Add.: 45 Judith Rd., Little Silver, N. J. CHEMICAL ENGINEERING. b. N.Y.C., Sept. 29, 1922. s. Max and Dorothy (Hildebrande) R. Edn.: B.Ch.E., C.C.N.Y., 1943; M.Ch.E., N. Y. U., 1947. m. Anita Ruth Greenberg, Aug. 26, 1947. c.: Jeffrey Paul; Seth Gordon; Lise Ann. Exp.: Rsch. Chem., Cities Serv. Rsch. and Dev. Co., Tallant, Okla., 1947-49; Assoc. Chem., ibid., Ind., 1949-50; Proj. Chem. Engr., ibid., N. J., 1950-51; Asst. to V. P., ibid., N. Y., 1951-57; Mgr. Prod. Dev., ibid., Cranbury, N. J., 1957-59; Mgr., ibid., 1959—. Mem.: A.I.Ch.E.; A.C.S.; A.P.I.; A.A.A.S.; A.S.T.M.; O.R.S.A.; C.-R.C.; N.L.G.I.; R.E.S.A. Contbr. to: Ind. and Engr. Chem.; Chem. Engr. Progress. Serv. Rec.: U. S. Army. Areas of Rsch.: Petroleum Product Rcsh. and Development.



ROSEN, Sidney (Mr.), Pres., The Natl. Instrument Co., 4119 Fordleigh Rd., Baltimore, Md. Home Add.: 2701 Rockwood Ave., Baltimore, Md. INSTRUMENT DEVELOPMENT: SPECIAL ELECTRO-MEDICAL EQUIPMENT, INSTRUMENTS AND APPARATUS FOR THE LABORATORIES OF INDUSTRY RESEARCH AND EDUCATION. b. Wilmington, Del., Feb. 27, 1913. s. Samuel and Rebecca (Perman) R. Edn.: B.S., Johns Hopkins Univ., 1939. m. Esther Renbaum, May 9, 1940. c.: Robert Allen; Gerald Mark; Leonard Jay. Exp.: Ordnance Engr., U. S. Naval Gun Factory, Wash., D. C., 1939-48 Vice-Pres. and Dir. of Rsch., Capitol Products Co., Inc., Baltimore, Md., 1948-52; Pres., Dir. of Rsch., Natl. Instrument Co., 1952—. Hon. Pos.: Consultant Clinical Rsch., Johns Hopkins Univ.; Consultant, Instrumentation for Cardiovascular Rsch., The Natl. Inst. of Health. Mem.: A.A.A.S.; Am.



Chem. Soc.; Am. Soc. for Metals. Contbr. to: Sci.; Analytical Chem.; Clin. Chem.; Jour. of Lab. and Clin. Med. Gen. Int.: Designer of Naval and Aircraft Armament during W. W. II. Awarded Nine Patents in the field of instrumentation; Developed the first successful automatic machine for transfusing Rh negative infants; Developed the Specialized equipment for production filling of the Salk, Sabin and Cox Polio Vaccine. Areas of Rsch.: Equipment for Measuring, Controlling and Metering Liquid Flow; Instrumentation for Clinical and Indusl. Rsch.; Instrumentation for Improving Sterilizing Techniques; Physical Testing Equipment.

ROSENBERG, Paul (Dr.), Pres., Paul Rosenberg Associates, 100 Stevens Ave., Mt. Vernon, N. Y. PHYSICS. b. N.Y.C., Mar. 31, 1910. s. Samuel and Evelyn (Abbey) R. Edn.: B.A., Columbia Coll., 1930; M.A., Columbia Univ., 1933; Grad. Schl. of Pure Sci., ibid., 1933-40. m. Marjorie S. Hillson, June 12, 1943. c.: Gale. Exp.: Chem., Hawthorne Paint and Varnish Corp., Hawthorne, N. J., 1930-32; Grad. Asst. in Physics, Columbia Univ., N. Y., 1934-39; Lectr. in Physics, ibid., 1939-41; Instr. in Physics, Hunter Coll. of the City of N. Y., 1939-41; Rsch. Assoc., Dept. of Elec. Engrng., M.I.T., Cambridge, Mass., 1941; Staff Mem., Radiation Lab. of the Natl. Defense Rsch. Com., ibid., 1941-45; Pres., Paul Rosenberg Assocs., Consulting Physicists, Mt. Vernon, N. Y., 1945—. Hon. Pos.: Pres., Inst. of Navigation, 1950-51; Gen. Chmn., Joint Electronics Conf. of the Radio Tech. Commn. for Aeronautics, Radio Tech. Commn. for Marine Services and I.O.N., 1950; Co-Chmn., Tech. Devel. Com. for Upper Atmosphere and Interplanetary Navigation, 1947-50; War Com. on Radio, Am. Standards Assn., 1942-44; Recipient of Talbert Abrams Award, Am. Soc. of Photogrammetry, 1955; Ed. Comm., Jour. of Aero-Space Sci., 1952-60; Natl. Acad. of Scis., Natl. Rsch. Coun. Adv. Panel; Maritime Rsch. Adv. Com., 1959-60. Mem.: Fellow, A.A.A.S.; Fellow, Inst. of Radio Engrs.; Am. Physical Soc.; Am. Chem. Soc.; Acoustical Soc. Am.; N. Y. Acad. Sci.; Am. Soc. Photogrammetry; Assoc. Fellow, Inst. of Aerospace Sci.; Sigma Xi; Epsilon Chi; Zeta Beta Tau. Contbr. to: Physical Rev.; Rev. Scientific Instruments; Jour. Inst. Navigation; Photogrammetric Engrng.; Aeronautical Engrng. Rev.; Jour. of Am. Osteopathic Assn.; World Scope Encyclopedia. Gen. Int.: Scientific Consultant and Technical Adv. to Industrial and Manufacturing Concerns and to the U. S. Govt. Special Int.: Molecular Beams; Kinetic Theory of Gases; Geometric and Physical Optics; Ultrasonics; Radar Mapping and Charting; Electrical Contacts; Potentiometer Devices; Navigation; Earth Satellites; Space Travel; Photogrammetry; Spinal-Mechanics; Indusl. Electronics. Has been granted patents in radar, television, and ultrasonics.

ROSENBLITH, Walter A. (Prof.), Communications Biophysics, Mass. Inst. of Tech., Cambridge, Mass. Home Add.: 164 Mason Terrace, Brookline, Mass. BIOPHYSICS. b. Vienna, Austria, Sept. 21, 1913. s. David A. and Gabriele (Roth) R. Edn.: Ingenieur Radiotelegraphiste, Univ. of Bordeaux, 1936; Ingenieur Radioelectrician, Ecole Superieure d'Electricite, Paris, 1937. m. Judy Olcott Francis, Sept. 27, 1941. c.: Sandra Yvonne; Ronald Francis. Exp.: Rsch. Engr., France, 1937-39; Rsch. Asst., N. Y. Univ., 1939-40; Tchng. Fellow and Asst. in Physics, U.C.L.A., 1940-43; Asst. Prof., S. Dak. Schl. of Mines and Tech., 1943-45; Assoc. Prof., ibid., 1945-47; Acting Hd., Dept. of Physics, ibid., 1944-47; Rsch. Fellow, Psycho-Acoustic Lab., Harvard Univ., 1947-51; Assoc. Prof. of Communications Biophysics, Mass. Inst. of Tech., 1951-57; Prof., ibid., 1957—; Staff Mem., Rsch. Lab. of Electronics, ibid., 1951—; Mem., Steering Comm., Cntr. for Communication Scis., ibid., 1958—; Acting Chmn., ibid., 1958—; Rsch. Assoc. in Otology, Harvard Med. Schl. and Mass. Eye and Ear Infirmary, 1957—. Hon. Pos.: Mem., Joint Armed Forces Natl. Rsch. Coun. Comm. on Hearing and Bioacoustics, 1953-59; Coun. Mem., ibid., 1955-57; Chmn., Subcomms. of Am. Standards Assn., 1952-58; Chmn., Panel on Convergent Fields, Natl. Acad. of Scis.-Natl. Rsch. Coun. Fellowship Prog., 1956-57; Mem., Armed Forces Natl. Rsch. Coun. Comm. on Bio-Astronautics, 1959-60; Consultant, Comm. on Conservation of Hearing, Am. Acad. of Ophthalmology and Otolaryngology, 1953—; Mem., Internatl. Brain Rsch. Organ., 1959—; Mem., Coun., Internatl. Organ. for Pure and Applied Biophysics, 1961—; Edl. Bds., Information Control, Daedalus, Biophysical Jour., Kybernetik. Mem.: Fellow, Am. Acad. of Arts and Scis.; Fellow, Acoustical Soc. of Am.; Sr. Mem., Inst. of Radio Engrs.; Soc. of Exptl. Psychologists; N. Y. Acad. of Scis.; Biophysical Soc.; A.A.A.S.; Eta Kappa Nu; Sigma Xi. Editor: Sensory Communication, 1961. Contbrng. Author: Handbook of Experimental Psychology, 1951; Biophysical Science, 1959; Quantity and Quality, 1961; Evolution and Man's Progress, 1961. Contbr. to: Jour. of the Acoustical Soc. of Am.; Noise Control; Am. Jour. of Physiol; Psychol. Monographs; Jour. of Neurophysiol.; Science; Revs. of Mod. Physics. Areas of Rsch.: Quantification of Electrical Activity of the Nervous System; Handling of Sensory Information by Organisms; Hearing; Effects of Noise on Man; Effects of Technological Change on Science and Society.

ROSENCRANZ, Robert (Mr.), Sr. Engr., Telex/Lumen, Post Office Box 905, Joliet, Ill. Home Add.: 2314 Marston Lane, Flossmoor, Ill. OCEANOGRAPHIC INSTRUMENTATION AND MAGNETICS. b. Chicago, Ill., July 2, 1926. s. Bernard and Lillian (Greenstein) R. Edn.: B.S., Univ. of Ill., 1948; B.S., Ill. Inst. of Technol., 1955. m. Judith Diane Levey, June, 1952. c.: Leslie Joyce; Holly Ann. Exp.: Chf. Engr., Standard Stamping and Perforating Co., Chicago, Ill., 1948-58; Rsch. Engr., Clearing Machine Corp., Div. of U. S. Industries, Chicago, Ill., 1958-60; Sr. Electrical Engr., U.S.I. Technical Ctr., Dept. of Marine Tech., Pompano Beach, Fla., 1960-61; Sr. Engr., Telex/Lumen, Joliet, Ill., 1961—; Consulting Engr., WAJP-FM, Joliet, Ill., 1962—. Mem.: A.I.E.E.; I.R.E.; A.A.A.S.; Internatl. Oceanographic Foundation; Masons; Shriners. Contbr. to: Applied Hydraulics; Production. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Magnetic Amplifiers, Magnetometers and Gradiometers, Hydraulic Servo Systems, Electronic Control Systems.

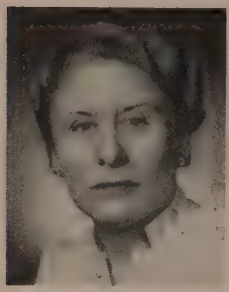
ROSENCRANZ, Mary Lou (Ph.D.), Assoc. Prof. of Home Econs., Univ. of Mo., Columbia, Mo. Home Add.: 1504 Dartmouth Dr., Columbia, Mo. SOCIOLOGY AND ANTHROPOLOGY; TEXTILES AND CLOTHING. b. New Bethlehem, Pa., Jan. 19, 1924. d. Rollie M. Lerch and Irma (Hetrick) L. Edn.: B.S., Carnegie Inst. of Tech., 1946; M.A., Mich., State Univ., 1948; Ph.D., ibid., 1960. m. Howard A. Rosencranz, 1948. Exp.: Instr., Asst. Prof., Mich. State Univ., E. Lansing, Mich., 1948-61; Assoc. Prof., Univ. of Mo., 1961—. Mem.: Am. Sociol. Assn.; Am. Home Econs. Assn.; Phi Kappa Phi; Omicron Nu; Alpha Kappa Delta; Sigma Kappa. Contbr. to: Jour. of Home Econs. Areas of Rsch.: Research in Area of Social Psychology of Clothing; Clothing Symbols; Consumer Preferences of Clothing and Textiles; Mass Media as It Relates to Home Economics.

ROSENE, Hilda Florence (Ph.D.), Rsch. Physiologist, Lund Rsch. Lab., Austin, Tex. Home Add.: 802 Barton Blvd., Austin 4, Tex. PHYSIOLOGY AND BIOPHYSICS. b. Chicago, Ill. d. Charles E. and Martha (Steven) R. Edn.: B.S., Univ. of Wash., 1922; M.S., ibid., 1923; Ph.D., Univ. of Tex., 1933. m. Elmer Julius Lund, Apr. 1, 1955. Exp.: Sci. Tchr., Western Wash. Coll. Edn., 1924-29; Tech. Rsch. Fellow, Univ. of Tex., 1929-30; Instr., ibid., 1933-37; Asst. Prof., ibid., 1937-43; Assoc. Prof., ibid., 1943-57; Rsch. Physiologist, ibid., Lund Rsch. Lab., 1957—. Hon. Pos.: John Simon Guggenheim Fellow, Univ. of Calif., 1939-40. Mem.: A.A.A.S.; Biophys. Soc.; Soc. Gen. Physiologists; Botan. Soc. Am.; Nordisk Forening for Fysiologisk Botanisk; Sigma Xi; Kappa Alpha Theta; Delta Kappa Gamma; Iota Sigma Pi; Sigma Delta Epsilon. Contbrng. Author: Bioelectric Fields and Growth, 1947; Growth and Differentiation in Plants, 1953. Contbr. to: Proc. Soc. for Exptl. Biol. and Med.; Jour. Gen. Physiol.; Comp. and Cell Physiol.; Pl. Physiol.; The New Physiologist; Am. Jour. Bot.; Physiol. Plantarium; Tex. Rep. Biol. and Med.; Publ. Inst. Mar. Sci.; Bot. Gaz.; Anat. Rec.; The Tex. Outlook. Areas of Rsch.: Bioelectrical Potentials; Transport; Water Exchange in Roots and Root Hairs.

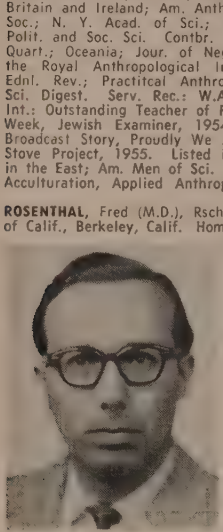
ROSENFELD, Irene (Ph.D.), Res. Prof., Univ. of Wyo., Laramie, Wyo. Home Add.: 2004 Sheridon, Laramie, Wyo. PATHOLOGICAL BIOCHEMISTRY. b. Austria, Hungary, Oct. 13, 1908. d. Sam (dec.) and Bertha (Spirer, dec.) R. Edn.: B.A., Ohio St. Univ., 1935; M.S., ibid., 1936; Ph.D., ibid., 1942. Exp.: Instr., Ohio St. Univ., 1941-42; Asst. and Assoc. Prof., Univ. of Wyo., 1942-48; Res. Prof., ibid., 1949—. Mem.: Am. Soc. Biol. Chem.; Soc. Exp. Biol. and Med.; N. Y. Acad. of Sci.; A.A.A.S., Fellow; Am. Chem. Soc.; Sigma Xi; Sigma Delta Epsilon. Author: Selenium, 1962. Contbr. to: Jour. Biol. Chem.; Jour. Nutri.; Jour. Pharm. Exp. Therap.; Am. Jour. Vet. Res.; Am. Jour. Clin. Pathol.; Jour. A.V.A. Areas of Rsch.: Metabolism of Selenium; Toxicity of Elements; Hormones.

ROSENSTEIN, Solomon Nathan (D.D.S.), Prof. of Dentistry, Columbia Univ., 630 W. 168th St., New York 32, N. Y. Home Add.: 32 Saddlewood Dr., Hillsdale, N. J. DENTISTRY FOR CHILDREN AND PREVENTIVE DENTISTRY. b. New York, N. Y., Sept. 1, 1906. s. Israel S. and Sarah (Tat) R. Edn.: B.S., City Coll. of N. Y., 1929; D.D.S., Columbia Univ., 1930. m. Beverly B. Gutterman, Dec. 19, 1943. c.: Roger G.; Dwight J.; Frederick L.; Elliott M. Exp.: Instr. in Dent., Schl. of Dental and Oral Surg., New York, N. Y., 1932-36; Asst. Prof. of Dent., ibid., 1936-47; Assoc. Prof., ibid., 1947-53; Dir., Cerebral Palsy Dent. Prog., ibid., 1952—; Dir., Div. of Pedodontics, ibid., 1952—; Prof. of Dent., Columbia Univ., 1953—; Attending Dental Surgeon, Presby. Hosp., New York, N. Y., 1954—. Hon. Pos.: Pres., Columbia Chapt., Sigma Xi, 1953; Clin. Adv. Comm., United Cerebral Palsy Rsch. and Edn. Found.; Cons., Guggenheim Dental Clinic; Pres., Dental Guid. Coun. for Cerebral Palsy, 1955-56; Pres., N. Y. Soc. of Dent. for Children, 1954-55; Diplomate, Am. Bd. of Pedodontics; Editor, Bull. of the Dent. Guid. Coun. for Cerebral Palsy. Mem.: Int. Assn. Dent. Rsch.; Am. Dental Assn.; Am. Pub. Health Assn.; Am. Soc. Dent. for Children; A.A.A.S.; Dental Guid. Coun. for Cerebral Palsy; N. Y. Soc. of Dent. for Children; Tau Delta Phi; Omicron Kappa Upsilon; Sigma Xi; Fellow, Am. Coll. of Dent.; Fellow, N. Y. Acad. of Dent.; Hon. Mem., Alpha Omega. Co-Author: Diseases of Soft Tissues of Mouth, 1938. Co-Editor: Differential Diagnosis of Oral Soft Tissue Lesions, 1941. Contbr. to: Jour. Am. Dent. Assn.; N. Y. St. Dent. Jour.; Jour. N. J. St. Dent. Soc.; Jour. Dent. Rsch.; Jour. Dent. for Children; Am. Jour. Ortho. and Oral Surg.; Jour. Am. Coll. of Dent. Areas of Rsch.: Dentistry for Handicapped Children; Conservation of Children's Teeth; Dental Development; Prevention of Dental Disease.

ROSENSTIEL, Annette (Ph.D.), Prof., Mills Coll. of Edn., 66-5th Ave., N.Y.C. Home Add.: 4 Old Mill Rd., Manhasset, N. Y. ANTHROPOLOGY, SOCIOLOGY, MODERN LANGUAGES, CULTURAL AND APPLIED ANTHROPOLOGY, LINGUISTICS, SOCIAL PROBLEMS. b. Jersey City, N. J., June 29, 1911. d. Dr. Julius I. and Rose (Altshul) Bitterman. Edn.: A.B., Hunter Coll, 1936; M.A., N. Y. Univ., 1941; Ph.D., Columbia Univ., 1953. m. Raymond Rosenstiel, Aug. 14 1943. c.: Leonie Jacqueline. Exp.: Tchr., Languages and Soc. Studies, Jersey City, H.S., 1937-40; Tchr., Mod. Langs., H. S., Ardsley, N. Y., 1940-43; Instr., Anthropology, Hunter Coll., 1953-54; Asst. Prof., Edn'l. Sociology and Anthropology, N. Y. Univ., 1955-59; Prof., Anthropology Soc., Mod. Langs., Mills Coll. of Edn., 1959—. Hon. Pos.: Trustee, Manhasset Coun., Waldemar Med. Rsch. Fdtn.; Chmn., Adult Edn. Dept., Temple Judea of Manhasset. Mem.: Fellow, A.A.A.S.; Fellow, Royal Anthropological Inst. of Great Britain and Ireland; Am. Anthropological Assn.; Am. Ethnological Soc.; N. Y. Acad. of Sci.; Alpha Kappa Delta; Am. Acad. of Polit. and Soc. Sci. Contbr. to: Human Organization; Polit. Sci. Quart.; Oceania; Jour. of Negro Edn.; Schl. and Soc.; Jour. of the Royal Anthropological Inst.; Tchr. Coll. Record; Harvard Edn'l. Rev.; Practitcal Anthropology; Le Prensa; El Imparcial; Sci. Digest. Serv. Rec.: W.A.C., 1943-46. Pvt. to Capt. Gen. Int.: Outstanding Teacher of French Award, 1941; Woman of the Week, Jewish Examiner, 1954; Subject of Coast-to-Coast Radio Broadcast Story, Proudly We Hail U.S.A., 1954; Consultant Solar Stove Project, 1955. Listed in: W. W. of Am. Women; W. W. in the East; Am. Men of Sci. Areas of Rsch.: Cultural Dynamics; Acculturation, Applied Anthropology, Linguistics, Education.



ROSENTHAL, Fred (M.D.), Rsch. Physiol., Dept. of Physiol., Univ. of Calif., Berkeley, Calif. Home Add.: 815 - 39th Ave., San Fran., Calif. NEUROPHYSIOLOGY; RADIOBIOLOGY. b. Germany, Feb. 26, 1961. s. Edmund and Dora (Rosenblum) R. Edn.: M.A., Stanford Univ., 1954; Ph.D., Univ. of Calif., Berkeley, 1956; M.D., Stanford Univ., 1960. m. Irene Ginzberg Sept., 1957. c.: Mark. Exp.: Fellow in Clin. Psychology, Langley Porter Clinic, San Fran., Calif., 1955-56; Rsch. Asst., Stanford Univ., Palo Alto, Calif., 1960; Rsch. Physiol., Univ. of Calif. Berkeley, Calif., 1960—. Mem.: Am. Psychol. Assn.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa. Contbr. to: Exptl. Neurol.; Int. Jour. Radiobiol.; Jour. Pharmacol. Exptl. Therap.; Radiation Rsch.; Procs. Exptl. Biol. and Med.; Jour. Edn. Psychol.; Jour. Gerontology; Jour. Western Pharmacol. Soc. Areas of Rsch.: Effects of Low Level Radiation on Brain Excitability; Neurophysiology; Neuropharmacology; Biostatistics.



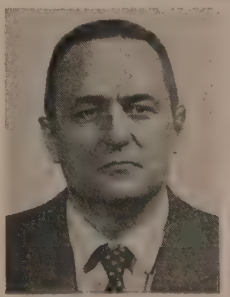
ROSENTHAL, Harold Leslie (Ph.D.), Assoc. Prof. and Chmn., Dept. of Physiol. Chem., Wash. Univ. Schl. of Dent., St. Louis, Mo. Home Add.: 7541 Teasdale, Univ. City, Mo. PHYSICOLOGICAL CHEMISTRY. b. Elizabeth, N. J., Mar. 26, 1922. s. Isadore and Sophia (Shapiro) R. Edn.: B.Sc., Univ. of Mex., 1944; Ph.D., Rutgers Univ., 1951. m. Rose Schwartz, June, 1947. c.: Jenifer Ann; Pamela Susan. Exp.: Instr., Tulane Univ., New Orleans, La., 1951-53; Chf. Biochemist, Rochester Gen. Hosp., Rochester, N. Y., 1953-58; Asst. Prof., Wash. Univ., St. Louis, Mo., 1958-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Assn. for the Adv. of Sci., Fellow; Soc. for Exptl. Biol. and Med.; Soc. of Am. Biochemists; Am. Chem. Soc.; Sigma Xi; Omicron Kappa Upsilon. Contbr. to: Jour. of Biochem.; Sci.; Archs. of Biochem. and Biophys.; Proc. Soc. Exptl. Biol. and Med.; Biol. Bull.; Jour. of Nutrn.; Jour. of Lab. and Clin. Med.; Am. Jour. of Physiol.; Nature. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Vitamins Proteins and Intermediary Metabolism.

ROSENTHAL, Maurice L. (Mr.), Vice Pres., New Product Dev., Robeco Chem., Inc., 25 E. 26th St., New York, N. Y. Home Add : 133 Andover Rd., Roslyn Hts., N. Y. TOPICAL PHARMACEUTICALS AND COSMETICS. b. New York, N. Y., Sept. 15, 1922. s. Herman H. and Ruth (Schwartz) R. Edn.: B.S., Columbia Univ., 1946; Lic. Phar., N. Y. St. Univ., 1947. m. Elenore Klein, Sept. 25, 1944. c.: Carol Joan; Steven James. Exp.: Secy., Robeco Tech. Equip. Corp., New York, N. Y., 1957—; Vice Pres., Robeco Chems., Inc., ibid., 1955 . Mem.: Chemists Club; N. Y. Acad. of Sci.; Am. Assn. Adv. Sci.; Am. Chem. Soc.; Am. Pharmaceutical Assn.; Soc. Cosmetic Chemists; Soc. Phar. in Industry. Serv. Rec.: U. S. Army, Med. Dept., 1942-46. Gen. Int.: Devel. of Vehicles for Dermatol. Application. Areas of Rsch.: Topical Pharmaceutical and Cosmetic Raw Materials, i.e. Vehicles, Emulsifiers, Penetrants, Emollients, Therapeutic Agents.

ROSENTHAL, Milton Eugene (Mr.), Actng. Chmn. Sci. Dept., Tchr. of Sci. and Math., Bigelow Jr. H. S., Newton, Mass. Home Add.: 38 Chapman St., Canton, Mass. BIOLOGY-CYTOLOGY. b. Boston, Mass., Jan. 14, 1933. s. Morris I. and Katherine (Ring), R. Edn.: A.B., Boston Univ., 1955; A.M., ibid., 1956. m. Willa Ruth Meyerhoff, Aug. 14, 1962. Exp.: Rsch. Asst., Boston Univ., Biol. Rsch. Lab., Boston, Mass., 1956-58; Tchr. of Students in Rsch., Boston Univ. Biol. Rsch. Lab., ibid., 1956-58; Hd. of Sci. Dept., Yeshiva of Boston, 1958-60; Tchr. of Sci. and Math., Bigelow Jr. H. S., 1957 . Hon. Pos.: Acting Chmn., Sci. Dept., 1961-62; Acting Chmn., Schl Sci. Fair, Civil Defense Rep. Mem.: Am. Assn. for the Adv. of Sci.; M.T.A.; Newton Tchrs. Assn.; A.T.M.N.E.; N.S.T.A.; N.E.A.; Tau Epsilon Phi. Contbr. to: The Sci. Tchr. Gen. Int.: Reg. Award Winner, John Gunther's High Road Teachers Award Program. Areas of Rsch.: Study of Regeneration in the Male Wistar Rat, Using the Adrenal Gland; Study of Freeze-Drying Tissues.

ROSHORE, Edwin Clinton (Mr.), Materials Engr., USAEWES, P.O. Drawer 2131, Jackson, Miss. Home Add.: 211 Mount Salus Dr., Clinton, Miss. MATERIALS ENGINEERING (CONCRETE RESEARCH). b. Hattiesburg, Miss., June 24, 1926. s. Clinton Lee and Bessie Ross (Watson) R. Edn.: B.S., Miss. State Coll., 1948. m. Mildred Ruth Miller, Sept. 3, 1949. Exp.: Engr., USAEWES, Jackson, Miss., 1948—. Mem.: Am. Chem. Soc.; Miss. Acad. of Sciences; Lambda Chi Alpha; Vet. Foreign Wars. Contbr. to: Proc. of Highway Rsch. Bd. Serv. Rec.: U. S. Navy, W.W. II. Gen. Int.: Co-Author of Paper: Use of the Soniscope by the Concrete Div., USAEWES. Areas of Rsch.: Concrete Research.

ROSINSKI, Jan (Mr.), Sr. Staff Mem., Natl. Ctr. for Atmospheric Rsch., Boulder, Colo. INORGANIC CHEMISTRY AND CHEMICAL ENGINEERING. b. Warsaw, Poland, Feb. 10, 1917. s. Caesar and Stanislawa (Jedynski) R. Edn.: Cert., Gorski Gymn., 1935; Chem. Engr., Warsaw Inst. of Technol., Poland, 1949; Dipl. in Ch. Engrng., Polish Univ. Coll., London, England, 1948. m. Barbara L. Tokarczyk, June 24, 1945. c.: Maciej C. Exp.: Rsch. Chemist, British Celanese Ltd., England, 1948-51; Sr. Scientist, Armour Rsch. Fdtn. of Ill. Inst. of Technol., 1951-62; Sr. Staff Mem., Natl. Ctr. for Atmospheric Rsch., 1962 . Mem.: Am. Geophys. Union; Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Sigma Xi. Contbr. to: Kolloid Zeitschrift; Indust. and Engrng. Chem.; Trans. Am. Geophys. Union; Anal. Chem.; Bull. Am. Meteorol. Soc.; Jour. Colloid Sci.; Jour. of Meteorol.; Appl. Scient. Rsch. Areas of Rsch.: Colloids, Mechanics of Aerosols and Hydrosols, Atmospheric Research.



ROSNER, Daniel Edwin, (Ph.D.), Aeronautical Rsch. Scientist, Aerochem. Rsch. Labs., P. O. Box 12, Princeton, N. J. Home Add.: 13 Colonial Ave., Princeton Junction, N. J. HEAT AND MASS TRANSFER; CHEMICAL REACTIONS IN FLOW SYSTEMS. b. N. Y. City, Oct. 30 1933. s. Samuel A. and May (Tischler) R. Edn.: B.M.E. (summa cum laude, City Coll. of N. Y., 1955; M.A., Princeton Univ., 1957; Ph.D., ibid., 1961. m. Susan Z. Daniels, Aug., 1958. c.: Lisa Evan; Stefan Willard. Exp.: Aeron. Rsch. Sci., Aero Chemist, Aerochem. Rsch. Labs., Princeton, 1958 . Mem.: Am. Rocket Soc.; Inst. of Aeronautical Scis.; Am. Inst. of Physics; Sigma Xi; Tau Beta Pi, Pi Tau Sigma; A.A.A.S.; Am Inst. Chem. Engrs Author Diffusion and Chemical Surface Catalysis in Flow Systems, 1963. Contbr. to: Am Rocket Soc. Jour.; Jour. of the Aero. Space Scis ; Jour. of Heat Transfer; Am Inst. of Chem. Engrs. Jour. Gen. Int : Guggenheim Jet Propulsion Fellow, 1955-56; Gen Elect. Charles

A. Coffin Fellowship, 1957; W. W. in Am. Univ. and Colls., and Am. Men of Sci. Areas of Rsch.: Chemical Surface Catalysis in Flow Systems; Heat and Mass Transfer in the Presence of Thermochemical Change, Combustion, Hypersonic Aerodynamics.

ROSOMOFF, Hubert Lawrence (M.D.), Clin. Asst. Prof. of Neurol. Surg., Univ. of Pittsburgh Schl. of Med., Pittsburgh, Pa. Home Add.: 3 Forest Glen Dr., Pittsburgh 28, Pa. NEUROSURGERY. b. Philadelphia, Pa., Apr. 11, 1927. s. Morris and Caroline (Green) R. Edn.: A.B., Univ. of Pa., 1948; M.D., Hahnemann Med. Coll., 1952; Dr. Med. Sci., Columbia Univ. Coll. of Physicians and Surgeons, 1960. m. Elaine Hayflick, June 25, 1950. c.: Richard Nicholas; Peter Andrew. Exp.: Intern, Hahnemann Hosp., Philadelphia, Pa., 1952-53; Asst. Res. Surg., Presby. Hosp., New York, N. Y., 1953-54; Asst. Res. Neurosurg., Neurol. Inst. and the Presby. Hosp., ibid., 1954-55; Neurologist, U. S. Naval Hosp., Bethesda, Md., 1955-57; Rsch. Physiologist, Surgeon, ibid., 1957-58; Consultant, ibid., 1957-59; Res. Neurosurg., Neurol. Inst. and Presby. Hosp., New York, N. Y., 1958-59; Clin. Trainee, B-348, NINDB, Pub. Health Serv., 1958-59; Clin Asst. Prof. of Neurol. Surg., Univ. of Pittsburgh Schl. of Med., 1959—; Chief, Neurol. Surg. Serv., VA Hosp., Oakland, Pittsburgh, Pa., 1959—; Asst. Attending Neurosurg, Presby. Hosp., ibid., 1959—; Attending Neurosurg., V.A. Hosp., Leech Farm, ibid., 1959—; Consultant, Harmarville Rehabilitation Ctr., ibid., 1961—. Mem.: ARNMD; AAAS; Am. Med. Assn.; Am. Physiol. Soc.; N. Y. Acad. of Scis.; Pa. Med. Soc.; Phila. Neurosurg. Soc.; Diplomate, Am. Bd. of Neurol. Surg.; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Jour. of Neurosurg.; Am. Jour. of Surg.; Archives of Neurol.; Am. Jour. of Physiol.; Jour. of Appl. Physiol.; Surgery; Surg., Gynecol. and Obsts. Serv. Rec.: USNR, Med. Corps, 1955-57. Gen. Int.: Award, Am. Acad. of Neurol. Surgery, 1956. Areas of Rsch.: Physiology; Hypothermia; Tissue Transplantation.

ROSS, Herbert Holdsworth (Ph.D.), Prin. Scientist, Hd. of Sect., Ill. Natl. Hist. Survey, Urbana, Ill. Home Add.: 208 W. Iowa St., Urbana, Ill. ENTOMOLOGY, TAXONOMY. b. Leeds, England, Mar. 8, 1908. s. Jonathan and Jessie (Holdsworth) R. Edn.: B.S.A., Univ. of Brit. Columbia, 1927; M.S., Univ. of Ill., 1929; Ph.D., ibid., 1933. m. Jean G. Alexander, Feb. 3, 1932. c.: Charles A. Exp.: Field Asst., Can. Entomol. Br., 1926-27; Asst. Entomologist, Ill. Natl. Hist. Survey, Urbana, Ill., 1927-31; Sect. Hd., ibid., 1931—. Hon. Pos.: Secy., Soc. for the Study of Evol. Mem.: A.A.A.S.; Sigma Xi; Soc. for the Study of Evol.; Ecol. Soc. of Am.; Soc. for Systematic Zool.; Entomol. Socs. Author: A Textbook of Entomology, 1st Ed., 1948; A Textbook of Entomology, 2nd Ed., 1956; Evolution and Classification of the Mountain Caddisflies, 1956; A Synthesis of Evolutionary Theory, 1962. Contbr. to: Ill. Natl. Hist. Survey Bull.; Ann. of the Ent. Soc. of Am.; Trans. Am. Ent. Soc. Areas of Rsch.: Evolution; Community Ecology; Insect Systematics.

ROSS, James Brent (Mr.), Asst. Gen. Mgr., Reinhold Book Div. and Mgr., Reinhold Coll. Textbook Dept., 430 Park Ave., N. Y. 22, N. Y. Home Add.: 18 Lake Dr., New Hyde Park, N. Y. BIOLOGICAL SCIENCES. b. Williamstown, W. Va., June 12, 1925. s. Claget Howard and Hazel (Bailey) R. Edn.: B.A., W. Va. Univ., 1949; M.S., Univ. of Pittsburgh, 1950. m. Alma E. Lowe, 1947. c.: Anna Elizabeth; William Brent. Exp.: Educational Representative and Coll. Editor, W. B. Saunders Co., Philadelphia, Pa., 1951-57; Mgr., Reinhold Coll. Textbook Dept., Reinhold Publishing Corp., N. Y., 1957—; Asst. Gen. Mgr., Reinhold Book Div., 1962—. Hon. Pos.: Pres., The Nature Conservancy, 1958-60; Bd. Gov., The Nature Conserv., 1960—. Mem.: Fellow, Am. Assn. Adv. Sci.; Sigma Xi; Phi Sigma; A.I.B.S.; Ecol. Soc. of Am.; Am. Ornithol. Union; Am. Chem. Soc.; Assn. Southeastern Biol.; Mason; Shrine; The Chemists Club. Contbr. to: Encycl. of Biol. Scis.; Nature Conservancy News. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Ecology, Conservation, Ornithology, Mammalogy.

ROSS, Mathew (M.D.), Med. Dir., Am. Psychiatric Assn., 1700 18th St., Wash. 9, D. C. Home Add.: 1855 Plymouth St., N. W., Wash. 12, D. C. PSYCHIATRY. b. Boston, Mass., July 29, 1917. s. Abraham and Frances (Lampke) R. Edn.: B.S., Tufts Univ., 1938; M.D., ibid., 1942; Postgrad. in Neurol., Coll. of Med. Evangelists, Los Angeles, Calif., 1949; Postgrad. in Psychosomatic Med., Univ. of Sou. Calif., Schl. of Med., 1946-48; Postgrad. in Exec. Development Univ. of Chicago, 1959; Postgrad. in Psychoanalysis, Los Angeles Inst. of Psychoanalysis, 1948-51. m. Brenda Boynton, Dec. 24, 1946. c.: Douglas; Gail; Craig; Bruce. Exp.: Psychiatrist, Student Health Serv., Univ. of Calif. Med. Ctr. and Clin. Prof. of Psychol. and Psychiatry, Univ. of Calif., Los Angeles, Calif., 1948-58; Psychiat., Good Samaritan Hosp., Los Angeles, Calif., 1948-49; Psychiatrist, Univ. of Calif. Med. Ctr., 1953-58; Psychiatrist, Mt. Sinai Hosp., Los Angeles, Calif., 1955-58; Psychiatrist, Edgemont Hosp., Los Angeles, Calif., 1956-58; Special Lctr. in Psychiatry, Geo. Wash. Univ., Wash., D. C.; Consultant Psychiatrist, New Sibley Mem. Hosp., Wash., D. C., 1960—; Med. Dir., Am. Psychiatric Assn., Wash., D. C., 1958—. Hon. Pos.: Bd. of Dirs., Am. Assn. for the Adv. of Sci.; The Am. Soc. of Mental Hosp. Bus. Adminrs.; The Natl. Assn. of Mental Health Coun. Mem.: Fellow, Am. Geriatrics Soc.; Fellow, Gerontol. Soc., Inc.; Fellow, Am. Assn. for Adv. of Sci.; Fellow, Am. Coll. of Phys.; Fellow, Am. Pub. Health Assn.; Assn. of Am. Med. Colls.; Am. Med. Assn.; So. Med. Assn.; Calif. Med. Assn.; L. A. Co. Med. Assn.; Med. Soc. of the Dist. of Columbia; Am. Acad. of Pol. and Social Sci.; Am. Assn. of Univ. Profs.; Soc. of Med. Consultants to the Armed Forces; World Fed. of Mental Health; Cosmos Club, Wash., D. C.; Natl. Press Club; Wash. Psychia. Soc.; Am. Psychopathol. Soc.; Group for Adv. of Psychia.; Am. Bd. of Psychia.; Natl. Bd. of Med. Exams.; Am. Child Guid. Found.; Am. Soc. of Mental Hosp. Bus. Adminrs.; Natl. Assn. for Mental Health; Acad. of Psychoanalysis. Contbr. to: Am. Practit. and Digest of Treatment; Calif. Med.; Psychiatric Quarterly; Geriatrics; Archives of Neuro. and Psychia; Diseases of the Nervous System; Internatl. Jour. of Group Psychotherapy; Archives of Gen. Psychiatry; Medecine et Hygiene; Mental Hygiene; Pa. Psychiatric Quarterly; So. Med. Jour.; Jour. of the Am. Ger. Soc.; Jour. Am. Dietetic Assn.; Am. Jour. of Psychiatry. Serv. Rec.: U. S. Army Med. Corps, 1942-46. Gen. Int.: Editor-in-Chief of the Jour., Mental Hospitals; Editorial Board of Excerpta Medica, 1953-56. Areas of Rsch.: Psychiatry in Medical Edn., Community Mental Health, Homosexuality, The Psychiatrist and Physician, Mental Health in Coll., Geriatric Psychiatry.

ROSS, Laurence Wilson (Mr.), Gen. Personnel Supvr., Union Bag-Camp Paper Corp. New York, N. Y. Home Add.: 15 Oaklawn Rd., Summit, N. J. PSYCHOLOGY. b. Leasburg, N. C., June 9, 1912. s. Charles R. and Rose Ellen (Holt) R. Edn.: A.B., Univ. of N. C., 1933; A.M., ibid., 1938. m. Helen Lance, 1931. c.: Laurence William. Exp.: Tchr., Elizabeth City Schls., N. C., 1933-35; Tchr. and Instr., Chapel Hill Schls. and Univ. of N. C., 1935-40; Dean, Greenville H. S., S. C., 1940-43; Personnel Techn., Air Service Comd., Warner Robin, Ga., 1943-44; Personnel Analyst, Union Bag-Camp Paper, 1944-57; Gen. Personnel Supvr., ibid., 1957—. Hon. Pos.: Chmn., Bd. of Examiners of Psychologists, Ga., 1953, 1956; Pres., Ga. Psychological Assn., 1957. Mem.: Am. Psychological Assn.; Ga. Psychological Assn.; A.A.A.S.; Southeastern Psychological Assn.; Phi Beta Kappa; Pi Mu Alpha. Contbr. to: Personnel; Jour. of Applied Psychol.; Am. Schl. Bd. Jour.; Schl. Rev.; Rev. of Edni. Rsch. Gen. Int.: Ind. Psychol., Personnel Measurements Applied to Ind. Employment; Established Techniques Now Common Throughout Pulp and Paper Ind. Areas of Rsch.: Aptitude Tests; Scientific Employment Techniques.

ROSS, W. Donald (M.D.), Prof. of Psychiatry, Univ. of Cincinnati and Attending Psychiatrist and Clinician, Cincinnati General Hosp., Cincinnati 29, O. Home Add.: 425 Rawson Woods Lane, Cincinnati, Ohio. PSYCHIATRY (RESEARCH AND SPECIALIZED KNOWLEDGE). b. Hamilton, Ont., Canada, Sept. 13, 1913. s. Frederic W. and Eleanor (MacDonald) R. Edn.: B.Sc., (Med.), Univ. of Manitoba, 1938; M.D., ibid., 1938. m. Sally Chipman, 1939. c.: George F. Exp.: Demonstrator (Histology, Physiol., Clin. Pathol., Med.), Univ. of Manitoba Faculty of Med., 1933-39; Demonstrator, Neurol., McGill Univ. Faculty of Med., 1940-43; Demonstrator, Psychiatry, ibid., 1943-48; Asst. Prof. of Psychiatry, Univ. of Cincinnati, 1948-52, 1953-54; Prof. of Psychiatry, Univ. of Br. Columbia, 1953; Assoc. Prof., Psychiatry, Univ. of Cincinnati, 1954-61; Prof. of Psychiatry, ibid., 1961—; Asst. Prof. Indust. Med., ibid., 1954—; Attending Psychiatrist and Clinician, Psychiatry and Med., Cincinnati Gen. Hosp., 1954—; Consult. Psychiatrist, V. A. Hosp., Cincinnati, 1954—. Hon. Pos.: Mem., Bd. of Trustees, Family Serv. of Cincinnati; Comm. Mem. in A.P.A. and A.M.A.; Past Pres., Cincinnati Soc. of Neurol. and Psychiatry; Dir., Indust. Mental Health Project, Univ. of Cincinnati Coll. of Med. Mem.: A.M.A.; Am. Psychiatry Assn.; Am. Psychosomatic Soc.; Am. Psychoanalytic Assn.; Am. Group Psychotherapy Assn.; Indust. Med. Assn.; Soc. for Project. Techniques; Am. Sociol. Soc.; Can. Psychol. Assn.; A.A.A.S.; Zeta Psi; Sigma Xi; Citizens Comm. on Youth, Cincinnati; and many others. Author: Understanding Ourselves, 1942, 1947; Practical Psychiatry for Industrial Physicians, 1956. Contbr. to: J.A.M.A.; Am. Jour. Psychiat.; Psychosomatic Med.; Arch. Gen. Psychiatry; Jour. Occupational Med.; Int. Jour. Gp. Psychother.; Jour. Psychosomatic Rsch.; Jour. Project Techniques; Ohio State Med. Jour.; Cincinnati Med. Jour.; Am. Jour. Surg.; Indust. Med. and Surg.; Vancouver Med. Bull.; Quart. Jour. of Studies on Alcohol; and many others. Serv. Rec.: Can. Army Med. Corps, 1943-46. Areas of Rsch.: Group Psychotherapy; Psychosomatic Med.; Psychopharmacology; Indust. Psychiatry; Psychoanalysis.

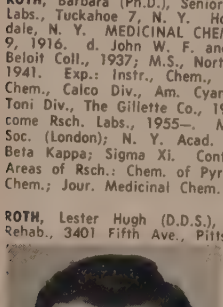
ROSS, Milton Samuel (M.D.), Dermatologist, 359 Main St., Mt. Kisco, N. Y. Home Add.: Chestnut Ridge Rd., Box 337, Rt. 2, Mt. Kisco, N. Y. DERMATOLOGY, RADIATION. b. New York, N. Y., Jan. 10, 1914. s. Samuel and Gussie (Rosenzweig) R. Edn.: B.S., Univ. of Va., 1936; M.D., Johns Hopkins Schl. of Med., 1940. m. Hilda Rosenblatt, May, 1941. c.: Susan; Robin; Penny. Exp.: Acting Med. Dir., Dist #5, Ind. St. Bd. of Health, Columbus, Ind., 1942-46; Instr., N. Y. Univ. Skin and Cancer Unit, 1950-55; Instr., Einstein Med. Schl., New York, 1961—. Hon. Pos.: Chmn., Ind. So. Cent. Conf. of Soc. Work, 1945. Mem.: Am. Med. Assn.; Westchester Acad. of Dermatol.; Am. Acad. of Dermatol.; Soc. of Invest. Dermatol.; Assn. of Mil. Surgeons; A.A.A.S.; Johns Hopkins Med. and Surg. Assn.; Assn. of Res. Officers; U.S.P.H.S.; Rotary Club; Pan Am. Med. Assn. Contbr. to: Archives of Dermatol.; Jour. Soc. Invest. Dermatol.; N. Y. St. Jour. of Med. Serv. Rec.: U.S.P.H.S., 1942-47. Areas of Rsch.: Co-founder of the Isotope Laboratory of the New York University Skin and Cancer Unit; Autoradiographic Techniques as Applied to Effect of Alpha Emmitters on the Skin was One Area of Study; Also Began a Study of a Beta Emitter such as Strontium 90 and its Skin Effects.

ROSSAS, James Anthony (Mr.), Physics Instr., Oroville H. Schl., Oroville, Calif. Home Add.: 2261 Perkins Ave., Oroville, Calif. PHYSICS EDUCATION. b. Oakland, Calif., May 5, 1928. s. James K. and Mary C. (Sexton) R. Edn.: A.B., Univ. of Calif., Berkeley, 1950; M.A., ibid., 1958. Exp.: Physics Instr., Oroville H. Schl., Oroville, Calif., 1951—. Mem.: Am. Assn. Phys. Tchrs.; Math. Assn. of Am.; Am. Assn. for the Adv of Sci.; Sci Tchr. Assn.; Cent. Assn. of Sci. Math. Tchrs.; Natl. Assn. of Tchrs. of Math. Contbr. to: Sci. Tchr.; Schl. Sci. and Maths.; Welch Phys. and Chem. Digest. Gen. Int.: Third Place Award, 1958, Natl. Sci. Tchr. Assn., S.T.A.R.

ROSTEN, Leo Calvin (Ph.D.), Spec. Editorial Advisor, Look Mag., N. Y., N. Y. Home Add.: 180 E. 79th St., N. Y., N. Y. POLITICAL SCIENCE; PUBLIC OPINION AND PROPAGANDA; POLITICAL PSYCHOLOGY. b. Lodz, Poland, Apr. 11, 1908. s. Samuel C. and Ida (Freundlich) R. Edn.: Ph.B., Univ. of Chicago, 1930; Ph.D., ibid., 1937. m. Zimi Rosten. c.: Philip; Madeline; Margaret. Exp.: Spec. Consultant, U. S. Govt., Exec. Offices of the Pres., Wash., D. C., 1939-40; Deputy Dir., Office of War Information, Wash., D. C., 1941-44; Sr. Staff, RAND Corp., Santa Monica, Calif., 1947-49; Spec. Editorial Advisor, Look Mag., N. Y., 1949—. Mem.: Am. Pol. Sci. Assn.; Am. Acad. of Pol. and Social Sci.; Am. Assn. for the Adv. of Sci. Author: The Washington Correspondents, 1937; Hollywood: The Movie Colony, 1941; Guide to Religions of America, 1956. Contbr. to: Journalism Quarterly; Pub. Opinion Quarterly. Serv. Rec.: Col., U. S. Army, 1945. Gen. Int.: George Polk Memorial Award, 1955; Freedoms Found. Award, 1956. Areas of Rsch.: Communications, Public Opinion, Propaganda.

ROTH, Barbara (Ph.D.), Senior Rsch. Chem., The Wellcome Rsch. Labs., Tuckahoe 7, N. Y. Home Add.: 310 Grand Blvd., Scarsdale, N. Y. MEDICINAL CHEMISTRY. b. Milwaukee, Wis., June 9, 1916. d. John W. F. and Nellie M. (Farr) R. Edn.: B.S., Beloit Coll., 1937; M.S., Northwestern Univ., 1939; Ph.D., ibid., 1941. Exp.: Instr., Chem., Lake Forest Coll., 1940-41; Rsch Chem., Calco Div., Am. Cyanamid Co., 1941-51; Rsch. Supvr., Toni Div., The Gillette Co., 1951-55; Sr. Rsch. Chem., The Wellcome Rsch. Labs., 1955—. Mem.: Am. Chem. Soc.; The Chem. Soc. (London); N. Y. Acad. Sci.; A.A.A.S.; Kappa Delta; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Am. Chem. Soc. Areas of Rsch.: Chem. of Pyrimidines and Pteridines; Jour. Org. Chem.; Jour. Medicinal Chem.

ROTH, Lester Hugh (D.D.S.), Clin. and Private Practice, Oral Rehab., 3401 Fifth Ave., Pittsburgh 13, Pa. Home Add.: 5600 Aylesboro Ave., Pittsburgh 17, Pa. BASIC RESEARCH AND CLINICAL RESEARCH; EXPERIMENTAL ANIMAL RESEARCH, RESEARCH CONSULTANT FOR DRUG AND PRODUCT DEVELOPMENT. b. Charleston, W. Va., Dec. 25, 1922. s. Hy and Sara Lee (Boiarsky) R. Edn.: D.D.S., Univ. of Pittsburgh, 1946. m. Leora Rogal, May 29, 1945. c.: Leslee. Exp.: Instr., Univ. of Pittsburgh, 1948-58; Special Lectr., Univ. of Pittsburgh, 1957—; Dir. of Thorlee Fdtn. for Rsch., Pa., 1956—; Pres., Rsch. Animals, Inc., Pa., 1956—. Hon. Pos.: Fellow, A.A.A.S.; Omicron Kappa Upsilon; I.A.D.R.; Sigma Xi. Contbr. to: Oral Surgery; Oral Med.; Oral Pathol.; W. Va. Dental Jour.; The N. Y. Jour. of Dentistry; The Fortnightly Rev. of the Chicago Dental Soc.; U. S. Armed Forces Med. Jour.; The Milit. Surgeon; The Ohio State Dental Assn. Jour.; Jour. of the Am. Dental Assn.; Antibiotics and Chemotherapy Med. Serv. Rec.: U.S.N. Reserves, 1946-48. Gen. Int.: Abstract Writer for Excerpta Medica Sect., 11; Prin. Investigator of Ultrasonic Studies in Dentistry, Univ. of Pittsburgh, 1955-56; Consultant, Lederle Labs., 1950-53; Scientific Exhibitor. Areas of Rsch.: Basic Rsch. and Clin. Rsch., Antibiotics, Nutrition, Bone, Ultrasonics.



ROTH, Herman Moe (Ph.D.), Dir., Rsch. and Devel. Div., Oak Ridge Operations Office, U. S. Atomic Energy Comm., P.O. Box E, Oak Ridge, Tenn. Home Add.: 123 Underwood Rd., Oak Ridge, Tenn. ASTROPHYSICS, NUCLEAR SCIENCE. b. Richmond, Va., Dec. 5, 1907. s. Frank and Ester (Weinstein) R. (both dec.) Edn.: B.S.E., Univ. of Va., 1927; M.S., ibid., 1928; Ph.D., Ohio State Univ., 1932. m. Blanche Brown, Dec. 27, 1931. c.: Sanford Irwin; Lawrence Max. Exp.: Tchng. Fellow, Univ. of Va., 1927-28; Asst. Prof., Ohio St. Univ., 1928-32; Prof., Cameron Coll., 1933-35; Prof., Oklahoma A. and M. Coll., 1935-41; Physicist, Manhattan Engr. Dist., Oak Ridge, Tenn., 1946-47; Physicist, U. S. Atomic Energy Comm., ibid., 1947—. Mem.: Am. Phys. Soc.; Am. Nuclear Soc.; A.A.A.S.; Sci. Rsch. Soc. of Am.; Fellow, Tenn. Acad. of Scis.; Phi Alpha; Pi Mu Epsilon; Sigma Xi; B'Nai Brith. Serv. Rec.: U. S. Army Corps of Engrs., 1941-46; Reserve, 1948—. Areas of Rsch.: Nuclear Physics and Energy; Reactors; Stellar Equilibrium; Density Distribution in Stars; Dynamical Stability of Stars.

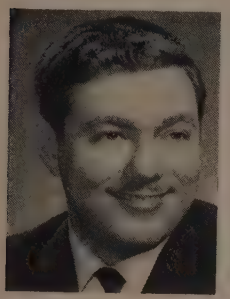
ROTH, Rev. Owen Harold, Professor of Zoology, St. Vincent Coll., Latrobe, Pa. Home Add.: St. Vincent Archabbey, Latrobe, Pa. ANATOMY. b. Straights, Pa., Apr. 28, 1915. s. John P. and Anna (Grunthaner) R. Edn.: A.B., St. Vincent Coll., 1938; M.A., ibid., 1940; M.S., Yale Univ., 1946. Exp.: Instr., St. Vincent Coll., 1940-46; Asst. Prof., ibid., 1946-51; Assoc. Prof., Latrobe Schl. of Nursing, 1946-62; Assoc. Prof., St. Vincent Coll., 1951-62; Prof., ibid., 1962—. Mem.: A.A.A.S.; Pa. Acad. of Sci.; N. Y. Acad. of Sci.; Albertus Magnus Guild; Knights of Columbus. Author: Laboratory Manual for Comparative Anatomy, 1956; Laboratory Manual for Comparative Anatomy, 1962; Laboratory Manual for Invertebrate Zoology, 1962. Areas of Rsch.: Anatomy, Histol.

ROTH, Robert Howard (Ed.D.), Acting Dir., Child Study Ctr., Asst. Prof. of Psychol., Newark State Coll., Union, N. J. Home Add.: 1129 Bergen Street, Newark, N. J. SOCIAL PSYCHOLOGY, PSYCHOANALYSIS, GROUP PSYCHOTHERAPY, EDUCATIONAL PSYCHOLOGY. b. Newark, N. J., Jan. 15, 1933. s. Max and Marion (Gurkewitz) R. Edn.: B.S., Juilliard Schl. of Mus., 1953; M.A., Columbua Univ., 1956; Ed.D., ibid., 1960. m. Estelle Goldstein, June 16, 1957. c.: Lisa Caren. Exp.: Instr. in Psychol., Union Jr. Coll., N. J., 1959-60; Asst. Prof. of Psychol., Newark St. Coll., 1960—; Acting Dir., Child Study Ctr., Newark St. Coll., 1962. Hon. Pos.: Chmn., Student-Faculty Human Rights Com., Newark State Coll.; Human Relations Consultant to Irvington, N. J. Human Relations Coun. Mem.: Soc. for Client Centered Counseling; N. J. Edn. Assn.; Soc. for Psychol. Study of Social Issues; Soc. for Gen. Systems Rsch.; Natl. Edn. Assn.; Am. Psychol. Assn.; N. J. Psychol. Assn.; Am. Gr. Psychotherapy Assn.; Eastern Gr. Psychotherapy Soc.; John Dewey Soc.; Am. Assn. Univ. Profs.; Am. Assn. Adv. Sci.; Phi Delta Kappa; Kappa Delta Pi. Contbr. to: Am. Psychologist; Jour. of Soc. Psychol.; Jour. of Psychol.; Psychol. Abstracts; Phi Delta Kappan. Areas of Rsch.: Social Psychology, Psychoanalysis; Group Psychotherapy, Educational Psychology, Child Development, Social Theory, Educational Theory, Scientific Study of Artistic Creativity.

ROTHE, Erich Hans (Ph.D.), Prof. of Math., Univ. of Mich., Ann Arbor, Mich. Home Add.: 413 S. Forest Ave., Ann Arbor, Mich. MATHEMATICS. b. Berlin, Germany, July 21, 1895. s. Wilhelm and Else (Horwitz) R. Edn.: Ph.D., Univ. of Berlin, 1926. m. Hildegard Ilie, 1928. c.: Erhard W. Edn.: Asst., Inst. of Appl. Math., Univ. of Berlin, 1924-26; Privatdozent Technische Hochschule, Breslau, Germany, 1927-35; ibid., Univ. of Breslau, 1931-35; Prof., William Penn Coll., 1937-43; Asst. Prof., Assoc. Prof., Prof., Univ. of Mich., 1943—. Mem.: Am. Math. Soc.; Am. Math. Assn.; A.A.A.S.; Iowa Acad. Contbr. to: Various Am. and German Mathematical Jours. Areas of Rsch.: Functional Analysis.

ROTHE, Walter F., Pres., The Universal Calendar Soc., Inc., P.O. Box 5603, Wash. 16, D. C. Home Add.: 5060 MacArthur Blvd., N.W., Wash. 16, D. C. ECONOMICS, POLITICAL AND SOCIAL SCIENCE ASTRONOMY. b. Crimmitschau, Saxony, Nov. 3, 1903. s. Fritz A. and Rosa Johanna (Koenig) R. m. Erica Maria, June 18, 1941. c.: Norma E. Exp.: Mathematician, Calculator, Wolf Bros., Neukirchen, Saxony, 1920-23; Hotel and Real Estate Bus., Atlantic City, N. J., 1928-34; Studies in Measurement of Time, Wash., D. C., 1934-47; Experimentations, Rsch., Inventions, Wash., D. C., 1947-53; Founder and Pres. of the Universal Calendar Soc., Inc., Wash., D. C., 1953—. Mem.: Natl. Acad. of Econs. and Polit. Sci.; Am. Acad. of Polit. and Soc. Sci.; The Natl. Inst. of Soc. and Behavioral Sci.; A.A.A.S.; Natl. Planning Assn.; Natl. Capital Astronomers; Am. Museum of Natural History; Univastro Soc.; The Steuben Soc. Author: The Perpetually Fixed Calendar, 1947; The Sesquicentennial Calendar, 1950; The Calendar of the Four Seasons, 1952; The Two-in-One Transitional Calendar, 1954-55; The Activated Universal Calendar, 1955; The Perfected Universal Calendar, 1956; The Symmetrical Universal Calendar, 1960. Gen. Int.: The Perfection of the Universal Calendar, Inventor and Holder of 17 Diverse Patents of Gen. Int. to the Public; First Tchr. of Almanalogy. Areas of Rsch.: The Measurements of Time; Astronomy and Calendars and Their Histories; Poetry; Chronology; Chronometry; Chronography are combined in new science of Almanalogy.

ROTHMAN, David (Mr.), Grad. Schl. Pub. Admin., Harvard Univ., Cambridge, Mass. Home Add.: 20 Whitman Rd., B-2, Waltham, Mass. MATHEMATICS (STATISTICS). b. Bronx, N. Y., Aug. 9, 1935. s. Morris and Lena (Rothfeld) R. Edn.: B.A., Univ. of Wis., 1954; M.A., ibid., 1955. m. Yolanda Freilich, June 7, 1959. c.: Mitchell S. Exp.: Sr. Physicist, Rocketdyne, NAA, Canoga Park, Calif., 1956-61; Mem., Tech. Staff, Systems Labs. Div., Electronic Specialty Co., 1961-62. Hon. Pos.: Ford Found. Fellowship; Natl. Sci. Fdtn. Fellowships. Mem.: A.M.S.; M.A.A.; I.M.S.; A.R.S.; S.I.A.M.; A.C.M.; I.R.E.; Am. Assn. for the Adv. of Sci.; A.S.A.; Pi Mu Epsilon. Areas of Rsch.: Design and Analysis of Experiments, Computing, Reliability and Systems Analysis.

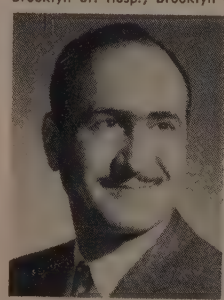


ROTHSTEIN, Edwin Carl (Mr.), Rsch. Engr., 300 Adams St., Hoboken, N. J. Home Add.: 2425 Nostrand Ave., Brooklyn 10, N. Y. CHEMICAL ENGINEERING; RHEOLOGY OF POLYMER SYSTEMS. b. Brooklyn, N. Y., Nov. 17, 1933. s. Sydney L. and Ida (Palais) R. Edn.: A.B., Brooklyn Coll., 1954; S.M., Mass. Inst. of Technol., 1956. m. Brenda Rothschild, July 3, 1958. Exp.: Rsch. Tchnologist, Socony Mobil Oil Co., Inc., R. & D. Lab., Paulsboro, N. J., 1956-59; Rsch. Engr., Keuffel and Esser Co., Hoboken, N. J., 1959. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; A.A.A.S.; Soc. of Rheology; Soc. of Plastics Engrs.; Beta Delta Mu; Phi Lambda Upsilon. Areas of Rsch.: Lubrication Technol.; Rheology of Polymer Systems; Applied Rsch. in Plastics Devel.

ROTHMAN, Theodore (M.D.), 415 N. Camden Dr., Beverly Hills, Calif. Home Add.: 970 Bluegrass Lane, Los Angeles 49, Calif. PSYCHIATRY. b. Paterson, N. J., Apr. 28, 1907. s. Abram and Helen (Geber) R. Edn.: B.A., Clark Univ., 1928; M.D., N. Y. Med. Coll., 1932. m. Jean Gershfield, Dec. 25, 1934. c.: Stephanie. Exp.: Assoc. Clin. Prof. of Psychiat., Univ. of So. Calif., Los Angeles, 1957-62; Clin. Prof. Psychiatry, Univ. of S. Cal., 1962—; Exec. Dir., Rush Rsch. Found., Beverly Hills, Calif., 1961—; Consult., Rsch. (Neurophyshiat.) Sepulveda V.A. Hosp., Sepulveda, Calif., 1962—; Secy.-Treas., Am. Coll. of Neuropsychopharmacol., ibid., 1961—. Hon. Pos.: Pres., Dante Alighieri Soc., 1960-62. Mem.: Fellow, Am. Coll. of Physns.; Am. Psychiat. Assn.; A.A.A.S.; Am. Coll. of Neuropsychopharmacology; Fellow, Academy of Psychosomatic Med.; Am. Med. Assn.; Calif. Med. Assn.; Am. Soc. of Medical Psychiat.; So. Calif. Psychiat. Assn.; N. Y. Acad. of Sci. Contbr. to: Jour. of the Am. Med. Assn.; Am. Jour. of Physiol.; Am. Med. Assn.; Archives of Neurol. and Psychiat.; Psychosomatics; Jour. of Neuropsychiat.; Comprehensive Psychiat. Gen. Int.: Awarded by Congress, 1946, Selective Serv. Medal of Merit; Cav., U.S.F. (Knight Official), Awarded by the Republic of Italy, 1962. Areas of Rsch.: Biochemistry and Endocrinology; Electrophysiology and Studies with Prolonged Wakefulness; Psychotherapy; Psychopharmacology; History of Medicine; Drug Evaluations and Methodology.

ROTHSTEIN, Jerome (Mr.), Sr. Staff Scientist, Lab. for Electronics, 1079 Commonwealth Ave., Boston, Mass. Home Add.: 70 Manemet Rd., Newton Ctr., 59, Mass. PHYSICS. b. Bronx, N. Y., Dec. 14, 1918. s. Harry and Annetta (Simenhoff) R. Edn.: B.S., Coll. of the City of N. Y., 1938; M.A., Columbia Univ., 1941. m. Charlotte E. Weinrebe, Dec. 25, 1941. c.: Louise; Judith; Deborah. Exp.: Rsch. Assoc. and Tutor, Columbia Univ. and City Coll. of N. Y., N. Y., 1941-42; Physicist, Sig. Corps Rsch. and Devel. Lab., Belmar, N. J., 1942-57; Sr. Scientific Exec., Edgerton, Germeshausen and Grier, Inc., Boston, Mass., 1957-61; Chief Scientist and Vice-Pres., Maser Optics, Inc., Boston, Mass., 1961-62. Mem.: Am. Phys. Soc.; A.A.A.S.; Instit. of Radio Engrs.; Biophys. Soc.; Soc. of Photographic Scientists and Engrs. Author: Communication, Organization and Science, 1958. Contbr. to: Phys. Rev.; Sci.; Bull. of the Am. Phys. Soc.; Jour. of App. Physics; Rev. of Scientific Instruments; Methodos; Philos. of Sci.; Photographic Sci. and Engrng.; Advances in Electronics and Electron Physics; Revue Internationale De Philosophie; Jour. of Chem. Physics; Am. Jour. of Physics. Gen. Int.: Hold 15 Patents in the Fields of Electronic Devices and Instrumentation. Areas of Rsch.: Information Theory; Laser Research; Biophysics; Physical Electronics; Solid State Physics; Radiation Effects.

ROUBEIN, Isaac Fuad (Ph.D.), Sr. Rsch. Scientist, Biochem., Brooklyn St. Hosp., Brooklyn 3, N. Y. Home Add.: 300 Hamilton St. F-6, New Brunswick, N. J. MICROBIAL CHEMISTRY. b. Amarah, Iraq, Jan. 20, 1924. s. Roubein and Mouzli (Moualem) Shouah. Edn.: Ph.C., Royal Coll. of Pharm. and Chem., Baghdad, Iraq., 1948; Ph.D., Rutgers Univ., 1960. m. Blanche Aharon, 1953. c.: Leor David; Eleanor Ruth. Exp.: Tchr., Shamash Schl., Baghdad, Iraq, 1948-51; Pharmacist, In charge, Middle E. Drug St., Baghdad, Iraq, 1948-51; Rsch. Chemist, Ag. Rsch. Sta., Rehovot, Israel, 1953-56; Rsch. Asst., Rutgers Univ., 1956-57; Rsch. Fellow, ibid., 1957-60; Sr. Rsch. Scientist, Brooklyn State Hosp., Brooklyn, N. Y., 1961—. Mem.: Am. Chem. Soc.; Sr. Grad. and A.A.A.S. Contbr. to: Jour. Biolchem. Areas of Rsch.: Studies into the Metabolism of Psychotropic drugs.



ROUSE, Irving (Ph.D.), Prof. of Anthropol., Yale Univ., New Haven, Conn. Home Add.: 12 Ridgewood Terrace, North Haven, Conn. ANTHROPOLOGY. b. Rochester, N. Y., Aug. 29, 1913. s. B. Irving and Louise (Bohachek) R. Edn.: B.S., Yale Univ., 1934; Ph.D., ibid., 1938. m. Mary Mikami, June 24, 1939. c.: Peter; David. Exp.: Instr., Yale Univ., 1938-43; Prof., ibid., 1954—; Chmn., Dept. of Anthropology, ibid., 1957—. Mem.: Natl. Acad. of Scis.; Am. Anthropol. Assn.; Soc. Am. Archaeology. Co-Author: An Archeological Chronology of Venezuela, 1958-59. Author: Prehistory in Haiti: A Study in Method, 1939; Porto Rican Prehistory, 1952. Contbr. to: Am. Anthropologist; Am. Antiquity; S.W. Jour. of Anthropol. Gen. Int.: A. Cressy Morrison Prize in Natl. Scis., N. Y. Acad. of Scis., 1951; Viking Fund Medal in Anthropol., 1959. Areas of Rsch.: Prehistoric Archeology, especially of the Caribbean Area.

ROUSER, George L., Jr. (Ph.D.), Sr. Rsch. Biochemist, Dept. of Biochemistry, City of Hope Med. Ctr., Duarte, Calif. Home Add.: 2307 S. Sixth Ave., Arcadia, Calif. BIOCHEMISTRY. b. Austin, Tex., June 2, 1923. s. George L., Sr. and Annis (Dalton) R. Edn.: B.S., Southwestern Univ., Tex., 1944; Ph.D., Univ. of Rochester Schl. of Medicine and Dentistry, 1952. m. Alice Marilyn Correll, Dec. 1, 1951. c.: James Correll; Mark Alan; John Eric. Exp.: Rsch. Chemist, Vanderbilt & Meharry Med. Schl., 1947-49; Rsch. Fellow, Univ. of Rochester Schl. of Med. and Dentistry, 1952-54; Rsch. Biochemist, City of Hope Med. Ctr., Duarte, Calif., 1954—. Mem.: Am. Chemical Soc.; Am. Soc. of Biological Chemists; Am. Oil Chemists Soc.; Am. Assn. Cancer Rsch.; Sigma Xi. Contbr. to: Jour. of Biological Chem.; Jour. the Am. Chemical Soc.; Analytical Chem.; Jour. of the Am. Oil Chemists Soc.; Arch. of Biochemistry and Biophysics; Biochimica et Biophysica Acta; Am. Jour. of Clinical Nutrition. Serv. Rec.: U. S. Corps of Engrs., 1944-47. Areas of Rsch.: Lipid Chemistry and Metabolism; Blood Chemistry with Particular Emphasis on Biochemistry of White Blood Cells; Amino Acid Metabolism in Human Leukemias.

ROWAN, William Hamilton (Mr.), Prof. and Hd., Civil Engrng., Vanderbilt Univ., Nashville, Tenn. Home Add.: 502 Hillwood Dr., Nashville 5, Tenn. CIVIL ENGINEERING, SOIL MECHANICS AND FOUNDATIONS. b. Nashville, Tenn., Oct. 8, 1903. s.

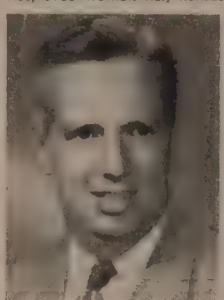
Ben Hardin and Alice (Buttorff) R. Edn.: B.E., Vanderbilt Univ., 1926; C.E., ibid., 1939. m. Elizabeth Lowry, July 16, 1931. c.: William Hamilton, Jr.; Ben Hardin, II. Exp.: Engr., Tenn. St. Highway Dept., Nashville, Tenn., 1926-42; Prof. and Hd., Civil Engrng., Vanderbilt Univ., 1945—. Hon. Pos.: Secy. and Treas., Tenn. St. Bd. of Architectural and Engrng. Examiners; Secy., NCSBEE Southern Zone. Mem.: Am. Soc. Civil Engrs.; A.C.I.; A.S.T.M.; A.S.E.E.; A.A.U.P.; Sigma Xi; Tau Beta Pi; Omicron Delta Kappa; Nashville Engrng. Assn. Contbr. to: Civil Engrng.; Proc. Am. Soc. of St. Highway Officials. Serv. Rec.: U.S.N.R., 1942-45. Gen. Int.: Co-inventor, Rowan and Buckner Method of Curing Concrete, U. S. Patent. Areas of Rsch.: Soil Mechanics; Concrete.

ROWE, Alan J. (Ph.D.), Dir., Indl. Dynamics, Hughes Aircraft Co., Culver City, Calif. Home Add.: 2169 Linda Flora Dr., Los Angeles 24, Calif. MANAGEMENT SCIENCE AND OPERATIONS RESEARCH. b. New York, N. Y., Sept. 25, 1923. s. Isadore and Eva (Coopersmith) R. Edn.: B.S., Columbia Univ., 1948; M.S., ibid., 1949; Ph.D., Univ. of Calif., 1959. m. Helen Brawer, 1948. c.: Andrea; Nadine; Clifford. Exp.: Rsch. Consult., Gen. Elect., New York, N. Y., 1955-59; Mgr., Mgmt. Rsch., System Dev. Corp., Santa Monica, Calif., 1959-60; Indl. Dynamics Dir., Hughes Aircraft Co., Culver City, Calif., 1960—. Hon. Pos.: Edl. Bd., Mgmt. Tech., Jour. of Indl. Engrng.; Natl. Panel of Am. Arbitration Assn.; Past Pres., Dalewood Civic Assn. Mem.: Inst. of Mgmt. Sci.; Operations Rsch. Soc. of Am.; Am. Inst. Indl. Engrs.; Am. Soc. Engrng. Edn.; Sigma Xi; Arista; Dalewood Civic Assn. Co-Author: Management Control Systems, 1960. Contbr. to: Mgmt. Tech.; Calif. Mgmt. Rev.; Jour. Indl. Engrng.; Agric. Engr.; Am. Mgmt. Assn.; Econometrica. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: Dev. of time lapse camera; Appl. of quartz crystal oscillator; Pioneered computer simulation and mgmt. games. Areas of Rsch.: Management Science; Operations Research; Computer Technology; Computer Simulation; Industrial Engineering; Statistical Quality Control; Management Education.

ROYCE, William Francis (Ph.D.), Dir., Fisheries Rsch. Instit., Prof. of Coll. of Fisheries, Univ. of Wash., Seattle 5, Wash. Home Add.: 4223 N.E. 73rd St., Seattle 15, Wash. FISHERY BIOLOGY, POPULATION DYNAMICS, OPERATIONS RESEARCH. b. De-Bruce, N. Y., Jan. 5, 1916. s. James S. and Mina (Winner) R. Edn.: B.S., Cornell Univ., 1937; Ph.D., ibid., 1942. m. Mary Savage, June 8, 1940. c.: James S.; William F., III; Andrew H. Exp.: Fishery Rsch., U. S. Fish and Wildlife Serv., Cambridge, New Bedford, Woods Hole, Mass., and Honolulu, Hawaii, 1942-55; Asst. Admin. in Charge of Rsch., ibid., Juneau, Alaska, 1955-58; Prof. Coll. of Fish. and Dir., Fisheries Rsch. Inst., Univ. of Wash., 1958—. Mem.: Fellow, A.A.A.S.; Fellow, Am. Inst. Fishery Rsch. Biol.; Am. Soc. Limnol. and Oceanography; Am. Soc. of Ichthyolos. and Herpetols.; Biometrics Soc.; Operations Rsch. Soc. of Am.; Am. Assn. Univ. Profs.; Am. Sos. of Zoologists; Sigma Xi; Alpha Zeta; Gamma Alpha; Isaac Walton League of Am. Contbr. to: Trans. of the Am. Fisheries Soc.; U. S. Fish and Wildlife Serv. Fishery Bull. and Spec. Sci. Reports; Commercial Fisheries Rev.; Trans. of N. Am. Wildlife Conf.; Copeia; Sci. Areas of Rsch.: Fishery Biology and Oceanography, Especially of the North Pacific, Population Dynamics and Operations Research.

ROWE, Robert Seaman (D.Eng.), Dean of Eng., Vanderbilt Univ., Nashville, Tenn. Home Add.: 4914 Roselawn Circle, Nashville, Tenn. STRUCTURAL MECHANICS. b. Newport, Del., Jan. 31, 1920. s. Everett Whittemore and Frances (Seaman) R. Edn.: B.C.E., Univ. of Del., 1942; M.S., Columbia Univ., 1949; M.Eng., Yale Univ., 1950; D.Eng., ibid., 1951. m. Emma Jean Mote, 1942. c.: Robert S., Jr.; William E. Exp.: U. S. Army Staff Officer, Commandant of Machine Gun Training Schl. and Adjutant of HDNY, 1942-46; Assoc. Prof., Princeton Univ., 1946-52; Rsch. Assoc., ibid., 1952-53; Dir., River and Harbor Sec., Civil Eng. Dept., ibid., 1953-56; Prof. and Chmn. of Dept., Civil Eng., Duke Univ., 1956-60; Dean of Eng., Vanderbilt Univ., 1960—. Hon. Pos.: Mem., Scientific Advisory Panel, Office of Ordnance Rsch. Mem.: Am. Soc. of Civil Eng.; Am. Concrete Inst., Am. Soc. for Eng. Edn.; Soc. of Am. Military Eng.; Nat. Soc. of Professional Eng.; Yale Eng. Assn.; Phi Kappa Phi; Tau Beta Pi; Sigma Xi. Author: Bibliography of Rivers and Harbors and Related Fields in Hydraulic Engineering, 1953; French-English Translation Guide for River and Harbor Engineering, 1954; German-English Translation Guide for River and Harbor Engineering, 1954; Russian-English Translation Guide for River and Harbor Engineering, 1954. Contbr. to: Jour. of the Am. Concrete Inst.; Jour. of Eng. Edn.; The Military Eng.; Transactions of the Am. Soc. for Civ. Eng.; Civil Engineering; Proc. of the Am. Soc. of Civ. Eng.; North Carolina Engineer. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Guyed Towers; Vehicle Mobility; Engineering Structures.

ROWLAND, James L., Physician and Surgeon, D.O., General Practice, 8133 Wornall Rd., Kansas City 14, Mo.; Former Prof. of Preventive Med. and Pub. Health, Kans. City Coll. of Osteopathy and Surgery, Kans. City, Mo. PREVENTIVE MEDICINE AND PUBLIC HEALTH, SANITATION. b. Ft. Smith, Ark., Aug. 20, 1917. s. James L. and Sallie (Biggs) R. Edn.: B.S., Central Coll., 1940; M.S.P.H., Loyola Univ., 1943; D.O., ibid., 1956. m. Eva Louis Squire, 1942. c.: Marcile Suzanne; James Gregory. Exp.: Chf. of Sanitation, Oak Park Bd. of Health; Oak Park, Ill., 1941-43; Milk and Food Consult., U. S. Pub. Health Serv., Dallas, Tex., 1943-46; Sanitation Consult., Acting Health Officer for Cent. Fla. Health Dist., Fla. State Bd. of Health, Ocala, Fla., 1946-48; Dir., Missouri Div. of Health, Kans. City, Mo., 1952—. Mem.: Milk and Food Sanitation; Am. Assn. of Food and Drug Officials; Natl. Assn. of Sanitations; (Fellow) Am. Pub. Health Assn.; Natl. Chmn., Conf. of Interstate Milk Shipments; Phi Sigma Gamma; Mason; Fellow in Am. Pub. Health Assn.; Fellow of Am. Coll. of General Practice; Fellow, Am. Coll. of Bio-Analysts; Diplomate, Bio-Analytical Allied Arts and Scis.; Am. Coll. of Neuropsychiatry. Author: New Approach to Food Handler Training, 1950. Contbr. to: Jour. of Amer. Osteo. Assn.; Jour. of Amer. Pub. Health; Milk and Food Tech.; The Sanitarian; Govt. Publications. Gen. Int.: Help Bring About a Condition That Will Bring A Better Milk Supply to All the People of the U. S. Special Int.: Sanitation, Pub. Health Edn.; Pub. Health Admin.; Neuropsychiatry.



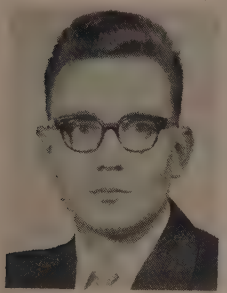
RUBENSTEIN, Albert H. (Ph.D.), Prof. of Industrial Engrng., Northwestern Univ., Evanston, Ill. Home Add.: 617 Haven St., Evanston, Ill. INDUSTRIAL ENGINEERING. b. Philadelphia, Pa., Nov. 11, 1923. s. Leo and Jean (Kaplan) R. Edn.: B.S., Lehigh Univ., 1949; M.S., Columbia Univ., 1950; Ph.D., ibid., 1954. m. Hildette Grossman, Sept., 1949. c.: Michael; Lisa. Exp.: Rsch. Assoc., Columbia Univ., 1950-53; Asst. Prof., Mass. Inst. of Tech., 1954-59; Prof., Northwestern University, 1959—. Hon. Pos.: Editor, Trans. on Engrng. Mgmt., Inst. of Radio Engrs.; Mem., Adv. Comm. on Econ. and Statis. Studies of Sci. and Tech., Natl. Sci. Found. Mem.: Inst. of Radio Engrs.; Inst. of Mgmt. Scis.; Soc. for Appl. Anthropol.; Operations Rsch. Soc. of Am.; Tau Beta Pi; Pi Tau Sigma; Pi Delta Epsilon; Omicron Delta Kappa; Pi Gamma Mu; Alpha Pi Mu; Sigma Xi. Editor: Coordination, Control and Financing of Industrial Research, 1955; Some Theories of Organization, 1960. Co-Author: Team Research, 1953. Contbr. to: Jour. of Industrial Engrng.; Harvard Bus. Rev.; IRE Trans. on Engrng. Mgmt.; Jour. of Bus.; Mgmt. Internatl. Serv. Rec.: U. S. Army, W.W. II. Areas of Rsch.: Organization Theory; Management of Research and Development.

RUBEY, Harry (Mr.), Civil Engrng. Dept., Univ. of Mo., Columbia, Mo. CIVIL ENGINEERING. b. St. Louis, Mo., Feb. 23, 1886. s. Thomas T. and Flora Vivian Rubey. Edn.: B.S. in C.E., Univ. of Ill., 1905; C.E., Univ. of Ill., 1925. m. Maude Harden, 1912 (dec.). c.: Thomas Harden, Mildred (Mrs. Charles H.) Bartlett. 2nd m. Ann Todd, St. Louis, Mo., 1948. Exp.: Engrng. Practice, 1905-15; Asst. and Assoc. Prof. of Civil Engrng., Univ. of Wash. and Carnegie Inst. Tech., 1915-24; Prof. and Chmn., Civil Engrng., Often Acting Dean, Univ. of Mo., 1924-56; Prof. Emer. and Lectr., 1956—; Dir., Naval Trng. Schl. and E.S.M.W.T., 1942-43, Univ. of Mo., Varied Engrng. Practice, 1915—. Mem.: A.S.C.E. (Life); Past Pres., Mid-Mo. Sect.; A.S.E.E. (Life); Past Mem. Coun., Chmn., Civil Engrng. Div., 1950-51; Mem., Natl. Soc. Prof. Engrs.; Phi Kappa Psi; Tau Beta Pi; Chi Epsilon; Univ. Club (Columbia, Mo.); Adv. Com. to Cong. on Flood Control, 1927; Consultant, Natl. Resources Com., 1936-37. Author: Ind. Organization, Ginn, 1931; Engrng. Surveys, Macmillan, 1934-40-50-58; Route Surveys, Macmillan, 1938-51-56; Applied Engrng. Surveys, Macmillan, 1941-50-58; The Engr. and Management, Lucas, 1950-53-55-58-62; Supplemental Irrigation, Univ. Mo., 1945-47-50-53; Supplemental Irrigation for Eastern U. S., Inter-

state Press, 1954-56. Contbr. to: Encyc. Brit. and the Tech. Press. Travel: Europe; Mex.; Alaska; S. Am.; World Tour. Listed in: Who's Who in Am.; Who's Who in Engrng.; Internatl. World Who's Who; A.M.S.; Who's Who in Indus.; Who's Who in Midwest; Who Knows—and What; World Biog. Special Int.: Mgmt. Construction, Supplemental Irrigation, Engrng. Surveys.

RUBIN, Ernest (Ph.D.), Adj. Prof. of Stat., Amer. Univ., Wash., D. C. APPLIED STATISTICS. b. N. Y., N. Y., May 14, 1915. s. George and Louise (Weinstein) R. Edn.: B.S., Coll. of the City of N. Y., 1937; M.A., ibid., 1938; Ph.D., Columbia Univ., 1947. m. Mary Villon, Oct. 15, 1934. c.: George; Eleanor; Michael. Exp.: Rsch. Analyst, Immigration and Naturalization Serv., Phila., Pa., 1943-48; Rev. Editor, Jour. of Amer. Assn., Wash., D. C., 1949-50; Rsch. Assoc., Natl. Bur. of Econ. Rsch., N. Y., N. Y., 1948-51; Questions and Answers Editor, The Amer. Statistician, 1954—; Dir., Sino-Soviet Div., B.I.P., Dept. of Commerce, Wash., D. C., 1951—; Lectr. in Econs., Howard Univ. and Cath. Univ., Wash., D. C.; Instr. in Math., Univ. of Va.; Chf., U. S. Trade Mission to Poland, 1958; Vice-Pres., Wash. Statistical Soc., 1959-60; Elected, Order of Artus, 1960; Elected, Coun. of Am. Statistical Assn., 1961-63. Mem.: Inst. for Math. Statistics; Am. Stat. Assn. Contbr. to: Jour. of Am. Econ. Special Int.: Design of Questionnaires and Sample Practice.

RUBIN, Gottfried Adolf (Dr. rer. nat.), Assoc. Prof. of Phys., Clarkson Coll., Potsdam, N. Y. Home Add.: 1 Round Hill Rd., Potsdam, N. Y. SOLID STATE PHYSICS. b. Leipzig, Germany, Dec. 30, 1926. s. Adolf and Eleonore Ilse (Liebscher) R. Edn.: Dr. rer. nat., Univ. of Saarbrucken, Germany, 1955. m. Rosemarie Boegardts, Sept. 8, 1955. c.: Astrid; Cordula. Exp.: Instr., Univ. of Saarbrucken, Germany, 1953-56; Sen. Scientist, Roechling—steelworks, Volklingen, Germany, 1956-57; Proj. Leader, Natl. Carbon Co., High Temp. Refract. Lab., Fostoria, Ohio, 1957-60; Asst. Prof., Clarkson Coll. of Tech., 1960-62; Assoc. Prof. of Physics, ibid., 1962—. Mem.: Am. Phys. Soc.; Am. Ceramic Soc.; Am. Assn. of Univ. Prof.; German Physical Soc.; Sigma Xi. Contbr. to: Berichte der DKG; Kolloidzeitschrift. Areas of Rsch.: Adsorption, Diffusion, Elast. Waves in Solids.



RUBIN, Vera (Ph.D.), Dir., Rsch. Inst. for the Study of Man, 162 E. 78th St., N. Y. 21, N. Y. Home Add.: 1080 Fifth Ave., N. Y., N. Y. ANTHROPOLOGY. b. Moscow, Russia, Aug. 16, 1911. d. Elias L. Dourmashkin and Jennie (Frankel) D. Edn.: B.S., N. Y., Univ., 1930; Ph.D., Columbia Univ., 1952. m. Apr. 27, 1930. c.: Mrs. Cora Weiss; Reed. Exp.: Rsch. Dir., Rsch. and Trng. Program for the Study of Man in the Tropics, Columbia Univ., N. Y. City, 1955-59; Visiting Assoc. Prof., Brandeis Univ., Waltham, Mass., 1959-60; Dir., Rsch. Inst. for the Study of Man, 1955—. Hon. Pos.: Hon. Fellow, N. Y. Acad. of Sci.; Fellow, Am. Anthrop. Assn.; Fellow, Am. Assn. for the Adv. of Sci.; Fellow, Am. Geogl. Soc. Mem.: Am. Acad. of Pol. and Social Sci.; Am. Sociol. Assn.; Acad. of Pol. Sci.; Internatl. African Inst.; Soc. for App. Anthropol.; Assoc. in Columbia Univ. Seminars. Author: Fifty Years in Rootville, 1951; Editor: Caribbean Studies, A Symposium, 1957, Plantation Systems in the New World, 1959, Social and Cultural Pluralism in the Caribbean, 1960, Culture, Society and Health, 1960. Contbr. to: Internatl. Jour. of Social Psychiat.; Am. Oxford Encyclo.; Biennial Rev. of Anthropol. Gen. Int.: Directorship, Peace Corps Trng. Program for Jamaica, W. I.; Consultant, Caribbean Fed. for Mental Health, Univ. Coll. of the W. Indies. Areas of Rsch.: Caribbean Social Anthropology.

RUBINS, Jack L. (M.D.), 1148 Fifth Ave., N. Y. 28, N. Y. Home Add.: 8215 234 St., Queens Village 27, N. Y. PSYCHIATRY. b. N. Y. City, Feb. 25, 1916. s. Charles Russell and Eva (Rubin) R. Edn.: B.Sc., Coll. of the City of N. Y., 1937; B. Med. Sc., Univ. of Geneva, Switzerland, 1941; M.D., ibid., 1943. Hon. Degrs.: F.A.P.A., 1957; Cert. Psychoanalyst., Am. Inst. Psychoanalysis, 1956; Diplomate in Psychiatry, Am. Bd. Neurol. and Psych., 1950. m. Tamara Kreinine, June 21, 1943. c.: Rosette; Marlene. Exp.: Asst. Neuropsychia., New York Univ., Bellevue Hosp., N. Y., 1946-47; Cert. Examiner, N. Y. Sta., 1948—; Psychia., Rehab. Clinic, Brooklyn Jewish Hosp., Brooklyn, N. Y., 1948-50; Psychia., Treatment Clinic for Adolescents, Probation Bureau, Magistrates Cts., N. Y. City, 1949-50; Adjunct. Psychia., Goldwater Mem. Hosp., N. Y., 1948-52; Adjunct Psychia. Hosp. for Joint Diseases, N. Y., 1948-52; Adjunct Psychoanal., Karen Horney Clinic, N. Y., 1955-57; Assoc. Psychoanal., ibid., 1957—; Consultant Psychia., N. Y. City Bd. of Edn., N. Y. City, 1954—; Attend. Psychia., Metropolitan Hosp., N. Y. City, 1962—; Lectr., Am. Instit. for Psychoanals., 1955—; Faculty, New Schl. for Social Rsch., N. Y. C., 1955—; Asst. Clin. Prof. of Psychia., N. Y. Med. Coll., 1962—; M.D., N. Y., 1945—. Hon. Pos.: Pres., Assn. for Adv. of Psychoanalysis; Delegate to Am. Psychiatric Assn. from Queens Co. Psychiatric Soc.; Prof. Advry. Comm., Queens Co., Mental Hlth. Soc. Mem.: Am. Med. Assn.; N. Y. Co. Med. Soc.; N. Y. Sta. Med. Soc.; N. Y. Soc. for Clinical Psychiatry; Queens Co. Psychiatric Soc.; Assn. for Adv. of Psychotherapy; Fellow, Am. Psychiatric Assn.; Fellow, Acad. of Psychoanalysis; Fellow, Assn. for the Adv. of Sci.; Pres. Assn. for the Adv. of Psychoanalysis; Med. Bd., Karen Horney Clinic. Contbrng. Author: Psychotherapy of Stuttering, 1961. Contbr. to: Quart. Jour. Child Behavior; Am. Jour. Psychoanalysis; Am. Jour. Psychotherapy; Rev. Med. Psychoanalytique; Arch. Neur. and Psych. Serv. Rec.: Free French Forces, 1944. Areas of Rsch.: Psychoanalysis; Psychoanalytic and Psychiatric Teaching.

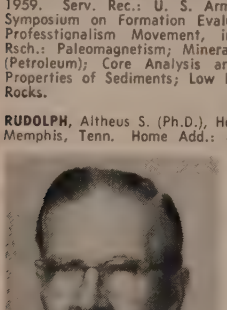
RUBINSTEIN, Hyman Solomon (M.D.), Neuro-Psychiatrist and Psychoanalyst, 2349 Eutaw Pl., Baltimore 17, Md. Home Add.: 7808 Crossland Rd., Pikesville 8, Md. PSYCHIATRY; PSYCHOANALYSIS. b. Leeds, Eng., Mar. 16, 1904. s. Myer David and Rose (Schneederman) R. Edn.: Ph.G., Univ. of Md., 1924; M.D., ibid., 1928; B.S., ibid., 1932; Ph.D., ibid., 1934. m. Ellen Steinhorn, 1929. c.: Madelyn Hope R. Shapiro; Roberta Faith. Exp.: Interne, Sinai Hosp., Baltimore, 1927-29; Tchng. and Rsch., Univ. of Md., Schl. of Med., 1929-35; Instr. to Assoc. in Neuroanatomy and Neurology, ibid., 1930-35; Chf., Neurology Clinic, ibid., 1933-35; Certified in Neurology and Psychiatry, Am. Bd. of Psychiatry and Neurology, 1936; Assoc. Examiner, Am. Bd. of Psychiatry and Neurology, 1938-48; Dir., Lab. for Neuroendocrine Rsch., Surgical Div., Sinai Hosp., 1935-45; Dir., Alfred Ullman Lab. for Neuropsychiatric Rsch., ibid., 1945-51; Chf., Div. of Psychiatry of Dept. of Med., ibid., 1945-47; Attending Physician in Neurology and Psychatry, U. S. Army Hosp., Aberdeen Proving Ground, Md., 1951-54; Consult. in Psychiatry, U. S. Pub. Health Serv., Baltimore Dist., 1937-42; Consult. in Psychiatry, Fed. Dist. Court, Md. Dist., 1942-50; Faculty Mem., Wash. Schl. of Psychiatry, 1952-56; Consult. to Dept. of Rsch., Spring Grove State Hosp., 1957; Assoc. Attending Physician in Psychiatry, Sinai Hosp., 1938—; Attending Physician, Seton Psychatric Inst., Baltimore, 1955—; Consult. Psychiatrist, Jewish Big Brother League, 1954—; Private Practice, Neurology and Psychiatry, 1936-52; Private Practice Psychiatry and Psychoanalysis, 1952—. Hon. Pos.: Natl. Vice Pres., Phi Lambda Kappa, 1957-59; Natl. Bd. of Trustees, ibid., 1959—; Natl. Pres., Medical Students' Aid Soc., 1960—; Chmn., Comm. on Law and Social Action of the Md. State Council, Am. Jewish Congress, 1957-60; Mem., Natl. Admin. Comm., ibid., 1958-60; Mem., Governing Council, ibid., 1960; Founder and Pres., Baltimore Chapt. of Am. Physicians Fellowship of the Israel Med. Assn., 1958—; Mem., Natl. Bd. of Trustees, ibid., 1958-59; Mem., Natl. Exec. Comm., ibid., 1959—; Secy., Baltimore Jewish Council, 1960. Mem.: Baltimore City Med. Soc.; Soc. of Med. Psychoanalysts; Wm. Alanson White Psychoanalytic Soc.; Sigma Xi; Fellow, Am. Med. Assn.; Am. Assn. Adv. Sci.; Am. Psychiatric Assn.; Acad. of Psychoanalysis; Phi Sigma Delta; Am. Civil Liberties Union; United World Federalsts.; U. N. Assn.; Baltimore Music Club; Torch Club; and many others. Author: Stereoscopic Atlas of Neuroanatomy, 1948; The Study of The Brain, 1953. Contbr. to: The Pituitary Gland; World Book Encycl.; Current Med. Digest; etc. Gen. Int.: Recipient of: Weaver Fellowship, Dept. of Neuroanatomy, Univ. of Md. Schl. of Med., 1931-35; Ciba Fellowship, Sinai Hosp., 1938-42. Areas of Rsch.: Endocrinology; Neuroanatomy; Psychiatry; Dynamics of Interpersonal Conflict.

RUCKER, Isabelle Pettit (Mrs.), Supvr. of Math., Sta. Dept. of Edn., Richmond 16, Va. Home Add.: 2615 Jimmy Winters Rd., Bon Air 35, Va. MATHEMATICS. b. Frederick's Hall, Va., June 5, 1918. d. William Albert Claude Pettit and Gerdena (Sherman) P. Edn.: A.B., Randolph Macon Woman's Coll., 1939; M. Edn., Univ. of Va., 1958. m. A. M. Rucker, Jr., June 14, 1941. Exp.: Tchr., Arlington Co. Schl. Bd., Arlington, Va., 1939-43; Tchr., Sausalito Schl. Bd., Sausalito, Calif., 1944-45; Tchr., Louisa Co. Schl. Bd., Louisa, Va., 1951-57; Supvr., Sta. Bd. of Edn., Richmond, Va., 1958—. Mem.: N.C.T.M.; M.A.A.; Am. Assn. for the Adv. of Sci.; C.A.S.M.T.; A.S.S.M.; Va. Edn. Assn.; Natl. Edn. Assn.; Kappa Delta; Kappa Delta Pi; Va. Acad. Sci.; S.E. Rep., Affiliated Gr. Comm., N.C.T.M. Contbr. to: Maths. Tchr.; Math. News; Ednl. Leadership. Areas of Rsch.: Mathematics Education, High School Level.

RUDD, Neilson (Mr.), Consulting Geologist and Vice-Pres. and Gen. Mgr., Geo-Engrng. Labs., Inc., 1402 W. Broadway, Mt. Vernon, Ill. Home Add.: 704 No. 12th St., Mt. Vernon, Ill. ECONOMIC GEOLOGY (PETROLEUM); GEOPHYSICS. b. Utica, N. Y., March 22, 1930. s. Thomas Brown and Helen F. (Neilson) R. Edn.: B.A., Hamilton Coll., 1953; M.S., Univ. of Minn., 1955. m. Marjorie A. Howell, Sept. 15, 1951. c.: Thomas Richmond; Phillip Russell; Constance Emilie. Exp.: Rsch. Asst., Dept. of Terrestrial Magnetism, Carnegie Inst. of Wash., D. C., Sum., 1954; Geologist, Magnolia Petroleum Co., Dallas, Tex., 1955-58; Consulting Geologist, Neilson Rudd, Cons. Geol., and Assocs., 1958 . Hon. Pos.: Chmn., Ill. Geol. Soc. Comm. on Prof. Registration, 1959; Chmn., I.G.S. Constitutional

Comm., 1960. Mem.: Am. Assn. of Petr. Geol.; Am. Assn. for the Adv. of Sci., Fellow; Appalachian Geol. Soc.; Geol. Soc. of Am.; Am. Inst. of Mining and Metalurgical Engrs.; Ill. Geol. Soc.; Am. Geophys. Union; Gamma Alpha; B.P.O.E. Editor: Illinois Geology Society Guidebook to Extreme Southern Illinois, 1959. Serv. Rec.: U. S. Army, 1951-52. Gen. Int.: Panelist, Symposium on Formation Evaluation, 1958; One of Sponsors of Professtignalism Movement, in Illinois Geol. Soc. Areas of Rsch.: Paleomagnetism; Mineral Economics; Formation Evaluation (Petroleum); Core Analysis and Log Interpretation; Mechanical Properties of Sediments; Low Level Permeabilities in Sedimentary Rocks.

RUDOLPH, Altheus S. (Ph.D.), Hd. Dept. of Biol. Memphis St. Univ., Memphis, Tenn. Home Add.: 445 S. Reese, Memphis 11. Tenn. BACTERIOLOGY. b. Marshall Co., Ky., Sept. 24, 1896. s. Linn Boyd and Josephine (Dishman) R. Edn.: B.S., W. Ky. Sta. Coll., 1924; M.S., Univ. of Ky., 1929; Ph.D., Ia. Sta. Univ., 1938. m. Annilee Mikel, 1936. Exp.: Hd. Dept. Sci., Bethel Coll., McKenzie, Tenn., 1924-42; Assoc. Prof. Sci., Troy Sta. Coll., Troy, Ala., 1942-45; Hd. Dept. Biol., Memphis Sta. Univ., 1945—. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Soc. for Microbiol.; Tenn. Acad. of Sci.; The Soc. of Sigma Xi; Kappa Delta Pi; Lions Club. Contbr. to: Jour. Bact.; Bull. Ia. Eng. Expt. Sta. Serv. Rec.: Coast Artillery, 1918. Aeras of Rsch.: Sanitary Bacteriology; Pollution of Local Waters; Staphylococci.



RUDOLPH, Philip S. (Ph.D.), Chemist, Oak Ridge Natl. Lab., P.O. Box X, Oak Ridge, Tenn. Home Add.: 106 E. Damacus Rd., Oak Ridge, Tenn. RADIATION CHEMISTRY; CHEMICAL KINETICS; MASS SPECTROMETRY. b. Syracuse, N. Y., May 10, 1912. s. Simon Rudolph (dec.) and Flora (Kliman) (dec.). Edn.: Syracuse Univ., A.B., 1933; Ph.D., ibid., 1951. m. Mary Kemzura, May 7, 1942. c.: Simon Alan; Florence Ann. Exp.: Tchng. Fellow, Syracuse Univ., Chem. Dept., 1944-46; Instr., Syracuse Univ., Chem. Dept., 1946; Chemist, Oak Ridge Natl. Lab., 1951 ; Dupont Fellow, Chem., Syracuse Univ., 1948-49. Mem.: Am. Chem. Soc.; A.A.A.S.; N. Y. Acad. of Sci.; Tenn. Acad. of Sci.; Radiation Rsch. Soc.; Sigma Pi Sigma; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. of Chem. Phys.; Jour. Phys. Chem. and other Scientific Jours. Serv. Rec.: U. S. Infantry, 1st Lt., 1941; Sig. Corps, 1941-42; Capt., A.A.F., 1942-44. Areas of Rsch.: Radiation Chemistry; Chem. Kinetics; Mass Spectrometry.

RUDYJ, Orest Nicolaus (Mr.), Rsch. Chemist, Franklin Instit., Phila. 3, Pa. Home Add.: 879 Woodstock St., Phila. 30, Pa. PHYSICAL CHEMISTRY. b. Sambir, Ukraine, Europe, Feb. 14, 1929. s. Eugene and Maria (Matkivska) R. Edn.: B.S., Univ. of Pa., 1957; M.S., St. Joseph's Coll., 1960. m. Natalie Stebelsky, June 16, 1962. Exp.: Rsch. Asst., Franklin Inst., Phila., Pa., 1957-58; Rsch. Chemist, ibid., 1958—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; R.E.S.A. Contbr. to: Jour. Am. Chem. Soc. Serv. Rec.: U. S. Army, 1951-53. Areas of Rsch.: Liquid Rocket Propellants; Shock Tube Combustion Studies; Electronic Properties of Organic Semiconductors.

RUEGAMER, William Raymond (Ph.D.), Assoc. Prof. of Biochem., St. Univ. of N. Y., Coll. of Med. at Syracuse, N. Y. Home Add.: 105 Brockton Lane, DeWitt, N. Y. THYROID AND LIPID METABOLISM; BIOCHEMISTRY. b. Huntington, Ind., Dec. 15, 1922. s. C. R. and E. P. (Roberts) R. Edn.: B.S., Ind. Univ., 1943; M.S., Univ. of Wis., 1944; Ph.D., ibid., 1947. m. Arlene Frankenberg, Apr. 15, 1946. Exp.: Biochemist, Swift and Co., Chicago, Ill., 1948-49; Instr., Biophys. Dept., Univ. of Colo., 1949-51; Asst. Chief, Radioisotope Labs., V.A. Hosp., Denver, Colo., Syracuse, N. Y., 1951-61; Assoc. Prof. of Biochem., St. Univ. of N. Y., 1961—. Mem.: Sigma Xi; Phi Sigma; Alpha Chi Sigma; Am. Soc. of Biol. Chemists; Soc. for Exptl. Biol. and Med.; Am. Chem. Soc.; A.A.A.S. Contbr. to: Jour. Biol. Chem.; Archives of Biochem. and Biophys.; Endocrinol.; Proc. of Soc. for Exptl. Biol. and Med.; Science; Jour. Lab. and Clin. Med.; Jour. Nutr. Gen. Int.: Rec. Travel Award to attend Fourth Internatl. Thyroid Cong., London, 1960. Areas of Rsch.: Thyroid Metabolism; Lipid Metabolism.

RUEHLE, George Dewey (Ph.D.), (dec.) Vice Dir. in Charge, Sub-Tropical Expt. Station, Route 1, Box 560, Homestead, Fla. Home Add.: 29675 S.W., 197th Ave., Homestead, Fla. PLANT PATHOLOGY; HORTICULTURE. b. Stillwater, Minn., May 10, 1898 s. Gustave Adolf and Matilda (Klebs) R. Edn.: B.S., Wash St Univ., 1923; Ph.D., ibid., 1930 m. Marian Susie Cooper, June 16, 1928. c.: John Leonard; Mrs Nadeane Evelyn Tuttle. Exp Asst. Plant Pathol., Wash. State Univ., Pullman, Wash., 1926-30; Asst. Plant Pathol., Univ. of Fla. Agric. Expt. Station, Lake Alfred, Fla., 1930-32; Assoc. Plant Pathol., ibid., 1932-35; Plant Pathol., Homestead, Fla., 1935-42; Vice Dir. in Charge, ibid., 1942-62. Hon. Pos.: Vice Pres., Krome Sect., Fla. State Hort. Soc.; Hon. Mem. of Fla. State Hort. Soc.,

1958. Mem.: Sigma Xi; Phi Kappa Phi; Am. Assn. for the Adv. of Sci., Fellow; Am. Phytopath. Soc.; Mycol. Soc. of Am.; Am. Hortl. Soc.; Potato Assn. of Am.; Gamma Sigma Delta. Contbr. to: Phytopathol.; Plant Dis. Rep.; Mycologia; Fla. State Hort. Soc. Procs. Serv. Rec.: U. S. Army, 1918. Gen. Int.: Developed Practical Control for Bacterial Soft Rot of Potatoes; Demonstrated for the First Time Anywhere Effectiveness of Nabam-Zinc Sulfate for Control of Potato and Tomato Late Blight; Discovered and Described new Storage Rots of Apple and New Diseases of Mango, Poinsettia and Potato; Developed New, Improved Varieties of Guava. Areas of Rsch.: Citrus Mango and Avocado Diseases; Potato Diseases, Especially Bacterial Rot and Late Blight, Guava Breeding and Culture.

RUGH, Roberts (Ph.D.), Assoc. Prof. Radiol., Coll. Phys. and Surg., Columbia Univ., 630 W. 168th St., New York 32, N. Y. Home Add.: 110 Morningside Dr., New York 27, N. Y. RADIOBIOLOGY AND EXPERIMENTAL EMBRYOLOGY. b. Springfield, Ohio, Apr. 16, 1903. s. Arthur and Gertrude (Roberts) R. Edn.: B.A., Oberlin Coll., 1926; M.A., ibid., 1927; Ph.D., Columbia Univ., 1935. m. Harriette Sheldon, July 24, 1926. c.: Mary Elizabeth, William Arthur. Exp.: Instr., Lawrence Coll., 1927-28; Instr. Hunter Coll., 1928-38; Asst. Prof., N. Y. Univ., 1938-48; Assoc. Prof., Columbia Univ., 1948 . Hon. Pos.: Trustee, Marine Biol. Lab., Woods Hole, Mass.; Chmn., Exp. Emb. Conf., N. Y. Acad. Sci., 1942. Mem.: Am. Soc. Roentgenologists; Radiol. Soc. N. A.; Harvey Soc.; Soc. Exptl. Biol. and Med.; Cancer Rsch. Soc.; Am. Soc. Zoologists; Am. Assn. Anatomists; Sigma Xi, Brit. Soc. Radiol.; Radiation Rsch. Soc.; Am. Assn. for Adv. Sci.; Am. Soc. Neuropathologists. Author: The Frog: Its Reproduction and Development, 1949; Experimental Embryology, 1952, 1962 Laboratory Manual Vertebrate Embryology, 1961; Vertebrate Embryology, The Dynamics of Development, 1963. Contbr to: N. Y. Acad. of Scis.; Anat. Rec.; Jour. Morph.; Jour. Exp. Zool., Jour. Cell. and Comp. Physiol.; Proc. Soc. of Exptl. Biol. and Med.; Am. Jour. Physiol.; Rad. Rsch.; Mil. Med.; Trans New Engl. Obstet. and Gnyec.; Yale Jour. Biol. and Med., etc Areas of Rsch.: Experimental Embryology and Radiobiology

RUH, Edwin (Ph.D.), Asst. Dir. Rsch., Harbison-Walker Refrs. Co., Garber Rsch. Center, P.O. Box 98037, Pittsburgh 27, Pa. Home Add.: 789 Fruithurst Dr., Pittsburgh 34, Pa. CERAMICS. b. Westfield, N. J., Apr. 22, 1924 s. Harry J., Sr. and Martha A. (Grasing) R. Edn.: B.S., Rutgers Univ., 1949; M.S., ibid., 1953; Ph.D., ibid., 1954. m. Bette Jeanne Mundy, June 14, 1952. c.: Edwin, Jr.; Beth Jeanne. Exp.: Rsch. Asst., Rutgers, New Brunswick, N.J., 1949-53; Ceramic Engr., Harbison-Walker Refractories Co., 1954-56; Asst. Dir. Rsch. ibid., 1956 Hon Pos: Chmn. Pittsburgh Sect., Am. Ceramic Soc., 1960; Chmn., Refractories Div., Am. Ceramic Soc., 1961-62 (Fellow), Am. Ceramic Soc. Mem.: Am. Inst. Mining, Metallurgical and Petrol. Engrs.; A.A.A.S.; British Ceramic Society

Deutschen Keramischen Geselischaft; Sigma Xi; Keramos. Contbr. to: Jour. Am. Ceramic Soc.; Bull Am. Ceramic Soc., Ceramic Age. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch: Fundamental and Applied Rsch. in the Field of Refractories and Refractory Technology.

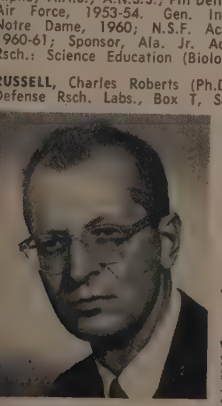
RUNYAN, William Scottie (Mr.) Rsch. Asst., Dept. of Nutrition, Havard Schl. of Pub. Health., Boston, Mass. Home Add.: 199 Park Dr., Boston 15, Mass. MICROBIOLOGY. b. Merrill, Wis., June 24, 1931. s. Charles Scottie and Irene (Rehwinkel) R. Edn.: B.S., Univ. of Idaho, 1960; M.S., ibid., 1962. m. Thora J. Doyon, Nov. 7, 1954. c.: Laura Irene. Exp.: Rsch. Asst., Harvard Schl. of Pub. Health, Boston, Mass., 1961—. Mem.: A.A.A.S.; Am. Soc. for Microbiol.; Phi Eta Sigma; Phi Kappa Phi; Phi Beta Kappa. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Bacterial Metabolism; Mammalian Cell Culture.

RUOCCO, Joseph N., (Ph.D.), Rsch. Scientist, Grumman Aircraft Engrng. Corp., Bethpage, N. Y. Home Add.: 6 White Deer Court, Huntington, N. Y. ENGINEERING AND EXPERIMENTAL PSYCHOLOGY. b. New York, N. Y., Nov. 1, 1929. s. Alfonso and Emelia (Aiello) R. Edn.: B.S. Fordham Coll., 1951; M.A., Fordham Univ., 1953; Ph.D., ibid., 1962. m. Marilyn Murphy, Dec. 27, 1954. c.: Virginia Ann; Joseph; Robert; Mary Catherine; Christopher. Exp.: Grad. Asst., Fordham Univ., 1952-53, 1955-56; Proj. Dir., Rsch. Scientist, N. Y. Univ. Coll. of Engrng., 1955-58; Rsch. Scientist, Grumman Aircraft, Bethpage, N. Y., 1955—. Mem.: Am. Psycho. Assn.; Human Factors Soc.; Am. Assn. Adv. Sci. Serv. Rec.: U. S. Army, Rsch. Asst., 1953-54. Areas of Rsch.: Engineering Psychology; Evaluation of Complex Man-Machine Systems especially Air Defense; Sensory and Perceptual Processes; Experimental Design; Bioionization Effects.

RUSCA, Ralph Austin (Mr.), Hd., Machinery Devel. Invests., Southern Reg. Rsch. Lab., New Orleans, La. Home Add.: 6530 Gen. Haig St., New Orleans, La. PHYSICS AND MECHANICAL ENGINEERING. b. Donaldsonville, La., Sept. 17, 1911. s. John Louis (dec.) and Nelida (Bercegray, dec.) R. Edn.: B.S., Northwestern State Coll., 1933. m. Lillian O'-Connor, Jan., 1960. c.: Ralph A., Jr. Exp.: Supvr. Social Welfare, Fed. Emergency Relief Admin., La., 1933-36; Scientific Aide, U.S. Dept. of Agric., Stoneville, Miss., 1936-39; Junior Cotton Technol., ibid., 1939-42; Asst. Cotton Tech., U. S. Dept. of Agric., New Orleans, La., 1942-44; Assoc. Cotton Tech., ibid., 1944-46; Cotton Technol., ibid., 1946-49; Sr. Physicist, ibid., 1949-51; Prin. Physicist in Charge, Machinery Devel. Sect., ibid., 1951-58; Hd., Machinery Devel. Invests., 1958—; Consulting Engr., Specialty Sales and Serv. Co., New Orleans, La., 1946-51; Dir., ibid., 1951—. Mem.: Am. Soc. of Mech. Engr.; La. Engrng. Soc.; Scientific Rsch. Soc. of Am.; Textile Quality Control Assn.; Lambda Delta Lambda; Textile Inst., Great Britain. Contbr. to: U. S. Dept. of Agric. Yearbook; Cotton Trade Jour. Internatl. Yearbook; Textile Rsch. Jour.; Textile World; Textile Bull.; Agric. Rsch. Jour.; A.S.M.E. Procs.; Jour. Textile Instit.; Textile Weekly; Can. Textile Seminar Trans. Gen. Int.: U. S. Dept. of Agrics. Dist. Serv. Award, 1954; Superior Serv. Award, 1950, 1962; Outstanding Performance Award, 1956, 1957, 1959, 1960. Areas of Rsch.: Development of Machinery, Apparatus and Instruments for Processing Cotton into Textile Products, Specializing in the Application of Engineerng Physcs.

RUSH, Orville Findley, Jr., (Mr.), 10 Bolin Heights, Chapel Hill, N. Car. BIOLOGY, CHEMISTRY. b. Washington, D. C., Oct. 16, 1932. s. Orville Findley and Walburga (Adams) R. Edn.: B.S., Univ. of Ala., 1957; M.Ed., Univ. of N. C., 1961. m. Virginia Stuckey, Dec. 22, 1953. c.: Linda Carol; Larry Lee. Exp.: Sci. Instr. and Hd. of Chem. Dept., John Carroll H. S., Birmingham, Ala., 1958-60; Doctoral Stud., Univ. of N. C., 1960—. Hon. Pos.: Pres., Beta Theta Chap., Phi Delta Kappa. Mem.: A.A.A.S.; N.S.T.A.; A.S.C.D.; N.E.A.; A.E.R.A.; N.A.B.T.; Pi Kappa Alpha; A.A.S.; A.N.S.S.; Phi Delta Kappa; Phi Chi. Serv. Rec.: U. S. Air Force, 1953-54. Gen. Int.: N.S.F. Scholarship, Univ. of Notre Dame, 1960; N.S.F. Acad. Year Inst., Univ. of N. C., 1960-61; Sponsor, Ala. Jr. Acad. of Sci., 1958-60. Areas of Rsch.: Science Education (Biology and Chemistry).

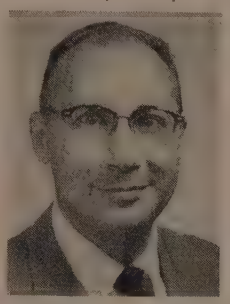
RUSSELL, Charles Roberts (Ph.D.), Technical Spec., Gen. Motors Defense Rsch. Labs., Box T, Santa Barbara, Calif. Home Add.: 405 San Rogue Rd., Santa Barbara, Calif. NUCLEAR REACTOR ENGINEERING, POWER SOURCES, CHEMICAL ENGINEERING. b. Spokane, Wash., July 13, 1914. s. Marvin A. and Dessie C. (Price) R. Edn.: B.S., Wash. St. Coll., 1936; Ph.D., Univ. of Wis., 1941. m. Dolores M. Kopriva, May 17, 1943. c.: Ann Elizabeth; John Charles; Thomas Robert; David Frank. Exp.: Engr., Procter and Gamble, Cincinnati, Ohio, 1941-44; Engr., Navy, Bureau of Ordn., Wash., D. C., 1944-50; Engr., U. S. Atomic Energy Comm., Wash., D. C., 1950-55; Techn. Spec., Gen. Motors Defense Rsch. Labs., Santa Barbara, Calif., 1955—. Hon. Pos.: Mem. Nuclear Standards Bd., Am. Standards Assn. Mem.: Am. Chem. Soc.; Am. Nuclear Soc.; Am. Assn. for the Adv. of Sci.; Soc. of Automotive Engrs.; Phi Beta Kappa; Tau Beta Pi; Sigma Xi; Y.M.C.A. Author: Reactor Safeguards, 1962. Contbr. to: SAE Jour. Serv. Rec.: U. S. Naval Reserve, 1944-46. Areas of Rsch.: Power Sources, Nuclear; Reactor Safeguards, Fuel Cells.



RUSHFORTH, Craig Knewel (Ph.D.), Asst. Prof. of Elect. Engrng., Utah State Univ., Logan, Utah. Home Add.: 1388 E. 9th N., Logan, Utah. ELECTRICAL ENGINEERING. b. Ogden, Utah, Sept. 4, 1937. s. Knewel H. and June (Nelson) R. Edn.: B.S., Stanford Univ., 1958; M.S., ibid., 1960; Ph.D., ibid., 1962. m. Martha Hollist, June 19, 1958. c.: Kevin; Kim. Exp.: Rsch. Asst., Stanford Elects. Labs., Stanford, Calif., 1958-59; Scient., Lockheed Missiles and Space Div., Sunnyvale, Calif., 1961; Asst. Prof., Utah State Univ., 1962—. Mem.: Inst. of Radio Engrs.; Phi Beta Kappa; Tau Beta Pi; Sigma Xi. Contbr. to: I.R.E. Report. Areas of Rsch.: Statistical Communication Theory.

RUSSELL, Francis Robinett (D.Sc.), Engrng. Assoc., Esso Rsch. and Engrng. Co., Box 209, Madison, N. J. Home Add.: 32 Island Trail, Sparta, N. J. CHEMICAL ENGINEERING, INSTRUMENTATION. b. Athens, Ohio, Feb. 18, 1911. s. Kyle D. and Amanda L. (Robinett) R. Edn.: A.B., Univ. of Cincinnati, 1930; M.S., Mass. Inst. of Technol., 1932; D.Sc., ibid., 1936. m. Janet Burt, Nov. 12, 1938. c.: Kyle; Beverly; Glenn; Brian; Deborah. Exp.: Asst. Dir., Bangor Field Station, M.I.T. Schl. Chem. Engr. Practice, 1933-34; Sect. Head, Esso Rsch. and Engrng. Co., Linden, N. J., 1947-59; Engrng. Assoc., ibid., Florham Park, N. J., 1959—. Mem.: Phi Beta Kappa; Sigma Xi; Am. Chem. Soc.; Am. Inst. Chem. Engrs.; A.A.A.S.; Lake Mohawk Country Club. Contbr. to: Chemical Engrng.; Industrial and Engr. Chem. Areas of Rsch.: Kinetics; Fluid Solids Techniques, Extreme Pressure Tech.; Instrumentation; Petroleum Process Rsch.; Munitions Rsch.; Computer Control of Plants.

RUSSELL, Dallas Wilson (Mr.), Assoc. Prof. Elect. Engrng., Auburn Univ., Auburn, Ala. Home Add.: 719 Heard, Auburn, Ala. ELECTRICAL ENGINEERING. b. Swansboro, N. C., Feb. 27, 1924. s. Robert M. and Bessie (Heady) R. Edn.: B.S. in E.E., Univ. of Tenn., 1948; M.S. in E.E., ibid., 1951. m. Evelyn McEver, Oct. 23, 1951. c.: Barbara Lynne; Robert Edward; Dallas McEver; Carol Ann. Exp.: Design Engr., Westinghouse Elec. Co., Lima, Ohio, 1948-50; Mgr., Instruments Br., ARO, Inc., Tullahoma, Tenn., 1951-59; Assoc. Prof., Auburn Univ., 1960—. Mem.: Sigma Xi; Am. Soc. for Engrng. Edn.; Am. Inst. of Elec. Engrng.; Tau Beta Pi; Eta Kappa Nu; Phi Eta Sigma; Delta Sigma Phi. Contbr. to: Electrical Engineering; AEDC TR-55-11, Arnold Engrng. Dev. Center; ISA Jour.; Control Engrng. Serv. Rec.: Army of U. S., 1943-46. Areas of Rsch.: Feedback Control Systems; Wind Tunnel Instrumentation.



RUSSELL, John Robert (M.D.), Neurological Surgeon, 1815 N. Capitol Ave., Indianapolis 2, Ind. Home Add.: 3864 Ruckle St., Indianapolis 5, Ind. NEUROLOGICAL SURGERY. b. Bloomington, Ind., Mar. 17, 1922. s. John Dale and Elsie (Hattery) R. Edn.: B.S., Univ. of Chicago, 1941; M.S., ibid., 1942; M.D., ibid., 1945. m. Jane Bureau, Aug. 21, 1943. c.: Thomas William; John Bureau; Ann Elizabeth. Exp.: Instr. in Surgery, Ind. Univ., Schl. of Med., Indianapolis, Ind., 1951-54; Asst. Prof. of Surgery, ibid., 1954—; Consultant, U. S. Vet. Admin. Hosp., ibid., 1951—; Neurological Surgeon, Indianapolis, Ind., 1959—. Hon. Pos.: Mem. of Exec. Comm. of Congress of Neurol. Surgeons, 1958-60; Chmn., World Dir. Comm., World Fed. of Neurosurg. Socs., 1959-61. Mem.: Harvey Cushing Soc.; Congress of Neurol. Surgeons; Interurban Neurosurgical Soc.; Cent. Neurosurgical Soc.; Ind. Neuropsychia. Assn.; Am. Med. Assn.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Neurosurgery; Jour. of Nervous and Mental Diseases; Jour. of Ind. State Med. Assn.; Proc. Soc. Exptl. Biol. and Med.; "Surgery, Gynecology and Obstet." Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Pyramidal Fibers.

RUSSELL, Helen Ross (Ph.D.), Dean, Prof. of Biol., St. Coll., Fitchburg, Mass. BIOLOGY. b. Feb. 21, 1915, Myerstown, Pa. d. Geo. Smith and Helen Louise (Boyd) R. Edn.: Normal Certificate, State Tchrs. Coll., W. Chester, Pa., 1934; B.A., Lebanon Valley Coll., Pa., 1943; M.A., Cornell Univ., 1947; Ph.D., ibid., 1949. m. Robert Stanley Russell, Sept. 24, 1960. Exp.: One Room Rural Schl., Jackson Twp., Pa., 1934-35; Grade Tchr., Bethel Cons. Schl., Berks Co., Pa., 1935-42; Geog. and Art, Lebanon City Schls., Pa., 1942-43; Geog. and Sci., Harding Jr. H. S., Pa., 1943-45; Sci., Harding Jr. H. S., Lebanon, Pa., 1945-46; Asst., Cornell Univ., Dept. of Rural Edn., 1947-49; Instr., Cornell Univ., Summer, 1949, 1950; Assoc. Prof., Biol., State Tchrs. Coll., Fitchburg, Mass., 1949-51; Prof., ibid., 1951—. Mem.: Am. Nature Study Soc.; N.A.B.T.; Pi Lambda Theta; Phi Kappa Phi; Fellow of Am. Assn. for the Adv. of Science; etc. Author: Cornell Rural School Leaflet, Spring, 1948; Apple Tree Animals. Contbr. to: Biological Sci. Ed., Jr. Brit. Encyc.; Nature Mag.; A.N.S.S. Newsletter; Audubon Mag.; The Sci. Tchr.; The Soil Auger. Ph.D. Dissertation: Conservation Edn. in the Elem. Schls. of the U. S. Hobbies: Outdoor Activities; Photography.

RUSSELL, Peter Byrom (Ph.D.), Dir. of Rsch., Wyeth Labs., Inc., Phila. 1, Pa. Home Add.: 1708 Sherwood Circle, Villanova, Pa. ORGANIC CHEMISTRY. b. Manchester, England, Oct. 24, 1918. s. Sydney Arthur and Elsie (Potter) R. Edn.: B.Sc., Univ. of Manchester, 1940; M.Sc., ibid., 1941; Ph.D., 1945. Hon. Deg.: D.Sc., Manchester, 1955. m. Joyce Leigh, 1945. c.: Timothy; Pamela. Exp.: Sr. Rsch. Chemist, Burroughs-Wellcome and Co., Tuckahoe, N. Y., 1947-56; Dir. of Rsch., John Wyeth and Bro., Ltd., Havant, England, 1956-57; Mgr. Chem. Dev. Lab., Wyeth Labs., West Chester, Pa., 1957-59; Dir. of Rsch., ibid., 1959—. Mem.: Am. Chem. Soc. Author: Antimalarials in Medicinal Chemistry, 1960. Contbr. to: Jour. of Chem. Soc., London; Jour. of Am. Chemical Soc.; Jour. Bio. Chem.; Jour. Chem. Soc.; Proc. Soc. of Exptl. Biol. and Med.; Chemistry and Industry; Jour. Org. Chem. Areas of Rsch.: Medicinal Chemistry, Especially Chemotherapy of Protozoal Diseases and CNS Active Compounds.

RUSSELL, Philip Gray (Mr.), Pres., Theodore Low, Inc. (oil and gas), Holdenville, Okla.; Trustee-Mgr., Structure Contour Syndicate, 4425 Stanford, Dallas 25, Tex. Home Add.: 4425 Stanford St., Dallas 25, Tex. GEOLOGY, PETROLEUM AND NATURAL GAS GEOLOGY, SUBSURFACE GEOLOGY. b. New Haven, Conn., Sept. 26, 1891. s. Talcott Huntington and Geraldine (Low) R. Edn.: B.A., Yale Univ., 1913; Grad. Work, ibid., 1913-16. m. Frances A. Hefley, 1942. c.: Donald Hill; Geraldine Van Vark; Talcott Huntington. Exp.: Lab. Instr., Yale Coll., 1913-14; Geologist, Ky. Geol. Survey, Frankfort, Ky., 1916-18; Geologist, Carl K. Dresser, Bradford, Pa., 1918; Geologist, Bed Rock Petrol. Co., Huntington, W. Va., 1919-20; Geologist, Champlin and Winkler, Duncan, Okla., 1920-21; Geologist, Chaplain and Bass, Holdenville, Okla., 1921-22; Geologist, Winkler and McQueen, Okla. City, Okla., 1922-26; Geologist Prairie Oil and Gas Co., Eastland, Tex., 1927-29; Geologist, Lone Star Gas Co., Dallas, Texas, 1929-41; Asst. Chf. Geologist, ibid., 1941-56; Pres. Theordore Low, Inc. (oil and gas), Holdenville, Okla., 1956—. Mem.: Am. Assn. Petrol. Geols.; Dallas Geophys. Soc.; Dallas Geol. Soc.; Fellow of A.A.A.S.; Beta Theta Pi; Phi Beta Kappa; Sigma Xi. Co-Author: Coals and Structure of Upper Licking River, Magoffin Co., Ky., 1917. Author: Coals of Sexton Creek, Clay Co., Ky., 1918. Contbr. to: Bull. Am. Assn. Petrol. Geologists. Serv. Rec.: U. S. Army, W.W. I. Areas of Rsch.: Subsurface Geology; Location of Test Wells for Oil and Gas.

RUSSELL, Robert Price (Mr.), Vice Pres., Am. Int. Assn., 30 Rockefeller Plaza, N. Y. City, N. Y. Home Add.: Box 76, R.F.D. 2, Lisbon, N. H. CHEMICAL ENGINEERING (PETROLEUM REFINING, PETROCHEMICALS, TROPICAL AGRICULTURE). b. Worchester, Mass., July 16, 1898. s. Ernest and Ella (Price) R. Edn.: A.B., Clark Univ., 1917; M.S., Mass. Instit. of Tech., 1922. Hon. Deg.: D.Sc., Clark Univ., 1946. m. Hadassah O'Brien, July 21, 1955. c.: Richard O.; Mercer P. Exp.: Rsch. Assoc., Rsch. Lab. Appl. Chem., Mass. Inst. of Tech., Cambridge, Mass., 1922-23; Div. Dir., ibid., 1923-24; Asst. Dir. and Asst. Prof., ibid., 1924-27; Rsch. Dir. Std. Oil Co. of La., ibid., 1927-29; Vice Pres. and Gen. Mgr., Hydro Engrng. and Chem. Co., Elizabeth, N. J., 1929-30; Mgr., Dev. Div., Std. Oil Dev. Co., New York, N. Y., 1930-34; Vice Pres. and Gen. Mgr., ibid., 1934-44; Pres., ibid., 1944-47; Dir. Ethyl Corp., New York, N. Y., 1936-47; Vice Pres., Internatl. Basic Econ. Corp., ibid., 1947-50; Pres., IBEC Rsch. Inst., New York, N. Y., 1950-60; Vice Pres., Am. Internatl. Assn., 1960—; Dir. Cosden Pet. Corp., 1960—; Dir. Nashua Corp., ibid., 1961—. Hon. Pos.: Chmn., Div. II, Natl. Def. Rsch. Comm., 1942-44; Chmn., Oil, Rubber and Explosives Div., U. S. Strategic Bombing Survey, 1944-45. Mem.: Am. Chem. Soc.; A.A.A.S.; Kappa Sigma; Alpha Chi Sigma. Author: Fuels and Their Combustion, Co-Author. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Am. Inst. Chem. Engrng.; Jour. Am. Pet. Inst.; Jour. Brit. Pet. Inst. Serv. Rec.: U. S. Marine Corps, 1917-18. Gen. Int.: Medal of Freedom and Medal For Merit, 1946; Am. Inst. Chem. Gold Medal, 1946; Cadman Medal, Brit. Pet. Inst., 1946; Chevalier, Legion d'Honneur, 1938. Areas of Rsch.: Petroleum Rsch. and Development; Hydrogenation; Synthetic Fuels; Synthetic Rubber Petrochemicals; Combustion; Corrosion; Agricultural Rsch. and Development in Tropics.

RUTH, Elbert Bresee (Ph.D.), Assoc. Prof., Anat., Johns Hopkins Univ., Baltimore 5, Md. Home Add.: 5809 Hillen Rd., Baltimore 12, Md. HUMAN AND COMPARATIVE ANATOMY. b. Los Angeles, Calif., Mar. 19, 1902. s. Christian Wismer and Emma Josephine (Springer) R. Edn.: A.B., Ind. Univ., 1927; M.A., Univ. of Wis., 1929; Ph.D., ibid., 1931. m. Rachel Elizabeth Starr, Sept. 7, 1947. c.: Douglas Darwin; Deborah Karen. Exp.: Instr., Univ. Wis., 1929-31; Instr., Univ. of Rochester, 1931-35; Asst. Prof., ibid., 1935-37; Asst. Prof., Georgetown Univ., 1937-38; Asst. Prof., Univ. of Cincinnati, 1938-47; Assoc. Prof., ibid., 1947-50; Assoc. Prof., Univ. of N. Dak., 1950-52; Assoc. Prof., Johns Hopkins Univ., 1952—. Hon. Pos.: Acting Chmn., Dept. of Anat., Univ. of Cincinnati, 1949-50. Mem.: Sigma Xi; Am. Assn. Anat.; Am. Soc. Zool. Contbr. to: Jour. Anat.; Anat. Rec.; Arch. Pathol.; Jour. Lab. and Clin. Med.; Bull. Johns Hopkins Hosp.; Stain Tech.; Sci. Areas of Rsch.: Development and Physiology of Bone; Mechanism of Bone Resorption; Histological Maturation of Bones.

RUZICKA, Francis F., Jr. (M.D.), Dir. of Radiology, Saint Vincent's Hosp. of the City of N. Y., 153 W. 11th St., New York, N. Y. Home Add.: 1 Druid Hill Road, Summit, N. J. MEDICAL RADIOLOGY. b. Baltimore, Md., June 30, 1917. s. F. Frederick and Anne F. (Kaspar) R. Edn.: A.B., Holy Cross Coll., 1939; M.D., Johns Hopkins Schl. of Med., 1943. m. Margaret Kernan, May 31, 1941. c.: Margaret; Mary; John; Francis; Therese; Joseph. Exp.: Internship, Univ. Hosp., Baltimore, 1943; Resident in Radiol., ibid., 1944-45; Fellow in Radiol., Univ. of Minn., 1948; Roentgenologist, Cancer Detection Center, Univ. of Minn., 1948-49; Instr. in Radiol., ibid., 1949-50; Dir. of Radiol., St. Vincent's Hosp of the City of N. Y., 1950—; Assoc. Clin. Prof. of Radiol., N. Y. Univ. Coll. of Med., 1950-54; Clin. Prof. of Radiol., ibid., 1954—. Mem.: Fellow, Am. Coll. of Radiol.; Radiol. Soc. of N. Am.; N. Y. Acad. of Med.; N. Y. Gastroenterol Soc.; Diplomate, Am. Bd. Radiol.; A.M.A. Contbrng.-Author: Co-Ed.: Arteriography Venography and Lymphography; Classic Descriptions in Diagnostic Roentgenology. Contbr. to: Am. Jour. of Med.; Radiology; Ann. of N. Y. Acad. of Scis.; Am. Jour. Digestive Diseases; Surg., Gynecol. and Obstet.; Surgery; Am. Jour. Roentgenol., Radium Therapy and Nuclear Med.; Bull. Univ. of Minn. Hosps. and Minn. Med. Found.; Jour. of the Am. Med. Assn. Serv. Rec.: U .S. Army, 1945-47. Areas of Rsch.: Portal Venous System and Splenic Portography; Radiologic Studies of the Liver; Gastroenterology.

RYAN, W. Carson (Ph.D.), Kenan Prof. of Edn., Emeritus, Univ. of N. C., Chapel Hill, N. C. Home Add.: 1303 Mason Farm Rd., Chapel Hill, N. C. EDUCATIONAL PSYCHOLOGY AND MENTAL HYGIENE. b. New York City, Mar. 4, 1885. s. Will C. and Sarah (Hobby) R. Edn.: A.B., Harvard, 1907; Ph.D., Geo. Wash. Univ., 1918; Ed.D., ibid., 1918. Hon. Deg.: LL.D., Geo. Wash. Univ., 1932. m. Isabel E. VanDewater of Nutley, N. J., June 20, 1908. d. Charles B. and Matilda S. VanDewater. c.: Carson; Carl Schurz; Isabel Edith; John Walker; Flora Ruby; Chester Maupin. Exp.: Tchr., Nutley, N. J., Pub. Schls., 1908-09; Carl Schurz Fellow, Columbia Univ., 1910-11; Instr. in German, Univ. of Wis., 1911-12; Asst. Ed. and Specialist in Vocl. Edn., U. S. Bur. of Edn., 1912-20; Ednl. Ed., N. Y. Evening Post, 1920-21; Prof. of Edn., Swarthmore Coll., 1921-30; Dir. of Edn., U. S. Indian Serv., 1930-35; On Staff of Commonwealth Fund, N. Y., 1935-36; Staff Assoc., Carnegie Fdtn., N. Y. C., 1936-40; Dir., Div. of Tchr. Edn., Univ. of N. C., Chapel Hill, N. C., 1940-48; On leave, Serving as Cultural Relations Officer with U. S. Dept. of State, 1949-50; Schl. Consult., World Fed. for Mental Health, 1958—. Contbr. to: Schl. and Soc.; Jour. of Natl. Edn. Assn.; etc. Author: The Literature of Am. Schl. and Coll. Athletics, 1929; Vocational Guidance in Public Schools; Mental Health Through Education, 1938; Studies in Early Grad. Education, 1939; With Skinner and others, Elem. Ednl. Psychol., 1947, '58; Other Bulls., Articles in Yearbooks; Editor H. S. Jour., 1940-49; Understand. the Child, 1941-57; Natl. Chmn. for Ment. Health, Congress of Parents and Tchrs., 1956-58. Clubs: Cosmos, Washington; Harvard, N. Y. City. Travel: Am. Delegate to World Fed. of Edn. Assns., Edinburgh, 1925, Geneva, 1929, Dublin, 1933, Oxford, 1935; Barcelona, 1959; Edinburgh, 1960; Delegate to New Education Fellowship, Locarno, 1927, Elsinore.

1929, Cheltenham, Eng., 1936, Germany, Scandinavian Countries, 1955, Holland, 1956; South America, 1957; American Indians, 1926-27; Virgin Islands, 1928; Methodist Second. Schls., 1931; United Service to China, 1945-46; U. S. Del. to UNESCO, Adult Edn. Seminar, Mysore, India, 1949; Italy; Greece; Turkey; Egypt; Austria; France, 1950; U. S. Delegate to Internatl. Cong. on Mental Health, Mexico, 1951; Consultant to Nursing Edn. Conf., World Health Organization, Geneva, 1952.

RYAN, Harold Joy (Mr.), Agric. Commissioner, Co. of Los Angeles (Ret.), Calif. Home Add.: 1108 Garfield Ave., S. Pasadena, Calif.

ECONOMIC ENTOMOLOGY, PLANT PEST QUARANTINE AND CONTROL, ADMINISTRATION AND ENFORCEMENT OF PLANT INDUSTRY REGULATIORY LAWS. b. Lincoln, Neb., Feb. 9, 1892. s. Thomas and Ella (Stoddard) R. Edn.: A.B., Pomona Coll., 1914. m. Inez Sheets, 1914. c.: Mrs. Nancy Zabriskie; David Joy; John Allen. Exp.: Hort. Inspctr., San Diego Co., Escondido and LaMesa, Calif., 1914-15; Hort. Inspctr., Co. of Los Angeles, Calif., 1915-17; Scientific Asst., U. S. Bureau of Ent. USDA, Calif., 1917-18; Comm'r., Co. of L. A., Los Angeles, Calif., 1918-62; Consultant, U. S. Bur. Ent. Pl. Quar., USDA, Wash., D. C., 1935; Agric. Commr. Co. of Los Angeles, (ret.), 1962—. Hon. Pos.: Chmn., Pacific Slope Brch. AAEE, 1946; Pres., Calif. Co. Agric. Comm'rs. Assn., 1921; Chmn., Calif. Orange Adm. Comm., 1943-50; Advsry. Mem. L. A., Ch. of C Agric. Comm., 1925—. Mem.: Entomol. Soc. Am.; Am. Assn. for the Adv. of Sci.; Ent. Club So. Calif. Contbr. to: Jour. of Econ. Ent.; Mo. Bull. Calif. Dept. of Agric.; Procs. Western Plant Bd.; Calif. Citrograph. Areas of Rsch.: Detection and Eradication of Incipient Infestations of Introduced Plant Pests.

RYDER, John Douglas (Ph.D.), Dean of Engrng., Mich. State Univ., E. Lansing, Mich. Home Add.: 3626 E. Hiawatha Dr., Okemos, Mich. ELECTRONICS. b. Columbus, Ohio, May 8, 1907. s. John Edwin and Lucy (Rider) R. Edn.: B.E.E., Ohio State Univ., 1928; M.S., ibid., 1929; Ph.D., Ia. State Univ., 1944. m. Sylvia MacCalla, 1933. c.: Barbara P.; John M. Exp.: Gen. Elect. Co., Schenectady, N. Y., 1929-31; Chg. of Elect. Rsch., Bailey Meter Co., Cleveland, Ohio, 1931-41; Prof. E.E., Ia State Univ., 1941-49; Hd., E.E., Univ. of Ill., 1949-54; Dean, Engrng., Mich. State Univ., 1954—. Hon. Pos.: Pres., IRE, 1955; Editor, IRE, 1958-59; Pres., Natl. Electronics Conf., 1953. Mem.: Fellow, A.A.A.S.; Fellow, Inst. Radio Engrs.; Fellow, Am. Inst. Elect. Engrs.; Am. Soc. Eng. Edn.; Sigma Xi; Phi Kappa Phi; Tau Beta Pi; Eta Kappa Nu. Author: Networks, Lines and Fields, 2nd Ed., 1954; Engineering Electronics, 1957; Electronic Fundamentals and Applications, 2nd Ed., 1959; Electronic Engineering Principles, 3rd Ed., 1961. Contbr. to: Proc. IRE; Jour. Eng. Edn. Areas of Rsch.: Computers (Analog).

RYGG, George Leonard (Ph.D.), Physiologist in Charge, Horticultural Corps Br., Agricultural Marketing U.S.D.A., P.O. Box 700, Pomona, Calif. Home Add.: 625 E. McKinley Ave., Pomona, Calif.

POST HARVEST OF HORTICULTURAL CROPS, ESPECIALLY CITRUS FRUITS AND DATES. b. Clifford, N. D., Feb. 14, 1903. s. A. A. and Karen (Folden) R. Edn.: B.S., N. D. Agric. Coll., 1929; M.S., Oregon State Coll., 1931; Ph.D., Univ. of Minn., 1941. m. Carol Cox, 1935. c.: Karen L. Exp.: Jr. Physiologist, U. S. Dept. of Agric., Pomona, Calif., 1931-37; Asst. Physiol., U. S. Dept. of Agric., Indio, Calif., 1937-43; Assoc. Physiol., Pomona, 1943-48; Physiol., ibid., 1948-57; Sr. Physiol., ibid., 1957-61; Principal Plant Physiol., ibid., 1961—. Mem.: Am. Soc. for Hort. Sci.; Am. Soc. of Plant Physiol.; Am. Assn. Adv. Sci.; Sigma Xi; Pi Gamma Mu; Alpha Zeta; Gamma Sigma Delta. Contbr. to: Proc. Am. Soc. for Hort. Sci.; Plant Physiology; U. S. Dept. of Agric. Series. Areas of Rsch.: Prevention of Spoilage and Retention of Quality in Citrus Fruits and Dates During Storage and Marketing.

S

SAATHOFF, Donald Ray (Mr.), Assoc. Mathn.; Southwest Rsch. Inst., San Antonio, Tex. Home Add.: 5310 Charter Oak Dr., San Antonio, Tex. MATHEMATICS. b. San Antonio, Tex., Feb. 29, 1936. s. Laylor and Melanie (Kral) S. Edn.: B.S., Univ. of Tex., 1957; M.A., Ariz. State Univ., 1962. m. Catherine Ann Thomas, Aug. 27, 1955. c.: Donald, Jr.; Dennis; Thomas. Exp.: Programmer, Gen. Elec. Atomic Power Equip. Dept., San Jose, Calif., 1957; Programming Analyst, Gen. Elec. Computer Dept., Phoenix, Ariz., 1957-62. Mem.: Mathl. Assn. of Am.; Am. Statl. Assn. Areas of Rsch.: Application of Digital Computers to Problems in Engineering and Physics.

SAATY, Thomas Lorie (Ph.D.), Hd., Math. Branch, Office of Naval Rsch., Washington, D. C. Home Add.: 310 Ellsworth Dr., Silver Spring, Md. MATHEMATICS AND OPERATIONS RESEARCH. b. Mosul, Iraq, July 18, 1926. s. David and Dola (Hayali) S. Edn.: Ph.D., Yale Univ., 1953. m. Bernadine Wearner, 1947. c.: Linda J.; Michael N.; Emily G. Exp.: Rsch. Mathematician, U. S. Air Force, Washington, D. C., 1951-52; Scientific Analyst, Meipar, Inc., Alexandria, Va., 1953-54; Scientific Analyst, Mass. Inst. of Tech., 1954-57; Scientific Analyst, Navy Management Office, Wash., D. C., 1957-58; Sci. Liaison Officer, Office of Naval Rsch., London, 1958-59; Dir. of Advanced Planning, ibid., Washington, 1959-61; Hd., Math. Branch, Office of Naval Rsch., Wash., D. C., 1961—. Mem.: A.A.A.S.; Am. Math. Soc.; Am. Math. Assn.; French Operation Rsch. Soc.; Operation Rsch. Soc. of Am. Author: Mathematical Methods of Operation Research, 1959; Elements of Queueing Theory, 1961. Contbr. to: Operations Rsch.; Am. Math. Monthly; Jour. Royal Statistical Soc.; Math. Rev.; Naval Rsch. Rev. Areas of Rsch.: Mathematics of Operations Rsch.; Calculus Variations; Game Theory and related topics in Mathematics.

SABERSKY, Rolf Heinrich (Ph.D.), Prof. of Mech. Engrng., Calif. Inst. of Technol., Pasadena, Calif. Home Add.: 2206 Loma Vista St., Pasadena, Calif. HEAT TRANSFER, ROCKET PROPULSION. b. Berlin, Germany, Oct. 20, 1920. s. Dr. F. and B. (Eisner) S. Edn.: B.S., Calif. Inst. of Technol., 1942; M.S., ibid., 1943; Ph.D., ibid., 1949. m. Bettina S. Schuster, June 16, 1946. c.: Carol M.; Sandra S. Exp.: Development Engr., Aerojet-Gen. Co., Azusa, Calif., 1943-46; Instr., Calif. Inst. of Technol., 1949-50; Asst. Prof., ibid., 1950-55; Assoc. Prof., ibid., 1955-61; Prof., ibid., 1961—. Mem.: Am. Rocket Soc., Sr. Mem.; Am. Soc. of Mechanical Engrng.; Tau Beta Pi; Sigma Xi. Author: Engineering Thermodynamics, 1957. Contbr. to: Am. Rocket Soc. Jour.; Trans. of A.S.M.E. Areas of Rsch.: Heat Transfer; Rocket Propulsion.

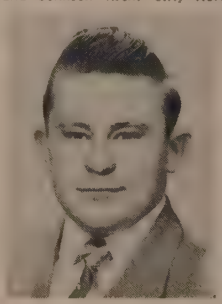
SACHER, Alex (Ph.D.), Pres., Dimensional Pigments, Inc., E. 3rd St. and Hobart Ave., Bayonne, N. J. Home Add.: 92 Van Ness Court, Maplewood, N. J.

POLYMER CHEMISTRY. b. Brooklyn, N. Y., July 24, 1922. s. David and Dinah (Epstein) S. Edn.: B.S., City Coll., New York, 1943; M.S., Polytechnic Inst. of Brooklyn, 1946; Ph.D., ibid., 1948. m. May Goldstein, June 17, 1943. c.: Joel; Stephen; Felice Arne. Exp.: Tech. Dir., Standard Insulation Co., E. Rutherford, N.J., 1955-58; Vice Pres., Hudson Pulp and Paper, N. Y., N. Y., 1958-59; Pres., Dimensional Pigments, Inc., Bayonne, N. J., 1960—. Hon. Pos.: Prog. Chmn., 15th ANTEC, S.P.E.; Chmn., Publ. Comm., S.P.E. Mem.: A.C.S.; A.S.T.M.; A.I.C.; A.A.A.S.; N. Y. Acad. of Sci.; Phi Lambda Upsilon; Sigma Xi Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Polymer Sci. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: High Polymers, Synthetic Pearl Pigments Manufacture and Application.

SABISTON, David Coston, Jr. (M.D.), Assoc. Prof. of Surg., Johns Hopkins Univ., Schl. of Med., Baltimore 5, Md. Home Add.: 722 Morningside Dr., Towson 4, Md. CARDIOVASCULAR SURGERY. b. Jacksonville, N. C., Oct. 4, 1924. s. David C. and Marie (Jackson) S. Edn.: B.S., Univ. of N. C., 1943; M.D., Johns Hopkins Univ. Schl. of Med., 1947. m. Agnes Barden, Sept. 24, 1955. c.: Anne Barden; Agnes Foy; Sarah Coston. Exp.: Surgeon-in-Charge, Children's Surg. Clinic, Johns Hopkins Hosp., Baltimore 5, Md., 1955—; Consultant in Surg., Walter Reed Army Hosp., Washington, D. C., 1958—; Consultant in Surg., Baltimore City Hosp., Baltimore 24, Md., 1959—; Assoc. Prof. of Surg., Johns Hopkins Univ., 1959—; Fulbright Rsch. Scholar, Oxford Univ., 1960. Mem.: Am. Coll. of Surgeons; Soc. of Univ. Surg.; Am. Assn. for Thoracic Surg.; Southern Surg. Assn.; Halsted Soc.; Am. Surg. Assn.; Soc. of Clin. Surg.; Soc. of Thoracic Surg. of Great Britain and Ireland; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Encyclopedia of Thoracic Surg.; Textbook of Pediatric Surg.; Cecil's Textbook of Med.; Recent Advances in Pediatric Surg.; Bull. of The Johns Hopkins Hosp.; Surg. Clinics of N. Am.; Annals of Surg.; Jour. of Thoracic Surg.; Annals of Internatl Med.; Physiol. Rev.; Fed. Proceedings; Am. Jour. of Physiology; Jour. of Clin. Investigation, etc. Serv. Rec.: U. S. Army Med. Corps, 1953-55. Gen. Int.: Rsch. Career Award, Natl. Insts. of Hlth., 1962—; Mem. of the Comm. on Fulbright Awards. Areas of Rsch.: Cardiovascular Physiology.

SACHS, Thomas Dudley (Ph.D.), Asst. Prof. of Phys., Univ. of Vermont, Burlington, Vt. Home Add.: 191 Howard St., Burlington, Vt. PHYSICS; ULTRASONICS, LIQUID STATE, ELECTRONICS, INSTRUMENTATION. b. St. Louis, Mo., Jan. 29, 1925. s. Ernest and Mary (Koues) S. Edn.: A.B., Univ. of Calif., 1951; Ph.D., Univ. of Innsbruck, 1960. m. Margit Bihari, Dec. 20, 1961. Exp.: Tchr. of Phys. and Chem., Lassen H. S. and Jr. Coll., Susanville, Calif., 1953-55; Post Doc. Rsch. Investigator, Western Reserve Univ., Chem. Dept., 1960-62; Asst. Prof. Phys., Univ. of Vt., 1962—. Mem.: A.A.A.S.; Am. Phys. Soc.; Acoustical Soc. of Am.; Sigma Xi. Contbr. to: Metalloberflaeche; Jour. of Acoustical Soc. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Non Linear Acoustics, Especially Two Beam Interactions. Ultrasonic Absorption and Fast Reactions. Non Linear Absorption and Microcavitation. Ultrasonics and Electroplating.

SACK, Georges Henri (Mr.), Rsch. and Devel. Chemist, Johnson and Johnson Rsch. Ctr., North Brunswick, N. J. Home Add.: 138 Montgomery St., Highland Park, N. J. CHEMISTRY. b. Mex. City, Mex., Aug. 30, 1930. s. Georges Albert and Louise (Martel) S. Edn.: B.S., Univ. of Miami, 1954. m. Arlene Fountain, June 1, 1957. c.: Katherine Cecile; Michelle Lisette. Exp.: Chemist, Am. Cyanamid Co., Danbury, Conn., 1954-61; Rsch. Devel. Chemist, Johnson and Johnson Rsch. Ctr., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Museum of Nat. History; Phi Iota Alpha. Areas of Rsch.: Pharmaceutical Chemistry; Polymer Chemistry; Protein and Textile Chemistry.

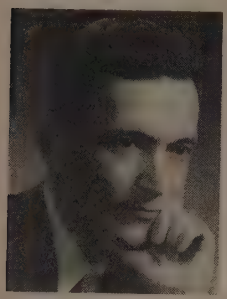


SACKMAN, Jerome Leo (Sc.D.), Assoc. Prof. of Civil Engrng., Univ. of Calif., Berkeley, Calif. Home Add.: 576 The Alameda, Berkeley 7, Calif. APPLIED MECHANICS. b. Rockaway Beach, N. Y., June 16, 1929. s. David and Sarah (Sirotta) S. Edn.: B.C.E., Cooper Union, 1951; M.S., Columbia Univ., 1955; Engr.Sc.D., ibid., 1959. m. Sandra May Gelberg, Dec. 23, 1951. c.: Nancy Andrea; Hildy Anshel. Exp.: Civil Engr., Engr. Rsch. and Dev. Lab., Ft. Belvoir, Va., 1951-52; Lt., U.S.A.F., Sanitary and Industrial Hygiene Eng., Rome, New York, 1952-54; Guggenheim Fellow, Flight Structures, Columbia Univ., 1954-56; Rsch. Asst., Dept. of Engr. Mech., Columbia, 1956-57; Instr., Dept. of Engr. Mech., ibid., 1957-59; Asst. Prof., ibid., 1959-60; Asst. Prof., Dept. of Civil Engr., Univ. of Calif., 1960-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Rocket Soc.; Am. Soc. of Civil Engr.; Am. Soc. Mech. Engr.; Inst. of Aerospace Scis.; A.A.A.S.; Tau Beta Pi; Chi Epsilon; Sigma Xi. Contbr. to: Jour. of the Am Rocket Soc; Jour of Applied Mechanics; Jour of the Aero Space Sciences; Proc of the Am Soc of Civil Engr. Areas of Rsch.: Theory of Elasticity; Thermoelasticity; Viscoelasticity and Inelasticity; Continuum Mechanics.

SADLER, Walter White (D.V.M.), Assoc. Prof., Dept. of Publ. Health, Schl. of Vet. Med., Univ. of Calif., Davis, Calif. Home Add.: 806 Miller Dr., Davis, Calif. VETERINARY MEDICINE. b. Biloxi, Miss., Dec. 3, 1913. s. William Owen and Lula Enochs (White) S. Edn.: B.S., Tex. A. and M. Coll., 1938; D.V.M., ibid., 1939; M.P.H., Univ. of Calif., 1958. m. Julia Diemer, June 18, 1940. c.: Julia Mary; Walter Enochs. Exp.: Meat Inspector, U.S.D.A., St. Louis, Mo., 1939-40; Milk Inspector, Tex. St. Health Dept., Austin, Tex., 1940-41; City Veterinarian, Beaumont City Health Dept., Beaumont, Tex., 1941-44; Private Practice Vet. Med., 1945-49; Rsch. Asst., Colo. St. Univ., 1949-50; Assoc. Prof., Univ. of Calif., 1950—. Mem.: A.V.M.A.; A.A.A.P.; Am. Publ. Health Assn.; C.V.M.A.; U.S. Livestock Sanitary Assn.; Poultry Sci Assn.; Publ. Health

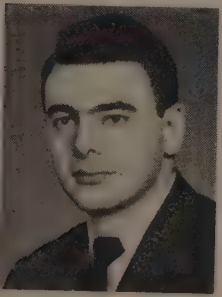
Veterinarians Conv.; Phi Zeta. Contbr. to: Am. Jour. Vet. Rsch.: Applied Microbiol.; Avian Diseases; Anat. Rec.; Am. Jour. Publ. Health; Jour. Infectious Diseases; Jour. Milk and Food Technol.; Poultry Sci.; Acta Endocrinologica. Areas of Rsch.: Relationship of Disease Syndromes to Wholesomeness of Poultry and Red Meat Carcasses.

SAFAR, Peter (M.D.), Prof. and Chmn., Dept. of Anesthesiol., Univ. of Pitts., Schl. of Med., Room 1103 Presbyt.-Univ. Hosp., Pitts. 13, Pa. Home Add.: 243 Hoodridge Dr., Pittsburgh 34, Pa. ANESTHESIOLOGY. b. Vienna, Austria, Apr. 12, 1924. s. Karl and Vinca (Landauer) S. Edn.: M.D., Univ. of Vienna, 1948. m. Eva Kyzivat, July 1, 1950. c.: Elizabeth; Philip. Exp.: Asst. Instr., Surg., Hosp. of the Univ. of Pa., Phila., Pa., 1952; Chf., Dept. of Anesthesiol., Natl. Cancer Inst., Lima, Peru, 1952-53; Asst. Prof., Anesthesiol., Johns Hopkins Univ., Schl. of Med., Balt., Md., 1954-61; Chf., Dept. of Anesthesiol., Balt. City Hosps., 1955-61; Clin. Assoc. Prof., Univ. of Md., Schl. of Med., 1955-61; Prof. and Chmn., Dept. of Anesthesiol., Univ. of Pgh., and Dir., Anesthesiol., Univ. of Pgh. Health Ctr. Hosp., 1961. Hon. Pos.: Consult., Vets. Admin. Hosp., Pgh., Pa.; Mem., Comm. on Artificial Respiration, Natl. Rsch. Coun., 1958; Mem., Med. Adv. Bd., Balt. City Hosps.; Mem., Medico Thoracic Surg. Team of Indochina, 1959; Mem., Med. Experts, Internatl. Resuscitation Conv., Univ. of Sydney, Australia, 1960. Mem.: Am. Soc. of Anesthesiolts.; Internatl. Anesthesia Rsch. Soc.; Md. Sta. Soc. of Anesthesiolts.; Am. Med. Assn.; Balt. City Med. Soc.; Secy., Md. Soc. of Anesthesiolt., 1957, Pres., 1958; Sigma Xi; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Sci.; Am. Physiol. Soc.; Assn. of Univ. Anesthest. Contbr. to: Jour. Am. Med. Assn.; Jour. Hosp. Appl. Physiol.; Anesthesiol.; Anesthesia and Analysis. Areas of Rsch.: Resuscitation.



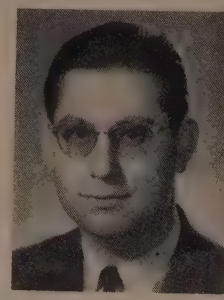
SAFRANSKI, Leo Walter (Mr.), Chemist, E. I. du Pont de Nemours and Co., Wilmington 98, Del. CHEMISTRY. b. Kenosha, Wis., Oct. 20, 1915. s. John and Josephine (Luczkewicz) S. Edn.: B.S., Univ. of Wis., 1937. m. Renata Ludwig, Apr. 12, 1947. c.: Gerald Lee. Exp.: Chemist, Monsanto Chem. Co., Anniston, Ala., 1937-38; Tchng. Asst., Univ. of Minn., Minneapolis, Minn., 1938-42; Rsch. Assoc., Univ. of Chicago, Chicago, Ill, 1942-44; Supvr. of Analytical Rsch. Group, Hanford Engr. Works, 1945; Chemist, E. I. du Pont de Nemours and Co., Wilmington, Del., 1946—. Mem.: Am. Chem. Soc.; Phi Beta Kappa; Phi Eta Sigma; Phi Lambda Upsilon; A.A.A.S.; R.E.S.A. Special Int.: Development of Analytical Methods for Organic and Inorganic Chem. Analysis. Polarography, Aging of Precipitates, Surface Area Measurements, Kinetics of Crystallization, Gas Chromatography.

SAGE, Harvey J. (Ph.D.), Rsch. Assoc., St. Luke's Hosp., Cleveland, Ohio. Home Add.: 3406 Ormond Rd., Cleveland Hgts., Ohio. PROTEIN CHEMISTRY. b. Brooklyn, N. Y., Jan. 5, 1933. s. Henry and Tillie (Rothman) S. Edn.: B.S., Brooklyn Polyt. Inst., 1954; Ph.D., Yale Univ., 1958. Exp.: Rsch. Assoc., Yale Univ. Med. Schl., 1958-60; Rsch. Assoc., St. Luke's Hosp., Cleveland, Ohio, 1962—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Soc. of Sigma Xi. Contbr. to: Archives of Biochem. and Biophysics; Biochimica; Biophysica Acta; Jour. of Am. Chem. Soc. Areas of Rsch.: Immunochemistry, Enzyme Chem., Non-Aqueous Studies on Proteins.

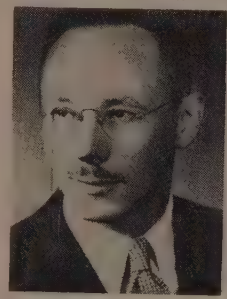


SAGEN, Oswald Karl (Ph.D.), Chf., Natl. Vital Statistics Div., Publ. Health Serv., Dept. of Health, Edn. and Welfare, Wash. 25, D. C. Home Add.: 210 Fifth St., S.E., Wash. 3, D. C. BIOSTATISTICS. b. LaCrosse, Wis., Mar. 27, 1906. s. Andrew K. and Hilda (Kinstad) S. Edn.: B.A., Luther Coll., 1926; Ph.D., Univ. of Chicago, 1934. m. Mary Louise Marvel, June 10, 1934. Exp.: Chf., Bur. of Statistics, Dept. of Publ. Health, St. of Ill., 1941-57; Chf., Special Studies, Natl. Health Survey, Publ. Health Serv., U. S. Dept. of Health, Edn. and Welfare, Wash., D. C., 1957-61; Chf., Natl. Vital Statistics Div., Asst. Dir., Natl. Ctr. for Health Statistics, ibid., 1961—. Hon. Pos.: Chmn., Statistics Sect., Am. Publ. Health Assn.; Chmn., Publ. Health Conf. on Records and Statistics; Mem., U. S. Natl. Committee on Vital and Health Statistics; A.P.H.A. Liaison Repr. to Am. Assn. of Med. Records Librarians. Mem.: Am. Math. Soc.; Am. Math. Assn.; Sigma Xi; Pi Mu Epsilon; Biometrics Soc.; Am. Eugenics Soc.; Am. Soc. for Publ. Adm.; Population Assn. of Am.; Am. Statistical Assn.; A.A.A.S., Fellow; Am. Publ. Health Assn., Fellow. Contbr. to: Am. Publ. Health Assn. Jour.; Publ. Health Reports. Areas of Rsch.: Vital Statistics; Publ. Health Statistics; Survey Methodol.

SAGHIR, Abdur-Rahman (Mr.), Rsch. Asst., Vegetable Crops Dept., Univ. of Calif., Davis, Calif. Home Add.: Mohamed Saghir, Rue Weygand, Beirut, Lebanon. PLANT PHYSIOLOGY. b. Beirut, Labanon, June 10, 1935. s. Bachir and Jehan (Nuweiri) S. Edn.: B.S., Am. Univ. of Beirut, 1957; Ingenieur Agricole, ibid., 1957; M.S., ibid., 1961. Exp.: Asst. Instr., Am. Univ. of Beirut, 1957-59; Grad. Asst., ibid., 1959-61; Rsch. Asst., Univ. of Calif., 1961—. Mem.: A.A.A.S.; Alumni Assn. of A.U.B.; Inst. of World Affairs; Internatl. Club, Univ. of Calif. (Pres.). Contbr. to Am. Univ. Beirut, Publ. No. 15, Faculty of Agr. Areas of Rsch.: Volatiles in Alliums, Herbicide Work, Physiological Aspects of Vegetable Crops.



SAGINOR, Sidney Victor (Mr.), Vice Pres., General Mgr., Tech. Ceramics Div., Gladding, McBean and Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif. Home Add.: 116, 26th St., Santa Monica, Calif. CERAMICS, HEAT TRANSFER AND HEAT TRANSMISSION. b. London, England, May 28, 1909. s. Phillip, Sr. and Polly (Miller) S. Edn.: B.S., Case Schl. of Applied Sci., 1932. m. Ruth Korman, 1935. c.: Mark L.; Gail J. Exp.: Specialist, M. E. Heat and Sound Transmission, Johns-Manville Corp., Cleveland, Ohio, 1932-36; M. E. Heat Transfer Specialist, Carbide and Carbon Chem. Corp., South Charleston, W. Va., 1936-39; Gen. Mgr., Davey Compressor Co., Kent, Ohio, 1939-45; First Vice Pres., Robinson Clay Prod. Co., Akron, Ohio, 1945-54; Vice Pres., Tech. Serv., Gladding, McBean and Co., Los Angeles, Calif., 1954-58; Vice Pres., Corp. Tech. Planning, ibid., 1958-60; Vice Pres., Gen. Mgr., Tech. Ceramics Div., ibid., 1960—. Mem.: Indus. Rsch. Inst.; Am. Soc. for Adv. of Sci.; Am. Soc. of Mech. Engrs.; Am. Soc. of Heating and Refrig. Engrs.; Am. Ceramic Soc.; Natl. Soc. of Professional Engrs.; Sigma Delta Chi; Masson; Rotary Club. Author: Private Publication Reviewing State-of-the-Art in Ceramic Technology in Major Countries of Europe and Asia and the Far East, 1961. Contbr. to: Prod. Engrng.; Chem. Engrng.; Am. Sociol. Rev. Areas of Rsch.: Application of Ceramic Oxides to the Electronics, Missile and Nuclear Energy Fields. Field of Heat Transfer.



SAGUE, Mary L. Landon (Ph.D.), Prof. Emeritus of Chem., Vassar Coll., Poughkeepsie, N. Y. Home Add.: 42 Barnard Ave., Poughkeepsie, N. Y. CHEMISTRY. b. Burlington, Vt., Sept. 29, 1885. d. Sealand Whitney and Helen Frank (Weeks) Landon. Edn.: A.B., Vassar Coll., 1907; M.A., Columbia Univ., 1914; Ph.D., ibid., 1920. Hon. Degree.: D.Sc., Middlebury Coll., 1946. m. James Edward Sague, June 14, 1928. c.: Isobel (stepdaughter). Exp.: Tchr., H. S., Bordentown, N. J., 1907-08; Asst. in Chem., Vassar Coll., Poughkeepsie, N. Y., 1908-10; Instr., ibid., 1910-13; 1914-17; Assoc. Alumnae Fellow, Vassar Coll., 1917-18; Goldschmidt Fellow, Columbia Univ., 1918-19; Asst. Prof., ibid., 1919-24; Assoc. Prof., ibid., 1924-28; Prof., ibid., 1928-52; Chmn. of Dept., ibid., 1924-51; Emeritus Prof., ibid., 1952—. Hon. Pos.: Past Pres., Poughkeepsie Br. of A.A.U.W.; Family Serv. Assn., Community Chest; Chmn., Mid-Hudson Sect., A.C.S.; Pres., Community Chest; Pres., Family Welfare Assn.; Pres. and Founder of the Poughkeepsie Br., A.A.U.W.; Chmn., Mid-Hudson Sect. of Am. Chem. Soc. Mem.: N. Y. Acad. of Sci.; Am. Chem. Soc.; Biochemical Soc. (England); Fellow, A.A.A.S.; Fellow, Am. Inst. of Chemists; A.A.U.W.; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; The Chemist. Special Int.: Inorganic and Phys. Chem.

SAHAKIAN, William Sahak (Ph.D.), Chmn., Dept. of Philos., Suffolk Univ., 20 Derne St., Boston, Mass. Home Add.: 135 Booth Rd., Dedham, Mass. PSYCHOLOGY AND PHILOSOPHY. b. Boston, Mass., Oct. 7, 1921. s. Jacob and Anna (Pakchoian) S. Edn.: B.S., Northeastern Univ.; S.T.B., Boston Univ.; Ph.D., Boston Univ. Graduate Schl.; D.Sc., Curry Coll., 1956. m. Mabel Marie Lewis, 1945. c.: James William; Richard Lewis; Barbara Jacquelyn; Paula Leslie. Exp.: Prof. of Philos. and Psychol., Chmn. of the Dept., Suffolk Univ., Boston, Mass., 1946—; Lectr. in Psychol. and Philos., Northeastern Univ., 1950—; Professorial Lectr. in Psychol., Mass. Coll. of Pharmacy, 1960; Lectr. in Psychol., The Fisher Schl., 1952, 1955; Former Prof. of Phil. and Psychol., Curry Coll.; Chmn., Dept. of Philos., Suffolk Univ.' Mem.: Am. Philos. Assn.; A.A.A.S.; Human Factors Soc. Hon. Pos.: Consult., Natl. Assn. on Standard Medical Vocabulary; Psychol. for the Mendota Rsch. Gp.; Trustee, Bedford Publ. Libr. Listed in: Dir. of Am. Scholars; Am. Men of Sci.; Dir. of Am. Philos.; Harvard Alumni Dir.; Who's Who (Internatl. Sup.); W.W.E.; Who's Who in New England; W.W.A.E. Author: The Emotive Ethic In Contemporary British and American Philosophy.

SAHINEN, Uuno Mathias Mr., Assoc Dir., Mont Bureau of Mines and Geology. Home Add.: 116 W. Silver St., Butte, Mont. GEOLOGY. b. Mass, Mich., Apr. 7, 1906. s. Mathias and Matilda (Jokela, S. Edn.: B.S., Mont. Schl. of Mines, 1929; M.S., ibid., 1935. m. Margaret Winston, June 1, 1930. c: Winston M. Exp.: Asst. Geol., North Butte Mine, Co., Butte, Mont., 1929-31; Geologist, Mont Bur. Mines and Geol., ibid., 1931-58; Chief Geol., ibid., 1958-62; Asst Dir., ibid., 1962; Assoc Dir., ibid., 1962. Mem.: Am. Inst. of Mining; Metallurgical and Petroleum Engrs.; Soc of Econ. Geo. Author: Geology and Ore Deposits, Rochester Mining District, 1938; Geology and Ore Deposits, Highland Mountains, 1949; Mines and Mineral Deposits, Missoula and Ravalli Counties, 1957. Serv. Rec.: U. S. Navy, W.W. II. Areas of Rsch.: Economic Geology, Metals and Non-Metals.

SAID, Abdel Salam (Ph.D.), Sr. Chemist, Beckman Instruments, Inc., 2500 Harbor Blvd., Fullerton, Calif. Home Add.: 4904 Durfee Ave., Pico Rivera, Calif. PHYSICAL CHEMIST. b. Bustan, Egypt, Mar. 12, 1924. s. Mohamed Mitwally and Nazli (Deif) S. Edn.: B.Sc., Cairo Univ., 1946; S.M., Mass. Inst. of Tech., 1956; Ph.D., Polytech. Inst. of Brooklyn., 1961. Exp.: Tchng. Fellow, Univ. of Alexandria, Alexandria, Egypt, 1946-48; Rsch. Assoc., Columbia Univ., N. Y., 1954-60; Sr. Chemist, Beckman Instruments, Inc., 1960—. Mem.: Am. Chem. Soc.; N. Y. Acad. of Sci.; The Mathl. Assn. of Am.; Sigma Xi. Contbr. to: Am. Inst. of Chem. Engrs. Jour.; Analytical Chem.; Chem. Engrng. Soc.; Jour. of Chem. Edn. Areas of Rsch.: Theory of Liquids; The Theory of Gas-Liquid and Gas-Solid Chromatography Chemical Kinetics and Ion Exchange.

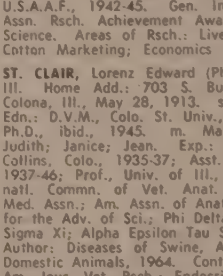
SAINIO, Margaret Karin Holsti (M.D.), Priv. Pract., Psychiat., 2100 Carlmont Drive, Belmont, Calif. Home Add.: 1608 Sunnyslope Ave., Belmont, Calif. ANATOMY AND PSYCHIATRY. b. Helsinki, Finland, Sept. 15, 1913. d. John E. and Eva E. (Landgren) Stenberg. Edn.: B.S., Helsinki Univ., 1933; M.B., ibid., 1937; Ph.D., ibid., 1948; M.D., Stanford Univ., 1959. m. William T. Sainio, Oct. 16, 1953. c.: Olof K. Holsti. Exp.: Asst. Prof., Anatomy, Univ. of Ore., 1949-54; Instr., ibid., Univ. of Calif., 1954-56; Internsh., Tucson Med. Center, Tucson, Ariz., 1956-57; Staff Psych., Stanford Univ., 1959-62; Priv. Pract., Belmont, Calif., 1962—. Mem.: A.A.A.S.; A.A.U.P.; Am. Med. Womens Assn.; Royal Coll. of Surgeons; Am. Psych. Assn.; Sigma Xi. Author: Anthropological Measurements of Cranial Indices, 1948. Contbr. to: Zschr. Vit. Forsch.; Yearbook of Odontology. Serv. Rec.: Finnish Army, 1939-42; U. S. Publ. Health, 1959—. Areas of Rsch.: Anatomy, Anthropology, Psychiatry.

SAINT-AMAND, Pierre (Ph.D.), Hd., Earth and Planetary Scis. Div., Rsch. Dept., U. S. Naval Ordnance Test Station, China Lake, Calif. Home Add.: 602 A Essex Circle, China Lake, Calif. GEOLOGY AND GEOPHYSICS. b. Tacoma, Wash., Feb. 4, 1920. s. Cyrias Z. and Mable (Berg) St.A. Edn.: B.S., Univ. of Alaska, 1948; M.S., Calif. Tech., 1951; Ph.D., ibid., 1953. m. Marie Poss, Dec. 9, 1945. c.: Gene Pierre; Barbara Michelle; Denali Marie; David Cyrias Humberto. Exp.: Observer, College Observ., Carnegie Instit. of Wash., D. C., Dept. of Terr. Magn., Coll., Alaska, 1941-42; Mem., Geophys. Instit., Univ. of Alaska, Coll., Alaska, 1946-49; Rsch. Assoc. Seismological Lab., CalTech, Pasedena, Cal., 1952-53; U. S. NOTS, Pasadena Annex, 1950-54; U. S. N. Ordnance Test Station, China Lake, Calif., 1954-61; Internatl. Cooperation Admin., Prof. of Geology, Univ. of Chile, Santiago, Chile, 1958-61; Hd., Earth and Planetary Scis. Div., Rsch. Dept., U.S.N. Ordnance Test Sta., China Lake, Calif., 1961—; Consultant, Am. Potash and Chemical Corp., Trona, Calif., 1961—. Hon. Pos.: Fulbright Scholar to France, 1954-55; Mem. Latin Am. Panel, Pres. Sci. Advisory Comm. Mem.: Geol. Soc. of Am.; Am. Geophys. Union; Seismological Soc. of Am.; Soc. of Phys. Sci. of Chile; Sigma Xi. Contbr. to: Trans. AGU; Bull. Seism. Soc.; Bull. Geol. Soc.; Jour. of Solar Energy; Annales de Astrophysique; Annales de Geophysique; Pub. of the Schl. of Geology, Univ. of Chile; Jour. of Geophysical Res. Serv. Rec.: U. S. Army Air Force, A.A.C.S., 1942-46. Areas of Rsch.: Circum Pacific Tectonics, Earthquakes, Structural Geology, Light of Night Sky and Aurora, Ionosphere, Oceanography, Weather Modification.

ST. CLAIR, James Sheldon (Ph.D.), Prof. and Agric. Econt., Univ. of Wyo., Laramie, Wyo. Home Add.: 711 Lyon St., Laramie, Wyo. AGRICULTURAL ECONOMICS. b. Pomona, Calif., Aug. 18, 1919. s. Maurice Sheldon and Ruth Joy Hogan. S. Edn.: B.S., Univ. of Calif., 1941; M.S., Univ. of Ill., 1947; Ph.D., ibid., 1950. m. Betty Jane Dobson, June 12, 1942. c.: Virginia Jill; John Maurice; David Dobson. Exp.: Rsch. Asst., Univ. of Ill., Urbana, Ill., 1941-42; Rsch. Asst., ibid., 1946-47; Calif. St. Polytech. Col., San Luis Obispo, Calif., 1946-50; Tchng. Asst., Univ. of Ill., 1950-51; Asst. Agric. Econt., Univ. of Ariz., Tucson, Ariz., 1951-55; In Chg., Unit, AMS, U.S. Dept. Agric., Tucson, Ariz., 1955-57; Assoc. Prof., Univ. of Wyo., 1957-59; Prof., ibid., 1959—. Hon. Pos.: Editor and Vice-Pres., Western Farm Econs. Assn., 1961-62; Vice-Pres., Wyo. Chapt., Gamma Sigma Delta, 1962-63. Mem.: Western Farm Econs. Assn.; Am. Farm Econ. Assn.; Mktng. Rsch. Comm. for the W. Agric. Econs. Rsch. Coun.; Alpha Zeta; Gamma Sigma Delta; Sigma Xi. Contbr. to: Procs. of the W. Farm Econs. Assn.; Procs. of the Mktng. Rsch. Comm., W. Agric. Econs. Rsch. Coun. Serv. Rec.: U.S.A.A.F., 1942-45. Gen. Int.: Recipient of W. Farm Econs. Assn. Rsch. Achievement Award, 1959; Listed in Am. Men of Science. Areas of Rsch.: Livestock Marketing; Wool Marketing; Cotton Marketing; Economics of Cotton Ginning and Harvesting.

ST. CLAIR, Lorenz Edward (Ph.D.), Prof., Univ. of Ill., Urbana, Ill. Home Add.: 703 S. Busey, Urbana, Ill. ANATOMY. b. Colona, Ill., May 28, 1913. s. John W. and Lida (Dennhardt) S. Edn.: D.V.M., Colo. St. Univ., 1935; M.S., Ia. St. Univ., 1940; Ph.D., ibid., 1945. m. Mary Louise, June 13, 1936. c.: Judith; Janice; Jean. Exp.: Asst. Prof., Colo. St. Univ., Fort Collins, Colo., 1935-37; Asst. Prof., Ia. St. Univ., Ames, Ia., 1937-46; Prof., Univ. of Ill., 1946—. Hon. Pos.: Mem., Internatl. Commn. of Vet. Anat. Nomenclature. Mem.: Am. Vet. Med. Assn.; Am. Assn. of Anats.; Am. Soc. of Zoolts.; Am. Assn. for the Adv. of Sci.; Phi Delta Theta; Phi Kappa Phi; Phi Zeta; Sigma Xi; Alpha Epsilon Tau Sigma Delta; Phi Sigma. Contbrng. Author: Diseases of Swine, Anatomy, 1958, 1962; Anatomy of Domestic Animals, 1964. Contbr. to: Jour. Am. Vet. Med. Assn.; Am. Jour. Vet. Rsch.; Endocrinol. Areas of Rsch.: Morphology, Histology, Endocrinology.

ST. CYR, Carol Ruth (Ph.D.), Assoc. Prof., Schl. of Edn., The Geo. Wash. Univ., Wash., D. C. Home Add.: Arlington Towers, Madison Bldg., Apt. 306, Arlington 9, Va. b. Meriden, Conn., Dec. 25, 1924. d. Donald J. and Margaret (Horan) St. Cyr. Edn.: B.S., Willimantic St. Tchrs. Coll., 1946; M.A., Trinity Coll., Hartford, Conn., 1949; Ph.D., Univ. of Mich., 1955. Exp.: Elem. Tchr. in Meriden, Conn., 1946-53; Rsch. Asst., Univ. of Mich., 1953-55; Visiting Prof., Univ. of N. C., 1955; Asst. Prof., Geo. Wash. Univ., 1955-60; Assoc. Prof., ibid., 1960—; Mem., Univ. Senate, 1960-63. Mem.: Pi Lambda Theta; A.A.U.W.; A.A.U.P.; Natl. Edn. Assn.; Assn. for Supvn. and Curriculum Dev.; Assn. for Higher Edn.; Am. Assn. for the Adv. of Sci.; Natl. Aerospace Edn. Coun. Ph.D. Dissertation: Present and Potential Uses of the Univ. of Mich. Curriculum Materials Center.



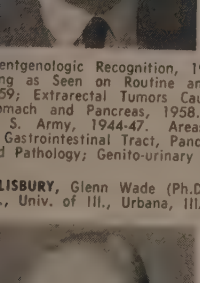
SAINZ, Anthony A. (M.D.), Dir. of Rsch., Marcy St. Hosp., Marcy, N. Y. Home Add.: Carondelet, Morgan Rd., Marcy, N. Y. PSYCHIATRIC AND NEUROHUMORAL RESEARCH. b. Havana, Cuba, July 27, 1914. s. Arthur Francis and Angelina (Nodarse) S. Edn.: B.A., Provincial Inst., Havana, Cuba, 1934; B.Sc., ibid., 1937; M.D., Univ. of Havana, Med. Coll., 1941. m. Flora Berardi, Sept. 26, 1946. c.: Elaine; Anthony, Jr. Exp.: Dir. of Biometrical Rsch., Rsch. Finlay Inst., Havana, Cuba, 1941-44; Dir. of Med. Servs., U.N.R.R.A., U. S. Zone, Germany, 1945-47; Clin. Dir., Asst. Supt., Cherokee St. Hosp., Cherokee, Ia., 1952-54; Dir. of Rsch., Marcy St. Hosp., Marcy, N. Y., 1956—. Hon. Pos.: Chmn., Publ. Relations Comm., Eastern Psychiatric Rsch. Assn.; Chmn., Sect. on Psychopharmacol., E.P.R.A. Mem.: A.A.A.S.; N. Y. Acad. of Scis.; Am. Psychiatric Assn., Fellow; Eastern Psychiatric Rsch. Assn.; Am. Coll.

of Neuropsychopharmacol.; Am. Soc. Med. Psychiatry; Oriskany Rotary Club. Contbr. to: Psychopharmacol.; Jour. of Am. Psychiatric Assn.; ACTA Psychopharmacologica; Jour. of Nervous and Mental Disease; Journ. of the Nervous System; Med. Psychiatry;; The Psychiatric Quarterly; Proc., Annals of the N. Y. Acad. of Scis. Areas of Rsch.: Neuropsychopharmacol.; Pharmaco. and Chemotherapy of Psychiatric Diseases; Neuropathol. and Neuropharmacol.

SALEM, Harry (Ph.D.), Sr. Pharmacol., Gen. Therapeutics Dept., Smith, Kline and French Labs., Philadelphia, Pa. and Instr., Univ. of Pa., Schls. of Med., Phila., Pa. Home Add.: 1025 Birch Rd., Warminster, Pa. PHARMACOLOGY AND TOXICOLOGY. b. Windsor, Ont., Can., Mar. 21, 1929. s. Oscar and Bessie (Pierce) S. Edn.: B.A., Univ. of W. Ont., 1950; B.Sc., Univ. of Mich., 1953; M.A., Univ. of Toronto, 1955; Ph.D., ibid., 1958. m. Florence Rosenbaum, June 30, 1957. c.: Jerome Sheldon. Exp.: Rsch. Asst., Univ. of Toronto, Toronto, Can., 1958-59; Head., Pharmacol. Dept., Air-Shields, Inc., Hatboro, Pa., 1959-62; Instr., Univ. of Pa., 1960—; Sr. Pharmacol., Smith, Cline & French Labs., Philadelphia, Pa., 1962—. Mem.: Am. Pharml. Assn.; Can. Pharml. Assn.; Air Pollution Control Assn.; Franklin Inst.; N. Y. Acad. of Sci.; Physiol. Soc. of Philadelphia; A.A.A.S.; Rho Pi Phi. Contbr. to: Nature; Toxicol. and Appl. Pharmacol.; Can. Med. Assn. Jour.; British Jour. of Pharmacol. and Chemotherapy; Archives of Environmental Health; Small Animal Clinician. Areas of Rsch.: Alcohol; Anesthesia; Atmospheric Pollution; Cardiovascular Respiration of Aerosols and Gases; Reticulo-Endothelial System; Toxicology.

SALIK, Julian Oswald (M.D.), Radiologist-in-Chief, Sinai Hosp. of Baltimore, Inc., Radiologist, Johns Hopkins Hosp., Assoc. Prof. of Radiol., Johns Hopkins Univ. Med. Schl., Baltimore, Md. Home Add.: 116 West University Parkway, Baltimore 10, Md. PHYSICIAN, RADIOLOGIST. b. Slavonice, Czechoslovakia, Sept. 17, 1909. s. Maximillian and Regina (Langer) S. Edn.: M.D., Cracow Univ. Med. Schl., 1936; D.M.R.E., Cambridge Univ., England, 1940. m. Felicia Bromberg, 1939. Exp.: Asst. Radiol., Coll. Phys. and Surg., Columbia Med. Schl. and Hosp., 1943-44; Radiologist-in-Chief, Sinai Hosp., Baltimore, Md., 1949—. Mem.: Fellow, N. Y. Acad. of Med.; Fellow, Am. Coll. Rad.; Fellow, A.M.A.; Radiol. Soc. of N. Am.; Am. Roentgen Ray Soc.; British Inst. of Radiol. Author: Pancreatic Carcinoma and Its Early Roentgenologic Recognition, 1961; The Vascular Pattern of the Lung as Seen on Routine and Tomographic Studies, co-author, 1959; Extrarectal Tumors Caused by Silent Carcinomas of the Stomach and Pancreas, 1958. Contbr. to: Radiol. Serv. Rec.: U. S. Army, 1944-47. Areas of Rsch.: Diagnostic Radiology of Gastrointestinal Tract, Pancreas and Lungs; Vascular Anatomy and Pathology; Genito-urinary tract.

SALISBURY, Glenn Wade (Ph.D.), Hd. and Prof., Dept. of Dairy Sci., Univ. of Ill., Urbana, Ill. Home Add.: 2110 So. Race St., Urbana, Ill. PHYSIOLOGY OF REPRODUCTION OF DOMESTIC ANIMALS. b. Sheffield, Ohio, June 2, 1910. s. S. M. and Golda (Wade) S. Edn.: B.Sc., Ohio St. Univ., 1931; Ph.D., Cornell Univ., 1934. m. Dorothy Cross, 1932. c.: Laird Wade; Susan Lynne. Exp.: Asst., Cornell Univ., 1931-34; Instr., ibid., 1934-36; Asst. Prof., ibid., 1936-41; Assoc. Prof., ibid., 1941-44; Prof., ibid., 1944-47; Prof. and Hd., Dept. of Dairy Sci., Univ. of Ill., 1947—; Fulbright Prof., Wageningen, Netherlands, 1955-56; Mem. Agri. Subpanel, Pres. Sci. Adv. Comm., 1961—. Hon. Pos.: Pres., Sci. Adv. Comm., 1961-62; Consult. to Office of Sci. and Tech., 1962; Bd. of Dirs., Internatl. Dairy Show, Chicago; Mem. Bd. of Consults., MMB England and Wales, 1948-52. Mem.: Am. Dairy Sci. Assn.; Am. Soc. of Animal Prod.; Soc. of Exptl. Biol. and Med.; Am. Genetics Assn.; Fellow, A.A.A.S.; Am. Physiol. Soc.; Soc. for Exptl. Biol. and Med.; Societa Italiana per Il Progresso della Zootecnica;. Phi Eta Sigma; Alpha Gamma Rho; Gamma Xi; Phi Kappa Phi; Alpha Zeta; Gamma Sigma Delta; Dairy Internatl. Co-Author: Physiol. of Reproduction and Artificial Insemination of Cattle, 1961. Editor: Animal Science Textbook Series. Contbr. to: Anat. Rec.; Jour. Hered.; Jour. Biophys. and Biochem. Cytology; Jour. Histochemistry and Cytochemistry; Jour. Fertility and Sterility; Science; Jour. of Dairy Sci.; Jour. of Animal Sci.; Jour. of Biological Chem.; Jour. of Exptl. Biol.; Nature, London; Proc. Soc. Exptl. Biol. Med.; Sci.; Am. Jour. of Physiol.; Adv. in Enzymol. Gen. Int.: Borden Award for Dairy Production Rsch. by Am. Dairy Sci. Assn., 1945; Medal of the Mich. St. Univ. Centennial, 1955. Areas of Rsch.: Genetics and Artificial Insemination of Cattle; Physiology and Biochemistry of Mammalian Germ Cells.



SALISBURY, Franklin Cary (Mr.), Secy-Dir., Atlantic Rsch., Alexandria, Va. Home Add.: 2922 45th St., N.W., Wash. 16, D. C. b. Cleveland, Ohio, Sept. 29, 1910. s. Elwood and Henrietta (Maione) S. Edn.: B.A., Yale Univ., 1932; LL.B., Western Res. Univ., 1937. m. Tamara Voloshin, 1955. c.: Franklin; John; Elaine; Elizabeth; Claire. Exp.: Asst. to Commnr., Fed. Communications Comm., 1939-40; Office Chf. of Ord., 1940-45; Judge Adv.-Gen's Dept. (JAG); Dir., Legal Div., Office of Foreign Liquidation, U. S. Embassy, Brazil, 1945-46; Pres. and Trustee, Latin-Am. Inst., Wash., D. C., 1946-55; Vice-Pres. and Gen. Counsel Radio St. Louis, Inc., 1953-58; Secy. and Gen. Counsel, Atlantic Rsch., Inc., 1949—; Secy., Dryomatic Corp., 1950-60; Bd. Chmn., Orbit Industries, Inc., 1960—; Sec. Dir., Commonwealth Capital, Inc., 1960—. War Record: Major, U. S. Army, 1942. Author: Speaking of Politics, 1956. Areas of Rsch.: Govt.-Indus. Relations.

SALISBURY, John William (Ph.D.), Chief, Lunar-Planetary Exploration Br., Air Force Cambridge Rsch. Labs., Bedford, Mass. Home Add.: 5 Arrowhead Rd., Concord, Mass. SPACE RESEARCH. b. Palm Beach, Fla., Feb. 6, 1933. s. John William and Mary (Bates) S. Edn.: B.A., Amherst Coll., 1955; M.S., Yale Univ., 1957; Ph.D., ibid., 1959. m. Lynne Trowbridge, June 5, 1957. c.: John William, Jr. Exp.: Tech. Asst., Ga. Dept. of Mines, Mining and Geol., Atlanta, Ga., summer months, 1956-58; Geol., Lunar-Planetary Exploration Br., 1959-61; Chief, ibid., 1961—. Mem.: Geol. Soc. of Am.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Sigma Xi; Delta Upsilon. Contbr. to: Astrophys. Jour. Serv. Rec.: U. S. Air Force, 1959—. Areas of Rsch.: Lunar and Planetary Environments.

SALKELD, Robert John (Mr.), Mgr., Advanced Manned Systems Aerospace Corp., El Segundo, Calif. Home Add.: 4101½ Landfair Ave., Westwood Village, Los Angeles, Calif. PHYSICS. b. Glen Rock, N. J., July 26, 1932. s. Charles Feagles and Doris (Cheney) S. Edn.: A.B., Princeton Univ., 1954; M.B.A., Harvard Bus. Schl., 1956. Exp.: Admin. Asst., Ramo-Wooldridge Corp., Los Angeles, Calif., 1956-58; Asst. Proj. Engr., Space Tech. Labs., Inc., ibid., 1958-60; Proj. Engr., Aerospace Corp., El Segundo, Calif., 1960-62. Mem.: Am. Phys. Soc.; Am. Rocket Soc.; A.A.A.S.; Cum Laude Soc. Contbr. to: STL Reports; Secret Aerospace Report; and many others. Areas of Rsch.: Military Space Operations and Missions Analysis; Pioneer 1, Deep-Space Probe; Propulsion Systems Design and Development; Manned Space Vehicle Design and Performance; Orbital Mechanics; Rocket Propelant.

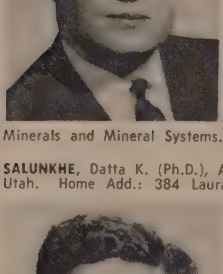
SALKIND, Charles Temach (Mr.), Assoc. Prof., Math., Polytech. Inst. of Brooklyn, Brooklyn, N. Y. Home Add.: 1304 N. Y. Ave., Bklyn. 3, N. Y. MATHEMATICS. b. N.YY.C., Apr. 16, 1899. s. Joseph and Nettie (Leventhal) S. Edn.: B.S., Coll. of City of N. Y., 1926; M.S., ibid., 1927. m. Jeannette Gurney, 1933. c.: Edward. Exp.: Tchr., Bd. of Edn., N.Y.C., 1925-54; Prof., Polytech. Inst. of Bklyn, 1954—. Hon. Pos.: Chmn., Natl. Comm. on H. Schl. Contests, M.A.A., 1961-63; M.A.A. Govr., 1961-63. Mem.: Am. Assn. for the Adv. of Sci.; Am. Mathl. Soc.; Math. Assn. of Am.; N.C.T.M.; C.A.S.M.T. Author: M.A.A. Contest Problem Book, 1961. Contbr. to: The Math. Tchrs.; Schl. Sci. and Maths.; Maths: Mag.; Am. Mathl. Monthly. Areas of Rsch.: Philosophy of Mathematics, Mathematical Contests; Curriculum in Mathematics (High School and Undergraduate).

SALLER, (Sister) Mary William, Biochemist, St. Agnes Hosp., Fond Du Lac, Wis. BIOCHEMISTRY. b. Altoona, Pa., Jan. 10, 1909. d. Joseph and Theresa (Probst) S. Edn.: B.S., Marquette Univ., 1939; M.S., Georgetown Univ., 1952; Ph.D., ibid., 1958. Exp.: Co-Dir., Clin. Lab., St. Agnes Hosp., 1946—; Assoc. Prof. Chem., Marian Coll., Fond Du Lac, Wis., 1951—; Biochemist, St. Agnes Hosp., 1952—. Mem.: Am. Chem. Soc.; Am. Assn. of Clinical Chemists; A.A.A.S. Contbr. to: Federation Proceedings;

Am. Soc. of Med. Technologists; Georgetown Med. Bull. Gen. Int.: Isolation and Identification of N-Acetylneuraminic Acid from Human Cerebrospinal Fluid. Areas of Rsch.: Human Cerebrospinal Fluid Constituents; Neurological Diseases.

SALMON, Merlyn Leigh (Mr.), Owner-Operator, Fluo-X-Spec Lab., Denver, Colo. Home Add.: 718 Sherman St., Denver 3, Colo. X-RAY SPECTROGRAPHY. b. Macksville, Kan., June 24, 1924. s. Kenneth Elbert and Inez Melba (Prose) S. Edn.: B.S., Univ. of Denver, 1951; M.S., ibid., 1952. m. Flora Sievers, Mar. 20, 1948. c.: Charla Lee; Merlyn Leigh, Jr. Exp.: Rsch. Engr., Denver Rsch. Inst., Univ. of Denver, 1951-56; Owner-Operator, Fluo-X-Spec Lab., Denver, Colo., 1956 —. Mem.: A.A.A.S.; S.A.S.; A.S.M.; A.C.S.; Sigma Xi; Phi Lambda Upsilon; Tau Beta Pi. Author: Handbook of X-Rays, co-author, 1962. Contbr. to: Annual Proc. of Denver Rsch. Inst. X-Ray Conf. Serv. Rec.: U. S. Army, 1943-47, Army Reserve, 1947-56. Areas of Rsch.: Application of X-Ray Spectrography to the Analysis of Minerals and Mineral Systems.

SALUNKHE, Datta K. (Ph.D.), Assoc. Prof., Utah St. Univ., Logan, Utah. Home Add.: 384 Lauralin Dr., Logan, Utah. HORTICULTURE AND FOOD TECHNOLOGY; RADIO BIOLOGY. b. Kolhapur, Bombay, India, Nov. 7, 1925. s. Kondjirao D. and Subhadra A. (Londhe) S. Edn.: B.S., Poona Univ., India, 1949; M.S., Mich. St. Univ., 1950; Ph.D., ibid., 1953. m. Uma Shinde, Apr., 1955. c.: Kathy; Abraham. Exp.: Instr., Poona Agri. Coll., Poona, India, 1949; Rsch. Asst. Mich. State Univ., 1951-53; Asst. Prof., Utah St. Univ., 1954-59; Assoc. Prof., ibid., 1959—. Mem.: Inst. of Food Tech. Contbr. to: Am. Soc. Agronomy Jour.; Food Tech.; Food Rsch.; Botanical Gaz.; Econ. Botany; Ind. Jour. Plant Breeding and Genetics; Ind. Hort. Jour.; Am. Potato Jour.; Nature; Radiation Rsch.; Food Engin.; Expt. Sta. Bull. Areas of Rsch.: Histology; Histochemistry, Microscopy; Post Harvest Physiol. and Pathology of Fruits and Vegetables; Effects of Ionizing Radiations on Biological Systems, Quality Evaluation of Processed Fruits and Vegetables.

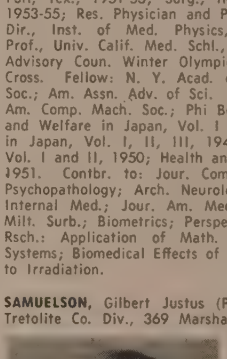


SAMELSON, Lincoln Russell (Mr.), Pres., Lake Publishing Corp., 311 East Park Ave., Libertyville, Ill. Home Add.: 920 Hawthorn Lane, Libertyville, Ill. ELECTRICAL AND ELECTRONIC INSULATION. b. N.Y.C., Mar. 30, 1926. s. John S. and Marjorie E. (Don) S. Edn.: B.S., Univ. of Ill., 1947. m. Marie J. Schupmann, Nov. 16, 1957. c.: Scott Lincoln; Kevin Russell; Quentin Barth; Susan Marie. Exp.: Publications Mgr., Insulation Mfrs. Corp., Chicago, Ill., 1948-55; Editor and Co-Publisher, Lake Publishing Corp., Libertyville, Ill., 1955-58; Publisher and Pres., ibid., 1958—. Mem.: Soc. of Plastic Engrs.; Inst. of Radio Engrs.; Am. Inst. of Electrical Engrs.; Electro-Chemical Soc.; Soc. of the Plastics Industry; Am. Assn. for the Adv. of Sci.; Conf. on Electrical Insulation of the Natl. Rsch. Coun.; Am. Soc. for Testing Material and Natl. Conf. on the Application of Electrical Insulation; Sigma Delta Chi; Alpha Delta Sigma. Contbr. to: Insulation. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Electrical and Electronic Insulation.

SAMMELWITZ, Paul Henry (Ph.D.), Asst. Prof. of Animal and Poultry Physiol., Univ. of Delaware, Newark, Dela. Home Add.: 97 Dallas Ave., Newark, Dela. PHYSIOLOGY OF REPRODUCTION (Mammalian); STRESS PHYSIOLOGY (Avian). b. Buffalo, N. Y., Mar. 13, 1933. s. Fred and Elsie (Blum) S. Edn.: B.S., Cornell Univ., 1955; M.S., Univ. of Ill., 1957; Ph.D., ibid., 1959. m. Diane Lease Moore, Aug. 17, 1962. c.: Michael Moore; Christopher Moore. Exp.: Grad. Rsch. Asst., Univ. of Ill., 1955-59; Asst. Prof. of Animal and Poultry Physiol., Univ. of Delaware, 1959 —. Mem.: A.A.A.S.; Sigma Xi; N. Y. Acad. of Sci.; Am. Assn. of Animal Science; Gamma Alpha; Boy Scouts of Am., Cubmaster. Contbr. to: Animal Sci.; Jour. Reprod. and Fertility; Anatomical Record. Areas of Rsch.: Heat Stress, (poultry); Reproductive Physiology; Endocrinology; Mammalian and Avian Physiology.

SAMS, Crawford Fountain (M.D.), Rsch. Physician, IER Uni of Calif., Berkeley, Calif.; Med. Dir., Inst. of Med. Physics, Be mont, Calif. Home Add.: Shearer Dr., Atherton, Calif. A PLICATION OF MATHEMATICS BIOLOGICAL SYSTEMS, FUNCTIO AL RESPONSE OF CNS TO IRRAD ATION. b. E. St. Louis, Ill., Ap 1, 1902. s. Fountain F. a Emma Deugusta (Eisenmaye (dec.) S. Edn.: B.S., Univ. Calif., 1925; M.S., Washingt Univ. Schl. of Med., 1927; M.D ibid., 1929. m. Elva V. Alle Sept. 2, 1925. c.: Mrs. Richa Johns; Mrs. Dale Dwyer. Exp Rsch. Fellow, Wash. Univ. Me Schl., 1926-27; Rsch. Fellow, ibid 1928-29; Intern, Letterman Ge Hosp., San Francisco, Calif., 192 30; Asst. Radiologist, Letterma ibid., 1930-31; Instr., MFS Schl Carlisle, Pa., 1932-33; Dir. Dept., ibid., 1934-36; Asst. Dept. Surg., Panama Canal Dept., Pa ama, C.Z., 1937-39; Med. Instr., Inf. Schl., Columbus, Ga., 193 41; Chf. Surg., U.S.A. FIME, Cairo, Egypt, 1941-43; Dir. of Dept MFS School, Carlisle, Pa., 1943-44; Chief Res. and Developmen WDG Staff, Wash., D. C., 1944-45; Chief Ph&W Sec., GHQ SCA For Japan, Tokyo, Japan, 1945-51; Chief PH&W Sec., ibid., f Korea, 1950-51; Asst. Commandant, Army Med. Serv. Schls FSH, Tex., 1951-53; Surg., Hq. First Army, New York, N. Y 1953-55; Res. Physician and Prof., Univ. of Calif., 1956—; Me Dir., Inst. of Med. Physics, Belmont, Calif., 1961—; Rsch Prof., Univ. Calif. Med. Schl., 1962—. Hon. Pos.: Chmn., Me Advisory Coun. Winter Olympics, 1960; Dir., Seq. Ch. Am. Re Cross. Fellow: N. Y. Acad. of Med.; A.P.H.A.; Am. Geriatric Soc.; Am. Assn. Adv. of Sci. Mem.: A.M.A.; I.R.E. Prof. Group Am. Comp. Mach. Soc.; Phi Beta Pi; Sigma Xi. Author: Healt and Welfare in Japan, Vol. I and II, 1948; Health and Welfar in Japan, Vol. I, II, III, 1949; Health and Welfare in Japa Vol. I and II, 1950; Health and Welfare in Japan, Vol. I and 1951. Contbr. to: Jour. Comp. Psychol.; Jour. Neurology an Psychopathology; Arch. Neurology and Psychiatry; Am. Jour. Internal Med.; Jour. Am. Med. Assn.; Am. Jour. Pub. Health Milt. Surb.; Biometrics; Perspective in Biol. and Med. Areas Rsch.: Application of Math. and Computer Systems to Bio Systems; Biomedical Effects of Radiation; CnS Functional Respons to Irradiation.

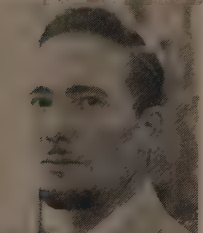
SAMUELSON, Gilbert Justus (Ph.D.), Tech. Dir., Petrolite Corp Tretolite Co. Div., 369 Marshall Ave., St. Louis 19, Mo. Hom Add.: 300 Park Rd., St. Louis 1 Mo. CHEMISTRY. b. Omaha, Neb Dec. 7, 1907. s. John P. an Albertina (Danielson) S. Edn. B.S., Chadron Neb. St. Tchrs Coll., 1929; M.S., Univ. of Neb 1932; Ph.D., ibid., 1934. m. Id Frey, Aug. 28, 1934. c.: Karen Judith Ann. Exp.: Instr., Chad ron H. S., Chadron, Neb., 192 30; Instr. to Assoc. Prof., Te A. and M. Coll., 1935-42; Assoc Prof., North Tex. Agri. Coll 1942-43; Rsch. Chemist, Asst. Di Rsch., Dir. of Rsch., Petrolit Corp., Long Beach, Calif. and Web ster Groves, Mo., 1943-61; Tech Dir. and Chf. Chemist, Petrolit Corp., Tretolite Co. Div., Webste Groves, Mo., 1961—. Mem.: Am Chem. Soc.; Am. Petroleum Inst. Natl. Assn. of Corrosion Engineers; Am. Assn. for the Adv. o Sci.; Sigma Xi. Areas of Rsch.: Chemical and Electrostatic Reso lution of Emulsions; Petroleum Technology; Corrosion.



SAMUEL, Arthur Lee (D.Sc.), Dir. of Rsch. Communications, IBM Thomas J. Watson Rsch. Ctr., P. O. Box 218, Yorktown Heights N. Y. Home Add.: 49 Joan Dr., Chappaqua, N. Y. ELECTRON TUBES AND DIGITAL COMPUTERS. b. Emporia, Kan., Dec. 5 1901. s. John R. (dec.) and Lee Ella (McHenry, dec.) S. Edn. A.B., Coll. of Emporia, 1923; B.S., Mass. Inst. of Tech., 1925 M.S., ibid., 1926. Hon. Degrs.: D.Sc., Coll. of Emporia, 1946 m. Bernice Crawford, May 23, 1931. c.: Margaret Lee Finch Donna Elizabeth Hussain. Exp.: Test Engr., Gen. Elect. Co Schenectady, N. Y., 1923-27; Instr., Mass. Inst. of Tech., Cam bridge, Mass., 1926-28; Tech. Staff, Bell Tele. Labs., Murra Hill, N. J., 1928-46; Prof., Univ. of Ill., Urbana, Ill., 1946-49 Dir. of Rsch., Communications, IBM, Thomas J. Watson Rsch Ctr., 1949—. Hon. Pos.: Chmn., Adv. Grp. on Electron Device Office of the Dir. of Defense, R. and E. Mem.: Inst. of Rad Engrs.; Am. Inst. of Elect. Engrs.; Am. Phys. Soc.; Am. Assn for the Adv. of Sci.; Assn. for Computing Machinery; Sigma X Contbrng. Author: Electrical Engineering Handbook, 1950; Ad vances in Computers, 1960. Contbr. to: Rev. of Scient. Instru ments; Procs. of the I.R.E.; Jour. of Appl. Phys.; Elect. Engrng Bell Syst. Tech. Jour.; M.I.T. Tech. Rev.; I.B.M. Jour. of Rsch and Devel.; Sci.; The Annals of the Am. Acad. of Polit. a

ocial Sci. Gen. Int.: Have Many Patents in Field of Microwave ubes and Have Made Contributions in Field of Artificial Intelli- ence. Areas of Rsch.: Microwave Electron Devices and Digital omputers.

AND, Seaward Alwyn (Ph.D.), Assoc. Geneticist, Conn. Agri. xpt. Sta., Box 1106, New Haven, Conn. BIOLOGICAL SCIENCES, PLANT CYTOGENETICS. b. Lockport, N.Y., Sept. 20, 1922. s. S. A., Sr. and Gertrude (Morris) S. Edn.: A.B., Cornell Univ., 1947; M.S., ibid., 1948; Ph.D., ibid., 1955. m. Mavis Gillette, Aug. 15, 1948. c.: Beverly V.; Valerie W.; Kimberly W.; Natalie W.; Kevin G. Exp.: Sci. Instr., H. S., Horseheads, N. Y., 1948-50; Tchng. and Rsch. Asst., Dept. Plant Breeding, Cornell Univ., 1950-54; Asst. Geneticist and Assoc. Geneticist, Conn. Agri. Expt. Sta., New Haven, Conn., 1954—; Visit. Assoc. Prof., Sta. Univ. of N.Y. at Stony Brook, 1962; Rsch. Collab., Brookhaven Natl. Lab., 1962; Guest Assoc. Genet., 1962-63; Fulbright Lectr. and Rschr., Trinity Co l., Dublin, Ireland, 1963. Mem.: enetics Soc. of Am.; A.I.B.S.; A.A.A.S.; Am. Soc. of Naturalists; n. Genetic Assn.; Sigma Xi. Contbr. to: Genetics; Science; The n. Naturalist; Tobacco Sci. Serv. Rec.: U. S. Army, 1943-46. eas of Rsch.: Nicotiana Cytogenetics; Mutation; Evolution, antitative Inheritance, Theoretical Biology, Tobacco Breeding.



NDEN, Oscar Emanuel (LL.D.), Dean, Coll. of Liberal Arts and mn. Sci. Dept., Northwestern Schools of Minneapolis, Mp's., Minn. Home Add.: 3537 33rd Ave., S., Mpls. 6, Minn. CHEMICAL STUDIES; BIOCHEMISTRY. b. Oslo, Norway, July 20, 1901. s. Oscar and Emma (Andreasson) S. Edn.: B.A., Univ. of Tex., 1934; B.D., Columbia and Austin Presby. Theol. Semins., 1930. Hon. Degrs.: LL.D., Northwestern Coll. of Liberal Arts, 1948. m. Carolyn Estelle Pederson, Sept. 4, 1931. c.: Oscar E., Jr.; Howard Calvin. Exp.: Dean, Northwestern Coll. of Liberal Arts, 1948-54; Chmn., ibid., 1948-54; Prof., ibid., 1948-54; Lectr. on Sci. and Religion, U. S. Presby. Church, U.S.A., 1952—. Hon. Pos.: Natl. Dir., The New Awakening Campaigns; Exec. Coun., Radio Lectr., Memb. Natl. Edn. Assn. Mem.: Fellow, Tex. ad. of Sci.; Am. Assn. for the Adv. of Sci.; The Victoria Inst. Philos. Soc. of Great Britain; Tau Kappa Alpha; Phi Beta ppa. Author: The Bible in the Age of Science, 1946; Does ience Support the Scriptures?, 1951; The Ninety-Five Theses of New Awakening, 1961. Contbr. to: Tex. Acad. of Sci. Reprts; United Temperance Movement Digest. Areas of Rsch.: rrelation of Science and Religion.

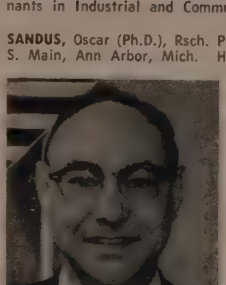
NDERS, Barkev Sahak (Ph.D.), Rsch. Consultant, U. S. Public alth Serv., Dept. of Health, Edn., and Welfare, 4th and "C" St., S.W., Wash. 25, D. C. Home Add.: 4620 Morgan Dr., Chevy Chase, Md. MEDICAL STATISTICS AND ECONOMICS. b. Van, Turkey, July 2, 1903. s. Sahak and Satenik (Sandrakortzian and Der-Parsegian) S. Edn.: B.S., Mass. Tchrs. Coll., 1926; M.A., Tchrs. Coll., Columbia Univ., 1927; Ph.D., Columbia Univ., 1934; LL.B., Georgetown Univ., 1940. m. Bessie Gruber, 1930. c.: Edward B.; Margaret. Exp.: Medical Statistician. Vet. Admin., Wash., D. C., 1929; Statistician, White House Conf. on Child Health and Development, ibid., 1930-31; Consulting Statistician, Comm. to Study Automobile Compensation, ibid., 1931-32; Med. Statistician, and Psychologist, U. S. Pub. Health v., ibid., 1932-35; Tech. Dir., Attny. Gen. Survey Dept. of tice, ibid., 1935-37; Chf., Disability Sec., Social Security Bd., ., 1937-39; Chf., Div. of Health and Disability Studies, S.S., 9-48; Consultant in Disability and Sickness Insurance, Bureau Old Age and Survivors Insurance, Baltimore, Md., S.S., ibid., 8-55; Advisor to Bradley, Comm. for Vet. Benefits, Wash., C., ibid., 1955-56; Rsch. Consultant, U. S. Pub. Health Serv., ., 1956—; Mem., Soc. Security Mission to SCAP, Japan, 1947; fessorial Lectr., Am. Univ., 1948-58; Lectr., Catholic Univ., 1-59; Lectr., Johns Hopkins Univ., 1952-58; Prin. Rsch. Investigator in Patent Utilization and Related Rsch., Geo. Wash. v., 1954—. Consultant, United Mine Workers Welfare and Retirement Fund, 1959—. Hon. Pos.: Chmn., Comm. for Armenian Collection of the Libr. of Cong. Mem.: Fellow, Am. Pub. Health Assn.; Am. Stat. Soc.; Tchrs. of Preventive Med.; Med. Sociologists. Author: Environment and Growth, 1934; Survey of Disabled Vets, Analysis of Statistical Data on Incomes, Employment and Other Characteristics, 1956; A Health Study in Kit Carson County, Colorado, 1961. Contbr. to: Jour. of Am. Stat. Assn.; The Jour. of the Patent Office Soc.; Jour. of the Am. Pub. Health Assn., and others. Areas of Rsch.: Medical Economics; Problems of Health Security; Actuarial and Statistical Methods with Respect to Health and Disability Insurance.

SANDERS, James Meadows (Ph.D.), Dept. of Nat. Sci., Chicago Tchrs. Coll., Chicago 21, Ill. ZOOLOGY. b. Knoxville, Tenn., Nov. 18, 1905. s. Frederick Oliver and Frances A. (Meadows) S. Edn.: A.B., William Jewell Coll., 1926; M.A., Univ. of Ill., 1927; Ph.D., ibid., 1931. m. Grace Komarek of Chicago, Ill., May 29, 1929. d. Gustaf and Cecilia Komarek. c.: Mark; Peter; Thomas. Exp.: Instr., Zool., Univ. of N. H., 1929-30; Hd., Biol., Ark. A. and M., 1931-32; Hd., Biol., Cumberland Univ., 1934-36; Hd., Biol., Okla. Bapt. Univ., 1936-37; Hd., Biol., Sioux Falls Coll., 1937-39; Chicago Tchrs. Coll., 1939—; Mo. Univ., Med., 1944-46, C.T.C., 1946—; Prof. of Zool., 1959. Mem.: A.A.A.S.; A.A.U.P.; Nature Conservancy; Grassland Rsch. Fdn.; N.A.B.T.; Ill. Soc. for Med. Rsch.; Phi Sigma; Sigma Xi. Ph.D. Dissertation: Devel. of Thyroid Gland in Urodeles.

SANDERS, Merritt William (Ph.D.), Chmn., Dept. of Psychol., Dir., Bur. of Measurements, Kan. St. Tchrs. Coll., Emporia, Kan. Home Add.: 1614 West St. Emporia, Kan. PSYCHOLOGY. b. Avoca, Pa., Jan. 28, 1912. s. Howard L. and Lydia (Eames) S. Edn.: A.B., Drew Univ., 1940; B.D., Drew Theol. Sem., 1943; Ph.D., N. Y. Univ., 1950. m. Gundie Holly, June 6, 1942. c.: Marjorie Ruth. Exp.: Asst. Fellow, Instr., Drew Univ., 1938-45; Instr. in Psychol., N. Y. Univ., 1945-50; Asst. Prof., Assoc. Prof. Psychol., Kan. St. Tchrs. Coll., Emporia, 1950-53; Prof., Hd. of Dept. of Psychol., Dir. of Bur. of Measurements, ibid., 1953—. Mem.: Kappa Delta Pi; Phi Delta Kappa; Am. Psychol. Assn.; Am. Assn. Adv. of Sci.; Kan. St. Tchrs. Assn.; Kan. Soc. for Exceptional Children; Kan. Psychol. Assn.; Emporia Country Club. Areas of Rsch.: I.B.M. Student Record Procedures; Tests and Measures; Personnel.

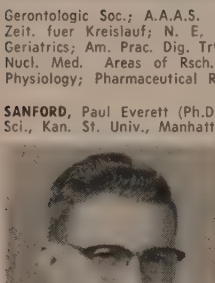
SANDS, Frederick Waddington (Mr.), Industrial Hygienist, U. S. Rubber Co., N. Y. 20, N. Y. Home Add.: 16 Bayard St., Larchmont, N. Y. INDUSTRIAL HYGIENE. b. Boston, Mass., Nov. 1, 1914. s. William Jacob and Florence (Waddington) S. m. Carmen Torres, Sept. 14, 1936. c.: Frederick. Exp.: Asst., Dept. of Industrial Hyg., Harvard Schl. of Pub. Health, 1937-38; Chemist, Lab. of Industrial Hyg., Fidelity and Casualty Co., N. Y., 1938-42; Industrial Hygienist, U. S. Rubber Co., N. Y., 1942—. Mem.: Am. Industrial Hyg. Assn.; Am. Pub. Health Assn.; Br. Occup. Hyg. Soc.; Royal Soc. of Health; Fellow, A.A.A.S.; Industrial Med. Soc. (Uruguay); Sigma Alpha Epsilon. Contbr. to: Jour. Industrial Hygiene and Toxicology; Industrial Hyg. Assn. Jour. Areas of Rsch.: Evaluation of Contaminants in Industrial and Community Environment; Toxicology.

SANDUS, Oscar (Ph.D.), Rsch. Phys. Chemist, Conduction Corp., 343 S. Main, Ann Arbor, Mich. Home Add.: 2540 Pamela Ave., Ann Arbor, Mich. PHYSICAL CHEMISTRY. b. N.Y.C., July 29, 1924. s. Samuel and Helen (Zwei) S. Edn.: B.S., Univ. of Ky., 1949; M.S., Univ. of Chicago, 1950; Ph.D., Ill. Inst. of Tech., 1955. m. Esther Bernice Herman, Dec. 22, 1946. c.: Deborah Sharon; Samuel Ira; Aaron Joel. Exp.: Asst. Chemist, Argonne Natl. Lab., Lemont, Ill., 1955-58; Assoc. Research Phys. Chem., Univ. of Mich. Radiation Lab., 1958-62; Rsch. Phys. Chemist, Conductron Corp., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Ill. St. Acad. Sci.; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Physical Chem.; Industrial and Engrng. Chem. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Thermodynamics and Properties of Non-electrolytic Solutions; Uranium, Fuel and Feed Materials Process Development; Dielectric Relaxation; Electromagnetic Materials Research.



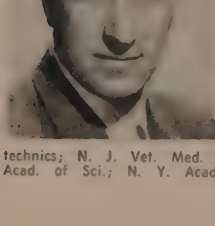
SANEN, Franz Joseph (M.D.), Med. Dir., E. Fougera and Comp., Inc., Cantiague Rd., Hicksville, N. Y. Home Add.: 92 Colonial St., East Northport, N. Y. INTERNAL MEDICINE, CARDIOLOGY. b. Dorsten, Germany, Mar. 15, 1915. s. Johannes and Helene (Koenig) S. Edn.: Certification in Internal Med., Univ. Jena, Germany, 1947. m. Ilse Masche, Dec. 27, 1941. c.: Marion. Exp.: Chief Med. Serv., Polyclinic, Muehlhausen, Germany, 1948-51; Chief Diagnostic Rad. and Cardiolog. Dept. Health Insur., Cologne, Germany, 1952-53; Dir. Med. Serv., State Hosp., Taunton, Mass., 1955-59; Med. Dir., E. Fougera and Co., Inc., Hicksville, N. Y., 1959—. Hon. Pos.: Chmn., Co. Med. Soc., Muehlhausen, Germany. Mem.: German Soc. of Internal Med.; German Soc. of Cardiac and Circulatory Rsch.; Am. Heart Assn.; Gerontologic Soc.; A.A.A.S. Contbr. to: Wiener. Klin. Wochens; Zeit. fuer Kreislauf; N. E. Jour. Med.; Jour. Urol.; Dis. Chest Geriatrics; Am. Prac. Dig. Trt.; Am. Jour. Roentgen., Rad., Ther., Nucl. Med. Areas of Rsch.: Internal Med.; Cardiology; Renal Physiology; Pharmaceutical Rsch.

SANFORD, Paul Everett (Ph.D.), Prof., Nutritionist, Dept. Poultry Sci., Kan. St. Univ., Manhattan, Kan. Home Add.: 343 N. 14th St., Manhattan, Kan. POULTRY NUTRITION AND PHYSIOLOGY. b. Milford, Kan., Jan. 14, 1917. s. Charles R. and Ina B. (Kneeland) S. Edn.: B.S., Kan. St. Univ., 1941; M.S., Iowa St. Univ., 1942; Ph.D., ibid., 1949. m. Helen Louise Crenshaw, Oct. 31, 1942. c.: Paula Louise; Patricia Kathleen; Carolyn Ruth. Exp.: Rsch. Fellow, Dept. Poul. Husb., Iowa St. Univ., 1941-42; Sr. Fellow, Rsch. Asst., Grad. Asst., ibid., 1946-49; Assoc. Prof., Nutritionist Dept. Poul. Science, Kan. St. Univ., 1949-60; Prof., ibid., 1960—. Hon. Pos.: Pres., Kan. St. Univ. Chapt., Phi Kappa Phi; Chmn., Faculty Advisors, Alpha Zeta, Kan. St. Univ. Mem.: A.A.-A.S., Fellow '61; Sigma Xi; Gamma Sigma Delta, Secy., 1958-61, Pres., 1962-63; Grad. Coun.; Faculty Senate. Contbr. to: Poultry Sci.; Sci. Archives of Biochem. and Biophys. War Rec.: U. S. Army Med. Corps, 1943-46. Areas of Rsch.: Poultry Nutrition and Physiology; Antibiotics, B-12; Vitamin A; Unidentified Growth Factors; Field Hemorrhagic Syndrome; Flavor and Aroma of Poultry Meat; Shell Quality of Eggs; Quantity and Quality of Protein.

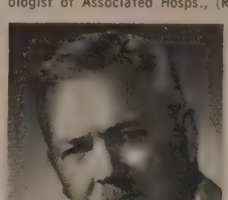


SANMANN, Madge Lucile Stewart (Ph.D.), Hd. of Dept. of Sociol., Monmouth Coll., Monmouth, Ill. Home Add.: 315 South Fifth St., Monmouth, Ill. SOCIOLOGY. b. Monmouth, Ill., Aug. 5, 1899. d. John Cecil Stewart and Louisa P. (Schultz) S. Edn.: A.B., Monmouth Coll., 1921; B.S., Univ. of Ill., 1923; M.A., Northwestern Univ., 1940; Ph.D., ibid., 1948; Postgrad., Univ. of Chicago. m. Frank Paul Sanmann, 1924. Exp.: Counselor, McKinley Fdtn., Univ. of Ill., 1923-42; Hd., Psychol. Dept., Drury Coll., Springfield, Mo., 1942-43; Dir. of the Inst. of Oriental Students for the Study of Human Relations, Chicago, Ill., 1943-49; Hd., Dept. of Sociol., Monmouth Coll., 1949—. Mem.: A.A.-U.W., Pres., 1959-61; Am. Sociol. Assn.; Pi Lambda Theta. Areas of Rsch.: Personnel and Guid.; Intergroup Relationships; Edn. for Family Living; Religious Edn.

SANTAMARINA, Enrique (Ph.D.), Assoc. Prof. of Animal Pathol., Rutgers Univ., New Brunswick, N. J. Home Add.: 76 Runyon Ave., Somerset, N. J. PATHOLOGY; PHYSIOLOGY OF REPRODUCTION; ENDOCRINOLOGY. b. Fonsagrada, Lugo, Spain, Aug. 1, 1910. s. Jose and Dominga (Becerra) S. Edn.: B.A. and B.Sc., Univ. of Santiago, Spain, 1939; D.V.M., Univ. of Madrid, Spain, 1943; M.Sc., Rutgers Univ., 1950; Ph.D., Ohio St. Univ., 1952. m. Phyllis Litwin, Sept. 22, 1952. Exp.: Vet. Inspector (Federal), Spain; 1943-47; Rsch. Assoc., Coll. of Vet. Med., Ohio St. Univ., 1952-53; Rsch. Asst., Physiol., ibid., 1953-54; Rsch. Assoc., Coll. of Med., ibid., 1954-55; Rsch. Assoc., Agric. Exptl. Sta., Rutgers Univ., 1956-58; Assoc. Prof. of Pathol., ibid., 1958—. Mem.: Internatl. Soc. of Vets. and Zootechnics; N. J. Vet. Med. Assn.; Phi Zeta; Sigma Xi; Ohio Acad. of Sci.; N. Y. Acad. of Sci.; Am. Assn. Adv. Sci.; Endocrine Soc. Contbr. to: Acts of 2nd International Vet Cong.; No. Am. Vet.; Archivos de Vet. Practica; Am. Jou of Vet. Rsch.; Acta Histochemica; Can. Jour. of Biochem. an Physiol.; Zootech.; Jour. Am. Vet. Med. Assn.; Acta Endocrinolo gica. Areas of Rsch.: Physiology of Reproduction; Histopatho ogy; Nutritional Diseases; Animal Tumors.

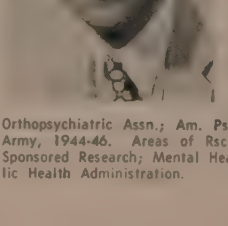


SANTE, LeRoy (M.D.), Prof. of Radiol., St. Louis Univ., and Radiologist of Associated Hosps., (Ret.), St. Louis, Mo. Bus. Add.: 63 No. Grand, St. Louis 3, Mo. Hom Add.: 308 Orchard Ave., Webste Groves, Mo. RADIOLOGY. b. St Louis, Mo., Mar. 31, 1890. s Aug. H. and Laura (Woodrow) S Edn.: M.D., Wash. Univ., Med Schl., 1913. m. Jewel Hartt, Jul 2, 1914. c.: LeRoy, Jr. (dec.) Elsie Eleanor S. Weaver; H. Evatt Exp.: Intern, St. Louis City Hosp 1913-14; Dir., Dept. Radiol., St Louis City Hosp., 1919-45; Dir. Radio. Depts. of St. Louis Hosp Grp.; St. Mary's Hosp., Firmi Desloge Hosp., Mt. St. Rose Hosp (chest); Cardinal Glennon Mem Hosp. for Children, 1919-62; Prof of Radiol., St. Louis Univ., 196 —. Hon. Pos.: Co-Chmn., Loca Civil Defense Com. in Radiol. Pres., St. Louis Med. Soc.; Pres. St. Louis City Hosp. Alumni Assn.; 1st Vice-Pres., Am. Radium Soc.; 1st Vice-Pres., Am. Roentgen Ray Soc.; Pres., St. Loui Radiol. Soc.; Hon. Lectureship, Phi Rho Sigma, 1952. Mem. Am. Roentgen Ray; Am. Radium Soc.; Radiol. Soc. of No Am.; Am. Coll. of Physicians; British Inst. of Radiol.; St Louis Soc. of Radiol.; St. Louis Med. Soc.; St. Louis Alumn Assn. of City Hosp.; Phi Rho; Sigma Xi. Author: Manual o Roentgenological Technique, 19th Rev. Ed., 1959; Spanish and Portuguese Translations: Principles of Roentgenological Interpretation, 12th Rev. Ed., 1960, Spanish and Portuguese Translations; The Chest Roentgenologically Considered, 1930; X-ray Examinations in Lobar Pneumonia, 1928; Radiology for Nurses 1946; Principles and Practice of Radiation Therapy, 1949; Atla of Miniature Roentgenograms, 1958. War Rec.: 1st Lt., M.C. U. S. Army, 1918-19. Gen. Int.: Gold Medal Award from Am Coll. Rad., 1959, for outstanding work in Radiology. Areas o Rsch.: Roentgenology of the Chest.



SANTISTEBAN, George Anthony (Ph.D.), Asst. Prof. of Physiology Schl. of Med., Univ. of Sou. Calif., Los Angeles 7, Calif. Home Add.: 16113 Candlelight Dr., Whittier, Calif. NEUROANATOMY NEUROPHYSIOLOGY, ENDOCRINOLOGY, MICROSCOPIC ANATOMY RADIATION BIOLOGY, VERTEBRATE ZOOLOGY. b. Cananea, So nora, Mex., Apr. 12, 1918. s. Antonio and Refugio (Duron) S Edn.: B.A., Univ. of Mont., 1945; M.A., Univ. of Utah, 1949 Ph.D., ibid., 1951. m. Barbara Johnston, 1942. c.: Stephani Lee; Adella Marie; Catherine Lou. Exp.: Instr., Schl. of Med. Univ. of Utah, 1951-53; Asst. Prof., Med. Coll. of Va., 1953-54 Asst. Prof., Anat., Univ. of Sou. Calif., 1954-59; Asst. Prof Physiol., ibid., 1959—. Mem.: A.A.A.S.; Am. Assn. of Anato mists; Biol. Hon. Soc., Phi Sigma; Endocrinology Soc. Contbr to: Anatomical Rec.; Quart. Jour. for Studies on Alcohol; En docrinology. Areas of Rsch.: Stress Physiology, the Response of the Endocrine System, Particularly the Adrenal Cortex, to Stressful Stimuli and the Interrelationship Between the Endocrine Adaptations to Stress and the Development of Malignant and Other Degenerative Diseases; Biology of Lymphatic Tissue, Factors Controlling Growth and Involution of Lymphatic Tissue and Bi ological Significance of Lymphocytolytic Response.

SAPIR, Philip (Mr.), Chf., Rsch. Grants and Fellowships Branch, Natl. Inst. of Mental Health, Bethesda 14, Md. Home Add.: 7106 Broxburn Dr., Bethesda 14, Md. RESEARCH ADMINISTRATION. b. Ottawa, Can., Nov. 8, 1916 s. Edward and Florence (Delson) S. Edn.: B.S., Yale Univ., 1938 m. Marjorie V. Peterson, 1948 c.: P. Eric. Step-children: M. Carol; James B.; Nancy A.; Donald W.; Susan J.; Linda J. Exp.: Jr. Pub. Health Rep., U. S. Pub Health Serv., Bethesda, Md., 1944; Information Specialist and Scientific Writer, ibid., Wash., D. C., 1946-48; Professional Asst., Natl. Rsch. Council, Wash., D. C., 1948-49; Pub. Health Rsch. Analyst, Natl. Inst. of Mental Health, Wash., D. D. and Bethesda, Md. 1949-54; Chief, Research Grants and Fellowships, ibid., Bethesda, 1954—. Mem.: A.A.A.S.; Am. Orthopsychiatric Assn.; Am. Psychosom. Soc. Serv. Rec.: U. S Army, 1944-46. Areas of Rsch.: Administration of Government Sponsored Research; Mental Health Research Administration; Public Health Administration.

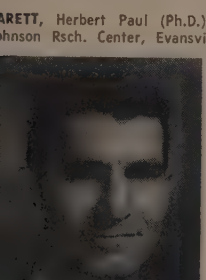


SARAVIS, Calvin Albert (Ph.D.), Staff, Protein Found., Inc., 281 South St., Jamaica Plain, Mass. Home Add.: 10 Angela Rd., Framingham, Mass. IMMUNOLOGY, SEROLOGY, PROTEIN FRACTIONATION AND ANALYSIS. b. Englewood, N. J., Feb. 27, 1930. s. Max and Eve (Adler) S. Edn.: A.B., Syracuse Univ., 1951; M.S., W. Va. Univ., 1955; Ph.D., Rutgers Univ., 1958. m. Judith Alice Bloch, Sept. 12, 1954. c.: Susan Ilene; Peter Jay; Ellen Ruth. Exp.: Staff, Blood Grouping Lab., Boston, Mass., 1958-59; Staff, Protein Fdtn., Inc., Jamaica Plain, Mass., 1959—; Med. Rsch. Collab., Brookhaven Natl. Lab., Upton, L. I., 1962-63; Consultant, Millipore Filter Corp., Bedford, Mass., 1959—; Consult., Ivan Sorvall, Inc., Norwalk, Conn., 1960—; Consult., Peter Bent Brigham Hosp., Boston, Mass., 1961—.

Mem.: A.A.A.S.; Am. Assn. of Blood Banks; Sigma Xi. Contbr. to: Proc. VIII Congress Intr. Soc. of Blood Transfusion; Jour. Neuropsychiatry; Ann. N. Y. Acad. Sci. Areas of Rsch.: The Isolation of a Blood Factor Responsible for Schizophrenia; The Isolation and Assay of Growth Hormone in Blood; the Study of the Autoimmune Processes.

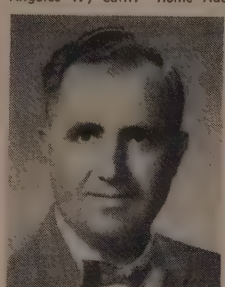
ARE, Ransom Lester (D.C.), Professional Dir., Doctors' Mutual Service Co., 1000 E. Broadway, Glendale, Calif. Home Add.: 3125 Karen Ave., Long Beach 8, Calif. CLINICAL NUTRITION AND PHARMACOLOGY. b. Denver, Colo., May 18, 1924. s. Lester A. and Gladys (Allen) S. Edn.: B.A., Univ. of Colo., 1946; M.S., Univ. of Sou. Calif., 1952; D.C., Los Angeles of Chiropractic, 1950. Hon. Deg.: D.P.H., Golden State Univ., 1950. m. Jane Kalbaugh, Aug., 1950. c.: Cynthia Jane; Deborah Lynn. Exp.: Assoc. Prof. of Nutrition, Los Angeles Coll. of Chiropractic, 1949-51; Dean, Hollywood Coll., 1951-53; Assoc. Prof. of Nutrition, Los Angeles Coll. of Chiropractic, 1955—; Dir., Doctors' Mutual Serv. Co., Glendale, Calif., 1957—. Mem.: Am. Assn. for Adv. of Sci.; Calif. Acad. of Sci.; Pi Kappa Alpha; Delta Sau Alpha; Phi Epsilon Phi; Optimist Club. Author: Guide to Nutrition in Endocrinology, 1961; Nutrtion and Physcal Medicine Applications, 1962. Serv. Rec.: U. S. Air Force, 1942-45. Areas of Rsch.: Clinical Nutrition.

ARETT, Herbert Paul (Ph.D.), Dir. of Nutritional Rsch., Mead Johnson Rsch. Center, Evansville 21, Ind. Home Add.: 854 St. James Blvd., Evansville 14, Ind. NUTRITION AND BIOCHEMISTRY. b. Brooklyn, N. Y., Feb. 5, 1916. s. Max and Mary (Goodman) S. Edn.: B.S., Brooklyn Coll., 1936; M.S., Cornell Univ., 1937; Ph.D., Duke Univ., 1942. m. Helen Deborah Statsinger, Dec. 26, 1948. c.: David Charles; Mark Edward; Joshua Daniel. Exp.: Instr. in Biochem., Duke Univ., 1942-43; Asst. Prof. and Rsch. Assoc. in Biochem., Ore. St. Coll., 1943-45; Rsch. Assoc. in Biochem., Med. Rsch. Lab., Edgewood Arsenal, Md., 1945; Asst. Prof., Tulane Univ., 1946-51; Assoc. Prof. of Biochem. and Med., ibid., 1951; Dir. of Nutritional Rsch., Mead Johnson, Evansville, Ind., 1951—. Hon. Pos.: Secy. and Chmn., South-

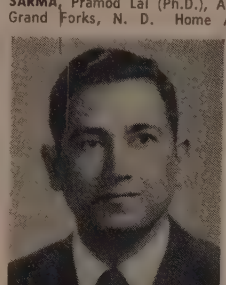


n Sec. of Soc. for Experimental Biol. and Med.; Chmn., Ind.-. Border Sec. of Am. Chem. Soc.; Tech. Advry. Grp. Comm. Nutrn. of Am. Acad. Ped. Mem.: A.A.A.S.; N. Y. Acad. of is.; Am. Soc. of Biol. Chem.; Am. Inst. of Nutrition; Am. c. Clin. Nutrn.; Am. Chem. Soc.; Soc. for Experimental Biol. d Med.; R.E.S.A.; Phi Beta Kappa; Sigma Xi; Phi Lambda silon. Contbr. to: Jour. of Nutrition; Jour. of Biological em.; Archives of Biochemistry; Proceedings of the Soc. for perimental Biol.. and Med.; Jour. of Clin. Investigation; Jour. Bacteriol.; Annual Rev. of Biochem. Gen. Int.: Award of nor, Brooklyn Coll., Distinguished Alumnus Award, 1959. eas of Rsch.: Metabolism of Nicotinic Acid, Assays for B tamins, Relation of Protein and B Vitamins, Bacterial Utiliza- n of Vitamins, Tryptophan Metabolism in Man, Carbohydrates Nutrition, Protein Evaluation, Zinc in Chick Growth, and Nu- tional Interrelationships.

SARIAN, Jirair Nerses (M.D.), Radiologist, 727 W. 7th St., Los Angeles 17, Calif. Home Add.: 5305 Shenandoah Ave., Los Angeles 56, Calif. RADIOLOGY AND NUCLEAR MEDICINE. b. Aintab, Room Kala, Turkey, Aug. 16, 1915. s. Nerses and Noritza (Philipbosian) S. Edn.: B.A.,, Med., Am. Univ. of Beirut, Lebanon, 1937; M.D., Lausanne Univ., Switzerland, 1940. m. Jessie Helen Maghakian, Jan. 28, 1950. c.: Norita; June; John. Exp.: Chf. Asst., Tchng. and Rsch. Dept. of Radiol., Univ. of Lausanne, Switzerland, 1943-46; Fellowship, Univ. of Kan., Kan. City, Kan., 1948-49; Abstractor, Am. Jour. of Roentgenol., Calif., 1950—; Radiologist, Los Angeles, Calif., 1951—. Hon. Pos.: Chmn. of Haigazian Coll., Calif. Comm. Mem.: Am. Med. Assn.; Pan-Am. Med. Assn.; Am. Coll. of Radiol.; Am. Assn. for the Adv. of Sci.; Geriats. Soc.; Town Hall, Los Angeles. Author: L'Affinite des Ultravirus, 1940; The Development of the Scientific Method, 1949. Contbr. to: Swiss Jour. of Med.; Radiologia Clinica; Am. Jour. of Roentgenol.; Excerpta Medica. Gen. Int.: Demonstration of Stimulation of Phagocytosis in Human Blood by Small Doses of Roentgen Radiation. Areas of Rsch.: Affinity of Viltrable Viruses and Reaction of Leueocytes, Phagocytosis and Irradiation, Opsonins, and Radiology.

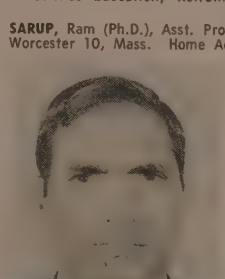


SARMA, Pramod Lal (Ph.D.), Asst. Prof. of Chem., Univ. of N. D., Grand Forks, N. D. Home Add.: 2620 Sixth Ave., N., Grand Forks, N. D. ANALYTICAL CHEMISTRY. b. Gandhia, India, Sept. 1, 1916. s. Amrit Lal and Subheswari (Devi) S. Edn.: B.Sc., Calcutta Univ., India, 1939; M.Sc., Benares Univ., India, 1946; M.S., L.S.U., 1950; Ph.D., ibid., 1951. m. Bina Pani Devi, May 25, 1947. c.: Gita Devi; Rita Devi; Rizu Lal. Exp.: Asst. Prof., A. & M. Coll. of Tex., 1955-58; Asst. Prof., Eastern Wash. St. Coll., 1958-59; Asst. Prof., Univ. of N. D., 1959—. Mem.: A.C.S.; Sigma Chi. Contbr. to: Mikrochimica Acta; Analytica Chimica Acta; The Sugar Jour.; Proc. Internatl. Soc. of Cane Sugar Technologists. Areas of Rsch.: Microanalysis with Special Emphasis on Spectrophotometry, Chemical Oscillometry, Amperometry and Chromatography.

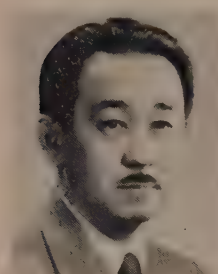


SARNER, David Samuel (Ed.D.), Dean of Instruction, Keene Tchrs. Coll., Keene, N. H. Home Add.: 85 Winchester St., Keene, N. H. SCIENCE EDUCATION (EMPHASIS ON BIOLOGY). b. Jersey City, N. J., Dec. 25, 1910. s. Henry H. and Anna (Fruchter) S. Edn.: B.S., Bucknell Univ., 1933; M.S., ibid., 1949; Ed.D., Cornell Univ., 1954. m. Irma Dostilio, Sept. 14, 1946. c.: Patricia Jean; Deborah Lynn. Exp.: Owner-Mgr., Retail Women's Wear Stores, Elmira, N. Y., and Corning, N. Y., 1933-42; Tchr., Hd. of Dept. of Sci., Trumansburg Central, N. Y., 1949-53; Grad. Asst., Coll. of Edn., Cornell Univ., 1953-54; Asst. Prof., Assoc. Prof. of Sci. Edn., Temple Univ., 1954-61; Dean of Instrn., Keene Tchrs. Coll., 1961—. Mem.: Natl. Sci. Tchrs. Assn.; Am. Assn. Adv. Sci.; Assn. for Educators of Tchrs. of Sci.; Assn. of Organizations for Tchr. Edn.; Natl. Edn. Assn.; Sigma Alpha Mu; Kappa Phi Kappa; Phi Kappa Phi; Kiwanis; Phi Delta Kappa; Fellow, A.A.A.S., 1961. Contbr. to: School Science and Math.; Clearing House; Science Tchr.; Sci. Edn. Serv. Rec.: U. S. Army, 1942-47. Areas of Rsch.: Curricular Program Changes in Science Education; Retraining of the In-Service Teacher.

SARUP, Ram (Ph.D.), Asst. Prof. of Phys., Coll. of the Holy Cross, Worcester 10, Mass. Home Add.: 3 Sun Valley Dr., Worcester 9, Mass. SOLID STATE SPECTROSCOPY. b. V. Mongash Pur, Delhi Sta., India, Aug. 7, 1928. s. Badlu Ram and Sarjo (Bai) Rana. Edn.: B.Sc. (Hons.), Hindu Coll., Delhi, India, 1949; M.Sc., Delhi Univ., Delhi, India, 1951; Ph.D., Johns Hopkins Univ., 1959. m. Joy Davis, Mar. 14, 1959. c.: David Wayne. Exp.: Lectr., D. Jain Coll., Baraut, India, 1951-53; Lectr., Vaish Coll., Punjab, India, 1953-54; Jr. Instr., Johns Hopkins Univ., Balt., Md., 1954-58; Rsch. Asst., ibid., 1958-59; Asst. Prof., Valparaiso Univ., Valparaiso, Ind., 1959-60; Scient. Off., Atomic Energy Estab., Bombay, India, 1960-61; Asst. Prof., Coll. of the Holy Cross, 1961—. Mem.: Am. Assn. Phys. Tchrs.; Sigma Xi. Contbr. to: Jour. of Chem. Phys. Areas of Rsch.: Rare Earth Spectroscopy, Crystallography.



SASAKI, Joseph Donald (Dr.), Optometrist, 304½ South State St., Ann Arbor, Mich. Home Add.: 4320 Fresno Lane, Ann Arbor, Mich. OCULAR SCIENCE, OCULAR-NEUROPHYSIOLOGY, GERONTOLOGY. b. Fresno, Calif., January 7, 1912. s. Tom Shigematsu and Fusa (Kishi) S. Edn.: A.B., Univ. of Calif., 1938; O.D., ibid., 1938. Hon. Deg.: D.O.S., Beta Sigma Kappa, 1960. m. Wakako M. Morimeio, July 31, 1937. c.: Edwin Fusaichi. Exp.: Instr., Univ. of Mich., 1944-45; Practitioner and Clinical Investigator, Ann Arbor, Mich., 1945—. Mem.: Mem. of Royal Soc. of Hlth., London, England; Optimist Club, Pres., 1961-62; Gerontological Soc.; Acad. of Psychosomatic Med.; Am. Optometric Assn.; Mich. Optometric Assn.; Am. Nutrition Soc.; Mich. Acad. of Sci.; A.A.A.S.; Wash. Inst. of Med.; Omega Delta; Beta Sigma Kappa; Optimist Club. Contbr. to: Optometric Weekly; Mich. Optometrist; Jour. of Gerontology. General Interest: Emil Arnold Science Award, 1950, Michigan Optometric Assn.; Beta Sigma Kappa Scientific Award (Mu Chapter), 1960. Areas of Rsch.: Ocular Neuro-Muscular Involvement in Systemic States; Ocular Neuro-Muscular Involvement in Psychosomatic States; Ocular Neuro-Muscular Involvement in Biological Aging; Reduction of Induced Myopia; Reduction of Induced Presbyopia; Improvement of Binocular Fusion Function on Neuro-Physiological Basis.



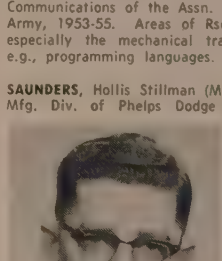
SASLAW, Milton S. (M.D.), Dir. of Med. Rsch., Natl. Children's Cardiac Hosp., 4250 West Flagler St., Miami 44, Fla. Home Add.: 8920 S.W. 51st St., Miami 55, Fla. CARDIOVASCULAR RESEARCH. b. Brooklyn, N. Y., May 1, 1911. s. Isidor and Esther (Wallach) S. Edn.: B.S., N.Y. Univ., 1931; M.D., Univ. and Bellevue Hosp., Med. Coll., 1934. m. Adeline Sokoloff, Apr. 28, 1937. c.: Shari Lenore; Gerald Evan. Exp.: Private Practice, Miami, Fla. ,1937-51; Dir. of Med. Rsch., Natl. Children's Cardiac Hosp., ibid., 1951—. Hon. Pos.: Fellow, Am. Coll. of Cardiology; Fellow, Am. Coll. of Chest Physicians. Mem.: Am. Med. Assn.; Soc. of Am. Bacteriologists; Am. Rheumatism Assn.; Am. Publ. Health Assn.; Council on Rheumatic Fever and Congenital Heart Disease; Southern Soc. for Clin. Rsch.; Soc. of Am. Microbiology. Contbr. to: J.A.M.A.; Circulation, Am. J. Dis. Child.; J. Infect. Dis.; Public Health Reports. Serv. Rec.: U. S. Army Med. Corps, 1940-45. Areas of Rsch.: Research in cause, diagnosis and prevention of rheumatic fever; research in cause of congenital heart disease.

SATER, Melvin H. (Mr.), Supvr., Polymer-Binder Rsch., Magnetic Products Lab., Minn. Mining and Mfg. Co., 400 McKnight Rd., St. Paul, Minn. Home Add.: 2030 East Calif. Ave., St. Paul 19, Minn. APPLIED RESEARCH MAGNETIC TAPE COATINGS FOR COMPUTERS, VIDEO, AUDIO RECORDING. b. Madison, Wis., May 3, 1923. s. Melvin H., Sr. (dec.) and Idell (Olson) S. Edn.: B.S., Univ. of Wis., 1945. m. Billie Lu Keese, June 12, 1948. c.: Robert Allan; James Edward; Lee Ann. Exp.: Polymer Rsch. and Dev. Chem., Minn. Mining and Mfg., Special Products Lab., St. Paul, Minn., 1945-54; Sr. Coating Eng., Minnesota Mining and Mfg., Magnetic Prods. Lab., ibid., 1954-61; Supvr. Polymer-Binder Rsch., ibid., 1961—. Mem.: A.A.A.S.; A.C.S. Areas of Rsch.: Addition Polymerization Research, Low Temperature Polymerization Systems, Photopolymerization Catalysts, Protective Coatings.

SASKI, Witold (Pharm. D.), Assoc. Prof. of Pharm., Univ. of Neb., Coll. of Pharm., Lincoln 8, Nebr. Home Add.: 2600 S. 46th St., Lincoln 6, Nebr. PHARMACEUTICAL TECHNOLOGY. b. Poland, Dec. 4, 1909. s. Jerzy and Teresa F. J. (Marszalski) S. Edn.: B.A., R. Traugutt Gymn., Brest, Poland, 1927; B.Sc., Univ. of Nebr., 1954; M.Pharm., Stefan Batory Univ., Vilna, Poland, 1933; Dr. Pharm., Bologna Univ., Bologna, Italy, 1946. m. Julia M. Zaturski, Dec. 26, 1950. Exp.: Asst. Prof., Mont. Sta. Univ., Missoula, Mont., 1951-52; Asst. Prof., Univ. of Neb., Lincoln, Nebr., 1952-55; Assoc. Prof. of Pharm., Ibid., 1955—. Mem.: Am. Pharml. Assn.; Am. Assn. for the Adv. of Sci.; The Pharml. Soc. of Gt. Brit.; The Instit. of Optical Sci.; Sigma Xi; Am. Assn. of Colls. of Pharm; Rho Chi; Kappa Psi. Co-Author: Experimental Pharmaceutical Technology, 1961. Contbr. to: Drug Standards; Jour. of Pharm. and Pharmacol.; Am. Jour. of Pharml. Edn.; Jour. of Pharml. Scis. Serv. Rec.: Polish Army, 1941-47. Areas of Rsch.: Macromolecules, Surface Active Agents, Drug Stability, Adsorption.

SATTLEY, Kirk (Mr.), Sr. Staff Mem., Computer Assocs., Inc., 44 Winn St., Woburn, Mass. DIGITAL COMPUTER PROGRAMMING. b. Chicago, Ill., Feb. 28, 1928. s. H. Cody and Kathleen (Kirkbride) S. Edn.: Ph.B., Coll. of the Univ. of Chicago, 1947; S.B., Univ. of Chicago, 1950. Exp.: Rsch. Asst., Univ. of Chicago, 1952-53; Sr. Programmer, Labs. for Appl. Scis., Univ. of Chicago, 1956-61; Sr. Staff Mem., Computer Assocs., Inc., Woburn, Mass., 1961—. Mem.: Assn. for Computing Machinery; Assn. for Symbolic Logic; Am. Assn. Adv. Sci. Contbr. to: Communications of the Assn. for Comp. Mach. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Digital Computer Programming, especially the mechanical translation of formalized languages, e.g., programming languages.

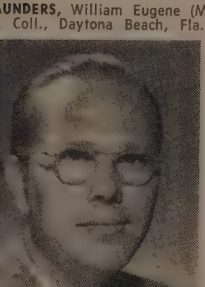
SAUNDERS, Hollis Stillman (Mr.), Dir. of Rsch. and Engrng., Inca Mfg. Div. of Phelps Dodge Copper Prod., Corp., New Haven Ave., Fort Wayne, Ind. Home Add.: 3406 Chancellor Dr., Fort Wayne, Ind. CERAMIC TECHNOLOGY AND ENGINEERING. b. Alfred, N. Y., July 5, 1918. s. Willis G. and Lucile B. (Stillman) S. Edn.: B.S., N. Y. State Coll. of Ceramics, Alfred Univ., 1940; m. Lorayne M. Darr, 1945. c.: Scott; Stephen; Douglas. Exp.: Ceramic Engr., Enamel Products Co., Cleveland, Ohio, 1940-42; Ceramic Engr., Am. Central Mfg. Co., Connersville, Ind., 1946—; Rsch. Engr., The O. Hommel Co., Pittsburgh, Pa., 1946-50; Dir. Frit Rsch., ibid., 1950-56; Dir. of Labs., ibid., 1956-59; Dir. App. Rsch. and Dev., Inca Mfg. Div. Phelps Dodge Copper Prod. Corp., Fort Wayne, Ind., 1959-62; Dir. of Rsch. and Engrng., ibid., 1962—. Hon. Pos.: Past Chmn. Ceramic-Metal Systems Div., Am. Ceramic Soc.; Fellow, Am. Ceramic Soc.; Past Chmn., Sub-Comm., Am. Soc. for Testing Matls.; Past Chmn., Tech. Publications Comm., Porcelain Enamel Inst. Mem.: Am. Ceramic Soc.; Am. Soc. for Testing Materials; Porcelain Enamel Inst.; Natl. Electrical Mfgrs. Assn.; Am. Assn. for the Adv. of Sci.; Lambda Chi Alpha; Keramos; C. of C. Contbr. to: Bull. of the Am. Ceramic Soc.; Jour. of Am. Ceramic Soc.; Ceramic Indus. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Ceramics, Ceramic Materials, Ceramic Coatings for Metals, Cermets, Flame Sprayed Cermets.



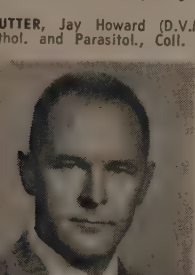
SAUNDERS, John Bertrand de Cusance Morant (Mr.), Dean, Schl. of Med., Univ. of Calif.; Univ. of Calif. Med. Center, San Francisco 22, Calif. Home Add.: 1412 Willard St., San Francisco 17, Calif. ANATOMY, BIOMECHANICS, BIOLOGY. b. Grahamstown, S. Africa, July 2, 1903. s. Col. Frederick Anastasius and Lucy (Meiklejohn) S. Edn.: M.B., Ch.B., Univ. of Edinburgh, 1925; m. Alison Maxwell Wood, July 2, 1930. c.: Alison Beatrix S. Duxbury; Margery Holburne S. Hellmann. Exp.: Demonstrator Anat. and Physiol., Univ. of Edinburgh, 1925-30; Lectr., Applied Anat., Dunfermline Coll. of Phys. Culture and Hygiene, 1928-30; Lectr., Settler's Hosp., S. Africa, 1929-30; Surgeon, Univ. of Calif., 1930-31; Asst. Prof. of Anat., ibid., 1931-35; Assoc. Prof., Anat., ibid., 1935-38; Prof., Chmn., Dept. of Anat., ibid., 1938-57; Lectr., Med. Hist. and Bibliography, ibid., 1933—; Dean, Schl. of Med., ibid., 1957—; Libr., Med. Center Libr., ibid., 1943—. Mem.: Hist. of Sci. Soc.; Amer. Assn. for Hist. of Med.; Amer. Assn. Anatomists; Amer. Acad. of Orthopaedic Surgeons; Anatomical Soc., Gr. Britain and Ireland; Am. Orthopaedic Assn.; Amer. Soc. Phys. Anthropol.; Soc. Exptl. Biol. and Med.; N. Y. Acad. of Scis.; Alpha Omega Alpha; Epsilon Alpha; Sigma Xi; Sigma Kappa Theta. Author: Andreae Vesalius Bruxellensis: Blood-letting Letter of 1537, 1947; Vesalius, The Illustrations from his Works, 1950; Leonardo da Vinci, On the Human Body, 1952; Ancient Egyptian and Cnidian Medicine, 1958. Contbr. to: ISIS; Sci.; Scientific Monthly; War Record: S. Africa Defense Force, 1918-19. Gen. Int.: F.R.C.S., Edinburgh, 1930. Areas of Rsch.: Anatomy, Embryology, Congenital Anomalies, Body Mechanics, Orthopaedic Surgery, History of Medicine.

AUNDERS, Richard Loraine de Chasteney Holbourne (M.D.), Prof. f Anatomy, Anat. Dept., Dalhousie Univ., Halifax, N. S., Can. Home Add.: 1124 Robie St., Halifax, N.S., Can. ANATOMY. b. Grahamstown, S. Africa, May 29, 1908. s. Col. Frederick Anastasius and Lucy (Meiklejohn) S. Edn.: M.B., Ch.B., Univ. of Edinburgh, 1932; M.D., ibid., 1940. m. Sarah Cameron MacIntyre, Mar. 25, 1936. c.: Alastair Corston de Cuzance Maxwell S. Exp.: Lectr. in Anat., Univ. of Edinburgh, 1933-37; Asst. Prof. of Anat., Dalhousie Univ., 1937-42; Assoc. Prof. of Anat., ibid., 1942-47; Prof. of Pathol. Anat., ibid., 1947-49; Prof. and Hd., Dept. of Anat., ibid., 1949—. Hon. Pos.: Corresponding Mem., Royal Soc. of Arts, London, England. Mem.: Fellow, A.A.A.S.; N. Y. Acad. of Scis.; Amer. Assn. Anatomists; Brit. and Can. Anat. Soc.; Phi Rho Sigma. Author: Cambridge Symposium on X-ray Microscopy, 1957; X-ray icroscopy and X-ray Microanalysis, 1960; Encycl. of Microscopy, 961. Co-author: Peripheral Circulation in Health and Disease, 957. Contbr. to: Jour. of Anat.; Anatomical Rec.; Canadian Med. ur.; Surgery; Jour. Bone and Joint Surgery; Nature; Experientia, c. Gen. Int.: Fellow of the Royal Soc., F.R.S.E., Edinburgh, 46; F.R.S.A., London, 1947. Hobbies: Fishing; Sketching. eas of Rsch.: Microradiography and X-ray Microscopy; Anatomy Peripheral Circulation.

AUNDERS, William Eugene (Mr.), Instr. of Biol., Daytona Beach Coll., Daytona Beach, Fla. Home Add.: 10620 Lorain Ave., Silver Spring, Md. PARASITOLOGY. b. Charlotte, N. C., June 3, 1917. s. William Edward and Grace (Drum) S. Edn.: A.A., Brevard Coll., 1939; B.S., Wake Forest Coll., 1942; M.S.P.H., Univ. of N. C., 1958. m. Josephine Kellogg, Aug. 13, 1958. Exp.: Tchng. Fellow, North Tex. State Coll., 1946-48; Instr., East Tex. Bapt. Coll., 1948-50; Instr., Burton Jr. Coll., 1950-51; Instr., Richfield Schl., Richfield, N. C., 1951-54; Instr., North Mecklanburg Schl., Charlotte, N. C., 1954-56; Rsch. Asst., Univ. of N. C., 1956-58; Instr. of Biol., Northwood Schl., Silver Spring, Md., 1958-62; Instr., Biol., Daytona Beach Jr. Coll., 1962—. Mem.: A.A.A.S.; Elisha Mitchell Soc.; E.A.; Md. State T.A.; Beta Beta Beta. Contbr. to: N. C. Edn. sn. Jour.; Jour. of Natl. Med. Areas of Rsch.: Age Growth d Food of White Bass; Pack Rat Reduviids Infected with panosona cruzi: Studies in the Effect of Organic Phosphous ecticides on Fish Brain Chormesterose. Cholinesterase. Toxosma Gondii, A Morphological Study.



UTTER, Jay Howard (D.V.M.), Prof. and Hd., Div. of Vet. thol. and Parasitol., Coll. of Vet. Med., Univ. of Minn., St. Paul 1, Minn. Home Add.: 1550 Fulham St., St. Paul 8, Minn. VETERINARY PATHOLOGY. b. Waynesburg, Ohio, Nov. 11, 1912. s. John F. and Daisy (Shearer) S. Edn.: D.V.M., Ohio St. Univ., 1944; Ph.D., Univ. of Minn., 1948. m. Margaret E. Bentley, Mar. 7, 1937. c.: Marjorie; David; Thomas. Exp.: Rsch. Fellow, Univ. of Minn., 1944-47; Instr., ibid., 1947-48; Assoc. Prof., ibid., 1948-54; Prof. and Hd. of Div. of Vet. Pathol., and Parasitol., Coll. of Vet. Med., ibid., 1954—. Hon. Pos.: Mem., Coun. of Am. Coll. of Vet. Pathologists. Mem.: A.A.A.S.; Am. Coll. of Vet. Patholst.; Am. Vet. Med. Soc.; N. Y. Acad. of Sci.; Sigma Xi; Minn. State Vet. Med. .; Omega Tau Sigma; Phi Zeta; Masons. Contbr. to: Jour. Vet. Med. Assn.; Cornell Vet.; N. Am. Vet.; Jour. Agri. and d Chem.; Internatl. Soc. of Hematol., Proc. of the Sixth gr.; Biol. and Med. War Record: U. S. Army, W. W. II. as of Rsch.: Vet. Pathol. Aplastic Anemia from Radiation, hlorovinyl Cystine and Trichloroethylene Extracted Soybean Meal.

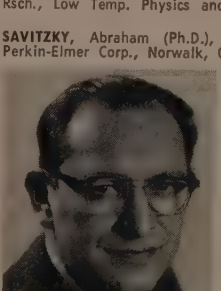


VAGE, John Edward (M.D.), Private Practice Obstetrics, 2 East d St., Baltimore 2, Md. Home Add.: 1401 Park Ave., Baltire 7, Md. OBSTETRICS. b. Phila., Pa., June 11, 1907. s. John Savage and Reina (Ross) S. Edn.: B.S., Univ. of Md., 1928; ., ibid., 1932. m. Louise Townsend, 1933. c.: John E., Jr.; oline M. Exp.: Asst. Prof., Obst. Gynecol., Univ. of Md. Schl. Med., 1946—; Lectr. in Obst., Johns Hopkins Univ., Schl. of ., 1957—; Chf. in Obst. Hosp. for The Women of Md., Baltimore, Md., 1949—; Chf. of Staff, Hosp. for The Women of Md., 1958—. Hon. Pos.: Pres., Md. Med. Serv., Inc.; Past Pres., Md. Obst. Gynecol. Soc. Mem.: Fellow, Am. Coll. of Surgeons; Fellow, Am. Coll. Obstetricians and Gynecologists; Am. Assn. Obstetricians and Gynecologists; Sou. Gynecol. and Obst. Soc. Contbr. to: Am. Jour. Obst. and Gynecol.; Obst. and Gynecol.; Sou. Med. Jour.; Clin. Obstetrics and Gynecol.; Bull. Schl. of Med., Univ. of Med. War Rec.: A.U.S., 1942-46. Areas of Rsch.: Clin. Obstetrics.

SAVAGE, Charles Francis (Mr.), Mgr., Placement and Engrng. Profl. Relations, Gen. Elect. Co., 570 Lexington Ave., N. Y. 22, N. Y. Home Add.: 18 Brookby Rd., Scarsdale, N. Y. ELECTRICAL ENGINEERING. b. Maywood, Ill., Feb. 24, 1906. s. Charles Francis, Sr. and Vida Pearl (Mosely) S. Edn.: B.S., E.E., Ore. State Univ., 1928. m. Ruth Frances Stewart, Apr. 8, 1930. c.: Edward; Ruth. Exp.: Engr., Gen. Elect. Test Prog., Radio Option at Schnectady Works, Schenectady, N. Y., 1928-31; Engr., Watthour Meter Design, Gen. Elect. Co., Lynn, Mass., 1931-33; Gen. Elect. Co., Chem. and Metal. Labs., ibid., 1933-39; ibid., Div. Engr., 1939-40; Aircraft Instrs. in Meter and Instr. Dept., Div. Engr., ibid., 1940-46; Div. Engr., Aircraft Instrnts. and Techn. Asst. to the Mgr., Engrng., ibid., 1946-47; Asst. to the Mgr. of Engrng., ibid., 1947-54; Consultant, Engrng. Prof. Relations, ibid., N. Y. City, 1954—. Hon. Pos.: Vice-Pres., Prof. Engrs. Conf. Bd. for Indust., NSPE; Comms. of the ECPD; Chmn., Worcester Reed Warner Medal Sub., A.S.M.E.; Reg. Profl. Engr., N. Y., Mass. and Ore. Mem.: A.S.M.E.; A.O.S.; A.R.R.L.; N.S.P.E.; A.S.E.E.; Assoc. Fellow, I.A.S.; A.A.A.S.; Fellow, A.I.E.E.; Sr. Mem. of I.R.E.; Eta Kappa Nu; Tau Beta Pi; Engrs. Club, N. Y. City; Thomson Club, Nahant, Mass. Co-author: Applied Electrical Measuremnnts, 1956. Contbr. to: Elect. Engrng.; Instruments; Am. Power Jour.; Jour. of Aerospace Sci.; Procs. of Am. Petrol. Inst. Areas of Rsch.: Aircraft Guidance Systems.

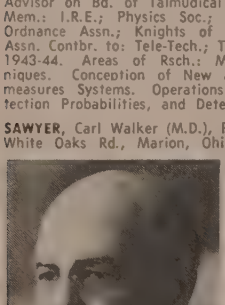
SAVAGE, William Ralph (Ph.D.), Mem. of the Tech. Staff, Tex. Instruments, Inc., 13500 N. Central Expressway, Dallas 22, Tex. Home Add.: 1219 Ridgeway Dr., Richardson, Tex. SOLID STATE PHYSICS. b. Cedar Rapids, Iowa,, Sept. 12, 1926. s. William L. and Libbie (Havlik) S. Edn.: B.S., Iowa State Univ., 1951; Ph.D., ibid., 1956. m. Helen L. Hoffman, Dec., 1950. c.: William D.; Barbara E. Exp.: Rsch. Asst., Ia. St. Univ., 1951-56; Rsch. Assoc., ibid., 1956; Sr. Rsch. Scientist, Minneapolis-Honeywell, Hopkins, Minn., 1956-58; Mem. of Tech. Staff, Texas Instruments, Dallas, Tex., 1958—. Mem.: Am. Physics Soc.; Division of Electron Physics; A.A.A.S.; Texas Acad. of Sci.; A.C.S. Div. of Colloid and Surface Chem.; Sigma Xi; Phi Kappa Phi; Phi Eta Sigma. Contbr. to: Jour. Chem. Physics; Jour. Electrochem. Soc. Serv. Rec.: U.S. Army, 1945-46. Areas of Rsch.: Vaporization of Rare Earth Metals, Surface Ionization, High Field Electron Emission from Semiconductors, Semiconductor Surface Phys. and Chem., Analytic Methods in Experimental Physics; Physical Electronics and Ultra-high Vacuum Rsch., Low Temp. Physics and Transport Properties of Solids.

SAVITZKY, Abraham (Ph.D.), Instrumentation Specialist, Rsch., Perkin-Elmer Corp., Norwalk, Conn. Home Add.: 188 Perry Ave., Norwalk, Conn. INFRARED SPECTROSCOPY. b. N.Y. City, May 29, 1919. s. Saul and Dora (Eliovitch) S. Edn.: B.A., N. Y. St. Coll. for Tchrs., 1941; Ph.D., Columbia Univ., 1949. m. Evelyn Robbins, Nov. 2, 1942. c.: Stephen; Alan. Exp.: Rsch. Asst., Columbia Univ., N.Y. City, 1949-50; Instrumentation Spec., Rsch., Perkin-Elmer Corp., 1951—. Hon. Pos.: Edn. Comm., Am. Chem. Soc.; Treas., Local Sect., Am. Chem. Soc. Mem.: N.Y. Acad. of Sci.; Am. Chem. Soc.; Instrument Soc. of Am.; Optical Soc. of Am.; Am. Phys. Soc.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Analyt. Chem.; Rev. Sci. Inst.; Ind. and Eng. Chem. Serv. Rec.: U. S. Air Force 1941-45. Areas of Rsch.: Infra-Red Spectroscopy and the Use of Computers.

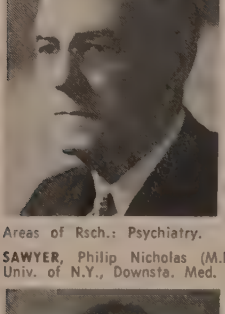


SAWELSON, Abraham Irving (Mr.), Prin., Staff Engr., Loral Electronics Corp., 825 Bronx River Ave., New York, N.Y. Home Add.: 1325 East 31st St., Brooklyn, N.Y. COUNTERMEASURES AND RADAR SYSTEMS ANALYSIS, OPERATIONS RESEARCH, MICRO-WAVE THEORY AND TECHNIQUES. b. Minsk, Poland, Oct. 10, 1918. s. Irving (dec.) and Sophie (Shulman) S. Edn.: B.S., Long Island Univ., 1942; M.S., N.Y. Univ., 1951. m. Ruth Lesnick, Mar. 28, 1943. c.: Beth Kyla; Naomi Helene. Exp.: Rsch. Physicist, Evans Signal Corps Lab., Belmar, N.J., 1942-43; Elect. Engr., Bell Aircraft Corp., Buffalo, N.Y., 1945-45; Proj. Mgr., Jordanoff Corp., N.Y., 1945-46; Elect. Engr., Pilotless Plane Div., Fairchild Engine and Aircraft Corp., Farmingdale, L.I., 1946-47; Asst. Chf. Physicist, DeMornay-Budd Corp., N.Y., Electronics, N. Y., 1949-50; Mgr., Counter-Measures Dept., W. L. Maxson Corp., N.Y., 1951-56; Sr. Engr., Arma Div., Am. Bosch-Arma Corp., Garden City, L.I., N.Y., 1956-57; Mgr., Radar Dept., Defense Products Div., Fairchild Camera and Instrument Corp., Syosset, N.Y., 1957-58; Prin. Staff Scientist, Martin Co., Baltimore, Md., 1958-60; Prin. Staff Engr., Advanced Systems Div., Loral Electronics Corp., N.Y., N.Y., 1960 —. Hon. Pos.: Mem. of Tech. Comm., Standardization of Traveling Wave Tubes; Mem., Hospitality Comm. I.R.E. Natl. Conv.; Advisor on Bd. of Talmudical Acad. of Baltimore for Sci. Curr. Mem.: I.R.E.; Physics Soc.; A.A.A.S.; Am. Mgmt. Assn.; Am. Ordnance Assn.; Knights of Pythias; B'nai B'rith; Vanderveer Assn. Contbr. to: Tele-Tech.; Trans. I.R.E. Serv. Rec.: U.S. Army, 1943-44. Areas of Rsch.: Microwave Transmission Line Techniques. Conception of New and Advanced Radar and Countermeasures Systems. Operations Rsch., Signal Characteristics, Detection Probabilities, and Detection of Signals in Noise.

SAWYER, Carl Walker (M.D.), Physician, Sawyer Sanatorium, 1313 White Oaks Rd., Marion, Ohio. PSYCHIATRY. b. LaRue, Ohio, May 30, 1881. s. C. E. and May E. (Barron) S. Edn.: B.S., Univ. of Chicago, 1904; M.D., Rush Med. Coll., 1906. m. Grace Curtis, Dec. 28, 1905. c.: Warren C. Exp.: Chf. of Staff, Sawyer Sanatorium, 1924-50; Physician, ibid., 1924—. Hon. Pos.: Pres., The Harding Mem. Assn. Mem.: Ohio Acad. of Sci.; Assn. for Rsch. in Nervous and Ment. Dis.; Am. Coll. of Physicians; A.M.A.; Am. Psychiatric Assn.; Diplomate, Psychiatry; Am. Therapeutic Soc.; A.A.A.S.; Rotary. Author: Pamphlet, The Psychology of the Sick. Contbr. to: Ohio State Med. Jour.; and others. Serv. Rec.: Mem., Neuro-psychiatric Bd., W.W. I; Mem., Med. Adv. Bd. No. 7, Selective Serv. for Ohio, W.W. II. Areas of Rsch.: Psychiatry.



SAWYER, Philip Nicholas (M.D.), Assoc. Prof. of Surg., State Univ. of N.Y., Downsta. Med. Ctr., 450 Clarkson Ave., Brooklyn, N.Y. Home Add.: 606 Third St., Brooklyn 15, N.Y. SURGERY (CARDIOVASCULAR AND THORACIC); SURGICAL RESEARCH, PHYSICAL CHEMISTRY AND ELECTROCHEMISTRY OF LIVING CELLS AS RELATED TO PROBLEMS IN MEDICINE (BIOPHYSICS). b. Bangor, Me., Oct. 25, 1925. s. Frank S. and Linda Mary (Makanna) S. Edn.: M.D., Univ. of Pa., 1949. m. Grace M. Makla, June 13, 1953. c.: Margaret Ann; Elizabeth Lynn; Susan Jean. Exp.: Asst. Instr., Univ. of Pa., Phila., Pa., 1953-56; Asst. Prof. of Surg., St. Univ. of N.Y., Downsta. Med. Ctr., 1959-62; Assoc. Prof. of Surg., ibid., 1962—. Hon. Pos.: Fellow, Am. Coll. of Surgeons, Markle Schlr. in Med. Sci. Mem.: A.A.A.S.; Phila. Physiol. Soc.; N.Y. Acad. of Sci.; Am. Heart Assn.; Am. Chem. Soc.; Brooklyn Surg Soc.; N.Y. Soc. for Cardiovascular Surg.; Soc. for Vascular Surg.; Internatl. Cardiovascular Soc.; Inst. of Radio Engrs.; Trudeau Soc.; Alpha Kappa Kappa. Author: International Symposium Etiology of Myocardial Infarction, 1961. Contbr. to: Anns. of Surg.; Surg.; Surg., Gyn. and Obst.; Am. Jour. of Phys.; Jour. of Gen. Physiol.; Nature. Serv. Rec.: U.S. Naval Reserve, 1943-46; Active Duty, Reserve, 1950-52. Areas of Rsch.: Surgery (Cardiovascular and Thoracic), Surgical Rsch., Phys. Chem. and Electrochem. of Living Cells as Related to Problems in Medicine (Biophysics).



SAWINSKI, Vincent John (Ph.D.), Asst. Prof., Loyola Univ., Chicago, Ill. Home Add.: 9703 Reeves Court, Franklin Park, Ill. BIOCHEMISTRY, PHYSIOLOGY, AND PHARMACOLOGY. b. Chicago, Ill., Mar. 28, 1925. s. Stanley and Pearl (Gapinski) S. Edn.: B.S., Loyola Univ., 1948; M.A., ibid., 1950; Ph.D., ibid., 1962. m. Florence Whitman, Aug. 24, 1952. Exp.: Instr., Loyola Univ., 1949-62; Rsch. Biochemist, Hines Hosp., Hines, Ill., 1961—. Hon. Pos.: Hon. Alumnus of Loyola Univ. Schl. of Dentistry. Mem.: Am. Assn. Adv. Sci.; Am. Chem. Soc.; Instrument Soc. of Am.; Natl. Sci. Tchrs. Assn.; Am. Assn. of Univ. Prof.; Delta Epsilon Sigma; Sigma Pi Alpha; Natl. Geographic Soc. Contbr. to: Tex. Reports on Biology and Med., 1958; Chem. Abstracts, 1957—. Serv. Rec.: U. S. Army, 1945. Areas of Rsch.: Physical Biochemistry, Protein Interactions, Basic Science Teaching in Professional Schools.

SAX, Robert Louis (Ph.D.), Staff Engr., Hughes Aircraft Co., Culver City, Calif. Home Add.: 8438 Ponce Ave., Canoga Park, Calif. GEOPHYSICS. b. Wheeling, W. Va., Apr. 7, 1928. s. Nathan and Rebecca Dorothy (Gross) S. Edn.: B.Sc., Mass. Inst. of Tech., 1952; Ph.D., ibid., 1960. m. Iris Fishman, Aug. 20, 1958. c.: Andrea Lee; Nina Robin. Exp.: Geologist-Geophysicist, Standard Oil Co. of Calif., Bakersfield, Calif., 1952-56; Tech. Staff, Ramo Wooldridge Labs., Canoga Park, Calif., 1959-60; Staff Engr., Hughes Aircraft Co., Culver City, Calif., 1960—. Mem.: Am. Geophysical Union; Soc. of Exploration Geophysicists; Sigma Xi. Author: Simulation of Density Distributions from Gravitational Field Measurements with Application to Mapping Glaciers, 1960. Contbr. to: Proc. of the 6th Symposium on Ballistic Missile and Aerospace Technol., Vol. III. Serv. Rec.: U.S.A.F., 1946-47. Areas of Rsch.: Planetary Physics, Preliminary Design of Systems for Planetary Exploration; Application of Computer Programming to Analysis of Geophysical Measurements.

SAXENA, Brij Behari (Ph.D.), Asst. Prof. of Biochem. (Med.), Seton Hall Coll. of Med., Jersey City 4, N. J. Home Add.: 26 Munna Lal St., Parade, Kanpur, Ind. ENDOCRINOLOGY, COMPARATIVE PHYSIOLOGY AND BIOCHEMISTRY. b. Kanpur, India, July 6, 1930. s. Tulsi Ram and Anandi (Devi) S. Edn.: B.Sc., Univ. of Agra, India, 1949; M.Sc., Univ. of Lucknow, India, 1951; Dipl. in German and French, ibid., 1953; Ph.D., ibid., 1954; Dr. rer. nat., Univ. of Munster, Germany, 1957; Ph.D., Univ. of Wis., 1961. m. Anjali Chatterji, 1953. Exp.: Rsch. Asst., Dept. of Zool., Univ. of Lucknow, 1951-54; Asst. Prof., Dept. of Zool., ibid., 1954-55; Alexander von Humboldt Endowment Fellow, Univ. of Munster, 1955-57; Fellow, Inst. for Spectrochem. and Spectroscopy, Dortmund, Germany, 1956; Rsch. Fellow, Univ. of Wis., 1957-62; Asst. Prof. of Biochem. (Med.), Seton Hall Coll. of Med., 1962—. Mem.: Sigma Xi; A.A.A.S.; N. Y. Acad. of Sci. Contbr. to: Nature; Current Science; Jour. Animal Physiol. and Morph.; Naturwissenschaften; Arch. Internat. de Physiol. et de Biochem.; Zeitschfr. fur Vergl. Physiol.; Physiol. Zool.; Jour. Biol. Chem.; Biochem. Biophys. Acta. Gen. Int.: Languages, Music and Art. Areas of Rsch.: Comparative Physiology and Biochemistry of Blood and Excretion; Blood Cells; Metabolic Constants and Adaptation; Nutrition; Purification of Gonadotropic Hormones from the Pituitary Gland, their Physico-chemical Characterization, Immunoassays, Bioassays, Physiology and Mode of Action.

SCARBOROUGH, James Blaine, Prof. Emer. of Math., United States Naval Acad., Ferry Farms, Annapolis, Md. APPLIED MATHEMATICS. b. Mt. Gilead, N. C., June 22, 1885. s. Isham Wilson and Jane (Haywood) S. Edn.: A.B., Univ. of N. C., 1913; A.M., ibid., 1914; Ph.D., Johns Hopkins Univ., 1923. m. Lessie Neville (dec.) June 30, 1915. c.: Lucile Elizabeth; James Blaine, Jr. (dec.); Ernest Neville; m. 2nd Julia Kauffman, Aug 18, 1930. c.: William Kauffman. Exp.: Instr. in Math., N. C. State Coll., 1914-18; Instr. in Math., U. S. Naval Acad., 1918-21; Asst. Prof., Math., ibid., 1921-28; Assoc. Prof., ibid., 1928-37; Prof., ibid., 1937-50; Prof., Emer. of Math., ibid., 1950—. Hon. Pos.: Chmn. of Md.-Va.-D. C. Section of Math. Assn. of Am.; Consultant in Numerical Analysis, U. S. Naval Ordnance Lab.; Class Chmn. in Math. Dept., U. S. Naval Acad., 1946-49. Mem.: Math. Assn. of Am.; Am. Math. Soc.; Soc. for Indust. and Applied Math.; Phi Beta Kappa Soc. Author: Numerical Mathematical Analysis, 1930, '50, '55, '58, '62. Co-Author: Fundamental of Statistics, 1948; The Gyroscope, Theory and Application, 1958. Contbr. to: Am. Math. Monthly; Proc. of the Natl. Acad.

f Sci.; Am. Jour. of Physics; Handbook of Engrng. Mechanics. ben. Int.: Awarded Cain Math. Medal, U. N. C., 1912; Showed hat one method of computing a certain probable error is vrong, 1935; Made first direct numerical comparison of difference etween the assumed parabolic path and the true elliptic path f a modern projectile in a vacuum. Spec. Int.: Numerical Math., ifferential Equations, Gyroscopic Theory, Statistics, Exterior allastics, Engrng., Math., Miscellaneous Applications of Math.

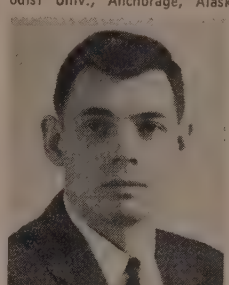
CATES, Alice Yeomans (Mrs.), Rsch. Coordinator, U. S. Office of dn., Wash. 25, D. C. Home Add.: 301 G St., S.W., Washington 4, D. C. RESEARCH IN EDUCATION. b. Pgh., Pa., Jan. 21, 915. d. William E. Yeomans and Georgiana (Lloyd) Y. Edn.: .S., N. J. Sta. Tchrs. Coll., 1936; M.Edn., Duke Univ., 1949. xp.: Tchr., Elem. Schl., Haddon Hghts., N. J., 1937-43; Trng. fficer Vet. Admin. Ctr., Dayton, Ohio, 1947-58; Rsch. Assoc., m. Coun. on Edn. Staff for Office Naval Rsch. Projs., 1949-51; sch. Dir., Am. Coun. on Edn., Wash., D. C., 1952-53; Asst. Dir., ati. Home Study Coun., 1954; Editor, Rsch. Asst., U. S. Office f Edn., Wash., D. C., 1955; Rsch. Analyst and Coordinator ffice of Edn. Coop. Rsch. Prog., 1956—. Mem.: Adult Edn. ssn.; Am. Edn. Rsch. Assn.; Kappa Delta Pi; Am. Assn. for the dv. of Sci., Fellow. Contbrng. Author: A.C.E.=O.N.R., Rsch. eport Series, 1949; Cooperative Research Projects, FY'57, FY'58, 959. Contbr. to: Edn. and Psychol. Measurement; Jour. of chr. Edn.; Higher Edn. Serv. Rec.: Women's Army Corps, 1943-5. Areas of Rsch.: Adult Education; Higher Education; Sociological Aspects of Education.

CHAEFER, Hugh Ferdinand, (Ph.D.), Rsch. Chemist, Parma Rsch. r., 12900 Snow Rd., Parma 29, Ohio. Home Add.: 13425 Detroit Ave., Cleveland 7, Ohio. CHEMISTRY. b. Rochester, N. Y., Apr. 19, 1925. s. Oscar Frederick and Mary Ella (Costich) S. Edn.: B.S., Univ. of Rochester, 1946; M.S., Univ. of Mich., 1949; Ph.D., ibid., 1953. Exp.: Jr. Chemist, Shell Devel. Co., Emeryville, Calif., 1946-47; Tchng. Fellow, Univ. of Mich., Ann Arbor Mich., 1947-50; Predoc Instr., ibid., 1950-52; Rsch. Chemist, Union Carbide Corp., Parma Rsch. Ctr., 1953—. Mem.: Am. Chem. Soc.; Electrochem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Alpha Chi Sigma; Phi Lambda Upsilon. Areas of Rsch.: Thin Films—Polymeric, Oxide, Corrosion; Anodic and Cathodic Reaction Mechanisms; Inorganic and Organic Reaction Mechanisms; Primary and Secondary Batteries; el Cells; Colloid and Surface Chemistry; Electrochemistry; Coordination Compounds; Catalysis; Physical Organic Chemistry; fect of Structure of Adsorbed Molecules on Interfacial Properties.

HAFER, George Edward (Ph.D.), Chief, Circuit Standards Div., tl. Bureau of Standards, Boulder, Colo. Home Add.: P. O. Box #1272, Boulder, Colo. PHYSICS. b. Lincoln, Nebr., April 27, 1922. s. Jacob and Augusta Alvina (Tessmer) S. Edn.: B.A., Macalester Coll., 1943; M.A., Univ. of Minn., 1949; Ph.D., Univ. of Colo., 1958. m. Mary Anna Sawyer, June 13, 1943. c.: Margaret Anne; Mark Edward. Exp.: Instr. of Phys., Southern Methodist Univ., 1948-49; Asst. Prof. of Phys., Nebr. State Coll., 1949-50; Phys. Sci. Aide, Natl. Bureau of Standards, Boulder, Colo., 1951-52; Physicist, ibid., 1952-61; Prof., Elec. Engrng., Dept., No. Car. State Coll., Raleigh, N. C., 1961-62; Chief, Circuit Standards Div., Natl. Bureau of Standards, Boulder, Colo., 1962—. Hon. Pos.: Chmn., fessional Group on Microwave Theory and Tech. Natl. Symium; Chmn., Tech. Prog. Comm. of 1960 Conf. on Standards l Elec. Measurements. Mem.: Am. Phys. Soc.; Sr. Mem., t. of Radio Engrs.; Am. Assn. of Phys. Tchrs.; Sci. Rsch. Soc. Am.; Sigma Xi. Contbr. to: I.R.E. Trans. on Microwave ory and Techniques; Proceedings of Inst. of Elec. Engrs.; .S. Jour. of Rsch.; Convention Record of I.R.E. Serv. Rec.: .A.A.F., 1943-46. Areas of Rsch.: Microwave Measurements Standards, Electronics, Molecular Spectroscopy.

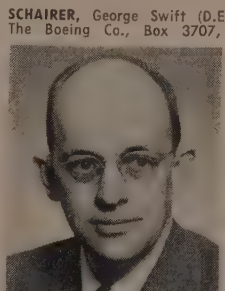
HAEFFER, Harold F. (Mr.), Prof. of Chem., Westminster Coll., ton, Mo. Home Add.: 15 E. Chestnut, Fulton, Mo. CHEMIS-Y; GENERAL AND PHYSICAL CHEMISTRY; CHEMICAL MICROS-PY. b. Phila., Pa., Sept. 21, 1899. s. Franklin Philip and rgaretta (Morgan) S. Edn.: B.Sc., Muhlenberg Coll., 1922; c., Univ. of N. H., 1926. m. Katherine Arlene Fisher, 1932. .: Rsch. Scient., Rensselaer Polytech. Inst., Troy, N. Y., 1952-Prof. of Chem., Grove City Coll., Grove City, Pa., 1953-55; f. of Chem., Coll. of Emporia, Emporia, Kans., 1955-59; Prof. Chem., Westminster Coll., Fulton, Mo., 1959—. Hon. Pos.: y., Penn-Ohio Border Sect. of Am. Chem. Soc., 1954; Chmn., mm. on Publs., Penn-Ohio Border Sect., 1955. Mem.: Am. m. Soc.; Am. Assn. Univ. Profs.; A.A.A.S.; Sigma Xi; ha Chi Sigma; Phi Lambda Theta. Author: Microscopy Chemists, 1953. Contbr. to: Jour. of Chem. Edn.; Jour. of Phys. Chem.; Jour. of Org. Chem.; Analyt. Chem.; Chem. Abstracts. Gen. Int.: Recipient of Cottrell Research Grants from Rsch. Corp., 1956, 1958 1960. Areas of Rsch.: Chemical Microscopy of the Platinum Metals.

SCHAFF, Ross Gilbert (Mr.), Asst. Prof. of Geol., Alaska Methodist Univ., Anchorage, Alaska. GEOLOGY. b. Scranton, Pa., Dec. 3, 1935. s. Clyde A. and Charlotte (Delorey) S. Edn.: A.B., Boston Univ., 1957; A.M., ibid., 1958. m. Eleanor Pearce, July 20, 1957. c.: Karl Stuart. Exp.: Asst. Prof., Alaska Methodist Univ., 1960—. Mem.: A.A.-A.S.; Alaska Geological Soc.; Lambda Chi Alpha. Areas of Rsch.: Petrography and Petrology.



SCHAFFRATH, Robert Eben (Ph.D.), Chmn., Dept. Chem., C. W. Post Coll., Greenvale, L. I., N. Y. Home Add.: 163 Radcliff Dr., E., E. Norwich, L. I., N. Y. ORGANIC CHEMISTRY. b. Syracuse, N. Y., Feb. 19, 1922. s. William and Faith (Buell) S. Edn.: B.S., Bates Coll., 1944; M.S., Syracuse Univ., 1948; Ph.D., ibid., 1958. m. Sylvia Irene Keiner, 1962. Exp.: Instr., New England Coll., Henniker, N. H., 1948-51; Instr., Univ. Mass., Amherst, 1951-54; Post-doctoral Fellow, Purdue Univ., 1957-58; Assoc. Prof., State Coll. Edn., New Paltz, N. Y., 1958-60; Chmn., Dept. Chem., C. W. Post Coll., Greenvale, L. I., N. Y., 1960—. Hon. Pos.: Pres., 1955-56, Syracuse, and 1958, Lafayette, Ind., Professional Chapters, Alpha Chi Sigma. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Lambda Upsilon; Sigma Xi; Alpha Chi Sigma; F. & A.M.; R.A.M.; R.&S.M. Contbr. to: Jour. Organic Chem.; Hexagon of Alpha Chi Sigma. Areas of Rsch.: Organic Sulfur and Nitrogen Containing Compounds.

SCHAIRER, George Swift (D.Eng.), Vice-Pres., Rsch. and Devel., The Boeing Co., Box 3707, Seattle 24, Wash. Home Add.: 4242 Hunts Point Rd., Bellevue, Wash. AERONAUTICAL ENGINEERING. b. Wilkinsburg, Penn., May 19, 1913. s. Otto S. and Elizabeth (Swift) S. Edn.: B.S., Swarthmore Coll., 1934; M.S., Mass. Inst. Tech., 1935. Hon. Deg.: D.Eng., Swarthmore, 1958. m. Pauline Tarbox, June 20, 1935. c.: George E.; John O.; Mary E.; Sally H. Exp.: Automotive Engr., Bendix Products, 1935-37; Aircraft Engr., Convair, 1937-39; Chf. Aerodynamicist, Boeing, 1939-46; Staff Engr., Aerodynamics and Powerplant, ibid., 1946-51; Chf. of Tech. Staff, ibid., 1951-56; Asst. Chf. Engr., ibid., 1956-57; Dir. of Rsch., ibid., 1957-59; Vice-Pres., Rsch. and Devel., ibid., 1959—. Hon. Pos.: Past Mem., U.S.A.F. Scientific Adv. Bd., 1944-45, 1957-59; Past Mem., Natl. Adv. Comm. for Aeronautics, Subcom. on Aerodynamics, 1945-60, Powerplants, 1948-50, and Propellers, 1945-49; Past Mem., Natl. Aeronautics and Space Admin., Com. on Aircraft Operations, 1960; Past Mem., Adv. Com. on Aeronautics Steering Group to Dir. of Defense Rsch. and Eng., D.O.D., 1958-61. Mem.: Am. Helicopter Soc.; Inst. of Aeronautical Sci.; Am. Astronautical Soc.; Am. Rocket Soc.; Sigma Xi; Sigma Tau. Contbr. to: Jour. Aerospace Sci. Gen. Int.: Sylvanus Albert Reed Award, 1949, I.A.S.; Spirit of St. Louis Award, 1959, A.S.M.E. Areas of Rsch.: Basic Research; Airplane Designer; Aerodynamics.

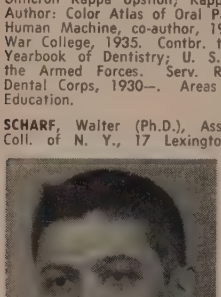


SCHANES, Steven Eli (Ph.D.), Vice-Pres., Martin E. Segal and Co., Inc., 3 East 54th Street, New York, N. Y. INDUSTRY—PENSION AND WELFARE FUND CONSULTANT. b. Newark, N. J., Jan. 7, 1924. s. Isadore J. and Lillian (Lubman) S. Edn.: A.B., State Tchrs. Coll., Montclair, N. J., 1943; Ph.D., Cornell Univ., 1949. m. Christine Marie Marra, June 11, 1947. c.: Christine Elise; Paul Anthony; Laura Marie; Steven Joseph; William David. Exp.: Instr. in Govt., Boston Univ., 1948-49; Rsch. Analyst, N. J. St. C. of C., 1949-52; Instr. in Govt., Rutgers Univ., 1950-51; Admin. Secy., N. J. Bur. of Pensions, 1952-55; Dir., N. J. State Div. of Pensions, Trenton, N. J., 1955-58; Vice-Pres., Martin E. Segal & Co., Inc., N. Y., N. Y., 1958—. Hon. Pos.: Pres., Natl. Conf. of State Soc. Security Administrators, 1957-58. Mem.: Am. Polit. Sci. Assn.; Govern-

mental Rsch. Assn.; Kappa Delta Pi. Contbr. to: Proc., Municipal Fin. Officers' Assn.; Govmtl. Rsch. Assn. Reporter; Proc., Rutgers Univ. Inst. on Labor and Mgmt. Relations. War Record: U. S. Army Air Corps, 1943-45. Gen. Int.: Awarded Air Medal with Four Oak Leaf Clusters. Areas of Rsch.: Doctoral Dissertation: International Co-operation in Civil Aviation, 1945-47 (1948); specialized Knowledge in the Field of Public Employee Pensions.

SCHANTZ, Curtiss William (D.D.S.), Asst. Chief of the Bureau of Med. and Surgery (Dentistry) and Chief, Dental Div., Code 6, BuMed., Navy Dept., Washington 25, D. C. Home Add.: 4821 Drummond Ave., Chevy Chase 15, Md. BIOSCIENCES. b. Cottage Grove, Wis., Oct. 21, 1902. s. Martin L. and Sophia (Brandt) S. Edn.: D.D.S., Marquette Univ. Dental Schl., 1925. Hon. Deg.: MRSH (G.B.), Marquette Univ., 1959; Sc.D., ibid., 1960. m. Catherine Hart McLellan, Aug. 4, 1927. c.: Mrs. J. J. Webb; Curtiss W., Jr.; John M. Exp.: Part-time Asst. Prof., Oral Surg., Marquette Univ., 1939-41; Asst. Chief of BuMed., and Chief, Dental Div., U. S. Navy, 1958—. Hon. Pos.: Gen. Chmn., Assn. Military Surgeons of the U. S., 1960; Founders Medal, Assn. Military Surg. of U. S., 1960. Mem.: Am. Coll. of Dentists; A.A.A.S.; Naval Order of U. S.; Am. Dental Assn.; Internatl. Assn. of Dental Rsch.; Fed. Dentaire Internationale; Sigma Xi; Omicron Kappa Upsilon; Kappa Sigma; Alpha Chi; F. and A.M. Author: Color Atlas of Oral Pathology, Supvry. Editor, 1956; The Human Machine, co-author, 1955; The War at Sea, 1918; Naval War College, 1935. Contbr. to: Jour. of the Am. Dental Assn.; Yearbook of Dentistry; U. S. Naval Med. Bull.; Med. Jour. of the Armed Forces. Serv. Rec.: U. S. Navy, 1925-30; Navy Dental Corps, 1930—. Areas of Rsch.: Bacteriology and Dental Education.

SCHARF, Walter (Ph.D.), Asst. Prof., Chem. Dept., The City Coll. of N. Y., 17 Lexington Ave., N. Y. 10, N. Y. Home Add.: 1640 Topping Ave., N. Y. 57, N. Y. ENZYMOLOGY. b. Vienna, Austria, July 19, 1929. s. Hermann and Rosa (Rosenheck) S. Edn.: B.S., City Coll. of N. Y., 1952; M.A., Columbia Univ., 1954; Ph.D., ibid., 1957. Exp.: Lectr. Asst., City Coll. of N. Y., 1952; Tchng. Asst., Columbia Univ., 1952-53; P.T. Tutor, Lectr., Instr. to Asst. Prof., Chem. Dept., City Coll. of N. Y., 1953—; Project Leader, Evans Rsch. and Devl. Corp., 1957-58. Hon. Pos.: Chmn., Personnel Com., 138th Natl. Meeting, Am. Chem. Soc.; Mem., Meeting-in-Miniature Com., Reg. Meeting Com. of N. Y. Sect., Am. Chem. Soc. Mem.: Am. Chem. Soc.; Am. Assn. Adv. of Sci.; Am. Assn. Univ. Profs.; Chem. Soc., London; Chemists Club; Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Polyphenol oxidase and flavorese enzymes.

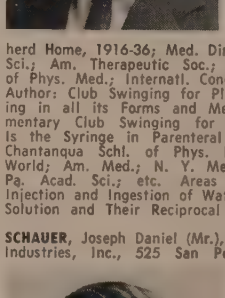


SCHATZ, Robert James, (Ph.D.), Dir. of Rsch., Plastics Div., Monsanto Chemical Co., 800 N. Lindbergh Blvd., St. Louis 66, Mo. Home Add.: 13041 Thornhill Dr., St. Louis 31, Mo. POLYMERS. b. Allentown, Pa., June 23, 1915. s. J. Warren and Anna L. (Reinsmith) S. Edn.: B.S., Lehigh Univ., 1936; M.S., ibid., 1938; Ph.D., Cornell Univ., 1942. m. Louise Doris Nordenhotl, Jan. 2, 1943. c.: Margaret Ann; Nancy Louise; James Robert. Exp.: Rsch. Chemist, Group Leader, Plastics Div., Monsanto Chemical Co., Springfield, Mass., 1942-50; Asst. Dir. of Rsch., ibid., 1950-55; Assoc. Dir. of Rsch., ibid., 1955-57; Assoc. Dir. of Rsch., ibid., Texas City, Tex., 1957-59; Dir. of Rsch., ibid., Springfield, Mass., 1959-61; Dir. of Rsch., St. Louis, Mo., 1961—. Mem.: A.C.S., A.I.Ch.E.; A.A.A.S.; Sigma Xi. Contbr. to: Phenoplasts. Areas of Rsch.: Synthetic Resins and Plastics.

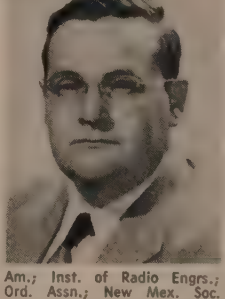
SCHARON, H(arry) LeRoy (Ph.D.), Prof. of Geophys., Wash. Univ., St. Louis 5, Mo. Home Add.: 567 Brookhaven Ct., Kirkwood, Mo. GEOPHYSICS. b. Baltimore, Md., Jan. 21, 1915. Edn.: B.A., Blue Ridge Coll., 1938; M.A., Johns Hopkins Univ., 1943; Ph.D., ibid., 1947. m. Anna Jane Swiger, 1940. c.: David F.; Stephen B.; Ann Carol W.; Kathleen N.; Gretchen L. Exp.: U. S. Geological Survey, Baltimore, Md., 1937-38; U. S. Bur. of Mines, Baltimore, Md., 1938-43; U. S. Geol. Survey, Baltimore, Md., 1943-47; Prof. of Geophysics, Wash. Univ., 1947—. Hon. Pos.: Past Chmn., Mining, Geol. and Geophys. Div., A.I.M.E.; Past Chmn., Mining Br. Counc., A.I.M.E.; Mem., William Bowie Medal Award Comm., A.G.U.; Past Mem. ex officio, Bd. of Dirs., A.I.M.E.; Rsch. Comm., Soc. of Exploration Geophysts. (SExG). Mem.: Soc. of Exploration Geophysicists; Seismological Soc. of Amer.; A.A.A.S.; Geol. Soc. of Amer.; Sigma Xi; Tau Kappa Alpha. Contbr. to: Mining Engrng.; Geophysics. Gen. Int.: Alumni Citation—Bridgewater College, 1960; Alumnus of the Year Award, Bridgewater Coll., 1962; Two National Science Foundation Grants—Paleomagnetic Investigations. Areas of Rsch.: Applied Geophysics and Mining Geophysics.

SCHATZ, William Jackson (M.D.), Med. Dir., Good Shepherd Home, Allentown, Pa. Home Add.: 1426 Walnut St., Allentown, Pa. INTRAVENOUS WATER INJECTION. b. Sellersville, Pa., Oct. 20, 1876. s. George and Mary Yeakel (Leister) S. Edn.: B.S. in Phys. Edn., Temple Univ., 1911; B.S., ibid., 1912; M.D., ibid., 1915. m. Mary Lizzie Meyers, Apr. 22, 1899. c.: Ralph Edward; Ruth Mildred Schatz Kressler. Exp.: Asst. Inst., Yale Gym., 1907; Dir., Gymnastics, Univ. Schl., Cleveland, Ohio, 1907-09; Prof. of Phys. Edn., Dir. of Normal Schl., Temple Univ., 1909-14; Tchr. of Athletics, Univ. of Pa., Summer Schl., 1910; Prof., Muhlenberg Coll., 1916-18; Mem. of Staff Sacred Heart Hosp., 1916; Dir., Emeritus, Physical Therapy, ibid., 1920-35; Emer. Dir., ibid., 1935; On Med. Staff, Good Shepherd Home, 1916-36; Med. Dir., ibid., 1926—. Mem.: Pa. Acad. Sci.; Am. Therapeutic Soc.; A.M.A.; A.A.A.S.; Latin-Am. Soc. of Phys. Med.; Internatl. Congress of Physiol.; Mason; Kiwanis. Author: Club Swinging for Pleasure and Exercise, 1908; Marching in all its Forms and Methods of Teaching It, 1914; Elementary Club Swinging for Normal Classes, 1913; How Old Is the Syringe in Parenteral Procedure?. Gen. Int.: Grad. of Chantanqua Schl. of Phys. Edn., 1908. Contbr. to: Medical World; Am. Med.; N. Y. Med. Record; Jour. Immunol.; Proc. Pa. Acad. Sci.; etc. Areas of Rsch.: Studies of Effects of Injection and Ingestion of Water and Hypertonic Sodium Chloride Solution and Their Reciprocal Antidotal Values.

SCHAUER, Joseph Daniel (Mr.), Mgr., New Mex. Branch, Randolph Industries, Inc., 525 San Pedro N.E., Albuquerque, N. Mex. Home Add.: 408 Cornell SE, Albuquerque, N. Mex. ENGINEERING—ELECTRICAL AND STRUCTURAL PROFESSIONAL ENGINEERING. b. Gallup, N. Mex., July 16, 1923. s. Joseph John and Elizabeth (O'Hagan) S. Edn.: B.S., Univ. of N. Mex., 1949; Grad. Schl., ibid., 1957. m. Adeline R. Brunetta, June 13, 1945. c.: Joseph D.; James O.; April M. Exp.: Chief Engr., Brunetta Construction Co., Gallup, N. Mex., 1951—; Staff Mem., Sandia Corp., Albuquerque, N. Mex., 1951-60; Sales Exec., Brooks-Feeger and Asco., ibid., 1960-61; Branch Mgr., Randolph Industries, ibid., 1962—. Hon. Pos.: Chmn., Legislative Comm. N. Mex. Soc. of Prof. Engrs. 1958. Mem.: Instrument Soc. of Am.; Inst. of Radio Engrs.; Soc. of Am. Milit. Engrs.; Am. Ord. Assn.; New Mex. Soc. of Prof. Engrs.; Natl. Soc. of Prof. Engrs.; Am. Assn. for the Adv. of Sci.; Am. Radio Relay League; Holy Name Soc.; B.P.O.E.; Izaak Walton League. Author: A Survey of Information Retrieval System, 1958; A Desk Top Information Retrieval System, 1959. Serv. Rec.: U. S. Marine Corps, 1942-46. Areas of Rsch.: Information Retrevial Systems, Intrusion Detection Systems, Electronic Test Equipment.



SCHEDLER, George Dean (Mr.), Reg. Rep., Harris-Upham and Co., Tulsa, Okla. Home Add.: 7257 E. 29th St., Tulsa, Okla. GEOPHYSICAL EXPLORATION FOR OIL AND MINERALS. b. Cavite, Philippines, Sept. 8, 1925. s. Edmund W. and Edna Belle (Rouse) S. Edn.: B.A., Univ. of Calif., 1946. m. Margaret Anne Gibson, Jan. 20, 1951. c.: Gregory Dean; Dale Gibson; Bruce Allen; Margaret Anne. Exp.: Party Chf., Seismograph Serv., Corp., Tulsa, Okla., 1946-57; Mgr. Far East. Oper. Century Geophys. Corp., Tulsa, Okla., 1957-61; Registered Rep., Harris-Upham and Co., 1961—. Hon. Pos.: Fulbright Comm. for Filipino Scholarships, Manila, Philippines. Mem.: Am. Geophys. Union; Soc. of Exploration Geophysts.; Beta Theta Pi. Contbr. to: The Philippine Geolt. Areas of Rsch.: Geophysical Exploration for Oil and Minerals.



SCHEFF, Benson Hoffman (Mr.), Sr. Project Mem., Technical Staff, R.C.A. Burlington Mass. Digital Computer Design and Development Group, 1959, Burlington, Mass. Home Add.: 76 Lovell Road, Watertown, Mass. DIGITAL COMPUTER APPLICATIONS. b. New York, N. Y., May 16, 1931. s. Herman D. and Sarah (Hoffman) S. Edn.: B.A., Oberlin, 1951; M.A., Columbia Univ., 1952. m. Betty-Jane Weiss; May 30, 1953. c.: Andrew Jon; James Lloyd; Brian Cyril. Exp.: Digital Computer Spec., Computer Training Officer, Natl. Security Agency, 1952-55; Rsch. DSR Staff, Servomechanism Lab., M.I.T., 1955-59. Mem.: Am. Stat. Assn.; Assn. for Computing Machinery; Mason; Knights of Pythias. Contbr. to: Am. Stat. Assn. War Rec.: U. S. Navy, Korean War. Areas of Rsch.: Digital Computer Applications. Research in Digital Computer System Design. Human-Computer Interaction Systems.

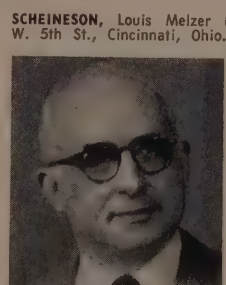
SCHEFF, George Julius (M.D. and Ph.D.), Prof. of Microbiology and Publ. Health, The Chicago Med. Schl., 710 S. Wolcott Ave., Chicago 12, Ill. Home Add.: 246 Hill Ave., Glen Ellyn, Ill. MICROBIAL BIOCHEMISTRY; INFECTIOUS DISEASES; EPIDEMIOLOGY, IMMUNOLOGY. b. Budapest June 6, 1897. s. Dr. Ladislaus and Ella (Wolf) S. Edn.: M.D., Univ. of Budapest, 1922; Ph.D., Yale Univ., 1943. m. Doctor Irene M. Pfeifer, 1924. Exp.: Instr., Univ. of Budapest, 1922-26; Asst. Prof., Univ. of Pecs, 1926-35; Assoc. Prof., ibid., 1935-38; Asst. Prof. in Med., Ohio State Univ., 1944-47; Asst. Prof., Chicago Med. Schl., 1947-51; Assoc. Prof., ibid., 1951-55; Prof., ibid., 1955—. Mem.: A.A.; Soc. Exp. Biol. and Med.; N. Y. Acad. of Sci. Contbr. to: Biochem. Ztsch.; Jour. Intf. Dis.; Jour. of Lab. and Clin. Med. Areas of Rsch.: Metabolism of Infectious Diseases, Microbiology, Immunology.

SCHEIBEL, Edward George (D.Ch.E.), Dir. of Engrng., York Process Equipment Corp., West Orange, N. J. Home Add.: 75 Harrison Ave., Montclair, N. J. CHEMICAL ENGINEERING—PROCESS DESIGN. b. Brooklyn, N. Y., Jan. 15, 1917. s. Edward A. and Frances W. (Eilenberg) S. Edn.: B.S., Cooper Union Inst. of Tech., 1937; M.Ch.E., Polytechnic Inst. of Brooklyn, 1940; D.Ch.E., ibid., 1943. m. Lucille J. Boyle, 1945. c.: Joan F.; Elaine L.; Edward J.; Gloria J. Exp.: Plant Supt., H. C. Bugbird Co., Inc., Carlstadt, N. J., 1937-42; Process Engrs., M. W. Kellogg, New York, N. Y., 1942-43; Process Engr., Hydrocarbon Rsch., Inc., ibid., 1944-45; Hd., Chem. Engr. Group, Hoffmann La Roche, Inc., Nutley, N. J., 1945-55; Dir. of Engrng., York Process Equipment Corp., Otto H. York Co., Inc., W. Orange, N. J., 1955—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engr.; Am. Assn. Adv. of Sci.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Encyc. of Chem. Tech.; Technique of Organic Chem.; Separation Processes in Practice; Ind. and Engr. Chem.; Petroleum Retiner; Chem. Engrng.; A.I.Ch.E. Jour.; Chem. Engrng. Progress; Chemie Ingenieur. Technik.; A.I.Ch.E. Symposium Series. Hon. Int.: Received Jr. Award of A.I.Ch.E. in 1949 for Papers Published in Chem. Engrng. Prog. on Extractive Distillation and Fractional Liquid Extraction. Areas of Rsch.: Chem. Process Design and Development. Equipment Design for Mass Transfer Operations—Absorption, Distillation and Extraction.

SCHEIE, Harold Glendon (M.D.), Prof. Ophthalmology, Chmn. Dept., Univ. of Pa., Philadelphia, Pa. Home Add.: Ardmore Ave. and Conbridge Rd., Ardmore Pa. OPHTHALMOLOGY. b. Brookings County, S. D., Mar. 24, 1909. s. Lars and Ella (Ware) S. Edn.: B.S., Univ. of Minn., 1931; M.D., ibid., 1935; D.Sc., Univ. of Pa., 1940. m. Mary Ann Tallman, Nov. 1, 1951. c.: Eric Glendon; Nancy Ware. Exp.: Instr., Med. Schl., Univ. of Pa., Dept. Ophthalmology, 1941-45; Asst. Prof., ibid., 1945-49; Assoc. Prof., ibid., 1948-53; Prof., ibid., 1953—; Instr., Ophthalmology, Grad. Schl. Med., Univ. Pa., 1946; Asst. Prof., Ophthalmology, ibid., 1946-52; Assoc. Prof., ibid., 1952-56; Prof., ibid., 1956—; Ophtalmologist, Childrens Hosp., Philadelphia, 1949—; Chmn., Dept. Ophthal., Hosp., Univ. of Pa., 1960. Hon. Pos.: Mem., Advisory Coun. Reserve Affairs to Surgeon Gen., 1955—; Advisory Panel, Med. Scis., to Secretary of Defense, 1956—; Special Med. Advisory Group, Vets. Admin., 1956-59; Medico, Natl. Comm.; A.M.A. Comm. Medical Rating; Panel Experts, Impartial Med. Testimony Plan, Pa.; Grad Training Comm. Am. Coll. Surgeons; Comm. Guild Fellowship Program, World Prescription Opticians Am., Inc.; Editorial Bd., A.M.A. Archives Ophthalmology; Comm. Ophthalmology of Tchrs. Sect., Nat. Acad. Ophthalmology. and Otolaryngology; Am. Bd. Ophthal. Special Advisory Staff, Philadelphia Chapt. Reserve Officers Assn.; Rsch. Exec. Coun. Natl. Soc. Prevention of Blindness; Natl. Trustees Natl. Med. Found. for Eye Care; Scientific Advisory Comm., Natl. Coun. to Combat Blindness, Inc.; Consultant, Ophthalmology, Camden City Municipal Hosp., 1950—; Second Vice Pres., Am. Coll. of Surgeons, 1961; Consultant, Ophthalmol., Skin and Cancer Hosp., Philadelphia; 1949—; Civilian Consultant, Valley Forge Gen. Hosp., Pa., 1947—; Civilian Consultant, Ocular Rsch. Unit, Walter Reed Army Hosp. and Med. Center, Wash., D. C., 1952—; Consultant, Vets. Admin. Hosp., Phila.; Central Office Chief Consultant, Ophthalmology, Vets. Admin., Wash., D. C., 1951-59; Consultant, Chronic Disease Program, Public Health Serv., 1956—; Secy., Sect. Ophthalmol., A.M.A., 1954-59; Chmn., ibid., 1959-60; Chmn., Section Ophthalmol., Coll. Physicians, Philadelphia, 1958-59; Treas. and Trustee, Natl. Med. Found. for Eye Care, 1959; Vice Pres., Pa. Acad. Ophthal. and Otol., 1959; 1st Vice Pres., A.A.O.O., 1959. Mem.: Philadelphia County Med. Soc.; Pa. State Med. Soc.; Am. Med. Assn.; Fellow, Am. Coll. Surgeons; Coll. Physicians Philadelphia; Opthalmic Club Philadelphia; Am. Acad. Ophthalmology and Otolaryngology; Am. Ophthal. Soc.; Pan-Am. Ophthal. Soc.; Pa. Acad. Ophthal. and Otol.; John Morgan Soc.; Med. Club Philadelphia; Assn. Rsch. Ophthal.; Alpha Omega Alpha; A.A.A.S.; Pan-Pacific Surgical Soc.; Philadelphia Country Club; Army-Navy Club, Wash., D. C.; Ophthalmological Soc. United Kingdom; Reserve Officers Assn.; Assn. Military Surgeons; Assn. U. S. Army; Order British Empire. Co-Author: Surgery of the Eye. Contbr. to: A.M.A.; Archives Ophthal.; Am. Jour. Ophthal.; Trans. Am. Acad. Ophthal. and Otol. Serv. Rec.: M.C. A.U.S., and U.S.A.R., 1936-53, Col. to Brig Gen. Decorations: Two Bronze Stars. Areas of Rsch.: Glaucoma and Ocular Surgery.

SCHEIN, Lorraine Sandra (Mrs.), Techn. Liaison, Leesona Moos Labs., 90-28 Van Wyck, Expwy., Jamaica, N. Y. Home Add.: 17 Admiral Lane, Hicksville, N. Y. PHYSICAL CHEMISTRY; DOCUMENTATION. b. Brooklyn, N. Y., Jan. 29, 1933. d. Abraham Isaac Charnoff and Belle (Siegel) C. Edn.: B.A., Adelphi Coll., 1954; M.S., N. Y. Univ., 1958. m. Aaron M. Schein, June 5, 1960. Exp.: Tchng. Fellow, N. Y. Univ., N.Y.C., 1954-56; Chemist, Scient. Design Co., N.Y.C., 1956-60; Techn. Liaison, Leesona Moos Labs., 1960—. Mem.: Am. Chem. Soc.; Am. Rocket Soc.; Am. Assn. for the Adv. of Sci.; Air Force Assn.; Phi Sigma Sigma; Delta Tau Alpha; Delta Phi Alpha; Gamma Sigma Epsilon. Areas of Rsch.: Fused Salts; Documentation; Patent Liaison.

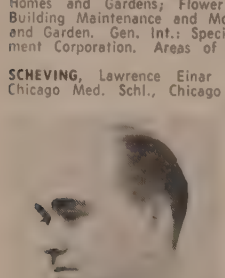
SCHEINESON, Louis Melzer (Dr.), Pharmaceutical Chemist, 146 W. 5th St., Cincinnati, Ohio. Home Add.: 5047 Oberlin Blvd., Cincinnati, Ohio. PHARMACEUTICAL CHEMISTRY. b. Cincinnati, Ohio, Sept. 26, 1905. s. Meyer and Fannie (Melzer) S. Edn.: B.S., Univ. of Cincinnati; Ph.B., Univ. of Cincinnati, Coll. of Pharm., 1924; Ph.C., ibid., 1925; Chicago Univ., Inst. for Hosp. Administration, 1940; D.Sc., Birmingham Coll., 1958. m. Mary Apseloff, July 14, 1935. c.: Nancy Jane. Exp.: The Jewish Hosp., Cincinnati, 1925-41; Milit. Serv., 1941-43; Self Employed, 1943—. Hon. Pos.: Co. Chmn., Hosp. Div., The Show Globe, N. Y. World's Fair, 1939. Mem.: A.A.A.S.; Soc. of Hosp. Pharmacists; Alpha Zeta Omega. Contbr. to: Am. Jour. of Ophthalmol.; The Modern Hosp. Serv. Rec.: U.S.A., Capt., Med. Adm. Corps. Areas of Rsch.: Estrogenic Substances; Buffered Ophthalmic Preparations; Bromine Ion; Replacing Iodine as X-ray Contrast Medium; Cosmetics Odors; Spermacidal Preparations; Biological Deodorizing Sprays.



SCHEPP, William John (Mr.), Consulting Chemist, 151 River Dr., East Paterson, N. J. SURFACE CHEMISTRY—INDUSTRIAL AGRICULTURAL, MEDICAL. b. Paterson, N. J., July 8, 1889. s. William and Anna (Sell) S. Edn.: Graduate Chemist of Cooper Union, 1912. m. Amelia Giger, Oct. 12, 1916. Exp.: Chemist, Cassella Color Co., N. Y. C., 1909-12; Textile Instr., 23rd St., Y.M.C.A., 1910-12; Chemist, Lederle Labs., 1912; Chf. Chem. and Textile Expert, Natl. Cloak and Suit Co., 1912-18; Pres., Schepp and Rosenthal (Textiles), N. Y. C. and S. and R. Silk Mills, Charlottesville, Va., 1919-37; Pres., William J. Schepp Co., East Paterson, N. J., 1937-58; Consulting Chem., East Paterson, N. J., 1958—. Hon. Pos.: Chmn., 1st Planning Bd. and Industrial Adv. Comm. of East Paterson, N. J.; Past Pres. of C. of C. of East Paterson, N. J. Mem.: Am. Chem. Soc.; Fellow, Am. Assn. Adv. Sci.; Fellow, Am. Inst. of Chem.; Fellow, Am. Scientific Affiliation; N. Y. Acad. Sci. Gen. Int.: Invented Sun-Tan Doll and Filmofoam Discs; Developed a Dermotherapeutic Agent for Re-establishing the Normal Ph of the Skin—Trade Mark "NORMA-derma." Areas of Rsch.: Development of Unusual Photo, Thermal and Chemical Changes.

SCHERY, Robert Walter (Ph.D.), Dir., Lawn Inst., Marysville, Ohio. Home Add.: Rt. 4, Marysville, Ohio. BOTANY. b. St. Louis, Mo., Mar. 12, 1917. s. William Robert and Meta (Schroth) S. Edn.: A.B., Wash. Univ., St. Louis, 1938; M.S., ibid., 1940; Ph.D., ibid., 1942. m. Lois Keller, 1941. c.: Teris Kim; Stephen Dale. Exp.: Prof., Wash. Univ., 1938-51; Sr. Tech., Rubber Development Corp., Rio de Janeiro, Brazil, 1943-46; Botanist, Monsanto Chem. Co., St. Louis, Mo., 1951-54; Botanist, Scott Seed Co., Marysville, 1954-57; Dir., The Lawn Inst., ibid., 1957—. Hon. Pos.: Chmn., Lawn and Turfgrass Div., Am. Seed Trade Assn.; Vice Pres., Nature Conservancy. Mem.: Botan. Soc. of Am.; Am. Inst. of Biol. Scis.; Am. Assn. for the Adv. of Sci.; Am. Soc. of Horticultural Sci.; Am. Soc. of Agronomy; Am. Horticultural Soc.; Ecological Soc. of Am.; Garden Writers Assn. of Am.; Sigma Xi; Phi Beta Kappa; Kiwanis Club. Author: Plants With Man, 1952; The Lawn Book, 1961. Contbr. to: Concept; Econ. Botany; USDA 1961 Yearbook; Popular Gardening; Horticulture; Am. Rose Mag.; Better Homes and Gardens; Flower and Garden; The Green Thumb; Building Maintenance and Modernization; Flower Grower; House and Garden. Gen. Int.: Special award of Merit Rubber Development Corporation. Areas of Rsch.: Botany.

SCHEVING, Lawrence Einar (Ph.D.), Asst. Prof. of Anatomy, Chicago Med. Schl., Chicago 12, Ill. Home Add.: 115 North Pierce, Wheaton, Ill. ANATOMY CYTOLOGY. b. Hensel, N. D., Oct. 20, 1920. s. Einar Larus and Mary (Brown) S. Edn.: B.S., De Paul Univ., 1949; M.S., ibid., 1950; Ph.D., Loyola Univ., 1957. m. Virginia Krumdick, Aug., 1949. c.: Lawrence; Mary; John; Jennifer. Exp.: Assoc. Prof., Lewis Coll., 1952-57; Asst. Prof., Chicago Med. Schl., 1957—. Mem.: Am. Soc. of Anatomists; Am. Soc. of Zoology; Sigma Xi. Contbr. to: Anatomical Record; Jour. of Cellular and Comparative Physiol.; Biol. Bull.; Acta Anatomica. Serv. Rec.: U. S. Army, W.W. II. Areas of Rsch.: Circadian Rhythms, Cell Culture, Autoradiography.



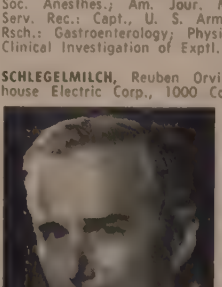
SCHICKER, Joseph Stephen (Mr.), Hd. of Maths. Dept., St. Ignatius H. S., Cleveland, Ohio. Home Add.: 4265 Rocky River Dr., Cleveland, Ohio. MATHEMATICS — THE NEW APPROACH. b. Cleveland, Ohio, Mar. 12, 1899. s. Peter Paul and Anna (Pollak) S. Edn.: B.Sc., Univ. of Dayton, 1919. m. Agnes N. Donnelly, June 28, 1941. c.: Charlotte; Peter Joseph. Exp.: Instr., Math. Dept., W. Phila. Catholic H. S., Phila., Pa., 1919-21, 1924-25; Instr., Univ. of Dayton Prep. Schl., Dayton, Ohio, 1921-24; Hd. of Sci. and Math. Depts., St. Louis Coll., Honolulu, Hawaii, 1925-35; Prin., St. Mary's Grade and Jr. High Schl., Hilo, Hawaii, 1935-37; Instr., St. Joseph's H. S., Alameda, Calif., 1937-38; Asst. Supt. of Dorms., Univ. of Dayton, Dayton, Ohio, 1938-40; Phys. and Math. Instr., St. Ignatius H. S., 1940-58; Hd. of the Depts. of Sci. and Math., ibid., 1958-60; Hd. of the Math. Dept., ibid., 1960—. Mem.: Greater Cleveland Maths. Program; Cleveland Diocesan Math. Assn.; Am. Assn. for the Adv. of Sci. Gen. Int.: Recipient of Father John J. Rossing Award, Presented by the Alumni of St. Ignatius H. S., 1959; Awarded two-year Natl. Sci. Sum. Fellowship at Western Resv., 1959 and 1960. Areas of Rsch.: The Introduction of the "New Mathematics" in the Grades and Second Schls.; The Education of Parents in the New Program by Lectures at Meetings and Social Affairs.

SCHLESINGER, Herbert Julius (Ph.D.), Chf. Clin. Psycholt., The Menninger Fdtn., Box 829, Topeka, Kan. Home Add.: 323 Greenwood Ave., Topeka, Kan. PSYCHOLOGY; PSYCHOANALYSIS. b N.Y.C., Oct. 22, 1921. s. Frank and Dinah (Wolfson) S. Edn.: B.B., Brooklyn Coll., 1942; Ph.D., Univ. of Kan., 1953. m. Elizabeth Giffin, June 6, 1951. c.: John Arnold; Robert Louis Exp.: Clin. Psychol. Asst., Kings Co. Hosp., Brooklyn, N. Y., 1941-42; Clin. Psychol., Intern, V.A. Hosp., Topeka, Kan., 1946-50; Sr. Rsch. Asst., Rsch. Dept., Menninger Fdtn., Topeka, Kan., 1947-50; Assoc. Psycholt., Adult Psychiat. and Rsch. Depts., ibid., 1950-52; Sr. Psycholt., Dept. of Adult Psychiat., ibid., 1953—; Instr., Topeka Inst. for Psychoanalysis, Kan., 1954; Chf. Clin. Psycholt., The Menninger Fdtn., Topeka, Kan., 1956-Hon. Pos.: Exec. Asst., Topeka Inst. for Psychoanalysis, 1958-61; Secy., Topeka Inst. for Psychoanalysis, 1961—; Trng. Analyst, ibid., 1961—; Secy.-Treas., Topeka Psychoanalytic Soc., 1962—; Fellow, Am. Psychol. Assn., Am. Orthopsychiat. Assn. Mem.: Am. Assn. Adv. Sci.; Sigma Xi; Kans. Psychol. Assn.; N. Y. Acad. Sci.; Pres., Fine Arts Soc. Contbr. to: Psychol. Rev.; Jour. of Personal.; Bull. of the Menninger Clinic; Am. Jour. of Orthopsychiat. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: The Application of Psychoanalytic Principles to Hospital Milieu Treatment; Methodology of Clinical and Experimental Investigation in Psychiatry and Perceptual and Cognitive Structure in Relation to Personality.

SCHIFF, Leon (M.D.), Prof., Medicine, Univ. of Cincinnati Med. Schl., Cincinnati, Ohio. Home Add.: 1027 Egan Hills Dr., Cincinnati, Ohio. INTERNAL MEDICINE. b. Riga, Latvia, May 1, 1901. s. Mordecai and Esther (Liebschutz) S. Edn.: B.S., Univ. of Cincinnati, 1922; M.D., ibid., 1924; M.S., ibid., 1927; Ph.D., ibid., 1929. m. Augusta Miller, June 9, 1925. c.: Herbert (dec.); Gilbert Martin; Eugene Roger. Exp.: Asst. Prof., Med. Univ. of Cincinnati, 1930-40; Assoc. Prof. Med., ibid., 1940-54; Prof., Med., ibid., 1954—; Dir., Gastric Lab., Cincinnati Gen. Hosp., 1936—. Hon. Pos.: Past Pres., Am. Assn. for the Study of Liver Diseases; Affiliate, Royal Soc. of Med., Great Britain. Mem.: Am. Coll. Phys.; Am. Gastroenterol. Assn.; Am. Soc. for Clin. Investigation; Central Soc. Clin. Rsch.; A.A.A.S.; N. Y. Acad. of Scis.; Internatl. Assn. for the Study of the Liver; Sigma Xi; Alpha Omega Alpha; Pi Kappa Epsilon. Author: Diagnosis of Jaundice, 1946; Clinical Approach to Jaundice, 1954. Editor: Diseases of the Liver, 1956. Areas of Rsch.: Diseases of the Liver and Digestive Tract.

SCHIFFRIN, Milton Julius (Ph.D.), Dir., Clin. Rsch., Hoffmann-La Roche, Inc., Nutley, N. J. Home Add.: 13 Hathaway Lane, Essex Fells, N. J. CLINICAL PHARMACOLOGY. b. Rochester, N. Y., Mar. 23, 1914. s. Wm. and Lillian (Harris) S. Edn.: B.A., Univ. of Rochester, 1937; M.S., ibid., 1939; Ph.D., McGill Univ., 1941. m. D. Euphemia Wharry, Oct. 10, 1942. c.: David W., Hilary A. Exp.: Instr., Northwestern Univ., 1941-46; Lectr., Univ. Ill. Med. Schl., 1948-56; Clin. Asst. Prof. Anesthesiol., ibid., 1957-61; Assoc. Dir., Clin. Rsch., Hoffmann-La Roche, Inc., Chicago, Ill., 1946-60. Hon. Pos.: Porter Fellow of Am. Physiol. Soc., 1941-42. Mem.: Am. Physiol. Soc.; Internatl. Coll. of Surg.; Can. Pharmacol. Soc.; Chicago Soc. Anesthesiol; N. Y. Acad. Sci.; Am. Chem. Soc. Am. Gerontol. Soc.; Soc. Exptl. Biol. Med.; A.A.A.S.; Sigma Xi; Beta Delta Gamma; Cliff Dwellers. Co-Author: Clinical Analgetics, 1955. Ed.: Mgmt. of Pain in Cancer, 1957. Contbr. to: Physiol. Principles of Surg.; Am. Jour. Physiol.; Am. Jour. Gastroenterol.; Proc. Soc. Exptl. Biol. Med.; Arch. of Surg.; J.A.M.A.; Jour. Can. Soc. Anesthes.; Am. Jour. Med. Sci.; Current Therap. Rsch. Serv. Rec.: Capt., U. S. Army Air Forces, 1942-46. Areas of Rsch.: Gastroenterology; Physiology and Pharmacology of Pain; Clinical Investigation of Exptl. Drugs.

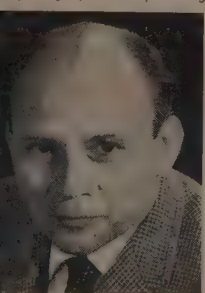
SCHLEGELMILCH, Reuben Orville (Ph.D.), Techn. Dir., Westinghouse Electric Corp., 1000 Conn. Ave., Wash. 6, D. C. Home Add.: 5306 Saratoga Ave., Chevy Chase 15, Md. ELECTRICAL ENGINEERING. b. Green Bay, Wis., Mar. 8, 1916. s. Raymond A. (dec.) and Emma J. (Schley) S. Edn.: B.S., Univ. of Wis., 1938; M.S., Rutgers Univ., 1940; Ph.D. Studies (E.E.), Cornell Univ., 1940-41; Ph.D. Studies (E.E.), Univ. of Ill., 1941-42; Completed formal requirements for D.E.E., Polytech. Instit. of Brooklyn, 1947-51; S.M. Ind. Mgt., Mass. Inst. of Tech., 1955; Ph.D. (cand.), E.E., Syracuse Univ., 1962. m. Margaret Roberts, Aug. 22, 1943. c.: Janet R.; Raymond J.; Joan C.; Margaret A. Exp.: Eng. Instr., Rutgers Univ., New Brunswick, N. J., 1938-40; Eng. Instr., Cornell Univ., Ithaca, N. Y., 1940-41; Res. Engr., Expt. Sta., Univ. of Ill., Urbana, Ill., 1941-42; Radar Dev. Engr. and Sect. Hd., U. S. Signal Corps, Camp Evans, Belmar, N. J., 1942-45; Chief Radar Lab., USAF, AMC Watson Labs, Red Bank, N. J., 1945-51; Chief Electronic Warfare and Techniques Div., Rome Air Dev. Ctr., Air Res. Dev. Command, Rome, N. Y., 1951-54; Grad. Fellow, Alfred P. Sloan, Fellow-



in Ind. Mgt., Mass. Inst. of Tech., Cambridge, Mass., 1954-55; Dir. Rsch. and Dev., Rome Air Dev. Ctr., Rome, N. Y., 1955-59; Techn. Dir., Defense and Space Gp. Hdqrs., Westinghouse Electric Corp., 1959—. Hon. Pos.: Vice Chmn., Rome-Utica Sec., Inst. of Radio Eng., Rome, N. Y., 1957-58; Chmn., Rome-Utica Sect., Inst. of Radio Eng., Rome, N. Y., 1958-59; Chmn., Prof. Group on Eng. Mgt., Inst. of Radio Eng., Rome, N. Y., 1956-57; Chmn., Prof. and Scientific Comm., Rome Air Dev. Ctr., USAF, Rome, N. Y., 1956-59; Mem., Natl. Admin. Comm., Prof. Group on Eng. Mgt., Inst. of Radio Eng., New York, N. Y., 1956-59; Chmn., Finance Commission, First Methodist Church, Rome, N. Y., 1957-58; Vice-Pres., Rome Scottish Rite Club, Rome, N. Y., 1958-59; Licensed Prof. Eng., State of New Jersey, 1947—. Mem.: Guided Missile and Space Council, Aerospace Industries, Wash., D. C., 1959—; Am. Assn. for the Adv. of Sci., 1944—; Inst. of Radio Eng., 1942—; Am. Inst. of Elec. Eng., 1946—; D. C. Soc. of Prof. Eng., 1959—; Natl. Soc. of Prof. Eng., 1947—; Inst. of the Aerospace Sci., 1959—; Am. Rocket Soc., 1959—; Natl. Rocket Club, 1960—; Soc. of Sloan Fellows, 1958—; Assn. of the U. S. Army, 1960—; Armed Forces Comm. and Elec. Assn., 1958—; Philosophical Soc. of Wash., 1960—; Free and Accepted Masons, 1957—; Ancient Accepted Scottish Rite, 1958—; Ziyara Temple, 1958—; Rome Scottish Rite Club, 1958—; Natl. Aviation Club, 1959—; Phi Eta Sigma, 1935; Alpha Zeta, 1937. Contbr. to: Annual Report, Expt. Sta., Cornell Univ.; Numerous USAF Classified Reports. Areas of Rsch.: Networks, Electronic Circuits and Electronic Tubes; Radar and Electronic Warfare Systems; Engineering Management.

SCHLEUSENER, Paul Edward (Ph.D.), Assoc. Prof. of Agric. Engrng., Univ. of Neb., Lincoln 3, Neb. Home Add.: 1811 N. 38, Lincoln 5, Neb. AGRICULTURAL ENGINEERING. b. Oxford, Neb., May 26, 1922. s. A. W. and Katherine (Albrecht) S. Edn.: B.Sc., Univ. of Neb., 1944; M.S., Mich. State Univ., 1949; Ph.D., ibid., 1957. m. Thelma E. Paxton, June 29, 1952. c.: Paul L.; David W.; Barbara A.; Mark A. Exp.: Grad. Asst., Mich. State Univ., East Lansing, Mich., 1947-48; Instr., ibid., 1948-51; Grad. Asst., ibid., 1951-53; Asst. Prof. of Agric. Engr., Univ. of Neb., 1953-58; Assoc. Prof., ibid., 1958—. Mem.: Sigma Tau; Gamma Sigma Delta; Sigma Xi; Lincoln Engrs. Club; Neb. Engrng. Soc. Contbr. to: The Jour. of the Am. Soc. of Agric. Engrs.; Trans. of the Am. Soc. of Agric. Engrs. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Evapotranspiration of Crops; Hydraulic, Hydrologic, Meteorologic and Soil Physical Phases of Soil-Water-Plant-Climate Relationships; Irrigation Well Construction.

SCHMID, Hellmut Heinrich (D.Eng.), Chf. Scient. Advisor, U. S. Army Engrs., Geodesy Intelligence Mapping Rsch. and Devl. Agency, Ft. Belvoir, Va. GEODESY AND PHOTOGRAMMETRY. b. Dresden, Germany, Sept. 12, 1914. s. Kurt Rudolf and Dora Hedwig (Meissner) S. Edn.: Dipl. Engr., Tech. Univ., Dresden, Germany, 1939; D.Engr., ibid., 1941. m. Ilse Hieby, Oct. 7, 1949. c.: Monica Ilse. Exp.: Scientist, Rocket Rsch. Ctr., Germany, 1941-45; Rsch. Scientist, Ballistic Rsch. Labs., Aberdeen, Md., 1945-62; Chf. Scientific Advisor, GIMRADA, Ft. Belvoir, Va., 1962—. Hon. Pos.: Mem., Bd. of Dirs., Soc. of Photogrammetry; Mem., Space Bd., Natl. Acad. of Scis. Mem.: Am. Geophys. Union; Am. Soc. of Photogrammetry. Contbr. to: Ballistic Rsch. Labs. Reports; Photogrammetric Engrng., Am. Soc. of Photogrammetry; Photogrammetria, Internatl. Soc. of Photogrammetry; Bildmessung und Luftbildwesen, German Soc. of Photogrammetry; Istituto Greografico Militare, Bolletino di Geodesia e Scienze Affini. Gen. Int.: Fairchild Award received, 1958; Robert H. Kent Award by the U.S.A. Ballistic Rsch. Lab., 1962. Areas of Rsch.: Photogrammetry, Analytical Photogrammetry; Precision Geodetic and Photogrammetric Mensuration Techniques; Generalized Least Squares Methods for Optimizing Multi-Variable Systems; Satallite Triangulation; Computer Application.



SCHMEER, (Sr.) M. Rosarii, O.P. Chmn., Sci. Dept., St. Vincent Ferrer H. S., and Chmn. Biol. Edn., Archdiocese of N.Y.C., 151 E. 65th St., N.Y. 21, N.Y. Home Add.: Dominican Srs. of St. Mary of the Springs, Columbus, Ohio. BIOLOGICAL SCIENCES. b. Rochester, N.Y., Nov. 14, 1929. d. Edw. J. and Madeline M. (Haines) S. Edn.: A.B., Coll. of St. Mary of the Springs, 1951; M.S., Notre Dame Univ. Exp.: Sci. Instr., Bishop Watterson H. S., Columbus, O., 1954-59; Chmn., Sci. Dept., St. Vincent Ferrer H. S., N.Y., N.Y., 1959—. Hon. Pos.: N.P. Science Council Manhattan; Chmn., Exec. Comm., Ohio Jr. Acad. of Sci., Cent. Ohio Dist., 1955-59; Chmn. of Pub., Ohio Acad. Sci. Day, 1956-57; Sci. Day Coordinator, Diocese of Columbus, Ohio, 1957-59; Exec. Bd. Permanent Chmn., Biological Edn., Archdiocese of N.Y.C.; Exec. Comm., Catholic Sci. Council. Mem.: N. Y. Acad. of Scis.; A.A.A.S.; Natl. Sci. Tchrs. Assn.; Albertus Magnus Sci. Guild; Am. Inst. of Biol. Scis.; A.C.S.; N.Y. Sci. Council; Natl. Assn. of Biol. Tchrs.; Assoc. Mem., Am. Museum of Natural History; Assoc. Mem., Natl. Geog. Soc. Honors and Awards: 1962 Natl. Sci. Fair Finalist in Seattle World's Fair; Received Am. Pharm. Assn. Award; Recipient, Natl. Sci. Fdn. Fellowship for Tchrs., 3 times; Elected Outstanding Sci. Tchr. for 1959 by Ohio Acad. Sci.; Was Sci. Tchr. Receiving Greatest Number of Superior Awards in Dist. and St. Sci. Days, 1958-59, Sponsored by Ohio Acad. Sci.; Had Hon. Mention Student in Westinghouse Sci. Talent Search, 1958 and 3 Hon. Mention Students, ibid., 1959; Was Winner and had 19 Hon. Mention Awards, Natl. Sci. Achievement Contest, 1958, and 23 Hon. Mention Awards in 1960, Same Competition; Recipient of Several Am. Cancer Soc. Awards, 1957-59. Gen. Int.: Has Had 21 Students Who Have Received Various Awards or Honors for Science Achievement Including 2 Kroger Sci. Awards, Natl. Sci. Fdn. Grants, Natl. Cancer Inst. Scholarship, N.Y. Sci. Fair Awards and N.Y. Archdiocesan Sci. Fair Awards. Areas of Rsch.: Biological Sciences, Tissue Culture, Cancer Chemotherapy.

SCHMIDEBERG, Melitta Rene (M.D.), Pres., Assn. for the Psychiatric Treatment of Offenders, 27 West 96th St., N.Y.C., N.Y. CRIMINAL PSYCHIATRY. PSYCHOANALYSIS, CHILD PSYCHIATRY. b. Czechoslovakia. d. Dr. Arthur S. M. Klein and Melanie (Reizes) K. Edn.: M.D., Univ. of Berlin, 1929. Exp.: Physician, London Clinic of Psycho-Analysis, Psychiatrist, ISTD, London, England, 1933-47; Training Analyst, Britist Psycho-Analytic Soc., 1936-47; Prof. of Psychiatry, Adelphi Coll., Long Island, N. Y., 1949-51; Dir. of Clin. Servs., Assn. for the Psychiatric Treatment of Offenders, New York, N. Y., 1950-61; Pres., ibid., 1962—. Hon. Pos.: Secy., Psychiatric Subcommittee, Med. Advisory Bd. to the Bd. of Correction, N.Y.C.; Co-Editor, Psychol. and Social Series, London; Jour. of Offender Treatment; Assoc. Editor, Archives of Criminal Psychodynamics; Mem., Editorial Bd., Excerpta Criminologica; Psychosomatics. Mem.: Internatl. Psycho-Analytic Assn.; Internatl. Criminological Soc.; Am. Med. Assn.; Am. Psychiatric Assn.; Orthopsychiatric Soc.; A.A.A.S. Author: Children in Need, 1949. Contbr. to: Am. Jour. of Psychotherapy; Jour. of Criminal Law, Criminol. and Police Sci.; Arch. of Criminal Psychodynamics; Child Care Publ. Areas of Rsch.: Techniques of Treatment with Psychopaths and Acting Out Patients; Relation of Psychiatry and Law.

SCHMIDT, Fred Herman (Mr.), Entomologist, Forest Serv. Rsch. Ctr., Jefferson Way, Ore. Sta. Univ., Corvallis, Ore. ENTOMOLOGY; INSECT PHYSIOLOGY. b. Brooklyn, N.Y., Apr. 6, 1928. s. Walter and Hedwig (Fenske) S. Edn.: B.S., Univ. of Ill., 1957; M.S., ibid., 1958. Exp.: Rsch. Asst., Insect Taxonomy, Univ. Ill., 1955-57; Entomologist, Indiana State Bd. Health, 1957-58, Summer; Rsch. Asst., Insect Physiology, Univ. Ill., 1957-61; Entomologist, Forest Serv. Rsch. Ctr., 1961—. Mem.: Sigma Xi; Entomological Soc. Am.; A.A.A.S.; Ill. Acad. Sci.; Chi Gamma Iota; Loyal Order Moose. Contbr. to: Acta Zoological Cracoviensia. Serv. Rec.: U.S. Army Med. Corps, 1951-53. Areas of Rsch.: Insect Physiology.

SCHMIDT, Gerhard Johann (Dr.), Asst. Prof., Fairleigh Dickinson Univ., 1000 River Rd., Teaneck, N.J. Home Add.: 203 W. 107th St., N.Y. 25, N.Y. MEDIAEVAL HISTORY OF ECONOMICS; THEORY OF MONEY; SOCIOLOGY OF LANGUAGES. b. Berlin, Ger., June 25, 1902. s. Salli and Johanna (Lebenheim) S. Edn.: Dr. rerum politicarum, Univ. of Berlin, 1925. Exp.: Stat., Natl. Bur. of Statistics, Berlin, 1926-27; Partner, Isr. Schmidt Sohne, Berlin-Frankfurt, 1928-38; Instr., Bergen Jr. Coll., 1946-54; Instr. to Asst. Prof., Fairleigh Dickinson Univ., 1954—. Mem.: Mediaeval Acad. of Am.; Am. Econ. Assn.; Am. Stat. Assn.; A.A.U.P.; Inst. for Mediterranean Affairs; Am. Council for Emigres in the Professions, Inc. Author: Der konstante Geldwert von Oresmius bis Knapp, 1925. Contbr. to: Various publications in Belgium, Brasil, Dantzig, England, France, Germany, India, Italy, Mexico, Netherlands, Spain, Switzerland and U.S.A. Areas of Rsch.: Influences of Italian Civilization on English Civilization; Influences of Islam on European Civilization; Civilization of Colonies; Foreigners; Tax Problems; Influence of Climate and Sociological Conditions on Languages; Problems of Money; Judaica; Causes of Industrial Revolution.

SCHMIT, Agnes Susan (Ph.D.), Prof. of Chem., San Diego Coll. for Women, Alcala Park, San Diego 10, Calif. BIOCHEMISTRY. b. Castlewood, S. D., Oct. 22, 1912. d. William and Mary (Sadler) S. Edn.: B.A., Univ. of S. D., 1933; M.S., St. Louis

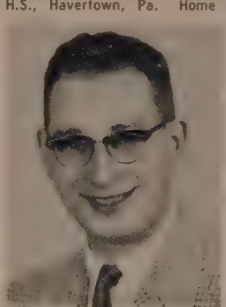
Univ., 1936; Ph.D., Stanford Univ., 1947. Exp.: Instr., Webster Coll., 1936-37; Rsch., Creighton Univ. Med. Schl., 1938-40; Instr., Duchesne Coll., 1939-40; Instr. and Assoc. Prof., San Francisco Coll. for Women, 1943-45, 1947-56; Prof. of Chem., San Diego Coll. for Women, 1956—. Mem.: Phi Beta Kappa; Sigma Xi; A.C.S.; Calif. Assn. of Chem. Tchrs.; Soc. of Sacred Heart. Contbr. to: Jour. Lab. and Clin. Med.; Proc. Soc. Exptl. Biol. and Med.; Stanford Med. Bull. Areas of Rsch.: Enzymes in Biochem.

SCHMITT, Harrison Ashley (Ph.D.), Consulting Mining Geologist, Silver City, N. Mex. Home Add.: Cottage San Rd., Silver City, N. Mex. MINING GEOLOGY. b. Mankato, Minn., June 11, 1896. s. Harrison L. and Esther M. (Grannis) S. Edn.: Ph.D., Univ. of Minn., 1926. m. Ethel M. Hagan, 1929. c.: Alexandra; Harrison H.; Paula; Armena. Exp.: Regional Geologist, Am. Smelting and Refining Co., Northern Mexico, 1926-27; Regional Geologist, N.J. Zinc Co., Southwestern U.S., 1927-31, and 1947-52; Consulting Mining Geologist, Silver City, New Mex., 1931—. Hon. Pos.: Former Pres., N. Mex. Geol. Soc.; Fellow: Geol. Soc. Am.; Mineralogical Soc. of Am.; A.A.A.S. Mem.: Soc. Econ. Geologists; Am. Inst. of Mining and Metallurgy; Geochem. Soc. Am.; Am. Geophys. Union; Beta Theta Pi; Gamma A'pha; Sigma Gamma Epsilon. Contbr. to: Econ. Geol.; Mining Engrng.; Engrng. and Mining Jour.; Bull. Geological Soc. of Am. Serv. Rec.: U.S. Marine Corps, 1917-19. Gen. Int.: Generally Credited with the Discovery and Development of Two Major Copper Mines in the U.S. and Other Mines and Ore Bodies of Copper and Zinc-Lead. Areas of Rsch.: Theory of Ore Deposition; The Valuation of Mines; Detailed Geologic Mapping of Mines.

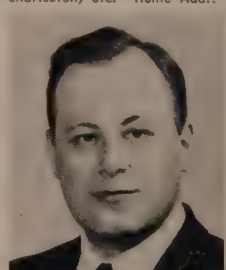
SCHMITT, Roman A. (Ph.D.), Staff Mem., Gen. Dynamics/Gen. Atomic, San Diego, Calif. Home Add.: 2181 March Pl., San Diego 10, Calif. RADIOCHEMISTRY. b. Ill., Nov. 13, 1925. s. Jos. S. and Mary B. (Freund) S. Edn.: M.S., Univ. of Chicago, 1950; Ph.D., ibid., 1953. m. Jean M. Vertovec, Dec., 1954. c.: Joseph S.; Mary F. Exp.: Chem. Instr., Univ. of Ill., 1953-54; Physics Post-Doctoral, ibid., 1954-56; Staff Mem., Gen. Dynamics/Gen. Atomic, San Diego, Calif., 1956—. Mem.: A.C.S.; Am. Geochem. Soc.; A.A.A.S. Contbr. to: Physical Rev.; Nature; Jour. of Agric. and Food Chem.; U. N. Internatl. Conf. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Photofission; Photonuclear Studies; Szilard-Chalmers Studies; Cosmochem. (Neutron Activation of Rare Earth Elements in Meteorites); Radiochem. in Solid State Physics.

SCHMITT, Waldo LaSalle (Ph.D.), Rsch. Assoc., U.S. Natl. Museum, Smithsonian Institution, Wash. 25, D.C. Home Add.: 111 Highland Lane, Takoma Park 12, Maryland. MARINE BIOLOGY, SYSTEMATICS, CARCINOLOGY. b. Wash., D.C., June 25, 1887. s. Ewald and Fanny Mathilde (Hesselbach) S. Edn.: B.S., George Wash. Univ., 1913; M.A., Univ. of Calif., Berkeley, 1916; Ph.D., George Wash. Univ., 1922. Hon. Deg.: D.Sc., Univ. of Sou. Calif., 1948. m. Alvina Stumm, Nov. 19, 1914. c.: Waldo Ernest (dec.); Barbara Ann S. Lundy. Exp.: Aide, Econ. Botany, U.S. Dept. Agri., 1907-10; Sci. Asst., U.S. Bur. Fisheries, 1910-13; Naturalist, U.S.B.F. Str. Albatross, 1913-14; Asst. Curator, Div. Marine Invertebrates, U.S. Natl. Museum, 1915-20; Curator, 1920-43; Hd. Curator, Dept. Biol., 1943-47; Hd. Curator, Dept. of Zool., 1947-57; Rsch. Assoc., Smithsonian Instit., 1957—. Hon. Pos.: Mem., Bd. Trustees, Internatl. Oceanographic Fdtn., Miami, Fla. and Bears Bluff Lab., Wadamalaw Island, S.C.; Mem., Bd. of Advisors, Serological Museum, Rutgers Univ., Inst. Fishers Rsch., Univ. of N.C.; Hon. Life Mem., Atlantic Estuarine Soc. and Zool. Soc., San Diego; Corres. Mem., Zool. Soc. London; Chmn., Conf. on the Importance and Needs of Systematics in Biology, Natl. Acad.-Natl. Rsch. Coun., 1953; Chmn., Sect. on Barnacles, Symposium on Marine Fouling and Boring Organisms, Seattle, 1958. Mem.: A.A.A.S., Fellow; Am. Soc. Zoologists; Am. Mus. Assn.; Am. Geophys Union; Am. Soc. Limnol. and Oceanography, Washington Acad. Scis.; Biol. Soc., Washington; Sigma Phi Epsilon; Beta Kappa Alpha; Sigma Xi; Cosmos, Wash., D.C.; Explorers, N.Y. Author: Marine Decapod Crustacea of California, 1921; Crustaceans, in Smithsonian Scientific Series, 1935. Contbr. to: Encyc. Brit. Gen. Int.: Naturalist, Marine Biologist and Leader on a number of exploring and collecting expeditions: So. Am.; So. Shetlands, Africa; Society Islands; Caribbean; Yucatan; Galapagos Islands; Juan Fernandez.

SCHMUCKLER, Joseph S. (Mr.), Chem. Tchr., Haverford Twp. Sr H.S., Havertown, Pa. Home Add.: 864 Beechwood Rd., Havertown, Pa. CHEMISTRY EDUCATION. b. Phila., Pa., Feb. 15, 1927. s. Harry Lewis and Ethel (Newman) S. Edn.: B.S., Univ. of Pa., 1952; M.S., ibid., 1954. m. Shirley Hyman, Sept., 1950. c.: Elliott Neil; Helene Lauren; Marjorie Beth; Lewis Andrew. Exp.: Chem. Tchr., Haverford Twp. Sr. H. S., Havertown, Pa., 1953—; Indust. Chem. Consult., Sadtler Rsch. Labs., Phila., Pa., 1954—; Chem. Edn. Consult., Franklin Inst., Phila., Pa., 1959—; Lectr. Hon. Pos.: Mem., Bd. of Dir., Phi'a. Sec., Am. Chem. Soc.; Chmn.-Elect, Current Vice-Chmn., Chem. Edn. Grp., A.C.S. Mem.: Am. Chem. Soc.; A.A.A.S.; NSTA; Phi Delta Kappa; Kappa Phi Kappa. Contbr. to: Jour. of Chem. Edn.; Chem. and Engrng. News; Phila. ACS Catalyst. Serv. Rec.: USAF, W.W. II. Areas of Rsch.: Chemical Education; Organic Chemistry.



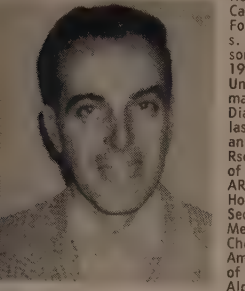
SCHMUT, Rudolf (Dr.), Rsch. Chemist, W. Va. Pulp and Paper, N. Charleston, S.C. Home Add.: 52 S. Main St., Mechanicville, N.Y. PHYSICS, CHEMISTRY, PULP AND PAPER TECHNOLOGY. b. Graz, Styria, Austria, April 10, 1930. s. Dr. Hubert and Mrs. Johanna Maria (Roeder) (dec.), L. Edn.: B.A., W. Mich. Univ., 1952; Dr. Tech. Sci., Tech. Hochschule Graz, Austria, 1957. m. Meralyn B. Dalton, May, 1961. Exp.: Lab. Asst., Sutherland Paper, Kalamazoo, Mich., summer, 1952; Sci. Asst., Inst. of Paper Tech., Graz, Austria, 1952-53, 1954-57; Rsch. Chem., W. Va. Pulp and Paper, Charleston, S.C., 1957—. Hon. Pos.: Fulbright Scholar; Chmn., TAPPI Subcomm., 1960—; Conf. Secy., Europ. Tech. Assn. Pulp and Paper Ind., 1956-57. Mem.: Tech. Assn. Pulp and Paper Ind.; A.I.C.H.E.; Alpha Phi Omega; Am. Museum Natl. Hist.; Rotary; Am. Chem. Soc.; AAAS; ASTM; Am. Manag. Assn.; S. C. Hist. Soc.; S. C. Acad. of Sci. Contbr. to: Jour. of Tech. Assn. Pulp and Paper; Southern Pulp and Paper Mftr.; Oesterr. Pacpierztg. Areas of Rsch.: Physics, Physical Chemistry, and Engineering Applied to Pulp, Paper, Lignin and Elastomers; Physical Testing; Electron Microscopy; Wood Constituents.



SCHNABLE, George L. (Ph.D.), Chemical Group Supvr., Philco Corp., Landsale Div., Church Rd., Lansdale, Pa. Home Add.: 525 Perkiomen Ave., Lansdale, Pa. INORGANIC CHEMISTRY; PHYSICAL CHEMISTRY. b. Reading, Pa., Nov. 26, 1927. s. Irvin L. and Laura C. (Albright) S. Edn.: B.S., Albright Coll., 1950; M.S., Univ. of Pa., 1951; Ph.D., ibid., 1953. m. Peggy Jane Butera, 1957. c.: Lee Ann. Exp.: Rsch. Asst. in Chem., Univ. of Pa., 1953; Proj. Chemist, Philco Corp., Lansdale, Pa., 1953-57; Chem. Grp. Supvr., ibid., 1957—. Mem.: Electrochemical Soc.; Am. Chemical Soc.; Am. Inst. of Chemists, Fellow; Franklin Inst. of Pa.; A.A.A.S.; Inst. of Radio Engrs.; Pa. Acad. of Sci.; Reading Chem. Club; Phi Lambda Upsilon; Alpha Chi Sigma; Sigma Xi. Contbr. to: Jour. of the Electrochemical Soc.; Analytica Chimica Acta; Jour. of Physical Chem. Serv. Rec.: U.S. Army, 1946-47. Areas of Rsch.: Chemistry of semiconductor device fabrication; surface properties of Ge and Si; electrodeposition of low melting alloys in molten form.

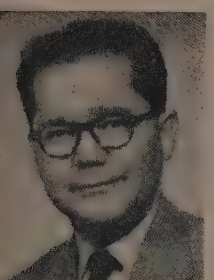
SCHNEIDER, Edward Martin (M.D.), Chf., Dept. of Med., Cameron Mem. Hosp., Bryan, Ohio. Home Add.: Route 3, Bryan, Ohio. INTERNAL MEDICINE. b. Cleveland, Ohio, May 12, 1922. s. Sol S. and Beatrice H. (Sicherman) S. Edn.: M.D., Univ. of Cincinnati, 1946. m. Jane Einstein, June 18, 1950. c.: Douglas Allen; Robert Stewart. Exp.: Asst. in Med., Univ. of Cin., Cin., Ohio, 1951-52; Asst. Prof., Univ. of Okla., Okla. City, 1952-57; Instr., Med., Univ. of Cin., 1957—; Chf., Dept. of Med., Cameron Mem. Hosp., 1961—. Hon. Pos.: Secy. of Cameron Med Hosp. Staff, Bryan, Ohio. Mem.: Am. Coll. of Physns.; Fellow; Am. Fed. for Clin. Rsch.; Am. Assn. for Study of Liver Dis.; Am. Gastroenterol. Assn.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Am. Jour. of Dig. Dis.; Am. Jour. of Med.; Gastroenterol.; Mongs. on Therapy; Anns. of Internal Med.; Jour. of the So. Med. Assn. Serv. Rec.: U.S. Army, 1943-46; 1948-50. Areas of Rsch.: Gastroenterological Studies Relating Chiefly to Liver Diseases and Drug Hepatotoxicity.

SCHNATHORST, William Charles (Ph.D.), Sr. Plant Pathologist, ARS, USDA, Dept. of Plant Pathol., Univ. of Calif., Davis, Calif. Home Add.: 647 Hunt Way, Davis, Calif. PLANT PATHOLOGY. b. Fort Dodge, Iowa, May 8, 1929. s. William T. and Elizabeth (Nelson) S. Edn.: B.S., Univ. of Wyo., 1952; M.S., ibid., 1953; Ph.D., Univ. of Calif., 1957. m. Rosemarie Meyer, Dec. 29, 1951. c.: Diana Lynn; William John; Douglas Alan. Exp.: Tchng. Asst. Botany, Univ. of Wyo., 1952-53; Rsch. Asst., Plant Pathol., Univ. of Calif., 1954-56; Plant Pathol., ARS, USDA, Davis, Calif., 1956—. Hon. Pos.: Chmn., Fungus Disease Sec., Am. Phytopath. Soc., 1961. Mem.: Am. Phytopathol. Soc.; Am. Chem. Soc.; Mycological Soc. of Am.; A.A.A.S.; Colo.-Wyo. Acad. of Sci.; Sigma Xi; Phi Kappa Phi; Alpha Zeta. Contbr. to: Phytopathology; Mycologia; J. Colo.-Wyo. Acad. Sci.; Plant Disease Reptr.; Calif. Agri. Gen. Int.: Burpee Seed Co. Award, 1951; Doane Award of the Farmhouse Fraternity, 1952. Areas of Rsch.: Physiology of Parasitism and Disease Resistance in Plants, Biology and Physiology of the Powdery Mildews, Axenic Culture of Obligate Parasites, Plant Disease Ecology.



SCHNITKER, Maurice Arthur (M.D.), Physician, 425 Jefferson Ave., Toledo 4, Ohio. Home Add.: 2545 Talmadge Rd., Toledo 6, Ohio. MEDICINE. b. Toledo, Ohio, May 16, 1905. s. Carl L. and Lisette (Luebker) S. Edn.: B.Sc., Univ. of Toledo, 1929; M.D., Univ. of Mich., 1931. m. Evelyn Kemper, Aug. 17, 1940. c.: Mary; Carolyn. Exp.: Asst. in Med., Harvard Med. Schl., 1936-39; Chf. Med. Consultant, Pacific Theater, 1945-46; Dir. Med., St. Vincent's Hosp., Toledo, Ohio, 1948—; Dir., Acad. Med. Library, Toledo, Ohio, 1940—; Bd. of Trustees, Univ. of Toledo, 1960—. Hon. Pos.: Pres., Northwest Ohio Heart Assn., 1950-53; Pres., Ohio State Heart Assn., 1956-58; Pres., Toledo Rotary Club, 1957-58. Mem.: Sigma Xi; Phi Kappa Phi; Alpha Omega Alpha; Am. Coll. Physicians; Am. Coll. Chest Physicians; Am. Heart Assn.; Phi Chi; Alpha Omega Alpha; Toledo Rotary Club; Bd. Trustees, Univ. of Toledo. Author: Sulfonamides in Treatment of Infections, 1940; Electrocardiogram in Congenital Cardiac Disease, 1940; Congenital Heart Disease—Congenital Anamolies of the Heart and Great Vessels, 1952; Medical Treatment of Disease, 1953. Serv. Rec.: Lt. Col., A.U.S., 1942-46. Areas of Rsch.: Internal Medicine and Cardiology.

SCHNUR, Sidney (M.D.), Physician, 929 Med. Arts Bldg., Houston, Tex. Home Add.: 2139 Sunset Blvd., Houston, Tex. INTERNAL MEDICINE, CARDIOLOGY. b. N.Y., N.Y., June 23, 1910. s. Joseph and Sadie (Broadman) S. Edn.: B.S., Coll. of City of N.Y., 1930; M.S., ibid., 1931; M.D., N.Y. Univ, 1935. m. Wilma Adalene Boyce, March, 1944. c.: Joseph H. Parnell, III. Exp.: Clin. Prof. Med., Univ. of Tex., Postgrad. Schl. of Med., Houston, Tex., 1954—; Clin. Prof. Med., Baylor Univ. Coll. Med., 1962—; Physician, Houston, Tex., 1962—. Hon. Pos.: Pres., Houston Heart Assn.; Exec. Bd. Tex. Heart; Bd. Gov., Tex. Acad. Int. Med. Mem.: Fellow, Am. Coll. Physns.; Am. Coll. Chest. Physns.; Am. Coll. Cardiol.; Diplomate, Am. Bd. Int. Med.; Am. Bd. Cardiovas. Dis.; Houston Club; Doctor's Club; Internatl. Club. Contbr. to: Am. Heart Jour.; Circulation; Anns. of Internal Med.; Jour. Clin. Instn.; Radiol; Jour. Am. Med. Assn.; Surg. Serv. Rec.: Lt. Col., U.S. Air Force, 1940-45. Areas of Rsch: Clinical Cardiology.



SCHOELD, Edmund Archibald (Mr.), Supt. of Rsch. and Quality Control, Potash Co. of Am., P.O. Box 31, Carlsbad, N. Mex. Home Add.: 210 East Church St., Carlsbad, N. Mex. CHEMISTRY, MINERALS BENEFICIATION. b. White Rock, S. Dak., Dec. 9, 1903. s. Andrew and Jennie (Rahm) S. Edn.: B.A. summa cum laude, Gustavus Adolphus Coll., 1925; M.S., Univ. of Minn., 1935. m. May Katherine Woodard, June, 1931. c.: Allan; James; Katherine. Exp.: Instr. Sci., H.S., Tyler, Minn., 1925-28; Instr. Sci., Waldorf Coll., Forest City, Iowa, 1928-35; Dean of Instrn., ibid., 1935-42; Chf. Chemist, Potash Co. of Am., Carlsbad, N. Mex., 1942-51; Asst. Rsch. Dir., ibid., 1951-55; Rsch. Supt., ibid., 1955-61; Supt. Rsch. and Quality Control, ibid., 1961—. Hon. Pos.: Chmn., Carlsbad City Planning Commn., 1950—; Councilor, Am. Chem. Soc. Mem.: Am. Chem. Soc.; A.I.M.E. Areas of Rsch.: Several inventions regarding flotation separation sylvite, halite.

SCHOENFELD, Henry, Jr. (Ph.D.), Priv. Pract., Henry Schoenfeld and Assocs., 312 E. Wis. Ave., Milw. 2, Wis. Home Add.: 2327 W. Acacia Rd., Milw. 9, Wis. PSYCHOLOGY (PSYCHOLOGISTS TO MANAGEMENT). b. Milw., Wis., June 26, 1913. s. Henry, Sr. and Elizabeth (Doermer) S. Edn.: B.S., Univ. of Wis., 1941; M.S., ibid., 1947; Ph.D., ibid., 1950. m. Mary E. Case, July 20, 1945. c.: Thomas Alan; Katherine Mary; Nancy E.; Elizabeth Ann. Exp.: Voc. Appraiser, 1946-47; Grad. Asst., Counseling and Guid., Edn. Psychol., Va., 1947-48; Counseling Psycholt., 1948-50; Consult. Psycholt., 1950-57, Staff Partner, Rohrer, Hibler and Replogle, Milwaukee, Wis., 1957-62; Private Pract., Henry Schoenfeld and Assocs., 1962—. Hon. Pos.: Pres., 1961-62, Mem. Exec. Coun., Wis. Psychol. Assn., 1959-62; Pres., 1957-58, Mem. Exec. Coun., 1957—, Wis. Pers. and Guid. Assn. Mem.: Am. Psychol. Assn.; A.A.A.S.; Am. Pers. and Guid. Assn.; Artus; Phi Delta Kappa. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Executive Evaluation and Development; Individual Counseling Psychology Applied to Problems of Business and Industrial Organizations.

SCHOENFELD, Myron Royal (M.D.), Sr. Physician, Lincoln Hosp., N. Y. 54, N. Y. and Asst. Attending Physician, Montefiore Hosp., N. Y., N. Y. and Asst. Att. Physician, Yonkers Gen. Hosp., Adj. Att. Physician, Trafalgar Hosp., N. Y. City. Home Add.: 1111 Midland Ave., Bronxville, N.Y. CARDIOLOGY AND INTERNAL MEDICINE. b. N.Y.C., Nov. 10, 1928. s. George and Rhoda (Kahn) S. Edn.: B.A., Univ. Coll., N.Y. Univ., 1948; M.A., Columbia Univ., 1949; M.D., Chicago Med. Schl., 1953. m. Gloria Edis, June 14, 1959. c.: Bradley. Exp.: Rsch. Fellow, Univ. of Ill., 1951-52; Interne, Kings Co. Hosp., Brooklyn, N. Y., 1953-54; Asst. Res., Kingsbridge V.A. Hosp., Bronx, N. Y., 1954-55; Res., ibid., 1958-59; Rsch. Fellow, Mt. Sinai Hosp., N.Y.C., 1959-60; Sr. Physician, Lincoln Hosp., N. Y. City, 1960—. Mem.: Am. Fed. for Clinical Rsch.; A.M.A.; Am. Geriatric Soc.; Am. Coll. of Cardiol.; N. Y. Cardiological Soc.; N. Y. Acad. of Sci.; A.A.A.S.; Westchester Acad. of Med.; Westchester Co. Med. Soc.; Phi Beta Kappa; Royal Soc. of Med., London; Beta Lambda Sigma; Phi Lambda Kappa; Phi Beta Kappa Alumni of N. Y.; Reserve Officers Assn. of Westchester. Contbr. to: New England Jour. of Med.; Circulation; Am. Heart Jour.; Annals of Int. Med.; Circulation Rsch.; Clinical Rsch.; Bull. of the N. Y. Acad. of Med.; The Lancet; N. Y. St. Jour. of Med.; Jour. of Am. Geriatric Soc.; Canadian Med. Assn. Jour.; Clinical Pharmacol. and Therapeutics; Medical Electronics; Jour. of Mt. Sinai Hosp. Editor: N. Y. Conferences on Cardiology. Serv. Rec.: U.S.A.F., 1955-57. Gen. Int.: Inventor of the Infusion Monitor. Areas of Rsch.: Cardiovascular Physiology, Pharmacology and Biochemistry.

SCHOENY, Leo John (D.D.S.), Dentist, 729 Maison Blanche Bldg., New Orleans, La. Home Add.: 27 Versailles Blvd., New Orleans, La. DENTISTRY. b. Ridgeway, Ill., Oct. 15, 1896. s. John R. and Susan (Stringer) S. Edn.: D.D.S., Loyola Dental Schl., Loyola Univ., 1920. m. Byrdie Casso, Oct. 10, 1918. Exp.: Priv. Pract., Donaldsonville, La., 1920-30; New Orleans, 1930—; Mem. of Staff of Hotel Dieu Hosp., 1930—; Ochsner Fdtn. Hospital, 1955—. Mem. and Hon. Pos.: Bd. of Dirs., Coun. of Social Agencies, 1951-59; Chmn., Coun. Dental Health, A.D.A., 1948-50; New Orleans Dental Conf., 1950; Hlth. Div., New Orleans Coun. Soc. Agencies, 1947-49; Fed. Inter-Agency Coun. on Dental Affairs, 1954-55; Am. Dental Assn.; Am. Acad. Periodontology; Am. Pub. Health Assn.; La. Dental Assn., Pres., 1928-29; Orleans Parish Med. Soc.; Pierre Fauchard Academy; New Orleans Dental Assn.; Am. Soc. Dentistry for Children; Fed. Dentaire Internationale; Acad. Internatl. of Dentistry; Delta Sigma Delta; Omicron Kappa Upsilon; C. of C.; New Orleans Young Men's Business Club, Pres., 1934; New Orleans Mid-winter Sports Assn., Secy., 1956-57; Fellow, Am. Coll. of Dentists; Fellow, Internatl. Coll. of Dentists; Mem., Natl. Advisory Com., Selective Serv., 1950-55; Mem., Health Resources Advisory Com., Office Defense Mobilization, 1950-55; Consultant Med. Servs. Task Force, Hoover Commn., 1954; Mem., Commn. on Dental Edn. Southern Regional Edn. Bd., 1956—; Mem., Sixth Dist. Dental Soc. of La., Pres., 1923-25; Mem., Com. Natl. Emergency Dental Servs., A.D.A., 1952; Consultant Coun.

Fed. Dental Servs., 1951-55; Chmn., Mayor's Com., Schl. Health Servs., New Orleans, 1949-52; Mem., Bd. of Dirs., United Community and War Chest, 1944-46; Mem., Bd. of Dirs., Social Welfare Planning Coun., 1960—; Mem., Royal Soc. of Health; Mem., State Bd. of Health, 1941-49, Secy., 1941; Am. Assn. for the Adv. of Sci.; So. Acad. of Periodontology; La. Pub. Hlth. Assn.; Chicago Dent. Soc. Contbr. to: Jour. Am. Dental Assn.; N. Y. Jour. of Dentistry; Internatl. Jour. of Orthodontia and Dentistry for Children; New Orleans Med. and Surg. Jour.; Jour. Tenn. State Dental Assn.; Jour. La. Dental Assn.; The Boardman; Jour. La. Schl. Bd. of Edn.; Am. Assn. Dental Schls. Serv. Rec.: U. S. Army, Dental Corps, 1929-34, U. S. Naval Reserve, 1940-43. Areas of Rsch.: Pedodontia.

SCHOLANDER, Per Fredrik (M.D., Ph.D.), Prof. of Physiol., Scripps Instn. of Oceanography, Univ. of Calif., La Jolla, Calif. Home Add.: 8374 Paseo del Ocaso, La Jolla, Calif. PHYSIOLOGY. b. Orebro, Sweden, Nov. 29, 1905. s. Torkel F. and Agnethe (Faye-Hansen) S. Edn.: M.D., Univ. of Oslo, 1932; Ph.D., ibid., 1934. m. Susan Irving, 1951. Exp.: Instr. of Anatomy, Univ. of Oslo, 1932-34; Rsch. Stipendiate, Physiol., ibid., 1934-39; Rockefeller Fellow and Rsch. Assoc., Swarthmore Coll., 1939-41; Rsch. Assoc., ibid., 1941-43; Aviation Physiologist, U.S.A.F., 1943-46; Rsch. Biologist, Swarthmore Coll., 1946-49; Special Fellow, Dept. of Biochem., Harvard Med. Schl., 1949-51; Physiologist, Woods Hole Oceanographic Instn., 1952-55; Prof. of Physiol., Dir., Inst., Zoophysiol., Univ. of Oslo, Norway, 1955-58; Prof. of Physiol., Scripps Inst. of Oceanography, Univ. of Calif., 1958—. Mem.: Am. Physiol. Soc.; Am. Soc. Plant Physiol.; Sigma Xi; Arctic Inst. of N. Am.; Explorers Club; Norwegian Acad. of Sci.; Norwegian Polar Club; Am. Acad. Arts and Scis.; Natl. Acad. of Sci.; Am. Phil. Soc.; A.A.A.S.; Am. Soc. Zool.; Bot. Assn. Norway. Contbr. to: Skandinavisches Arch. Physiol.; Jour. Biol. Chem.; Sci.; Jour. Gen. Physiol.; Biol. Bull.; Jour. Cell. Comp. Physiol.; Hvalradets Skrift; Am. Jour. Physiol.; Physiol. Zool.; Plant Physiol.; Jour. Applied Physiol. Serv. Rec.: See Positions. Areas of Rsch.: Comp. Physiol. of Respiration, Diving, Gas Secretion and Climatic Adaptation, Arctic Botany, Lichens, Microtechniques, Single Cell Respiration, Physiol. of Freezing, Osmoregulation of Fish, Oxygen Transport in Blood, Hydrodynamic Problems in Plants, Composition of Gas in Glaciers, Circulatory Adjustment in Divers.

SCHOMAN, Charles Martin, Jr. (Ph.D.), Chf. Scientist, Naval Supply Rsch. and Devl. Facility, Bayonne, N. J. Home Add.: 809 Willow Grove Rd., Westfield, N. J. RESEARCH MANAGEMENT, FOOD SCIENCE, INDUSTRIAL ENGINEERING, APPLIED AND MATHEMATICAL STATISTICS. b. Rochester, N. Y., Dec. 24, 1924. s. Charles Martin and Violet E. (Nickels) S. Edn.: B.S., U. S. Naval Acad., 1946; M.S., Rutgers Univ., 1957; Ph.D., ibid., 1960. m. Beryl Mina Vanderpool, Aug. 1946. Exp.: Assoc. Tech. Dir., Food Sci. and Engrng. Div., U. S. Naval Supply Rsch. and Devl. Facility, Bayonne, N. J., 1957-59; Sr. Staff Tech. Consultant, ibid., 1959-61; Chf. Scientist, ibid., 1961—. Hon. Pos.: Dir., Inst. of Food Technologists; Chmn., Jr. Adv. Comm., Inst. of Food Technologists. Mem.: Inst. of Food Technologists; Am. Inst. of Indl. Engrs.; Internatl. Soc. of Food Serv. Consultants; Am. Management Assn.; Navy Sr. Scientists Coun.; Sigma Xi; Naval Acad. Alumni Assn.; Phi Tau Sigma; Army Navy Country Club; Naval Acad. Athletic Assn. Contbr. to: Food Science; Food Technology; Jour. of Am. Dietetic Assn.; Food Service. Serv. Rec.: U.S.N., 1946-54, USNR, 1954—. Gen. Int.: Navy Letters of commendation, 1950, '52, '53; Meritorious Civilian Service to U. S. Navy Award, 1956, '58, '62; U. S. Dept. of Agric. William A. Jump Memorial Award, 1958; Navy Superior Accomplishment Award, 1960; Rsch. and Devl. Assoc. Quartermaster Food and Container Inst. for Armed Forces Rohland A. Isker Award, 1962. Areas of Rsch.: Basic concepts in food production, plant layout and design, research management.

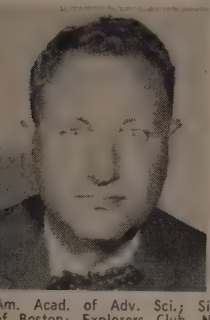
SCHON, Martha (Ph.D.), Assoc. Clin. Rsch. Psychologist, Memorial Sloan Kettering Cancer Ctr., 444 E. 68th St., New York, N. Y. Home Add.: 10 West 86th St., N. Y. 24, N. Y. CLINICAL PSYCHOLOGY, MEDICAL PSYCHOLOGY, PSCHO-ENDOCRINOLOGY. b. Vienna, Austria, Aug. 2, 1914. d. Heinrich and Regina (Hirsch) Sprinzeles. Edn.: M.S., City Coll., N. Y., 1950; Ph.D., N. Y. Univ., 1957. m. Leo Schon, Dec. 20, 1941. c.: Eric Alan; Steven Gabriel. Exp.: Rsch. Fellow, Sloan Kettering Inst. for Cancer Rsch., N. Y. C., 1955-58; Rsch. Assoc., ibid., 1958-60; Asst. Clin. Rsch. Psychologist, Neuropsych. Serv. Memorial Ctr., N. Y. C., 1958-60; Rsch. Specialist, Rutgers Univ., 1960-61. Mem.: Am. Psychol. Assn.; A.A.A.S.; N. Y. Acad. of Sci.; Med. Circle, N. Y.; Royal Acad. of Med., London, England; Assn. for Applied Psychoanalysis; Soc. of Projective Techniques; Internatl. Coun. of Psychologists; Psi Chi. Contbr. to: Jour. of Clin. Psychol.; Cancer; Jour. Projective Techniques; Brit. Jour. of Mental Sci.; Jour. of Clin. Endocrinol. and Metabolism. Areas of Rsch.: Psychoendocrinol.; Psychological Effects of Hypothysectomy; Psychological Effects of Hypothyroidism; Psychological Preperation for Surgery; Etiology of Paranoid Reactions in Postoperative Psychoses; Study on Depression in Cancer Patients.

SCHOMBERG, Vivian Amelia (Miss), Instr., Biology and Physiology Folsom H. S., Folsom, Calif. Home Add.: 50 Sandburg Dr., Sacramento 19, Calif. BIOLOGICAL SCIENCES: MARINE AND FRESH WATER INVERTEBRATE BIOLOGY, EXPERIMENTAL ANIMAL PHYSIOLOGY; SUB-CELLULAR PARTICLES. b. Marysville, Calif., July 16, 1927. d. Wesley W. and Emil (Gschwandtner) S. Edn.: A.A., Sacramento Coll., 1947; B.S., Univ. of the Pacific, 1949. Exp.: English and Remedial Reading Instr., Hd. Librarian, Healdsburg H. S., Healdsburg, Calif., 1950-52; Lab. Technologist, Univ. of Calif. Med. Center, San Francisco, Calif., Summer, 1952; Gen. Sci. and Biol. Instr., George Wash. H. S., Agana, Guam, M. I., 1952-54; Civil Engr., Base Develop. Planning and Design, Materials Testing, Commander Naval Forces Marianas, Nimitz Hill, Guam, M. I., Summer, 1953; Independent Rsch. in Marine Biol., Guam and Rota, M. I., 1954-55; Biol. and Physiol. Instr., Folsom H. S., Folsom, Calif., 1956—. Hon. Pos.: Mem. of Steering Comm. for Sacramento Co. Sci. Tchrs. Fellow, Natl. Inst. of Hlth., Dept. of Food Sci. and Techn., Univ. of Calif. at Davis, 1962-63; Dist. Chmn., Sacramento Central Valleys Sci. Fair; Regional Co-Chmn. for Folsom Unified Schls. Sci. Fair. Mem.: A.A.A.S.; Am. Assn. of Unip. Women; Calif. Tchrs. Assn.; Natl. Assn. of Biol. Tchrs.; Natl. Ednl. Assn.; Natl. Sci. Tchrs. Assn.; Mem. of Advisory Coun., Sacramento Inter-Society Coun. on Sci. Edn.; Sacramento Co. Sci. Tchrs. Assn.; Beta Beta Beta, Natl. Honorary Biol. Frat.; Phi Rho Chapt. of Delta Delta Delta, Women's Frat. Gen. Int.: Natl. Sci. Fdtn. Summer Inst. Participant, 1959; Co-Chmn. and Participant in Cancer Genetics Workshop for Sacramento Co. Sci. Tchrs., 1960; Chmn. of Heart-lung Workshop for Sacramento Co. Sci. Tchrs., 1961; Assisted with Rsch. on Sub-Cellular Particles, Dept. of Food Sci. and Technol., Univ. of Calif., Davis, Calif., 1961; Co-Chmn. and Participant in Nuclear Edn. Symposium for Sacramento Co. Sci. Tchrs., 1962. Areas of Rsch.: Marine and Freshwater Invertebrate Biology; Experimental Animal Physiology; Use of Electrophoresis in Biology; Cancer Genetics Rsch.; Use of Animals in Rocket Rsch.; Biomagnetics; Sub-Cellular Particles.

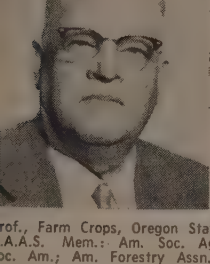
SCHOOF, Herbert Frederick (Ph.D.), Scientist Dir., Chf., Biol. Sect., U. S. Pub. Health Serv., Communicable Dis. Ctr., Technol. Br., Techn. Devel. Labs., P. O. Box 769, Savannah, Ga. Home Add.: 3 Pinewood Ave., Parkersburg, Savannah, Ga. ENTOMOLOGY-CONTROL TECHNIQUES, MEDICAL. b. N.Y.C., Apr. 18, 1914. s. Charles and Elizabeth (Gaensley) S. Edn.: B.S., N. C. St. Coll., 1936; M.S., ibid., 1938; Ph.D., Univ. of Ill., 1940. m. Beulah Weathers, Aug. 28, 1937. c.: Charles Vernon. Exp.: Tchng. Asst., N. C. St. Coll., Raleigh, N. C., 1936-38; Tchng. Asst., Univ. of Ill., 1938-40; Zool. Instr., N. C. St. Coll., 1940-42; Entomol., MCWA, N. C. St. Bd. of Health, Raleigh, N. C., 1942-43; Sr. Asst., Sanitn., U. S. Pub. Health Serv., Raleigh, N. C., 1943-48; Scient., U. S. Pub. Health Serv., Chf., Fly-Borne Dis. Br., Atlanta, Ga., 1948-53; Scientist, Dir., U. S. Pub. Health Serv., Chf., Biol. Sect., TDL, Savannah, Ga., 1953—. Hon. Pos.: Consult. to World Health Orgn.; Pan Am. Br. and Agency Internatl. Devel., Consult.; Mem., World Health Org. Expert Comm. on Insecticides. Mem.: Am. Assn. Adv. Sci.; Ent. Soc. Am.; Am. Soc. Trop. Med. and Hyg.; Am. Mosquito Control Assn.; Fla. Anti-Mosquito Assn.; Sigma Xi; R.E.S.A.; Phi Kappa Phi; Phi Eta Sigma; Alpha Kappa Phi. Contbr. to: Jour. of Econ. Entomol.; Mosquito News; Anns. of the Ent. Soc. of Am.; Pub. Health Reps.; Am. Jour. of Trop. Med. and Hyg.; Indian Jour. of Malariol.; Pest Control; Am. Jour. of Pub. Health; Bull. World Health Organ. Serv. Rec.: U. S. Pub. Health Serv., 1945-52. Areas of Rsch.: Biology and Control of Arthropods of Public Health Importance; Advancement of Knowledge on Insect Resistance and on Control Methods for Flies and Mosquitoes.

SCHORR, Arthur Martin (D.M.D.), Dentist, 14 Albany Post Rd., Hyde Park, N. Y. Home Add.: 5 Valley View Rd., Hyde Park, N. Y. DENTISTRY. b. Cedarhurst, N. Y., Oct. 27, 1923. s. Herbert and Hulda (Salat) S. Edn.: A.B., Lafayette Coll., 1942; D.M.D., Tufts Univ., 1946. m. Heather Jenkin, Aug. 17, 1951. c.: Susan Bradstreet. Exp.: Intern, Jersey City Med. Center, 1946; Private Practice, N. Y., 1948—. Mem.: Am. Dental Assn.; Ninth Dist. Dental Soc.; Dutchess Co. Dental Soc.; Am. Assn. Adv. Sci.; Rotary. Contbr. to: Jour. Am. Dental Assn. Serv. Rec.: U. S. Army Dental Corps, 1946-48. Areas of Rsch.: Prenatal and Postnatal Sodium Fluoride Therapy (tablet) in the Reduction of Dental Caries.

SCHORR, Marvin G. (Ph.D.), Pres., Technical Operations, Inc., South Ave., Burlington, Mass. Home Add.: 330 Beacon St., Boston, Mass. PHYSICS AND ELECTRONICS. b. N. Y., N. Y., Mar. 10, 1925. s. Samuel and Fannie (Smolen) S. Edn.: B.S., Yale Univ., 1944; M.S., ibid., 1947; Ph.D., ibid., 1949. m. Rosalie Yorshis, 1957. c.: Eric Douglas. Exp.: Exec. Vice Pres., Technical Operations, Inc., Burlington, Mass., 1951-62; Pres., ibid., 1962—. Hon. Pos.: Dir., Powers Sources, Inc., Burlington, Mass.; Dir. of Chemtrol Corp., Stamford, Conn.; Dir. of Beckman and Whitley, Inc., San Carlos, Calif.; Mem., Advisory Com. for Nuclear Engrng., Lowell Technol. Inst.; Mem., Program Com., Annual Meeting, Operations Rsch. Soc. of Am., 1958. Mem.: Am. Phys. Soc.; Inst. of Radio Engrs.; Am. Acad. of Adv. Sci.; Sigma Xi; Harvard and Yale Clubs of Boston; Explorers Club, N. Y.; Cosmos Club, Wash., D. C.; Bus. Associates Club of Boston. Contbr. to: Yale Jour. Biol. and Med.; Phys. Rev.; Military Surgeon; Rev. Sci. Instr.; Military Surgeon; I.R.E. Trans.; Jour. Soc. Non Destructive Testing '63; Electronic Design; Operations Rsch. Office Reports; Armed Forces Special Weapons Project WT-391.



SCHOTH, Harry August (Mr.), Rsch. Agronomist, U. S. Dept. Agri., Oregon State Coll., Corvallis, Ore. Home Add.: 246 N. 29th St., Corvallis, Ore. RESEARCH—FORAGE AND RANGE CROPS AND FIELD SEED PRODUCTION. b. Hannah, Wyo., May 24, 1891. s. August and Nellie (Tuveson) S. Edn.: B.S., Oregon State Coll., 1914; M.S., ibid., 1917. m. Dorothy Harriet Hartung, Aug. 9, 1923. c.: Eleanor May Jaffe; Lois Marie McKee. Exp.: Agent, U. S. Dept. of Agri., 1916-17; Scientific Asst., U. S. Dept. of Agri., 1917-22; Jr. Agronomist, ibid., 1922-23; Asst. Agronomist, ibid., 1923-28; Assoc. Agronomist, ibid., 1928-34; Agronomist, ibid., 1934-42; Sr. Agronomist, ibid., 1942-50; Rsch. Agronomist, ibid., 1950-61; Collaborator, USDA, 1961—; Emeritus Prof. of Agronomy, Ore. State Univ., 1961—. Hon. Pos.: Prof., Farm Crops, Oregon State Coll. Fellow: Am. Soc. Agron.; A.A.A.S. Mem.: Am. Soc. Agron.; A.A.A.S.; Soil Conservation Soc. Am.; Am. Forestry Assn.; Natl Soc. Geography; Am. Museum Natural Hist.; Alpha Zeta; Gamma Sigma Delta; Rotary International. Contbrng. Author: Encyclopedia Britannica; Proceedings—Sixth International Grassland Congress; Forages. Contbr. to: Jour. Am. Soc. Agron. Serv. Rec.: W.W. II. Gen. Int.: Station, U. S. Navy Dept. for Work in Sand Dune Control; Plaque Award by Oregon Seed Growers League in Recognition for Services Rendered in Development of Oregon Multi-Million Dollar Seed Production; Service Medal by Oregon Farm Bur. for Outstanding Seed Production Work in the Pacific Northwest; Award for Superior Service and Citation by U. S. Dept. of Agri. for His Contribution to the Development of the Grass and Legume Seed Industry in the Pacific Northwest and for Research in the Development of Several Improved Grass and Legume Varieties; Merit Certf., Am. Grassland Coun. in Recognition for Outstanding Serv. to Grassland Agric. Areas of Rsch.: Pacific Northwest—Forage, Field Seed and Soil Conserving Crops; Culture, Maint., Improvement, Distrib. of Propagating Stock, Induc. of New and Improved Crops; Sand Dune Control.



SCHRADER, Frank Gebhardt (Mr.), Chief Metallurgist, U. S. Naval Air Station, Alameda, Calif. Home Add.: 1246 148th Ave., San Leandro, Calif. PHYSICAL MENTALLURGY, SERVICE FAILURES, WELDING METALLURGY. THERMAL PROCESSING OF METALS, CORROSION, HIGH TEMPERATURE METALS, NONFERROUS METALS. b. Caldwell, Tex., Mar. 13, 1909. s. Frank Gottfried and Minna (Gebhardt) S. Edn.: A.B., Univ. of Calif., 1940. m. H. Luana Benson, Dec. 31, 1936. c.: Russell; Helen. Exp.: Asst. Chem. Engr., U. S. Bureau of Mines, San Francisco, Calif., 1944-47; Physicist, San Francisco Naval Shipyard, San Francisco, Calif., 1947-49; Physical Met., ibid., 1949-53; Prod. Met., U. S. Naval Air Sta., Alameda, Calif., 1953-55; Chief Met., ibid., 1955—. Mem.: Am. Assn. for the Adv. Sci.; Am. Chem. Soc.; Calif. Acad. of Scis.; Am. Soc. Metals; Natl. Geographic Soc. Areas of Rsch.: Physical Metallurgy, Welding Metallurgy, Heat Treatment, High Temperature Alloys, Corrosion, Metal Selection, Nondestructive Testing, Metallography, Spectrographic Analysis, Chemical Engineering, Phys., Properties, and Uses of Radioistotpes, Unsteady State Heat Transfer.

SCHREINER, Albert William, III (M.D.), Chief, Med. Serv., V. A. Hosp.; Assoc. Prof. of Medicine, Univ. of Cincinnati, Dept. of Internal Med., Cincinnati, Ohio. Home Add.: 830 Clifton Hills Terr., Cincinnati 20, Ohio. INTERNAL MEDICINE (Hematology). b. Cincinnati, Ohio, Feb. 15, 1926. s. Albert, Jr. and Ruth (Neuer) S. Edn.: B.S., Univ. of Cincinnati, 1947; M.D., ibid., Coll. of Med., 1949. m. Jean Tellstrom, Dec. 12, 1953. c.: David William. Exp.: Instr. in Med., Univ. of Cincinnati, 1955-59; Clin. Invest., V.A. Hosp., Cincinnati, Ohio, 1957-59; Chief, Med. Serv., ibid., 1959—; Asst. Prof. of Clin. Med., Univ. of Cincinnati, 1959-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Federation for Clin. Rsch.; Diplomate, Am. Bd. of Internal Med., Assoc., Am. Coll. of Physicians; Mem., A.A.A.S.; Phi Beta Kappa; Sigma Xi; Acad. of Med. of Cincinnati; Ohio State Med. Assn. Contbr. to: The Jour. of Lab. and Clin. Med. Serv. Rec.: U.S.A.R., Capt., 1953-55. Areas of Rsch.: Transmissibility of Experimental Rodent Tumors and Effect of Anti-Metabolic Agents Upon Rodent Tumors; Internal Med. (Hematology).

SCHREYER, James Marlin (Ph.D.), Sr. Chemist, Union Carbide Nuclear Co., Oak Ridge, Tenn. INORGANIC AND ANALYTICAL CHEMISTRY. b. Asheville, N. C., Dec. 26, 1915. s. Roy and Vinnetta S. Edn.: A.B., Univ. of N. C., 1938; Ph.D., Ore. State Coll., 1948. m. Ethyl Huse, 1951. c.: David Janet; Phillip. Exp.: Chem. Tchr., Asheboro H. S., Asheboro, N. C., 1938-41; Inspector of Powder and Explosives, Radford Ord. Wks., Radford, Va., 1941-42; Chem. Engr., Badger Ord. Wks., Baraboo, Wis., 1942-43; Process Engr., U. S. Rubber Co., Charlotte, N. C., 1943-44; Rsch. Engr., Sulphonics, Inc., Baltimore, Md., 1944-45; Grad. Asst. and Tchng. Fellow, Ore. State Coll., Corvallis, Ore., 1945-48; Asst. Prof., Univ. of Ky., 1948-51; Assoc. Prof. Chem., ibid., 1951; Sr. Chem., Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1951-53; Sr. Chem., Union Carbide Nuclear Co., Oak Ridge, Tenn., 1953—. Mem.: Sigma Xi; Am. Chem. Soc. Contbr. to: Anal. Chem.; Jour. Am. Chem. Soc. Ph.D. Dissertation: Higher Valence Compounds of Iron. Hobbies: Music; Dancing. Listed in: A.M.S.

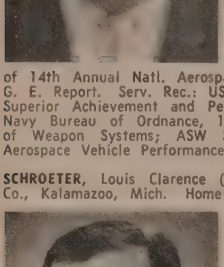
SCHROEDER, Alfred Christian (Mr.), Mem. of Tech. Staff, David Sarnoff Rsch. Center, RCA Labs., Princeton, N. J. Home Add.: 1545 Winding Rd., Southampton, Pa. COLOR TELEVISION. b. W. New Brighton, N. Y., Feb. 28, 1915. s. Alfred and Chryssa (Weishaar) S. Edn.: B.S., Mass. Inst. of Tech., 1937; M.S., ibid., 1937. m. Janet Ellis, Sept. 26, 1936. c.: Carol Ann. Exp.: Color Television Rsch. Engr., RCA Victor, Camden, N. J., 1937-42; Color Television Rsch. Engr., RCA Labs., Princeton, N. J., 1942—. Mem.: Fellow, I.R.E.; A.A.A.S.; Franklin Inst.; Sigma Xi; Soc. for Social Responsibility in Sci.; Religious Soc. of Friends. Contbr. to: RCA Rev.; Proc. of the I.R.E.; Jour. of Applied Physics; Jour. of the S.M.P.T.E.; Jour. of the Optical Soc. of Am. Gen. Int.: Recd. R.C.A. Labs. Award for outstanding work in research, 1947, 1950, 1951, 1952, 1957; Instrumental in development of the simultaneous and the simultaneous subcarrier (present standard) color television systems; Holder of patent on the R.C.A. Tri-color Tube and over 50 other patents; published Theory of the Mechanism of Color Vision. Areas of Rsch.: Color Television Systems, Reproducers, etc.

SCHROEDER, Juel P. (Ph.D.), Asst. Dir. Polymer Rsch. and Devel., Union Carbide Plastics Co., Bound Brook, N. J. Home Add.: Sycamore Hill Rd., Bernardsville, N. J. ORGANIC CHEMISTRY; POLYMER CHEMISTRY. b. New England, N. D., Jan. 23, 1920. s. Henry E. and Laura (Mueller) S. Edn.: B.S., Univ. of N. D., 1941; Ph.D., Univ. of Wis., 1948. m. Dorothy Chynoweth, Nov. 1, 1943. Exp.: Anal. Chemist, Monsanto Chem. Co., St. Louis, Mo., 1942-43; Rsch. Chemist, ibid., Springfield, Mass., 1943-46; Rsch. Chemist, Union Carbide Plastics Co., Bloomfield, N. J., 1948-58; Asst. Dir. of Rsch.: ibid., Bound Brook, N. J., 1958-62; Asst. Dir., Polymer Rsch. and Devel., ibid., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Alpha Tau Omega; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Polymer Sci. Areas of Rsch.: Phenol-Aldehyde Polymers,

Vinyl Polymers, Organophosphorus Compounds; Iminoesters, Orthoesters, Ketene Acetals.

SCHROEDER, Robert L., Mgr., Systems Requirements Dept., Raytheon Co., 40 2nd Ave., Waltham, Mass. Home Add.: 46 Windemere Rd., Wellesley Hills, Mass. ELECTRONIC ENGINEERING. b. New Orleans, La., June 1, 1929. s. Walter L. and Alma (Jeanfreau) S. Edn.: B.S.E.E., Tulane Univ., 1950. m. Eleanor Gondran, Oct., 1950. c.: Walter K.; Kim M.; Robert K. Exp.: Design Engr., North Am. Aviation, International Airport, Inglewood, Calif., 1951-53; Hd. Simulation Sect., U. S. Naval Ordnance Test Sta., Pasadena, Calif., 1953-59; Mgr. SRD, Raytheon Co., Waltham, Mass., 1959–. Mem.: Inst. of Radio Engineers; Institute of Aeronautical Scis.; Am. Rocket Soc.; Operations Rsch. Soc. of Am. Contbr. to: Proc. of IAS Symposium on Tracking and Command of Aerospace Vehicles; Proc. of 14th Annual Natl. Aerospace Elect. Conf.; Navord Reports; G. E. Report. Serv. Rec.: USNR, 1946-49. Gen. Int.: Received Superior Achievement and Performance Award from the U. S. Navy Bureau of Ordnance, 1957. Areas of Rsch.: Simulation of Weapon Systems; ASW Systems; Ground Instrumentation; Aerospace Vehicle Performance.

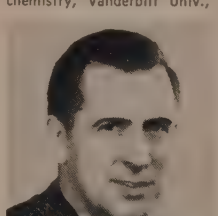
SCHROETER, Louis Clarence (Ph.D.), Rsch. Assoc., The Upjohn Co., Kalamazoo, Mich. Home Add.: 908 Ellendale, Kalamazoo, Mich. PHARMACEUTICAL CHEMISTRY. b. St. Louis, Mo., Dec. 13, 1929. s. Clarence Edward and Eleanor (Schindler) S. Edn.: B.S., St. Louis Coll. of Pharm., 1952; M.S., ibid., 1956; Ph.D., Univ. of Wis., 1959. m. Julann Griffin, June 7, 1952. c.: John Louis; Lois Celeste; Julie Ann. Exp.: Instr., St. Louis Coll. of Pharm., 1952-53; Instr., ibid., 1955-56; Rsch. Assoc., The Upjohn Co., Kalamazoo, Mich., 1959–. Mem.: Am. Pharm. Assn.; Rho Chi; Phi Lambda Upsilon; Sigma Xi; Phi Sigma. Contbr. to: Jour. Pharm. Sci.; Jour. Am. Chem. Soc.; Jour. Am. Pharm. Soc. Serv. Rec.: U. S. Army, 1953-55. Areas of Rsch.: Chemical Kinetics; Photochemistry and Free Radical Reactions; Clathrate and Inclusion Compounds.



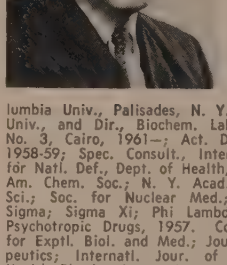
SCHUELER, Fred Warren (Ph.D.), Prof. and Chmn., Dept. of Pharmacology, Tulane Univ., Schl. of Med., 1430 Tulane Ave., New Orleans 12, La. Home Add.: 3401 Ridgeway Dr., Metairie, La. PHARMACOLOGY. b. Ft. Collins, Colo., Apr. 12, 1921. s. Frederick William and Mabel Claire (Poor) S. Edn.: B.A., Univ. of Colo., 1943; M.A., ibid., 1945; Ph.D., Univ. of Chicago, 1947. m. Julia Israel, 1944. c.: Tanya Ruth; Carl Frederick. Exp.: Asst. Prof., Dept. of Pharm., St. Univ. of Iowa, 1949-53; Assoc. Prof., ibid., 1953-56; Prof. and Chmn., Tulane Univ., Schl. of Med., 1956–. Hon. Pos.: Chmn., Prog. Comm., Am. Soc. for Pharmacology and Exptl. Therapeutics. Mem.: Soc. of Pharmacology and Exptl. Therapeutics; Soc. of Exptl. Biol. and Med.; Soc. of Sigma Xi; Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Phi Beta Pi. Author: Chemobiodynamics and Drug Design, 1960. Contbr. to: Jour. of Pharmacology and Experimental Therapeutics; Jour. of Am. Pharm. Assn.; Jour. of Am. Chm. Soc.; Internatl. Archives de Pharm. et de Therapie. Gen. Int.: Awarded Ebert Prize by Am. Pharm. Assn., 1955; Awarded the J. J. Abel Prize in Pharm., 1956. Areas of Rsch.: Relationship Between Chemical Constitution and Pharmacologic Activity.

SCHULT, Veryl Gladys (Miss), Specialist in Secondary Schl. Maths., U. S. Office of Edn., Wash., D. C., Pub. Schls. Home Add.: Sheraton-Park Hotel, Wash. 8, D. C., Apt. 1-448. MATHEMATICS. b. Dodge Co., Wis., May 19, 1906. d. Charles and Louise (Henke) S. Edn.: B.S., Univ. of Wis., 1927; M.A., Geo. Wash. Univ., 1938. Exp.: Tchr., Wash H. S., Two Rivers, Wis., 1927-29; Head, Math. Dept., Oconomowoc H. S., Oconomowoc, Wis., 1929-32; Tchr., Stuart Jr. H. S., Wash., D. C., 1932-38; Math. Supvr., Wash., D. C., Pub. Schls., 1938-58; Supervising Dir., Dept. of Maths., ibid., 1958-62; Spec., Secondary Schl. Maths., U. S. Office of Edn., 1962–; Tchr., Summers, Geo. Wash. Univ., Columbia Univ., Harvard Univ., Univ. of Md., Catholic Univ., Wilson Tchrs. Coll., Emory Univ.; Staff Mathematics Insts., Duke Univ., Hampton Inst., Wellesley, Phillips Exeter & Williams Coll. for Insts. of New England Assn. Tchrs. Mathematics, La. St. Univ. Hon. Pos.: Pres., Pi Lambda Theta; Pres., Panhellenic Assn., Wash., D. C.; Vice-Pres., Phi Beta Kappa Assn., Wash. D. C.; Delegate, White House Conf. on Children and Youth, 1960; Delegate, White House Conf. on Edn., 1955. Mem.: Phi Beta Kappa; A.A.A.S., Fellow; Pi Lambda Theta (Geo. Wash. Univ. Chapt.); Delta Kappa Gamma; Math. Assn. Am.; Natl. Coun. Tchrs. Math.; A.A.U.W.; Beta Sigma Omicron (Panhellenic). Co-Author: Mathematics in Daily Use, 1941, '50, '58; First Year Algebra and Second Year Algebra, 1957; Plane Geometry and Supplements, 1959; Solid Geometry, 1952; Mathematics at Work, 1962; Mathematics in Life, 1962; New First Algebra, 1962; New Second Algebra, 1962. Contbr. to: Math. Tchr.; Jour. Natl. Edn. Assn.; Schl. Sci. and Math. Gen. Int.: Worked with Schl. Mathematics Study Group During Summers of 1958, '59, '60, '61, '62. Areas of Rsch.: Mathematics. Listed in: W. W. in Am. Edn.

SCHULERT, Arthur Robert (Ph.D.), Asst. Prof., Dept. of Biochemistry, Vanderbilt Univ., Nashville, Tenn.; Dir., Biochemistry Labs., U. S. Navy Med. Rsch. Unit No. 3, Cairo, Egypt, U.A.R. Mailing Add.: Cairo Office of Naval Attache, Dept. of State, Wash. 25, D. C. Home Add.: 22 Road 100, Maadi, Egypt, U.A.R. BIOCHEMISTRY. b. Gladwin, Mich., Feb. 26, 1922. s. Oscar E. and Ruth Olive (Sanford) S. Edn.: B.S., Wheaton Coll., 1943; M.A., Princeton Univ., 1947; Ph.D., Univ. of Mich., 1951. m. Ruth B. Darling, June 17, 1949. c.: Barbara R.; Mark W.; Jean Ellen; Philip J.; Andrew J.; Peter A. Exp.: Fellow, Pub. Health Rsch. Inst. of N.Y.C., N. Y. Univ., 1951-53; Rsch. Fellow, Columbia Univ., Rsch. Serv., Goldwater Memorial Hosp., N. Y., 1953-55; Rsch. Assoc., Lamont Geochem. Lab., Columbia Univ., Palisades, N. Y., 1955-61; Asst. Prof., Vanderbilt Univ., and Dir., Biochem. Labs., U. S. Navy Med. Rsch. Unit No. 3, Cairo, 1961–; Act. Dir., Lamont Geochem. Lab., ibid., 1958-59; Spec. Consult., Interdepartmental Comm. on Nutrition for Natl. Def., Dept. of Health, Edn. and Welfare, 1959–. Mem.: Am. Chem. Soc.; N. Y. Acad. of Sci.; Am. Assn. for Adv. of Sci.; Soc. for Nuclear Med.; Health Physics Soc.; Sigma Pi Sigma; Sigma Xi; Phi Lambda Upsilon. Co-Author: Chap. IV, Psychotropic Drugs, 1957. Contbr. to: Sci.; Proc. of the Soc. for Exptl. Biol. and Med.; Jour. of Pharmacol. and Exptl. Therapeutics; Internatl. Jour. of Applied Radiation and Isotopes; Health Physics Jour. Areas of Rsch.: Drug and Mineral Metabolism; Relation of Trace Elements to Nutrition and Disease; Disposition of Nuclear Fallout.



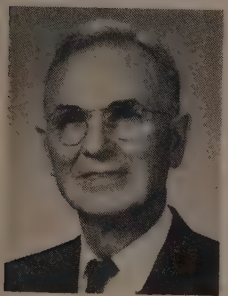
SCHULTZ, Frank G. (Ph.D.), Dean, Sci. and Applied Arts, S. Dak. St. Coll., Brookings, S. Dak. Home Add.. 510 9th Ave., Brookings, S. Dak. CHEMISTRY, EDUCATIONAL ADMINISTRATION AND EDUCATIONAL PSYCHOLOGY. b. Dorchester, Wis., Nov. 30, 1901. s. Gustav and Mathilda (Kupke) S. Edn.: B.A., Northland Coll., 1926; M.A., Univ. of Minn., 1935; Ph.D., ibid., 1941. m. Alice G. Johnson, Aug. 7, 1936. c.: John Thomas. Exp.: Tchr., Sci. and Athletics, H. S., Bayfield, Wis., 1926-28; H. S. Prin. and Sci., Moose Lake, Minn., 1928-29; H. S. Prin. and Sci., Floodwood, Minn., 1930-35; Grad. Asst., Univ. of Minn., 1935-36; Supt. of Schls., Sunrise, Wyo., 1936-40; Instr., Coll. of Edn., Univ. of Minn., 1941-42, Dean, Div. of Sci. and Applied Arts, S. Dak. St. Coll., 1942–. Mem.: Natl. Soc. for the Study of Edn.; Phi Kappa Phi; Pi Gamma Mu; Phi Kappa Delta; Mason 32°; Shriner; Kiwanis; C. of C. Contbr. to: Jour. of Exptl. Edn.; Edntl. Admin. and Supvrn.; Natl. Schl. Bd. Jour. Areas of Rsch.: Edntl. Rsch.



SCHULTES, Richard Evans (Ph.D.), Curator, Bot. Museum of Harvard Univ., Cambridge, Mass. Home Add.: 46 Hewlett St., Roslindale, Mass. ECONOMIC AND TROPICAL BOTANY, SPECIAL INTEREST IN NATIVE NARCOTIC AND POISON PLANTS; RUBBER PLANTS; ORCHIDS. b. Boston, Mass., Jan. 12, 1915. s. Otto Richard and Maude Beatrice (Bagley) S. Edn.: A.B., Harvard Univ., 1937; A.M., ibid., 1938; Ph.D., ibid., 1941. Hon. Degrs.: M.H., Universidad Nacional, Colombia. m. Dorothy Crawford McNeil, 1959. c.: Richard Evans, II; Neil Parker; Alexandra Ames. Exp.: Agronomist, Rubber Devel. Corp., Colombia, 1942-43; Plant Explorer, U.S.D.A., Colombia, Peru, Brazil, 1943-54; Curator, Harvard Univ., 1954–. Hon. Pos.: Pres., New England Bot. Club; Secy.-Treas., Harvard Chapt., Sigma Xi; Editor, Econ. Botany; Editor, Bot. Museum Leaflets, Harvard Univ. Mem.: Am. Assn. Adv. Sci.; Am. Acad. Arts and Scis.; Linnean Soc., London; Systs. Assn., London; Cuban Soc. of Bot.; Argentine Assn. of Bot.; Colombian Assn. of Agron. Engrs.; Colombian Acad. of Scis.; Sigma Xi; New England Bot. Club; Soc. for Econ. Bot.; Mexican Soc. of Bot.; Internatl. Assn. of Plant Taxonts. Author: Native Orchids of Trinidad and Tobago, 1960. Co-Author: Economic Botany of the Kiowa Indians, 1939. Contbr. to: Bot.

Museum Leaflets; Jour. Arnold Arboretum; Rhodora; Econ. Bot.; Taxon; Caldasia; Revista de la Academia Colombiana de Ciencias; Lloydia; Bull. of Narcotics; Agricultura Tropical; Trans. Linnean Soc.; Am. Anthrop.; Suelos Ecuatoriales; Mutisia; Bull. Am. Orchid Soc. Areas of Rsch.: Taxonomy of Rubber Plants; Ethnobotany and Taxonomy of Narcotics, Poisons and Medicinal Plants of New World Natives; Phytogeography of Northwest Amazon; Tropical New World Orchids.

SCHULZE, Benjamin Ernst (Mr.), Assoc. Prof. of Phys., Del Mar Coll., 101 Baldwin Blvd., Corpus Christi, Tex. Home Add.: 534 Ohio Ave., Corpus Christi, Tex



CHEMISTRY AND PHYSICS. b. Round Top, Tex., Sept. 13, 1896. s. Ernst and Bertha (Voelkel) S. Edn.: B.A., Southwest Tex. State Coll., 1925; M.S., Univ. of Okla., 1937. m. Leonora Elisa Cordes, Aug., 1919. c.: Loma Jeanette. Exp.: Tchr. and Prin., Rural Schl. of Fayette Co., Tex., La Grange, Tex., 1914-22; Tchr. of Chem. and Physics, Corpus Christi H.S., Corpus Christi, Tex., 1925-46; Assoc. Prof. of Physics, Del Mar Coll., ibid., 1946—. Hon. Pos.: Pres., So. Tex. Div., Tex. Acad. of Sci.; Fellow, Tex. Acad. of Sci. Mem.: A.A.A.S.; Sigma Chi; Sigma Xi. Contbr. to: Sci. Tchrs. of Am.; Sci. Tchr.; Tex. Acad. of Sci. Serv. Rec.: U. S. Army, W.W. I. Areas of Rsch.: The Reduction of Mercuric Ions with Mercury; Crystal Growth.

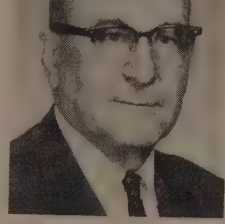
SCHULZE, Else Louise (Ph.D.), Mgr., Tech. Information Serv., The Procter and Gamble Co., Ivorydale Tech. Ctr., Cincinnati 17, Ohio. Home Add.: 4008 Floral Ave., Cincinnati 12, Ohio. CHEMISTRY. b. Cincinnati, Ohio, Oct. 19, 1901. d. Louis C. and Emilie (Berckhemer) S. Edn.: B.A., Univ. of Cincinnati, 1923; M.A., ibid., 1924; Ph.D., ibid., 1926. Exp.: Librn., Chem. Div., The Procter and Gamble Co., 1926-39; Librn., Technical Libr., ibid., 1939-52; Librn., Technical Librs., ibid., 1952-56; Mgr., Tech. Information Serv., ibid., 1956—. Mem.: Am. Chem. Soc.; Am. Documentation Inst.; A.A.U.W.; Special Librs. Assn.; Alpha Chi Omega; Iota Sigma Pi; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Edn.; Special Libraries.

SCHUMAKER, John Abraham (Ph.D.), Prof. and Chmn. of Math. Dept., Rockford Coll., Rockford, Ill. Home Add.: 329 Coll. Ave., Rockford, Ill. MATHEMATICS. b. Marshall, Ill., July 24, 1925. s. John W. and Martha C. (Kaufman) S. Edn.: B.S., Univ. of Ill., 1946; M.A., ibid., 1947; Ph.D., N. Y. Univ., 1959. Exp.: Instr., Asst. Prof., MacMurray Coll., Jacksonville, Ill., 1947-53; Instr., Grinnell Coll., 1953-55; Asst. and Assoc. Prof., Montclair St. Coll., 1955-61; Prof., Rockford Coll., 1961—. Hon. Pos.: Vice-Pres., Math. Sec. of N. Y. Soc. for Experimental Study of Edn.; Co-Editor of The New Jersey Math. Tchr.; Bd. of Dir. of N. J. Sec. of Math. Assn. of Am. Mem.: Math. Assn. of Am.; A.A.A.S.; Natl. Coun. of Tchrs. of Math.; Phi Beta Kappa; Phi Kappa Phi; Pi Mu Epsilon; Phi Delta Kappa; Kappa Delta Pi; Kappa Mu Epsilon. Author: Statistics: An Intuitive Approach, 1962. Contbr. to: Scripta Mathematica; The Mathematics Tchr.; Rev. of Edn. Rsch.; N. J. Math. Tchr. Areas of Rsch.: Math. Edn., Theory of Numbers.

CHUMAN, Leonard Michael (M.D.), Prof. of Epidemiology, Schl. of Pub. Health, Univ. of Minn., Minneapolis, Minn. Home Add.: 1758 Bohland Ave., St. Paul 16, Minn. EPIDEMIOLOGY. b. Cleveland, Ohio, Mar. 4, 1913. s. Morris and Rebecca (Lazarowitz) S. Edn.: A.B., Oberlin Coll., 1934; M.S., Grad. Schl., Western Reserve Univ., 1939; M.D., Schl. of Med., ibid., 1940. m. Marie Romich, Oct. 30, 1954. c.: Lowell; Judith. Exp.: Fellow in Bacteriol., Schl. of Med., Western Reserve Univ., 1937-39; Commissioned Officer, U. S. Public Health Service, Sr. Surgeon (Commander), 1940-47; Dist. Epidemiologist, Ill. Dept. of Pub. Health, 1941-43; Asst. Chief, Div. Local Health Admin., ibid., 1943-45; Med. Officer in Charge, Southeastern Nutrition Rsch. Unit, U. S. Public Health Serv., Gainesville, Ga., 1945-47; Chief, Div. of V. D. Control, Ill. Dept. of Pub. Health, 1947-49; Deputy Dir., Div. Prev. Med., ibid., 1949-54; Epidemiologist, Cold Injury Rsch. Team, Korea, A.U.S., 1951-53; Assoc. Prof. of Epidemiol., Schl. of Pub. Health, Univ. of Minn., 1954-57; Prof. of Epidemiol., ibid., 1957—. Hon. Pos.: Surg. Gen. (USPHS) Expert Advry. Comm. on Smoking and Hlth.; Chmn., Adv. Panel, Natl. Cancer Inst.; Chmn., Coun. on Rsch., Am. Coll. of Preventive Med.; Chmn., Conf. of Chronic Disease Trng. Program Dirs.; Advisory Com., Polio Vaccine Evaluation Center, Univ. of Mich.; Advisory Com., Live Virus Oral Polio Vaccine Evaluation, Minn.; Natl. Cancer Control Com., Natl. Cancer Inst., U.S.P.H.S.; Consult. to Communicable Disease Center; Div. of Rad. Health; Air Pollution Program. Mem.: Am. Epidemiol. Soc.; Am. Pub. Health Assn.; Am. Venereal Disease Assn.; Assn. Milit. Surgeons, U.S.A.; Am. Assn. Pub. Health Physicians; A.A.U.P.; Am. Coll. of Preventive Med.; Diplomate, Am. Bd. Preventive Med.; Middle States Pub. Health Assn.; Minn. Pub. Health Assn.; N. Y. Acad. of Scis.; Assn. Tchrs. of Preventive Med.; Phi Beta Kappa; Alpha Omega Alpha; Greater St. Paul Area Health Coun. Contbrng. Author: Cold Injury, 1954. Contbr. to: Jour. Am. Pub. Health Assn.; Am. Jour. of Hygiene; Pub. Health Reports; Jour. Am. Med. Assn.; Ill. Med. Jour.; Univ. of Minn. Med. Bull.; Annals, N. Y. Acad. of Scis.; Jour. of Ven. Dis. Info.; North Am. Veterinarian; Pediatrics. Gen. Int.: Co-Discoverer of Silo-Filler's Disease. Areas of Rsch.: Gen. Epidemiol. of Acute Infectious and Chronic Disease. Specifically: Rsch. in Poliomyelitis; Rsch. in Silo Filler's Disease; Rsch. in Leukemia; Rsch. in Toxoplasmosis; Rsch. in Congenital Malformations.

SCHUSTER, Benjamin (M.D.), Dir. of Cardiopulmonary Ctr., Good Samaritan Hosp., Fairview Ave., Dayton, Ohio. Home Add.: 519 Elm Grove Dr., Dayton 15, Ohio. CARDIOPULMONARY DISEASES. b. Milwaukee, Wis., Apr. 14, 1923. s. Morris and Minnie (Neman) S. Edn.: B.S., Univ. of Wis., 1950; M.D., ibid., 1952. m. Marian Mayerson, Feb. 1, 1953. c.: Maria; Debra; Karen. Exp.: Fellow in Med., Univ. of Wis., 1956; Dir. of Cardiopulmonary Dept., Good Samaritan Hosp., Dayton, Ohio, 1957—; Consultant in Cardiology, Wright Patterson Air Force Base Hosp., Dayton, Ohio, 1960—. Mem.: Am. Federation for Clin. Rsch.; Am. Coll. of Chest Physicians; Am. Coll. of Cardiol.; Am. Thoracic Soc.; Am. Geriatrics Soc.; Am. Soc. of Internal Med.; Am. Bd. of Internal Med., Diplomate; Am. Heart Assn.; Alpha Omega Alpha; Phi Delta Epsilon. Contbr. to: Jour. of Pharmacol. and Exptl. Therapeutics; Jour. of Clin. Investigation; The Jour. of Lab. and Clin. Med.; Anesthesiol.; Clin. Rsch. Proc. Serv. Rec.: U. S. Army, 1942-44. Areas of Rsch.: Cardiovascular and Pulmonary Diseases.

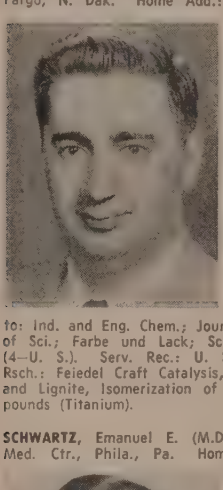
SCHWARTE, Louis Harold (D.V.M.), Prof., Vet. Med. Rsch. Inst., Iowa St. Univ., Ames, Ia. Home Add.: 1103 Roosevelt Ave., Ames, Ia. PATHOLOGY. b. Saratoga, N. Y., July 29, 1896. s. John C. and Virginia (Miller) S. Edn.: B.S., Cornell Univ., 1918; M.S., ibid., 1920; D.V.M., Iowa St. Coll., 1928; Ph.D., ibid., 1934. m. Ella R. Murphy, 1934. c.: Mary Kay. Exp.: Pathologist, Agric. Expmt. Sta., Rhode Island St. Coll., 1928-30; Asst. Prof., Iowa St. Coll., 1930-35; Assoc. Prof., ibid., 1935-45; Prof., ibid., 1945—. Mem.: Sigma Xi; Phi Lambda Upsilon; Phi Kappa Phi; Phi Zeta; Gamma Sigma Delta; Osborn Club; N. Y. Acad. Sci.; Iowa Acad. Sci.; A.A.A.S.; Am. Veterinary Med. Assn.; Iowa Vet. Med. Assn.; Internatl. Acad. Pathology; Conf. Rsch. Workers in Animal Diseases; U. S. Livestock Sanitary Assn.; Am. Pub. Health Assn. Co-Author: Diseases of Poultry, 1943, '48, '52, '59. Contbr. to: Am. Jour. Physiology; Am. Jour. Pathology; Jour. Am. Vet. Med. Assn.; Vet. Med.; N. A. Veterinarian; Sci.; Iowa State Jour. Sci.; Iowa Veterinarian; Diseases of Swine. Serv. Rec.: Am. Expeditionary Forces, England and France, W.W. I, 1918. Gen. Int.: Consultant to Ames Labs., A.E.C., Chem. Corps, and Assoc. Vet. Labs. Areas of Rsch.: Comparative Physiology and Pathology; Virus Diseases; Neurotropic Infections; Toxicology.



SCHWARTZ, Benjamin S. (Mr.), Dir. of Microbiology, Warner-Lambert Rsch. Inst., 170 Tabor Rd., Morris Plains, N. J. Home Add.: 30 Washington Ct., Livingston, N. J. MICROBIOLOGY. b. Otich, Russia, Dec. 12, 1914. s. Charles and Sylvia (Bernstein) S. Edn.: B.A., Brooklyn Coll., 1939; M.A., ibid., 1941. m. Sara Fox, May 17, 1941. c.: Diane; Ilene. Exp.: Hd. of Dept. Bact. Serol., St. Joseph Hosp., Fort Wayne, Ind., 1946; Sr. Microbiologist, Warner-Lambert Thera. Rsch., N.Y.C., 1946-53; Acting Dir. Dept. Micro., ibid., Morris Plains, N. J., 1953-56; Dir., Dept. Micro., ibid., 1956—. Hon. Pos.: Visiting Biol., A.I.B.S.; Space and Sci. Train U.S.A. Adv. Comm.; Sci. Tape Inst. Adv. Comm.; Chmn., Ed. and Career Comm. Theo. Smith Soc.; Coun., Theobald Smith Soc. ASM; Coun., N. Y. City A.S.M. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Tissue Culture

Assn.; Officers Reserve Corps; Theobald Smith Soc.; Sigma Xi. Contbr. to: Antibiotics Annual; Antimicrobial Agents Annual; Jour. Immunol.; Jour. Dent. Rsch.; Jour. Lab. and Clin. Med.; Proc. Soc. Exptl. Biol. and Med. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Antibiotic Rsch. Chemotherapy of Bacterial and Viral Disease; Parsite-host Mechanisms; RES; Tissue Culture, Development of Diagnostic Lab. Aids.

SCHWARTZ, Donald (Ph.D.), Prof. of Chem., N. Dak. St. Univ., Fargo, N. Dak. Home Add.: 901 Park Drive, Fargo, N. Dak.



CHEMISTRY, SOLID AND LIQUID FUELS, FRIEDEL CRAFTS, OXIDATION PRODUCTS OF COAL, ORGANIC-TITANIUM COMPOUNDS. b. Scarsdale, N. Y., Dec. 27, 1927. s. Harry A. and Ethel (Rabinowitz) S. Edn.: B.S., Univ. of Mo., 1949; M.S., Mont. St. Coll., 1951; Ph.D., The Pa. St. Univ., 1955. m. Lois Fields, Sept. 10, 1948. c.: Leanne; Mark Wayne; Scott Blake. Exp.: Rsch. Chemist, Esso Rsch. Lab., Baton Rouge, La., 1957-58; Asst. Prof. of Chem., Moorhead St. Coll., 1958-59; Prof. of Chem., N. Dak. St. Univ., 1959 —. Mem.: A.C.S.; A.A.U.P.; A.A.A.S.; N. Dak. Acad. of Sci.; Minn. Acad. of Sci.; Phi Lambda Upsilon; Sigma Xi; Mason; Fargo-Moorhead Open Forum. Contbr. to: Ind. and Eng. Chem.; Jour. Chem. Edn.; Proc. N. Dak. Acad. of Sci.; Farbe und Lack; Sci. Edn.; Chem. and Ind.; Patents (4—U. S.). Serv. Rec.: U. S. Coast Guard, 1945. Areas of Rsch.: Feiedel Craft Catalysis, Oxidation and Structure of Coals and Lignite, Isomerization of n-Paraffins, Organic Metallic Compounds (Titanium).

SCHWARTZ, Emanuel E. (M.D.), Radiotherapist, Albert Einstein Med. Ctr., Phila., Pa. Home Add.: 547 Howe Rd., Merion Park, Pa.

RADIATION THERAPY (RADIOLOGY). b. N.Y.C., Oct. 14, 1923. s. Sigmund and Tessie (Weiss) S. Edn.: B.A., N. Y. Univ., 1946; M.D., State Univ. of N. Y., 1950. m. Charlotte Finsten, 1956. c.: Frederic Henry; Nancy Ellen. Exp.: Internship, Jewish Hosp. of Brooklyn, 1950-51; Res., Yale-New Haven Med. Center, 1951-53; Instr., Yale Univ. Schl. of Med., 1953-54; Instr., Univ. of Chicago Schl. of Med., A.E.C. Fellow, Argonne Cancer Rsch. Hosp., 1954-55; Rsch. Asst. in Radiotherapy, Hosp. for Joint Diseases, 1955-56; Pub. Health Serv. Special Postdoctoral Fellow of the N.C.I. Oak Ridge Natl. Lab., 1956-57; Radiotherapist, Albert Einstein Med. Ctr., 1957—; Asst. Prof., Radiol., Hahnemann Med. Coll., 1961—. Mem.: Am. Assn. for Cancer Rsch.; Radiation Rsch. Soc.; Am. Assn. Adv. Sci.; Am. Club of Therapeutic Radiologists; Radiological Soc. of N. Am.; Diplomate, Am. Bd. of Radiology. Contbr. to: Cancer Res.; Radiology; Surgical Forum; Proc. Soc. Exptl. Biol. and Med.; Fed. Proc.; Blood; Radiation Rsch.; Acta Radiologica. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Radiation Effects; Protection Against Radiation Injury; Tumor-Host Relationship.

SCHWARTZ, Ferdinand Francis (M.D.), Med. Dir. of Birmingham Inst. of Phys. Med. and Rehab., 916 So. 20th St., Birmingham, Ala. Home Add.: 5305 11th Ave., S., Birmingham, Ala.

PHYSICAL MEDICINE AND REHABILITATION. b. Cleveland, Ohio, Mar. 15, 1902. s. Ellis and Rose (Weiss) S. Edn.: A.B., Univ. of W. Va., 1925; B.S., ibid., 1927; M.D., Rush Med. Coll., 1930. m. Jessie L. Gerk, Aug., 1957. c.: Steven; Rose Carol. Exp.: Consult., V.A. Hosp., Tuscaloosa, Ala., 1952—; Consult., V.A. Hosp., Birmingham, Ala., 1958 -; Assoc. Prof., Med. Coll. of Ala., 1954—. Hon. Pos.: Chmn., Ala. Chapt. of the World Med. Assn.; Mem. of the Exec. Comm. for the Physns. Fellowship of Israel. Mem.: Am. Med. Assn.; Ala. St. Med. Soc.; Acad. of Cerebral Palsy; Acad. of Phys. Med.; So. Med. Soc.; Acad. of Scis. of N. Y. and Ala.; Colombian Med. Socs.; Am. Arthritic Soc.; Geriats. Soc.; Elks; Sertoma; Lions; E. End Bus. Club; Crestwood Civic Club. Contbr. to: Am. Med. Jours.; Jour. of Phys. Med. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Physical Medicine and Rehabilitation.

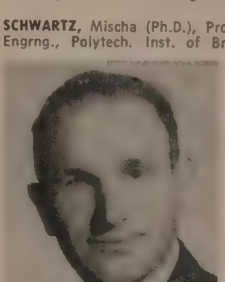
SCHWARTZ, Lawrence Elliot (Mr.), Consultant, RAND Corp., 1700 Main St., Santa Monica, Calif. Home Add.: 44 Conant Hall, Harvard Univ., Cambridge 38, Mass.

ECONOMICS. b. Chicago, Ill., Feb. 16, 1935. s. Louis and Eleanor (Mazor) S. Edn.: B.A., Northwestern Univ., 1956; M.A., Harvard Univ., 1960. Exp.: Asst. Economist, RAND Corp., Santa Monica, Calif., 1961-62; Consult., ibid., 1961—. Mem.: Am. Econ. Assn.; A.A.A.S.; Operations Rsch. Soc.; Inst. of Mgmt. Scis.; Phi Beta Kappa. Areas of Rsch.: Econs. of Information and Econs. of Urban Areas.

SCHWARTZ, Martin DePuy (Sc.D.), Dir., Operations Analysis, No. American Aviation, Inc., Space and Information Systems Div., 12214 Lakewood Blvd., Downey, Calif. Home Add.: 1516 Espinosa Circle, Palos Verdes Estates, Calif.

AERONAUTICAL ENGINEERING (AEROELASTICITY); OPERATIONS ANALYSIS. b. Syracuse, N. Y., Oct. 28, 1922. s. Peter Joseph and Gladys Louise (DePuy) S. Edn.: B.S., Mass. Inst. of Tech., 1947; Sc.D., ibid., 1950. m. Janet Lenora Wilsey, Dec., 1943. c.: Susan; Martin; Judith; Carol; Russell. Exp.: Rsch. Assoc. Project Leader, Aeroelastic and Structures Rsch. Lab., Mass. Inst. Tech., Cambridge, Mass., 1947-51; Chf., Aircraft and Missiles Div., Operations Analysis, Hqs. SAC, Omaha, Neb., 1951-59; Deputy Chf., Operations Analysis, Office, Vice Chf. of Staff, Hqs., U.S.A.F., Wash., D. C., 1959-61; Dir., Operations Analysis, No. American Aviation, Inc., Space and Information Systems Div., Downey, Calif., 1961—. Mem.: Assoc. Fellow, Inst. of Aerospace Sci.; Operations Rsch. Soc. of Am.; Am. Ordnance Assn.; A.A.A.S.; Tau Beta Pi; Sigma Xi; Gamma Alpha Rho. Contbr. to: Aeronautical Engrng. Review. Serv. Rec.: U.S.A.F.R. Gen. Int.: Received Douglas Aircraft Co. Fellow, Mass. Inst. Tech., 1948-49; U.S.A.F. Meritorious Civilian Service Award, 1959. Areas of Rsch.: Supersonic flutter of low aspect ratio wings, aeroelastic problems of transonic control, and pioneering research in the theory and practice of flight testing for aeroelastic effects while directing classified investigations under A.F. and Navy contracts.

SCHWARTZ, Mischa (Ph.D.), Prof. and Acting Hd., Dept. of Elect. Engrng., Polytech. Inst. of Brooklyn, 333 Jay St., Brooklyn 1, N. Y. Home Add.: 73 Hillturn Lane, Roslyn Heights, L. I., N. Y.



ELECTRICAL ENGINEERING AND PHYSICS. b. N.Y.C., Sept. 21, 1926. s. Isaiah and Bessie (Weinstein) S. Edn.: B.E.E., The Cooper Union, 1947; M.E.E., Polytechnic Inst. of Brooklyn, 1949; Ph.D., Harvard Univ., 1951. m. Lillian Mitchnick, June, 1957. c.: David. Exp.: Proj. Engr., Sperry Gyroscope Co., Great Neck, L. I., N. Y., 1947-52; Grad. Lectr., Applied Mat., Adelphi Coll., 1951-52; Asst. Prof., Polytechnic Inst. of Brooklyn, 1952-56; Assoc. Prof., ibid., 1956-59; Prof., ibid., 1959—; Acting Hd., Dept. of Elect. Engrng., ibid., 1962—. Mem.: I.R.E.; A.A.A.S.; A.A.U.P.; A.S.E.E.; Tau Beta Pi; Sigma Xi; Eta Kappa Nu. Author Information, Transmission, Modulation and Noise, 1959. Contbr. to: Trans. PGII—I.R.E. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Communication Theory, Random Processes.

SCHWARTZ, Philip (Col.), Phys. Instr. (Ret.), 122 San Miguel Rd., Pasadena, Calif. PHYSICS. b. Jersey City, N. J., Sept. 13, 1895. Edn.: B.S., Columbia Univ., 1917; M.A., U.C.L.A., 1962. m. Ethel Miller, 1922. c.: Richard; Susan; Herbert. Exp.: Dir. Rsch. and Devel. Div., Armed Forces Staff Coll., Norfolk, Va., 1950-52; Design Spec., Lookheed Air Corp., Burbank, Calif., 1953-58; Phys. Instr., Harbor and Valley Colls., Los Angeles, Calif., 1958-61. Mem.: Am. Assn. Adv. Sci.; Am. Assn. Phys. Tchrs.; Army and Navy Club, Wash., D. C.; Am. Ordn. Assn.; Air Force Assn. Contbr. to: Ordn.; Coast Artillery Jour.; Field Artillery Jour. Serv. Rec.: U. S. Army and Air Force, 1921-53. Areas of Rsch.: Ballistics; Weapon Systems; Education; Ordnance.

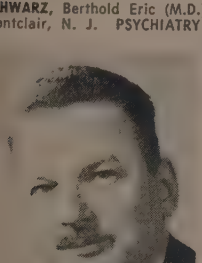
SCHWARTZ, Richard Frederick (Ph.D.), Assoc. Prof., The Moore Schl. of Electl. Engrng., Univ. of Pa., Phila., Pa. Home Add.: 426 Northcroft Rd., Springfield, Delaware Co., Pa. ELECTRICAL ENGINEERING (COMMUNICATION ENGINEERING, INSTRUMENTATION, MICROWAVE THEORY AND TECHNIQUES). b. Albany, N. Y., May 31, 1922. s. Frederick William and Mary H. (Holland) S. Edn.: B.E.E., Rensselaer Poly. Inst., 1943; M.E.E., ibid., 1948; Ph.D., Univ. of Pa., 1959. m. Ruth Louise Feldman, Oct., 1945. c.: Kathryn Gail; Frederick Earl; Karl Edward; Eric Christian; Frieda Diane. Exp.: Asst., Rensselaer Poly. Inst., Troy, N. Y., 1946-48; Instr., ibid., 1948; Development Engr., Engrng. Products Dept., RCA Victor Div., R.C.A., Camden, N. J., 1948-51; Instr., Assoc., Rsch. Assoc., Moore

Schl. of E. E., Univ. of Pa., Phila., Pa., 1951-59; Asst. Prof., ibid., 1959-62; Assoc. Prof., ibid., 1962—; Visiting Asst. Prof., Univ. of Mich., Ann Arbor, Mich., 1960-61. Mem.: Inst. of Radio Engrs.; Am. Inst. of Elect. Engrs.; Am. Soc. for Engrng. Edn.; A.A.A.S.; Franklin Inst.; Eta Kappa Nu; Sigma Xi. Co-author: The Eavesdroppers, 1959. Contbr. to: Electronics, Electrical Mfg.; Trans. I.R.E.; Jour. Appl. Physics; I.R.E. Proc.; Wescon Proc. Serv. Rec.: A.U.S., 1944-46. Areas of Rsch.: Microwave Theory and Techniques, Communication Engineering, Instrumentation.

SCHWARTZ, Robert (Dr.), Tufts-New England Med. Center, Boston, Mass.

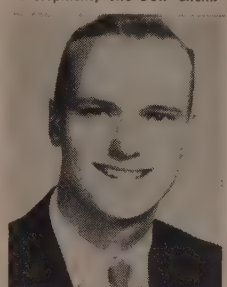
SCHWARZ, Anton Josef Franz (M.D.), Asst. Hd. of the Virus Rsch. Dept., Pitman Moore Co., a Div. of the Dow Chemical Co., Indianapolis, Ind. Home Add.: 6139 Broadmoor Plaza, Indpls., Ind. VIROLOGY. b. Munich, Germany, May 26, 1927. s. Joseph and Theresa (Bauer) S. Edn.: M.D., Univ. of Munich, 1951. m. Josephine Morrissey, Nov. 15, 1952. c.: Theresa Ann; Anton Joseph, Jr. Exp.: Internship in Internal Med., Krankenhaus rechts der Isar, Munich, Ger., 1951-52; Rotating Internship, St. John's Hosp., L. I. City, N. Y., 1952-53; Res. in Gen. Practice, Dobbs Ferry Hosp., Dobbs Ferry, N. Y., 1953-54; Sr. Rsch. Assoc., Children's Hosp. Rsch. Fdn., Dept. of Pediatrics, Coll. of Med., Univ. of Cincinnati, 1954-56; Sr. Virologist, Pitman Moore Co., Indianapolis, Ind., 1956-60; Asst. Hd., Virus Rsch. Dept., ibid., 1960—. Mem.: Am. Med. Assn.; Indianapolis Med. Soc.; Am. Jour. of Dis. of Children; Ind. State Med. Assn.; N. Y. Acad. of Sci.; A.A.A.S. Contbr. to: Proc. of the Soc. for Exptl. Biol. and Med..; Jour. of the Am. Med. Assn. Gen. Int.: Became an American Citizen, June, 1957. Areas of Rsch.: General Virus Rsch. and Tissue Culture.

SCHWARZ, Berthold Eric (M.D.), Physician, 74 S. Mountain Ave., Montclair, N. J. PSYCHIATRY AND ELECTRO-ENCEPHALOGRAPHY. b. Jersey City, N. J., Oct. 20, 1924. s. Berthold T. D. and Thyra (Ericson) S. Edn.: A.B., Dartmouth Coll., 1945; Cert. Dartmouth Med. Schl., 1945; M.D., N. Y. Univ. Coll. of Med., 1950; M.Sc., Univ. of Minn., 1957. m. Ardis M. Peterson, Jan. 22, 1955. c.: Lisa Thyra; Eric Rolf. Exp.: Intern, Mary Hitchcock Memorial Hosp., Hanover, N. H., 1950-51; Fellowship in Psychiatry, Mayo Found., 1951-55; Pvt. Pract. and Rsch., N. J., 1955—. Mem.: Dipl., Am. Bd. of Psychiatry and Neurol.; Fellow, Am. Psychiatric Assn.; Fellow, Am. Assn. Adv. Sci.; N. J. Neuro-Psychiatric Assn.; N. J. St. Med. Soc.; Am. Med. Assn.; Am. EEG Soc.; Eastern EEG Soc.; Fellow, Am. Geri-



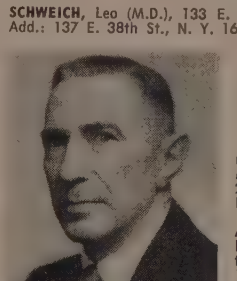
atric Soc.; Fellow, Acad. of Med. of N. J.; Am. Soc. Psychiat. Rsch.; Am. Parapsychol. Assn.; Alpha Kappa Kappa. Co-Author: Parent-Child Tensions, 1958. Contbr. to: A.M.A. Arch. of Neurol. and Psychiatry; Jour. Nerv. and Mental Dis.; Proc. Staff Meetings of Mayo Clinic; Neurology; Psychiatric Quart.; Jour. Social Therapy; Psychosomatic Med.; Jour. Med. Soc. of N. J.; Med. Times; Jour. Investigative Dermatol.; Trans., Am. Acad. of Psychosomatic Med.; Anesthesia and Analgesia; Jour. Ins. Med.; Jour. N. J. Parapsych. Areas of Rsch.: Psychopathology, Psychotherapy, Electro-encephalography, Parapsychology.

SCHWARTZBECK, Richard Arthur (Ph.D.), Plant Sci. Rsch. and Development, The Dow Chem. Co., 916 Shoreham Bldg., Wash. 5, D. C. Home Add.: 1210 N. Harrison St., Arlington 5, Va. AGRICULTURAL CHEMICALS EFFECTIVENESS AND PHYSIOLOGICAL ACTION. b. Milwaukee, Wis., Feb. 29, 1932. s. Arthur K. and Lydia E. (Bonin) S. Edn.: B.S., Univ. of Wis., 1954; M.S., ibid., 1955; Ph.D., Univ. of Minn., 1959. m. Virginia A. Pile, Dec. 4, 1954. c.: Ralph K.; Robert J. Exp.: Asst. Agronomist, Tex. Agri. Expt. Sta., Crystal City, Tex., 1955-57; Rsch. Asst., Univ. of Minn., 1957-59; Post Doctoral Rsch. Fellow, ibid., 1959-61; Plant Sci. R and D, The Dow Chem. Co., Wash. 5, D. C., 1961—. Mem.: Sigma Xi; Am. Soc. of Agronomy; Soil Sci. Soc. of Am.; Weed Soc. of Am.; Phi Mu Alpha. Contbr. to: Proceedings of the Soil Sci. Soc. of Am. Areas of Rsch.: Agri. Chem. Physiology, Silage Gases, Chem. of Soil Nitrogen.



SCHWARZ, Emil (Mr.), Rsch. and Devel. Engr., c/o Vard 2981 E. Colorado Blvd., Vard, Div. Royal Indust. Inc., Pasadena, Calif. Home Add.: 10436 Peach Ave., Granada Hills, Calif. MISSILE, GUIDANCE AND CONTROL SYSTEMS. b. SaarBruecken, Germany, Feb. 1, 1910. s. Andrew and Hildegard (Jantzen) S. Edn.: Tech. Engr. Coll., Germany, 1928. m. Bernice Blumenfeld, Dec., 1934. c.: Ronald; Richard. Exp.: Chf. Gunsmith, U. S. Rubber Munitions Plant, Des Moines, Ia., 1941-42; Sr. Mfg. Production Engr., Ford Motor Co., Aircraft Engine Div., Chicago, Ill., 1953-59; Nuclear Components, Sr. Engr., Vard Div. Royal Indust. Inc., Pasadena, Calif., 1962—. Hon. Pos.: Mem., Cost Reduction Comm.; Instr., War Prod. Bd. Accredited; Tech. Adv., Jet Engines. Mem.: A.S.T.M.E.; A.R.S.; A.O.A.; I.S.A.; A.A.A.S.; N.A.A.; Calif. Acad. Sci.; Natl. Geog. Soc.; Am. Museum of Natl. History. Gen. Int.: Invented 7 Special Machines and Instrumental to 11 Inventions Companies Owned.

SCHWEICH, Leo (M.D.), 133 E. 58th St., N. Y. 22, N. Y. Home Add.: 137 E. 38th St., N. Y. 16, N. Y. DERMATOLOGY. b. Trier, Germany, Sept. 26, 1894. s. Herman and Augusta (Mayers) S. Edn.: Univ. of Kiel, 1914; Univ. of Strassburg, 1915; Univ. of Bonn, 1916; M.D., Univ. of Cologne, 1920. m. Dorothea Valeska Mendelsohn, Dec. 2, 1938. Exp.: Dermatologist, Dept. of Dermatol., Univ. of Cologne and Municipal Hosp., Elberfeld, 1921-26; Mem. of Staff, Columbia-Presby. Med. Ctr., N.Y.C., and Lenox Hill Hosp., N.Y.C., 1934—; Attending Dermatologist, Vanderbilt Clinic; Att. Dermatol. Emeritus, Lenox Hill Hosp., N.Y.C., 1944; Special Lectr. in Dermatol., Columbia Univ., N.Y.C., 1960. Mem.: Am. Med. Assn.; Am. Acad. of Dermatol. and Syphilol.; N. Y. Acad. of Med.; Soc. of Investigative Dermatol.; Acad. of Sci.; A.A.A.S.; Assn. of Am. Colls.; German Dermatol. Soc.; Assn. of Dermatols. of Rhenish-Westphalia; Internatl. Soc. for Tropical Dermatol.; Corresponding Mem., Dermatol. Soc. of Venezuela. Areas of Rsch.: Dermatology.



SCHWARZ, David Robert (Mr.), Pres., Schwarz BioResearch, Inc., Mountainview Ave., Orangeburg, N. Y. Home Add.: 633 Fenimore Rd., Larchmont, N. Y. CHEMICAL ENGINEERING APPLIED TO BIOCHEMICAL MATERIALS—ESPECIALLY YEAST DERIVATIVES AND NUCLEIC ACIDS. b. Mount Vernon, N. Y., Mar. 28, 1917. s. Robert and Sylvia (Weingart) S. Edn.: B.S., Harvard Coll., 1937; M.A., Columbia Univ., 1938. m. Jeanne Lasser, Jan. 1, 1939. c.: Susan; Jane; Judith. Exp.: Tech. Dir., Natl. Grape Corp., Brocton, N. Y., 1938-40; Airborne Elec. Dev. and Test., Naval Rsch. Lab., Wash., D. C., 1944-46; Mgr., Rsch. and Devel., Vice-Pres., Schwarz Labs., Inc., Mt. Vernon, N. Y., 1940-59; Pres., Schwarz BioResearch, Inc., Orangeburg, N. Y., 1959—. Hon. Pos.: Consultant, Dept. of Defense, 1958—; Liaison Mem. NRC Div. Biol. Agr. Mem.: A.A.A.S.; Am. Chem.

Soc.; Inst. Food Technol.; Am. Soc. of Brewing Chem.; Biochem. Soc.; Rye Neck Citizens' Comm. for Pub. Schls.; Mamaroneck Village Improvement Comm. Co-Editor: Glutathione, 1954; Symposium on Sulfur in Proteins, 1959. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Preparation of Biochemical Intermediates, Enzymes, Nucleic Acids, and Radiochemical Tracer Compounds for Biomedical Research.

SCHWEIGERT, Bernard Sylvester (Ph.D.), Chmn., Dept. of Food Sci., Mich. St. Univ., East Lansing, Mich. Home Add.: 1750 Woodside Dr., East Lansing, Mich.

BIOCHEMICAL AND NUTRITIONAL ASPECTS OF FOOD SCIENCE. b. Alpha, N. Dak., Mar. 29, 1921. s. John S. and Barbara (Busche) S. Edn.: B.S., Univ. of Wis., 1943; M.S., ibid., 1944; Ph.D., ibid., 1946. m. Alta Goede, Sept. 25, 1943. c.: James Bernard; John Frederick. Exp.: Tchng. Asst., Univ. of Wis., 1942-46; Assoc. Prof., Tex. A. and M. Coll., 1946-48; Dir. of Rsch. and Assoc. Prof., Am. Meat Inst., Found and Dept. of Biochem., Univ. of Chicago, 1948-60; Prof. and Chmn., Dept. of Food Sci., Mich. State Univ., 1960—. Hon. Pos.: Chmn. and Mem. Advisory Comm. of the Natl. Rsch. Coun. to the Dept. of Defense; Chmn., Comm. on Radiation Pasteurization of Foods. Mem.: An. Inst. of Nutrition; Am. Soc. of Biol. Chem.; Am. Chem. Soc.; Am. Oil Chem. Soc.; Inst. of Food Technologists; Am. Dairy Sci. Assn.; Am. Soc. of Microbiology; Am. Assn. for the Adv. of Sci.; Am. Soc. of Animal Sci.; Soc. of Experimental Biol. and Med.; Phi Kappa Phi; Sigma Xi; Phi Lambda Upsilon; Phi Eta Sigma; Alpha Zeta; Delta Theta Sigma; Gamma Alpha. Contbr. to: Science of Meat and Meat Products; Jour. Biol. Chem.; Jour. Nutrition; Arch. Biochem.; Jour. of Food Sci.; Jour. Agric. and Food Chem.; Science; Proc. Soc. Exptl. Biol. and Med.; Jour. of Animal Sci.; Jour. Am. Dietetics Assn.; Am. Jour. of Physiology. Areas of Rsch.: Biochemistry, Nutrition and Food Science Relating to Nutritive Value of Foods, Radiation Preservation of Foods, Role of Vitamin B12 in Metabolism, Interrelationships in the Metabolism of Amino Acids and Vitamins.

SCHWEIKER, George C. (Ph.D.), Mgr., Plastics Rsch. Dept., Celanese Corp. of Am., Summit Rsch. Lab., Summit, N. J. Home Add.: 460 Bayberry Lane, Mountainside, N. J.

CHEMICALS, POLYMERS, PLASTICS. b. Phila., Pa., Feb. 17, 1924. s. William F. and Isabelle L. (Michael) S. Edn.: A.B., Temple Univ., 1949; M.A., ibid., 1952; Ph.D., ibid., 1953. m. Joyce Gilman, Feb. 14, 1950. c.: Russell; Marguerite; Susan; Robert; Laura. Exp.: Instr., Drexel Inst. of Tech., Phila., Pa., 1950-53; Supvr. of Polymer Rsch., Hooker Chem. Corp., Niagara Falls, N. Y., 1953-57; Mgr. of Rsch., Velsicol. Chem. Corp., Chicago, Ill., 1957-60; Mgr., Plastics Rsch., Celanese Corp. of Am., Summit, N. J., 1960—. Mem.: Am. Chem. Soc.; Chem. Soc. London; Plastics Inst.; Soc. of Chem. Industry; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Sci.; A.S.T.M.; Sigma Xi; Soc. of Plastics Engr. Contbr. to: Jour. Am. Chem. Soc.; Jour Polymer Sci.; Jour. App. Polymer Sci.; U. S. Patents. Serv. Rec.: U. S. Maritime Service, 1942-46. Areas of Rsch.: Polymerization and Polymers; Monomers; Intramolecular Rearrangements; Agri. Chems.; Rsch. and Tech. Administration.

SCHWERIN, Erna (Mrs.), Staff Psychologist, Jamaica, N. Y. Ctr. for Psychotherapy, 178-10 Wenford Terr., Jamaica 32, N. Y. Home Add.: 175-21 88th Ave., Jamaica 32, N. Y.

CLINICAL PSYCHOLOGY. b. Stuttgart, Germany, Sept. 28, 1913. d. David and Golda (Horn) Keller. Edn.: M.A., Bowling Green State Univ., 1953. m. Alfred Schwerin, Mar. 1, 1947. Exp.: Chf. Psychologist, Northwest Guid. Ctr., Inc., Lima, Ohio, 1948-62; Asst. Acting Dir., ibid., 1960-62; Staff Psycholt., Ctr. for Psychotherapy, 1962—. Mem.: Am. Psychol. Assn.; Am. Group Psychotherapy Assn.; Soc. for Projective Techniques and Rorschach Inst.; Ohio Psychol. Assn.; A.A.A.S. Contbr. to: Jour. Clin. Psychol. Areas of Rsch.: Areas of Projective Techniques and Individual and Group Psychotherapy with Children and Adults.

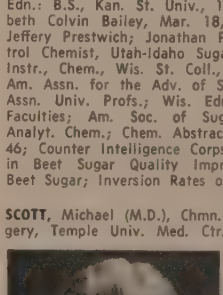
SCOTT, Alfred Witherspoon (Ph.D.), Prof. and Hd., (Emer.), Dept. of Chem., Chmn. Div. of Phys. Scis., Univ. of Ga., Athens, Ga. CHEMISTRY. b. Macon, Ga., June 25, 1896. s. Geo. Edward and Mamie Lee (Wing) S. Edn.: B.S., Univ. of Ga., 1918; Ph.D., Princeton Univ., 1921. m. Jane Shields Sams of Atlanta, Ga., 1923. d. Richard Fuller and Elizabeth (Jones) S. c.: Alfred W., Jr.; Richard Sams; George Edward. Exp.: Assoc. Prof. of Chem., Univ. of Ga., 1922-27; Prof., ibid., 1927-62; Hd., Dept. of Chem., ibid., 1927-62; Chmn., Div. of Phys. Scis., ibid., 1935—. Hon. Pos.: Vice-Pres., Ga. Acad. of Sci., 1932; Pres., 1935; Vice Pres., Natl. Collegiate Athletic Convention Assn., 1962-64; Chmn., Ga. Sec. Am. Chem. Soc., 1935; Counselor, Am. Chem. Soc., 1936 and 1940-41. Mem.: Am. Chem. Soc.; A.A.A.S.; Fellow, Ga. Acad. of Sci.; Phi Lambda Upsilon; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi; Gamma Sigma; Phi Delta Theta; Alpha Chi Sigma; Gamma Sigma Epsilon; B.P.O.E.; Athens Country Club; Assn. Univ. Profs.; Fellow, Am. Inst. of Chemists. Author: A Laboratory Manual of Inorganic Chem. and Semimicro Qualitative Analysis. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem. Title of Ph.D. Dissertation: The Beckmann Rearrangement of Some New Hydroxamic Acid Derivatives. War Record: Pvt. Chem. Warfare Serv., U. S. Army. Travel: U. S.; Can.; Europe. Recreations and Hobbies: Fishing; Golf. Listed in: W. W. in Am.; W. W. in Ga.; A.M.S.; W. W. in the Southeast; W. W. in the Western Hemisphere; Biog. Encyc. of the World; Who Knows and What; Chemical Who's Who; Internatl. World Who's Who; W. W. in Am. Edn.

SCOTT, Edith Bohrer (Mrs.), Grad. Student and Grad. Rsch. Asst., Dept. of Botany, Univ. of Calif., Berkeley 4, Calif. Home Add.: Sardinia, Ohio.

BOTANY, HEPATICAE. b. Georgetown, Ohio, Jan. 20, 1928. d. Elmer L. Bohrer and Lulu M. (Kress) B. Edn.: A.B., Marietta Coll., 1951; M.S., Univ. of Cincinnati, 1958. m. John H. Scott, Jr., 1952. Exp.: Grad. Rsch. Asst., Harvard Univ., 1955-56; Special Asst. in Rsch., Miami Univ., 1959-60; Grad. Rsch. Asst., Univ. of Calif., 1961—. Mem.: A.A.A.S.; Am. Bryological Soc.; Torrey Botanical Club; Internatl. Assn. for Plant Taxonomy; Botanical Soc. of Am.; Am. Soc. of Plant Taxonomists; Friends of the Arnold Arboretum; Botanical Soc. of Wash.; Phi Beta Kappa; Sigma Xi; Beta Beta Beta; Phi Sigma; Phi Alpha Theta. Contbr. to: The Bryologist; Nova Hedwigia; Revue Bryologique; Bios. Areas of Rsch.: Taxonomy, Morphology, Physiology, and Cyto-Histochemistry of Hepaticae.

SCOTT, Lawrence William (Mr.), Instr. in Chem., Wis. St. Coll., River Falls, Wis. Home Add.: 521 E. Maple, River Falls, Wis. ANALYTICAL CHEMISTRY AND FOOD TECHNOLOGY. b. Manhattan, Kan., June 10, 1924. s. Joseph P. and Lois Mary (Smith) S. Edn.: B.S., Kan. St. Univ., 1951; M.S., ibid., 1954. m. Elizabeth Colvin Bailey, Mar. 18, 1949. c.: Rosemary Nikkolette; Jeffery Prestwich; Jonathan Peter. Exp.: Rsch. and Qual. Control Chemist, Utah-Idaho Sugar Co., W. Jordan, Utah, 1954-61; Instr., Chem., Wis. St. Coll., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Inst. of Food Technolgs.; Am. Assn. Univ. Profs.; Wis. Edn. Assn.; Assn. of Wis. St. Coll. Faculties; Am. Soc. of Sugar Beet Technolgs. Contbr. to: Analyt. Chem.; Chem. Abstracts. Serv. Rec.: U. S. Army, 1944-46; Counter Intelligence Corps, 1947-50. Areas of Rsch.: Rsch. in Beet Sugar Quality Improvement, Analysis of Saponin in Beet Sugar; Inversion Rates of Beet Sugar.

SCOTT, Michael (M.D.), Chmn. and Prof., Dept. of Neurolo. Surgery, Temple Univ. Med. Ctr., 3401 N. Broad St., Phila., Pa. Home Add.: 57 Derwen Rd., Bala, Cynwyd, Pa.



NEUROLOGICAL SURGERY. b. Perth Amboy, N. J., Aug. 28, 1906. s. Max L. and Cecelia (Dimond) S. Edn.: B.S., Rutgers Univ., 1928; M.D., Jefferson Med. Schl., 1932; M.Sc., Temple Univ. Med. Schl., 1938. m. Catherine G. Fadde, 1938. c.: R. Michael; Richard; William; Judith Anne. Exp.: Chief, Dept. Neurosurg., Div. B, Phila. Gen. Hosp., Pa., 1961; Chmn. and Prof., Dept. Neurosurg., Temple Univ., 1962—. Hon. Pos.: Diplomate, Am. Bd. Neurological Surg.; Diplomate, Am. Bd. Neurology. Mem.: Harvey Cushing Neurosurgical Soc.; Congress Neurol. Surgeon; Phila. Neurosurgical Soc.; Phila. Coll. of Phys.; Fellow, Am. Coll. Surgeons. Co-Author: Neurosurgery, Babcock Surgery. Contbr. to: Jour. of A.M.A.; Jour. Neurosurg.; Archives Neurol.; Jour. Surg. Gynecol. and Obst. Areas of Rsch.: Cerebrovascular Dis.; Cranioplasty; Hydrocephalus; Brain Tumors.

SCOTT, Paul M. (Ph.D.), Assoc. Prof., Pharmacol., Univ. of Kansas City, Kan. City, Mo. Home Add.: 3521 Baltimore, Kan. City 11, Mo. PHARMACOLOGY. b. Wolcott, Ind., Mar. 31, 1920. s. Claude and Virginia (Goodrich) S. (dec.). Edn.: B.S., Purdue Univ., 1942; M.S., ibid., 1948; Ph.D., ibid., 1950. Exp.: Asst. Prof., Wash. St. Univ., 1950-59; Assoc. Prof., Kansas City Univ., 1959—; Visit. Prof., Pharmacol., Univ. of Cairo. Mem.: A.A.A.S., Fellow; Rho Chi Soc.; Sigma Xi; Kappa Psi. Contbr. to: Am. Pharmaceutical Assn. Jour.; Sci. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Cardiovascular Drugs; Antiulcer Drugs; Detergents.

SCOTT, Roland Boyd (M.D.), Hd. and Prof. of Peds., Howard Univ., Coll. of Med., 520 W. St., N.W., Wash., D. C. Home Add.: 1723 Shepherd St., N.W., Wash. 11, D. C. PEDIATRICS AND PEDIATRIC ALLERGY. b. Houston, Tex., Apr. 18, 1909. s. Ernest John and Cordie (Clark) S. Edn.: B.S., Howard Univ., 1931; M.D., ibid., 1934. m. Rosetta Weaver, June 24, 1935. c.: Roland Boyd, Jr.; Venice Rosetta; Estelle Irene. Exp.: Asst. Prof. of Peds., Howard Univ., 1939-47; Assoc. Prof., ibid., 1947-52; Prof., ibid., 1952—. Hon. Pos.: Courtesy Staff, Children's Hosp., Wash., D. C., 1955—; Courtesy Staff, Washington Hosp. Ctr., Wash., D. C., 1961—; Mem. of Bd. of Dirs. of the Natl. Med. Fellowships, Inc., 1951—; Chmn., Sect. on Peds. of the Natl. Med. Assn., 1952, '53, '54; Mem. of Med. Adv. Comm. of the United Cerebral Palsy Assn. of Wash., D. C., 1951—. Mem.: Am. Med. Assn.; Am. Ped. Soc.; Soc. for Ped. Rsch.; Am. Acad. of Allergy; Am. Acad. of Peds.; Am. Fed. for Clin. Rsch.; Natl. Med. Assn.; Medico-Chirurgical Soc. of the Dist. of Columbia; Am. Assn. for the Adv. of Sci.; Allergy Soc. of the District of Columbia; Beta Kappa Chi; Kappa Pi; Internatl. Correspondence Soc. of Allergists; Sigma Xi; Assn. for Ambulatory Ped. Servs.; Alumni Assn., Roosevelt Hosp., N. Y. Contbr. to: Arch. of Pediat.; Am. Jour. Dis. Child.; Procs. of Am. Fed. for Clin. Rsch.; Jour. of Peds.; Jour. A.M.A.; Jour. of Allergy; Child Devel.; Peds.; Med. Annals of D. C. Areas of Rsch.: Pediatric Allergy; Sickle Cell Anemia; Growth and Development.

SCOTT, Walter Edwin (Mr.), Admin. Asst. to the Dir., Wis. Conservation Dept., P.O. Box 450, Madison 1 Wis. Home Add.: 1721 Hickory Dr., Madison 5, Wis. b. Milwaukee, Wis., Feb. 27, 1911. s. James Wylock and Ida Louise (Fischer) S. Edn.: B.A., Kalamazoo Coll., 1933; M.A., ibid., 1955. m. Gertrude May Cox of Markesan, Wis., Apr. 15, 1941. d. E. M. and Ida M. (Henning) Cox. Exp.: Leader and Nature Inst., Milwaukee B.S.A. Camp, 1925-35; Cons. Warden, Wis. Conservation Dept., 1934-36; Game Mgt. Supvr., ibid., 1936-43, 1946-48; Editor, Information and Edn. Div., ibid., 1948-50; Admin. Asst. to Dir., ibid., 1950—. Hon. Pos.: Exec. Comm., Wis. Phenol. Soc.; Coun. Mem., Wis. Acad. Scis., Arts and Letters; Past Pres., Gordon MacQuarrie Fdtn., Inc.; Past Pres., Wis. Soc. for Ornithol.; Past Pres., Wis. Capitol Chap., Am. Soc. for Pub. Admin. Mem.: Britain's Wildfowl Trust, Life Member, 1958; Cons. Edn. Assn.; Wis. Coun. Conservation Edn.; Forest History Soc.; Am. Soc. Pub. Admin.; Wildlife Soc.; Soc. Am. Foresters; Soil Cons. Soc. of Am.; Am. Nature Study Soc.; Nature Conservancy; International. Assn. Game, Fish and Cons. Commrs.; Wis. Acad. of Sci., Arts and Letters; Izaak Walton League of Am.; Sierra Club. Contbr. to: Jour. Wildlife Mgmt.; The Auk; Wis. Cons. Bull.; Wis. Badger Hist.; The Passenger Pigeon. Author: Poems to Trudi, 1950; Wis. Conservation Dept. Activities Progress Report Nos. 1-76, 1947-55. Editor: The Passenger Pigeon, 1939-43; Silent Wings—A Memorial to the Passenger Pigeon, 1947; Wis. Acad. Rev., Bull. Wis. Acad. Sci., Arts and Letters, 1954—. Serv. Rec.: U. S. Army, 1943-46. Travel: Japan; New Caledonia; New Hebrides; Hawaii. Gen. Int.: Co-founder, Wis. Soc. for Ornithol. Hd. Citizens Natural Resources Assn. of Wis.; Founding Editor, The Passenger Pigeon and the Wis. Acad. Rev. Hobbies: Collecting, Lib. of Wildlife and Conservation Hist.; Writing and Editing; Bird Study; Gardening; Discovery and Recording of Record trees. Listed in: Who Knows and What; Who's Who in Wis.; Who's Who in Am. Edn.

SCOTT, William Coryell (M.D.), 30 N. Tucson Blvd., Tucson, Ariz. Home Add.: 340 S. Country Club Rd., Tucson, Ariz. OBSTETRICS-GYNECOLOGY. b. Sterling, Colo., Nov. 22, 1920. s. James F. and Edna Ann (Schillig) S. Edn.: A.B., Dartmouth Coll., 1942; M.D., Univ. of Colo., 1944; M.S., ibid., 1951. m. Jean Marie English, Dec. 23, 1944. c.: Kathryn Ann; James Coryell; Margaret Helene. Exp.: Interne, U. S. Navy, Hosp., Great Lakes, Ill., 1944-45; Interne, Denver General Hosp., Denver, Colo., 1946-47; Resident (Ob-Gyn.), St. Joseph's Hosp., Denver, Colo., 1947-48; Resident, Colo. General Hosp., Denver, Colo., 1948-51; Instr. in Ob-Gyn. Colo. General Hosp., Denver, Colo., 1950-51; Chf. of Obstetrics, St. Mary's Hosp., Tucson, Ariz., 1960-61. Mem.: A.M.A.; Am. Coll. of Obstetrics and Gynecology; Am. Coll. of Surgeons; Southwestern Surgical Congress; Southwest Obstetrics and Gynecological Soc.; A.A.A.S.; Med. Soc. of the U. S. and Mex.; Old Pueblo Club; Execs. Club of Tucson. Contbr. to: Am. Jour. of Obstetrics and Gynecology; Western Surgical Jour. Serv. Rec.: U. S. Navy, 1943-46, 1956-58. Areas of Rsch.: Obstetrics and Gynecology.

SCOTT, Wilson Ludlow (Ph.D.), Co-Dir., Data Unlimited, Suite #6, 2633 15th St., N.W., Wash. 9, D. C. Home Add.: Suite #11, 2633, 15th St., N.W., Washington, 9, D. C. HISTORY OF CHEMISTRY. b. New York City, N. Y., Aug. 5, 1909. s. U. S. Judge Henry Wilson and Marion (Loveridge) S. Edn.: B.A., Yale Coll., 1931; M.A., The Johns Hopkins Univ., 1955; Ph.D., ibid., 1960. m. Margaret Koehler, Dec. 28, 1948. c.: Betsy Hobson Ekman. Exp.: Sci. Owner, Scott Seminars, Univ. of Calif., 1937-46; Sci. Writer, Washington Times Herald, Wash., D. C., 1942-46; Sci. Editor, Pathfinder News Magazine, ibid., 1946-47; Sci. Lectr., Natl. Inst. Cleaning and Dyeing, ibid., 1948-50; Math. Lectr., Am. Univ., 1961—; Sci. Co-Dir., Data Unlimited, Wash., D. C., 1950—. Hon. Pos.: Pres., Wash. Hist. of Sci. Club. Mem.: Natl. Hist. of Sci. Soc.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Hist. Assn.; Am Mktng. Assn.; Rsch. Engrng. Soc. of Am.; Soc. for the Hist. of Tech.; Sigma Xi; Alpha Sigma Phi; Wash. Round Table Club; Yale Club of Wash. Contbr. to: ISIS; Editor and Publisher; Washington Times-Herald; Pathfinder News Mag. Serv. Rec.: U. S. Army, 1931-35. Areas of Rsch.: Chemistry, History of Physical Scis. and Math., Marketing Rsch., Inventions.

SCREPETIS, Dennis (Mr.), Owner—Consulting Office, N. Bergen, N. J. Home Add.: 704 79th St., N. Bergen, N. J. ENGINEERING. b. Hoboken, N. J., Feb. 12, 1920. s. George D. and Athanasia (Stasinos) S. m. Betty Pravasilis, Sept. 17, 1960. Exp.: Indust. Engr., Walter Kidde Constructors, Inc., N. Y.; Plant Design Engr., Bechtel Corp., N. Y.; Layout Engr., McKiern and Terry Corp., Harrison, N. J.; Prod. Engr., War Years, Sperry Prods., Inc., Hoboken, N. J.; Profl. Engrs. Lics., N. Y., N. J.; Owner Consult. Office N. Bergen, N. J., 1961—. Mem.: N.S.P.E.; A.A.A.S. Areas of Rsch.: Consulting Engineer for Industrial Plastics and Equipment; Exhaustive Experience on Intricate Government Project.

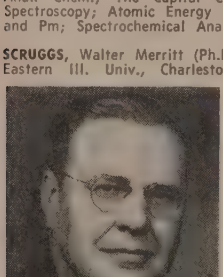
SCOULAR, Florence Isabelle (Ph.D.), Dean, Schl. of Home Economics; Prof., Home Economics, North Texas State Univ., Denton, Tex. Home Add.: 2223 Houston St., Denton, Tex. NUTRITION. b. Iron Ridge, Wis., Nov. 17, 1897. d. John David and Nellie Louise (Thomas) S. Edn.: B.S., Stout St. Coll., 1919; M.S., Iowa St. Univ., 1929; Ph.D., State Univ. of Iowa, 1937. Exp.: Instr., Home Econs., River Falls State Coll., 1919-20; Supvr., Home Econs., Ironwood Pub. Schls., 1920-22; Instr., Foods and Nutrition, Stout State Coll., 1922-27; Instr., Foods and Nutrition, Buffalo State Coll., 1928-30; Instr., Foods and Nutrition, Purdue Univ., 1930-31; Asst. Prof., Household Sci., Okla. State Univ., 1931-33; Rsch. Asst., Nutrition, Iowa Child Welfare Rsch. Station State Univ. Iowa, 1933-36; Acting Dir., Dept. Home Econs., Skidmore Coll., 1936-37; Dir., Dept. Home Econs., Eastern Ill. State Coll., 1937-38; Dean, Schl. of Home Econs., North Tex. State Coll., 1938—. Hon. Pos.: Pres., Tex. Dietetic Assn.; Pres., Tex. Home Econs. Assn.; Councilor to Am. Home Econs. Assn.; Tex. Delegate, Am. Dietetic Assn.; Mem., Am. Acad. Assn. Committees on Rsch., Coll. and Univ. Sect., Editorial Bd., Am. Home Economics Assn. Jour. Mem.: Am. Inst. Nutrition; A.A.A.S.; Am. Chem. Assn.; Am. Dietetic Assn.; Am. Home Econs. Assn.; A.A.U.W.; Am. Public Health Assn.; Inst., Rsch. Assoc., Food and Container Inst.; Natl. Edn. Assn.; Schl. Mood Service Assn.; Tex. Home Econs. Assn.; Tex. Dietetic Assn.; Tex. Acad. Sci.; Tex. State Nutrition Coun.; Sigma Xi;

Iota Sigma Pi; Delta Kappa Gamma; Kappa Gamma; Kappa Kappa Iota; Phi Upsilon Omicron. Contbr. to: Jour. Nutrition; Am. Jour. Diseases Children; Food Rsch.; Child Devel.; Am. Dietetic Assn. Jour.; Jour. Am. Home Econs. Assn.; Tex. Acad. Sci. Jour.; Tex. Jour. Sci. Gen. Int.: Fellow, Tex. Acad. Sci.; Fellow, Am. Pub. Hlth. Assn. Areas of Rsch.: Human Metabolic Studies; Food Processing and Nutrients; Child Nutrition.

SCRIBNER, Belding H. (Dr.), Univ. of Washington, Seattle, Wash.

SCRIBNER, Bourdon Francis, (Mr.), Chief, Spectrochem. Sect., Natl. Bureau of Standards, Wash. 25, D. C. Home Add.: 4801 Conn. Ave., N.W., Wash. 8, D. C. PHYSICAL CHEMISTRY. b. Westernport, Md., Apr. 13, 1910. s. Bourdon Walter and Nellie Veronica (Mansfield) S. Edn.: B.S., Chem., George Wash. Univ., 1933; M.S., Chem., Univ. of Md., 1939. Exp.: Lab. Asst., Natl. Bureau Standards, Wash., D. C., 1927-33; Chemist, ibid., 1933-47; Sect. Chief, ibid., 1947—. Hon. Pos.: Chmn., A.S.T.M. Comm., E-2, 1946-54; Chmn., Wash. Sect. Am. Chem. Soc., 1957; Gen. Chmn., Internatl. Conf. on Spectroscopy, Univ. of Md., 1962. Mem.: Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Soc. for App. Spectroscopy; Am. Soc. Testing Matls.; Wash. Acad. Scis.; Optical Soc. Am., Fellow; Alpha Chi Sigma; Cosmos Club. Contbr. to: Procs. of the Sixth Sum. Conf. on Spect. and Its Applications; Jour. Rsch. Natl. Bur. Standards; Anal. Chem.; The Capital Chemist. Areas of Rsch.: Atomic Spectroscopy; Atomic Energy Levels; Spectra of Hf, Lu, Cb, Tc, and Pm; Spectrochemical Analysis.

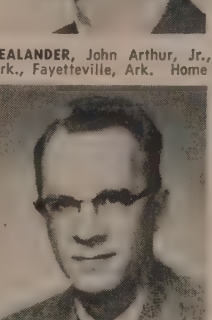
SCRUGGS, Walter Merritt (Ph.D.), Prof. and Hd. Dept. of Zool., Eastern Ill. Univ., Charleston, Ill. Home Add.: Charleston, Ill. CYTOLOGY AND HISTOLOGY. b. Pony, Mont., Jan. 4, 1903. s. William Merritt and Lenora (Young) S. Edn.: B.Edn., Eastern Ill. St. Coll., 1928; M.S., Univ. of Ill., 1935; Ph.D., Harvard Univ., 1942. Hon. Deg.: Pd.D., Eastern Ill. St. Coll., 1949. m. Ruth Burk, Nov., 1922. c.: Eugene W.; David R. Exp.: Tchr., Mason Ill. Grade Schl., Mason, Ill., 1921-23; Prin., ibid., 1924-27; Supt., Mundelein, Ill. Schls., Mundelein, Ill., 1928-29; Instr. to Prof., Eastern Ill. St. Coll., 1929-43; Dept. Hd. Zool., Eastern Ill. Univ., 1949—. Mem.: Sigma Xi; Beta Beta Beta; Charleston Rotary Club. Contbr. to: Jour. Morphology. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Cytology and Histology.



SCRIMSHAW, Nevin Stewart (M.D.), Prof. of Nutrition; Dept. of Nutrition, Food Sci. and Tech., Hd. of Dept., Mass. Inst. of Tech., Cambridge 39, Mass. Home Add.: 12 Valentine St., W. Newton, Mass. NUTRITION. b. Milwaukee, Wis., Jan. 20, 1918. s. Stewart and Harriet (Fernwood) S. Edn.: B.A., Ohio-Wesleyan Univ., 1938; M.A., Harvard Univ., 1939; Ph.D., ibid., 1941; M.D., Univ. of Rochester, 1945; M.P.H., Harvard Univ., 1959. Hon. Degr.: D.Publ.-Serv., Ohio Wesleyan Univ., 1961. m. Mary Ware Goodrich, Aug. 26, 1941. c.: Susan Crosby; Norman Stewart; Nevin Baker; Steven Ware; Nathaniel Lewis. Exp.: Rotating Interne, Gorgas Hosp., Canal Zone, 1945-46; Postdoctoral Fellow, Univ. of Rochester, Dept. of Obstetrics and Gynecology, 1946-47; Postdoctoral Fellow, Merck Natl. Rsch. Coun., ibid., 1947-49; Asst. Res. Physician in Obstetrics and Gynecology, Strong Memorial and Genesee Hosps., Rochester, N. Y., 1948-49; Consultant in Nutrition, Pan Am. Sanitary Bureau, Regional Office for the Americas, World Health Organization, Guatemala, C.A., 1948-49; Chf., Nutrition Sect., ibid., 1949-53; Regional Adviser in Nutrition, ibid., 1953-58; Consultant, ibid., 1958—; Dir., Inst. of Nutrition of Central Am. and Panama, ibid., 1949-61; Consulting Dir., ibid., 1961—; Prof. of Nutrition and Hd., Dept. of Nutrition, Food Sci. and Tech., Mass. Inst. of Tech., 1961—. Hon. Pos.: Vice-Chmn., Food and Nutrition Sect., Am. Pub. Health Assn., 1961-62. Mem.: Mass. Med. Soc.; Mass. Pub. Health Assn.; Inst. Food Tech.; Am. Inst. of Nutrition; Am. Soc. for Clin. Nutrition; Am. Physiol. Soc.; Am. Chem. Soc.; Am. Soc. for Tropical Med. and Hygiene; Am. Pub. Health Assn., Fellow; Genetics Soc. of Am.; Delta Tau Delta; Sigma Xi; Delta Omega; Omicron Delta Kappa; Phi Beta Kappa; Gamma Alpha. Contbr. to: Circulation; Lancet; Food Rsch.; Jour. Agr. and Food Chem.; Fed. Proc., Am. Jour. Pub. Health; Jour. Trop. Pediatrics; Am. Jour. Clin. Nutrition; Nutrition Revs.; Am. Jour. Vet. Res.; Pan Am. Sanitary Bureau; Bull. World Health Organ.; Jour. Nutrition; Jour. Am. Dietetic Assn.; Pub. Health Repts.; Am. Jour. Med. Sci. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Pub. Health Nutrition, Maternal and Child Nutrition, Nutrition and Infection, Nutritional Requirements.

SCUTCHFIELD, Beecher Layne (Mr.), Bacteriol. in Chg., Clin. Lab., McDowell Memorial Hosp., McDowell, Ky. Home Add.: Martin, Ky. MICROBIOLOGY. b. Water Gap, Ky., June 8, 1911. s. Frank and Emma (Layne) S. Edn.: B.A., Berea Coll., 1934. m. Ann Osborne, Aug. 9, 1941. c.: Frank Douglas; Scott B. Exp.: Bacteriol., Inland Steel Co., Wheelwright, Ky., 1938-46; Bacteriol. in Chg. Hazard Clin., Hazard, Ky., 1946-56; Bacteriol. in Charge, Lab., McDowell Mem. Hosp., 1956—. Mem.: A.A.A.S.; Soc. of Am. Bacteriol.; Am. Soc. Med. Technols.; Ky.-Tenn. Branch of Soc. of Bacteriol.; Phi Kappa Phi. Contbr. to: Jour. of Lab. and Clin. Med. Areas of Rsch.: Med. Bacteriology.

SEALANDER, John Arthur, Jr., (Ph.D.), Prof. of Zool., Univ. of Ark., Fayetteville, Ark. Home Add.: 1527 Markham Rd., Fayetteville, Ark. COMPARATIVE PHYSIOLOGY, MAMMALOGY. b. Detroit Lakes, Minn., Dec. 9, 1917. s. John Arthur and Mary C. (Grimsgaard) S. Edn.: A.B., Luther Coll., 1940; M.S., Mich. St. Univ., 1942; Ph.D., Univ. of Ill., 1949. m. Lucile Rehm, Aug. 23, 1947. c.: John Arthur III; Judith Anne; Sarah Kristine. Exp.: Asst. Prof., Univ. of Ark., 1949-54; Assoc. Prof., ibid., 1954-59; Prof., ibid., 1959—. Mem.: Am. Physiological Soc.; Am. Soc. of Zoologists; Soc. for Exptl. Biol. and Medicine; Internatl. Soc. of Biometerol.; Ecological Soc. of Am.; Am. Soc. of Mammalogists; Sigma Xi; Phi Sigma; Southwestern Assn. of Naturalists; A.A.A.S.; Fellow; Ark. Acad. of Sci.; Am. Inst. of Biological Scis. Contbr. to: Am. Jour. of Physiol.; Biological Bull.; Ecol.; Jour. of Mammalogy; Am. Midland Naturalist; Southwestern Naturalist; Jour. of Wildlife Mgmt.; Jour. of Parasitol.; Copeia; Proc. Ark Acad. of Sci. Serv. Rec.: U. S Navy, 1942-46. Areas of Rsch.: Temperature Acclimation and Acclimatization of Small Mammals; Mammalian Taxonomy; Population Studies and Behavioral studies of Mammals.



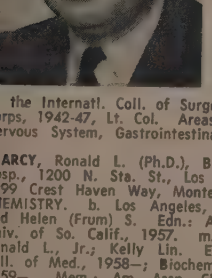
SEABORG, Glenn Theodore (Ph.D.), Chmn., U. S. Atomic Energy Comn., Wash., D. C. Home Add.: 3825 Harrison St., N. W., Wash., D. C. NUCLEAR CHEMISTRY. b. Ishpeming, Mich., Apr. 19 1912. s. Herman T. and Selma (Erickson) S. Edn.: A.B., Univ. of Calif., L. A., 1934; Ph.D., Univ. of Calif., Berkeley, 1937. Hon. Degrs.: D.Sc., Univ. of Denver, 1951; D.Sc., Northwestern Univ., 1954; D.Sc., Gustavus Adolphus Coll., 1954; LL.D., Univ. of Mich., 1958; D.Sc., Univ. of Notre Dame, 1961; D.Sc., Fla. Sta. Univ., 1961; D.Sc., Univ. of Md., 1961; D.Sc., Temple Univ., 1962; D.Sc., Tulane Univ., 1962; L.H.D., No. Mich. Coll., 1962; D.P.S., George Wash., 1962; D.Sc., Drexel Inst. of Technol., 1962; D.Sc., Georgetown Univ., 1962; D.Sc., Univ. of the Sta. of N. Y., 1962. m. Helen Griggs, June 6, 1942. c.: Peter Glenn; Lynne Annette; David Michael; Stephen Keith; John Eric; Dianne Karole. Exp.: Rsch. Assoc., Coll. of Chem., Univ. of Calif., Berkeley, 1937-39; Instr., Dept. of Chem., ibid., 1939-41; Asst. Prof., ibid., 1941-45; Prof., ibid., 1945— (on leave of Absence, 1961—); Section Chief, Metallurgical Laboratory, Univ. of Chicago, 1942-46; Dir., Nuclear Chem. Rsch., Rad. Lab., Berkeley, Calif., 1945-58; Assoc. Dir., Rad. Lab., Univ. of Calif., Berkeley, Calif. 1954-61; Chanc., Univ. of Calif., Berkeley, 1958-61; Chmn., U. S. Atomic Energy Comn., Wash., D. C., 1961—. Hon. Pos.: Appointed by Pres. Truman, Mem. of Atomic Energy Comns. First Gen. Advy. Comm., 1946-50; Mem., Bd. of Dirs., Nucl. Sci. and Engrng. Corp., Pgh., Pa., 1954-61; Mem., Sci. Adv. Bd., Robert A. Welch Fdtn., Houston, Tex., 1957—; Mem., Bd. of Dirs., Natl. Edntl. TV. and Radio Ctr., N. Y., 1958—; Chmn., Chem. Edn. Material Study, U. S. Natl. Sci. Fdtn., 1959—; App. by Pres. Eisenhower, Mem., Pres. Sci. Advy. Comm., 1959-61; Mem., Natl. Sci. Bd. of Natl. Sci. Fdtn., 1960-61. Mem.: Am. Chem. Soc.; Am. Acad. Arts and Scis.; Am. Philos. Soc.; Royal Swedish Acad. Engrng. Scis.; Am. Nat.

Acad. Scis.; Am. Scandinavian Fdtn.; Internatl. Union of Pure and Appl. Chem.; Phi Beta Kappa; Sigma Xi; Pi Mu Epsilon; Alpha Chi Sigma; Hon. Mem., Phi Lambda Upsilon; Fellow, Am. Phys. Soc.; Fellow, Am. Nucl. Soc.; Fellow, Calif. Acad. of Scis.; Fellow, N. Y. Acad. of Scis.; Fellow, A.A.A.S.; Fellow, Royal Soc. Arts, England. Author: The Transuranium Elements, 1958. Co-Author: Comprehensive Inorganic Chemistry, 1953; The Chemistry of the Actinide Elements, Co-Author, 1957; Elements of the Universe, 1958, Co-Author. Contbr. to: Phys. Rev.; Jour. Am. Chem. Soc.; Rev. of Mod. Phys.; Jour. of Chem. Phys.; Chem. Revs.; Sci.; Chem. and Engrng. News; Nature; Scient. Am.; Jour. of Inorg. and Nucl. Chem.; Bull. of the Am. Soc. of Swedish Engrs. Gen. Int.: 1951, Nobel Prize for Chemistry, Co-Recipient; U. S. Atomic Energy Comm. Enrico Fermi Award, 1959. Areas of Rsch.: Nuclear Chemistry and Nuclear Physics.

SEAMAN, George J. (M.D.), Physician, 99 Lafayette Ave., Brooklyn, N. Y. Home Add.: 80-56 Surrey Pl., Jamaica Estates, L. I., N. Y. ORTHOPEDIC SURGERY. b. N. Y., N. Y., June 27, 1915. s. Milton and Mildred (Train) S. Edn.: A.B., Univ. of Mo., 1936; M.D., St. Louis Univ., 1940. m. Ethel Sperling, May 15, 1946. c.: Michael J.; Robert W. Exp.: Interne, Res. in Pathol., Res. in Orthopedic Surg., Asst. in Orthopedic Surg., Jewish Hosp. of Brooklyn, 1941-56; Asst. Res., Asst., Assoc. in Orthopedic Surg., Metropolitan Hosp., 1946—; Chf. of Orthopedic Surg., Coney Island Hosp., 1956—; Chf. of Orthopedic Surg., Swedish Hosp., 1957—; Chf. of Orthopedic Sur., Menorah Hosp., 1956—; Asst. Assoc., Orthopedic Surg., Jewish Chronic Disease Hosp., 1949—; Instr., Assoc., Orthopedic Surg., N. Y. Med. Coll., 1949—. Mem.: Am. Acad. of Orthopedic Surgeons; Acad. of Psychosomatic Med.; A.A.A.S.; N. Y. State Soc. for Med. Research; Assn. of Milit. Surgeons of U. S.; Kings Co. Surgical Soc.; Kings Co. Med. Soc.; N. Y. State Med. Soc.; Am. Med. Assn.; Am. Physicians Fellowship Comm. of Israel Med. Assn.; Am. Geriatrics Soc.; Assn. Am. Med. Colls.; Jerusalem Acad. of Med.; Mu Sigma; Psi Chi; Phi Sigma Delta. Contbr. to: International Rec. of Med.; Jour. Am. Med. Assn.; Jour. Am. Geriatrics Soc.; Psychosomatics. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Orthopedic Surgery—Low Back, Neck; Geriatric Orthopedics; Psychosomatic Orthopedics.

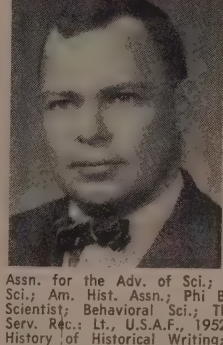
SEAMANS, James Otis (Mr.), Assoc. Dir., R. & E. Baird-Atomic, Inc., 95 Second St., Waltham, Mass. Home Add.: Monument St., Concord, Mass. MISSILE GUIDANCE. b. Salem, Mass., Oct. 7, 1918. s. Richard D. and Nathalie (Gifford) S. Edn.: B.S., U. S. Naval Acad., 1942. m. Diana Fraser, Aug. 26, 1944. c.: Richard Fraser; Jane Tyler. Exp.: Engr., Western Electric Co., Winston-Salem, N. C., 1947-51; Sr. Engr., Raytheon Co., 1951-55; Mgr., Missile Dept., ibid., 1955-57; Tech. Dir., Sparrow Missile, ibid., 1957-59; Mgr., Missile Program, ibid., 1959-62; Assoc. Dir., R. & E., Baird-Atomic, Inc., 1962—. Mem.: Inst. of Radio Engrs.; Am. Rocket Soc.; Am. Ornithol. Union; Cooper Ornithol. Soc. Contbr. to: Mass. Audubon. Serv. Rec.: U. S. Navy, 1941-47.

SEAY, Patrick Herbert, (Ph.D.), Dir. of Biological Rsch., McNeil Labs., Inc., Ft. Washington, Pa. Home Add.: 325 Wenner Way, Ft. Washington, Pa. PHARMACOLOGY. b. Lexington, S. C., Jan. 31, 1920. s. John Jacob and Maggie (Leaphart) S. Edn.: A.B., Univ. of So. C., 1941; M.A., Princeton Univ., 1949; Ph.D., ibid., 1950. m. Gloria Ann Nash, 1948. c.: Janet Ann; Karen Louise. Exp.: Sr. Pharmacologist, The Upjohn Co., Kalamazoo, Mich., 1950-57; Sect. Leader, ibid., 1957-60; Dir. of Biological Rsch., McNeil Labs., Inc., Ft. Washington, Pa., 1960—. Mem.: Phi Beta Kappa; Sigma Xi; Mason. Contbr. to: A.M.A. Arch. of Surgery; Jour. of Med. & Pharm. Chem.; Am. Jour. of Physiol.; Soc. for Exptl. Biol. and Med.; Jour. of Mich. St. Med. Soc.; Jour. of Pharm. and Exptl. Therap.; Jour. of the Internatl. Coll. of Surgeons. Serv. Rec.: U. S. Chemical Corps, 1942-47, Lt. Col. Areas of Rsch.: Pharmacol. of Central Nervous System, Gastrointestinal Tract, Uterus and Adrenals.



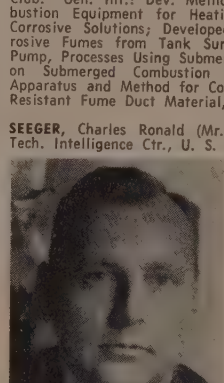
SEARCY, Ronald L. (Ph.D.), Biochemist, Los Angeles Co. Gen. Hosp., 1200 N. Sta. St., Los Angeles 33, Calif. Home Add.: 1999 Crest Haven Way, Monterey Park, Calif. CLINICAL BIOCHEMISTRY. b. Los Angeles, Calif., Apr. 18, 1930. s. Loy Richard Helen (Frum) S. Edn.: A.B., Whittier Coll., 1952; Ph.D., Univ. of So. Calif., 1957. m. Yvonne Vandergriff, 1951. c.: Ronald L., Jr.; Kelly Lin. Exp.: Assoc. Prof. Pathol., Calif. Coll. of Med., 1958—; Biochemist, Los Angeles Co. Gen. Hosp., 1959—. Mem.: Am. Assn. Clin. Chemists; Am. Heart Assn.; Calif. Fed. of Clin. Rsch.: Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Sci.; Am. Soc. for Microbiol.; Am. Chem. Soc.; Calif. Med. Rsch. Assn.; Sigma Xi. Author: Lipoporteins Chemistry in Health and Disease, 1962. Contbr. to: Clin. Chem.; Arch. of Biochem. and Biophys.; Am. Jour. of Med. Tech.; Lancet; Clin. Chim. Acta; Metabol.; Anal. Biochem.; Jour. of Lipid Rsch.; Clin. Rsch. Areas of Rsch.: Metabolism of Lipids in Health and Disease.

SEDELOW, Walter Alfred, Jr. (Ph.D.), Chmn., Dept. of Sociology, Rockford Coll., Rockford, Ill.; Assoc. Prof. of Hist., and of Sociology, the Jane Addams Foundation, Rockford, Ill. Home Add.: 502 Coll. Ave., Rockford, Ill. SOCIAL AND BEHAVIORAL SCIENCES. b. Ludlow, Mass., April 7, 1928. s. Walter A. and Una M. (Roberts) S. Edn.: B.A., Amherst Coll., 1947; M.A., Harvard Univ., 1951; Ph.D., ibid., 1957. m. Sally A. Yeates, June 14, 1958. Exp.: Instr. Hist., Williams Coll., 1948-50; Instr. to Asst. Prof. Hist., Amherst Coll., 1954-60; Chmn., Dept. of Sociol., Assoc. Prof. of Hist. and Sociol., Parsons Coll., 1960-61; Chmn., Dept. of Sociol. and Assoc. Prof. of Hist. and Sociol., Rockford Coll., 1961—. Hon. Pos.: Former Mem. of the Corp. and Dir., Porter-Phelps-Huntington Found. Mem.: Am. Assn. for the Adv. of Sci.; Am. Sociol. Assn.; Iowa Acad. of Sci.; Am. Hist. Assn.; Phi Beta Kappa. Contbr. to: The Am. Scientist; Behavioral Sci.; The Explicator; Mod. Lang. Notes. Serv. Rec.: Lt., U.S.A.F., 1952-54. Areas of Rsch.: Method and History of Historical Writing; Hist. and Method of Behavioral and Social Sciences; Early Mod. European Intellectual Hist.



SEE, Walter George (Mr.), Pres. of Submerged Combustion, Inc., P. O. Box 267, Hammond, Ind. Home Add.: R.R. 7, Box 149, Crown Point, Ind. COMBUSTION, INDUSTRIAL ENGINEERING AND FAST CUTTING OF METALS. b. Pittsburgh, Pa., Dec. 31, 1909. s. Theodore S. and Lois (Evens) S. Edn.: Commercial Engr., Carnegie Inst. of Tech., 1929-30, 1931-34. m. Bertha Stoikowitz, Oct. 10, 1936. c.: Theodore A.; Patricia Jane; Georganne Elizabeth. Exp.: Industrial Engr., La Salle Steel Co., 1934-37; Consulting Engr., Theo. S. See and Assoc., 1937-55; Sales and Serv. Mgr., Submerged Combustion, 1937-43; Chf. Engr., Submerged Combustion, Inc., 1943-46; Vice Pres., ibid., 1947; Pres., ibid., 1948—; Owner, Walter George See and Assoc., 1955—. Hon. Pos.: Bd. of Natl. Patent Council. Mem.: Wire Assoc., Iron and Steel Engr.; N. Y. Acad. of Sci.; Am. Gas Assn.; Combustion Inst.; Am. Inst. of Mngmt.; Natl. Small Men's Bus. Assn.; Rotary Internatl.; Woodmar Country Club; Youche Country Club; Ill. Athl. Club. Gen. Int.: Dev. Methods of Control for Submerged Combustion Equipment for Heating, Agitating, and or Evaporating Corrosive Solutions; Developed New Methods for Removing Corrosive Fumes from Tank Surfaces; Developed Acid Meter, Acid Pump, Processes Using Submerged Combustion Equipment; Patents on Submerged Combustion Control Systems; Igniter Device, Apparatus and Method for Concentrating Acids, Acid Meter, Acid Resistant Fume Duct Material, Fast Cutting of Steel Methods.

SEEGER, Charles Ronald (Mr.), Earth Sci. Analyst, Scient. and Tech. Intelligence Ctr., U. S. Naval Observ., Wash., D. C. Home Add.: 326 N. George Mason Dr., Arlington, Va. ASTROGEOLOGY; GEOPHYSICS. b. Columbus, Ohio, Jan. 31, 1931. s. Karl Elder and Ethel (Jones) S. Edn.: B.Sc., Ohio St. Univ., 1953; M.S., George Wash. Univ., 1958. m. Barbara Ashley, July 29, 1961. c.: Leslie Ethel. Exp.: Rsch. Asst., Ohio Div. of Shore Erosion, Lake Erie, Columbus, Ohio, 1952-53; Tchng. Asst., George Wash. Univ., Wash., D. C., 1957-58; Engrng. Geolt., Photronix, Inc., Columbus, Ohio, 1958; Staff Mem., Instit. for Defense Analysis, Wash., D. C., 1958-60; Earth Sci. Analyst, Scient. and Tech. Intelligence Ctr., U. S. Naval Observ., 1960—. Mem.: Am. Geophys. Union; Geol. Soc. of Am.; Am. Assn. Adv. Sci.; Wash. Geol. Soc.; Tau Kappa Epsilon; Scabbard and Blade. Contbr. to: Scient. and Tech. Articles and Revs. Serv. Rec.: U. S. Naval Reserve, 1949-53; Active, 1953-57. Areas of Rsch.: Field Geology, Structural Geology, Geotectonics, Astrogeology and Geophysics.



SEECOF, David P(hillip) (M.D.), Pathologist, 1970 Daly Ave., Bronx, N. Y. ANATOMICAL PATHOLOGY. b. Dec. 25, 1895, N. Y. City. s. Morris Noah and Jennie (Berlowitz) S. Edn.: M.D., Univ. and Bellevue Hosp. Med. Coll., N. Y., 1918. m. Anna J. Robertson, June, 1948. Exp.: Pathol., Montefiore Hosp., N. Y., 1918-19, 1921-27; Assoc. to Dr. Isaac Levin, N. Y., 1919-21; Assoc. Prof., Pathol., Med. Schl., Univ. of Colo., 1927-29; Asst. Prof., Pathol., Western Reserve, 1929-33; Pathol., City Hosp., Cleveland, Ohio, 1929-33; Dir. Lab., Jewish Hosp.; Montreal, Can., 1934-37; Asst. Prof. Pathol., Yeshiva Univ., Einstein Med. Coll. and Asst. Visiting Bronx Municipal Hosp. Center, 1956-57; Consult Path., V. A. Hosp., Castle Point, N. Y., 1957—. Mem.: Amer. Assn. for Adv. of Sci.; Soc. Exptl. Pathol.; Amer. Cancer

Rsch.: Amer. Pathol. and Bacteriol.; Endocrine Soc.; Soc. Exptl. Biol. and Medicine; N. Y. Pathol. Soc.; N. Y. Acad. Med.; Canadian Physiolog. Soc.; N. Y. Acad. of Sci.; Inter-natl. Acad. Pathol.; Sigma Xi; Phi Delta Epsilon. Contbr. to: Sci. Papers on Cancer Endocrine Glands; etc. War Record: Pvt., Med. Enlisted Res. Corps; Honarable Discharge. Hobbies: Photography; Music; Walking. Listed in: A.M.S.; Dir. of Med. Specialists; Who's Who's Who in Amer. Jewry; Sigma Xi; Who's Who in N. Y.; Who's Who in World Jewry; World Biol.; Who's Important in Medicine; Jews in the World of Sci.; W. W. in the E. Areas of Rsch.: Gross and Microscopic Pathology Including Cytology in Fields of Cancer, Endocrinology, Cardiovascular Systems and Irradiation.

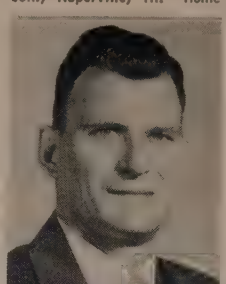
SEEGERS, Walter Henry (Ph.D.), Prof., Wayne State Univ., Coll. Med., Detroit, Mich. Home Add.: 832 Notre Dame, Grosse Pointe, Mich.

PHYSIOLOGY AND BIOCHEMISTRY. b. Westgate, Iowa, Jan. 4, 1910. s. William and Mary (Wente) S. Edn.: B.A., Univ. Iowa, 1931; M.S., ibid., 1932; Ph.D., ibid., 1934. Hon. Deg.: D.Sc., Wartburg Coll., 1953. m. Lillian Entz., Dec. 31, 1935. c.: Dorothy Margaret. Exp.: Rsch. Fellow, Univ. Ia., 1931-34; Rsch. Assoc., ibid., 1934-35; Rsch. Assoc., Antioch Coll., 1936-37; Rsch. Assoc., Univ. of Ia., 1937-42; Rsch., Parke Davis, & Co., Detroit, 1942-45; Assoc. Prof. Physiology, Wayne State Univ. Coll. Med., 1945-46; Prof. and Head, Dept. Physiol., 1946-48; Prof. Physiol., Univ. Detroit, 1946-50; Prof. Physiol. and Chmn., Dept. Physiol. and Pharmacology, Wayne State Univ. Coll. of Med., 1948—. Hon. Pos.: Chmn., Subcom., Blood Coagulation, Natl. Rsch. Coun., 1950-53; Comm. Surgery, N.R.C., 1951; Comm., Blood Related Products, N.R.C., 1952; Chmn., Panel on Blood Coagulation, N.R.C., 1953-57; Visiting Prof., Baylor Univ., 1950, 52; Chmn., Wayne State Univ. Annual Symposium on Blood, since 1951; Editorial Bd., Am. Jour. Physol., and Am. Jour. Applied Physiol., since 1956; Ed. Bd., Circulation Rsch., since 1954; Chmn., Symposium Chemistry of Prothrombin and Fibrinogen, Am. Soc. Biol. Chemists, 1955. Mem.: Am. Chem. Soc.; Am. Soc. Biol. Chem.; Soc. Exptl. Biol. and Med.; Detroit Physiological Soc.; Internatl. Soc. Hematol.; Am. Physiological Soc.; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Mich. Acad. Sci.; A.A.A.S.; Canadan Physiological Soc.; Am. Heart Assn.; Engrng. Soc. Detroit; Harvey Soc. N. Y.; Alpha Omega Alpha; N. Y. Acad. Sci.; Chilean Hematology Soc.; Societe Internationale Europeenne D'Hematologie. Author: Hemostatic Agents, 1948; Living Consciously: The Science of Self, 1959. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Jour. Nutrition; Am. Jour. Physiol.; Human Biol.; Am. Jour. Obstet and Gynec.; Jour. Exptl. Med.; Sci.; Surgery; Jour. Lab. and Clin. Med.; Arch. Biochem.; Jour. Phys. and Colloid Chem.; Jour. Hematol.; Jour. Clin. Invest.; Surgery, Gynec. and Obstet.; Cincinnati Jour. Med.; Jour. Mich. State Med. Soc.; Harvey Lecture Series; Record Chem. Progress; Internatl. Forum; Physiological Reviews; Revue d'Hematologie; Soc. Biol. Chemists; Archives Biochem. and Biophysics; Ann. N. Y. Acad. Sci.; Pharmacological Reviews. Gen. Int.: Rsch. Grants from Natl. Institutes of Health, Mich. Heart Assn. and Industry; Special Award in Support of Creative Work from the Commonwealth Fund of N. Y., 1957-58. Areas of Rsch.: Physiology; Biochemistry.

SEGAL, Leon (Ph.D.), Sr. Rsch. Chemist, So. Reg. Rsch. Lab., New Orleans, La. Home Add.: 3224-45th St., Metairie, La.

CHEMISTRY. b. Memphis, Tenn., Jan. 28, 1918. s. Maurice and Anna (Paseltiner) S. Edn.: B.S., Miss. St. Coll., 1940; M.S., La. St. Univ., 1942; Ph.D., Tulane Univ., 1954. m. Evelyn G. Kent, Dec. 31, 1961. c.: Evelyn Ann; Sera Rae; Stephen T. Kent. Exp.: Grad. Asst., La. St. Univ., Baton Rouge, La., 1940-42; Chemist, So. Reg. Rsch. Lab., 1942—; Acting Sect. Ldr., ibid., 1952-54; Unit Supvr., ibid., 1954-58; Prin. Chemist, ibid., 1954—; Acting Assoc. Prof. of Chem., Tulane Univ., New Orleans, La., 1957-58; Sr. Rsch. Chemist, So. Reg. Rsch. Lab., 1958—. Hon. Pos.: Secy., La. Sect., Am. Chem. Soc., 1957-63; Vice-Pres., New Orleans Acad. of Sci., 1955-57; Trng. Officer, U. S. Coast Guard Aux. Flotilla 47, 1960-61. Mem.: Am. Chem. Soc.; Natl. Geog. Soc.; Rsch. Soc. of Am.; Phi Eta Sigma; Kappa Mu Epsilon; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma; Sigma Alpha Mu; Mason. Contbr. to: Jour. of Polymer Sci.; Textile Rsch. Jour.; Appl. Spectroscopy; Jour. of the Am. Chem. Soc.; Analyt. Chem.; Jour. of Phys. Chem.; Am. Dyestuff Reporter. Serv. Rec.: U. S. Navy, 1943-46; Naval Air Reserve, 1946-54; Naval Rsch. Reserve, 1954—. Areas of Rsch.: Cellulose and Textile Chemistry; Complexes of Cellulose with Amines; Training In Analytical Chemistry, X-Ray Diffraction, Infrared Spectroscopy; Electronics.

SEHE, Charles Theodore (Ph.D.), Assoc. Prof. of Biol., N. Central Coll., Naperville, Ill. Home Add.: 204 N. Washington, Naperville, Ill.

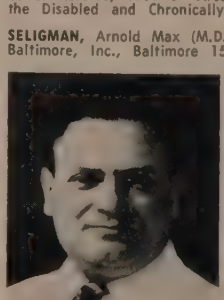


ZOOLOGY: VERTEBRATE EMBRYOLOGY AND ENDOCRINOLOGY. b. Geneva, Ill., Feb. 26, 1923. s. William (dec.) and Frances (Burzyck) S. Edn.: B.A., N. Central Coll., 1950; M.S., Univ. of Ia., 1953; Ph.D., ibid., 1957. m. Lillian Lysaght, 1953. c.: Isabel; Mary; Kiren; Elizabeth. Exp.: Instr., Ia. St. Tchrs. Coll., summer, 1957; Asst. Prof., Univ. of Ill., 1957-58; Asst. Prof., Univ. of Cincinnati, 1958-62; Assoc. Prof., N. Central Coll., 1962—; Rsch. Assoc., Argonne Natl. Lab., Argonne, Ill., summer, 1962. Hon. Pos.: Lectr., H. S. Sci. Inst. Meetings. Mem.: Ia. Acad. of Scis.; Tri-Beta; Am. Soc. of Zoologists; Am. Museum of Natural Hist.; Sigma Xi; Gamma Alpha. Contbr. to: Endocrinol.; Am. Zoologist. Serv. Rec.: U. S. Navy, 1940-46. Areas of Rsch.: Structure of Ultimobranchial Body in Fishes, Amphibians, Reptiles and Birds; Radioautographic Preparations Using Radioisotopes; Exptl. Embryol. and Endocrinol., Comparative Anatomy (Vertebrates).

SEHNERT, Robert Harold (Mr.), Mgt. Planning, Atomics Internl. Canoga Pk., Calif. Home Add.: 4520 Sendero Pl., Tarzana, Calif. NUCLEAR PHYSICS; MATHEMATICS. b. Milw., Wis., June 30, 1917. s. Willard K. and Anita F. (Hansen) S. Edn.: B.S., Univ. of Chgo., 1941; M.S., Univ. of Calif., L. A., 1949. m. Gisela Kamm, Nov. 20, 1943. c.: Brian Ashley. Exp.: Proj. Engr. Atomics Internatl., A Div. of N. Am. Atomics, Canoga Pk., Calif., 1949-55; Applications Engr., ibid., 1955-57; Eastern Rep., ibid., Wash., D. C., 1957-61; Mgt. Planning, ibid., 1961—. Hon. Pos.: Pres., Univ. of Chgo. Club of Wash., D. C. Mem.: Am. Phys. Soc.; Am. Nuclear Soc.; Am. Rocket Soc.; Atomic Indust. Forum; Am. Mgt. Assn.; Soc. of Naval Architects and Marine Engrs.; Soc. of Naval Engrs.; Assn. for Computing Machinery; Natl. Aviat. Club; Aero Club of Wash.; Natl. Cap. Democratic Air Force Assn.; Am. Ordn. Assn.; Navy League. Contbr. to: A.E.C. Rsch. Repts. Serv. Rec.: U. S. Air Force, 1942-46. Areas of Rsch.: Nuclear Reactors, Nuclear Physics, Space Digital and Analogue Computers, Meteorology.

SEIDENFELD, Morton Alfred, (Ph.D.), Special Asst. to Asst. Dir. for Rsch. and Trng., Office of Vocat. Rehab., Dept. of Hlth. Edn. and Welf., Wash. 25, D. C. Home Add.: 5410 Conn. Ave., N. W., Wash. 15, D. C. PSYCHOLOGY. b. Spokane, Wash., Sept. 21, 1906. s. Samuel and Frances (Gross) S. Edn.: B.Sc., Univ. of Wash., 1927; M.Sc., Univ. of Pa., 1934; Ph.D., ibid., 1937. m. Miriam Clair, March 6, 1932. c.: Carol Faye; Sue Ellen. Exp.: Dir. of Psychol. Servs., The Natl. Fdtn., N. Y. City, 1946-60; Asst. Chf. Rsch., Div., Office of Voc. Rehab., U. S. Dept. of Hlth., Edn. and Welf., 1960—. Hon. Pos.: Hon. Past Pres. of Soc. of Milit. Psychots.; Staff Asst., White House Conf. of Children and Youth, 1965 and 1960. Mem.: Phi Delta Kappa; Psi Chi; Fellow, Am. Psychol. Assn.; Am. Orthopsychiat. Assn.; Acad. of Psychosomatic Med.; Royal Soc. of Hlth.; Am. Assn. for the Adv. of Sci.; Sigma Alpha Mu. Author: Psychological Aspects of Medical Care, 1949. Contbr. to: Psychol. Bull.; Jour. of Psychol.; Jour. of Exptl. Psychol.; Am. Jour. of Psychol.; The Nervous Child. Serv. Rec.: U. S. Army, 1940-46; U. S. Reserve, 1961—. Areas of Rsch.: Psychological Care of the Disabled and Chronically Ill; Military Clinical Psychology.

SELIGMAN, Arnold Max (M.D.), Surgeon-in-Chief, Sinai Hosp. of Baltimore, Inc., Baltimore 15, Md. Home Add.: Park Heights Avenue, Owings Mills, Md.

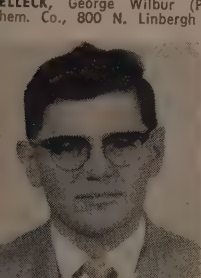


CANCER RESEARCH; HISTOCHEMISTRY; SURGERY. b., St. Johnsbury, Vt., Mar. 30, 1912. s. Maurice Jack and Sylvia (Crestin) S. Edn.: B.A., Harvard Coll., 1934; M.D., Harvard Med. Schl., 1939. m. Blume Appel, Mar. 3, 1940. c.: Myron; Dale; Garry; Stanley. Exp.: Chief Res. in Surg., Beth Israel Hosp., Boston, Mass., 1945-46; Tutor and Asst. Prof. of Surg., Harvard Med. Schl., 1948-54; Assoc. Dir. of Surg. Rsch., Beth Israel Hosp., 1949-54; Surgeon-in-Chief, Sinai Hosp. of Baltimore, Inc., 1954—; Assoc. Prof. of Surg., The Johns Hopkins Univ. Schl. of Med., 1954—. Hon. Pos.: Vice-Pres., Histochemical Soc., 1953-54; Pres., Histochemical Soc., 1954-55; Board of Directors, Am. Assn. for Cancer Research, 1958-61. Mem.: Am. Medical Assn.; A.A.A.S.; Soc. Exptl. Biol. & Med.; Am. Assn. for Cancer Rsch.; Am. Acad. of Arts and Scis.; Surg. Biol. Club; Am. Bd. of Surg.; Am. Coll. of Surgs.; Am. Surg. Assn.; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi. Author: Handbuch der Histochemie, Vol. VII, Part I, 1960. Contbr. to: Cancer; Cancer Rsch.; Jour. Histochemistry and Cytochemistry; Jour. Biological Chem.; Jour. of the Am. Chem. Soc.; Jour. Biophysical and Biochem. Cytol.; New England Jour. of Med.; Jour. of Clin. Invest.; Annals of Surg.; Anatomical Rec.; Endocrinol.; Sci.; Jour. of Pharmacol. and Exptl. Therapeutics; Arch. of Biochem. and

Biopyhs. Areas of Rsch.: Synthesis of Carcinogenic Hydrocarbons; Induction of Expelt. Brain Tumors; Physiology of Shock; Development Peritoneal Lavage for Uremia; Development of Histochemical Methods; Development of Chemotherapeutic Agents for Cancer.

SELL, Harold Melvin (Ph.D.), Prof. of Biochem., Mich. State Univ., E. Lansing, Mich. Home Add.: 430 Charles, East Lansing, Mich. BIOCHEMISTRY. b. Waseca, Minn., June 7, 1905. s. Rudolph and Wanda (Born) S. Edn.: A.B., North Central Coll., 1929; M.S., Mich. State Univ., 1931; Ph.D., Univ. of Wis., 1938. m. Mabelle Alice Sargent of Sparta, Wis., Dec. 26, 1939. d. Mr. and Mrs. J. E. Sargent. c.: John Edward; Elizabeth Kay. Exp.: Asst. in Chem., N. Central Coll., 1927-29; Grad. Asst., Mich. State Univ., 1929-31; Rsch. Chem., Gen. Foods Corp., 1931-35; Grad. Asst. in Biochem., Univ. of Wis., 1935-38; Post Doct. Asst. in Biochem., Univ. of Wis., 1938-39; Assoc. Chemist, Tung Investigations, U.S.D.A., 1939-45; Prof. of Biochem., Mich. State Univ., 1945—. Mem.: Phi Kappa Phi; Alpha Chi Sigma; Phi Sigma; Gamma Alpha; Phi Lambda Upsilon; Sigma Xi; Kappa Delta Pi; Am. Inst. of Biol. Sci.; Am. Chem. Soc.; Am. Soc. of Plant Physiol.; Am. Soc. Biol. Chem.; Mich. Acad. of Sci., Arts and Letters; A.A.A.S.; Kiwanis. Contbr. to: Jour. Biol. Chem., Jour. Am. Oil Chem. Soc., Bot. Gaz.; Plant Physiol.; Arch. Biochem. and Biophysics, and Jour. Am. Chem. Soc. Ph.D. Dissertation: Syntheses in the Hexuronic Acid Group. Hobbies: Hunting; Fishing. Special Int.: Plant Growth Regulators, Chem. of Plant Mechanisms and Synthetic Organic Chem. Listed in: Who's Who in the Midwest; A.M.S.; Chem. Who's Who; Who Knows—and What; W.W.A.E.; Internatl. Blue Book.

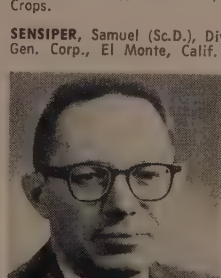
ELLECK, George Wilbur (Ph.D.) Sr. Project Mgr., Monsanto Chem. Co., 800 N. Linbergh Blvd., St. Louis, Mo. Home Add.: No. 1, St. Alfred Road, St. Louis 32, Mo. PLANT ECOLOGY. b. Spalding, Sask., Can., Jan. 28, 1924. s. Lee Wilbur and Beatrice Elma Mary (Lunsford) S. Edn.: B.S.A., Univ. of Sask., 1950; M.Sc., ibid., 1953; Ph.D., Univ. of Wis., 1959. m. Verla Klois Griffith, June 29, 1948. c.: Lee Griffith; Scott Brian. Exp.: Weed Ecologist, Univ. of Sask., 1953-56; Instr., ibid., 1956; Asst. Prof., ibid., 1956-60; Sr. Project Mgr., Monsanto Chem. Co., 1960—. Mem.: Am. Assn. Adv. Sci.; Ecol. Soc. of Am.; Weed Soc. of Am.; Can. Soc. of Agron.; Am. Soc. of Agron.; Agri. Inst. of Can.; Sask. Inst. of Agrologists; Soc. of Trop. Ecol.; Rsch. Comm., N.C.W.C.C.; Phi Sigma. Contbr. to: Weeds; Bot. Rev.; Ecol.; Can. Jour. Plant Sci.; Rsch. Report, N. C. W. C. C.; Ecological Monographs; Research Report, Western Section of National Weed Comm., Canada; Proc. of Western Canadian Weed Control Conf.; Proc. of North Central Weed Control Conf.; Proc. of Canadian Soc. of Agronomy; Proc IX Internatl. Bot. Congress; Abstracts of the Weed Soc. of Am. Serv. Rec.: R.C.A.F., 1942-45. Areas of Rsch.: Plant Sociology; Plant Ecology; Agronomy; Agricultural Pesticides.



N, Hari Keshab (Dr.), Sr. Scientist, CRZC, U. S. Air Force Cambridge Rsch. Labs., Bedford, Mass. Home Add.: 34A Irving St., Apt. 21, Cambridge 38, Mass. PLASMA PHYSICS AND MAGNETOGAS DYNAMICS, ASTROPHYSICS. b. Nagina, India, Feb. 9, 1905. s. Upendra Nath (dec.) and Shreemoti Himangshu Badani (Devi) S. Edn.: B.Sc., Allahabad Univ., India, 1925; M.Sc., ibid., 1927; LL.B., ibid., 1929; D.Phil., ibid., 1943. m. Kanika Mazumdar, Nov. 24, 1937. c.: Manjushree. Exp.: Lectr., Univs. and Colls., India, 1929-47; Lectr. and Rsch. Fellow, Harvard Univ., 1947-51; Physicist, Natl. Bur. of Standards, Wash., D. C. and Boulder, Colo., 1951-54; Sr. Scientist, Hughes Aircraft Co., Culver City, Calif., 1954-55; Sr. Scientist, CRZC, U.S.A.F. Cambridge Rsch. Lab., Bedford, Mass., 1955—. Mem.: F.S.A.; Am. Astronomical Soc.; Am. Geophys. Union; Inst. of Radio Engrs., Sr. Mem.; Internatl. Astronomical Union; Am. Automobile Assn. Contbrng. Author: Conference on Extremely High Temperatures, 1958; Proceedings of Fourth International Conference on Ionization Phenoma in Gases, 1960. Contbr. to: Phys. Rev.: Jour. of Geophys. Rsch.; Physics of Fluids; Astrophysical Jour.; Proc. Natl. Inst. Sci., India; Proc. Natl. Acad. Sci., India; Proc., Natl. Acad. Sci., U.S.A. Gen. Int.: Recipient of Hill Memorial Prize and Education Minister's Gold Medal, India, for Outstanding Astrophysical Research. Areas of Rsch.: Magnetohydrodynamic Shock Wave Structure and the Magnetoionic Theory of Electromagnetic Wave Propagation.

SENGBUSCH, Howard George (Ph.D.), Prof. Biol., Sta. Univ. Coll., Buffalo 22, N. Y. Home Add.: 18 Lorfield Dr., Amherst 26, N. Y. PARASITOLOGY—ACAROLOGY. b. Buffalo, N. Y., Dec. 14, 1917. s. Howard C. and Blanche (Foreman) S. Edn.: B.S., Sta. Tchrs. Coll., 1939; Ed.M., Univ. of Buffalo, 1947; M.S., N. Y. Univ., 1951; Ph.D., N. Y. Univ., 1951. m. Beatrice Ebling, July 2, 1942. c.: Craig Howard; Lee Ardell. Exp.: Tchr., Lockport, Schls., Lockport, N. Y., 1939-41; Grad. Asst., Univ. of Buffalo, Buffalo, N. Y., 1946-47; Tchng. Fellow, N. Y. Univ., N. Y., N. Y., 1947-51; Prof., St. Univ. Coll., Buffalo, N. Y., 1951—. Hon. Pos.: Bd. Dirs. and Vice-Pres., Buffalo Zool. Soc.; Bd. Dirs., Amherst Community Church. Mem.: Am. Soc. Parasitols.; Entomol. Soc. Am.; Soc. Systematic Zoolos.; Am. Soc. Zoolos.; Internatl. Acad. of Zool., Fellow; Internatl. Soc. Soil Zool.; Am. Instit. Biol. Sci.; Am. Assn. for the Adv. of Sci.; Phi Delta Kappa; Sigma Tau Gamma. Contbr. to: Jour. of Parasitol.; Annals of Entomol. Soc. Am.; Jour. Econ. Entomol.; Zoologica. Serv. Rec.: U. S. Army, 1941-46. Gen. Int.: Reserve Comm. Scientist, in U. S. Pub. Health Serv.; Radiation Safety Officer for A.E.C. During Bomb Tests in Nev., 1957. Areas of Rsch.: Research on Soil Mites; Research in Parasitology.

SENN, Taze L. (Ph.D.), Hd., Dept. of Horticulture, Rm. 162 Plant & An. Sci. Bldg., Clemson Coll., Clemson, S. C. Home Add.: 201 Strawberry Lane, Clemson, S. C. POST-HARVEST PHYSIOLOGY. b. Newberry, S. C., Oct. 16, 1917. s. George Walter and Rebecca (Reeder) S. Edn.: B.S., Clemson Coll., 1939; M.S., Univ. of Md., 1950; Ph.D., ibid., 1958. m. Marguerite Busby, Dec. 23, 1939. c.: Richard Alan; Thomas Leonard; David Lee. Exp.: Asst. Horticulturist, S. C. Exp. Sta., Clemson Coll., 1939-40; Lab. Instr., Botany Dept., ibid., 1941; Asst. Plant Pathologist, Univ. of Tenn., 1941-43; U.S.D.A., BEPQ Inspector, Clemson, S. C., Summers, 1947, '48, '49; U.S.D.A., Proj. Leader Peach Survey, Clemson, S. C., 1950; Assoc. Tobacco Chemist, Duke Univ., summers, 1951, '52, '53; Assoc. Prof. of Horticulture, Clemson Coll., 1954-56, 1958-59; Agric. in Charge, Flue-Cured Tobacco Rsch., E. Regional Rsch. Lab., U.S.D.A., Washington, D. C., 1957-58; Prof. of Horticulture and Horticulturist, Clemson Coll., 1959-60; Hd. Dept. of Horticulture, ibid., 1960 -. Hon. Pos.: Chmn., Sou. Sect. Am. Soc. Hort. Sci.; Chmn., Sou. Region, Post-Harvest Physiology Comm., U.S.D.A.; Organizer and Past Chmn., Sou. Sect. Hort. Sci. Collegiate Br. Comm. Mem.: Am. Soc. for Horticultural Sci.; Gamma Sigma; Alpha Zeta; Sigma Xi; Kiwanis Club. Contbr. to: Am. Soc. for Hort. Sci.; U.S.D.A. Tech. Bull.; S. C. Agric. Exp. Sta. Bull.; Hort. Rsch Series. . Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Tobacco Chemist; Post-Harvest Evaluation of Tobacco Quality; Plant Physiology as Related to Horticultural Crops.

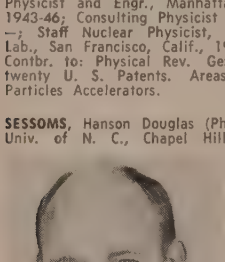


SENSIPER, Samuel (Sc.D.), Div. Gen. Corp., El Monte, Calif. Command and Control Lab., Space Home Add.: 6011 Holt Ave., Los Angeles 56, Calif. MICROWAVE ELECTRONICS AND VLF AND LF COMMUNICATIONS. b. Elmira, New York, Apr. 26, 1919. s. Louis and Molly (Pedolsky) S. Edn.: S.B., Mass. Inst. Technol., 1939; E.E., Stanford Univ., 1941; Sc.D., Mass. Inst. Technol., 1951. m. Elaine M. Zwick, Sept. 10, 1950. c.: Martin; Sylvia; David. Exp.: Rsch. Asst. Elec. Engrng. Dept., Stanford Univ., 1939-41; Asst. Proj. Engr. to Sr. Proj. Engr. and Sect. Hd., Microwave Electronics Dept., Sperry Gyroscope Co., 1941-47; Industrial Electronics Fellow, Mass. Inst. Technol., 1947-49; Consultant, Sperry Gyroscope Co., 1948-50; Staff Mem., IRE, Mass. Inst. Technol., 1949-51; Rsch. Physicist, Sect. Hd., Antenna Sect., Radar Dept.; Rsch. Physicist, Sect. Head., Circuits and Analysis Sect., Electron Dynamics Dept., Sr. Staff Consult., Electron Dynamics Dept., Rsch. Lab., Hughes Aircraft Co., 1951-60; Dir., Command and Control Lab., Space Gen. Corp., Glendale, Calif., 1960—. Hon. Pos.: Tech. Program Chmn., 1957-58, and Conf. Chmn., 1958-59, IRE-AIEE Conf. on Electron Tube Rsch. Mem.: Inst. of Radio Engrs. (Fellow); Am. Assn. for Adv. of Sci. (Fellow); Eta Kappa Nu; Sigma Xi; R.E.S.A. Contbr. to: Proc. I.R.E.; I.R.E. Prof. Gr. Trans.; Antennas and Propagation; Electron Devices; Microwave Theory and Techniques. Areas of

Rsch.: Microwave Instrumentation; Applied Electromagetic Theory in Field of Transmission, Generation and Radation of Microwaves, Periodic Circuits, Traveling Wave Tubes and Parametric Amplifiers, VLF and LF Propagation, and VLF and LF Communications Systems.

SERDUKE, James T.(ychon) (Mr.), Consulting Physicist and Engr., 925 Avis Dr., El Cerrito 8, Calif.; Staff Nuclear Physicist, U. S. Naval Radiological Defense Lab., San. Francisco, Calif. Home Add.: 925 Avis Dr., El Cerrito 8, Calif. HIGH ENERGY CHARGED PARTICLE ACCELERATORS, INTERTIAL ACCELEROMETERS, GUIDANCE FOR GUIDED MISSILES, GAMMA RAYS AND NEUTRONS SHIELDING, NUCLEAR REACTORS. b. Novomoskovsk, Ekaterinoslav Province, Russia, Oct. 23, 1897. s. Tychon and Pelageya (Lozovaya) S. Edn.: B.S., Union Coll., 1926; M.S., ibid., 1931. m. 2nd, Vera P. Mansur, June 10, 1937. c.: Franklin James David. Exp.: Employee, Paraffine Paint Co., Antioch and Emeryville, Calif., 1923-24; Pacific Gas and Ele. Co., San Francisco, Calif., 1924-25; Rsch. Engr., Gen. Elec. Co., Rsch. Labs., Schenectady, N. Y., 1926-31; Tchng. Fellow and Student Instr., Dept. of Physics, Mass. Inst. Tech., 1931-35; Prof., Dept. of Physics and Elect. Engrng., Natl. Pei Yang Univ., Tientsin, China, 1935-40; Sr. Physicist, Navy Dept., San Francisco, 1941-43; Sr. Physicist and Engr., Manhattan Project, Los Alamos, N. Mex., 1943-46; Consulting Physicist and Engr., El Cerrito, Calif., 1946—; Staff Nuclear Physicist, U. S. Naval Radiological Defense Lab., San Francisco, Calif., 1949—. Mem.: A.A.A.S.; Sigma Xi. Contbr. to: Physical Rev. Gen. Int.: Sole or joint inventor on twenty U. S. Patents. Areas of Rsch.: High Energy Charged Particles Accelerators.

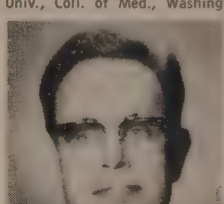
SESSOMS, Hanson Douglas (Ph.D.), Asst. Prof., Dept. of Sociol., Univ. of N. C., Chapel Hill, N. C. Home Add.: Box 855, Chapel Hill., N. C. RECREATION LEADERSHIP; THE SOCIOLOGY OF LEISURE. b. Wilmington, N. C., July 18, 1931. s. Hanson and Sadie (Edens) S. Edn.: A.A., Wilmington Coll., 1951; A.B., Univ. of N. C., 1953; M.S., Univ. of Ill., 1954; Ph.D., N. Y. Univ., 1958. m. Celeste Heatherley, Aug. 24, 1957. Exp.: Asst. Instr., Univ. of Ill., 1953-54; Instr., Univ. of N. C., 1954-59; Asst. Prof., Dept. of Sociol., ibid., 1959—. Hon. Pos.: Chmn., Personnel Standards, N. C. Recreation Soc.; Chmn., Prog. Standards, Am. Recreation Soc.; Consultant, Gen. Rsch. Corp., and the Outdoor Recreation Resources Rev. Commission. Mem.: N. C. and Am. Rec. Socs. Author: Syllabus For Social Problems, 1962; A Review of Selected Results of Recreation Studies, 1961; A Glossary of Recreation Terms, 1956. Contbr. to: Am. Recreation Jour.; Inventory; Social Forces; Youth Leaders Digest; N. C. Recreation Rev. Areas of Rsch.: Trends in Leisure Use; The Leisure Patterns of Alcoholics; Recreation and Youth.



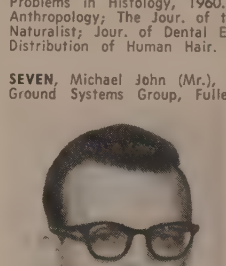
SETO, Frank (Ph.D.), Assoc. Prof. of Biol., Berea Coll., Berea, Ky. Home Add.: 104 Van Winkle Grove, Berea, Ky. ZOOLOGY AND GENETICS. b. Los Angeles, Calif., Mar. 12, 1925. s. Harukichi and Yasu (Ishi) S. Edn.: B.A., Berea Coll., 1949; M.S., Univ. of Wis., 1950; Ph.D., ibid., 1953. m. Gail Marie Sprague, Sept. 3, 1955. c.: Carol Elizabeth; Linda Ellen. Exp.: Asst. Prof., Univ. of Wis., 1953-56; Assoc. Prof., Berea Coll., 1956—. Mem.: A.A.A.S.; A.S.B.; Am. Genetics Assn.; Genetics Soc. of Am.; A.I.B.S.; Soc. for Study of Evolution; Ky. Acad. of Sci.; Sigma Xi; Phi Kappa Phi; Gamma Alpha; Phi Sigma. Contbr. to: Am. Naturalist; Jour. of Heredity; Jour. of Expl. Zoology. Serv. Rec.: U. S. Army Med. Corps, 1946-48. Areas of Rsch.: Developmental Genetics; Particularly the Study of Lethal Factors in Drosophila.

SEVAGIAN, Aram H. (Mr.), Tchr., Westwood Schl. System, Westwood Mass. and Instr. in Chemistry, Suffolk University, Boston, Massachusetts. Home Add.: 104 Hilltop St., Milton 86, Mass. INSTRUCTION OF PHYSICS, CHEMISTRY, THE PHYSICAL SCIENCES. b. Mattapan 26, Mass., May 10, 1932. s. Haig O. and Surpoohy T. (Tarbassian) S. Edn.: B.S., Suffolk Univ., 1960; M.A., ibid., 1962. Exp.: Chem. Lab. Instr., Suffolk Univ., Boston, Mass., 1959-62; Tchr., Westwood Schl. System, Westwood, Mass., 1960—; Instr., Chem., Suffolk Univ., 1962—. Hon. Pos.: Vice Pres., Sci. Club. Mem.: Am. Inst. of Phys.; Am. Assn. of Phys. Tchrs.; Am. Chem. Soc.; Am. Chem. Soc. Div. of Chem. Edn.; Phi Beta Chi. Serv. Rec.: U.S. Army Med. Corps, 1955-58. Gen. Int.: Traveled in Europe and Eastern Can., Working Knowledge of Four Languages. Areas of Rsch.: Industrial Diamond Dust Reclamation; Petrochemistry anl Plastics; Physics and Chemistry.

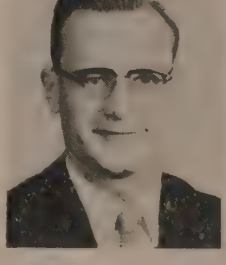
SETTY, Laurel Raymond (Ph.D.), Asst. Prof. of Anatomy, Howard Univ., Coll. of Med., Washington, D. C. Home Add.: 4508 38th St., Brentwood, Md. HUMAN ANATOMY. b. Council Grove, Kans., Nov. 8, 1906. s. Albert Reed and Mabel E. (Wright) S. Edn.: B.S., Kans. State Tchrs. Coll., 1929; M.A., Univ. of Kans., 1930; Ph.D., Cornell Univ., 1939. Exp.: Instr. of Biol., Park Coll., Parkville, Mo., 1930-35; Asst. Prof. of Biol., ibid., 1935-45; Prof. and Hd. of Dept., ibid., 1945-47; Instr., Anatomy, Univ. Kans. City, Schl. of Dentistry, 1947-52; Instr. in Anatomy, Creighton Univ., Schl. of Med., 1952-54; Asst. Prof. of Anatomy, Univ. of Ore. Dental Schl., 1954-58; Asst. Prof. of Anatomy, Howard Univ., Coll. of Med., 1958—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Assn. of Anatomists; Sigma Xi; Kappa Delta Pi; United World Federalists. Author: Laboratory Problems in Histology, 1960. Contbr. to: Am. Jour. of Phys. Anthropology; The Jour. of the Natl. Med. Assn.; Am. Midland Naturalist; Jour. of Dental Edn. Areas of Rsch.: Variations in Distribution of Human Hair.



SEVEN, Michael John (Mr.), Sr. Scientist, Hughes Aircraft Co., Ground Systems Group, Fullerton, Calif. Home Add.: 948 N. Adlena Dr., Fullerton, Calif. INFORMATION SCIENCES, MAN-MACHINE SYSTEMS. b. Chicago, Ill., Dec. 25, 1926. s. Michael August and Violet (Olen) S. Edn.: B.S., Univ. of Ill., 1950. m. Sally Spiegel, Aug. 6, 1952. c.: Judith Maureen; Kathleen Annette. Exp.: Mgr., Simulation Specifications, The RAND Corp., Systems Develop. Div., Santa Monica, Calif., 1953-56; Consulting Analyst, General Electric Co., Computer Dept., Phoenix, Ariz., 1957-60; Sr. Scientist, Hughes Aircraft Co., Ground Systems Group, Fullerton, Calif., 1960—. Mem.: N. Y. Acad. of Sci.; Am. Psychological Assn.; Operations Rsch. Soc. of Am.; Am. Assn. for the Adv. of Sci. Author: USAF Intelligence Data Handling System, 5 Vols., 1959; Headquarters USAF Design Improvement, 2 Vols., 1961; Computer War Game, 1957. Serv. Rec.: U. S. Navy, 1944-47. Areas of Rsch.: Information Sciences, especially Fundamental Concepts and Systematic Methods Applicable to Information-Exploitation Systems; Cognitive Models; Advanced Hardware Design Specifications; Analysis and Design of Command, Management, and Information Systems.



SEVERIN, William Bernard, Jr. (Mr.), Math. Instr., Douglass Publ. Schls., Douglass, Kans. Home Add.: Box 141, Douglass, Kans. MATHEMATICS. b. Bendena, Kan., June 3, 1931. s. William B., Sr. and Mabel Helen (Bahr) S. Edn.: B.S., Kans. State Tchrs. Coll., 1959. Exp.: Math. Instr., Douglas Publ. Schls., Douglass, Kans., 1959-62. Hon. Pos.: Chmn., Math. Roundtable-Wichita Sec., Kan. State Tchrs. Convention. Mem.: Natl. Coun. of Math. Tchrs.; Natl. Sci Tchrs. Assn.; Am Assn. for the Adv. of Sci.; Delta Sigma Phi; Am. Legion. Serv Rec.: U. S. Navy, 1951-55. Areas of Rsch.: Functions and Theirgraphs.

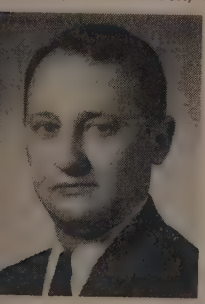


SEWARD, Raymond Sanford (Ph.D.), Prof., Physics, Univ. of Puget Sound, Tacoma 6, Wash. Home Add.: 3011 N. 22nd St., Tacoma 7, Wash. PHYSICS. b. Monticello, Iowa, Feb. 7, 1889. s. Arthur Lewis and Sarah Louise (Smith) S. Edn.: B.S., Pomona Coll., 1912; M.A., Univ. of Calif., 1921; Ph.D., Stanford Univ., 1930. m. Olive I. Brown, Aug. 26, 1932. Exp.: Sci. and Math. Instr., Calif. Secondary Schls., 1913-23; Prof., Univ of Puget Sound, 1923—. Mem.: Sigma Xi; A.A.P.T.; A.A.U.P. Contbr. to: Physical Rev. Areas of Rsch.: Intensity Measurements in Atomic Spectra.

SEXTON, Virginia Staudt (Ph.D.), Assoc. Prof. of Psychol., Hunter Coll., New York, N. Y. Home Add.: 188 Ascan Ave., Forest Hills 75, N. Y. PSYCHOLOGY. b. New York, N. Y., Aug. 30, 1916. d. Philip and Kathryn (Burkard) S. Edn.: B.A., Hunter Coll., 1936; M.A., Fordham Univ., 1941; Ph.D., ibid., 1946. m. Richard Sexton Jan. 21 1961. Exp.: Assoc. Prof. of Psychol., Notre Dame Coll., 1944-53; Assoc. Prof. of Psychol., Hunter Coll., 1953—. Mem.: Am. Psychol. Assn.; Am. Assn. for the Adv. of Sci.; Internatl. Coun. of Psychol.; Eastern Psychol. Assn.; N. Y. State Psychol. Assn.; Am. Catholic Psychol. Assn.; N. Y. Soc. of Clin. Psychol.; Metropolitan Assn. of Applied Psychol.; Catholic Round Table of Sci.; Albertus Magnus Guild; Am. Assn. of Univ. Prof.; Phi Beta Kappa Alumnae in N. Y.; Sigma Xi; Eta Sigma Phi. Author: Catholics in Psychology: A Historical Survey, co-author, 1954. Contbr. to: Assoc. Editor and Abstractor for Psychol. Abstracts; Jour. of Psychol.; Psychol. Bull.; Jour. of Social Psychol.; Jour. of Genetic Psychol. Areas of Rsch.: History of Psychology, Clinical.

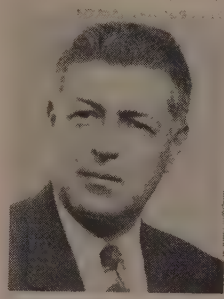
SEYMOUR, Raymond B. (Ph.D.), Chmn., Chem. Dept., Sul Ross St. Coll., Alpine, Tex. Home Add.: 205 W. Ave. B, Alpine, Tex. CHEMISTRY. b. Boston, Mass., July 26, 1912. s. Walter A. and Marie E. (Doherty) S. Edn.: B.S., Univ. of N. H., 1933; M.S., ibid., 1935; Ph.D., Univ. of Ia., 1937. m. Frances B. Moran, 1936. c.: David Ray; Peter Jerome; Mrs. Susan S. Smith; Philip Alan. Exp.: Rsch. Chemist, Goodyear Tire and Rubber Co., Akron, Ohio, 1937-39; Chf. Chemist, Atlas Mineral Product Co., Mertztown, Pa., 1939-41; Rsch. Group Ldr., Monsanto Chem. Co., Dayton, Ohio, 1941-45; Dir. of Rsch., Univ. of Chattanooga, 1945-48; Dir. of Rsch., Johnson and Johnson, New Brunswick, N. J., 1948-49; Pres., Atlas Mineral Products Co., Mertztown, Pa., 1949-55; Chmn., Bd., Alcylite Plastics Corp., Newhall, Calif., 1955-60; Prof., Sul Ross St. Coll., 1960—. Hon. Pos.: Pres., Sou. Calif. Sect., Soc. Plastics Industry; Natl. Dir., Chmn., Sou. Central Sect., Am. Assn. Textile Chemists; Councilor, Chattanooga Sect., A.C.S.; Chmn., Rsch. Edn. Comm., N.A.M. Mem.: A.A.A.S.; A.C.S.; A.I.Ch.E.; Tex. Acad. of Sci.; S.P.I.; S.P.E.; Alpha Xi Sigma; Phi Lambda Upsilon; Sigma Xi; Gamma Sigma Epsilon; Alpine Rotary Club. Author: National Paint Dictionary, 1949; Plastics for Corrosion Resistant Applications, 1955; Hot Organic Coatings, 1960. Contbr. to: Jour. A.C.S.; Ind. Eng. Chem.; Jour. Org. Chem.; Anal. Chem.; Chem. Engr. Progress; Chem. Engrng.; Jour. Soc. Plastic Engrng.; Modern Plastics; Plastics World; Western Plastics; Am. Textile Reporter; Corrosion; Jour. Chem. Edn. Gen. Int.: Western Plastics Award, 1960. Areas of Rsch.: Organic Chem.; Plastics; Synthetic Rubber; Corrosion.

SFAT, Michael Rudolph (Mr.), Pres., Rahr Bio-Techn. Labs. and Vice Pres., Rsch. and Dev., Rahr Malting Co., Manitowoc, Wis. Home Add.: 1030 W. Crescent Dr., Manitowoc, Wis. CHEMICAL ENGINEERING BIOENGINEERING. b. Timisora, Rumania, Oct. 28, 1921. s. Peter and Emilia (Iovin) S. Edn.: B.Chem.E., Cornell Univ., 1943; M. Chem. E., ibid., 1947. m. Jane Buckridge, Nov. 24, 1948. c.: Gail Buckridge; Mary Anne. Exp.: Rsch. Assoc. Cornell Univ., 1943-44; Jr. Microbiol., Asst. Microbiol., Sr. Microbiol., Merck and Co., Inc., Rahway, N. J., 1947-52; In-Chge., Pilot Plant Pabst Labs. Milwaukee, Wis., 1952-54; Dir. of Rsch., Vice Pres., Rsch. and Dev., Rahr Malting Co., Manitowoc, Wis., 1954—; Pres., Rahr Bio-Techn. Labs., 1962—. Hon. Pos.: Chmn., Foods and Biochemicals Sub. Area, A.I.Chem.E. Mem.: A.C.S.; A.A.A.S.; N. Y. Acad. of Sci.; Soc. Am. Bact.; Am. Soc. Brewing Chem.; Am. Assn. Cereal Chem.; Master Brewers Assn. Am.; I.F.T.; Sigma Pi; Sigma Xi; Tau Beta Pi; Sigma Delta Chi. Contbr. to: Ind. Engrng. Chem.; Proc., Am. Soc. Brewing Chemists; Agri. and Food Chem.; Trans. Master Brewers Assn. Am. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Chemical Engineering; Fermentation; Seed Germination; Enzymes; Bioengineering.



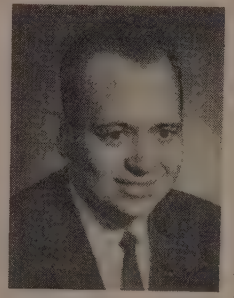
SACKELFORD, Richard Max (Ph.D.), Assoc. Prof. of Genetics, Coll. Genetics, Univ. of Wisconsin, Madison 6, Wisconsin. Home Add.: Box 689, Verona, Wisconsin. GENETICS, MAMMALIAN, ENDOCRINOLOGY, PHYSIOLOGY OF REPRODUCTION IN MAMMALS. b. Murray, Ky., Jan. 23, 1915. s. John Richard and Mary Bernetta (Wilcox) S. Edn.: B.S., Murray State Coll., 1936; M.S., Univ. of Wis., 1941; Ph.D., ibid., 1947. m. (Div.). c.: Jole Richard. Exp.: Tchr., Hardy Consolidated Schls., Hardy, Ark., 1936-37; Prin., Mammoth Springs H. S., Mammoth Springs, Ark., 1937-40; Rsch. Asst. in Genetics, Univ. of Wis., 1940-42; Rsch. Asst. in Genetics, ibid., 1946-47; Asst. Prof., ibid., 1947-55; Assoc. Prof., ibid., 1955—. Mem.: Soc. Genetics of Am.; Am. Genetic Assn.; A.A.A.S.; Am. Soc. of Zoology; Sigma Xi; Delta Eta Sigma. Author: Genetics of the Ranch Mink, 1st Ed., 1950, 2nd E., 1956. Contbr. to: Trans. Wis. Acad. of Sci. Arts, Lett.; Am. Naturalist; Jour. of Heredity; Proc. Natl. Acad. of Sci.; Anatomical Record; Jour. of Animal Sci.; Jour. of Endocrinology. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Coat Color Genetics in Domestic Fur Bearers (Fox and Mink), General Genetics of Domestic Fur Bearers, Physiology of Reproduction in Domestic Fur Bearers, Immunogenetics of Domestic Fur Bearers.

SHACKMAN, Nathan Howard (M.D.), Physician. Home Add.: 1700 President St., Brooklyn 13, N. Y. INTERNAL MEDICINE AND CARDIOLOGY. b. Russia, Aug. 8, 1908. s. Isidor and Bessie (Oster) S. Edn.: B.A., Wash. Sq. Coll., 1934; M.D., N. Y. Univ., 1938. m. Dorothy Kutler, 1938. c.: Daniel R. Exp.: Chief, Med. Clinic, Jewish Hosp., Brooklyn, N. Y., 1957—; Assoc. Internal Medicine, ibid., 1957—; Attending Cardiol., Jewish Chronic Disease Hosp., Brooklyn, N. Y., 1961—. Mem.: Am. Coll. of Physicians, Fellow; Am. College Cardiol., Fellow; Am. Coll. Chest Physicians, Fellow; Am. Bd. of Internal Medicine; Brooklyn Soc. Internal Medicine, Fellow; N. Y. Acad. of Scis.; N. Y. Cardiological Soc.; A.A.A.S.; Am. Soc. of Internal Medicine; Am. Heart Assn.; State Med. Assn.; A.M.A.; Eastern Parkway Lions Club; Lincoln Terrace Civic Assn. Contbr. to: Annals of Internal Medicine; New England Jour. of Med.; Arch. of Internal Medicine; Jour. of the A.M.A.; Am. Heart Jour.; Proc. of the Soc. for Exptl. Biol. and Medicine; The Am. Jour. of Medicine. Areas of Rsch.: Cardiol.



SHAFER, Barbara Hunt (Mrs.), Sci. Tchr., Briscoe Jr. H. S., Beverly, Mass. Home Add.: 67 Rust St., South Hamilton, Mass. CHEMISTRY, SECONDARY SCIENCE EDUCATION. b. Miami, Fla., Feb. 16, 1926. d. Frederick Kinsman Hunt and Virginia (Wilson) H. Edn.: A.B., Mount Holyoke Coll., 1947; Ed.M., Boston Univ., 1962. m. Wayne Arlie Shafer, Jr., June 28, 1947. c.: Douglas Richard; Daniel Kinsman. Exp.: Prog. Dir., Y.W.C.A., Worcester, Mass., 1947-48; Tchr., Briscoe Jr. H. S., Beverly, Mass., 1960—. Mem.: A.A.A.S.; N.S.T.A.; Mass. Tchrs. Assn.; Pi Lambda Theta. Areas of Rsch.: Effect of Gibberellic Acid on Field Tomatoes Grown in Greenhouse under Short Day Conditions.

SHAFFER, Thomas William (Mr.), Sci. Dir., Round Valley H. S., Springerville-Eagar, Ariz. Home Add.: 655 Ash St., Prescott, Ariz. SCIENCE EDUCATION; SCIENCE SUPERVISION. b. Ellwood City, Pa., Aug. 4, 1936. s. Samuel Wilson (dec.) and Christina Bertha (Dolter) S. Edn.: B.A., Ariz. State University, 1959; M.A., ibid., 1962. Exp.: Lectr. in Zool., Ariz. State Univ., summers, 1958, '59, '60; Life Sci. Instr., ibid., 1957-59; Sci. Instr., Scottsdale H. S., Scottsdale, Ariz., 1959-61; Sci. Dir., Round Valley H. S., Springerville-Eagar, Ariz., 1961—. Hon. Pos.: Ariz. State Chmn., Natl. Assn. of Biol. Tchrs.; Chmn., Sci. Sect., Ariz. Assn. for Supvr. and Curriculum Devel. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Assn. of Biol. Tchrs.; Natl. Sci. Tchrs. Assn.; N.E.A. (Life); Natl. Wildlife Fed.; Natl. Geographic Soc.; Planned Parenthood Fed. of Am.; Natl. Assn. for Mental Health; Human Betterment Assn.; Wilderness Soc.; Natl. Cong., Parents and Tchrs.; A.E.A.; Assn. for Supvr. and Curriculum Development; Beta Beta Beta; Blue Key. Contbr. to: Am. Biol. Tchr.; Natl. Young Scientist; Going-To-College Handbook; Ariz. Tchr.; Sci. Newsletter. Serv. Rec.: Ariz. Army Natl. Guard, 1954-57. Areas of Rsch.: Desert Life, Scientific Issues, Reproductive Edn. Participant, 1961 A.A.A.S. Conference; N.S.F. Fellow, 1962 Summer Inst. for Sci. Supervision, New Mex. Highlands Univ.

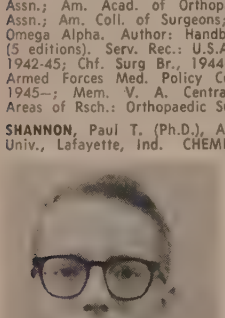


SHANKWEILER, John Victor (Ph.D.), Prof. of Biol., Muhlenberg Coll., Allentown, Pa. Home Add.: 735 N. 26th St., Allentown, Pa. ZOOLOGY. b. Huff's Church, Pa., July 22, 1894. s. James Valentine and Catherine (Bittenbender) S. Edn.: B.S., Muhlenberg Coll., 1921; M.A., Cornell Univ., 1927; Ph.D., ibid., 1931. m. Lehal Shuler, 1921. c.: Dorothy; Grace; Bruce. Exp.: Tchr., Mohnton H. S., Mohnton, Pa., 1915-17; Instr., Muhlenberg Coll., Allentown, Pa., 1921-27; Prof. of Biol., ibid., 1927—.

Mem.: Am. Assn. for the Adv. of Sci.; Museum of Nat. History; Natl. Geog. Soc.; Omicron Delta Kappa; Sigma Xi; Phi Kappa Tau. Serv. Rec.: U. S. Army, W. W. I. Areas of Rsch.: Zoology.

SHANDS, Alfred Rives, Jr. (M.D.), Md. Dir., Alfred I. DuPont Institute of the Nemours Foundation, Box 269, Wilmington, Del. Home Add.: Rockland Rd., Box 269, Wilmington, Del. ORTHOPAEDIC SURGERY. b. Wash., D. C., Jan. 18, 1899. s. Aurelius and Agnes Horner (Eppes) S. Edn.: B.S., Univ. of Va., 1918; M.D., ibid., 1922. Hon. Deg.: D.Sc., Univ. of Del., 1959; D.Med.Sc., Woman's Medical Coll., 1959. m. Elizabeth Prewitt, 1926. c.: Alfred Rives, III. Exp.: Assoc. Prof. of Surgery in Chg. of Orthopaedics, Duke Univ., 1930-37; Visiting Prof. of Orthopaedic Surgery, Univ. of Pa., 1941—; Med. Director, Nemours Found., Wilmington, Del., 1937—. Hon. Pos.: Chmn., Skeletal System Comm., Natl. Rsch. Coun., 1956-62; Chmn., Comm. on Prosthetics Edn. and Info., Natl. Rsch. Coun., 1958-60; Pres., Am. Orthopaedic Assn., 1954; Pres., New Castle Co. Med. Soc., 1953; Pres., Med. Soc. of Delaware, 1959; Pres., Delaware Acad. Med., 1956-58; Pres., Univ. of Va. Med. Alumni, 1949-51; Pres., Orthopaedic Rsch. and Edn. Found., 1955-59, 1961—. Mem.: Am. Orthopaedic Assn.; Am. Acad. of Orthopaedic Surgeons; Southern Surgical Assn.; Am. Coll. of Surgeons; Sigma Nu; Nu Sigma Nu; Alpha Omega Alpha. Author: Handbook of Orthopaedic Surgery, 1937 (5 editions). Serv. Rec.: U.S.A.F., 1942-45; Sr. Orth. Consultant, 1942-45; Chf. Surg Br., 1944-45; Legion of Merit, 1946; Mem. Armed Forces Med. Policy Coun., 1951-54; Col. U.S.A.F. Res., 1945—; Mem. V. A. Central Med. Advisory Com., 1946-51. Areas of Rsch.: Orthopaedic Surg.

SHANNON, Paul T. (Ph.D.), Asst. Prof. of Chem. Engr., Purdue Univ., Lafayette, Ind. CHEMICAL ENGINEERING. b. Cleveland, Ohio, May 5, 1932. s. Paul Bernard and Sarah (Meriam) S. Edn.: B.S., in Ch.E., III. Inst. of Technol., 1956; Ph.D., ibid., 1959. m. Patricia Brooke, Jan. 28, 1956. c.: Mark Andrew; Barbara Ann. Exp.: Corn Prods. Refining Co., Argo, Ill., summers, 1952-54; Process Engr., Dev. Engrng., Standard Oil of Ind., Whiting, Ind., summers, 1955-56; Chem. Engr., Corn Prods. Refining Co., Argo, Ill., 1958; Asst. Prof., Chem. Engrng., Purdue Univ., 1958—; Chem. Engr., Humble Oil and Refining Co., Baton Rouge, La., summer, 1961; Visit. Prof. (on leave), Thayer Schl., Dartmouth Coll., 1962—; Asst. Prof., Purdue Univ., 1962—. Hon. Pos.: Mem. Basic Inst. in Nuclear Engrng., Cornell Univ., Brookhaven Natl. Lab., summer, 1959; Visit. Prof., Ford Fdtn. Computer Project, Univ. of Mich., summer, 1960; Shell Oil Fellowship, 1956-59; Ford Fdtn. Post-Doctoral Fellowship, 1962. Mem.: Sigma Xi; Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Am. Soc. of Engrng. Edn.; Chi Psi; Tau Beta Pi; Phi Lambda Upsilon. Contbr. to: A.I.Ch.E. Jour. Areas of Rsch.: Information Theory, Thermodynamics, Batch and Continuous Thickening, Digital Computer Computation.



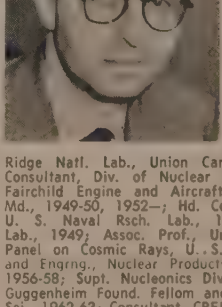
SHAPIRO, Harry Lionel (Ph.D.), Chmn., Dept. of Anthropol., Am. Museum of Nat. History, N. Y. 24, N. Y. Home Add.: 26 E. 91st St., N. Y. 28, N. Y. PHYSICAL ANTHROPOLOGY. b. Boston, Mass., Mar. 19, 1902. s. Jacob and Rose (Clemens) S. Edn.: B.A., Harvard Univ., 1923; M.A., ibid., 1925; Ph.D., ibid., 1926. m. Janice Sandler, June 26, 1938. c.: Thomas Clemens; Harriet Rose; James Earnest. Exp.: Asst. Curator, Dept. of Anthropol., Am. Mus. Nat. History, 1926-31; Assoc. Curator, ibid., 1931-41; Chmn., ibid., 1942—; Prof. of Anthropol., Columbia Univ., 1943—. Hon. Pos.: Pres., Am. Anthropol. Assn., 1948; Pres., Am. Ethnol. Soc., 1942; Pres., Am. Eugenics Soc., 1955—; Am. Assn. Phys. Anthropol., Secy., 1935-39; Vice-Pres., ibid., 1941; Chmn., Div. Anthropol. and Psychol., Natl. Rsch. Coun., 1953; Hon. Assoc. in Anthropol., Bishop Museum, Honolulu, Hawaii. Mem.: Natl. Acad. of Scis. Author: The Heritage of the Bounty, 1936; Migration and Environment, 1939; Man, Culture and Society, Editor, 1956; Aspects of Culture, 1956; The Jewish People: A Biological History, 1960. Contbr. to: Am. Jour. Phys. Anthropol.; Jour. Polynesian Soc.; Bull. and Memoirs Bernice P. Bishop Mus., Honolulu; Jour. de la Societe des Oceanistes; Am. Anthropolt.; Jour. Natl. Acad. of Med.; Eugenics Quart.; Oceania; The Tchng. Biolt. Gen. Int.: Spec. Mission for the Quartermaster Gen., to European Theater of War to Set Up Scient. Method for Identifying the Unknown War Dead, 1946. Areas of Rsch.: Human Biology, Race Mixture, Population, Human Genetics.

SHAPIRO, Lewis (M.D.), Instr. in Dermatol., Columbia Univ., Coll. of Physns. and Surgns., New York, N. Y. Home Add.: 133 Fairview Ave., Great Neck, N. Y. DERMATOLOGY (DERMATOPATHOLOGY. b. N. Y. City, Apr. 24, 1928. s. Henry and Sidonia (Mochson) S. Edn.: A.B., Duke Univ., 1948; M.D., Ibid., 1952. m. Suzanne Bassewitz, Sept. 17, 1954. c.: Denise Marie; Philip Edwin. Exp.: Asst. to Clin. Instr., N. Y. Univ. Postgrad. Med. Schl., N. Y., 1958-61; Clin. Instr., Dermatol., Albert Einstein Coll. of Med., Yeshiva Univ., N. Y., 1958-61; Instr., Dermatol., Columbia Univ. Coll. of Physns. and Surgns., N. Y., 1961—. Mem.: Soc. for Invest. Dermatol.; Am. Acad. of Dermatol. and Syphilol.; Am. Acad. of Peds.; N. Y. Acad. of Med.; Am. Med. Assn.; Am. Assn. for the Adv. of Sci.; Zeta Beta Tau; Phi Beta Kappa. Contbr. to: Jour. Am. Med. Assn.; N. Y. State Jour. of Med. Serv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Dermatopathology.

SHAPIRO, Isadore (Ph.D.), Pres., Universal Chem. Systems, Inc., 11838 West Jefferson Blvd., Culver City, Calif. Home Add.: 5624 W. 62nd St., Los Angeles 56, Cal. CHEMISTRY. b. Minneapolis, Minn., Apr. 25, 1916. s. Jacob and Bessie (Goldman) S. Edn.: B.Ch.E., High Distinction, Univ. of Minn., 1938; Ph.D., ibid., 1944. m. Mae Hirsch, Sept. 4, 1938. c.: Stanley Harris; Jerald Steven. Exp.: Asst. Instr. in Chem., Univ. of Minn., 1938-41; Rsch. Fellow, ibid., 1944-45; Rsch. Chemist, E. I. du Pont de Nemours and Co., Philadelphia, Pa., 1946; Hd. Chem. Lab., U. S. Naval Ordnance Test Station, Pasadena, Calif., 1947-52; Dir., Rsch. Lab., Olin Mathieson Chem. Corp., Pasadena, Calif., 1952-59; Hd., Chem. Dept., Hughes Tool Co., Aircraft Div., Culver City, Calif., 1959-62; Pres., Universal Chem. Syst., Inc., 1962—.

Rater, U.S. Civil Serv. Bd. Examiners, 1948-52; Registered Prof. Engr., Cal. Mem.: Am. Rocket Soc.; Am. Chem. Soc.; Am. Phys. Soc.; N.Y. Acad. Sci.; Soc. of Rheology; Am Inst. of Physics; Am. Inst. Mgmt.; Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon; Participant XVI (Paris) and XVII (Munich), Internatl. Congresses for Pure and Applied Chemistry. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Chem. Phys.; Jour. Inorg. and Nuclear Chem.; Analytical Chem.; Rev. Sci. Inst.; Nature. Patents. Serv. Rec.: 1st Lt., Anti-Aircraft Artillery, U. S. Army, 1941-44. Listed in: A.M.S.; Who's Who in the West; World Who's Who in Commerce and Indus.; Who Is Who in Calif.; Internatl. Year Book and Statemen's Who's Who (London). Special Int.: Boron Hydrides; Organoboranes; Reaction Kinetics; Mass Spectrometry; Infrared Spectroscopy; Nuclear Magnetic Resonance; High Vacuum Equipt.; Catalysis; Surface Chem.; Aging of Precipitates; Water-reactive Chemicals; Propellant and Missile Chemistry.

SHAPIRO, Maurice Mandel (Ph.D.), Supervisory Physicist (Supt.) Nucleonics Div. and Hd., Cosmic Ray Br.), U. S. Naval Rsch. Lab., Wash., D. C. Home Add.: 6511 Elgin Lane, Bethesda 14, Md. PHYSICIST. b. Jerusalem, Palestine, Nov. 13, 1915. s. Asher and Miriam (Grunbaum) S. Edn.: B.S., Univ. of Chicago, 1936; M.S., ibid., 1940; Ph.D., ibid., 1942. m. Inez Weinfield, Feb. 8, 1942. c.: Joel Nevin; Judith Ellen; Raquel Tamar. Exp.: Instr. Physics, Math., Chicago City Colls., 1937-41; Chmn. Dept. Phys. and Biol. Scis., Austin Coll., 1938-41; Instr. Math., Gary Coll., 1942; Physicist, U. S. Navy Dept., 1942-44; Lectr. in Phys. and Math., Geo. Wash. Univ., 1943-44; Group Leader, and Mem. of the Coordinating Coun., Los Alamos Sci. Lab., Univ. of Calif., 1944-46; Sr. Physicist, Lectr., Oak Ridge Natl. Lab., Union Carbon and Carbide Corp., 1946-49; Consultant, Div. of Nuclear Energy for Propulsion of Aircraft, Fairchild Engine and Aircraft Corp., 1948-49; Lectr., Univ. of Md., 1949-50, 1952—; Hd. Cosmic Ray Branch, Nucleonics Div., U. S. Naval Rsch. Lab., 1949—; Consultant, Argonne Natl. Lab., 1949; Assoc. Prof., Univ. of Md., 1950-51; Consultant Panel on Cosmic Rays, U. S. Natl. Comm. IGY; Lectr. Physics and Engrng., Nuclear Products-Erco Div., A.C.F. Industries, Inc., 1956-58; Supt. Nucleonics Div., U. S. Naval Rsch. Lab., 1953—; Guggenheim Found. Fellow and Visiting Prof., Weizmann Inst. of Sci., 1962-63; Consultant, CREI Atomics, Wash., D.C., 1959—. Hon. Pos.: Chmn., U. S. IGY Comm. on Interdisciplinary Rsch., Natl. Acad. of Scis.; Fellow, Am. Physical Soc.; Fellow, A.A.A.S. Nuclear Emulsion Panel, Space Scis. Bd.; Natl. Acad. of Scis., 1959—; U. S. Repr., Steering Comm., Internatl. Coop. Emulsion Flights; Chmn. Communications Comm., Philos. Soc. of Wash., 1956-57, Secy., ibid., 1958-60; Vice Pres., Philos. Soc. of Wash., 1960-61; Rsch. Soc. Am.; Chmn., Assn. of Los Alamos Scientists, 1946; Chmn., Assoc. Oak Ridge Engrs. and Scientists, 1948; Natl. Coun., Federation of Am. Scientists, 1947-55, 1958; Natl. Exec. Comm., Federation of Am. Scientists, 1950-51; Chmn. Comm. on Awards in Physical Sci., Wash. Acad. of Scis., 1958-59. Mem.: Societa Italiana di Fisica; Phi Beta Kappa; Sigma Xi. Contbr. to: Encyclopedia of Physics; Am. Inst. of Physics Handbook. Gen. Int.: U. S. Pioneer in Applying and Developing the Powerful Photographic Emulsion Technique of Nuclear Particle Detection; Helped Establish Existence of the Sigma Hyperon. Areas of Rsch.: Cosmic Rays; High Energy Physics, Especially Properties of Strange Particles; Photographic Emulsion Technique;



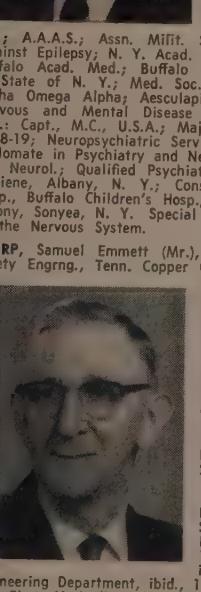
Detection; Neutron Physics and Design of Fission Reactors; ezoelectricity; Hydrodynamics.

IAPIRO, Stanley Harris (Mr.), Asst to the Pres., Universal Chem. stems, Co., 11838 W. Jefferson Blvd., Culver City, Calif. Home Add.: 5624 W. 62nd St., Los Angeles 56, Calif. CHEMISTRY. b. Minneapolis, Minn., Apr. 4, 1941. s. Dr. Isadore and Mae (Hirsch) S. Edn.: B.S., Univ. of Calif. at L.A., 1962. Exp.: Mem., Tech. Staff, Chem. Services, Los Angeles, Calif, 1960—; Asst. to the Pres., Universal Chem. Systems, Co., Culver City, Calif., 1962—. Hon Pos.: Pres., UCLA Chapt., Alpha Chi Sigma; Vice-Pres., UCLA Student Chapt. of Am. Chem. Soc., 1960-61. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Alpha Chi Sigma. Areas of Rsch.: Powder Technology, Inorganic Chemistry, Military Chemicals.

ARP, Edward Affleck (M.D.), Prof. of Neurol. Emer. and Assoc. f. of Psychiatry Emer., Med. Schl., Univ. of Buffalo. Home Add.: 81 Linwood Ave., Buffalo 9, N. Y. NEUROLOGY AND PSYCHIATRY. b. Bridgeport, Ohio, Nov. 20, 1875. s. J. Frank and Mary (Affleck) S. Edn.: M.D., Univ. of Buffalo Med. Schl., 1898. m. Helen Gertrude Sharp, May, 1900. c.: Eleanor. Exp.: Assoc. in Neuro-Anatomy, Assoc., Asst. Prof., Assoc. Prof. and Prof. of Neurol., Med. Schl., Univ. of Buffalo, Buffalo, N. Y., 1912-45; Prof. of Neurol. Emer., ibid., 1945—; Assoc. Prof. of Psychiatry, ibid., 1934-45; Assoc. Prof. of Psychiatry Emer., ibid., 1945—. Hon. Pos.: Pres., Med. Soc. Co. of Erie, 1933. Mem.: A.M.A.; Am. Neurol. Assn.; Am. Psychiatric Assn.; Am. Acad. Neurol.; Assn. for Rsch. in Nerv. and Mental.

; A.A.A.S.; Assn. Milit. Surgeons of U. S. Natl. League inst Epilepsy; N. Y. Acad. of Med.; N. Y. Neurological Soc.; falo Acad. Med.; Buffalo Neuropsychiatric Soc.; Med. Soc. State of N. Y.; Med. Soc. County of Erie; Nu Sigma Nu; ha Omega Alpha; Aesculapian Club; etc. Contbr. to: Jour. vous and Mental Disease Trans. Am. Neurol. Assn. War .: Capt., M.C., U.S.A.; Major., M.C., U.S.A.; A.E.F., France, 8-19; Neuropsychiatric Service in Base Hospitals. Gen. Int.: lomate in Psychiatry and Neurol. from Am. Bd. of Psychiatry Neurol.; Qualified Psychiatrist certified by Dept. of Mental iene, Albany, N. Y.; Consulting Neurologist, Buffalo Gen. p., Buffalo Children's Hosp., E. J. Meyer Mem. Hosp., Craig ony, Sonyea, N. Y. Special Int.: Poliomyelitis and Infections the Nervous System.

RP, Samuel Emmett (Mr.), Licensed Profl. Engr., Supt. of ty Engrng., Tenn. Copper Co., Div. Tenn. Corp., Copperhill, Tenn. b. Carrollton, Carroll Co., Ga., Sept. 16, 1898. s. Emmett Andrew and Mary Arcadia (Dimmock) S. Edn.: B.S., E.M., No. Ga. Coll., Div. Univ. Syst. of Ga., 1920-24. m. Nell Garner, Mar. 23, 1934. c.: Eleanor G. Exp.: Draftsman and Transitman, Dixie Construction Co., Div. Ala. Power Co., Birmingham, Ala., 1924; Engr., ibid., 1925-48; Mining Engr., Tenn. Copper Co., Mining Dept., Copperhill, Tenn., 1925-26; Mining Safety Engr., ibid., 1927-37; Consulting Engr., N. C. Exploration Co., Div. Tenn. Corp., Fontana, N. C., 1934-43; Chief Safety Engr., Tenn. Copper Co., Personnel Dept., Copperhill, Tenn., 1938-48; Dir. of Safety Engineering, Tenn. Copper Co., Safety neering Department, ibid., 1949—. Hon. Pos.: Chmn., Official First Methodist Church, Copperhill, Tenn.; Pres., P.T.A., town, Tenn., 1945-47; Mem., Bd. of Edn., Polk Co., Tenn., -51; Chmn., 1950-51; Chmn., Bd. of Trustees, Copper Basin Hosp., 1952—; Dir., Copperhill-Ducktown-Polk County Civil nse; Gen. Chmn., Mining Sect., Natl. Safety Coun., 1958- Mem.: Copper Basin Golf Club (Charter Mem.); Copper- Kiwanis Club; Fellow, A.A.A.S.; Am. Ind. Hyg. Assn.; Am. of Mining; Metallurgical and Petroleum Engrs.; Fellow, Soc. of Safety Engrs.; T.C. Engrs. Club; Veterans of Y; U. S. Civil Defense Coun.



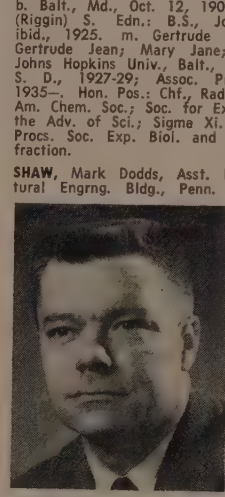
TTUCK, Alberta Iliff (Mrs.), Home Add.: 2078 Clermont St., er, Colo. BIOCHEMISTRY AND PHYSIOLOGICAL GROWTH. b. er, Colo., Nov. 24, 1909. d. Wm. S. and Alberta (Bloom) I. A.B., Univ. of Denver, 1931; M.S., ibid., 1932; Ph.D., Univ. olo., 1942. m. Robert C. Shattuck, M.D., 1959. c.: Robert Donald M. Exp.: Rsch. Fellow, Child Rsch. Coun., Univ. of Colo. Schl. of Med., 1932-46; Instr. in Physiol. Growth, Dept. of the Study of Human Growth, ibid., 1946-48; Asst. Prof. in Physiol. Growth, Dept. of the Study of Human Growth, ibid., 1948-59. Mem.: A.A.A.S. (Fellow); Colo.-Wyo. Acad. of Sci.; Sigma Xi; Iota Sigma Pi; Pi Beta Phi. Contbr. to: Am. Jour. of Diseases of Children; Jour. of Lab. and Clin. Med.; Jour. of Pediatrics; Jour. of Nutrition; Am. Jour. of Physiol.; Am. Jour. of Clin. Pathol.; Pediatrics; Child Dev. Areas of Rsch.: Basal Metabolism of Children and Young Adults.

SHAW, Albert Norman (LL.D.), Retired Physicist, McGill Univ., Montreal 2, Canada. Home Add.: 2125 Sunset Rd., Montreal 16, Canada. PHYSICS. b. Dec. 31, 1886, England. s. John Henry Shaw and Robina (Milne) S. Edn.: B.A., McGill Univ., 1908; M.Sc., ibid., 1910; D.Sc., ibid., 1915; LL.D., ibid., 1952; B.A., Cambridge, Eng., 1913; M.A., ibid., 1927. m. Ethel Skelton of Montreal, 1913. c.: Hilda Margaret (Mrs. J. H. Shipley) Shaw. Exp.: Demonstrator in Physics, McGill Univ., 1908-10; King Res. Fellow, ibid., 1909-10; Lectr. in Physics, ibid., 1910-11; 1851 Exhibition Scholar, Cambridge, Eng., 1911-13; Lectr. in Physics, MacDonald Coll., 1913-18; Assoc. Prof., McGill Univ., 1918-26; Prof. of Physics, ibid., 1926-52; Chmn. of Dept., 1935-52; Retired, 1952—. Mem.: Fellow, Royal Soc. of Canada; Fellow, Am. Phys. Soc.; Royal Meterol. Soc.; Sigma Xi; etc. Author of Over 50 Scientific Articles and Papers. Special Int.: Thermodynamics, Hygrometry, Electrical Measurements and Atomic Physics.

SHAW, Edward James (M.D.), Asst. Clinical Prof. of Surgery, N. Y. Med. Coll., 1249 Fifth Ave., N. Y. 29, N. Y. Home Add.: 4 East 95th St., New York, N. Y. SURGERY. b. N. Y. C., Oct. 22, 1914. s. Samuel Johnson and Adele (Herndon) S. Edn.: B.A., Columbia Coll., N. Y. C., 1934; M.D., Yale Univ. Schl. of Medicine, 1937. m. Irene K. Lovenbein, May 31, 1941. c.: Edward J., Jr.; Emily Kathryn; Barbara Ann. Exp.: Instr. in Surgery, N. Y. Med. Coll., 1954-55; Assoc. in Surgery, ibid., 1955-56; Asst. Clinical Prof. of Surgery, ibid., 1956—. Hon. Pos.: Fellow, Internatl. Coll. of Surgs.; Mem., N. Y. Acad. of Gastroenterol.; N. Y. and Bklyn. Reg. Comm. of Trauma of Am. Coll. of Surgs.; Att. Surg., Doctors Hosp., N. Y. City; Asst. Att. Surg., Flower Fifth Ave. Hosp.; Assoc. Visit. Surg., Metropolitan Hosp. and Associate Visiting Surgeon, Bird S. Coler Hospital. Mem.: N. Y. Co. and St. Med. Soc.; Am. Coll. of Surgeons, Fellow; A.M.A.; N. Y. St. Soc. of Industrial Medicine; Industrial Med. Assn.; N. Y. Acad. of Medicine, Fellow; Am. Geriatric Soc.; Assn. of Military Surgeons of the U. S.; A.A.A.S. Serv. Rec.: U. S. Army, 1941-46.

SHAW, Edwin H., Jr. (Ph.D.), Prof. of Biochem., State Univ. of S. D., Vermillion, S. D. Home Add.: 227 So. Plum St., Vermillion, S. D. X-RAY DIFFRACTION OF BIOLOGICAL MATERIALS. b. Balt., Md., Oct. 12, 1900. s. Edwin H. and Blanche Belle (Riggin) S. Edn.: B.S., Johns Hopkins Univ., 1921; Ph.D., ibid., 1925. m. Gertrude Bell Walker, June 12, 1929. c.: Gertrude Jean; Mary Jane; William Edwin. Exp.: Postdoc., Johns Hopkins Univ., Balt., Md., 1925-27; Asst. Prof., Univ. of S. D., 1927-29; Assoc. Prof., ibid., 1929-35; Prof., ibid., 1935—. Hon. Pos.: Chf., Radef. Serv., S. D. Civil Defense. Mem.: Am. Chem. Soc.; Soc. for Exptl. Biol. and Med.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Jour. of Biol. Chem.; Procs. Soc. Exp. Biol. and Med. Areas of Rsch.: X-Ray Diffraction.

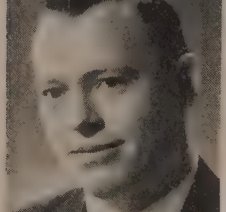
SHAW, Mark Dodds, Asst. Prof. Agric. Engrng., 202 Agricultural Engrng. Bldg., Penn. State Univ., University Park, Pa. Home Add.: 1017 Houserville Rd., State College, Pa. AGRICULTURAL ENGINEERING. b. Karuizawa, Japan, Aug. 22, 1924. s. Mark Revell and Alma Cox (Dodds) S. Edn.: B.A., Earlham Coll., 1945; B.S., Penn. State Univ., 1954; M.S., ibid., 1958. m. Mary Suzanne Dearden, Aug., 1948. c.: Karen; Elizabeth; Craig; Jennifer; Richard. Exp.: Relief Worker, Am. Friends Service Comm., China, 1946-50; Area Dir., ibid., Phila., Pa., 1950-51; Instr., Penn. State Univ., University Park, Pa., 1954-58; Asst. Prof., ibid., 1958—. Mem.: A.A.A.S.; Am. Soc. of Agric. Engrs.; Am. Soc. for Engrng. Edn.; Soc. for Social Responsibility in Sci.; Phi Kappa Phi; Sigma Xi; Gamma Sigma Delta. Contbr. to: Agricultural Engrng. Areas of Rsch.: Frozen Food, Soil Moisture Measurement, Bacteriological Treatment of Individual Water Supplies.



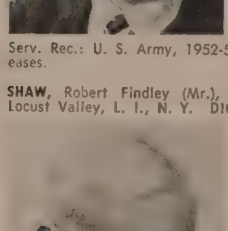
SHAW, Myril Clement (Ph.D.), Rsch. Dir., Asbestos Textile Inst., Philadelphia 44, Pa. Home Add.: 563 Gates St., Phila. 28, Pa. CERAMICS. b. Columbus, Ohio, Nov. 4, 1907. s. Joseph Bradfield and Marian Margerite (Wilde) S. Edn.: B.Sc., Pa. St. Coll., 1929; M.Sc., ibid., 1930; Ph.D., Ohio St. Univ., 1934. m. Garnet Imogene Coleman, July 9, 1945. c.: Marilyn Kay; Myril C., Jr. Exp.: Rsch. Engr., Ohio St. Engrng. Expt. Sta., 1930-34; Supt., Asst. Mgr., Mgr., Edward Orton, Jr. Ceramic Foundation, 1934-44; Ceramic Rsch. Engr. General Ceramics Co., 1944-46; Rsch. Specialist, Rutgers Univ., 1946-50; Rsch. Dir., Asbestos Textile Inst., 1950—. Mem.: Am. Ceramic Soc.; Am. Soc. for Testing Materials; Keramos; Sigma Xi; Phi Psi. Contbr. to: Jour. Am. Ceramic Soc.; Bull. Am. Soc. for Testing Materials. Special Int.: Ceramics—Temperature Measuring Pyrometric Cones, Ceramic Titania Capacitors; Asbestos Textiles—Asbestiform Minerals and Asbestos Textile Materials.

SHAW, Marvin E. (Ph.D.), Professor, Dept. of Psychology, Univ. of Fla., Gainesville, Fla. Home Add.: 3809 S.W. 3rd Ave., Gainesville, Fla. PSYCHOLOGY. b. Bellefonte, Ark., Aug. 15, 1919. s. Carl E. and Eula (Brown) S. Edn.: A.B., Ark. Coll., 1947; M.A., Univ. of Ark., 1949; Ph.D., Univ. of Wis., 1953. m. Lilly May Street, 1947. c.: Michael David. Exp.: Instr., Ark. Coll., Batesville, Ark., 1946-47; Instr., Univ. of Ark., 1948-50; Rsch. Assoc., The Johns Hopkins Univ., 1953-55; Asst. Prof., ibid., 1955-56; Assoc. Prof., Mass. Inst. of Tech., 1956-59; Assoc. Prof., Univ. of Fla., 1959-62; Prof., ibid., 1962—. Mem.: Am. Psychol Assn.; Am. Assn. for the Adv. of Sci; Psychonomic Soc.; Sou. Soc. for Philos. and Psychol.; Fla. Psychol. Assn.; Sigma Xi; Fellow, Intl. Instit. of Arts and Letters. Contbr. to: Jour. Abnorm. Soc. Psychol.; Jour. Exp. Psychol.; Jour. Persn.; Jour. Psychol.; Jour. Genet. Psychol. Psychol. Repts.; Ann. Rev. Psychol. Serv. Rec.: U. S. Army Air Force, 1943-45. Areas of Rsch.: Psychology; Group Dynamics.

SHAW, Ralph Arthur (M.D.), Intern, Evanston Hospital, Evanston, Ill. Home Add.: 111 Central Park Ave., Wilmette, Ill. BIOCHEMISTRY. b. Peoria, Ill., Dec. 27, 1930. s. Ralph S. and Hazel Marie (Redding) S. Edn.: B.S., Northwestern Univ., 1954; M.S., Purdue Univ., 1956; Ph.D., ibid., 1958; M.D., Northwestern Univ., 1962. m. Barbara Regina Christman, June 4, 1955. c.: Karl Gregory; Regina Ann. Exp.: Post Doctorate, Northwestern Med. Schl., 1958-60; Rsch. Chemist, Children's Meml. Hosp., Chicago, Ill., 1960—. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Lambda Upsilon; Alpha Chi Sigma; Sigma Xi; Zeta Psi; Phi Rho Sigma. Author: Radioisotope Experiments for the Chemistry Curriculum, 1960. Contbr. to: Jour. of Animal Sci.; Proc. Soc. Exptl. Biol. and Med.; Arch. Biophys.; Nature. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Metabolic Diseases.



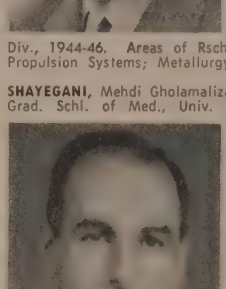
SHAW, Robert Findley (Mr.), Systems Consultant, Bayville Rd., Locust Valley, L. I., N. Y. DIGITAL DATA SYSTEMS. b. Warsaw, Ohio, July 10, 1915. s. Rev. Edward B. and Jean (Smith) S. Edn.: A.B., Princeton, 1937; Post. Grad. Work, Moore Schl. of E.E., Univ. of Pa., 1937-42. m. Vilma (Fatalin), 1956. Exp.: Rsch. Engr., Moore Schl. of E.E., Univ. of Pa., Phila., Pa., 1943-46; Rsch. Engr., Electronic Computer Proj., Inst. for Adv. Study, Princeton, N. J., 1946; Senior Proj. Engr., Univac Div., Sperry Rand Corp., Phila., Pa., 1946-51; Tech. Advisor to Div. Dir., Electronic Computer Div., Underwood Corp., N. Y., 1951-57; Vice-Pres., Digitronics Corp., Albertson, L. I., N. Y., 1957-61; Consultant, 1961—. Mem.: A.A.A.S.; I.R.E.; A.C.M.; Sigma Xi. Contbr. to: Proc. of the I.R.E.; Rev. of Scientific Instruments; Electronics, Electronic Equip. Engrng.; Control Engrng. Areas of Rsch.: Digital Computers, Digital Data Handling Systems.



SHAW, Robert Harold (Ph.D.), Prof., Ia. St. Univ., Ames, Ia. Home Add.: 1431 Duff Ave., Ames, Ia. AGRICULTURAL CLIMATOLOGY. b. Madrid, Ia., June 26, 1919. s. Mathew M. and Lois (Stover) S. Edn.: B.S., Ia. St. Univ., 1941; M.S., Ph.D., ibid., 1942. m. Adelaide Urbutt, 1945. c.: Robert; Thomas; Mary Marjorie. Exp.: Assoc., Ia. St. Univ., 1945-48; Asst. Prof., ibid., 1948-49; Assoc. Prof., ibid., 1949-57; Prof., ibid., 1957—. Hon. Pos.: Consultant Pres. Adv. Comm. Weather Control; Mem., Comm. on Agric. Meteor. and Climatol., N.R.C. Agric. Bd.; Chmn., Comm., Agric. Meteor. and Climatol., Am. Soc. Agron. Mem.: Soil Sci. Soc. of Am.; Am. Meteor. Soc.; A.G.U.; Internatl. Soc. Bioclimatol.; Phi Kappa Phi; Sigma Xi; Gamma Sigma Delta. Contbr. to: Agron. Jour.; Proc. Soil Sci. Soc. of Am.; Bull. Am. Meteor. Soc.; Ia. St. Jour. Sci.; Plant Physiol.; Phytopathol.; Monthly Weather Rev.; Forest Sci. Serv. Re U. S. Navy, 1942-45. Areas of Rsch.: Microclimatol., Weath and Crop Yield Relationships; Statistical Analysis of Weath Data.

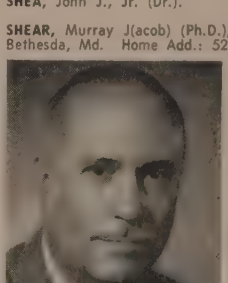
SHAW, William Corr (Ph.D.), Prof. of Physics, S.I.U., Edwardsville, Ill. Home Add.: 1604 W. Main, Collinsville, Ill. PHYSI b. Des Moines, Ia., Mar. 31, 190 s. Harry Elsworth and Bess (Wheat) S. Edn.: B.A., Corn Coll., 1930; M.S., Purdue Uni 1932; Ph.D., Ia. St. Univ., 195 m. Dorothy Spicely, 1933 (dec m. 2nd. Ruth Meeker, 1962. Suzanne; Lucinda; Sara; Jan Exp.: Rsch. Asst., Inst. for Aton Rsch., Ames, Ia., 1950-53; Physicist, Midwest Rsch. Ins Kansas City, Mo., 1953-55; S Analyst, Naval Ord. Test Statio China Lake, Calif., 1955-59; Pro Sou. Ill. Univ., 1959—. Mem Sigma Xi; Sigma Pi Sigma; Mu Epsilon; R.E.S.A.; A.I.P.; A.A.U.P.; Am. Astron. Soc. Co tbr. to: Physical Rev.; Rev. Sci. Instrums. Serv. Rec.: Nav Bur. of Ord., Rsch. and Deve Div., 1944-46. Areas of Rsch.: Solid State Physics; Underwat Propulsion Systems; Metallurgy; Micro-Physics.

SHAYEGANI, Mehdi Gholamalizadeh (Ph.D.), Rsch. Assoc., Dept. Grad. Schl. of Med., Univ. of Pa., Phila., Pa. Home Add 158 "B" W. Md. Ave., Alda Pa. MEDICAL MICROBIOLOG b. Rasht, Iran, Apr. 2, 1926. Abbas and Shahrbanou (Gohari) Edn.: D. of Pharm., Tehran Univ Tehran, Iran, 1952; M.S., Uni of Pa., 1958; Ph.D., ibid., 196 m. Asieh, Aug. 22, 1961. Exp Dir. of Lab., Pub. Health Cente Caspian Region and Isfahan, Ira 1952-55; Hd. of Bacteriology an Serology, Dept. of Parasitolog Tehran Univ., Tehran, Iran, 195 57; Instr., Schl. of Med., Uni of Pa., 1958-61; Rsch. Assoc Inst. of Microbiology, Rutger Univ., 1961-62; Rsch. Assoc Univ. of Pa., 1962—. Mem.: Sigm Xi; Am. Assn. for the Adv. of Sci Am. Soc. for Microbiology; Th Theobald Smith Soc., N. J. Co tbr. to Jour. of Exptl. Med.; Jour. Gen. Microbiol.; Proc. So Exptl. Med. Areas of Rsch.: Host, Parasite Relationships Cellular Level; Intracellular Study of Staphylococci; The Effe of Endotoxin on Monocytes.



SHEA, John J., Jr. (Dr.).

SHEAR, Murray J(acob) (Ph.D.), Chf. of Lab., Natl. Cancer Inst Bethesda, Md. Home Add.: 5203 Battery Lane, Bethesda 14, M CANCER RESEARCH. b. Brooklyn N. Y., Nov. 7, 1899. s. Victo J. and Henrietta (Robinson) Edn.: B.S., City Coll. of N. Y 1920; M.A., Columbia Univ., 192 Ph.D., ibid., 1925. m. Rose Ros man, Aug. 14, 1935. c.: Davi Ben; Jonathan; Victor Henry Exp.: Asst., Chem. Dept., Colum bia Univ., N. Y., 1923-25; Rsch Chemist, Ped. Rsch. Labs., Th Jewish Hosp. Brooklyn, N. Y 1925-31; Biochemist, Cancer In vest., U. S. Pub. Health Serv 1931-51; Chf. of Lab., Natl. Can cer Inst., 1951—. Hon. Pos. Pres., Am. Assn. Cancer Rsch 1960-61; Chmn., Chemotherap Comm., Internatl. Union Againi Cancer, 1954—; Chmn., Financ Comm., ibid., 1958—. Mem: Am Soc. Biol. Chem., Am Soc Pharmacol.; Soc Exptl Biol Med Am. Assn Cancer Rsch., Wash Acad of Med., Royal Soc Med London; Societa Italiana di Cancerologia; Phi Beta Kappa, Sigm Xi; Phi Lambda Upsilon; Harvard Club of Boston; Cosmos Club Contbr. to: Jour. of Natl. Cancer Inst., Am. Jour. of Cancer Jour. of Biol. Chem.; Proc. Soc. Exptl. Biol. and Med. Serv Rec.: U. S. Army, 1918. Gen. Int.: Pioneer in Carcinogenesis (Causation of Cancer with Chemicals and in Chemotherapy of Cancer. Areas of Rsch.: Mechanism of Deposition of Bone Salts; Chemical Carcinogenesis, Chemotherapy and Immunology of Cancer; Management Policy for Scientific Personnel.

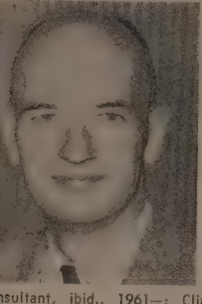


SHEARMAN, Robert William (Mr.), Secy., The Metallurgical Soc of A.I.M.E. and Asst. Secy., Am. Inst. of Mining, Metall., and Petrol. Engr. (A.I.M.E.), 345 E. 47th St., N. Y. 17, N. Y. Hom Add.: 21 Miles Rd., Darien, Conn. METALLURGICAL SOCIETY O A.I.M.E. b. Brooklyn, N. Y., June 7, 1916. s. William H. and Florence Emily (Bell) S. Edn.: A.B., Chem., Princeton Univ 1937. m. Dorothy French Dodge, July 3, 1954. c.: Grad Dodge; Edith Bell. Exp.: Staff, Pgh. Plate Glass Co., Newark

. J., 1937-39; Staff, Bethlehem Steel Co., Bethlehem, Pa., 940-41; Staff, Union Carbide Corp., 1946-51; ibid., 1953-54; ecy., The Metall. Soc. of A.I.M.E., 1955—. Mem.: Am. Inst. f Mining, Metall., and Petrol. Engr.; Am. Chem. Soc.; Sigma i, Assoc. Mem.; Appalachian Mtn. Club. Contbr. to: Jour. of letals. Serv. Rec.: U. S. Army, 1941-46; U. S. Air Force, 951-53.

HEEHAN, William Francis (Ph.D.), Assoc. Prof., Univ. of Santa lara, Santa Clara, Calif. Home Add.: 180 Westridge Dr., Santa lara, Calif. PHYSICAL CHEMISTRY. b. Chicago, Ill., Oct. 19, 926. s. William Francis and Catherine (Salisbury) S. Edn.: .S., Loyola Univ. of Chicago, 1948; Ph.D., Calif. Inst. of Tech., 952. m. Teresa Bailey, Oct. 3, 1953. c.: Michael J.; Patrick ; Catherine J.; Delphine M.; Daniel P.; John H. Exp.: Chemist, ell Devel. Co., Emeryville, Calif., 1952-55; Instr. to Assoc. rof., Univ. of Santa Clara, 1955—. Mem.: Am. Chem. Soc.; gma Xi; Pi Gamma Mu; Pi Alpha Lambda. Author: Physical emistry, 1961. Contbr. to: Jour. of Am. Chem. Soc.; Jour. Chem. Phys. Serv. Rec.: U. S. Army Air Force, 1945. Areas Rsch.: Structural Chemistry; Valence Theory.

HEEHY, William Robert (M.D.), Psychiatrist, 3031 Telegraph ve., Berkeley 5, Calif. Home Add.: 44 Avon Rd., Berkeley 7, Calif. PSYCHIATRY. b. Portland, Ore., Mar. 28, 1919. s. William James and Harriet Adele (Garretson) S. Edn.: A.B., Stanford Univ., 1940; M.D., Univ. of Mich., 1943. m. Jacqueline Bloch, Aug. 8, 1953. c.: Michael Hamilton; Margaret Marie; Barbara Adele. Exp.: Intern, San Francisco Hosp., San Francisco, Calif., 1943-44; Resident in Psychiatry, Univ. of Chicago Clinics, 1946-49; Fellow, Inst. for Juvenile Rsch., Chicago, Ill., 1950; Staff Psychiatrist, ibid., 1950-51; Child Psychiatrist, Berkeley St. Mental Hygiene Clinic, Berkeley, Calif., 1951-52; Chf. Psychiatrist, ibid., 1952-55; Consultant, ibid., 1955—; Dir. of Psychiatric Training, Herrick Mem. Hosp., Berkeley, Calif., 1957-61;

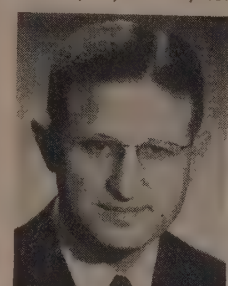


nsultant, ibid., 1961—; Clin. Instr. in Psychiatry, Univ. of if. Schl. of Med., 1951—. Hon. Pos.: Secy.-Treas., No. Calif. ychiatric Soc., 1953-55; Vice-Pres., ibid., 1955-56; Pres., East Psychiatric Assn., 1956-57. Mem.: Am. Med. Assn.; Calif. d. Assn.; Alameda Contra Costa Med. Assn.; Fellow, Am. ychiatric Assn.; Am. Orthopsychiatric Assn.; Am. Assn. Adv. ; No. Calif. Psychiatric Soc.; East Bay Psychiatric Assn.; Gamma Delta; Phi Chi. Serv. Rec.: U.S.N.R., 1944-46.

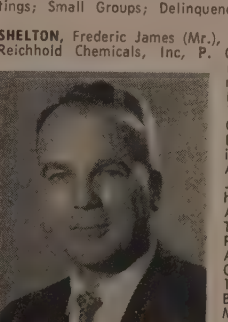
EELY, Clyde Quitman (Ph.D.), Prof. of Chem., Miss. St. Univ., te College, Miss. Home Add.: Box 574, State College, Miss. EMISTRY. b. Pelahatchie, Miss., July 12, 1904. s. Charlie and Ida (Marshall) S. Edn.: B.A., Miss. Coll., 1925; M.S., St. Univ., 1926; Ph.D., Ohio St. Univ., 1930. m. Katherine kervill, Sept. 4, 1930. c.: Clyde Q., Jr.; William B.; Rob- A. Exp.: Assoc. Prof., Miss. St. Univ., 1929-48; Prof., ibid., 8—. Hon. Pos.: Exec. Off. Miss. Acad. Sci., 1940—; Dist. r. Natl. Exchange Club. Mem.: Fellow, Am. Assn. Adv. ; Am. Chem. Soc.; Miss. Acad. of Sci.; Sigma Xi; Gamma ha; Alpha Chi Sigma; Phi Kappa Phi; Kappa Sigma; Blue Key; icron Delta Kappa; Exchange Club, Past St. Pres. Author: sissippi State University Freshman Chemistry Laboratory nual, 1952; Homology and Periodicity of the Atoms, 1947. tbr. to: Jour. Miss. Acad. of Sci.; Ind. and Eng. Chem.; Perfumer; Jour. of Chem. Edn. Gen. Int.: Outstanding pa Sigma of 1960. Areas of Rsch.: Catalytic Oxidation of or Phase Hydrocarbons; Atomic Structure; Organic Synthesis; rosion Effects of Naphtha Solutions of Sulfur and Sulfur pounds; Zeolite Softening of Water; Action of Refining nts on Naphtha Solutions of Pure Organic Sulfur Compounds.

ETS, Raymond Franklin (M.D.), Prof., Internal Med., Univ. of Ia. City, Ia. Home Add.: 323 Koser Ave., Ia. City, Ia. INTERNAL MEDICINE. b. Bentley, Ill., June 15, 1914. s. Raymond Franklin and Estella Jane (McCallister) S. Edn.: A.B., Carthage Coll., 1936; M.S., Univ. of Ill., 1940; M.D., ibid., 1940. m. Viola Miriam Meining, Jan. 7, 1946. c.: Peter Raymond; Michael Frederick; Cordelia Ann. Exp.: Intern, St. Univ. of Ia., 1940-41; Resident, ibid., 1946-49; Instr., Prof., ibid., 1949—; Attending Physician, V. A. Hosp., Iowa City, Ia., 1950—. Mem.: Assn. Am. Med. Colls.; A.M.A.; Central Soc. for Clinical Rsch.; Ia. Clin. Soc.; Soc. of Nuclear Med.; Central Clin. Rsch. Club; Ia. Heart Assn.; Am. Heart Assn.; Am. Soc. of Hematology; Sigma Xi; Am. Coll. of Physicians; A.A.U.P.; Sierra ; The Wilderness Soc.; Izaak Walton League; Natl. Parks . Contbrng. Author: Diseases of the Chest, 1959. Contbr. Sci.; Am. Pract.; Jour. Clin. Invest.; Geriatrics; Jour. Lab. Clin. Med.; Proc. Soc. Exptl. Med. and Biol.; Jour. A.M.A.; s. Assn. Am. Phys.; Jour. Applied Physiol. Serv. Rec.: . Navy (MC), 1941-45. Areas of Rsch.: Hematol.

SHEFELMAN, Harold S. (LL.D.), Partner, Roberts, Shefelman, Lawrence, Gay & Moch, 1612 Northern Life Tower, Seattle 1, Wash. Home Add.: 1100 University St., Seattle 1, Wash. PLANNING, LOCAL AND STATE GOVERNMENT, TAXATION. b. N.Y.C., Apr. 15, 1898. s. Joseph and Henrietta (Lovett) S. Edn.: Ph.B., Brown Univ., 1920; LL.B., Yale Univ., 1925; LL.D., Seattle Pacific Coll., 1962. m. 1st. Madolene Whitehead, Aug. 12, 1924 (dec.). m. 2nd. Sylvia Rogers, Dec. 19, 1958. c.: Thomas Whitehead; Mrs. June S. Hensley. Exp.: Partner, Roberts, Shefelman, Lawrence, Gay & Moch, Seattle, Wash., 1928—; Lectr., Schl. of Law, Univ. of Wash., 1930-57. Hon. Pos.: Pres., Am. Soc. of Planning Officials; Pres., Bd. of Regents of Univ. of Wash.; Trustee, Brown Univ.; Pres., Municipal League of Seattle and King Co.; Pres., Seattle Bar Assn.; Chmn., Seattle City Planning Comm.; Chmn., Seattle Civic Ctr. Comm.; Chmn., Wash. St. Little Hoover Comm.; Chmn., Wash. St. Tax Advisory Coun.; Chmn., Municipal Law Sect. of Am. Bar Assn.; Chmn., Governor's Comm. on Metropolitan Area Problems; Chmn., Wash. St. Delegation to White House Conf. on End.; Dir., Natl. Municipal League; Dir., Natl. Planning Assn.; Dir., Century-21 Exposition; Dir., Natl. Civil Serv. League; Dr., Natl. Metropolitan Area Problems Conf.; Dir., Am. Judicature Soc.; Wash. St. Bd. of Edn.; Coun. on Legal Edn. of Am. Bar Assn. Mem.: Am. Law Inst.; Am. Acad. of Soc. and Polit. Sci.; Acad. of Polit. Sci.; Phi Beta Kappa; Order of the Coif; Seattle C. of C. Serv. Rec.: U. S. Army, W.W. I. Gen. Int.: Recipient, Natl. Municipal League Distinguished Citizen Award, 1956; Outstanding Citizen Award, Municipal League of Seattle and King Co., 1961; Citation of Honor, Wash. St. Chapt., Am. Inst. of Architects, 1955; Alumni Citation, Brown Univ., 1959.



SHELLHASE, (Major) Leslie John, Rsch. Social Worker, Dept. of Psychiatry, Walter Reed Army Inst. of Rsch., Hq. U.S.A. Med. Rsch. and Dev. Command, Wash., D. C. Home Add.: 9407 Flower Ave., Silver Spring, Md. INDIVIDUAL AND GROUP HUMAN BEHAVIOR; MENTAL HEALTH; SOCIAL WORK; SOCIAL ACTION. b. Hardy, Neb., Jan. 12, 1924. s. John Clayton and Sanna (Muth) S. Edn.: A.B., Midland Coll., 1947; M.S.W., Univ. of Neb., 1950; D.S.W., Catholic Univ., 1961. m. Fern Kleckner, June 6, 1948. c.: Jeremy Clayton; Joel Kleckner. Exp.: Parole Supvr., Dept. of Child Welfare, Omaha, Neb., 1948-49; Psychiatric Social Work Intern, Letterman Gen. Hosp., 1950-51; Chf. Psychiatric Social Worker, Mental Hyg. Consultation Serv., Fort Ord, Calif., 1952-55; Chf. Med. Social Worker, Walter Reed Gen. Hosp., Army Med. Ctr., 1955-56; Rsch. Social Worker, Dept. of Psychiatry, Div. of Neuropsychiatry, Walter Reed Army Inst. of Rsch., 1957—. Hon. Pos.: Coun. Mem., Social Work Edn.; Chmn., Monterey Chapt., A.A.S.W., 1954-55; Mem., Exec. Comm., Metro-Wash. Chapt., N.A.S.W., 1959-61; Chmn., Rsch. Sect., 1961—. Mem.: Grp., Med., Psychiat. and Rsch. Sections, Natl. Assn. of Social Workers; Natl. Conf. on Social Welfare; A.A.A.S.; Grp. Psychotherapy. Contbr. to: Internatl. Jour. Social Psychiat.; Grp. Psychotherapy; Mental Hyg.; Proc., Army Social Work Conf. Author: The Group Life of the Schizophrenic Patient, 1961; Psychiatric Social Work in Hospital, Home and Community, 1962. Service Record: U. S. Army, 1942-46, 1949—. Areas of Rsch.: Uti'ization of Social Science in Therapeutic and Regimented Settings; Small Groups; Delinquency; Research-Service Coordination.



SHELTON, Frederic James (Mr.), Tech. Dir., Pacific Northwest Div., Reichhold Chemicals, Inc, P. O. Box 1482, Tacoma 1, Wash. Home Add.: 511 No. W St., Tacoma 3, Wash. CHEMICAL ENGINEERING. b. Seattle, Wash., Feb. 10, 1928. s. Frederic Steele and Charlotte K. (Newberry) S. Edn.: B.S., Univ. of Wash., 1949; M.S., ibid., 1956. m. Nancy Grimes, Aug. 6, 1949. c.: Mark; Gayle; James. Exp.: Chem. Engr., Reichhold Chemicals, Inc., 1950-52; Acting Tech. Dir., ibid., 1952-53; Tech. Dir., ibid., 1953—. Hon. Pos.: Chmn., Puget Sound Sect., Am. Inst. Chem. Engrs., 1959-60; Co-Chmn., Wood Industries Conf., 1959; U. S. Dept. of Commerce, B.D.S.A., Exec. Reserve, 1960—. Mem.: Am. Inst. Chem. Engrs.; Am. Chem. Soc.; A.A.A.S., Fellow; Forest Products Rsch. Soc.; Am. Wood Preservers Assn.; Sigma Xi; Tacoma Engrs. Club. Contbr. to: Analyt. Chem.; Forest Products Jour.; and others. Serv. Rec.: U.S.N., 1945-46. Gen. Int.:

U. S. and Foreign Patents (25); Registered Profl. Engr., St. of Wash. Areas of Rsch.: Plywood Adhesives, Partial Oxidation of Organic Compounds, Organic Chlorinations, Laboratory Admin.

SHELTON, Lewis Samuel, Jr. (Mr.), Hd., Sci. Dept., Cross Keys H. S., 1626 N. Druid Hills Rd., N.E., Atlanta 19, Ga. Home Add.: 2104 Cascade Rd., S.W., Atlanta 11, Ga. ZOOLOGY; HERPETOLOGY. b. Jacksonville, Fla., Nov. 19, 1933. s. Lewis Samuel, Sr. and Mattie (Wansley) S. Edn.: B.S., Univ. of Ga., 1955. m. Patricia Rae, Aug. 20, 1955. c.: Mayre Barbara; Catherine Rae. Exp.: Hd., Biol. Dept., Gordon Milit. Coll., Barnesville, Ga., 1955-57; Fishery Rsch. Biolt., Ga. Game and Fish Comm., Atlanta, Ga., 1957-59; Hd., Sci. Dept., Cross Keys H. S., 1959—. Hon. Pos.: Hd., Dept. of Biol., Gordon Milit. Coll.; Hd., Sci. Dept., Cross Keys H. S.; Leader, DeKalb Co. Sci. In-Serv. Group. Mem.: Am. Soc. of Ichtholts; Natl. Assn. of Biol. Tchrs.; Assn. of Southeastern Biolts.; A.I.B.S.; A.A.A.S. Areas of Rsch.: Herpetology; Flora of Granite Outcrops.

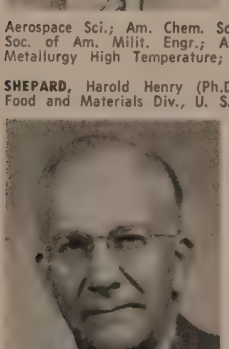
SHEN, David Wei-Chi (Ph.D.), Assoc. Prof., 33rd and Walnut St., Phila., Pa. Home Add.: 4531 Springfield Ave., Phila., Pa.

b. Fukien, China, Jan. 4, 1920. s. Yenho C. K. and Bertha (Nee) S. Edn.: B.S., Natl. Tsing Hua Univ., 1939; Ph.D., Univ. of London, 1948. Exp.: Lectr. in Elec. Engrng., Univ. of Amoy, China, 1941-44; Sr. Lectr., Univ. of Adelaide, So. Australia, 1950-53; Visiting Asst. Prof., Univ. of Ill., 1953-54; Visiting Asst. Prof., M.I.T., 1954-55; Asst. Prof., Moore Schl. of Elec. Engrng., Univ. of Pa., Phila., 1955-60; Assoc. Prof., ibid., 1960—; Consult. to Gen. Dynamics Electronics, Rochester, N. Y., 1960—. Mem.: I.E.E.; A.I.E.E.; A.S.E.E.; Franklin Inst.; Soc. of Sigma Xi; Sr. Mem., I.R.E. Contbr. to: Jour. of Franklin Inst.; Philosophical Mag.; Proc. I.E.E.; Trans. A.I.E.E.

SHENK, Leo H. (Mr.), Sr. Industrial Engr., U. S. Air Force, Los Angeles, Calif. Home Add.: 8814 Hazeltine Ave., Panorama City, Calif.

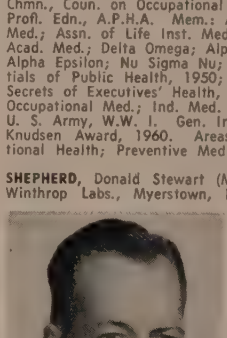
CHEMICAL ENGINEERING, APPLIED CHEMICAL PHYSICS, PROPELLANT. b. Ravenna, Italy, Jan. 3, 1902. s. Dr. Bernard and Elizabeth (Calecka) S. Edn.: Dipl. Engrng., German Lang. Inst. of Tech., Brunn, 1927; M.S., Univ. of Vienna, 1930. m. Veronika von Brunn, 1950. c.: Elizabeth Coldman. Exp.: Chemist, Chemical Factory for Alcohol and Pofash, Czechoslovakia, 1930-38; Chem. Engr., Austrian Chem. Works, Linz, Austria, 1938-54; Chf. Material Sec., U. S. Air Force, Norton San Bermardron, Calif., 1954-55; General Engr., U. S. Army Ordnance, Pasadena, Calif., 1956-60; Sr. Indus. Engr., U. S. Air Force, Los Angeles, Calif., 1960—. Mem.: Inst. of Aerospace Sci.; Am. Chem. Soc.; Am. Soc. of Quality Control; Soc. of Am. Milit. Engr.; A.A.A.S. Areas of Rsch.: Special Metallurgy High Temperature; Chemical Kinetics.

SHEPARD, Harold Henry (Ph.D.), Chief, Agri. Chemicals Staff, Food and Materials Div., U. S. Dept. of Agri., Wash. 25, D. C. Home Add.: 2701 S. June St., Arlington 2, Va. ENTOMOLOGY; AGRICULTURAL CHEMICALS. b. Templeton, Mass., Mar. 8, 1898. s. John B. and Mabel (Smith) S. Edn.: B.S., Univ. of Mass., 1924; M.S., Univ. of Md., 1927; Ph.D., Univ. of Mass., 1931. m. Eleanor C. Geiger, Sept. 5, 1924. Exp.: Asst. Entomologist, U. S. Dept. of Agri., Wash., D. C., 1927-31; Asst. Prof., Univ. of Minn., 1932-43; Indus. Specialist, War Food Admin., Wash., D. C., 1943-45; Assoc. Prof., Cornell Univ., 1945-46; Entomologist, U.S.D.A., Wash., D. C., 1946-50; Staff Specialist, U.S.D.A., ibid., 1950—; Lectr., Univ. of Md., 1947—. Hon. Pos.: Pres., Entomological Soc. of Wash., 1962. Mem.: Am. Assn. for Adv. of Sci.; Entomological Soc. of Am.; Insecticide Soc. of Wash.; Wash. Acad. of Sci.; Cosmos Club; Sigma Xi; Gamma Sigma Delta; Phi Kappa Phi; Torch Club. Author: Chemistry and Toxicology of Insecticides, 1939; Butterflies, co-author, 1941; Applied Entomology, co-author, 4th ed., 1942, 5th ed., 1955; Chemistry and Action of Insecticides, 1951; Methods of Testing Chemicals on Insects, Vol. I, 1958, Vol. II, 1960. Contbr. to: Annals of Entomological Soc. of Am.; Jour. of Econ. Entomology; Hesperiid Parts for Lepidopterorum Catalogus. Gen. Int.: U. S. Dept. of Agri. Superior Service Award, 1960. Areas of Rsch.: Pesticides.



SHEPARD, William Peacey (M.D.), Consultant in Indus. Med., Pub Health Edn., Med. Communication; Assoc. Dir., Inst. for Adv. o Med. Communication, 33 E. 68th St., N. Y. 21, N. Y. Home Add 7 Peter Cooper Rd., N. Y., N. Y PUBLIC HEALTH AND PREVENTIVE MEDICINE AND INDUSTRIAL MEDICINE. b. Hull, Ia., July 6 1895. s. William T. and Lavini (Teale) S. Edn.: B.S., Univ. o Minn., 1920; M.B., ibid., 1921 M.D., ibid., 1922; M.A., ibid 1924. Hon. Deg.: Sc.D., West mar Coll., 1959. m. Harriet Hil dreth, Feb. 28, 1947. Exp.: Special Agent, Div. of Prev. Diseases Minn. St. Bd. of Health, 1917-21 Asst. Dir., Student Health Serv. Univ. of Minn., 1921-24; Private Practice, Iowa, 1924-25; Health Officer, Berkeley, Calif., 1925-26 Asst. Secy., Pacific Coast, Metropolitan Life Ins. Co., 1926-44; Third Vice-Pres., ibid., 1944-53; Second Vice-Pres., N. Y. Metropolitan Life Ins. Co., 1954-59; Chf. Med. Dir., ibid., 1959-61; Assoc. Dir., Inst. for Adv. of Med. Comns., 1961—. Hon. Pos.: Chmn., Coun. on Occupational Health, A.M.A.; Chmn., Comm. on Profl. Edn., A.P.H.A. Mem.: A.M.A.; Am. Acad. of Occupational Med.; Assn. of Life Inst. Med. Dirs.; Indusl. Med. Assn.; N. Y. Acad. Med.; Delta Omega; Alpha Omega Alpha; Sigma Xi; Sigma Alpha Epsilon; Nu Sigma Nu; Univ. Club, N. Y. Author: Essentials of Public Health, 1950; The Physician in Industry, 1961; Secrets of Executives' Health, 1961. Contbr. to: J.A.M.A.; Jour. Occupational Med.; Ind. Med. and Surg.; J.A.P.H.A. Serv. Rec.: U. S. Army, W.W. I. Gen. Int.: Recd. Lasker Award, 1956 and Knudsen Award, 1960. Areas of Rsch.: Tuberculosis; Occupational Health; Preventive Medicine.

SHEPHERD, Donald Stewart (Mr.), Vice-Pres. and Factory Mgr., Winthrop Labs., Myerstown, Pa. Home Add.: 321 East High St., Lebanon, Pa. CHEMICAL ENGINEERING. b. Cranford, N. J., Mar. 27, 1914. s. John N. and Nellie (Brock) S. Edn.: B.S., Polytechnic Inst. of Brooklyn, 1936. m. Grace Buckley, Oct. 6, 1939. c.: Suzanne Shepherd Bagley; Bonnie E. Exp.: Asst. Chf. Chemist, Charles N. Phillips Div. of Sterling Drug, Stamford, Conn., 1936-47; Plant Mgr., ibid., Gulfport, Miss., 1947-52; Vice-Pres., Winthrop Lab., Div. of Sterling Drug, Myerstown, Pa., 1952—. Hon. Pos.: Dir., Capital Hosp. Serv.; Dir., Good Samaritan Hosp.; Past Pres., Dir., Commuinty Chest of Lebanon Co.; Past-Pres., Dir., Lebanon Co. C. of C. Mem.: A.I.-Ch.E.; A.C.S.; A.Ph.A.; A.A.A.S.; Pa. Soc. Profl. Engrs.; Pi Kappa Phi; Rotary Club. Areas of Rsch.: Production of Pharmaceutical Products.



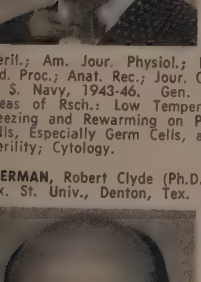
SHEPHERD, Mark, Project Engr., Texas Instruments, Inc., Dallas 22, Tex.

SHEPS, Cecil George (M.D.), Prof. of Med. and Hosp. Admin., Grad. Schl. of Pub. Health, Univ. of Pittsburgh, Pittsburgh 13, Pa. Home Add.: 4625 Fifth Avenue, Pittsburgh 13, Pa. MEDICAL ADMINISTRATION AND PREVENTIVE MEDICINE. b. Winnipeg, Can., July 24, 1913. s. George and Polly (Lirenman) S. Edn.: M.D., Univ. of Manitoba, Can., 1936; M.P.H., Yale Univ., U. S., 1947. m. Mindel Chernick, May 29, 1937. c.: Samuel Barry. Exp.: Rsch. Prof. of Health Plan., Univ. of N. C., 1951-52; Gen. Dir., Beth Israel Hosp., Boston, Mass., 1953-60; Clin. Prof. of Preventive Med., Harvard Med. Schl., ibid., 1958-60; Prof. of Med. and Hosp. Admin., Grad. Schl. of Pub. Health, Univ. of Pittsburgh, 1960—. Hon. Pos.: Chmn., Health Servs. Rsch. Study Sect., Natl. Insts. of Health, 1958-62. Mem.: Sigma Xi; Soc. for Applied Anthropol.; Am. Public Health Assn.; Am. Coll. of Preventive Med.; Assn. Am. Med. Colls.; Harvard Club of Boston. Co-Author: Needed Research in Health and Medical Care, A Biosocial Approach, 1954; Community Organization, Action and Inaction, 1956. Contbrng. Editor: Medical Education and Medical Care Interactions and Prospects, 1961. Contbr. to: Jour. of Med. Edn.; Am. Jour. of Pub. Health; New England Jour. of Med.; Jour. of Health and Human Behavior; Mod. Hospitals; Pub. Health Reports; Southern Med. Jour.; Jour. Am. Stat. Assn.; Yale Jour. of Med. and Biol. Serv. Rec.: Royal Canadian Army Med. Corps, 1943-46. Areas of Rsch.: Medical Administration, Public Health, Preventive Medicine, Venereal Disease Control.

HERMAN, Bennett (Mr.), Chief Engineer, Connecticut Instrument Company, Wilton, Connecticut. Home Add.: 90-95 56th Ave., Elmhurst 73, N. Y. OPTICAL SYSTEM DESIGN, TEST, SYNTHESIS; INFRARED, VISUAL AND ULTRA - VIOLET MEASUREMENTS AND INSTRUMENTS. b. N.Y.C., Apr. 28, 1922. s. Josef and Mary (Gordon) Kaplan. Edn.: B.S., Purdue Univ., 1946; M.S., Univ. of Rochester, 1947. m. Anita Ress, Jan. 22, 1956. c.: Lynn Jo; Jeffrey Marc. Exp.: Eng., A. M. Meyerstein Engrng. Co., Brooklyn, N. Y., 1940-42; Und. G., Cooper Union Inst., N. Y., 1940-42; Und. G., Purdue Univ., Ind., 1945-46; Grad. Instr., Univ. of Rochester, N. Y., 1946-47; Rsch. Eng., Farrand Optical Co., N. Y., 1947-59; Chf. Optical Engr., Autometric Corp., 1959-60; Chf. Spectro Engr., Barnes Engrng. Co., 1960—. Mem.: Optical Soc. of Am.; Soc. of Photo. Instr. Engrs. Mem.: Optical Soc. of Am.; Soc. of Photo. Sci. and Engrng.; Soc. of Photo. Instr. Engrs.; Am. Ordnance Assn.; A.A.A.S.; Sigma Pi Sigma. Author: Camera Lenses and Tests, 1961. Contbr. to: Photographic Methods for Ind. Serv. Rec.: U. S. Air Force Engrs., 1942-44. Gen. Int.: Independent Rsch. in Astronomy; Constructed Schmidt Camera for This Purpose; Obtained Patents for Monochromators. Areas of Rsch.: I. R. Vis, and U. V. Radiation Measurements, Detection, Instrumentation; Optical Systems Combined with Mechanical and Electronic Devices; Instrument Design, Development, and Performance Analysis.

HERMAN, Jerome Kalman (Ph.D.), Assoc. Prof. of Anatomy, Univ. Ark. Schl. of Med., Little Rock, Ark. Home Add.: 3012 No. Grant, Little Rock, Ark. LOW TEMPERATURE BIOLOGY, MICROSCOPIC ANATOMY. b. Brooklyn, N. Y., Aug. 14, 1925. s. Murray and Beatrice (Freilich) S. Edn.: A.B., Brown Univ., 1947; M.S., Western Reserve Univ., 1949; Ph.D., St. Univ. of Ia., 1954. m. Hildegard Schroder, Dec., 1952. c.: Karen; Marc; Keith. Exp.: Rsch. Assoc., St. Univ. of Ia., 1952-55; Rsch. Assoc., Am. Foundation for Biological Rsch., Madison, Wis., 1955-59; Asst. Prof., Schl. of Med., Univ. of Ark., 1959-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Physiological Soc.; Am. Soc. of Zoologists; Soc. Exptl. Biol. and Med.; Am. Assn. of Anatomists; Sigma Xi; Lions Club. Contbr. to: Nature; Fertil. and Steril.; Am. Jour. Physiol.; Proc. Soc. Exptl. Biol. and Med.; Anat. Rec.; Jour. Cell and Comp. Physiol. Serv. Rec.: U. S. Navy, 1943-46. Gen. Int.: Lederle Med. Faculty Award. Areas of Rsch.: Low Temperature Biology (Effects of Cooling, Freezing and Rewarming on Protoplasm; Preservation of Various Cells, Especially Germ Cells, at Low Temperatures); Fertility and Sterility; Cytology.

HERMAN, Robert Clyde (Ph.D.), Prof. of Biol., Box 5447, North Tex. St. Univ., Denton, Tex. Home Add.: 2228 Houston Place, Denton, Tex. BIOLOGY. b. Brighton, Mo., Oct. 26, 1913. s. Jesse Frank and Ida Mae (Goodacre) S. Edn.: B.A., Southwest Mo. State Coll., 1935; M.S., North Tex. St. Univ., 1946; Ph.D., Univ. of Mo., 1950. m. Elizabeth Pinkerton, June 1, 1940. c.: Robert Frank; Elizabeth Lynn; Judson Van. Exp.: Supt., Vona Pub. Schls., Vona, Colo., 1937-42; Asst. Prof., No. Tex. St. Univ., 1946-48; Prof., ibid., 1950—. Hon. Pos.: Pres., Tex. Acad. of Sci., 1959; Chmn., Bd. of Sci. Edn., Tex. Acad. of Sci.; Chmn., Tex. Edn. Agency Conservation Edn. Advisory Comm. Mem.: Am. Assn. for the Adv. of Sci.; Tex. Acad. of Sci.; Natl. Sci. Tchrs. Assn.; Natl. Assn. of Biol. Tchrs.; Natl. Assn. for Rsch. in Sci. Tchng.; Assn. for the Adv. of Tchr. of Sci.; Sigma Xi; Delta Kappa. Author: Life and Death of the Soil, 1955. Contbr. to: Tex. Jour. of Sci.; Sci. Edn. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Science Education; Field Biology.



ROCKMAN, Andrew Antolcik (Mr.), Assoc. Prof. of Chemistry, Evansville Coll., Evansville, Ind., 1946-55; Tech. Editor and Dir., Natl Trng. Program, 1956-59; Westinghouse Elec. Corp. (Atomic Power Div.) (Bettis Atomic Power Lab.). Home Add.: R.D. 5, 596-B, McMichael Rd., Pittsburgh 5, Pa. b. Raccoon, Pa., May 19, 1913. s. Andrew and Anna (Antolcik) S. Edn.: A.B., St. of Dubuque, 1935; M.Ed., Univ. of Pittsburgh, 1945; Columbia Univ., 1944, Certificate; Carnegie Inst. of Tech., 1937; Harvard Univ., Summer, 1949; Univ. of Pittsburgh, Ph.D., 1955. m. Anna Yesko of Burgettstown, Pa., Oct. 31, 1943. Exp.: Exec. Asst. to Chief Med. Officer, Vet. Admin., Pittsburgh, Pa., 1946; Sci. Tchr. and Hd. Dept. of Sci., Union H. S., Burgettstown, Pa., 1935-45; Chemist, Koppers Coal Co., Pittsburgh, Pa., Summer, 1938; Chemist, Pittsburgh Coal Co., Summer, 1935; Coal Miner, 1929; Supvr., Natl. Steel Corp., Rsch. and Devel. Dept., Technical Information Serv., 1959—. Mem.: A.A.A.S.; Ind. Chemical Soc.; Ind. Acad. of Pi Kappa Delta; Alpha Chi Sigma; Phi Beta Chi; Kiwanis; American Chemical Society; Midwest Teachers Chemical Association of Liberal Arts; Natl. Science Tchrs. Assn.; Soc. of Technical Writers and Editors; Phi Delta Kappa; Phi Alpha Theta; Am. Legion; W. Va. Libr. Assn.; Spec. Librs. Assn. Contbr. to: The Lib. Jour.; Ind. Tchr.; Nursing Outlook; Chemical Week; Sci. Counselor. Special Int.: Sci. Edn. Technical Trng. and Tech. Editing. War Record: Army, June 15, 1942 to Feb. 26, 1946; Major, Air Force Res. Hobby: Swimming.

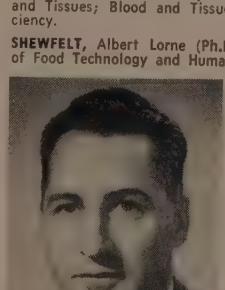
SHERR, Paul Edgar (Mr.), Rsch. Meteorologist, Bendix Systs. Div., Ann Arbor, Mich. Home Add.: 4765 W. Liberty Rd., Ann Arbor, Mich. METEOROLOGY. b. Buffalo, N. Y., Apr. 4, 1933. s. Leonard F. and Pearl C. (Bowen) S. Edn.: B.S., N. Y. Univ., 1955; M.S., ibid., 1957. m. Rose Mary Spahr, May 26, 1956. c.: Frederick P.; Thomas E. Exp.: Aide, U. S. Weather Bur., Buffalo, N. Y., 1952; Rsch. Aide, N. Y. Univ., N. Y., 1953-57; Phys. Scientist, U. S. Army, 1957-59; Rsch. Meteorologist, Bendix Systs. Div., 1959—. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; Kappa Sigma. Contbr. to: Jour. of Meteorol. Serv. Rec.: U. S. Army, 1957-59. Areas of Rsch.: Meteorology, Refractive Index Properties of the Air, Geophysical Sciences and Applied Climatology.

SHERRICK, David Chauncey (Mr.), Mgr., Technical Liaison, Stelma, Inc., 1200 18th St., N.W., Wash. 6, D. C. Home Add.: 7705 Marbury Rd., Bethesda 14, Md. ELECTRICAL ENGINEERING, COMMUNICATIONS. b. Monmouth, Ill., Oct. 21, 1925. s. John Chauncey and Florence Kennedy (Munford) S. Edn.: B.S., Mass. Inst. of Technol., 1946. m. Helen Lorraine Wichterman, May 21, 1949. c.: Susan Lorraine; Robert Chauncey. Exp.: Project Engr., Stewart-Warner Corp., Chicago, Ill., 1946-48; Project Engr., Pioneer Electric and Rsch. Corp., Forest Park, Ill., 1948-53; Project Engr., Kleinschmidt Labs., Inc., Deerfield, Ill., 1953-55; R & D Servs. Mgr., ibid., 1955-56; Chf. Systems Engr., ibid., 1956-57; Rsch. Supvr., Smith-Corona, Highland Park, Ill., 1957-58; Mgng. Dir., Smith-Corona Marchant, Inc., R & D Div., Highland Park, Ill., 1958-59; Wash. Technical Dir., ibid., Wash., D. C., 1959-61; Mgr. of Technical Liaison, Stelma, Inc., 1961—. Mem.: Inst. of Radio Engrs.; Am. Inst. of Electrical Engrs.; A.A.A.S.; Western Soc. of Engrs.; Alpha Tau Omega. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Digital Communications.

SHIN, Yung Soo (Mr.), Biochemist, St. Anthony Hosp., Terre Haute, Ind. Home Add.: 609 S. 6th St., Terre Haute, Ind.

CLINICAL CHEMISTRY, LIPID CHEMISTRY. b. Pusan, Korea, Aug. 3, 1930. s. Kee Bong and Lee (Malburm) S. Edn.: M.A., St. Univ. of S. Dak., 1959; B.A., ibid., 1957. m. Young Sun Hong, Sept. 4, 1957. c.: David S.; Michael M.; Lawrence T. Exp.: Bacteriologist, St. Mary of Nazareth Hosp., Chicago, Ill., 1957-58; Parasitologist, Mt. Sinai Hosp., N.Y.C., summer, 1959; NIH Rsch. Fellow, Georgetown Univ. Med. Schl., Wash., D. C., 1959-60; Biochemist, St. Anthony Hosp., Terre Haute, Ind., 1960—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Proc. of the Soc. of Exptl. Biol. and Med.; Analytical Chemistry; Clinical Chemistry. Areas of Research: Analytical Methods for the Chromatographic Separation of Lipid Fractions, and for the Spectrophotometric Determination of Lipids; Spectrophotometric Determination of Phosphorus; Investigations on Lipid Levels of Human Blood and Cerebrospinal Fluids with Respect to Lipid Metabolism and Mechanism of Various Disorders; Chemical Analysis of Biological Fluids and Tissues; Blood and Tissue Lipid Levels and Nutritional Deficiency.

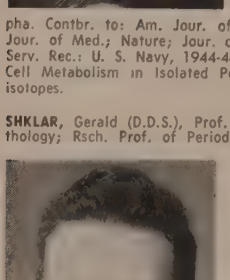
SHEWFELT, Albert Lorne (Ph.D.), Assoc. Food Technologist, Dept. of Food Technology and Human Nutrition, Clemson Coll., Clemson, S. C. Home Add.: 126 Folger St., Clemson, S. C. FOOD TECHNOLOGY AND PLANT BIOCHEMISTRY. b. Somerset, Manitoba, Can., July 7, 1917. s. Robert Baird (dec.) and Joanna (MacKay) S. Edn.: B.S.A., Univ. of Manitoba, 1940; M.S., Univ. of Alberta, 1943; Ph.D., Ore. St. Univ., 1952. m. Doris Louise Williams, Sept. 10, 1948. c.: Robert Lorne; Louise Joanne. Exp.: Biochemist, Natl. Rsch. Coun., Ottawa, Ontario, Can., 1943-46; Food Technologist, Can. Dept. of Agri., Morden, Manitoba, 1946-61; Asst. Prof., Univ. of Fla., 1958-59; Assoc. Food Technologist, Clemson Coll., 1961—. Hon. Pos.: Past-Pres., Canadian Inst. of Food Technology; Past-Pres., Morden Branch, Agri. Inst. of Can. Mem.: Inst. of Food Technologists;



Can. Inst. of Food Tech.; Am. Assn. for the Adv. of Sci.; Can. Soc. for Horticultural Sci.; Agri. Inst. of Can.; Manitoba Inst. of Agrologists; Phi Kappa Phi; C. of C.; Lions Club; Kinsmen Club; Parent Tchrs. Organization. Contbr. to: Canadian Jour. of Plant Sci.; Food Tech.; Proc. of the Internatl. Horticultural Congress. Gen. Int.: Agri. Inst. of Canada Scholarship, 1948. Areas of Rsch.: Biochemical Factors Affecting the Edible Quality of Fruit and Vegetable Products; Relationship of Pectic Substances to Texture of Vegetative Tissue.

SHIPP, Joseph Calvin (M.D.), Asst. Prof. of Med., Univ. of Fla., Schl. of Med., Gainesville, Fla. Home Add.: 320 S.W. 10th St., Gainesville, Fla. INTERNAL MEDICINE (ENDOCRINOLOGY). b. Northport, Ala., Feb. 10, 1927. s. Ezra Jonah and Norah (Earnest) S. Edn.: B.S., Univ. of Ala., 1948; M.D., Columbia Univ., 1952. m. Marjorie Morris, Nov. 23, 1961. Exp.: Resident Tutor, Eliot and Quincy House, Harvard Coll., 1954-60; Chf. Resident Physician, Peter Bent Brigham Hosp., Boston, Mass., 1957-58; Rsch. Assoc., Oxford Univ., Oxford, England, 1958-59; Instr. in Med., Harvard Univ., 1959-60; Asst. Prof. of Med., Univ. of Fla. Schl. of Med., 1960-. Mem.: Am. Federation for Clin. Rsch.; Am. Diabetes Assn.; N. Y. Acad. of Sci.; A.A.A.S.; Am. Coll. of Physicians; A.M.A.; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Am. Jour. of Physiol.; Diabetes; New England Jour. of Med.; Nature; Jour. of Biol. Chem.; Am. Jour. of Med. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Endocrinology; Cell Metabolism in Isolated Perfused Heart Studied with Radioisotopes.

SHKLAR, Gerald (D.D.S.), Prof. and Chmn. of Dept. of Oral Pathology; Rsch. Prof. of Periodontology; Prof. of Dental History, Tufts Univ. Schl. of Dental Med., 136 Harrison Ave., Boston, Mass. Home Add.: 1 Parkway Terr., Cambridge, Mass. ORAL PATHOLOGY. b. Montreal, Can., Dec. 2, 1924. s. Louis and Ann (Schleifstein) S. Edn.: B.S., McGill Univ., 1947; D.D.S., ibid., 1947; M.S., Tufts Univ., 1952. m. Judith Nisse, June 16, 1948. c.: David; Michael. Exp.: Rsch. Assoc. in Oral Pathol., Periodontol., 1951-52; Instr. in Oral Pathol. and Periodontol., Tufts Univ. Schl. of Dental Med., 1952-53; Asst. Prof., ibid., 1953-59; Assoc. Prof., ibid., 1959-60; Prof. and Chmn. Dept. of Oral Pathology, Rsch. Prof. of Periodontology, 1961-. Mem.: Am. Dental Assn.; Fellow, Am. Acad. Oral Pathol.; Fellow, A.A.A.S.; Internatl. Assn. for Dental Rsch.; New England Soc. Pathol.; Am. Cancer Soc.; Am. Acad. Dental Med.; N. Y. Acad. Scis.; Am. Soc. Periodontists; Northeast Soc. Periodontists; Sigma Xi; Omicron Kappa Upsilon. Contbr. to: Oral Surg.; Oral Med.; Oral Pathol.; Jour. Dental Rsch.; Jour. of Periodontology; Dental Clinics of N. Am.; Cancer; New England Jour. Med. Areas of Rsch.: Relation of Steroid Hormones to Bone and Connective Tissue; Histo-chemistry of Salivary Glands; Malignant Tumors of Mouth and Jaws; Diseases Involving Oral Mucosa; Experimental Carcinogenesis.



SHLAES, William H. (M.D.), 4640 N. Marine Dr., Chicago 40, Ill. Home Add.: 1232 W. Chase St., Chicago, Ill. GASTRO-ENTEROLOGY AND CLINICAL PARASITOLOGY. b. Omaha, Neb., Aug. 4, 1919. s. Richard M. and Anna (Priesman) S. Edn.: B.S., Univ. of Chicago, 1941; M.D., the Chicago Med. Schl., 1944. m. Marjorie Weishaus, Mar. 16, 1941. c.: David Mitchell; Nancy Lee. Exp.: Clin. Asst. Prof. Med., The Chicago Med. Schl., 1946-; Assoc. Microbiol., ibid., 1954-; Rsch. Assoc., Hektoen Inst. for Med. Rsch., 1949-; Chief, Gastro Intestinal Clin., Mt. Sinai Hosp., Chicago Med. Schl., 1955-60; Attending Physician in Med., Weiss Meml. Hosp.; Consultant in Internal Med., Martha Wash. Hosp., Chicago. Mem.: Sigma Xi; N. Y. Acad. of Sci.; Fellow, Royal Soc. Trop. Med. and Hygiene, London; Am. Med. Assn.; Phi Lambda Kappa. Contbr. to: J.A.M.A.; Am. Jour. Trop. Med. and Hygiene; Gastroenterology; Am. Jour. Digestive Diseases; Practitioner; Chicago Med. Schl. Quarterly. Areas of Rsch.: Gastroentenology; Clinical Research in Amebiasis; Research in Basic and Clinical Aspects.

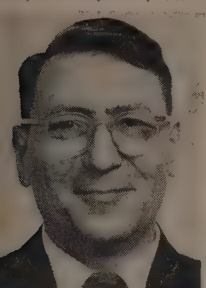
SHNEIDEROV, Anatol James (Mr.), Geophysicist, U. S. Geol. Survey, Br. of Theor. Geophysics, Interior Bldg., Room 5244, Washington 25, D. C. Home Add.: 1945 Calvert St., 44, Washington 9, D. C. COSMOPHYSICS; PHYSICS (GRAVITATION; UNIFIED FIELD THEORY). b. Ekaterinbourg, Russia, July 29, 1894. s. James and Alexsandra (Petukhova) S. Edn.: C.E., Petrograd Mil. Engrng. Schl., 1917; M.M.E., 1918; B.E.E., George Washington Univ., 1944; Grad. Study, Johns Hopkins Univ., 1945-46; M.A., in Ed., Columbia Univ., Tchrs. Coll., 1948. m. Siren Martirosiants (dec.). c.: Svetozara A. Shneiderov-Persidsky. Exp.: Mng. Dir., Shneider Process Co., Ltd., Hongkong-Shanghai-Washington, D. C., 1941-45; Pres., Polycultural Inst. of Am., 1945-58; Geophysicist, U. S. Geol. Survey, Wash., D. C., 1958-. Hon. Pos.: Fellow, European Cntr. for Gravittational Rsch. Mem.: Am. Geophys. Union; Am. Physical Soc.; Astronomical Soc. of France; European Centr. for Gravitational Rsch.; Fed. of Am. Scientists; Phil. Soc. of Wash. Author: Little Blue Book of Shanghai, 1932. Contbr. to: Trans. Am. Geophys. Union; Nature, Eng.; Sci.; Bollettino di Geofisica Teorica ed Applicata, Italy; Quaderni di Astronautica, Italia. Gen. Int.: Organized the 1st Polycultural Instn. in the world; Proposed Radional Unified Field Theory, and Expansion of the Earth, 1943. Areas of Rsch.: Cosmophysics; Gravitation; Astrophysics; Astronomy; Planetary Theory; Geophysics; Physics (Matter-Mass; Magnetic, Electric, Gravitational, Nuclear Forces, and the Universum continuum).

SHOCK, Nathan Wetherill (Ph.D.), Chf., Gerontol. Br., Natl. Heart Insts. and Balt. City Hosps., Balt. 24, Md. Home Add.: 6505 Maplewood Rd., Balt. 12, Md. GERONTOLOGY. b. Lafayette, Ind., Dec. 25, 1906. s. Joseph H. and Blanche (Stults) S. Edn.: B.S., Purdue Univ., 1926; M.S., ibid., 1927; Ph.D., Univ. of Chicago, 1930. Hon. Deg.: D.Sc., Purdue Univ., 1954. m. Margaret Truman, 1928. c.: John Howard; Joseph Baird. Exp.: Rsch. Assoc., Dept. Pediatrics and Instr. Physiol., Univ. Chicago, 1930-32; Rsch. Assoc., Instr. Child Welfare and Asst. Prof. Physiol., Univ. of Calif., Berkeley, 1933-41; Chief, Gerontol. Br., Natl. Heart Inst and Baltimore City Hosp., 1941-. Hon. Pos.: Pres., Gerontol. Soc., 1960; Chmn., Sect. N., A.A.A.S., 1959; Asst. Editor, Jour. Gerontol., 1950-61, Editor, 1963-. Mem.: Gerontol. Soc.; Am. Physiol. Soc.; Am. Psychol. Assn.; Soc. Exptl. Biol. and Med.; Psychomet. Soc.; Soc. Rsch. in Child Devel.; Am. Geriats. Soc.; Am. Assn. for the Adv. of Sci. Author: A Classified Bibliography of Gerontology and Geriatrics, 1951-57; Trends in Gerontology, 1951, 1957; Aging, Some Social and Biological Aspects, 1960. Contbr. to: Am. Jour. of Physiol.; Jour. of Gerontol.; Jour. Clin. Investn.; Proc. Soc. Exptl. Biol. and Med.; Scient. Amn.; Circulation Rsch.; Am. Jour. Psychol.; Jour. Appl. Physiol.; Geriats. Areas of Rsch.: Physiological and Psychological Aspects of Aging.

SHOEMAKER, Lois Meier (Ph.D.), Prof. of Sci. (Ret.), Trenton St. Coll., Trenton 5, N. J. Home Add.: 515 E. Ewingville Rd., Trenton 8, N. J. BIOLOGY. b. Ipava, Ill., Oct. 20, 1899. d. W. H. D. (Meier) and Elizabeth (Campbell) M. Edn.: B.A., Wellesley Coll., 1921; M.A., Tchrs. Coll., Columbia, 1924; Ph.D., ibid., 1930. m. Morris B. Shoemaker, 1931. c.: Robert M.; William E.; Mary Elizabeth; Alice C. Exp.: Tchr. of Sci., Framingham, M. S., Mass., 1921-23; Biol. Tchr., H. S., White Plains, N. Y., 1924-26; Rsch. Asst., Lincoln Schl., Columbia Univ., N. Y., 1926-27; Prof. of Sci., N. J. St. Coll. (Ret.), 1929-59. Mem.: Am. Assn. for Adv. of Sci., Fellow; Nat. Geogr. Soc.; Nat. Assn. Rsch. in Sci. Tchng.; Trenton Nat. Club. Co-Author: Essentials of Biology, 1943; Wonderworld of Science, 1943; Mammals of New Jersey. Areas of Rsch.: Specialist in Outdoor Education.

SHOFNER, Orman Eugene (Mr.), Rsch. Technician, Hermann Hosp., Houston, Tex. Home Add.: 630 Twickenham Trail, Houston, Tex. RADIOLOGY. b. Houston, Tex., Nov. 1, 1938. s. Amos Eugene and Mary Kathryn (Witcher) S. Edn.: R.T., Community Hosp., Houston, Tex., 1958. Exp.: Chf. R.T., Des Moines Gen. Hosp., Des Moines, Ia., 1960-61; Neuro-Radiological Technician, Hermann Hosp., Houston, Tex., 1961-. Mem.: A.A.A.S.; Sigma Zeta; Beta Beta Beta; Tex. Soc. X-Ray Technicians; H.S.X.T.; Tex. Med. Rsch. Soc.; N.G.S.; A.R.T.; A.S.X.T.; Sigma Tau Gamma; Gamma Delta; U. S. Jr. C. of C.; Am. Red Cross; Natl. Coll. of Radiography Technologists, Fellow. Contbr. to: A.R.T. Jour.; Tex-Rays. Gen. Int.: Holder of Order of the Golden Ray; A.R.T. Distinguished Serv. and Citation Awards. Areas of Rsch.: Tissue Culture; Radiation Health Physics; Nuclear Med.; Study Under S.W. Foundation for Rsch. and Edn.

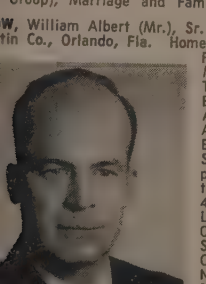
HONKA, Francis R. (Ph.D.), Director, Physical Sciences Lab., St. ...rocopius Coll., Lisle, Ill. Home Add.: 8115 Edgewater Rd., Riverside, Ill. RADIOLOGICAL PHYSICS. b. Linwood, Neb., Apr. 18, 1906. s. Joseph John and Mary (Famfrlik) S. Edn.: B.S., St. Procopius Coll., 1928; M.S., Univ. of Chicago, 1931; Ph.D., ibid., 1941. m. Louise M. Cuchna, June 15, 1938. c.: Mary Rose; Francis Joseph; Mary Louise; Joseph John; Paul Richard; Thomas Edward. Exp.: Hd., Dept. of Physics, DePaul Univ., Chicago, 1938-43; Assoc. Prof. Biophysics, Univ. of Chicago, 1947-52; Sr. Physicist and Div. Dir., Argonne Natl. Lab., Argonne, Ill., 1944-54; Dir. of Rsch., St. Procopius Coll., Lisle, Ill., 1954—. Mem.: Am. Phys. Soc.; Rad. Rsch. Soc.; Gamma Alpha; Sigma Xi. Contbrng. Author: The Effects of Atomic ...eapons, 1950. Contbr. to: Phys. Rev.; Rad. Rsch. Areas of ...ch.: Radiological Physics with Special Emphasis on Dosimetry ...d Instrumentation.



...OOK, Edwin Martin (Mr.), Dir., Tikal Project, The Univ. Mu...um, Univ. of Pa., 33rd and Spruce Sts., Phila. 4, Pa. Home ...d.: Oak Hill Rd., Harvard, Mass. ANTHROPOLOGY; ARCHAEOL...GY OF MESOAMERICA. b. Newton, N. C., Nov. 22, 1911. s. ...dley E. and Cora A. (Deal). Edn.: Drexel Inst. of Technol., ...30-31; Columbia Inst. of Technol., 1933; George Wash. Univ., ...34; Harvard Univ., 1939. m. Virginia Barr, July 31, 1937. ... Edwin M.; Stephen H.; John A. Exp.: Asst. Archaeologist, ...mporary Staff Mem., Carnegie Inst. of Wash., 1933-39; Archae...ogist, Dept. of Archaeology, Carnegie Inst. of Wash., 1940-58; ...chaeologist, Dir. of the Tikal Proj., Univ. Museum, Univ. of ..., 1955—; Rsch. Assoc., Carnegie Inst., 1959—. Hon. Pos.: ...legate from Guatemala and Carnegie Inst. to 29th Congress ... Americanists; Organizing Comm., VII Mesa Redonda, Soc. Mex. ... Anthrop.; Chmn. Archaeology Sect., VII Mesa Redonda, Soc. ...x. de Anthrop. Mem.: Fellow, Am. Anthropological Assn.; ...c. of Am. Archaeol.; Sociedad Mexicana de Anthropologia; ...low, A.A.A.S.; Assn. Anthropologica de Guatemala; Internatl. ...ngress of Americanists; Am. Schl. of Guatemala; Soc. de ...ografia e Hist. de Guat. Contbr. to: Carnegie Inst. Wash. ...nographs, Contbr. Reports and Notes; Proc. Cong. of Ameri...nists; Anales del Instituto de Anthropologia e Historia; Univ. ... Mus. Monographs, Bull. and Expeditions. Gen. Int.: Archae...gical Excavations, Exploration, Reconnaissance in Yucatan and ...thern Mexico, Guatemala, Brit. Honduras, El Salvador, Hon...ras, and Nicaragua.

...OPWIN, Charles Dietrich (Ph.D.), Speech Pathologist, Psy...ologist, Dir., Communicative Disorders Sect., Loma Linda Univ., ...20 Brooklyn Ave., Los Angeles 33, Calif. Home Add.: 270 So. ...mercy Pl., Los Angeles 4, Calif. SPEECH PATHOLOGY, PSY...OLOGY, PSYCHOTHERAPY FOR COMMUNICATIVE DISORDERS, ...RRIAGE AND FAMILY COUNSELING. b. Cincinnati, Ohio, Feb. ... 1916. s. Karl Julius and Frieda Martha (Stoltz) Shopwinkel. ...: A.B., Los Angeles St. Coll., 1951; A.M., Univ. of Sou. ...if., 1953; Ph.D., ibid., 1958. m. Muriel Pollia, Jan. 3, 1953. ...: Instr., Schl. of Nursing, Loma Linda Univ., Los Angeles, ...if., 1954-61; Staff Mem., Dept. of Psychiatry, ibid., 1961—; ... of Communicative Disorders Sect., Dept. of Phys. Med. and ...ab., ibid., 1954—. Hon. Pos.: Mem., Rehab. Conf., Loma ...da Univ.; Mem., Staff, White Meml. Hosp., ibid.; Consultant, ...ily Dept., Am. Inst. of Family Relations; Counselor, Am. ... of Family Relations; Consultant, Comm. Dis., Glendale ...at. and Hosp. Mem.: Am. Speech and Hearing Assn.; Am. ...d. of Psychotherapists; Am. Group Psychotherapy Assn.; A.A.- ... Contbr. to: Am. Jour. of E.E.G. Serv. Rec.: U.S.C.G., 1941- ... Gen. Int.: Advanced Certification in Speech, A.S.H.A.; Cer...d Psychologist, St. of Calif.; Stuttering and Voice Disorders, ...chogenic Communicative Disorders, Psychotherapy (Individual ... Group), Marriage and Family Counseling.

...W, William Albert (Mr.), Sr. Engr., Advanced Technology, The ...tin Co., Orlando, Fla. Home Add.: 3219 Hargill Dr., Orlando, Fla. RESEARCH AND DEVELOPMENT OF COMMERCIAL AND MILITARY EXPLOSIVES AND DEVICES; EXPLOSIVE METAL FORMING. b. Alton, Ill., Nov. 4, 1916. s. John A. and Mabel J. (Longfellow) S. Edn.: B.S., Shurtleff Coll. (now Sou. Ill. Univ.), 1939. Exp.: Explosives Chemist, Western Cartridge Co., E. Alton, Ill., 1940-42; U. S. Naval Officer, BuOrd Liaison, Chem. Corps, 1942-46; Ordnance Engr., Naval Ord. Test Sta., China Lake, Calif., 1946-47; Chf. Propellants and Chem. Sect., Naval Ord. Lab., White Oak, Md., 1947-48; Chf., Applied Rsch. Br., Army Chem. Center, Md., 1948-53; Asst. Tech. Dir., Olin Mathieson Co., E. Alton, Ill., 1953-58; Gen. Mgr. to Pres., U. S. Flare, ...us, Calif., 1958; Prin. Engr., Aerojet Gen. Azusa, Calif., ...-59; Asst. for Exptl. Development, Olin Mathieson, E. Alton, ... 1959-61; Sr. Engr., Advanced Technol., The Martin Co., 1961 —. Hon. Pos.: Mem., Milit. Pyrotechnics Comm., Fuze Comm. of Am. Ord. Assn.; Panel Mem., Explosive Metal Forming for ASM, NDRC Chem. Warfare Proj. Coordination Staff. Mem.: Am. Assn. for Adv. of Sci.; Am. Chem. Soc.; Am. Ord. Assn.; Armed Forces Chem. Assn.; Ill. Acad. of Sci.; Sigma Zeta; Masons. Serv. Rec.: LCDR, U. S. Navy, 1942-46; BuOrd Liaison Officer with Chem. Corps, Terminal Ballistics Project Officer at NOTS. Areas of Rsch.: Commercial and Military Explosives; Devices and Munitions.

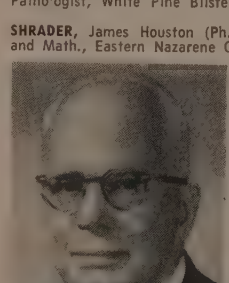


SHOR, Arthur J. (Mr.), Devel. Engr., Oak Ridge Natl. Lab., Oak Ridge, Tenn. Home Add.: 193 Outer Dr., Oak Ridge, Tenn. CHEMICAL ENGINEERING. b. N. Y., June 10, 1923. s. David and Anna Shor. Edn.: B.Chem.Engrng., Coll. of The City of N. Y., 1943. m. Roberta Wagner, Oct. 31, 1952. c.: Andrew; Joel. Exp.: Assoc. Chem. Engr., Argonne Natl. Lab., Chicago, Ill., 1946-56; Rsch. Chem. Engr., Armour Rsch. Fdtn., Chicago, Ill., 1956-57; Devel. Engr., Oak Ridge Natl. Lab., 1958 Mem.: Am. Nuclear Soc.; Am. Assn. for the Adv. of Sci.; Sigma Kappa Tau. Contbr. to: Nuclear Sci. and Engrng.; Trans. A.N.S.; O.R.-N.L. Publs. Serv. Rec.: U. S. Maritime Serv., 1944-46. Areas of Rsch.: Design, Evaluation of In-Pile Experiments for the Determination of the Effect of Nuclear Radiation on Materials of Construction and on Fuel Materials.

SHOWALTER, Donald F. (Ph.D.), Prof. Emeritus of Psychol., Kan. St. Univ., Manhattan, Kan. Home Add.: 1300 N. Manhattan port, Neb. s. B. W. and Anne (Fox) S. Edn.: A.B., Univ. of Ruth S. Stephenson of Clay Center, Neb., 1917 (dec.). d. Mr. and Mrs. Crit Stephenson. c.: Alan B.; Ronald D. Exp.: Supt. of Schls., 1917-30; Hd., Dept. of Edn. and Psychol., Ark. State Coll., 1931-47; Dean, ibid., 1937-47; Acting Pres., 1945-46; Asst. Prof. of Psychol., Kans. State Coll., Manhattan, Kans., 1947-49; Assoc. Prof., ibid., 1949-57; Prof., ibid., 1957—; Acting Head, Dept. of Psychol., 1957-59; Visit. Prof., Northern State Teachers Coll., Summer, 1961; Staff, State College of Iowa, Summer, 1962; Consultant on Consumer Psychology, 1950—. Mem.: Society for Psychol. Study of Social Issues; A.A.A.S.; Am. Psychol. Assn.; Sigma Xi; Phi Delta Kappa; Phi Beta Kappa; Pi Gamma Mu; Psi Chi; Nat. Council for Measurements used in Edn.; Am. Coll. Personnel Assn.; Kans. Psychological Assn.; Midwest Psychol. Assn. Ph.D. Dissertation: A Qualitative Study of Human Maze Learning. Spec. Int.: Retail Marketing; Psychol. Measurements.

SHOWALTER, Wendell Vernon (Ph.D.), Prof. of Biol. and Chmn. of Dept., Hastings Coll., Hastings, Nebr. Home Add.: 507 University St., Hastings, Nebr. BOTANY. b. Washington, Kans., May 18, 1923. s. Orville and Loa (Stolzer) S. Edn.: B.S., Univ. of Kans., 1949; M.A., ibid., 1951; Ph.D., ibid., 1956. m. Anna Lou Morphy, Aug. 14, 1949. c.: John Louis; Reed Charles. Exp.: Asst. Instr., Botany, Univ. of Kans., 1949-55; Asst. Instr., Biol., ibid., 1955—; Assoc. Prof., Biol., Hastings Coll., 1956-58; Chmn. and Prof., Dept. of Biol., ibid., 1958 —. Mem.: Nebr. Acad. of Sci.; Am. Assn. Adv. Sci.; Kans. Acad. of Sci.; Botanical Soc. of Am.; Sigma Xi; Phi Sigma; Assn. of Midwest Coll. Biol. Tchrs.; Hastings Community Concert Assn., Hastings, Nebr. Contbr. to: Kans. Acad. Sci. Trans. Mem. of the Faculty Devel. Coun. for the Coop. Coll. Tchr. Improvement Program for Nebr. Serv. Rec.: U.S. Army, 1943-46; U.S.A.F.R., 1946-57. Gen. Int.: Direct Exchange Scholarship from Univ. of Kans. to Swiss Fed. Inst. of Technology, Zurich, 1949-50; Woods Distinguished Tchr. Award, Hastings Coll., Nebr., 1958. Areas of Rsch.: Myco'ogy and Phycology. U. S. Forest Service; Plant Patho'ogist, White Pine Blister Rust.

SHRADER, James Houston (Ph.D.), Chmn., Emeritus, Div. of Sci. and Math., Eastern Nazarene Coll., Wollaston, Mass. Home Add.: Waterville, Vt. CHEMISTRY, FOOD TECHNOLOGY, PHILOSOPHY OF SCIENCE. b. Washington, D. C., Sept. 30, 1885. s. Houston Downing and Mary (Amos) S. Edn.: A.B., George Washington Univ., 1909; Ph.D., Johns Hopkins Univ., 1913. m. Anne Hosley, 1911. c.: Muriel; Margaret; Jean. Exp.: Food Technologist, U. S. Dept Agri. Bur. Plant Ind., Washington, D.C., 1917-20; Dir., Bur. Chem. and Food, Balto, City Health Dept., Baltimore, Md., 1921-28; Pres., Rsch. Labs. Natl. Dairy Prod. Corp., 1928-35; Prof. Chem. and Chmn., Div. Sci. and Math., Eastern Nazarene Coll., 1939-56; Chmn., Emeritus, Div. of Sci. and Math., ibid., 1957—. Hon. Pos.: Chmn., Div. of Food and Nutrition, Am. Publ. Health Assn.; Editor, Jour. of Milk and Food Tech. Mem.: Am. Chem. Soc.; Am. Assn. Adv. of Sci.; Inst. Food Technologists; Am. Publ. Health Assn.; Inst. Religion in an Age of Sci; Sigma Xi. Author: Food Control: Its Public Health Aspects, 1939; Co-founded J. Milk and Food Technology,



edited, 1938-54. Contbr. to: Jour. Am. Chem. Soc.; Am. Jour. Publ. Health; Jour. Milk and Food Tech.; The Christian Scholar. Areas of Rsch.: Food Technology, Food Sanitation, Food Waste Utilization, Religion-Science Philosophy.

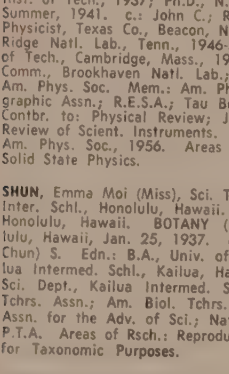
SHUGER, Leroy Woodrow (Ph.D.), Vice Pres., Baltimore Paint and Chem. Corp., 2325 Annapolis Ave., Baltimore 30, Md. Home Add.: Shuger Hill Rd., P. O. Box 5781, Pikesville 8, Md. CHEMISTRY. b. Baltimore, Md., Jan. 11, 1910. s. Morres and Sophie (Navanvorich) S. Edn.: B.S., Johns Hopkins Univ., 1931; Ph.D., ibid., 1934. m. Joyce Tramer, Dec. 25, 1939. c.: Jill Fran; Maura Jacqueline. Exp.: Vice Pres., Baltimore Paint and Chem. Corp., Baltimore; Pres., Calvert-Mt. Winans Co., Inc., Baltimore; Vice Pres., Murphy Paints, Inc., Baltimore. Hon. Pos.: Secy. and Mem. of Bd. of Dirs., Shuger Corp.; Mem. of Dist. Coun. of A.S.T.M.; Chmn., Scientific Comm. of the Natl. Paint, Varnish and Lacquer Assn. Mem.: Am. Chem. Soc.; Fellow, Am. Inst. Chem.; Am. Soc. for Testing Materials; Highway Rsch. Bd.; Am. Assn. Adv. Sci.; Fed. of Paint and Varnish Production Club; Am. Oil Chem. Soc.; Phi Alpha. Gen. Int.: Inventor of a number of patents principally in the field of Reflectorized Traffic Paint. Area of Rsch.: Reflectorized Traffic Paint.

SHULL, Clifford G. (Ph.D.), Prof. of Physics, Mass. Inst. of Tech., Cambridge, Mass. Home Add.: 4 Wingate Rd., Lexington, Mass. SOLID STATE PHYSICS. b. Pittsburgh, Pa., Sept. 23, 1915. s. David H. and Daisy (Bistline) S. Edn.: B.S., Carnegie Inst. of Tech., 1937; Ph.D., N. Y. Univ., 1941. m. Martha-Nuel Summer, 1941. c.: John C.; Robert D.; William F. Exp.: Rsch. Physicist, Texas Co., Beacon, N. Y., 1941-46; Chf. Physicist, Oak Ridge Natl. Lab., Tenn., 1946-55; Prof. of Physics, Mass. Inst. of Tech., Cambridge, Mass., 1955—. Hon. Pos.: Chmn., Visiting Comm., Brookhaven Natl. Lab.; Chmn., Div. of Solidstate Phys., Am. Phys. Soc. Mem.: Am. Phys. Soc.; A.A.A.S.; Am. Crystallographic Assn.; R.E.S.A.; Tau Beta Pi; Phi Kappa Phi; Sigma Xi. Contbr. to: Physical Review; Jour. Chem. Phys. Solids; Science; Review of Scient. Instruments. Gen. Int.: Awarded Buckley Prize, Am. Phys. Soc., 1956. Areas of Rsch.: Neutron Diffraction and Solid State Physics.

SHUN, Emma Moi (Miss), Sci. Tchr., Dept. of Pub. Instrn., Kailua Inter. Schl., Honolulu, Hawaii. Home Add.: 1555 Laumaile St., Honolulu, Hawaii. BOTANY (TAXONOMIC BOTANY). b. Honolulu, Hawaii, Jan. 25, 1937. d. Wah Sheong and Victoria (Tom Chun) S. Edn.: B.A., Univ. of Hawaii, 1959. Exp.: Tchr., Kailua Intermed. Schl., Kailua, Hawaii, 1960—. Hon. Pos.: Chmn., Sci. Dept., Kailua Intermed. Schl., 1961-62. Mem.: Natl. Sci. Tchrs. Assn.; Am. Biol. Tchrs. Assn.; Am. Forestry Assn.; Am. Assn. for the Adv. of Sci.; Natl. Edn. Assn.; Hawaii Edn. Assn.; P.T.A. Areas of Rsch.: Reproductive Structures of Coralline Algae for Taxonomic Purposes.

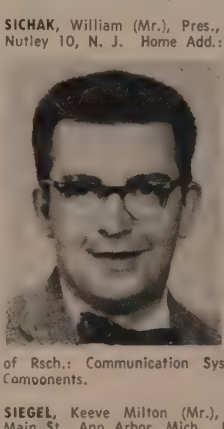
SHURLEY, Virginia D'Voe (Mrs.), Tchr. of Math., Galena Park H. S., Galena Park, Tex. Home Add.: 1533 Godwin St., Houston, Tex. MATHEMATICS. b. Ludlow, Miss., March 1, 1904. d. Rev. Tom Tomlinson and Stella (Smith) T. Edn.: B.S., Millsaps Coll., 1932; M.Ed., Univ. of Houston, 1951. m. Herbert Edmond Shurley (dec.), Dec. 13, 1925. c.: Betty Jean Selden; Carolyn Ann Marsh; Martha Jo Smith. Exp.: H. S. Tchr., Miss. Schls., 1937-41; Math. Tchr., Aldine H. S., Aldine, Tex., 1941-43; Math. Tchr., Galena Park H. S., Galena Park, Tex., 1944—. Hon. Pos.: Sponsor of Mu Alpha Theta. Mem.: N.E.A.; C.T.A.; T.S.T.A.; A.A.A.S.; Natl. Coun. of Tchrs. of Math. Gen. Int.: Fellow of Natl. Sci. Found. Areas of Rsch.: Edn. and Math.

SHUSTER, Carl Nathaniel (Ph.D.), Hd. of Math. Dept., Univ. of Tampa, Tampa, Fla. Home Add.: 2035-26A North, St. Petersburg, Fla. MATHEMATICS. b. Frenchtown, N. J., 1890. s. Nathaniel Rittenhouse and Catherine (Draucker) S. Edn.: B.S., Columbia Univ., 1915; A.M., ibid., 1918; Ph.D., ibid., 1940. m. Edith Gilman, June 5, 1918. c.: Carl Jr.; John G.; Jean. Exp.: Faculty, Clark Schl., 1915-18; Faculty, Orange, N. J. High Schl., 1920-28; Faculty, Trenton Jr. Coll., 1955-57; Faculty, Columbia Univ., 1928-55; Faculty, N. J. Coll., Trenton, 1928-56; Faculty, Yeshiva Univ., 1952-56; Faculty, Pennington Schl., N. J., 1956-57; Faculty, Univ. of Tampa, 1957-60. Hon. Pos.: Pres., Am. Math. Tchrs. of New Jersey; Pres., Natl. Council of Tchrs. of Math. and many more; Alumni Citation, N. J. Coll. at Trenton, 1961. Mem.: Natl. Council of Tchrs. of Math.; Fellow, A.A.A.S.; Am. Math. Soc.; Am. Math. Assn.; Fla. Acad. of Sci.; Fla. Assn. of Sci.; Phi Delta Kappa; Torch; Masons; Lions. Author: Field Work in Math., and more than 30 other books. Contbr. to: Math. Mag.; Bull. Am. Math. Soc.; Math. Achr.; Arithmetic Tchr.; Scripta Math.; etc. Serv. Rec.: U. S. Navy, 1918-19. Areas of Rsch.: Teaching of Math. and Applications of Mathematics.



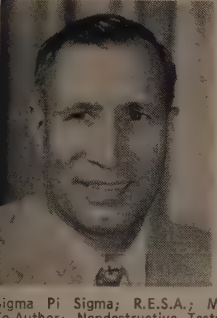
SIBLEY, Gretchen (Miss), Zool. Instr., Los Angeles Co. Museum and Biol. Lectr., Pepperdine Coll. Home Add.: 6006 Overhill Dr., Apt. 4, Los Angeles 43, Calif. IDENTIFICATION OF HAIRS AND FIBERS, INCLUDING FOSSIL FORMS—GENERALLY: VERTEBRATE ZOOLOGY. b. Los Angeles, Calif., May 14, 1914. d. Richard E. and Alda M. (Shuttleworth) S. Edn.: B.A., Pasadena Coll., 1943; M.A., Univ. of Sou. Calif., 1947. Exp.: Sci. Tchr., Garvey Jr. High Schl., Los Angeles Co., 1943-46; Zool. Instr., Los Angeles Co. Museum, 1946—; Biol. Lectr., Pepperdine Coll., (Part-time), 1954—. Hon. Pos.: Secy., Sou. Calif. Acad. of Sci. Mem.: A.A.A.S.; Sou. Calif. Acad. of Sci.; Western Soc. of Naturalists; Natl. Sci. Tchrs. Assn.; Sigma Xi; Phi Sigma; Delta Kappa Gamma; Pi Lamgda Theta; Sigma Delta Epsilon. Contbr. to: Los Angeles Co. Museum Quart. Areas of Rsch.: Microfauna of La Brea Pleistocene Deposits; Microscopic Study of Hairs and Fibers; Special Training of Gifted Young People in Science.

SICHAK, William (Mr.), Pres., Sichak Assoc., 518 Franklin Ave., Nutley 10, N. J. Home Add.: 24 Evelyn Place, Nutley 10, N. J. PHYSICS: COMMUNICATION SYSTEMS, ELECTRONICS. b. Lyndora, Pa., Jan. 7, 1916. s. Michael and Katherine (Minto) S. Edn.: A.B., Allegheny Coll., 1942. m. Arlene Johnson, Aug. 30, 1940. c.: Jane; Jill. Exp.: Staff Mem., Radiation Lab., M.I.T., Cambridge, Mass., 1942-45; Dir. Communication Systems, I.T.T. Fed. Labs., Nutley, N. J., 1945-61; Pres., Sichak Assoc., ibid., 1961—. Mem.: Am. Assn. for the Adv. of Sci.; Inst. of Radio Engrs.; N. Y. Acad. of Sci.; Am. Physic Soc.; Am. Rocket Soc.; Beta Kappa. Author: Reference Data for Engineers, Member of Editorial Board and Contributor, 1956. Contbr. to: I.R.E.; Tele-Tech; Elec Communication; Electronics. Areas of Rsch.: Communication Systems; Antennas; Radio Frequency Components.

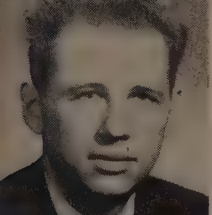


SIEGEL, Keeve Milton (Mr.), Pres., Conductron Corp., 343 S. Main St., Ann Arbor, Mich. Home Add.: 1425 Hatcher Crescent, Ann Arbor, Mich. THEORETICAL PHYSICS. b. N.Y.C., Jan. 9, 1923. s. David P. (dec.) and Rose (Jelin) S. (dec.). Edn.: B.S., Rensselaer Polytechnic Instit., 1948; M.S., ibid., 1950. m. Ruth Boerker, June 22, 1951. c.: Leigh Michael; David Alan. Exp.: Hd. Univ. of Mich. Rad. Lab., Ann Arbor, Mich., 1957-61; Prof., Univ. of Mich. Elect. Engrng. Dept., ibid., 1957—; Pres., Conductron Corp., Ann Arbor, Mich., 1960—; Chmn. of Bd., ibid., 1961—. Hon. Pos.: Mem., Comm. Vi-URSI Natl. Acad. of Scis.; Chmn., Sub comm. 6.3-URSI; Chmn., Univ. of Mich., URSI Symposium, 1955; Chief, U. S. Rep., French—URSI Meeting, 1956; U. S. Rep., XII'th Gen. Assembly of URSI, Boulder, 1957; Mem., Editorial Bd., Jour. of Mathematical Physics, Am. Institute of Physics; Member, Scientific Advisory Board to the U. S. Air Force; Member, Advisory Group for Radio Exptn. in Space, Natl. Aeronautics and Space Admn.; Assoc. Editor Trans. of Prof. Group on Antennas and Propagation, IRE. Mem. N. Y. Acad. of Scis.; Am. Mathl. Soc.; Am. Instit. of Physic Instit. of Aeronautical Scis.; Assoc. Fellow, Instit. of Radio Engrs.; Am. Assn. for the Adv. of Sci.; Am. Phys. Soc.; Sigma Xi. Contbr. to: Proc. of IRE; Jour. Aero. Sci.; Jour. Math. and Phys.; Proc. Am. Math. Soc.; Jour. Appl. Phys.; Trans. IRE; L'Onde Electrique; Appl. Sci. Rsch.; Paris Symp. on Radio Astronom Aero-Space Engrng. Jour.; Can. Jour. Phys.; Jour. Rsch. Nat. Bureau Standards; Astrophys. Jour. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Electromagnetic Theory; Hydrodynamic Aerodynamics; Magneto-Hydrodynamics to Include Plasma Physics; Radiation and Propagation and Scattering and Ionization Phenomena.

SIDHU, Surain Singh (Ph.D.), Sr. Physicist, Argonne Natl. Lab., Argonne, Ill. Home Add.: 1404 Thornwood Dr., Downers Grove, Ill. PHYSICS. b. Amritsar, India, June 8, 1902. s. Sundar S. and Balwant (Kaur) S. Edn.: B.S., Univ. of Pittsburgh, 1925; M.S., ibid., 1926; Ph.D., ibid., 1937. m. Mary Elizabeth Homoney, June 8, 1929. c.: Marion L.; Victor S.; Ellen Dianne. Exp.: Lectr. Physics, Univ. of Pittsburgh, 1937-38; Dir., X-ray Lab., ibid., 1938-50; Asst. Prof., Assoc. Prof., Prof. of Physics, ibid., 1942-50; Sr. Physicist, Argonne Natl. Lab., Ill., 1947-48; 1950—. Hon. Pos.: Pres., Argonne Br., R.E.S.A., 1958-59; Mem., Ill. Bd. of Radiation Phys. Mem.: Fellow, Am. Phys. Soc.; Fellow, Am. Assn. Adv. Sci.; Fellow, Am. Coll. of Radiology; Am. Assn. Physics Tchrs.; Am. Crystallographic Assn.; Sigma Xi; Sigma Pi Sigma; R.E.S.A.; Mem., Adv. Bd., Watumull Found. Co-Author: Nondestructive Tests in the Field of Nuclear Energy, 1957; Progress in Nuclear Energy, Series 5, Vol. 3, Chapter 4, 1961. Contbr. to: Phys. Rev.; Jour. Appl. Phys.; Acta Crysta.; Am. Jour. of Phys.; Nuclear Sci. and Engrng. Gen. Int.: Founder of Pittsburgh Annual Diffraction Conf. Areas of Rsch.: Neutron, Plasma and Solid State Physics; Neutron Diffraction Techniques and Their Applications; X-ray and Electron Diffraction; Crystal Structure; Metal-hydrogen Systems; Radiography; Radiology.



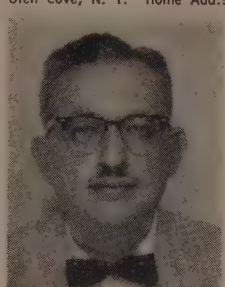
SIEBRING, Barteld Richard (Ph.D.), Professor of Chemistry, Univ. of Wis., 3203 N. Downer, Mil., Wis. Home Add.: 2524 N. Lake Dr., Mil., Wis. INORGANIC CHEMISTRY. b. George, Ia., Sept. 24, 1924. s. Richard and Kate (Snuttjer) S. Edn.: B.A., Macalester Coll., 1947; B.S., Univ. of Minn., 1948; M.S., ibid., 1949; Ph.D., Syracuse Univ., 1953. Exp.: Instr., Worthington Jr. Coll., Worthington, Minn., 1948-50; Instr., Gen. Chem., Lafayette Coll., Easton, Pa., 1950-51; Instr., Gen. Chem., Syracuse Univ., Syracuse, N. Y., 1951-53; Visit. Prof., Gen. and Organic Chem., Jamestown Coll., Jamestown, N. D., 1953; Asst. Prof., Univ. of Wis.-Mil., Mil., Wis., 1953-56; Assoc. Prof. (Summers only), Univ. of Wis., Madison, Wis., 1958, 1960, 1961; Assoc. Prof. of Chem., Univ. of Wis., Mil., Wis., 1956-62; Prof. of Chem., ibid., 1962—. Mem.: Am. Chem. Soc.; Hist. of Sci. Soc.; Natl. Assn. for Rsch. in Sci. Tchng.; A.A.A.S. Contbr. to: Am. Jour. of Physics; Jour. of Chem. Edn.; Sci. Edn. Serv. Rec.: U. S. Naval Reserve, 1944-46. Areas of Rsch.: Co-ordination Compounds, Technical Personnel, History of Chemistry.



SIEGEL, Max (Ph.D.), Assoc. Prof., Psychol., Brooklyn Coll., Brooklyn 10, N. Y. Home Add.: 58-32 210th St., Bayside 64, N. Y. PSYCHOLOGY. b. N. Y., N. Y., July 22, 1918. s. Harry and Fanny (Goodman) S. Edn.: A.B., City Coll. of N. Y., 1939; M.S. in Edn., ibid., 1940; Ph.D., N. Y. Univ., 1951. m. Frieda Friedman, Nov. 23, 1941. c.: Ozzie; Shelley Ann. Exp.: Interne in Clin. Psychol., N. Y. State Intern Trng. Program, Warwick, Rockland State, and Letchworth Village, N. Y., 1940-41; Psychologist, Vets. Admin., N. Y., N. Y., 1946-47; Sr. Clin. Psychologist, N. Y. C. Domestic Relations Court Psychiatric Clinic, N. Y., 1947-48; Assoc. Prof. and Chief Psychologist, Brooklyn Coll. and Community Counseling Center, 1948—. Hon. Pos.: Advisory Coun. in Psychol., N. Y. State Edn. Dept.; Professional Advisory Com., Queens Co. Mental Health Assn. Mem.: Am. Psychol. Assn., Fellow; Am. Orthopsychiatric Assn., Fellow; Soc. for Projective Techniques, Fellow; N. Y. State Psychol. Assn.; N. Y. Soc. of Clin. Psychologist; Am. Group Psychotherapy Assn.; Am. Assn. of Univ. Profs.; Am. Personnel and Guid. Assn.; Eastern Psychol. Assn.; Brooklyn Psychological Assn.; Am. Acad. of Psychotherapists. Author: Compulsory Education and Adolescent Personality, 1958. Contbrng. Author: A Commitment To Youth, 1960. Contbr. to: Personnel and Guidance Jour.; N. Y. State Psychol. Assn.; Annual Proc. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Individual and Group Psychotherapy, Learning Problems, Clinical Diagnosis, Psychopathology and Mental Hygiene, Diagnostic Psychological Testing.

SIEGEL, Walter Whiteley (Mr.), Home Add.: 2243 Cambridge Ave., Cardiff by the Sea, Calif. GRAVITY (THEORY) AND FREE WILL. b. Ariz., Aug. 24, 1908. s. Walter and Maude B. (Whiteley) S. m. Mildred J. Bowen, Jan. 19, 1957. c.: Mrs. Diana Stone; Mrs. Jane Iverson; Jan; L. G. Zerfas, II; John; Robert. Mem.: Am. Assn. for the Adv. of Sci.; Am. Humanist; Unitarian Serv. Comm., Turn Toward Peace.

SIEGELMAN, Arthur Murray (Mr.), Rsch. Assoc., Community Hosp., Glen Cove, N. Y. Home Add.: 296 Cedar Swamp Rd., Glen Head, L. I., N. Y. BIOCHEMISTRY. b. Bronx, N. Y., Dec. 23, 1927. s. William and Rose (Siegelman) S. Edn.: B.A., N. Y. Univ., 1950; M.A., Columbia Univ., 1951. m. Phyllis Breindel, June 27, 1948. c.: Richard Ellis; Jonathan Jay. Exp.: Rsch. Dir., Haemoscope Corp., Albertson, L. I., N. Y., 1953-56; Rsch. Assoc., Community Hosp., Glen Cove, L. I., N. Y., 1957—; Instr., C. W. Post Coll., 1961—. Mem.: Am. Mus. Nat. Hist.; A.A.A.S. Contbr. to: Arch. of Biochem. and Biophysics; Am. Jour. of Clin. Pathol. Serv. Rec.: U. S. Army, 1946-49. Areas of Rsch.: Clin. Enzymol.; Haematol. Technol.; Med. Technol.



SIEGLER, Peter Emery (M.D.), Coll. and Hosptl., Phila., Pa. Assoc. in Med., Hahnemann Med. Home Add.: 1209 W. Wynnewood Rd., Wynnewood, Pa. ALLERGY AND CLINICAL PHARMACOLOGY. b. Budapest, Hungary, Feb. 3, 1924. s. Bela and Elizabeth (Levai) S. Edn.: M.D., Univ. of Budapest Schl. of Med., 1951. m. Georgina Faludi, 1957. Exp.: Instr., Pathol., Med. Coll. of Univ. of Budapest, Budapest, Hungary, 1948-51; Instr. and Asst. Prof. of Med., ibid., 1951-56; Instr. to Assoc. in Med., Hahnemann Med. Coll. and Hosp., 1959—. Mem.: Am. Med. Assn.; Pa. Med. Soc.; Phila. Co. Med. Soc.; N. Y. Acad. of Scis.; Am. Geriatrics Soc.; Am. Fed. for Clin. Rsch.; Am. Hungn. Med. Assn.; Gerontol. Soc., Inc.; Phila. Allergy Soc.; Pa. Allergy Assn.; Am. Acad. Allergy. Contbr. to: Zsch. inn. Med. Leipzig. Orvosi Hetilap, Budapest; Allerg. u. Asthmaforsch.; Toxicol. and Appl. Pharm.; Fed. Proc.; Clin. Rsch.; Antibiot.; Med. and Clin. Theraps.; Curr. Therap. Rsch.; Lancet; Anns. of Allergy; Postgrad Med. Areas of Rsch.: Allergy; Clinical Pharmacology; Psychopharmacology and Internal Medicine.

SIENKO, Michell J. (Ph.D.), Prof. of Chem., Cornell Univ., Ithaca, N. Y. Home Add.: 1433 Ellis Hollow Rd., Ithaca, N. Y. PHYSICAL-INORGANIC CHEMISTRY. b. Bloomfield, N. J., May 15, 1923. s. Felix and Teofila (Kislova) S. Edn.: B.A., Cornell Univ., 1943; Ph.D., Univ. of Calif., 1946. m. Carol Tanghe, Aug. 25, 1946. c.: Tanya. Exp.: Instr. in Chem., Univ. of Calif., 1946; Rsch. Assoc., Stanford Univ., 1946-47; Instr. in Chem., Cornell Univ., 1947-50; Asst. Prof., ibid., 1950-53; Assoc. Prof., ibid., 1953-59; Prof., 1959—. Visiting Lectr., Univ. of Toulouse (France), 1956-57. Mem.: Am. Chem. Soc.; Am. Physical Soc.; Phi Beta Kappa; Sigma Xi. Author: Textbook of Chemistry for University Students, 1955; Chemistry, 1957; Experimental Chemistry, 1958. Contbr. to: Jour. Chem. Physics; Jour. Am. Chem. Soc. Areas of Rsch.: Solid State Defect Structures, Magnetic Resonance.

SIGUA, Richard Alvarez (Ph.D.), Mem., Staff, Tamar Electronics, Inc., Gardena, Calif. Home Add.: 14613 Condon Ave., Lawndale, Calif. PHYSICS AND GEOPHYSICS. b. Philippine Islands, May 2, 1915. s. Santiago and Francisca (Alvarez) S. Edn.: B.S.A.E., AFESA Univ., 1937; LL.B., Far East Coll., 1941; Ph.D., Coll. of Philos., 1958; I.D.S. (Human Factors), and Exp. Engr. Mgmt., U.C.-L.A., 1961-62. m. Rosa McCaw, 1939. c.: Virginia; Ginger; Rosita; Josephine; Richard, Jr.; Jonathan; Alexander. Exp.: Mgr. and Vice Pres., Pate Engrng., Ala., 1957-60; Mgr., Natl. Rocket Corp., El Segundo, Calif., 1960-61; Dir., Transi-Tech. Electronics, Culver City, Calif., 1961-62; Mem., Staff, Tamar Electronics, Inc., Gardena, Calif., 1962—. Mem.: Am. Rocket Soc.; Am. Geophys. Union; Am. Assn. for the Adv. of Sci.; Epsilon Delta Xi. Serv. Rec.: U. S. Army, 1941-47. Gen. Int.:

All Weather Ballistic Missile. Areas of Rsch.: Geomagnetics; Aeronomy; Meteorites; Guided Missile and Satellite.

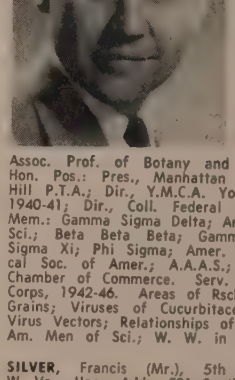
SIKORSKY, Igor Alexis (Mr.), Chief Aerodynamacist, Sikorsky Aircraft, div. of United Aircraft Corp., Stratford, Conn. Home Add.: 105 Elmhurst Ave., Stratford, Conn. AERONAUTICAL ENGINEERING. b. Lenkoran (Russia), Sept. 11, 1901. s. Alexis and Nathalie (Komaroff) S. Edn.: B.S., Russian Naval Acad., 1922; Certificate, Univ. of Poitiers, France, 1923; Certificate, Univ. of Paris, 1926; AE.E., Ecole Tech., d'Aeronautique, Paris, 1927. Exp.: Draftsman and Designer, France, Society Disticoke, Aeroplanes Amiot, Aeroplanes Caudron, 1928-30; Aeronautical Engr., Sikorsky Aircraft, div. of United Aircraft Corp., 1930—; Chief Aerodynamicist, ibid., 1946—. Hon. Pos.: Chmn., one of the Technical Sessions, IV Internati. Aeronautical Congress, Paris, 1959; Vice Pres., Am. Helicopter Soc., 1945-46. Mem.: Fellow, Inst. of Aeronautical Scis.; Hon. Fellow, Am. Helicopter Soc.; Fellow, Royal Aeronautical Society; Natl. Soc. of Prof. Engrs.; Conn. Soc. of Profl. Engrs.; Am. Assn. Adv. Sci.; Assn. Francaise des Ingenieurs et Techniciens de l'Aeronautique. Co-author: booklet, Aerodynamics and Performance of Helicopters, 1954. Contbr. to: Jour. of Am. Helicopter Soc.; Technique et Science Aeronautiques; Papers to Inst. of the Aeronautical Scis. and IV Internatl. Aeronautical Congress for Vertical Flight. Areas of Rsch.: Helicopter Aerodynamics and Performance.

SILBERMAN, David Eli (M.D.), Psychiatrist, 7 Pk. Ave., N. Y. 16, N. Y. Home Add.: 100 Elmsmere Rd., Mount Vernon, N. Y. PSYCHIATRY. b. New York City, Jan. 21, 1909. s. Joseph and Esther (Hausman) S. Edn.: B.S., N. Y. City Coll., 1929; M.A., Columbia Univ., 1932; M.D., N. Y. Univ. Coll. of Med., 1936. m. Susan Fine, Dec. 15, 1938. c.: Paul. Exp.: Rotating Intern, Montefiore Hosp., N. Y. C., 1937-38; Resident in Med., ibid., 1938; Intern in Pathol., ibid., 1938-39; Asst. in Med., ibid., 1939-44; Clin. Asst., Allergy, Mount Sinai Hosp., O.P.D., N. Y. C., 1939-46; Clin. Asst. Visiting in Med., City Hosp., ibid., 1940-41; Chief in Med., ibid., 1940-47; Asst. Visiting, ibid., 1941-43; Asst. Clin. Prof. of Med., N. Y. Med. Coll., 1943-53; Assoc. Visiting in Med., City Hosp., ibid., 1944-53; Instr. in Clin. Med., Columbia Univ., ibid., 1944-47; Visiting Physician in Allergy, Hebrew Home and Hosp. for Chronic Sick, ibid.; Adjunct Visiting in Med., Montefiore Hosp., ibid., 1945-53; Lectr. in Med., Cardiology, Columbia Univ., ibid., 1946-53; Adjunct Visiting Physician in Allergy, Lebanon Hosp., ibid., 1947-48; Chief of Allergy, ibid., 1947-48; Fellow, Postgraduate Course in Psychiatry, N. Y. U., Bellevue Med. Center, ibid., 1950-51; Fellow in Psychiatry, N. Y. Univ. Coll. of Med., ibid., 1950-53; VA Fellow in Psychiatry, N. Y. U., Bellevue Med. Center, ibid., 1951-52; U. S. Public Health Serv. Fellow in Psychiatry, ibid., 1952-54; Asst. in Psychiatry, N. Y. Univ. Coll. of Med., ibid., 1953-54; Assoc. Visiting Psychiatry, Hebrew Home and Hosp. for Chronic Sick, 1953-55; Asst. in Psychiatry, Univ. Hosp., N. Y. U., Bellevue Med. Center, ibid., 1953-58; Clin. Asst. Visiting Neuropsych., Bellevue Psychiatric Hosp., ibid., 1953-55; Chief Psychiatrist; Dir. of Psychiatric Services Div., Inst. of Physical Med. and Rehabilitation, ibid., 1953-56; Visiting Physician, Psychiatry, Hebrew Home and Hosp. for Chronic Sick, ibid., 1955-61; Instr. in Psychiatry, N. Y. Univ. Coll. of Med., ibid., 1955-58; Asst. Visiting Neuropsychiatrist, Bellevue Psychiatric Hosp., ibid., 1956-61; Clin. Instr., Psychiatry, N. Y. Univ. Coll. of Med., ibid., 1958-61. Hon. Pos.: Past Pres., North Bronx Med. Soc.; Am. Bd. of Intern. Med. and Allergy; Am. Bd. of Neurol. and Psychiatry; Med. Advisory Bd., N. Y. State Occupational Therapy Assn.; Advisory Comm., Skills Unlimited, Inc., E. Islip, N. Y. Rehabilitation Center; Rsch. Advisory Comm., Visiting Nurse Serv. of N. Y. Mem.: Fellow, Am. Acad. of Allergy; Am. Soc. of Certified Allergists; AMA, Fellow; Bronx Co. Med. Soc.; N. Y. Co. Med. Soc.; Westchester Co. Med. Soc., Assoc.; Am. Coll. of Physicians, Fellow; N. Y. Acad. of Scis.; Am. Psychiatric Assn.; N. Y. Acad. of Med., Fellow; N. Y. Soc. for Clin. Psychiatry; Soc. of Med. Psychoanals.; Acad. of Psychoanal., Fellow; A.A.A.S., Fellow; Am. Heart Assn. Contbr. to: Jour. Biol. Chem.; Journ. AMA; Journ. Allergy; Am. Clinica; Ann. Int. Med.; Transactions of N. Y. Acad. of Scis. Areas of Rsch.: Psychiatry; Allergy; Intern. Med.

SILVER, Archie Aaron (M.D.), Assoc. Clin. Prof., N. Y. Univ., Schl. of Med., 550-1st Ave., N. Y. 16, N. Y. Home Add.: 23 Kent Rd., Scarsdale, N. Y. PSYCHIATRY. b. N. J., Jan. 29, 1917. s. Samuel and Esther (Lesser) S. Edn.: B.S., N. Y. Univ., 1936; M.D., ibid., 1940. m. Mary Louise Berkovitz, 1943. c.: Robert Alan; Frederick Michael. Exp.: Asst. Res., Bellevue Hosp., N. Y., 1946; Fellow, N. Y. Univ. Coll. of Med., 1946-48; Jr. Psychiat., Bellevue Hosp., 1948-49; Sr. Psychiat. and Psychiat in Chg., Mental Hyg. Clinic, ibid., 1949—; Clin. Asst. Atten. Psychiat., N. Y. Univ. Coll. of Med., 1947-49; Asst. Psychiat., Univ. Hosp., 1950-52; Asst. Attn. Psychiat., ibid., 1952—; Clin. Asst., N. Y. Univ., 1949-50; Clin. Instr., ibid., 1950-52; Asst. Clin. Prof. of Psychiat., ibid., 1952-61; Assoc. Clin. Prof., ibid., 1961—. Hon. Pos.: Diplomate in Psychiat., Am. Bd. of Neurol. and Psychiat.; Diplomate in Child Psychiat., ibid.; Mem. of Conf. on Psychiat. in Patient Treatment of Children, 1956-57; Mem., Comm. on Child and Adolescent Psychiat., N. Y. Dist. Br. Am. Psychiat. Assn. Mem.: Fellow, Am. Psychiat. Assn.; Am. Med. Assn.; Fellow, N. Y. Acad. of Med.; Fellow, Am. Assn. for the Adv. of Sci.; Orton Soc.; Soc. for Psychopathol. and Psychotherap.; Fellow, Am. Orthopsychiat. Assn.; Phi Beta Kappa. Contbr. to: Proc. Am. Orthopsychiat. Assn.; Bull. of the Orton Soc.; Ped. Clinics of N. Am.; Am. Jour. of Psychotherap.; Quart. Rev. of Peds.; Am. Jour. Peds. Serv. Rec.: U. S. P.H.S., 1942-45. Areas of Rsch.: Schizophrenia in Childhood; Minimal Brain Damaga in Childhood; Learning Disabilities.

SILL, Webster Harrison, Jr., Assoc. Prof. of Botany and Plant Pathology, Dept. of Botany, Kans. State Univ., Manhattan, Kans. Home Add.: RFD 1, Manhattan, Kans. PLANT VIROLOGY: PLANT PATHOLOGY. b. Wheeling, W. Va., Dec. 4, 1916. s. Webster H. and Grace (Clark) S. Edn.: B.S., W. Va. Wesleyan Coll., 1939; M.A., Boston Univ., 1947; Ph.D., Univ. of Wis., 1951. m. Charlyn Adams of Parkersburg, W. Va., July 25, 1943. d. Dr. C. T. Adams. c.: Webster H., III; Susan Chenoweth; Warren T. Exp.: Tchng. Asst., Boston Univ., 1940-41; Tchng. Asst., Pa. State Coll., 1941-42; Tchng. Asst., ibid., 1947-48; Prof., W. Va. Wesleyan Coll., 1946-47; Rsch. Asst., Univ. of Wis., 1948-51; Rsch. Assoc., ibid., 1951-52; Asst. Prof. of Botany and Plant Pathology, Kansas State Univ., 1952-56; Assoc. Prof. of Botany and Plant Pathology, ibid., 1956—. Hon. Pos.: Pres., Manhattan Coun. of Churches; Pres., Coll. Hill P.T.A.; Dir., Y.M.C.A. Youth Activities, Dorchester, Mass., 1940-41; Dir., Coll. Federal Credit Union, Kans. State Univ. Mem.: Gamma Sigma Delta; Amer. Acad. of Political and Social Sci.; Beta Beta Beta; Gamma Alpha; Sigma Alpha Sigma; Sigma Xi; Phi Sigma; Amer. Phytopathological Soc.; Mycological Soc. of Amer.; A.A.A.S.; A.A.U.P.; Kans. Acad. of Sci.; Chamber of Commerce. Serv. Rec.: 1st Lt., U. S. Marine Air Corps, 1942-46. Areas of Rsch.: Viruses of Grasses and Small Grains; Viruses of Cucurbitaceae; Virocides of Plant Viruses; Virus Vectors; Relationships of Science and Religon. Listed in: Am. Men of Sci.; W. W. in Midwest.

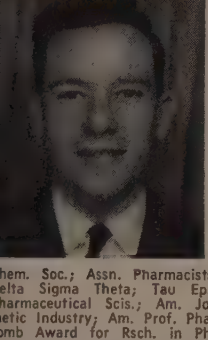
SILVER, Francis (Mr.), 5th Consulting Engr., Martinsburg, W. Va. Home Add.: 501 South Queen St., Martinsburg, W. Va. AIR POLLUTION, AIRBORNE TOXICITY. b. Martinsburg, W. V., Jan. 4, 1916. s. Gray and Kate (Bishop) S. Edn.: B.E., Johns Hopkins Univ., 1937. Exp.: Heavy Chem. Mgmt. and Engr., Standard Lime and Stone Co., Millville, W. Va., 1937-42; Plant Engr., Gen. Mgr., Vice-Pres., John W. Bishop Co., Martinsburg, W. Va., 1947-50; Weight Engr., Fairchild Aircraft, Hagerstown, Md., 1951-57; Weight Engr., Boeing Aircraft, Seattle, Wash., 1957; Consulting Engr., Martinsburg, W. Va., 1957—. Hon. Pos.: Mem., City Planning Comm., Martinsburg, 1950-57. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Soc. Mech. Engrs.; Inst. of Gen. Semantics; Natl. Speleological Soc.; W. Va. Soc. Profl. Engrs.; Reg. Profl. Engr. Author: Levels of Living (a Chart). Contbr. to: Mech. Engrng.; General Semantics Bull.; Natl. Speleological Soc. Bull. Serv. Rec.: U.S. Army, 1942-46. Gen. Int.: Called to Testify as an Expert on Air Pollution before Congressional Committee Holding Hearings on Schenck Bill for Curbing of Automobile Exhaust Fumes. Areas of Rsch.: Organoleptic Measurement of Total Actual Air-Borne Toxicity.



SILVERMAN, Alexander (Mr.), Prof. and Hd., Dept. of Chem. (Emer.), Univ. of Pittsburgh, Pittsburgh 13, Pa. Home Add.: 1514 Denniston Ave., Pittsburgh 17, Pa. GLASS—GLASS FOR USE IN SPACE CRAFT. b. Pittsburgh, Pa., May 2, 1881. s. Philip and Hannah (Schamberg) S. Edn.: Ph.B., Univ. of Pittsburgh, 1902, A.B., Cornell Univ., 1905; M.S., Univ. of Pittsburgh, 1907. Hon. Degrs.: Sc.D., Univ. of Pittsburgh, 1930; Sc.D., Alfred Univ., 1936. m. Elrose Reizenstein, Dec. 16, 1907. Exp.: Chemist, Macbeth-Evans Glass Co., Charleroi, Pa., 1902-04; Faculty, Chem. Dept., Univ. of Pittsburgh, Pittsburgh, Pa., 1905—; Hd. of Dept., ibid., 1915-51; Prof., (emer.), ibid., 1951—. Hon. Pos.: Hon. Pres., of IUPAC Comn. on Inorganic Nomenclature. Mem.: Am. Chem. Soc., (emer.); Natl. Instit. of Ceramic Engrs.; Am. Assn. of Univ. Profs.; Pa. Acad. of Sci.; Pa. Ceramics Assn.; Fellow, Am. Ceramic Soc.; Fellow, Instit. of Ceramic Engrs.; Fellow,

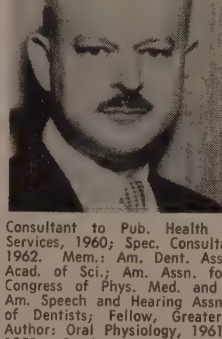
Am. Assn. for the Adv. of Sci.; Fellow, Am. Instit. of Chemists; Fellow, Soc. of Glass Technol., England; Cosmos Club; Sigma Xi; Phi Lambda Upsilon; Omicron Delta Kappa; Chemists' Club of Pgh.; Phi Beta Kappa. Contbr. to: Jour. Soc. Chem. Ind.; Trans. Am. Ceram. Soc.; Jour. Ind. Eng. Chem.; Met. Chem. Eng.; Trans. Faraday Soc.; Glass Ind.; Ind. Eng. Chem. Achievements of Gen. Int.: Internatl. Authority on Glass; Invented Important Sighting Devices for Microscopes. Areas of Rsch.: Glass, especially Fiber Glass Used in Space Craft.

SILVERMAN, Harold Irving (D.Sc.), Assoc. Prof., Long Island Univ., 600 Lafayette Ave., Brooklyn, N. Y.; and Brooklyn Coll. of Pharmacy, Brooklyn, N. Y. Home Add.: 49 Crestmont Rd., West Orange, N. J. PHARMACOGNOSY, PHARMACY. b. Lawrence, Mass., April 27, 1928. s. Jack S. and Norma (Illman) S. Edn.: B.Sc., Philadelphia Coll. of Pharmacy and Sci., 1951; M.Sc., ibid., 1952; D.Sc., ibid., 1956. m. Arlene Jacobowitz, Nov. 25, 1951. c.: Robert Lewis; Richard Larry. Exp.: Instr., Philadelphia Coll. of Pharm. and Sci., 1953-56; Asst. Prof., Brooklyn Coll. of Pharmacy, 1956-59; Sr. Scientist, Warner-Lambert Rsch. Inst., Morris Plains, N. J., 1958—; Assoc. Prof., Long Island Univ. and Brooklyn Coll. of Pharmacy, 1959—. Mem.: Am. Pharmaceutical Assn.; Am. Assn. Colleges of Pharmacy; Am. Chem. Soc.; Assn. Pharmacists Industry; Rho Chi; Rho Pi Phi; Delta Sigma Theta; Tau Epsilon Phi. Contbr. to: Jour. of Pharmaceutical Scis.; Am. Jour. of Pharmacy; Drug and Cosmetic Industry; Am. Prof. Pharmacist. Gen. Int.: Edwn L. Newcomb Award for Rsch. in Pharmacognosy, 1956; Lederle Rsch. Award, 1962. Areas of Rsch.: Pharmacognosy; Pharmacy (Research and Development).



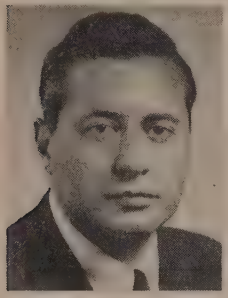
SILVERMAN, Hirsch Lazaar (Ph.D.), Prof. of Psychol., Grad. Schl. of Edn., Yeshiva Univ., 110 W. 57th St., N. Y. 19, N. Y., and Research Consult. Psychologist, N. Y. Medical Coll., M/R Clinic, Flower and Fifth Ave. Hosps., N. Y. City. Home Add.: 361 Highland Ave., Newark 4, N. J. CLINICAL AND CONSULTING PSYCHOLOGY; PSYCHOLOGICAL SERVICES. b. N. Y. City, June 19, 1915. s. Herman and Ida (Mackta) S. Edn.: B.Sc., (Soc. Sc.), Coll. of City of N. Y., 1936; M.Sc. (Ed.), ibid., 1938; M.A., New York Univ., 1948; M.A. (Admin. Supvr.), Seton Hall Univ., 1957; Ph.D., Yeshiva Univ., 1951. m. Mildred Friedlander of Newark, N. J., Mar. 1, 1942. d. Louis and Lena Friedlander. c.: Hyla; Morton; Stuart. Exp.: High Schl. Teacher, Newark, N. J., 1936-38; Lectr., Psychol. and Sociol., Coll. Soc. Studies, Newark, N. J., 1938-42; Res. Hd. of Philos. Dept., Asst. Prof., Philos.-Psych. Dept., Mohawk Coll., State Univ. of N. Y., 1946-48; Psychological Consult., Lab. of Psych. Studies, Stevens Inst. of Tech., 1948-50; Asst. Prof. of Psych., Newark Coll. of Arts and Scis., Rutgers Univ., 1949-53; Clin. and Consult. Psychologist, priv. pract., Newark, N. J., 1950—; Psychologist-in-Charge, Bd. of Edn., Nutley (N. J.) Pub. Schls., 1953-54; Asst. Prof. and Lectr., Schl. of Edn., Seton Hall Univ., 1953—; Lectr. Grad. Edn. Psych., Paterson State Coll., 1957—; Lectr. Psych., Grad. Schl. Edn., Yeshiva Univ., 1958—; Dir. of Psych. Svs. and Asst. to Supt. of Schls. in Chg. of Spec. Svs., Nutley Pub. Schls., 1954-59; Prof. of Psych. and Chmn., Dept. of Educl. and Schl. Psychol., Grad. Schl. of Edn., Yeshiva Univ., 1959-61; Prof. of Psychology, 1959—. Hon. Pos.: Hon. Mbr., Dedication Comm., Bar-Ilan Univ., State of Israel; Nutley Mental Health Comm.; Mbr., Bd. of Dir. and Consult. in Psych., North Essex Child Guid. Clinic; Comm. Mental Hlth. of N. J.; Coun. of Social Agencies; co-editor Bulletin, N. J. Acad. of Scis.; Consult., Nutley Human Rels. Council; Psych. Consult., J.E.A. of Essex County (N.J.); Edn. Advsmt. Comm., N. J. Region, Natl. Conf. of Christians and Jews; Dir., Bd. Edn., Relig. Schl., Temple Oheb Shalom, So. Orange, N. J.; Chmn., Div. of Psych., N.J.A.S.; Chmn., Sub-Comm. on Press Inform., N. J. Psych. Assn.; Secy. and Exec. Comm. Mbr., N. J. Acad. of Sci. Prof. Affils.; Fellow, Amer. Psych. Assn.; Fellow, N. Y. Acad. of Scis.; Fellow, Am. Assn. for Adv. of Sci.; Fellow; N. J. Acad. of Scis.; Fellow, Gerontological Soc.; Fellow, Am. Assn. on Mental Deficiency; Am. Acad. of Psychotherapists; N. Y. State Psych. Assn.; Acad. of Psych. in Marital Counseling; Am. Assn. of Marriage Counselors; Psychometric Soc.; A.A.U.P.; Prof. Mbr., Natl. Voci. Guid. Assn.; Assn. for Phys. and Mental Rehab.; Am. Grp. Psychotherapy Assn.; Eastern Psych. Assn.; N. J. Psych. Assn.; World Federation for Mental Health; N. J. Acad. and Pers. Assn.; Soc. for Psych. Study of Soc. Issues; Sou. Soc. of Philos. and Psych.; Am. College Pers. Assn.; Am. Cath. Psych. Asst.; Natl. Acad. of Relig. and Mental Health; Intern. Assn. for Exceptl. Children; Natl. Assn. of Secd. Schl. Prins.; N. Y. Philos. Assn.; N. Y. Soc. of Clin. Psych.; Am. Schl. Couns. Assn.; Phi Delta Kappa; Interam. Soc. of Psych.; Essex County (N. J.) Assn. of Schl. Psych.; Am. Edn. Rsch. Assn.; N. J. Schl. Psych. Assn.; N.E.A.; Am. Pers. and Guid. Assn.; A.A.U.P.; Am. Acad. of Pol. and Soc. Sci.; N. J. Edn. Assn.; Am. Assn. on Mental Deficiency; Eastern Grp. Psychotherapy Assn.; Am. Assn. of Schl. Admins.; Assn. Intern. de Psychotechnique (Europe); Clin. Psych. of North, N. J.; Fellow, Am. Assn. on Mental Deficiency; Prof. Member, Div. of Rehab. Couns., Am. Pers. Guid. Assn.; Kappa Delta Pi; Psi Chi; Phi Sigma Tau; Royal Soc. of Hlth. of Great Britain. Author: Psychology and Education: A Textbook of Essays, 1961; Education Through Psychol., 1954; Moments of Eternity, 1953; Philosophy: Its Significance in Contemporary Civilization, 1946; Fragments of Remembrance, 1944; Paeans to the Universe, 1941; In Abysm of Time, 1938; Psychology and Education, 1960; Random Thoughts: Liberalism in Life and Philosophy, 1936. Contbr. to: Psychiatric Quarterly; Phi Delta Kappan; Education; Am. Cath. Schl. Jour.; Bulletin of N.A.S.S.P.; Mental Hygiene; Christian Home Mag.; Am. Hebrew; Bulletin of N.J.A.S., Understanding the Child. Ph.D. Dissertation: Relationships of Personality Factors and Religious Background Among College Students. War Record: U. S. Army, W. W. II, 1942-46, Milit. Intellig. Corps. Travel: Hawaiian Islands; Central Pacific, South Pacific areas; Far East; Japan. Gen. Int.: Awarded Army Commendation Medal for Lects. in Edn. Psych. to overseas troops by War Dept.; Awarded Certif. of Recognition, N.C.C.J. Founder and First Exec. Secy., Alpha Psi Field Chapt., Phi Delta Kappa, N. Y. State; Charter Mbr., first Treas., N. J. Acad. of Sci.; Regist. State Psych. Examiner for Mental Retardates, N. J. Dept. of Edn.; Certif. Clin. and Consult. Psych., State Dept. of Mental Hygiene; Regist. Consult. and Clin. Psych., Vocat. Rehab. and Edn., U. S. Civil Service Commission, Wash., D. C.; Certif. Schl. Psych., N. J. State Dept. of Edn.; Certified Psychologist, St. of N. Y. and St. of N. J.; Approved Psychologist for Listing in Directory of Am. Board for Psychol. Svs. Hobbies: Writing prof. journals; Poetry; Humanities; Lecturing. Listed in: Dir. of Am. Scholars; Amer. Men of Sci.; Who's Who in the East; Who's Who in Am. Edn.

SILVERMAN, Sidney (D.D.S.), Dir., Grad. and Postgrad. Prosthodontics, N. Y. Univ. Coll. of Dentistry, N. Y., N. Y. Bus. Add.: 80 Park Ave., N. Y. 16, N. Y. Home Add.: 32 Cow Lane, Kings Point, Great Neck, L. I., N. Y. PROSTHODONTICS. b. N. Y. City, N. Y., June 19, 1913. s. Hyman and Ida (Kalman) S. Edn.: B.S., City Coll. of N. Y., 1934; D.D.S., N. Y. Univ. Coll. of Dentistry, 1937; Cert., Denture Prosthesis and Rsch., ibid., 1953. m. Eleanor Tobis, June 9, 1940. c.: Beth; Deborah. Exp.: Dir. and Assoc. Prof., N. Y. Univ., Coll. of Dentistry, 1954—; Assoc. Clin. Prof., Phys. Med. and Rehabilitation, N. Y. Med. Coll., 1954—; Consultant in Prosthodontics, Vet. Admin. Hosp., N. Y., 1956—. Hon. Pos.: Consultant to the Planning Comm., White House Conf. on Aging, 1961; Spec. Consultant to Pub. Health Serv., Chronic Disease and Spec. Services, 1960; Spec. Consultant to N. Y. City Dept. of Health, 1962. Mem.: Am. Dent. Assn.; Am. Pub. Health Assn.; N. Y. Acad. of Sci.; Am. Assn. for Cleft Palate Rehabilitation; Am. Congress of Phys. Med. and Rehabilitation; Am. Denture Soc.; Am. Speech and Hearing Assn.; Alpha Omega; Fellow, Am. Coll. of Dentists; Fellow, Greater N. Y. Acad. of Prosthodontics. Author: Oral Physiology, 1961. Collaborator: Dental Prosthetics, 1958. Contbr. to: Jour. Am. Dent. Assn.; Jour. of Prosthetic Dentistry; Dent. Clinics of No. Am.; Arch. of Phys. Med. and Rehabilitataion; The Alpha Omegan; R. N.—A Jour. of Nurses. Serv. Rec.: Army of U. S. Dental Serv., 1943-45. Gen. Int.: Cooperative Grant, U. S. Public Health Serv., Dental Student, Spec. Problems in Trng., 1961. Areas of Rsch.: Chronic Disease and Disability; Dental Care for the Chronically Sick and Aged; Cleft Palate.

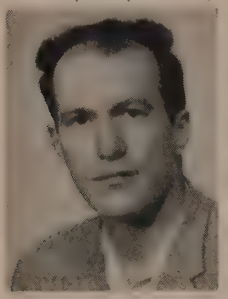


SILVERMAN, Leslie (Sc.D.), Prof. Engrng., Environmental Hygiene, Harvard University, Boston, Mass. Home Add.: County St., Dover, Mass. INDUSTRIAL HYGIENE; AIR POLLUTION CONTROL. b. Apr. 27, 1914, Chicago, Ill. s. Hyman and Kate (Bernstein) S. Edn.: B.S., Univ. Ill., 1936; M.S., Rutgers Univ., 1938; S.M., Harvard Univ., 1938; Sc.D., ibid., 1943. m. Eleanore Riffin, Aug. 10, 1941. c.: Hugh Jerald; Juliet; Mary Linda; Leslie Riffin. Exp.: Grad. Asst., Mech. Engrng., Rutgers Univ., 1936-37; Gordon McKay Scholar, Harvard Univ. Grad. Schl. Engrng., 1937-38; Rsch. Fellow, ibid., 1938-39; Instr., Indusl. Hyg., Harvard Univ. Schl. Pub. Health, 1939-41; Rsch. Assoc., ibid., 1941; Instr., Indusl. Med., ibid., 1941-42; Assoc., Indusl. Hyg., Harvard Schl. Pub. Hlth. and Grad. Schl. Engrng., 1942-45; Asst. Prof., ibid., 1945-48; Assoc. Prof., Indusl. Hyg., Harvard Univ. Schl. Pub. Hlth. and Div. Engrg. and Appl. Physics, Grad. Schl. Arts and Scis., 1948-53; Assoc. Prof., Indsl. Hyg. Engrg., Harvard Univ., Schl. Publ. Hlth. and Div. Engrg. and Appl. Physics, Grad. Schl. Arts and Scis., 1953-58; Prof., Engrng. in Environmental Hygiene, ibid., 1958—; Dir., Radiological Hygiene Program, ibid., 1958—; Hd., Indusl. Hyg. Dept., 1961; Consult.

Engr., Problems of Indust. Hyg., 1938. Hon. Pos.: Dir., A.I.H.A., 1957-60; Dir. Hlth. Physics Soc., 1961-64; Natl. Rsch. Coun.; Chmn., D-22 Comm., A.S.T.M.; Chmn., Subcomm., Atmospheric and Indust. Hyg., N.R.C.; U.S.A.E.C.; Chmn. Adv. Comm. on Reactor Safeguards, 1960—, Member, 1958—; Reg. Prof. Engr., Mass., 1947; Trustee, Am. San. Engr. Intersoc. Bd., 1962-65. Mem.: A.S.M.E.; A.I.Ch.E.; Am. Assn. for the Adv. of Sci.; A.S.E.E.; A.P.C.A.; Am. Industrial Hygiene Assn.; Health Physics Soc.; Am. Nuclear Soc.; A.S.T.M.; Tau Beta Pi; Sigma Xi; Phi Epsilon Pi Sigma Tau; Pi Mu Epsilon; Pi Tau Sigma; Delta Omega. Contbr. to: Science; Heating and Ventilating; Archives Ind. Health; Chem. Engrng.; Ind. and Engrng. Chem.; Anal. Chem.; Rev. Sci. Insts.; Jour. Clin. Invest.; Am. Rev. T.B.; Chem. Engrng. Progress; Air Engrng.; Jour. Air Poll. Control Assn. Areas of Rsch.: Air and Gas Cleaning; Aerosol Behavior; Radiological Hygiene and Industrial Ventilation.

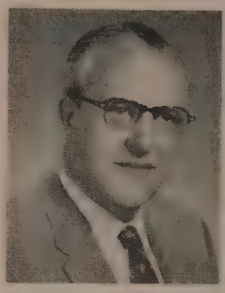


SILVERSTEIN, Martin Elliot (M.D.), Assoc. Dean, Assoc. Prof. of Surg., N. Y. Med. Coll., 1249 Fifth Ave., N. Y. 29, N. Y. Home Add.: 505 E. 82nd St., N. Y. 28, N. Y. GENERAL SURGERY. b. N. Y. City, N. Y., Sept. 6, 1922. s. Louis and Ethel (Stattman) S. Edn.: A.B., Columbia Univ., 1945; M.D., N. Y. Medical Coll., 1948. Exp.: Intern, Metropolitan Hosp., 1948-49; Asst. Res. in Surg., Flower and Fifth Ave. Hosps., 1949-50; Asst. Res., in Orthopedics, Metropolitan Hosp., 1950; Asst. Res. in Surg., Flower and Fifth Ave. Hosps., 1951; Chf. Res., Surg., ibid., 1951-52; Chf. Res., Surg., Metropolitan Hosp., 1952-53; Attending Surg., Flower and Fifth Ave. Hosps., Metropolitan Hosp. and Bird S. Coler Hosp., 1958—; Chmn., Hosp. Governing Comm., N. Y. Med. Coll., 1959-61; Asst. to the Dean, N. Y. Med. Coll., 1955-58; Asst. Dean, ibid., 1958-60; Instr. in Surg. and Bact., ibid., 1953-55; Asst. Prof. of Surg., ibid., 1955-57; Consult. for Surg. Film Rsch., Med. Film Inst., Am. Assn. Med. Colls., 1950-51; Assoc. Dean and Assoc. Prof. of Surg., N. Y. Med. Coll., 1960—. Hon. Pos.: Ed. Bd., Nursing Home Administrator, 1952—; Diplomate, Am. Bd. of Surg.; Coordinator, Med. Edn. for Natl. Defense Program; Examiner in Surg., Natl. Bd. of Med. Examiners, 1952—. Mem.: Fellow, Dazian Found. for Med. Rsch.; Phi Beta Kappa; Harvey Soc.; N. Y. Acad. Med.; N. Y. Acad. Scis.; Assn. Am. Med. Coll.; Assn. Milit. Surg.; Am. Ger. Soc.; Am. Assn. Adv. Scis.; Am. Coll. Gastroenterology; Am. Coll. Surgs.; Am. Soc. for Surg. of Trauma; Am Fed. for Clin. Rsch.; Am. Therapeutic Soc.; Affiliate, Royal Soc. Med.; N. Y. Co. Med. Soc.; A.M.A.; Am. Soc. Nuclear Med.; Phi Delta Epsilon. Contbrng. Author: The Treatment of Cancer and Allied Diseases, 1960. Contbr. to: Am. Jour. Surg.; Surgical Clinics of N. Am.; Annals of Internal Med.; Arch. of Internal Med.; Geriatrics; Arch. of Surg. Serv. Rec.: U.S.N.R., Retired. Areas of Rsch.: Modification of Urea Splitting Organisms by Quaternary Ammonium Compounds; Neurovascular Syndromes of the Upper Limb; Physiology of Burns, Shock and Blood Substitutes; Electrolyte Patterns, Modification of Urine Excretory Patterns by Hormonal Substances; Microsurgery.



SIMINOFF, Robert, (Ph.D.), Instr., Dept. Pharmacol., Woman's Med. Coll., Phila., Pa. Home Add.: 3425 Tidden, Philadelphia 29, Pa. PHARMACOLOGY. b. Brooklyn, N. Y., July 31, 1926. s. Joseph and Anna (Glassman) S. Edn.: A.A., E. Los Angeles Jr. Coll., 1948; B.S., Univ. of Calif., L. A., 1950; Ph.D., Univ. of So. Calif., 1959. m. Rosalie Brook, Jan. 21, 1951. c.: Sheryl; Arthur Bryant. Exp.: Toxocolst., Los Angeles Co. Coroner's Office, L. A., Calif., 1950-58; Postdoc. Fellow, Univ. of Calif., L. A., 1959-60; Rsch. Pharmacolt., Miles Labs., Inc., Elkhart, Ind., 1960-61; Instr., Woman's Med. Coll., 1961—. Mem.: Am. Assn. for the Adv. of Sci.; Physiol. Soc. of Phila. Contbr. to: Jour. of Pharmacol. and Exptl. Theraps.; Jour. of Neurophysiol.; Jour. of Neurochem. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Neurophysiol. and Neuropharmacology; Microelectrophysiol. of the Central Nervous System; Use of Analog Computers for the Analysis of Activity from Nerves.

SIMMONS, Alvin Joseph (Ph.D.), Fellow, Epidemiology, Harvard Univ. Schl. of Pub. Hlth., Boston Mass. Home Add.: 7 Middle Street, South Dartmouth, Massachusetts. PSYCHOLOGY, CLINICAL, COMMUNITY MENTAL HEALTH, EPIDEMIOLOGY. b. New Bedford, Mass., Oct. 31, 1930. s. Joseph F. and Elvira (Page) S. Edn.: B.S., Boston Coll., 1952; M.S., Univ. of Mass., 1954; Ph.D., ibid., 1960. m. E. Joan Brindel, Aug. 10, 1957. c.: Christopher Alvin; Michael Joseph; Polly Jane Maurine. Exp.: Psychol. Asst., Butler Hosp., Providence, R. L., 1952-53, 1953-54; Clinical Psychol. Intern, Larue D. Carter Mem. Hosp., Indianapolis, Ind., 1956-57; Psychol. Fellow in Community Mental Health, Dept. of Psychiatry, Mass. Gen. Hosp., 1957-58; Clinical Psychologist, Human Relations Service of Wellesley, Inc., 1958-59; Asst., Human Relations, Serv. of Wellesley, Inc., 1959-61; Lectr. in Epidemiologic Approach to Mental Health and Illness, and Consultant in Rsch. and Development, Boston Univ. Grad. Schl. of Nursing, 1960—; Rsch. Psycholst., Human Relations Serv., Wellesley, Inc., 1961—; Fellow, Epedemiol., Harvard Univ. Schl. of Pub. Health, 1962—. Mem.: Am. Psychol. Assn.; Am. Pub. Health Assn.; A.A.A.S.; Am. Catholic Psychol. Assn.; Mass. Psychol. Assn.; Boston Assn. Nursery Edn.; Sigma Xi; Phi Kappa Phi; Lions; Jr. C. of C. Contbrng. Author: A Reference Guide, 1962; Community Mental Health and Social Psychiatry. Contbr. to: Jour. of Genetic Psychol; Jour. of Consult. Psychol. Areas of Rsch: Preventive and Social Psychiatry; Community Mental Health; Epidemiology; Mental Health Consultation; Religion and Mental Health; Animistic Thinking; Child Development.



SIMMONS, Frederick Charles, Jr. (Mr.), Technol., Div. of Forest Utilization Rsch., N. E. Forest Expt. Sta., 102 Motors Ave., Upper Darby, Pa. LOGGING AND PRIMARY PROCESSING OF WOOD. b. Waverly, N. Y., Oct. 27, 1905. s. Fred C. and LaVantia H. (Russell) S. Edn.: B.S., Cornell Univ., 1928; M.F., cum laude, Yale Univ., 1931. m. Lorene Harder, 1929. c.: Donna Sue; Beverly Jane. Exp.: Instr., Pa. State, 1931-32; Management Asst., Allegheny Natl. Forest, 1933-35; Timber Mgt. Specialist, Region 7, U. S. Forest Service, 1936-44; Forester, Forest Utilization Service, N. E. Forest Exptl. Station, 1945-55; Technologist, ibid., 1955; Chmn., Logging and Milling Comm., F.P.R.S., 1954-55; Chmn., Logging Div., F.P.R.S., 1956—; Advisor, Technical Panel on Forestry Eq. F.A.O., United Nations; Logging Engrng. Editor, Northeastern Logger; Chmn., N. E. Loggers Congress, 1955-61. Mem.: Soc. of Amer. Foresters; Forest Products Rsch. Soc. Contbr. to: Jour. Forestry; Forest Products Jour.; Yearbook of Agri.; etc. Special Int.: Logging Equipment and Methods; Primary Processing of Wood Including Sawmilling, Veneer Cutting, Charcoal Mfg., and Prep. of Wood for Pulping, Mine Timbers, Poles and Piling, Excelsior, etc.

SIMONIAN, Vartkes Hovaness (Ph.D.), Prof. of Pharmacognosy, Univ. of Arizona, Tucson, Ariz. Home Add.: 1801 No. Forgeus Ave., Tucson, Ariz. NATURAL PRODUCTS OF MEDICINAL AND OTHER USAGE. b. Baghdad, Iraq, June 18, 1911. s. Hovaness M. and Azniv (Der Baghdasarian) S. Edn.: Ph.C., Am. Univ. of Beirut, Beirut, Lebanon, 1936; M.Sc., Mass. Coll. of Pharm., 1949; Ph.D., Univ. of London, 1950. m. Rose Chobanian, 1944. c.: Beatrice; Mary Anne; Elizabeth. Exp.: Instr., Lecturer, Prof. and Dir. of Royal Coll. of Pharm., Baghdad, Iraq, 1936-46; Consultant to Ministry of Supply, Baghdad, Iraq, and Controller of Chems., ibid., 1942-46; Assoc. Prof. of Pharmacognosy, Duquesne Univ., 1950-55; Prof. of Pharmacognosy, Univ. of Ariz., 1955—. Mem.: F.R.M.S.; F.C.S.; F.L.S. (British); F.A.A.A.S.; Am. Pharm. Assn.; Am. Chem. Soc.; Am. Pharmacognosy; Ariz. and Pa. Acad. of Sci.; Sigma Xi; Phi Kappa Phi; Phi Lambda Upsilon; Rho Chi; Kappa Psi; Beta Beta Beta. Contbr. to: Jour. Am. Pharm. Assn.; Scientific Sec.; The Indian Pharmacist. Areas of Rsch.: Detection, Identification and Applications of Products of Natural Origins, Used as Drugs or Other Economic Purpose.

SIMON, Alfred Walter (Ph.D.), Instr., Calif. Sta. Polytechnic Coll., San Luis Obispo, Calif. Home Add.: 228 N. Chorro St., San Luis Obispo, Calif. PHYSICS. b. Chicago, Ill., Sept. 16, 1897. s. Richard and Margaret (Curdts) S. Edn.: B.S., Univ. of Chicago 1921; Ph.D., ibid., 1925. m. Mary Villegas, 1958. Exp.: Dir. Cottrell Rsch. Lab., U. S. Stee Corp., Birmingham, Ala., 1927-32; Rsch. Physicist, Radio Lab. Stewart Warner Corp., Chicago Ill., 1935-37; Geophysicist, Geophys. Rsch. Corp. and Stanolind Oil and Gas Co., Tulsa, Okla. 1937-39; Chf. Engr., Am. Harmonica Co., Chicago, Ills., 1939-41; Physicist, Naval Ordn. Lab. Wash., D. C., 1941-42; Instr. Wash. Univ., St. Louis, Mo., 1943-44; Asst. Prof., ibid., 1946-47 Asst. Prof., Tulsa Univ., Tulsa Okla., 1948-51; Assoc. Prof., Ala Polytechnic Inst., Auburn, Ala., 1951-54; Instr. Phys., Calif. Sta Polytechnic Coll., 1955-58; Physicist, A. F. Missile Devel Ctr Lectr. in Psychol., Regis Coll., Weston, Mass., 1958-60; Admin. Holloman Air Force Base, N. Mex., 1958-59; Instr., Phys., Calif

Sta. Polytechnic Coll., 1958—. Hon. Pos.: Natl. Rsch. Fellow, Phys., 1925-27. Mem.: Sigma Xi. Contbr. to: Phys. Rev.; Am. Jour. of Phys.; Electronics; Jour. Inst. Radio Engrs.; Jour. of the Franklin Inst.; Rev. of Scientific Instruments; Jour. of Solar Energy; Philos. Mag. Serv. Rec.: S.A.T.C., 1918. Gen. Int.: Developed Theory of Electrostatic Generators, Radio Coil Winding; Beam Theory; Cottrell Process. Areas of Rsch.: Electrostatics, Electric Circuits, Coil Winding; Electrostatic Generators, Solar Furnace, High Speed Test Track, Human Tolerance to Acceleration, Mechanics, Vibration, Strength of Materials, Magnetic Mines, Harmonicas.

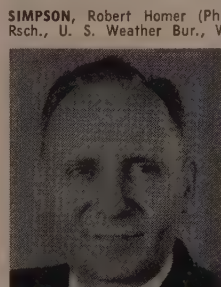
SIMON, Leslie Earl (Mr.), Staff Dir. of Rsch., The Carborundum Co., Niagara Falls, N. Y. Home Add.: 1761 Pine Tree Rd., Winter Park, Fla. ADMINISTRATION OF SCIENTIFIC RESEARCH, MATHEMATICAL AND APPLIED STATISTICS, ENGINEERING. b. Memphis, Tenn., Aug. 11, 1900. s. Andrew John and Agnes (Knox) S. Edn.: B.S., U. S. Milit. Acad., 1924; B.S., Mass. Inst. of Tech., 1929. m. Marie Dozier, July 2, 1930. c.: Carolyn; L. Andrew. Exp.: Misc. Appointments at Picatinny Arsenal to Asst. Dir., Ballistic Rsch. Labs., Aberdeen Proving Ground, Md., 1933-40; Promoted to Dir., ibid., 1940-49; Asst. Chf. Ordnance, Dept. of Army, Washington, D. C., 1949-56; Dir. Rsch. and Dev., The Carborundum Co., Niagara Falls, N. Y., 1956-60; Dir. of Rsch. and Dev. and Vice Pres., ibid., 1957-60; Staff Dir. of Rsch., ibid., 1960—. Hon. Pos.: Honorary Prof., Math. and Appl. Statistics, Rutgers Univ.; Spec. Consult to the Pres., Gen. Dynamics Corp.; Consult. to N.A.S.A. Mem.: Fellow, Defense Sci. Bd.; Office of Secy. of Defense; Scientific Advisory Comm., Ballistic Rsch. Labs.; Am. Acad. Arts and Sci.; Inst. of Math. Statistics; Am. Statis. Assn.; Am. Soc. Qual. Control.; Am. Soc. Test Materials; Mem., Am. Ordnance Assn.; Cosmos Club; The Univ. Club, Winter Park, Fla. Author: An Engineer's Manual of Statistical Methods, 1941; German Rsch. in World War II, 1947. Serv. Rec.: U. S. Army, Major General. Areas of Rsch.: Administration of Rsch. and Development; Ballistics, Stastics; Engineering; and Applied Science in General.

SIMONSON, Ernst (M.D.), Prof. Physiol. Hyg. and Lab. Physiological Hygiene, Univ. Minn., Minneapolis 14, Minn. APPLIED PHYSIOLOGY, PHYSIOLOGICAL OPTICS, AND ELECTROCARDIOGRAPHY. b. Tiegenhof, Germany, June 26, 1898. s. Max and Kathe (Paechter) S. Edn.: M.D., Univ. of Greifswald, Germany, 1924. m. Sophie Schemel, Frankfurt, Germany, July 19, 1931. d. Johan and Franziska Schemel. c.: Walter E. Exp.: Rockefeller Scholarship, Dept. of Pharmacol., Univ. of Greifswald, 1924-26; Head, Lab. of Hygiene, Inst. of Social Hygiene, Frankfurt, 1927-30; Prof. of Industrial Physiol., Univ. of Frankfurt, 1928-30; Scientific Dir., Inst. of Labor, Kharkov, Russia, 1930-35; Prof., Physiol., Med. Schl., Univ. of Kharkov, 1935-37; Hd. of Dept. of Industrial Physiol., Central Inst. of Psycho-technics, Prague, Czechoslovakia, 1937-39; Rsch. Assoc., Mt. Sinai Hosp., Milwaukee, Wis., 1939-44; Assoc. Prof. of Physiol. Hygiene and Physiol., Labor. of Physiol. Hygiene, Univ. of Minn., 1944—; Assoc. Prof. Physiological Ophthalmol., 1957-58; Prof. of Physiol. Hygiene, 1958—; Prof. of Physiol. emer., Univ. of Frankfurt, Germany, 1950—; Consulting Biophys., V. A. Hosp., Minneapolis, 1949—; Dept. of Internal Med., Univ. Hosp., ibid., 1952—; Mt. Sinai Hosp., ibid., 1952—. Mem.: Am. Physiol. Soc.; Soc. for Exprmtl. Biol. and Med.; Soc. Res. in Ophthalm., Corres. Mem., Dtch. Physiol. Gesellsch.; Chmn., Ed. Bd., FASEB Transl. Proj.; Gerontol. Soc.; A.A.U.P.; Sigma Xi; N.Y. Acad. of Sci.; Campus Club, Univ. of Minn. Author: Differentiation Between Normal and Abnormal in Electrocardiography, 1961. Contbr. to: Annual Rev. of Physiology; American Journal of Physiology; American Heart Jour.; Circulation; Geriatrics; Jour. of Industrial Hygiene; Am. Jour. of Ophthalmol.; Med.; Jour. of Applied Physiol.; Occupational Med.; Circul. Res., Jour. of Gerontol.; Arbeitsphysiol.; Ergebn. d. Physiol.; Ergebn. d. Hygiene; Zeitschrt. exper. Medizin; Annual Rev. of Psychol.; Opthalmal. Special Int.: Clin. Physiol.; Electrocardiography; Indusl. Physiol. and Vision.

SIMPSON, Robert Gene (Ph.D.), Asst. Prof. of Entomol., Colo. State Univ., Fort Collins, Colo. Home Add.: 632 So. Loomis St., Fort Collins, Colo. INSECT BIOLOGY, ECOLOGY AND CONTROL. b. Neodesha, Kans., Aug. 13, 1925. s. Sidney Edward (dec), and Ida Leona (Rufenacht) S. Edn.: B.S., Zool., Colo. State Univ., 1950; M.S., Entomol., ibid., 1953; Ph.D., Kans. State Univ., 1959. m. Annabelle Louise Walek, 1951. c.: Diane; Kathleen; Carolyn. Exp.: Staff, Colo. Dept. of Agric., Denver, Colo., 1953-56; Grad. Rsch. and Tchng. Asst., Kans. State Univ., Manhattan, Kans., 1956-59; Asst. Ext. Entomolt. Univ. of Nebr., Lincoln, Nebr., 1959-60; Asst. Prof., Ent., Colo. State Univ., 1960—. Mem.: Sigma Xi; Gamma Sigma Delta; Am. Assn. for the Adv. of Sci.; Am. Ent. Soc.; Kans. Ent. Soc.; Colo. Wyo. Acad. Sci.; Phi Kappa Tau. Contbr. to: Jour. Ent. Soc. of Am. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: Behavior, Habits, Ecology of the Green Peach Aphid, "Myzus Persicae" (Sulzer).

SIMPSON, Myron Lee (Sc.D.), Hd., Dept. of Biol. Scis., Allegany Community Coll., Cumberland, Md. Home Add.: 1112 Bedford St., Cumberland, Md. BIOLOGY (PARASITOLOGY). b. Cumberland, Md., July 23, 1910. s. Charles Jay and Mary Louise (Willison) S. Edn.: A.B., Am. Univ., 1933; Sc.D., Johns Hopkins Univ., 1944. Exp.: Instr., Sci. and German, Massanutten Milit. Acad., Woodstock, Va., 1933-38; Asst. in Parasitol., Johns Hopkins Univ., 1942-44; Asst. Prof., Biol., Gettysburg Coll., 1944-48; Prof., Biol., Chmn. of Dept. of Biol., and Premed. Adviser, Westminster Coll., 1948-57; Assoc. Prof. of Biol. and Chmn., Dept., Wash. Coll., 1957-58, Visiting Professor Biol., Gettysburg Coll., 1958-60; Dept. of Biol. Scis., Allegany Community Coll., Cumberland, Md., 1961—. Hon. Pos.: Natl. Pres., Kappa Sigma Pi, 1936-52; Natl. Vice Pres., Am. Soc. of Prof. Biol., 1950-51; Hon. Fourth Deg., Kappa Sigma Pi, 1946. Mem.: Fellow, A.A.A.S.; Am. Soc. Parasitol.; Am. Micros. Soc.; Natl. Assn. of Biol. Tchrs.; Am. Soc. of Prof. Biol.; A.A.U.P.; Pa. Acad. of Sci.; Kappa Sigma Pi; Sigma Xi; Gamma Alpha; Beta Beta Beta; Mason. Contbr. to: Jour. of Parasitol.; Am. Jour. of Hyg.; Quar. Rev. of Biol. Gen. Int.: Editor-in-Chf., The Pi Mag., 1938-39; Natl. Grand Chaplain, Pi Christian Frat. Orders, 1957—. Areas of Rsch.: Familial Composition and Heredity in Tuberculous Families; Malariology and Protozoology; Biology of Plasmodium durae; Biology (especially reproduction) of the "3T" Strain of Plasmodium cathemerium.

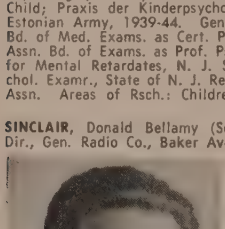
SIMPSON, Robert Homer (Ph.D.), Deputy Dir. of Meteorological Rsch., U. S. Weather Bur., Wash. 25, D. C. Home Add.: 5909 Aberdeen Road, Bethesda, Md. METEOROLOGY. b. Corpus Christi, Tex., Nov. 19, 1912. s. Clyde R. and Annie Laurie (Rainey) S. Edn.: B.S., Southwestern Univ., 1932; M.S., Emory Univ., 1935; Ph.D., Univ. of Chicago, 1962. m. Louise Waldrep, 1956. c.: Peggy Ann; Linda; Lynn; John. Exp.: Exec. Asst. to Asst. Chf. of Bur., U. S. Weather Bur., Washington, D. C., 1952-56; Dir., Natl. Hurricane Rsch. Proj., ibid., W. Palm Beach, Fla., 1956-60; Deputy Dir. of Meteorological Rsch., U. S. Weather Bur., Wash., D. C., 1960—. Mem.: A.G.U.; Am. Meteorological Soc.; Sigma Xi; Royal Meteorological Soc.; Wash. Acad. of Scis. Contbr. to: Jour. Am. Meteorological Soc., Scientific Am.; Trans. A.G.U.; Monthly Weather Rev.; Bull. A.M.S. Serv. Rec.: U. S. Air Force, 1945. Areas of Rsch.: Tropical Meteorol.; Hurricane; Dynamics of High Atmosphere; Cloud Physics; Weather Modification.



SIMPSON, Thomas Alexander (Mr.), Chief, Econ. Geology Div., Geological Survey of Ala., P. O. Drawer O, University, Ala. Home Add.: 72 Vestavia Hills, Northport, Ala. GEOLOGY; MINING GEOLOGY; MINING HYDROLOGY. b. Adams, Mass., Oct. 23, 1925. s. Ernest C. and Mabelle (Blaser) S. Edn.: B.S., Mo. Schl. of Mines and Metallurgy, 1951; M.S., Univ. of Ala., 1959. m. Susie Pradat, July 17, 1954. c.: Thomas A., Jr.; Walter Edward. Exp.: Geologist, U. S. Geol. Survey, Ground Water Br., Tuscaloosa, Ala., 1953-56; Geologist, ibid., Birmingham, Ala., 1956-59; Geologist, Asst. Mining-Hydrol. Sect., U. S. Geol. Survey, Ground Water Br., Washington, D. C., 1959-61; Chief Geologist, Geol. Survey of Ala., Tuscaloosa, Ala., 1961—. Mem.: Am. Inst. Mining, Metallurgical and Petrol. Engrs.; Am. Geophysical Union; Soc. of Econ. Geologists; Geol. Soc. of Am.; Am. Assn. of Petrol. Geologists; Ala. Acad. of Sci.; Geol. Soc. of Washington, D. C.; Am. Soc. of Mil. Engrs.; S. E. Geol. Soc.; Ala. Mineral and Lapidary Soc.; Sigma Xi; Sigma Gamma Epsilon. Contbr. to: Mining Engrng.; Trans. Am. Geophysical Union; Jour. of Ala. Acad. of Sci.; Abs. Geol. Soc. of Amer.; U. S. Geol. Survey Rsch. Serv. Rec.: U.S.M.C., W. W. II, 1943-46, Korean War, 1951-52. Areas of Rsch.: Geohydrology Pertaining to Mine Drainage Problems; Economic Geology; Ore Deposits; Structural Geology; Mining Geology.

SIMSON, Eduard (Ph.D.), Chief Psychologist, Hunterdon Med. Center, Flemington, N. J. Home Add.: 181 Harrison St., Princeton, N. J. CLINICAL PSYCHOLOGY; PSYCHOTHERAPY. b. Viljandi, Estonia, July 29, 1920. s. Juhan and Anna (Kallas) S. Edn.: A.B., Stanford Univ., 1951; M.A., N. Y. Univ., Grad. Schl. of Arts and Science, 1952; M.Psy., Univ. of Louisville, 1953; Ph.D., Heidelberg Univ., Germany, 1956. Exp.: Clin. Psychol., Alaska Territorial Dept. of Health, Anchorage, Alaska, 1956-58; Post Doc. Fellow, Devereux Found., Devon, Pa., 1958-59; Chf. Psychol., Hunterdon Med. Ctr., Flemington, N. J., 1959—; Schl. Psychol., Tewksbury Twp. Bd. of Edn. (Ret.), 1961-62. Hon. Pos.: Mem., Bd. of Dirs., Mental Hlth. Assn. of Hunterdon Co., Mem., Adv. Bd., N. J. Assn. for Retarded Children, Hunterdon Co. Unit. Mem.: Am. Psychol. Assn.; Am. Grp. Psychotherapy Assn.; Intl. Coun. of Psycholts.; Intl. Soc. for Clin. and Exptl. Hypnosis; Am. Soc. for Clin and Exptl. Hypnosis; Phila. Soc. for Clin. Psycholts.; N. J. Psychol. Assn.; Soc. for the Scientific Study of Sex; N. Y. Acad. of Sci.; Soc. for Client Centered Counsching; Berufsverband Deutscher Psychologen; Deutscher Gesellschaft fur Psychologie; Rotary Club. Contbr. to: Diagnostica; Home and Child; Praxis der Kinderpsychologie und Psychiatrie. Serv. Rec.: Estonian Army, 1939-44. Gen. Int.: Cert. by the State of Calif. Bd. of Med. Exams. as Cert. Psycholt.; Cert. by the Ore. Psychol. Assn. Bd. of Exams. as Prof. Psycholt.; Reg. State Psychol. Examr. for Mental Retardates, N. J. State Dept. of Edn.; Approved Psychol. Examr., State of N. J. Rehab. Comm.; Cert. Am. Ontoanalytic Assn. Areas of Rsch.: Children's Apperception Test, CAT-Z Test.

SINCLAIR, Donald Bellamy (Sc.D.), Exec. Vice Pres. and Tech. Dir., Gen. Radio Co., Baker Ave., W. Concord, Mass. Home Add.: Nashawtuc Rd., Concord, Mass. INSTRUMENTATION. b. Winnipeg, Man., Can., May 23, 1910. s. Coll Claude and Edith Almira (Bellamy) S. Edn.: S.B., Mass. Inst. of Technol., 1931; S.M., ibid., 1932; Sc.D., ibid., 1935. m. Willona Grace Henderson, July 11, 1932. c.: Douglas Coll; Robert Allan; Donald Fraser; Heather Grace. Exp.: Rsch. Asst., Mass. Inst. of Technol., Cambridge, Mass., 1932-35; Rsch. Assoc., ibid., 1935-36; Engr., Gen. Radio Co., 1936-44; Asst. Chf. Engr., ibid., 1944-50; Chf. Engr., ibid., 1950-60; Vice-Pres. for Engrng., ibid., 1954-56; Vice Pres. and Chf. Engr., ibid., 1957-60; Exec. Vice Pres. and Techn. Dir., ibid., W. Concord, Mass., 1960. Hon. Pos.: Natl. Assn. of Mfgrs. Rsch. Comm., 1960—; Natl. Rsch. Coun., 1960-63; Rep. to Indust. Rsch. Inst., 1945—; Visiting Comm. to Elect. Engrng. Dept., Carnegie Inst. of Tech., 1961-64; Tech. Rep., USAF, 1943; Civil. with Office of Scient. Rsch. and Devel., 1943; Mem., Div. 5, Natl. Def. Rsch. Coun., 1943-45; Consultant to Dept. of Def., 1954-57, 1960—; USAF Pub. Adv. Comm. on Calibration, 1961—; Pres. Cert. of Merit, 1948; Mem. of Adv. Coun. of Ctr. for Measurement Sci., The George Washington Univ., 1962-63. Mem.: Fellow of Inst. of Radio Engrs.; Fellow, Am. Inst. of Electr. Engrs.; Am. Assn. for the Adv. of Sci.; Am. Phys. Soc.; Sigma Xi; Eta Kappa Nu; Concord Country Club. Author Contbrng.: Encyclopedia of Science and Technology, 1961. Contbr. to: Proc. of I.R.E.; Tele-Tech.; Procs. of Institn. of Radio Engrs. Australia; Communications; L'onde Electrique; Radio-Elect. Engrng.; Anns. Des Postes Telegraphes et Telephones. Areas of Rsch.: Research in Electrocardiography Impedance Measurements; Design of Scientific Instruments, Analog Computers.

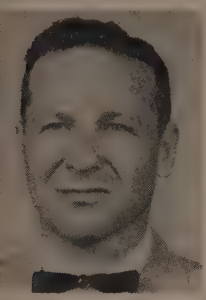


SINCLAIR, John Taylor, Jr. (Mr.), President, United Canso Oil Gas Ltd.—Operations Coordinator, The Catawba Corp., c/o 537 Tex. Natl. Bank Bldg., Houston 2, Tex. Home Add.: 216 Merrie Way, Houston 24, Tex. PETROLEUM GEOLOGY AND ENGINEERING. b. Paterson, N. J., Mar. 14, 1918. s. John T. and Anne (Bolte) S. Edn.: B.A., Wesleyan Univ., 1939; M.S., Univ. of Sou. Calif., 1943. m. Ethel Mae Edwards, Sept. 18, 1941. c.: John T.; Lawrence Glenn. Exp.: Engrng. Trainee, Tidewater Oil Co., Los Angeles, 1939-41; Asst. Dist. Petroleum Engr., ibid., 1941-45; Div. Engr., Geologist, Pantepec Oil Co., C.A., Eastern Venezuela, 1945-48; Supt. of Field Operations, ibid., 1948-49; Chf. Engr. and Geologist, ibid., Caracas, Venezuela, 1949-51; Asst. Secy.-Treas., ibid., 1951-53; Chf. Engr. and Geologist, Pancoastal Oil Corp., Caracas, Venezuela, 1949-51; Secy.-Treas., ibid., 1951-53; Pres., United Canso Oil and Gas Ltd. (and predecessors), Calgary, Alta., Canada and Houston, Tex., 1954—; Oprns. Coordinator, The Catawba Corp., Houston, Tex., 1958—. Hon. Pos.: Mem. Bd. of Dirs., United Canso Oil Gas Ltd., Canada Sou. Petroleum Ltd., Coastal Caribbean Oils, and Minerals, Ltd., Pantepec Oil Co., C.A., Pancoastal Petroleum Co., S.A., San Jose Petrol., Inc. Mem.: Phi Beta Kappa; Soc. of Sigma Xi; Phi Kappa Phi; Am. Assoc. of Petrol. Geols.; Am. Assoc. for Adv. of Sci.; Am. Inst. Min., Metall., and Petrol. Engrs.; Am. Petrol. Inst.; Chi Psi; Memorial Dr. Country Club; The Houston Club; Calgary Petrol. Club. Gen. Int.: Registered Petroleum Engr., Calif. Areas of Rsch.: Oil and Gas Exploration, Development and Production; Firm Technical and Management Level.

SINGSEN, Edwin Pierce (Ph.D.), Prof. and Hd., Poultry Sci. Dept., Univ. of Conn., Storrs, Conn. Home Add.: Moulton Rd., Storrs, Conn. POULTRY NUTRITION; ANIMAL NUTRITION. b. Hackensack, N. J., Dec. 10, 1916. s. Arthur G. and Edith (Pierce) S. Edn.: B.S., Univ. of R. I., 1938; M.S., N. C. St. Coll., 1940; Ph.D., Univ. of Ill., 1945. m. Ilse Heyder, Aug. 23, 1939. c.: Bernhard H.; Edwin G.; Erika H. Exp.: Grad. Asst., N. C. St. Coll., 1938-40; Instr., Univ. of Conn., 1940-41; Tchng. Asst., Univ. of Ill., 1941-43; Asst. Prof., Univ. of Conn., 1943-47; Assoc. Prof., ibid., 1947-48; Prof. and Hd., Poultry Sci. Dept., ibid., 1948—. Hon. Pos.: Chmn., NRC Subcomm. on Feed Additives, 1955-57. Mem., Poultry Sci. Assn.; Animal Nutrition Rsch. Coun.; Sigma Xi; Phi Kappa Phi; Am. Assn. Univ. Profs., Alpha Zeta; Gamma Sigma Delta. Contbr. to: Poultry Sci.; Journ. of Nutrition; Storrs, Conn. Agric. Expt. Sta. Publications. Gen. Int.: Adviser and Lectr. on Poultry Nutrition and Production Problems During Five Trips to Germany and Gr. Britain, 1956-61. Recipient of Am. Feed Mfgs. Assn. Award for Rsch. in Poultry Nutrition, 1954; Conn. Grange Award for Service to Agric., 1954; Northeastern Poultry Industry Associates Man of the Year Award, 1956. Areas of Rsch.: Phosphorus in Poultry Nutrition, Energy Utilization in Rations for Broilers and Adult Chickens, Antibiotics, Vitamin B_{12} and Fish Products, Vitamin E and Antioxidants, Encephalomalacia, and Controlled Feeding.

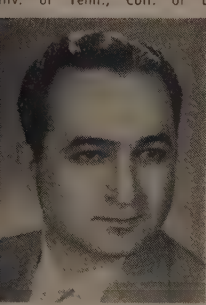
SIPLE, Paul Allman (Ph.D.), Scientific Advisor, ARO, OCRD, Dept. of Army, Washington 25, D. C. Home Add.: 131 No. Jackson St., Arlington 1, Va. PHYSICAL GEOGRAPHY (POLAR AND MILITARY). b. Montpelier, Ohio, Dec. 18, 1908. s. Clyde Livonius and Fannie (Allman) S. Edn.: B.S., Allegheny Coll., Pa., 1932; Ph.D., Clark Univ., Mass., 1939. Hon. Degrees: D.Sc., Allegheny Coll., 1942; D.Sc., Clark Univ., 1958; D.Laws., Gannon Coll., 1958; D.Sc., Univ. of Mass., 1958; D.Sc., Boston Univ., 1958; D.Sc., Bowling Green State Univ., 1959. m. Ruth I. Johannesmeyer, 1936. c.: Ann Byrd; Jane Paulette; Mary Cathrin. Exp.: Boy Scout Selected Repr., Naturalist, Dog Driver, First Byrd Antarctic Expedition, Antarctic, 1928-30; Chief Biologist and Leader of Marie Bryd Land Exploration Party, Second Byrd Antarctic Expedition, ibid., 1933-35; Leader of W. Base, Little Am. III Sr. Geographer, Tech. Supvr. of Logistics and Navigator, Observer and in Charge of all West Base Exploratory Operations, U. S. Antartic Serv. Expedition, Antarctic, 1939-42; Cold Climate Consultant, U. S. Army Standardization Br., Wash., D. C., 1941; Chief, Environmental Rsch. Sect., later Basic Rsch., R. & D. Div., Dept. of the Army, Washington, D. C., 1953-55; Deputy to Officer in Charge, U. S. Antarctic Programs, Services on loan from Office, Chief of Rsch. and Dev., Dept. of Army, ibid., 1955-58; Sta. Leader, Amundsen-Scott South Pole Sta., U. S. Natl. Com., IGY, Natl. Acad. of Sciences, Antarctica, 1956-57; Scientific Advisor, Office, Chief of Rsch. and Dev., Dept. of Army, Washington, D.C., 1958—. Hon. Pos.: Pres., Assn. of Am. Geographers, 1959-60; Vice Pres., ibid., 1958-59; Mem. of the Coun., ibid., 1950-52; Fellow and Gov. of Arctic Inst. of No. Am., 1961-63; 1st Pres. and Hon. Mem., Am. Polar Soc.; Pres., Antarctican Soc., 1961-62; Exec. Bd. Mem., Arlington, Va. Chpt., Am. Red Cross. Mem.: Assn. of Am. Geographers; Am. Geophys. Union; Am. Geographical Soc.; Wash. Acad. of Scis.; Internatl. Geog. Union; International Union of Geodesy and Geophys.; Arctic Inst. of No. Am.; Scott Polar Rsch. Inst., Cambridge, Eng.; British Glaciol. Soc.; Am. Assn. Adv. Sci.; Alpha Chi Rho; Omicron Delta Kappa; Phi Beta Kappa; Boy Scouts of Am.; Explorers Club; and many others. Author: A Boy Scout with Byrd, 1931; Exploring at Home, 1932; Scout to Explorer—Back with Byrd to the Antarctic, 1936; 90° South, 1959. Contbr. to: Natl. Geographic Mag.; UNESCO Courier; Annals of the Mo. Botanical Garden; Polar Times; Proc. Am. Phil. Soc.; Encycl. Britannica; Fed. Proc. Internatl. Symposium on Cold Acclimation. Serv. Rec.: Army of U. S., 1942-46. Gen. Int.: Received many awards such as, Three Congressional Byrd Antarctic Expedition Medals; Heckel Sci. Award; Hatfield Golc Medal; Air Medal; M.B.E. Order of the British Empire; Silver Buffalo, Boy Scouts of Am.; David Livingston Gold Medal Award; Hubbard Medal; Royal Geographical Soc. Patrons Medal, England; Mt. Siple in Antarctica named by U. S. Bd. of Geographic Names; Sect. of Antarctic Coast named Siple Coast by the New Zealand Govt. Areas of Rsch.: Polar geography, geophysics of earth motions, military geography, global environmental effects upon men, equipment and operations.

IROTA, Jonas Henry (M.D.), Asst. Clin. Prof. of Med., Stanford
ied. Schl., Palo Alto, Calif. Home Add.: 15745 E. Alta Vista Way, San Jose 27, Calif. RENAL RESEARCH, KIDNEY PHYSIOLOGY, INTERNAL MEDICINE. b. N.Y.C., July 26, 1916. s. Samuel and Pauline (Werbin) S. Edn.: B.A., Brooklyn Coll., 1936; M.D., N. Y. Univ., 1940. m. Katherine J. Edgett, Jan. 18, 1948. c.: Leslie Dee; Sindy Lou; Penny Sue. Exp.: Rsch. Fellow, N. Y. Univ., 1947-49; Instr. in Med., Columbia Univ. Med. Schl., 1949-53; Asst. Prof. Clin. Med., Stanford Univ. Med. Schl., 1958—. Hon. Pos.: Pres., Santa Clara Co. Heart Assn.; Chmn., Med. Dept., Santa Clara Co. Dept. of Med. Mem.: Western Soc. for Clin. Rsch.; Am. Physiological Soc.; Soc. for Exptl. Biol. and Med.; Am. Fed. for Clin. Rsch.; Alpha Omega Alpha; Am.



oll. of Physicians; Diplomate, Am. Bd. of Internal Med. Contbr.
: Am. Jour. of Med.; Jour. of Clin. Investigation; Proc. of
oc. for Exptl. Biol. and Med.; Am. Jour. Physiol.; Am. Heart
our.; N. Eng. Jour. of Med.; Jour. of Mt. Sinai Hosp., Jour.
Pharm. and Exptl. Therapeutics; Fed. Proc.; Am. Jour. of
athol. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.:
enal Physiol.; Kidney Diseases in Man; Internal Med.

ISKIN, Milton (D.D.S.), Assoc. Prof., Dept. of Oral Med.,
niv. of Tenn., Coll. of Dentistry, Memphis, Tenn. Home Add.: 5209 Walnut Grove Rd., Memphis, Tenn. ORAL PATHOLOGY ENDODONTOLOGY. b. Cleveland, Tenn., May 14, 1921. s. Max and Gertrude (Jacobson) S. Edn.: B.A., Univ. of Tenn., 1942; D.D.S., ibid., 1945. m. Laverne Lazarov, June 20, 1948. c.: Milton, Jr.; Gregory. Exp.: Asst. Prof., Coll. of Dentistry, Univ. of Tenn., 1947-58; Chr., Div. of Oral Med. and Surgery, ibid., 1955-58; Head, Dept. of Oral Med., ibid., 1955-58; Assoc. Prof., Coll. of Dentistry, ibid., 1958—; Lectr., Grad. Schl. of Orthodontics, ibid., 1951 ; Lectr., Dept. of Gen. Anatomy and Embryol., ibid., 1953—; Consultant, V.A. Hosp., Memphis, Tenn., 1954—; Consultant, John Gaston Hosp., Mem-



his, Tenn., 1954—. Mem.: Fed. Dentaire Internationale; Am.
oll. of Dentists, Fellow; The Am. Acad. of Oral Pathol.,
ellow; Am. Assn. of Endodontists; Am. Acad. of Oral Roent-
enol.; Am. Acad. of Dental Med.; Inst. of Dental Med.; A.A.-
.S.; Am. Soc. of Dentistry for Children; N. Y. Acad. of Scis.;
ou. Endodontic Study Group; Am. Med. Writers' Assn.; Am.
oc. of Clin. Hypnosis; Am. Dental Assn.; Omicron Kappa
psilon; Alpha Omega; Zeta Beta Tau; Exec. Club. Contbr. to:
our. of Tenn. State Dental Assn.; Rev. of Dentistry; Dental
inics of N. Am.; Am. Professional Pharmacist. Serv. Rec.:
S.N.R., 1947. Areas of Rsch.: Endodontics and Oral Pathol.

SSON, Thomas Randolph Clinton (M.D.), Assoc. Clin. Prof.,
eds., Albert Einstein Med., Coll., N. Y. City, N. Y. Home Add.:
50 Roaring Brook Rd., Chappaqua, N. Y. PEDIATRICS-HEMATOLGY. b. Winnipeg, Can., Jan. 22, 1920. s. Lorne R. C. and Edna
Vilson) S. Edn.: A.B., Colgate Univ., 1941; M.D., Temple
niv., 1944. m. Anne Robson, May 5, 1945. c.: Geoffrey;
eter; Paul. Exp.: Instr., Ped., Univ. of Rochester, Rochester,
. Y., 1953-59; Asst. Prof., ibid., 1959-60; Geigy Pharmls.
rdsley, N. Y., 1960—; Assoc. Clin. Prof., Peds., Albert Einstein
oll. Med., 1960—. Mem.: Fellow, Am. Acad. of Peds.; Soc.
r Ped. Rsch.; Fellow, Intl. Soc. of Hematol.; Am. Inst.
utrn.; Soc. Study of Blood; Am. Hematol. Soc.; Am. Assn.
r the Adv. of Sci.; N. Y. Acad. of Sci.; Soc. of Human
enets.; Am. Fed. for Clin. Rsch.; Am. Assn. of Univ. Profs.;
i Chi; Delta Upsilon. Contbr. to: Peds.; Jour. of Peds.;
n. Jour. Clin. Nutrn.; Procs. Soc. Exptl. Biol. and Med.
our. Dis. Children. Serv. Rec.: U. S. Naval Reserve, 1945-46,
950-51. Areas of Rsch.: Prematurity, the Newborn, Nutrition
d Blood Diseases, Hematologic Disorders of Childhood; Anemia;
on Metabolism; Erythrokinetics.

TZ, Earl LeRoy (Mr.), Prof. of Elec. Engrng., Kans. State
niv., Manhattan, Kan. ELECTRICAL ENGINEERING. b. Davenri, Ia., Feb. 28, 1904. s. Theodore G. and Katie (Passig)
Edn.: B.S., Iowa State Univ., 1927; M.S., Kan. State Univ.,
932. m. Sarah Golda, Nov. 24, 1927. c.: Carol Ann. Exp.:
str., Dept. of Machine Design, Kans. State Univ., Manhattan,
n., 1927; Dept. of Elec. Engrng., ibid., 1928-40; Design
gr., Westinghouse Elec. Corp., 1940-41; Dept. Elec. Engrng.,
ns. State Univ., 1941-45; Design Engr., Westinghouse Electric
rp., 1945-46; Dept. of Elec. Engrng., Kan. State Univ., 1946-
; Dept. of Elec. Engrng., Michigan Coll. of Mining and
chnology, 1948—; Dept. Elec. Engrng., Kan. State Univ.,
948—. Mem.: Am. Inst. of Elec. Engrs.; Am. Soc. for Engrng.
n.: Eta Kappa Nu; Sigma Tau; Phi Kappa Phi. Gen. Int.:
censed Professional Engineer.

SITLER, Harry Grant (Mr.), Agric. Econt., ERS, Econ. Bldg., Colo. State Univ., Ft. Collins, Colo. Home Add.: 409 S. Grant Ave., Ft. Collins, Colo. AGRICULTURAL ECONOMICS. b. Coldwater, Kan., June 12, 1912. s. Fred G. and Allie Louise (Hankerson) S. Edn.: B.S., Kan. State Coll., 1935; M.S., Ia. State Coll., 1940. m. Shirley Greene, May 8, 1948. c.: Grant Harry; Lynn Christine. Exp.: Supvr. Co., Kan. Rehab. Corp., Morton Co., Kans., 1935; Agric. Econt., Resettlement Admin., Amarillo, Tex., 1936-37; Agric. Econt., BAE to ARS to ERS, U.S.D.A., 1938—. Hon. Pos.: Chmn. of Employment Comm., AFEA, 1961-62. Mem.: Western Farm Econs. Assn.; AFEA; OPEDA; Masonic Lodge; Reserve Officers Assn.; Assn. U. S. Army. Contbr. to: Colo. Expt. Sta. Bull.; Prod. Rsch. Rept. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Agriculture; Economics.

SJOSTRAND, Fritiof Stig (M.D.), Prof. of Zool., Univ. of Calif., Los Angeles, Calif. Home Add.: 1345 Casiano Rd., Los Angeles 49, Calif. MOLECULAR BIOLOGY, CELL RESEARCH. b. Stockholm, Nov. 5, 1912. s. Nils Johan and Dagmar Louise Ulrika (Hansen) S. Edn.: M.D., Karolinska Inst., Stockholm, 1941; Ph.D., ibid., 1945. m. Ebba I.A.L. Gyllenkrok, Mar. 28, 1955. c.: Ebba; Rutger; Johan. Exp.: Asst. Prof. of Anatomy, Karolinska Inst., 1945-49; Assoc. Prof. of Anatomy, ibid., 1949-60; Prof. of Histology, ibid., 1960-62; Prof. of Zoology, Univ. of Calif., Los Angeles, 1955-62—. Hon. Pos.: Hon. Mem. of Electron Microscope Soc. of Japan; Hon. Fellow, Royal Micros. Soc., London. Mem.: Electron Microscope Soc. of Am.; Scandinavian Electron Microscope Soc.; Electron Microscope Soc. of Japan; Deutsche Gesellschaft für Elektronomikroskopie; Biophysical Society. Contbr. to: Journal of Ultrastructure Research; Experimental Cell Research; Nature. Areas of Rsch.: Electron Microscopy of Cells and Tissues; Ultrastructure of the Retina of the Eye, of Muscle Tissue, and of the Nervous System.

SJOSTROM, Loren Birger (Mr.), Vice Pres., Food and Flavor Dept., Arthur D. Little, Inc., Cambridge 40, Mass. Home Add.: 12 Cordis St., Wakefield, Mass. CHEMICAL ENGINEERING. b. North Andover, Mass., July 21, 1912. s. Waldemar L. and Alice M. (Barstow) S. Edn.: B.S., Northeastern Univ., 1935. m. Bernice Whitehead, Aug. 20, 1938. c.: Jean; Lois; Betty. Exp.: Rsch. Chem., Arthur D. Little, Inc., Cambridge, Mass., 1936-47; Head of Food and Flavor Dept., ibid., 1947-62; Vice Pres., ibid., 1962—. Hon. Pos.: Past Chmn., Northeast Sect., Inst. of Food Technols. Mem.: Am. Chemical Society; Am. Inst. of Chems.; A.A.A.S.; Inst. of Food Technols.; Mass. Soc. of Profl. Engrs.; Soc. of Cosmetic Chems.; N. Y. Acad. of Sci.; Chems. Club; Masons. Contbr. to: Food Engrng.; Food Technol.; The Confectioner; The Baker's Digest; Perfumery and Essential Oil Record; Encyclopaedia Britannica; Flavor Rsch. and Food Acceptance. Areas of Rsch.: Flavor and Odor Problems; New Products Development; Cosmetics; Pharmaceuticals.

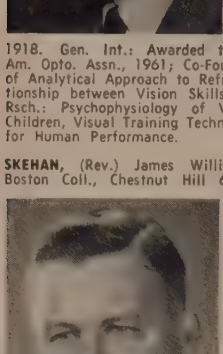
SKARLAND, Ivar (Ph.D.), Prof., Anthrop., Univ. of Alaska, College, Alaska. PREHISTORY OF ALASKA. b. Namdal, Norway, Sept. 2, 1890. s. Ole P. and Anna (Fossum) S. Edn.: B.A., Univ. of Alaska, 1935; M.A., Harvard, 1942; Ph.D., ibid., 1949. Exp.: Instr. to Prof., Univ. of Alaska, 1940—. Hon. Pos.: Pres., Arctic Br., A.A.A.S. Mem.: Am. Assn. Phys. Anth.; Soc. Am. Arch.; Am. Geog. Soc.; Am. Anth. Assn.; V.F.W.; Royal Anthropological Instit.; Am. Ethnological Soc. Contbr. to: Am. Antiquity; Alaska Proc., A.A.A.S.; Book Rev. War Rec.: U. S. Army, 1943-45. Areas of Rsch.: Pleistocene Climatic Conditions in Alaska.

SKEEN, John Robsin (Ph.D.), Indust. Consult., Wash., D. C. Home Add.: Aldenville, Pa. PHYSICAL CHEMISTRY. b. Phila., Pa., June 28, 1899. s. John R. and Almyra G. (Gail) S. Edn.: B.S., Pa. State Univ., 1921; A.M., Univ. of Pa., 1924; Ph.D., ibid., 1926. m. Helen Goodspeed, Feb. 10, 1938. c.: John R., III; Helen Gail. Exp.: Instr., Univ. of Pa., Phila., Pa., 1925-30; Phys. Chemist, United Gas Improvement Co., 1930-35; Grp. Leader, ibid., 1935-42; Chf., Chems. Br., WPB., Wash., D. C., 1942-43; Prin. Chem. Engr., Int. Revenue Serv., Wash., D. C., 1944-47; Dir., Foster D. Snell, Inc., N. Y., 1947-52; Dir., Chem. Market Abstracts, N. Y., 1948-55; Consult., Nati. Prod. Authority, Wash., D. C., 1955-56; Vice Pres., Nuodex Prods. Co., Inc., Elizabeth, N. J., 1952-56; Indus. Consult., Wash., D. C., 1956—. Hon. Pos.: Chmn., Market Rsch. Symp., Am. Chem. Soc., 1952. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Fellow, Am. Inst. of Chemists; Bot. Soc. of Am.; Theta Chi; Sigma Xi. Contbrng. Author: Chemical Business Handbook, 1954; Literature Sources, 1954. Contbr. to: Soil Scien.; Am. Jour. of Bot.; Jour. Franklin Inst.; Jour. Plant Physiol.; Chem. and Engrng. News; Chem. Engrng.; Gas Jour. Areas of Rsch.:

Plant Physiology, Soil Structures, Gas Equilibria; Plant Nutrition; Oil Pyrolysis; Industrial Water Control; Surface Coatings; Industrial Chemical Supply and Distribution; Dairy Management.

SKEFFINGTON, Arthur Marten (O.D.), Dir. of the Grad. Clinic Found., Edn. Dir. for the Optometric Ext. Program, Duncan, Okla. Home Add.: Auld Ingle, Meramec Forest, Valley Park, Mo. VISION—AS IT RELATES TO HUMAN PERFORMANCES. b. Kans. City, Mo., Aug. 28, 1890. s. Thomas and Margaretta (Sommers) S. Edn.: O.D., Needles Inst. in Kans. City, 1916. Hon. Degs.: D.O.S., 1933; L.H.D., Pacific Univ., 1957. m. Mary Jane Berkeley, Feb. 19, 1916. Exp.: Director of Optometric Ext. Bureau, Duncan, Okla., 1928—. Mem.: Sigma Xi; Beta Sigma Kappa. Author: Procedures in Ocular Examination, 1927; Diagnosis in Ocular Examination, 1929. Contbr. to: Keystones Mag.; Am. Jour. of Optometry; Archives of Optometry; Optometric Weekly; Optical Jour. and Rev. Serv. Rec.: U. S. Army, 1918. Gen. Int.: Awarded the Apollo Award for Dist. Serv., Am. Opto. Assn., 1961; Co-Founder, Optom. Ext. Program; Devel. of Analytical Approach to Refraction Used for Study of the Relationship between Vision Skills and Reading Abilities. Areas of Rsch.: Psychophysiology of Vision, Visual Problems of School Children, Visual Training Techniques, Kinetic Application of Lenses for Human Performance.

SKEHAN, (Rev.) James William S.J., Assoc. Prof. of Geol., Boston Coll., Chestnut Hill 67, Mass. GEOLOGY: STRUCTURAL GEOLOGY, PETROLOGY AND ENGINEERING GEOLOGY. b. Houlton, Maine, Apr. 25, 1923. s. James William and Mary Effie (Coffey) S. Edn.: A.B., Boston Coll., 1946; A.M., ibid., 1947; Ph.L., Weston Coll., 1947; A.M., Harvard Univ., 1950; Ph.D., ibid., 1953. Exp.: Asst. Prof. of Geol., Dept. of Geol. and Grad. Dept. of Geophysics, Boston Coll., 1951-62; Assoc. Prof. of Geol., Dept. of Geol. and Grad. Dept. of Geophys., Boston Coll., 1962—; Founder and Chmn., Dept. of Geol., 1958—; Asst. Dir. of Weston Observ., 1956—. Mem.: Sigma Xi; Boston Geol. Soc.; New England Intercollegiate Geol.; Am. Assn. Jesuit Scientists; Am. Water Works Assn.; N. E. Water Works Assn.; Am. Am. Geol. Tchrs. Assn.; Boston Geol. Soc., Vice Pres., 1957-58, Pres., 1958-59, Secy.-Treas., 1961-62; N. Y. Acad. of Scis.; U. S. Comm. on Large Dams of the Int. Comm. on Large Dams; New England Sect. of the Natl. Assn. of Geol. Tchrs., Vice Pres., 1962-63; Fellow of the Geol. Soc. of Am.; Fellow of the Geol. Soc. of London; European Assn. of Exploration Geophysicists; Assn. for the Geological Study of the Deeper Zones of the Earth's Crust; Am. Geop. Union. Contbr. to: Bull. Geol. Soc. Am.; Jour. Geol.; Am. Jour. of Sci.; Am. Thought; Jour. of Philippine Studies; U. S. Quart. Book Rev.; Bull. Am. Assn. Jesuit Scientists. Pub. Books: The Green Mountain Anticlinorium in the Vicinity of Wilmington-Woodford, Vermont, Bull. 17 of the Vermont Geological Survey, 1962. Gen. Int.: Quadrangle Mapping of Metamorphics of New England; Detailed Mapping of Quarries and the Relation of Structure to Quarry Problems; Engineering geology as applied to groundwater supplies, landslides, large dam foundations, power plant foundations and locations; Regional Tectonics of World.



SKELTON, Marilyn Mae (Mrs.), Asst. Prof., Home Economics, Univ. of Wyo., Laramie, Wyo. Home Add.: 317 Sully, Box 5, Laramie, Wyo. FOODS AND NUTRITION. b. Coffeyville, Kans., May 3, 1936. d. C. T. McNelis and Opal (Miller) M. Edn.: B.S., Kans. Sta. Univ., 1957; M.S., ibid., 1958. m. Thomas W. Skelton, Oct. 4, 1958. c.: Kerry Thomas. Exp.: Instr., Kans. Sta. Univ., Manhattan, Kans., 1959-62; Asst. Prof., Univ. of Wyo., 1962—. Hon. Pos.: Omicron Nu Advisor. Mem.: Phi Kappa Phi; Sigma Xi; Omicron Nu; Gloria Sorority. Contbr. to: Food Technol. Areas of Rsch.: Histological and Chemical Research with Meat.

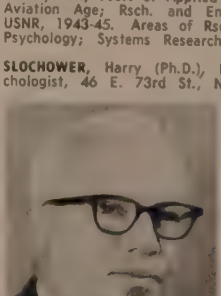
SKOLNIKOFF, Eugene Bertram (Mr.), Staff Mem., Office of Spec. Asst. to the Pres. for Sci. and Technol., The White House, Wash., D. C. Home Add.: 1822 35th St., N.W., Wash. 7, D. C. ELECTRICAL ENGINEERING, ECONOMICS; SCIENCE AND FOREIGN POLICY. b. Phila., Pa., Aug. 29, 1928. s. Benjamin H. a Betty E. (Turoff) S. Edn.: S.M., Mass. Inst. of Tech., 195 S.B., ibid., 1950; B.A., Oxford Univ., 1952; M.A., ibid., 19 m. Winifred Weinstein, Sept. 15, 1957. c.: David Ethan. Ex Test Engr., Genl. Elec. Co., Schenectady, Syracuse, N. Y., 194 49; Rsch. Asst., M.I.T., 1950; Rsch. Asst., Uppsala Univ., Uppsal Sweden, 1952; Indust. Liaison Officer, M.I.T., 1952-55; Analys Inst. for Def. Analys., Wash., D. C., 1957-58; Staff Mem The White House, 1958—. Mem.: Am. Assn. Adv. Sci.; Am. Ass of Rhodes Schlrs.; Sigma Xi; Eta Kappa Nu; Tau Beta Pi. Ser Rec.: U. S. Army, 1955-57. Gen. Int.: Rhodes Scholarshi Areas of Rsch.: Science and Public Policy, especially the Relatio ship of Science to Foreign Policy.

SKUBIC, Vera (Ph.D.), Assoc. Prof., Univ. of Calif., Sant Barbara, Calif. Home Add.: 6881 Del Playa Dr., Goleta, Cali PHYSIOLOGY. b. Chicago, Ill., Apr. 8, 1918. d. Albin H. an Sophie M. (Roth) S. Edn.: B.S., Univ. of Ill., 1940; M.S Univ. of Calif., L. A., 1946; Ph.D., Univ. of Sou. Calif., 195 Exp.: Instr., Faulkner Prvt. Schl., Chicago, Ill., 1942-44; Instr Chicago Pub. Schl., ibid., 1942-44; Instr., Morningside Col Sioux City, Ia., 1945-47; Instr., La. State Univ., Baton Roug La., 1947-50; Assoc. Prof., Univ. of Calif., 1951—. Hon. Pos. Chmn., Dept. of Phys. Edn. for Women. Mem.: Assn. f Health, P. E. and Rec., Fellow; Am. Coll. Sports Med., Fellow Am. Assn. for the Adv. of Sci.; Am. Physiol. Soc.; Calif. Rsch Assn.; Delta Psi Kappa; Natl. Assn. of Phys. Edn. for Col Women; Calif. Assn. for Health, Phys. Edn. and Rec.; Rsch Coun. of the Am. Assn. Health Phys. Edn. Rec.; Natl. Edu Assn.; Western Soc. for Phys. Edn. for Coll. Women. Contb to: Jour. of the Am. Assn. for the Health, Phys. Edn. an Rec.; Rsch. Quarterly of the Am. Assn. Health Phys. Edu and Rec.; Jour. of Tchr. Edn. Areas of Rsch.: Physiology o Exercise.

SLAUGHTER, Maynard (Ph.D.), Asst. Prof. of Geol., Univ. o Mo., Columbia, Mo. Home Add.: 1503 W. Broadway, Colum bia, Mo. X-RAY CRYSTALLOGRAPHY. b. Athens, Ohio, Jan. 13 1934. s. John J. and Martha (Maynard) S. Edn.: B.S., Ohi Univ., 1955; M.A., Univ. of Mo., 1957; Ph.D., Univ. of Pittsburgh 1961. m. Betty L. Tippie, 1952. c.: Cecil; Thad; Michael Steven; Amy. Exp.: Inorganic Geochemist, Gulf Rsch., Pittsburgh Pa., 1957-60; Asst. Prof. of Geol., Univ. of Mo., 1960—. Mem. Am. Crystallographic Assn.; Am. Mineralogical Soc.; Sigma Xi Contbr. to: Bull. Geol. Soc. of Am.; Acta Crystallographica; Bull Am. Ceramic Soc.; Clays and Clay Minerals. Areas of Rsch. X-Ray Crystallography; Structure of Silicate Minerals.

SLEIGHT, Robert Benton (Ph.D.), Pres., Applied Psychol. Corp. 4113 Lee Highway, Arlington, Va. Home Add.: 3717 No. 27t St., Arlington, Va. PSYCHOLOGY b. Hemlock, N. Y., Sept. 16 1922. s. Edson F. and Maria (Hoppough) S. Edn.: B.Ed., Stat Univ. of N. Y., Tchrs. Coll. Geneseo, 1946; M.S., Purdue Uni versity, 1947; Ph.D., ibid., 1949 m. Dorothy Barden, 1944. c. Robert B. Exp.: Rsch. Fellow Purdue Univ., 1946-48; Assistan Prof. and Rsch. Psychol., Th Johns Hopkins Univ., 1948-51 Rsch. Scientist and Consult, Nava Rsch. Lab., Wash., D. C., 1952 Pres., Applied Psychol. Corp. Arlington, Va., 1952—. Hon. Pos. Consultant, Soc. of Automotiv Engrs.; Chmn. of Bd., Applie Psychol. Corp., 1952—; Mem. o Citizens' Zoning Adv. Comm. 1955-57; Visit. Lectr., Gouche Coll., 1949. Mem.: Am. Ordn. Assn., Internatl. Assn. o Applied Psychol.; Am. Psychol. Assn.; E. Psychol. Assn.; Inst of Aeronautical Scis.; Am. Assn. for Adv. of Sci.; Sigma Xi Human Factors Soc. Contbr. to: Industrial Rsch.; Am. Jour of Psychol.; Jour. of Applied Psychol.; Jour. of Exptl. Psychol. Aviation Age; Rsch. and Engrng. Serv. Rec.: Naval Aviator USNR, 1943-45. Areas of Rsch.: Human Engineering; Industria Psychology; Systems Research and Transportation Research.

SLOCHOWER, Harry (Ph.D.), Psychotherapist and Certified Psychologist, 46 E. 73rd St., New York 21, N. Y. Home Add.: 221 E. 18th St., Brooklyn 26 N. Y. PSYCHOANALYSIS AND MYTHOPOESIS. b. Austria, Sept. 1 1900. s. Mayer and Frieda (Schnapp) S. Edn.: B.S.S., City Coll. of N. Y., 1923; M.A., Columbia Univ., 1924; Ph.D., ibid. 1928. c.: Joyce Anne. Exp.: Lectr., The New Schl., N. Y. C. 1947—; Lctr., William A. White Inst. for Psychiatry, N. Y. C. 1948-52; Assoc. Prof., Brooklyn Coll., 1950-56. Hon. Pos.: Pres. Assn. for Applied Psychoanalysis Mem.: N. Y. Soc. of Clin. Psychologists; Coun. of Psychoanalytic Psychotherapists; Am. Group Psychotherapy Assn. Author: Three Ways of Modern Man, 1937 Thomas Mann's Joseph Story, An Interpretation, 1938; No Voice is Wholly Lost, 1945. Editor: Guide to Psychiatric and Psycho



gical Literature. Contbrng. Editor: Philosophic Abstracts. Con-
r. to: Encyc. of Soc. Scis. and the Encyc.; The Libr. of
ving Philosophers; Progress in Clin. Psychol. Gen. Int.:
ggenheim Fellow, 1929-30; Bollingen Fellowship, 1950-51.
eas of Rsch.: Relation of Psychoanalysis to Literature and
t, (Thomas Mann and Franz Kafka).

ETTEN, Owen (Ph.D.), Assoc. Prof., Civil Engrng., Iowa St.
iv., Ames, Ia. Home Add.: 307 12th St., Ames, Ia. SANI-
RY ENGINEERING SCIENCE. b. Willmar, Minn., July 22, 1904.
Hans Magnus and Inga (Newman) S. Edn.: B.A., St. Olaf
ll., 1929; M.Sc., Univ. of Minn., 1947; M.P.H., Univ. of
tsburgh, 1958; Ph.D., Wash. Univ., St. Louis, Mo., 1962.
Pearl E. Wattnem, Sept. 12, 1941. c.: Carol Gwen; Byron
n. Exp.: Lab. Dir., Coca-Cola Bottling Co., Minneapolis, Minn.,
39-53; Operating Own Lab., Minn., 1953-62; Chemist and
cteriologist, Minneapolis Water Dept., 1958-59; Assoc. Prof.,
wa State Univ., 1962—. Mem.: Am. Chemical Soc.; Soc.
Am. Bacteriologists; Am. Public Health Assn.; Royal Soc. of
alth; Am. Water Wks. Assn.; Sigma Delta Psi; Sigma Xi.
ntbr. to: Jour. of Bacteriol. Gen. Int.: Microbiol. Areas of
ch.: Microbiology, Sanitary Engineering.

OPER, (von Cadenberg), Samuel Arthur (Mr.), Exptl. and Theoret-
l Inorg. Chemistry, Private Invest., Westwood, Calif. Home Add.:
3 Fir St., Westwood, Calif. INORGANIC CHEMISTRY-SYNTHESES,
EPARATIONS, STRUCTURE OF INORG. COMPDS. AND INORG.
PICS IN GENERAL. b. Cottonwood, Ariz., Nov. 18, 1925. s.
roy C. and Bernice A. (Nichelson) S. Edn.: Univ. of Ariz., 1951.
Maria Helene Mielczarek, June, 1946. c.: Samuel L.; Rose
aria Bernice; Anna Brunette; Stefan Arthur. Exp.: Chem., priv.,
iz., 1951-60; Chem., priv., Westwood, Calif., 1960—. Mem.:
n. Chem. Soc.; Calif. Sect., Am. Chem. Soc.; Phi Lambda
silon (Phi Chapter-U. of A.); Past mem., Am. Rocket Soc.
rv. Rec.: U. S. Army, 1943-46. Gen. Int.: Military awards—
onze Star, D.U.C., Combat Badge, Commendation Ribbon with
clusters, Fr. Croix de Guerre, Medaille Reconnaissance Fran-
ise, Medaille Liberee; Sqdn. Commander. Areas of Rsch.:
etals; Reduction of Metals from Ores.

OTE, Lawrence (Eng.Sc.D.), Sr. Rsch. Scientist, N. Y. Univ.,
Y. 53, N. Y. Home Add.: 14 Woodcut Lane, N. Rochelle, N. Y. ENVIRONMENTAL HEALTH ENGINEERING; SANITARY ENGINEERING; MECHANICAL ENGINEERING. b. N. Y. City, May 23, 1924. s. Simon and Blanche (Coppersmith) S. Edn.: B.S.M.E., Univ. of Rhode Island, 1947; M.M.E., N. Y. Univ., 1948; Eng. Sc.D., ibid., 1961. m. Mildred Brody, July 10, 1960. c.: Gregory. Exp.: Sr. Rsch. Scientist, N. Y. Univ., 1948—; Vice Pres., Rototex Rsch. Corp., N. Y., 1950—; Adjunct Asst. Prof., Ind. Engr., N. Y. Univ., 1962—; Consult. to Nuclear Rsch. Assocs., Inc., 1962—. Hon. Pos.: Executive Council, Human Factors Soc.; Chmn. Rsch. Study Comm. Human Factors Group of A.S.M.E. Mem.: Am. Assn. for the Adv. of Sci.; S.M.E.; N. Y. Acad. of Scis.; Human Factors Soc.; Am. tronautical Soc.; Air Pollution Control Assn.; Am. Instit. of ed. Climatol.; Alpha Epsilon Pi; Sigma Xi; The Bayberry Assn. New Rochelle. Contbr. to: Am. Schl. and Univ. Yearbook; ocs. of Am. Inst. of Med. Climatol. Serv. Rec.: U. S. Navy, 44-46; U. S. Naval Reserve, 1946-50. Gen. Int.: Listed W. W. in the East; W. W. in Human Factors. Areas of Rsch.: omechanics; Human Factors Engineering; Air Ions and Human erformance; Accident Prevention and Safety Engineering; Cryp-climatology and Ecology of Manned Spacecraft; Life Support ystems; Medical Engineering.

LUSHER, Harold Schultz (Mr.), Asst. Prof. of Physics, and Dir., dd Mem. Seismic Observatory, Tex. Western Coll., El Paso, Tex. Home Add.: 1524 Devonshire, El Paso, Tex. GEOPHYSICS AND ASTRONOMY. b. Capito, Ky., Aug. 12, 1934. s. Dewey G. and Lucy (Slusher) S. Edn.: B.A., Univ. of Tenn., 1954; M.S., Univ. of Okla., 1960. m. Joy McConkey, Apr. 22, 1953. c.: Lisa Kay. Exp.: Assoc. Engr., Martin Aircraft Co., Baltimore, Md., 1955; Instructor, Hiwassee Coll., Madisonville, Tenn., 1956-57; Asst. Prof., Dir., Kidd Mem. Seismic Observatory, Tex. Western Coll., 1957—. Mem.: Am. Geophysical Union; Am. Assn. Physics Tchrs.; Astron. Soc. of the Pacific; Meteor. Soc.; Am. Sci. Affiliation; Sigma Pi Sigma. Areas of Rsch.: Binary Eclipsing Stars; Meteoritics; Gravity Surveys.

MELT, Ronald (Ph.D.), Vice-Pres., Lockheed Missiles and Space
. and Gen. Mgr., Nuclear Space Progs. Div., Lockheed Air-
raft Corporation, P. O. Box 504, Sunnyvale, Calif. Home
dd.: 13091 Alta Lane, N. Los Altos Hills, Calif. MATHEMATICS,
IGH-SPEED AERODYNAMICS, SPACE MECHANICS. b. Houghton le Spring, Durham, England, Dec. 4, 1913. s. Henry Wilson and Florence (Bradburn) S. Edn.: B.A., King's Coll., England, 1935; M.A., ibid., 1939; Ph.D., Stanford Univ., 1961. m. Marie Anita Collings, Nov., 1940. c.: David. Exp.: Aerodynamicist, Royal Aircraft Establishment, Farnborough, England, 1935-41; Chief, High Speed Flight Sect., Hd., Gas Dynamics Dept., ibid., 1941-46; Chief, Guided Weapons Dept., ibid., 1935-48; Deputy Chief, Aeroballistic Rsch. Dept., Naval Ord. Lab., White Oak, Silver Spring, Md., 1948-50; Chief, Gas Dynamics Dept., Aro., Inc., Arnold Engrng. Devel. Ctr., Tullahoma, Tenn., 1950-57; Dir., New Design, Lockheed Missile and Space Co., 1957-58; Dir., Rsch., ibid., 1958-59; Mgr., Satellite Syst., ibid., 1959-60; Chief Scientist, ibid., 1960-62; Vice-Pres., Gen. Mgr., Nuclear Space Prog., ibid., 1962—. Hon. Pos.: Mem., Natl. Aero. and Space Admin. Research Adv. Sub-Comm. on High-Speed Aerodynamics, 1958-59; Mem., NASA Rsch. Adv. Comm. on Missile and Space Vehicle Aerodyn., 1959-61. Mem.: Cambridge Philos. Soc., Fellow; Royal Aeron. Soc., Fellow; Am. Rocket Soc., Fellow; Instit. of the Aerospace Scis., Assoc. Fellow; Am. Phys. Soc.; Am. Astron. Soc. Contbr. to: Space/Aeronaut.; Jour. Am. Rocket Soc.; Aerospace Eng.; Can. Aeronaut. Jour.; Jour. Royal Aeronaut. Soc. Serv. Rec.: U. S. Royal Air Force, 1944-46. Areas of Rsch.: High Speed Flight, Jet and Rocket Propulsion, Experimental Hypersonic Aerodynamics, Satellite Mechanics.

SMITH, Albert McFarland (Mr.), Optical Engr., Chicago Aerial Industs., Inc., 550 West Northwest Highway, Barrington, Ill. Home Add.: 48 E. Woodland Rd., Lake Forest, Ill. OPTICAL ENGINEERING. b. Taegu, Korea, May 31, 1917. s. Roy Kenneth and Lura (McLane) S. Edn.: B.A., Lake Forest Coll., 1939. m. Virginia Postal, Sept. 26, 1942. c.: Sylvia Eileen; Graham Willson. Exp.: Optical Engr., Bell and Howell Co., 1940-52; Sr. Rsch. Engr., North Am. Aviation, Inc., Downey, Calif., 1952-56; Mgr., Optical Labs., Optical Div., Bell and Howell Co., 1956-59; Special Project Engr., ibid., 1959-61; Optical Engr., Chicago Aerial Industries, Inc., 1961—. Mem.: Optical Soc. of Am.; Optical Soc. of Chicago; Optical Soc. of Sou. Calif.; Soc. of Motion Picture and Television Engrs.; A.A.A.S.; Sigma Pi Sigma; Phi Eta Sigma; Beta Beta Beta. Areas of Rsch.: Optical Engrng. in Photographic and Visual Optics.

SMITH, Alpheus Wilson (Ph.D.), Dean, (Emer.), of the Grad. Schl. and (Emer.) Prof. of Phys., Dept. of Phys. and Astronomy, Ohio State Univ., Columbus, Ohio. Home Add.: 232 E. 16th Ave., Columbus, Ohio. PHYSICS. b. Philippi, W. Va., Jan. 15, 1876. s. John R. W. and Celia Anne (Wilson) S. Edn.: A.B., W. Va. Univ., 1900; A.M., Harvard Univ., 1903; Ph.D., ibid., 1906. Hon. Degs.: D.Sc., Ohio Wesleyan Univ., 1942; LL.D., Ohio St. Univ., 1946; D.Sc., Capital Univ., 1950. m. Adah A. Beaton, Aug. 25, 1913. c.: Robert Beaton; Theodore Beaton. Exp.: Instr., Phys., W. Liberty Normal Schl., W. Liberty, W. Va., 1900-01; Instr., Bowdoin Coll., Brunswick, Me., 1906; Instr., Haverford Coll., Haverford, Penn., 1906-07; Instr., Univ. of Wis., Madison, Wis., 1907-09; Instr. to Prof., Ohio State Univ., Columbus, Ohio, 1909-46; Dean of the Grad. Schl., Ohio State Univ., 1939-46; Dean (emeritus), and Prof., (emeritus), ibid., 1946—. Hon. Pos.: Pres., Ohio St. Univ. Research Found., 1945-58; Co-ord. of Grad. Work Between Grad. Schl. and Grad. Ctr. at Wright Patterson Air Force Base, 1946-58. Mem.: Am. Phys. Soc.; Am. Assn. for the Adv. of Sci.; Am. Phys. Tchrs. Assn.; Sigma Xi; Phi Beta Kappa. Co-Author: Elements of Physics, 1957; Careers in Physics, 1960 Contbr. to: Phys. Rev.; Am. Jour. of Phys. Gen. Int.: Air Force Medal for Exceptional Civilian Serv., 1958; Distinguished Service Citation, Ohio State Univ., 1956. Areas of Rsch.: Galvanomagnetc and Thermomagnetic Effects Absorption and Atomic Spectroscopy.

SMITH, Bernard Joseph (Mr.), Consulting Engr., 641 O'Farrell St., San Francisco 9, Calif. and 3600 Beverly Dr., Dallas 5, Tex. Home Add.: 3600 Beverly Dr., Dallas, Tex. REGIONAL DEVELOPMENT. b. Liverpool, England, Aug. 29, 1900. s. Thomas J. and Sarah Anne (Crum) S. Edn.: B.Eng., (Hons.), Univ. of Liverpool, England, 1923; M.Eng., ibid., 1926. m. Julia Susan Connolly, June 4, 1929. c.: Mrs. S. A. Kathleen Schaffer; Mrs. Maureen Gallagher, Jr.; Una Eileen; Aislin; T. E. Malachy; Joan Pauline; John Philip Michael. Exp.: Res. Engr., Underpinning and Found. Co., N. Y., 1924; Underground Conduit Engr., New York and N. J. Tele. Co., and Ohio Bell Tele. Co., N. Y., and Ohio, 1924-26; Asst. Engr., Alexander Potter Consulting Engr., N. Y., 1926-30; Design Engr., Humble Oil and Refining Co., Baytown, Tex., 1930-32; City Mgr., Baytown, Tex., 1932-33; Consulting Engr., ibid., 1931-34; Engr., Exam. Pub. Works Admn., Ft. Worth, Tex., 1934-38;

Dir. of Rsch. and Personnel, City of Ft. Worth, Tex., 1938-41; Sta. Planning Engr. and Acting Sta. Dir. Pub. Wk. Res., Tex., 1941-42; Lectr., Tex. Christian Univ., Ft. Worth, Tex., 1940-43; Asst. Reg. Dir., Natl. Housg. Agcy., Reg. 8, Dallas, Tex., 1942-47; Lectr., So. Methodist Univ., Dallas, Tex., 1947-53; Consulting Engr., Calif., 1947; Co-lateral, Planning Assignments Corps of Engrs., U.S.A., 1957—. Hon. Pos.: A.S.C.E. Comm. on Edn. Curriculum for Engrng. Planning; Pres., Irish Literary and Hist. Soc. of San Francisco; Pres., Irish Lit. Soc., Elizabeth, N. J.; Pres., Catholic Fed. of Ft. Worth, Tex.; Dir. Catholic Charities, Ft. Worth, Exec. Coun. USO, Ft. Worth. Mem.: Dir., Columbia Forum, Dallas; Fellow, Am. Soc. of Civil Engrs.; Am. Econ. Assn.; Am. Waterworks Assn.; Am. Assn. for the Adv. of Sci.; Louth. Archaeol. Soc.; Pi Gamma Mu. Author: Town Building, 1939; International Scene, 1946; Elements of Housing Market Analysis, 1945; El Paso Housing Market, 1945; Dams, Pumps, Aqueducts, 1957. Contbr. to: The Texas Engr.; The Tenn. Valley Engr.; Tex. Stat. Coun. Gen. Int.: Nominated Honors Leader Univ. of Liverpool in Structural Design and Water Supply. Areas of Rsch.: Urban Planning; Regional Socio-Economic Development; Water Resources Development; Racial Persistence and Fusional Culture.

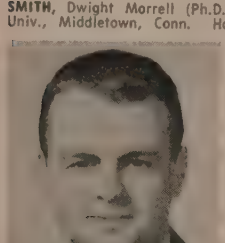
SMITH, Charles Zell, Jr. (Mr.), Asst. to Dir. of Mfg., Norton Internatl., Inc., Troy, N. Y. Home Add.: 517 Dawson Rd., Delmar, N. Y. ENGINEERING. b. Dayton, Ohio, Mar. 26, 1919. s. Charles Z. and Mildred A. (Ten Broeck) S. Edn.: B.M.E., Rensselaer Polytechnic Inst., 1950. m. Mildred E. Hoss, Dec. 27, 1941. c.: Carol; Charles. Exp.: Development Engr., Behr-Manning Co., Troy, N. Y., 1950-51; Project Engr., ibid., 1951-52; Plant Mgr., ibid., N. Ireland, 1952-55; Dir., ibid., 1955-60; Asst. to Dir. of Mfg., Norton Internatl., Inc., 1960—. Hon. Pos.: Past Pres., Tau Beta Pi. Mem.: A.A.A.S.; A.S.M.E.; A.S.T.M.E.; Sigma Xi; Rotary Internatl. Serv. Rec.: Major, U. S. Army, 1941-46. Areas of Rsch.: Textiles and Abrasives.

SMITH, Chester Warren (Sc.D.), Consulting Engr., 2 Rogers Ave., Lynn, Mass. MECHANICAL ENGINEERING. b. Everett, Mass., Jan. 17, 1896. s. Joseph W. and Rose (Kelly) S. Edn.: A.B., Harvard Coll., 1919; B.S., ibid., 1921; M.S., Mass. Inst. of Technol., 1929; LL.B., Suffolk Law Schl., 1935; Sc.D., Mass. Inst. of Technol., 1940. Exp.: Rsch. Devel. and Design Engr., Gen. Electric Co., Lynn, Mass., 1922-61; Adjunct Prof. of Aero. Engrng., N. Y. Univ., N. Y. Univ., 1946-58; Consulting Engr., Lynn, Mass., 1961—. Mem.: Inst. of the Aerospace Scis.; Am. Rocket Soc.; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Scis. Author: Aircraft Gas Turbines, 1956. Contbr. to: A.S.M.E. Trans.; Jour. Aerospace Scis. Serv. Rec.: U. S. Army, 1918-19. Areas of Rsch.: Mechanical Engineering, Especially Gas Turbines.

SMITH, David Jerome (Mr.), Systems Analysis Engr., General Elec. Co., Missile and Space Div., Systems Dept., Phila., Pa. Home Add.: 400 Browning Lane, (Apt. 10-D), Brooklawn, N. J.

ENGINEERING ANALYSIS (ELECTRICAL AND ELECTRONIC). b. Glen Ridge, N. J., Sept. 30, 1923. s. George A. and Genevieve (Finn) S. Edn.: B.S., St. Peter's Coll., N. J., 1947; M.S., Univ. of Notre Dame, Ind., 1949. Exp.: Lab. Engr., Natl. Union Radio Corp., Orange, N. J., 1947-48; Actuarial Trainee, Royal-Liverpool Group of Insurance Co.'s, New York, 1949-50; Electronic Scientist, Natl. Bureau of Standards, U. S. Dept. of Commerce, Wasn., D. C., 1950-51; Electrical Engr., Breeze Corp., Inc., Union, N. J., 1951-59; Electronics Engr., Convair San Diego Div. of the Gen. Dynamics Corp., San Diego, Calif., 1959-60; Systems Engr., G.E.M.S.D., 1960—. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Mathematical Soc.; Mathematical Assn. of Am.; Am. Ordnance Assn. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Radar and Airborne Electrical Systems.

SMITH, Dwight Morrell (Ph.D.), Asst. Prof. of Chem., Wesleyan Univ., Middletown, Conn. Home Add.: 28 Susan Circle, Portland, Conn. ANALYTICAL AND PHYSICAL CHEMISTRY. b. Hudson, N. Y., Oct. 10, 1931. s. Elliott Monroe and Helen (Hall) S. Edn.: B.A., Central Coll., Ia., 1953; Ph.D., Pa. Sta. Univ., 1957. m. Alice Bond, 1955. c.: Karen; Susan. Exp.: Instr., Chem., Calif. Inst. of Tech., Pasadena, Calif., 1957-59; Sr. Chemist, Texaco Rsch. Ctr., Beacon, N. Y., 1959-61; Asst. Prof., Chem., Wesleyan Univ., 1961—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Am. Assn. Univ. Profs.; Sigma Xi; Scientific Rsch. Soc. of Am.; Phi Kappa Phi; Phi Lambda Upsilon; Alpha Chi Sigma; Alpha Psi Omega. Contbr. to: Analytical Chemistry; Talanta. Areas of Rsch.: Trace Analysis, Chromatography, Reaction Kinetics, Precipitation Phenomena, Catalysis, Electroanalytical Chemistry.

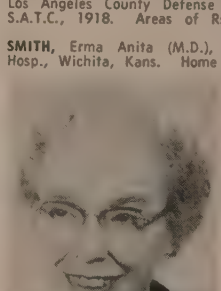


SMITH, Dale (Ph.D.), Prof. of Agronomy, Univ. of Wis., Mad 6, Wis. Home Add.: 6413 Mendota Ave., Middleton, AGRONOMY. b. Fairmont, Nebr., Apr. 13, 1915. s. Harry and Emma S. (Haughawout) S. Edn.: B.Sc., Univ. of Nebr., 1 M.Sc., Univ. of Wis., 1940; Ph.D., ibid., 1947. m. Mari Brainard, June, 1940. c.: Warren B.; Sharon A. Exp.: Prof., Univ. of Wis., 1946-50; Assoc. Prof., ibid., 1950-56; P ibid., 1956—. Mem.: Am. Soc. of Agronomy, Fellow; Am. of Plant Physiol; Alpha Zeta; Sigma Xi; Phi Sigma; Ga Sigma Delta. Author: Forage Management, 1960. Contbr. Agronomy Jour.; Crop Sci.; Plant Physiol.; Bot. Gaz.; Cana Jour. Plant Sci. Serv. Rec.: U. S. Army, 1942-46. Areas Rsch.: Management, Growth Responses, Chemical Composi and Food Reserves in Forage Plants; Winterhardiness Survival of Legumes.

SMITH, Edwin Jefferson (M.D.), Med. Staff, Rancho Los Am Hosp., Downey, Calif. Home Add.: 435 Charmingdale Rd., mond Bar, Calif. MEDIC (Psychiatry). b. Belgrade, Mi June 24, 1890. s. Frank Ro and Louise (Kramps) S. E A.B., Ripon Coll., 1914; Univ. of S. Dak., 1919; M Univ. of Iowa Coll. of M 1922; Grad. Study; Lan Porter Psychiatric Inst., Univ. Calif., 1946; Studies in Alco ism, Yale Univ., 1956. m. Ja A. Myres, Sept. 23, 1929. E Intern, St. Elizabeth Hosp., cago, Ill., 1922-23; Indusl. Gen. Med., U. S. Steel Corp. Santa Fe Ry. Co., Chicago, 19 30; Grad. Study, Univ. of 1930-31; Gen. Med., U. S. Go Agencies in Calif., 1932-36; M Staff, Rancho Los Amigos Ho 1937-61; Med. Examiner, Ca

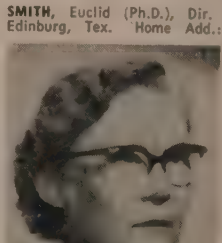
Dept. Mental Hygiene, 1941—; Asst. Med. Dir., Rancho Amigos Hosp., 1941-45; Instr. in Psychiatry, Univ. of Ca Extension Div., 1944-48; Consultant in Psychiatry, Long Be Gen. Hosp., 1951—. Mem.: Fellow, Am. Psychiatric Assn.; Fell A.A.A.S.; Los Angeles County Med. Assn.; Calif. Med. Ass Am. Med. Assn.; Los Angeles Soc. of Neurol. and Psychiat Sigma Nu; Big Ten Club; Univ. Club of Claremont; Am. Legi Los Angeles County Defense Organization, 1942—. Serv. Re S.A.T.C., 1918. Areas of Rsch.: General Psychiatry.

SMITH, Erma Anita (M.D.), Attending Physician, Vet. Adm Hosp., Wichita, Kans. Home Add.: 120 N. Kans. Ave., Wich 14, Kans. PHYSICAL MEDICI AND REHABILITATION. b. Larn Kans., Sept. 20, 1895. d. Thon D. and Emily Pauline (Wade) Edn.: A.B., Univ. of Kans., 192 M.A., Vassar Coll., 1922; Ph. Univ. of Chicago, 1926; M. Rush Med. Coll., 1933. Ex Instr., Vassar Coll., Poughkeeps N. Y., 1920-22; Prof., Ia. S Coll., Ames, Ia., 1927-46; Phy cian, Duke Univ., Durham, N. 1946-50; Physician, Vet. Admi Boston, Mass., Hines, Ill., Cle land, Ohio, Wichita, Kan 1951—. Hon. Pos.: Natl. Pre Sigma Delta Epsilon. Mem.: A Med. Assn.; Am. Cong. of Phy Med. and Rehab.; Am. Acad. Phys. Med. and Rehab.; A Assn. for the Adv. of Sci.;



Acad. of Sci.; Am. Physiol. Soc.; Soc. for Exptl. Biol. and Med Alpha Omega Alpha; Sigma Xi; Business and Profl. Wome Club; Am. Assn. of Univ. Women. Author: Laboratory Outli for Physiology, 1940. Contbr. to: Am. Jour. of Physiol.; A Jour. of Biol. Chem.; Am. Jour. of Pub. Hlth. Areas of Rsch Physiology; Physiological Chemistry; Pharmacology.

SMITH, Euclid (Ph.D.), Dir. Home Economics, Pan Am. Col Edinburg, Tex. Home Add.: P. O. Box 273, Edinburg, Te NUTRITION AND BIOCHEMISTR b. Caldwell, Tex. d. George Lew Smith and Josie L. (Simpson) Edn.: B.S., Tex. State Coll. f Women, 1923; M.A., Columb Univ., 1925; S.S., ibid., 193 1939; Iowa State Coll., 193 Univ. of Mo., 1944-45; Univ. Wis., 1948; Tex. A. and M. Coll 1950; Cornell Univ., 1951; Ph.D Tex. Sta. Coll. for Women, 195 Exp.: Hd. Home Economics, Sa Marcos Acad., Tex., 1923-24; Dir Home Economics, Kidd-Key Coll Sherman, Tex., 1925-28; Directo Home Econs., Phoenix Coll., 192 44; Assoc. Prof., Univ. of Akro 1945-48; Act. Hd., Home Econs Bradley Univ., 1928; Assoc. Prof Coll. of Pacific and Stockton Coll 1948-52; Rsch., Assoc. Prof., Neic



Childers Stark Nutrition Clinic, T.S.C.W., 1953-54; Dir., Hom Econs., Pan Am. Coll., 1954—. Mem.: Am. Assn. Adv. Sci.; N.

ad. of Sci.; Tex. Acad. Sci.; V.P., A.A.U.W.; Am. Assn. Mat.
d Child Health; Tex. Rio Grande Valley and Am. Dietetic
sn.; Tex. State Historical Soc.; Tex. State Nutrition Coun.; Iota
gma Pi; Mem., Natl. Geog. Soc.; Pres., Rio Grande Valley
etetic Assn.; Dir., School Lunch Workshop, 1955, 1956; Alpha
Gamma; Kappa Delta Gamma; Zonta Internatl.; Pan Am. La-
s Faculty Club; S. Tex. Assn. Ment. Retarded. Contbr. to:
n. Assn. Home Econs. Jour.; Jr. Coll. Jour.; Tex. Acad. of Sci.
ır. Areas of Rsch.: Vitamin B-12 in Muscular and Organic
sues of Healthy and Diseased Swine; Human Metabolic
odies; Influences of Socio-economic Factors Upon the Dental
atus of Eleven Year-Old Children; Effect of Diet and Dietary
bits Upon Nutritional Status of Grade Schl. Children.

IITH, Eugene Eaton (Mr.), Chief of Meteorological Rsch., Beech-
od Assocs., Beechwood, North Berwick, Maine. Home Add.:
141 Washington St., Winchester,
Mass. BIOCLIMATOLOGY. b.
Long Beach, Calif., Apr. 14, 1898.
s. Orrin Elmer and Eva Dorcas
(Smith) S. Edn.: A.B., Univ. of
New Hamp., 1949; M.A., Univ. of
Ariz., 1952. m. Lois Gibson,
Mar. 21, 1936. c.: Donald Gib-
son; David Eugene. Exp.: Instr.
in Math. and Sci., H. S., Lisbon
Falls, Maine, 1928-30; Instr.,
Stephens H. S., Rumford, Maine,
1946-47; Instr., Academy, Lim-
erick, Me., 1947-48; Searing
Tutoring, N. Y. C., 1952-53; Data
Coordinator, Army Proving
Ground, Dugway, Utah, 1953-55;
Chief of Meteorol. Rsch., Beech-
wood Assocs., North Berwick,
Me., 1955—. Mem.: Nat. Sci.
Tchrs. Assn.; Am. Assn. Physics

hrs.; Natl. Assn. Sec. Schl. Prins.; Portland Soc. of Nat. Hist.;
n. Acad. of Pol. and Soc. Sci.; Foreign Mem., Royal Meteol.
c.; Am. Meteorol. Soc.; Am. Geophysical Union; A.A.A.S.;
E.A.; A.A.U.P. (Jr.); Zeta Psi; Lions; Vet. of W. W. I of
S.A. Serv. Rec.: U.S.N., 1917-21, 1942-45. Areas of Rsch.:
ological Parameters of Microclimatology.

IITH, Francis Lorin (Ph.D.), Prof. of Agronomy and Agron.,
ri. Expt. Sta., Univ. of Calif., Davis, Calif. Home Add.:
615 A St., Davis, Calif. PLANT
BREEDING OF DRY FIELD BEANS.
b. Woodruff, Ariz., June 18, 1902.
s. Samuel F. and Lulu Jane
(Hatch) S. Edn.: B.S., Univ. of
Ariz., 1927; M.S., Kans. State
Coll., 1929; Ph.D., Univ. of Calif.,
1938. m. Florence Dial, Dec. 19,
1929. c.: Robert Dial; Lorin
Francis. Exp.: Agent, U.S.D.A.,
Kans. State Coll., 1927-29; Jr.
Agronomist, U.S.D.A., Sacaton,
Ariz., 1929-30; Grad. Asst. Genet-
ics, Univ. of Calif., 1930-31;
Tech. Asst., Agron., Univ. of
Calif., 1931-33; Jr. Agron., ibid.,
1933-42; Asst. Agron., ibid., 1942-
48; Assoc. Agron., Assoc. Prof.,
ibid., 1948-55; Agron. and Prof.,
ibid., 1955—. Mem.: Theta Xi;
Sigma Xi; Alpha Zeta; Phi Kappa

i; Phi Sigma; Rotary Internatl. Contbr. to: Jour. of Agron.;
ır. of Heredity; Hilgardi. Areas of Rsch.: Plant Breeding;
reditary Studies; Varietal Am. Soc. of Agron.; A.A.A.S.; Am.
netic Soc.; Improvement in Dry Beans.

IITH, Frank O.(rvil) (Ph.D.), Plant Pathologist, Crops Div.,
Detrick, Frederick, Md. Home Add.: 13 West 14th St.,
Frederick, Md. ECONOMIC BOT-
ANY. b. Sioux City, Ia., Dec.
9, 1917. s. Wm. J. and Bertha
A. (McElwain) S. Edn.: B.S., Ia.
State Univ., 1949; M.S., ibid.,
1950; Ph.D., ibid., 1953. m.
Marguerite H. Pescosta, Oct., 1945.
c.: Robert F.; Douglas J.; Jes-
sica L. Exp.: Rsch. Assoc., Ia.
State Coll., Guatemala Tropical
Rsch. Center, Ames, Ia. and An-
tigua, Guatemala, 1951-53; Assoc.
Prof. and Asst. Dean, Faculty of
Agric. Sci., Am. Univ. of Beirut,
Lebanon, 1954-59; Plant Pathol-
ogist, Crops Div., Ft. Detrick,
Frederick, Md., 1959—. Hon.
Pos.: Chmn., Univ. Athletic
Comm., 1955-56; Univ. Scholar-
ships and Admissions Comm.,
1957-59; Mem. Univ. Senate,

56-59. Mem.: Am. Phytopathological Soc.; Soc. for Econ.
tany; A.A.A.S.; Torrey Botanical Club; Md. Acad. of Sci.;
SA; Sigma Gamma Delta. Contbr. to: Phytopathology; Ia. Sta.
ll. Jour. of Sci.; Ia. Farm Sci.; Turrialba. Serv. Rec.: USMC,
39-45. Areas of Rsch.: Disease control, fungus physiology,
ochemistry.

IITH, Ezra Sheldon, III (Mr.), Phys. Instr., Jos. Case H. Schl.,
ansea, Mass. Home Add.: 58 Bank St., Attleboro, Mass.
PHYSICAL SCIENCE EDUCATION. b. Flushing, N. Y., May 4, 1931. s. E. Sheldon and Virginia (Fernandez) S. Edn.: B.S., Mass. St. Coll., Bridgewater, 1955; M.Ed., ibid., 1957. m. Alice McNary, Dec. 25, 1951. c.: Shelley Jean; Joseph Lyman. Exp.: Instr., Sci. and Math., Attleboro H. S., 1955-56; Instr., Dept. of Sci., S. Attleboro Jr. H. S., 1956-61; Phys. Instr., Jos. Case H. Schl., 1961—. Mem.: Natl. Sci. Tchrs. Assn.; A.A.A.S.; Mass. Tchrs. Assn.; Attleboro Tchrs. Assn.; Kappa Delta Phi Contbr. to: Mass. Tchr. Serv. Rec.: U. S. Army, 1951-53. Areas of Rsch.: Science Education.

SMITH, Frederick Howard (Mr.), Mgng. Dir., Manton Gaulin, S. A., Boston 49, Mass. Home Add.: Box 122, Boston 49, Mass.

MECHANICS. b. Peru, Nebr., Aug. 22, 1915. s. Fred C. and Fern (Ogg) S. Edn.: A.B., Middlebury Coll., 1937; M.S., Univ. of Mich., 1940. m. 2nd, Claire Waldman, July 8, 1961. c.: 1st m., Gail P. Exp.: Instr., Physics, Muhlenberg Coll., Allentown, Pa., 1937-40; Chf. Mech. Engrng., USN Labs., Harvard Univ., Cambridge, Mass., 1941-45; Process Dir., Sharples Corp., Phila., Pa., 1945-57; Mgng. Dir., Manton Gaulin, S. A., 1959—. Mem.: Am. Acoustical Soc.; Am. Soc. Mech. Engrng.; Soc. Plastics Engrng.; Am. Oil Chem. Soc.; Tech. Assn. Pulp and Paper Ind.; Am. Assn. for the Adv. of Sci.; Chi Psi; World Trade Ctr. of New England. Contbr. to: ASME Monographs; Jour. of Oil Chem. Soc.; Encyc. of Chem. Tech. Areas of Rsch.: Centrifugal Machines and Dispersion Machines.

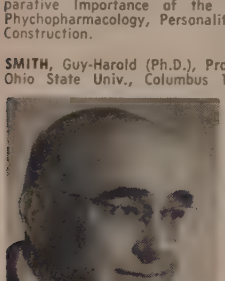
SMITH, Gail Preston (Ph.D.), Mgr., Gen. Prod. Devel., Res. and Dev. Div., Corning Glass Works, Corning, N. Y. PHYSICS. b.

Rochester, Pa., Jan. 25, 1915. s. Daniel C. and Sarah (Ketterer) S. Edn.: B.S., Geneva Coll., 1934; M.A., Syracuse Univ., 1936; Ph.D., Univ. of Mich., 1941. m. Martha Cameron, June 8, 1937. c.: Daniel Preston; Martha Marian. Exp.: Instr., Physics and Math., Battle Creek Coll., Battle Creek, Mich., 1936; Instr., Physics and Math., Geneva Coll., Beaver Falls, Pa., 1936-37; Asst. Physics, Univ. of Mich., Ann Arbor, Mich., 1937-41; Physicist, Corning Glass Wks., Corning, N. Y., 1941-61; Mgr., Gen. Prod. Devel., Rsch. and Devel. Div., ibid., 1961—. Hon. Pos.: First Pres., Sigma Xi Club, Corning Glass Works, 1946; Chmn., Am. Phys. Soc., N. Y. State Sect., 1951-53. Mem.: Am. Phys. Soc.; A.A.A.S., Fellow; Am. Ceramic Soc.; Inst. Radio Engrs.; Sigma Pi Sigma; Sigma Xi; N. Y. Acad. of Scis. Contbr. to: Phys. Rev.; Insulation; Proc. of Symposia on Dielectrics and Electronic Components. Special Int.: Dielectric Breakdown of Gases; B-ray Spectroscopy; Expansivity and Density of Glasses; Dielectrics; Rsch. and Devel. of Glass Capacitors; Glass, Ceramic, and Glass-Ceramic Technology.

SMITH, Gene Marshall (Ph.D.), Assoc. in Psychol., Harvard Med. Schl., Boston, Mass. Home Add.: 6 Briarwood Ave., Peabody, Mass. PSYCHOLOGY. b. Little Rock, Ark., June 14, 1930. s. Edward B. and Bera (McCann) S. Edn.: B.A., Univ. of Calif., 1951; Ph.D., Univ. of Rochester, 1954. m. Eleanor Dow, Mar. 19, 1960. c.: Scott M. Exp.: Rsch. Asst., University of Rochester, Rochester, New York, 1951-54; Research Assoc., Harvard Medical Schl., Boston, Mass., 1954-59; Assoc. In Psychol., ibid., 1959-62; Rsch. Consultant, Boston Univ., Boston, Mass., 1959-62; Rsch. Dir., Catherine Laboure Schl. of Nursing, Dorchester, Mass., 1956—; Rsch. Fellow, Mass. General Hosp., Boston, Mass., 1954-62; Prin. Investigator on a rsch. grant from the U. S. Dept. of Health, Edn. and Welfare, Pub. Health Serv., to study "Nursing Student Selection and Job Satisfaction", 1960—; Co-Prin. Invest. on a Rsch. Grant from the Dept. of the Army, Office of the Surgeon Gen., Rsch. and Devel. Div., to study "Quantitative Effects of Drugs on Performance and Subjective States, 1960-61. Mem.: Sigma Xi; Am. Assn. for the Adv. of Sci.; Am. Psychol. Assn.; Phi Beta Kappa. Contbr. to: Jour. of Consulting Psychol.; Jour. of the Am. Med. Assn.; Jour. of Pharmacol. and Exptl. Therap.; New England Jour. of Med.; Jour. of Clin. Invest. Gen. Int.: Demonstration that Amphetamine Sulfate Improves Performance of Expert Athletes; Specification of Psychological Effects of Heroin, Morphine and Other Opiates on Non-Addicts; Development of a Method to Locate

the Specific Aspects of Personality Which Are Important for Success and Happiness in Nursing, and also Assesses the Comparative Importance of the Traits Located. Areas of Rsch.: Phychopharmacology, Personality, Self-Concept, Selection and Test Construction.

SMITH, Guy-Harold (Ph.D.), Prof. and Chmn., Dept. of Geography, Ohio State Univ., Columbus 10, Ohio. Home Add.: 2340 Canterbury Rd., Columbus 21, Ohio. GEOGRAPHY, CARTOGRAPHY, CONSERVATION. b. LaFarge, Wis., Jan. 1, 1895. s. John William and Harriet (Waddell) S. Edn.: Ph.B., Univ. of Wis., 1921; Ph.D., ibid., 1927. m. Elizabeth Baker, Aug. 5, 1926. c.: John Waddell. Exp.: Student Asst., Univ. of Wis., Madison, Wis., 1920-21; Grad. Asst., Univ. of Wis., ibid., 1921-22; Instr., Univ. of Pa., Phila., Pa., 1922-23; Instr., Univ. of Wis., Madison, Wis., 1923-27; Assoc., Univ. of Ill., 1928-29; Asst. Prof., Ohio State Univ., 1927-28; ibid.,, 1929-34; Assoc. Prof. and Chmn. Dept., Ohio St. Univ., 1934-37; Prof. and Chmn., Ohio State Univ., 1937-63. Hon. Pos.: Visit. Prof., Summer Session, Peabody Coll. for Tchrs., 1929-30; Univ. of Wash., 1935, Western Reserve Univ., 1937, State Tchrs. Coll., Buffalo, 1938, Columbia Univ., 1939, 1941, 1942, 1944; Mem., Ohio George Wash. Bicentennial Comm., 1932. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Am. Geog. Soc.; Ohio Acad. of Sci.; Mem., Assn. Am. Geogrs.; Natl. Coun. Geog. Edn.; Am. Polar Soc.; Arctic Inst. N. Am.; Phi Beta Kappa; Sigma Xi; Beta Gamma Sigma. Author: Physiographic Diagram of S. Am., 1935; Co-Author: Japan: A Geographic View, 1943; Editor, and Contbr., Conservation of Natural Resources, 1958. Contbr. to: Anns. Assn. Am. Geogrs.; Geog. Rev.; Profl. Geogr. Jour. of Geography. Serv. Rec.: U. S. Army, 1917-18. Areas of Rsch.: Geography, Cartography, Geomorphology, Conservation.



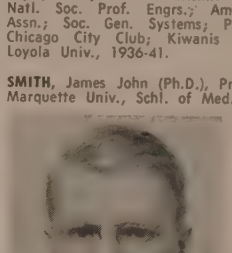
SMITH, Herbert Andrew (Ph.D.), Hd., Dept. of Secdry. Edn., Pa. St. Univ., Univ. Park, Pa. Home Add.: 1940 Hillview Rd., Lawrence, Kan. TEACHER EDUCATION AND RESEARCH IN SCIENCE EDUCATION. b. Clatonia, Neb., Apr. 7, 1916. s. Chester W. and Verna B. (Heckman) S. Edn.: B.Sc., Univ. Neb., 1938; M.A., ibid., 1941; Ph.D., ibid., 1948. m. Hilda Helen Holz, Aug. 21, 1938. c.: Sandra; Barry; Cynthia. Exp.: Sci. Tchr., Principal, Burr, Nebr., 1938-40; Hd., Sci. Dept., Wayne, Nebr., 1940-42; Sci. Tchr., Fremont, Nebr., 1942; Supt. of Schls., West Point, Nebr., 1942-44; Part-time Instr., Secd. Edn., Univ. Nebr., 1946-48; Asst. Prof., Secd. Edn. and Supvr., Sci., ibid., 1948-51; Assoc. Prof., Secd. Edn. and Supvr., Sci., ibid., 1951-53; Assoc. Prof. and Dir., Bur. Ednl. Rsch., Univ. Kans., 1953-55; Prof. Edn. and Dir. Bur. Ednl. Rsch., ibid., 1955-59; Chf., Sci., Math., and Foreign Lang. Sect., U. S. Office Edn., 1959-60; Prof. Edn., Univ. of Kan., 1960-62; Head, Dept. of Secd. Edn., Pa. St. Univ., 1962—. Hon. Pos.: N.S.T.A.; Secy., Sect. Q, A.A.A.S.; Vice Pres., N.A.R.S.T. Mem.: A.A.U.P.; A.E.R.A.; Am. Assn. Adv. Sci.; N.S.T.A.; N.A.R.S.T.; Phi Delta Kappa; N.E.A. Contbr. to: Sci. Edn.; Jour. Ednl. Rsch.; Motion Pictures, Intelligence, and Enrichment; Audio-Visual Communication Rev.; Univ. Kans. Bull. Edn.; Am. Schl. Bd. Jour.; Kans. Tchr.; Kans. Studies in Edn.; Clearing House; Rev. Ednl. Rsch.; Mo. Sci. News; Sci. Tchr.; Schl. Sci. and Math.; Compton's Pictured Encyc.; Peabody Jour. Edn.; Sci. World; Am. Jour. Physics; Schl. and Society; Sci.; Elem. Schl. Sci. Bull.; N.E.A. Jour. Serv. Rec.: U. S. Navy, Lt (Jg.), 1944-46. Gen. Int.: First Chief, Sci., Math., and Foreign Lang. Sect., U. S. Office Edn., Under Natl. Defense Edn. Act. Areas of Rsch.: Education of Science Tchrs.; Use of Audio-Visual Aids to Instruction.

SMITH, Hilton Albert (Ph.D.), Dean, Grad. Schl., Coordinator of Rsch., Univ. of Tenn., Knoxville 16, Tenn. Home Add.: 5817 Toole Dr., Knoxville 19, Tenn. CHEMISTRY, PARTICULARLY PHYSICAL CHEMISTRY. b. Plymouth, N. Y., Sept. 4, 1908. s. Roy Leo and Ethel Elizabeth (Lewis) S. Edn.: B.A., Oberlin Coll., 1930; M.A., Harvard Univ., 1932; Ph.D., ibid., 1934. m. Elizabeth Harvey Zorbaugh, 1933. c.: Cynthia Jean; Lewis Harvey; Judith Ellen; Roy Hilton; Charles Leeman. Exp.: Instr. and Asst. Prof., Lehigh Univ., 1935-41; Prof., Univ. of Tenn., 1941-61; Dean, Grad. Schl., Coordinator of Rsch., ibid., 1961—. Hon. Pos.: Chmn., East Tenn. Sect., A.C.S.; Pres., Univ. of Tenn. Chapt., Sigma Xi; Councillor, Oak Ridge Inst. for Nuclear Studies. Mem.: A.C.S.; London Chem. Soc.; Tenn. Acad. of Sci.; Tenn. Edn. Assn.; Tenn. Schl. Bds. Assn.; Alpha Chi Sigma; Phi Kappa Phi. Contbrng. Author: Catalysis, 1955, 1957; Advances in Catalysis, 1957. Contbr. to: Jour. of A.C.S.; Jour. of Physical Chem.; Jour. of Organic Chem.; Jour. of Chem. Documentation; Jour. of Electrochem. Soc.; Analytical Chem.; Rev. of Scientific Instruments. Areas of Rsch.: Catalysis; Chem. Kinetics; Adsorption, Isotope Studies; Physical-Organic Chem.

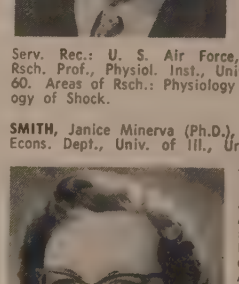
SMITH, Isabel Fothergill (Ph.D.), Prof. of Geology and History of Science, Scripps Coll., Claremont, Calif. HISTORY OF SCIENCE. b. Nov. 15, 1890, Greeley, Colo. d. Frederic Elias and Margaret (Emerson) S. Edn.: A.B., Bryn Mawr Coll., 1915; M.A., ibid., 1919; Ph.D., ibid., 1922; Student, Univ. of Paris, 1920-21; M. Carey Thomas European Fellow, 1918. Exp.: Tchr. of Eng., Mary C. Wheeler Schl., Providence, R. I., 1915-17; Tchr. of Sci., Concord Acad., Concord, Mass., 1922-23; Instr., Geol Smith Coll., Northampton, Mass., 1923-26; Asst. Prof., Geol 1926-29; Assoc. Prof., 1929—; Class Dean, Smith Coll., 192 29; Dean and Prof. of Geol., Scripps Coll., 1929-35; Prof. Geol. and Hist. of Sci., 1935-54; Prof. Emer., 1954—. Mem Fellow, A.A.A.S.; Hist. of Sci. Soc. Contbr. to: Pan Am Geol.; Am. Mineralogist; Bull. Acad. of Sci. Ph.D. Dissertation: Anorthosite in the Piedmont Province of Pa. Liste in: A.M.S.

SMITH, James H. (Ed.D.), Deputy Supt., Chicago Bd. of Edn Chicago, Ill. Home Add.: 8021 Crandon Ave., Chicago, Il EDUCATION—ENGINEERING. b. Chicago, Ill., Dec. 12, 1903. s James H. and Maude (Kinsey) S. Edn.: B.S., Univ. of Ill., 1926 M.A., Univ. of Chicago, 1932; Ed.D., Loyola Univ., 1953. Hon Deg.: Sc.D., Bradley Univ., 1952. Exp.: Sci. Tchr., Secd. Schl Chicago, 1929-37; Prin., Fenger H. S., Chicago, 1939-43; Prin Lane Tech. Schl., Chicago, 1943-53; Dist. Supt., Secd. Schls Chicago, 1953-55; Assoc. Supt., Chicago Schls., 1955-59; Deput Supt., ibid., 1960—. Mem.: A.A.A.S.; Ill. Soc. Prof. Engrs Natl. Soc. Prof. Engrs.; Am. Edn. Rsch. Assn.; Am. Voc Assn.; Soc. Gen. Systems; Phi Delta Kappa; Sigma Epsilon Chicago City Club; Kiwanis Gen. Int.: Lectr., Grad. Schl Loyola Univ., 1936-41.

SMITH, James John (Ph.D.), Prof. and Chmn., Dept. of Physiol Marquette Univ., Schl. of Med., Mil. 3, Wis. Home Add.: 142 N. 122nd St., Mil. 13, Wis. PHYSIOLOGY—CIRCULATORY PHYSIOLOGY AND SHOCK. b. St. Paul Minn., Jan. 28, 1914. s. James W. and Catherine (Weisch) S Edn.: M.D., St. Louis Univ., 1937 M.S., Northwestern Univ., 1942 Ph.D., ibid., 1946. m. Mar Schumacher, Mar. 17, 1946. c. Philip; Lucy; Paul; Gregory. Exp. Dean, Loyola Univ., Schl. of Med. Chicago, Ill., 1946-50; Chief Edn Div., Vet. Admin. Dept. of Med and Surgery, Wash., D. C., 1950-52; Prof. and Chmn., Dept. o Physiol., Marquette Univ., Mil. Mil., Wis., 1952—. Mem.: Sigma Xi; Am. Physiol. Soc.; Mil. Acad of Med. Contbr. to: Am. Jour of Physiol.; Circulation Rsch. Procs. of Soc. for Exptl. Biol Serv. Rec.: U. S. Air Force, 1941-46. Gen. Int.: Fulbrigh Rsch. Prof., Physiol. Inst., Univ. of Heidelberg, Germany, 1959-60. Areas of Rsch.: Physiology of Heart and Circulation; Physiology of Shock.



SMITH, Janice Minerva (Ph.D.), Prof. of Nutrition; Hd. of Home Econs. Dept., Univ. of Ill., Urbana, Ill. Home Add.: 1112 S Pine St., Champaign, Ill. NUTRITION AND BIOCHEMISTRY. b. Osco, Ill., Oct. 13, 1906. d. J. Hebe and Minnie M. (Hadley) S. Edn.: A.B., Univ. of Ill., 1930; M.S., ibid., 1932; Ph.D., ibid., 1937. Exp.: Asst. in Home Econs., Univ. of Ill., 1930-37; Asst. Prof., Assoc. Prof., Human Nutrition Research, Pa., 1937-43; Nutritionist, C.F.R.B., War Food Admin., U.S.D.A., 1943-44; Prof. Nutrition, Hd., Foods and Nutrition Div., Univ. of Ill., 1944-50; Prof. Nutrition; Hd., Home Econ. Dept., ibid., 1950—. Hon. Pos.: ESCOP, Comm. of Nine; Exec. Comm., Am. Assn. Land-Grant Colls. and State Univs.; Ed. Com. of Journ., Am. Dietetic Assn. Med.; Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Omicron Nu; Sigma Delta Epsilon; Phi Sigma; Am. Inst. of Nutrition; A.A.A.S.; Iota Sigma Pi; Am. Dietetic Assn.; Alpha Gamma Delta; Altrusa. Contbr. to: Jour. Home Econs.; Sci. Jour. Am. Dietetics; Jour. Nutrition; Am. Jour. Clin. Nutrition. Areas of Rsch.: Nutrition Needs of pre-schl. Children, Adolescents, Adults—Young and Aged; Protein, Calcium; Vitamin A; Thiamine; Riboflavin; Energy Needs, Particularly Subject of Rsch.; Nutritional Status and Dietary Habits of Population Grps.



SMITH, Julian Francis (Ph.D.), Asst. Prof., Lenoir Rhyne Coll., Hickory, N. C. Home Add.: 303 24th Ave., N.E., Hickory, N. C. ORGANIC CHEMISTRY; CHEMICAL LITERATURE. b. Liscomb, Ia., Nov. 1, 1893. s. George T. and Candace (Lhamon) S. Edn.: B.S., Ill., 1916; M.S., Calif., 1920; Ph.D., Chicago, 1922. m. Irene Smith, Aug. 22, 1918 (dec.); Kathleen May Franklin S., Mar. 25, 1959. c.: Carl G.; Celia Ann. Exp.: Rsch. Libn., Natl. Aniline and Chem. Co., 1916-19; ibid., Comi. Solvents Corp., 1922-23; Tech. Libn., B. F. Goodrich Co., 1923-28, Partner, Smith and Smith Reference Serv., 1928-30; Staff, DuPont Exptl. Sta., Wilmington, Del., 1930-39; Assoc., Dir., Hooker Sci. Libr., 1939-42; Chem. Editing, 1942-47; Sci. Documents Officer, Office of Naval Rsch., 1947-52; Consultant in Chem. Documentation, 1952-55; Asst. Prof. Chem., Lenoir Rhyne Coll., 1955—; Special Expert, Natl. Bur. of Standards, Wash., D. C., summers, 1956—. Hon. Pos.: Chmn., Div. of Chem. Literature, Am. Chem. Soc. Mem.: Am. Chem. Soc.; A.A.A.S.; Am. Inst. of Chemists; Am. Documentation Institute; Special Libraries Assn.; Sigma Xi;

ontbr. to: Industrial Engineering Chem.; Jour. Am. Chem. c.; Bulletin Am. Soc. of Swedish Engineers; Record Chem. og.; Wallerstein Lab. Communications; Am. Scientist. Areas Rsch.: Documentation (Scientific Literature, Foreign Languages).

ITH, Lawrence Beckley (Mr.), Meteorol., Sandia Corp., Al-querque, N. M. Home Add.: 1029 Florida S.E., Albuquerque, M. METEOROLOGY, UPPER ATMOSPHERIC PHYSICS. b. Min-apolis, Minn., Feb. 12, 1917. s. Jess R. and Ethel (Beckley) Edn.: B.S., Univ. of Ala., 1949; M.S., Fla. State Univ., 52. m. Katherine Sample, 1944. c.: Linda LaKay; Susan ne. Exp.: Meteorol., A.F., Maxwell A.F.B., Ala., 1946-48; eteorol., A.F. Elgin A.F.B., Fla., 1956-57; Meteorol., Sandia rp., Albuquerque, N. M., 1952-56, 1957—. Hon. Pos.: Mem., mm. on Upper Atmosphere Rocket Rsch., Space Sci. Bd. of tl. Acad. of Sci. Mem.: Am. Meteorol. Soc.; Am. Geophys. ion; Sigma Phi Sigma; Phi Mu Epsilon; Kiwanis. Contbr. Jour. of Meteorol.; Jour. of Geophys. Rsch.; Archiv fur eteorologie; Geophysik und Bioklimatologie. Serv. Rec.: U.S.-A.F., 1941-45. Areas of Rsch.: Upper Atmospheric Me-orological Parameters above 30 Km.; Design of Rocket In-rumentation and Gathering of Atmospheric Structure Data Be-een 30 and 100 km.; Radioactive Fallout.

ITH, Neal Austin (Mr.), Assoc. Prof., The Ohio State Univ., ect. Engrng. Dept., 2024 Neil Ave., Columbus 10, Ohio. Home Add.: 67 Westview Ave., Columbus 14, Ohio. ELECTRICAL ENGINEERING. b. Norwich, Ohio, Feb. 10, 1919. s. Miner F. and Bessie L. (Shuman) S. Edn.: B.E.E., The Ohio State Univ., 1941; M.Sc., ibid., 1947. m. Faye L. Schlupe, June 7, 1942. Exp.: Elect. Engr., Fed. Machine and Welder Co., Warren, Ohio, 1941-43; Asst. Chf. Elec. Engr., ibid., 1943-44; Instr., The Ohio State Univ., 1947-54; Asst. Prof., ibid., 1954-60; Assoc. Prof., ibid., 1960—. Hon. Pos.: Post Commander, Univ. Post 310, Am. Legion of Ohio. Mem.: Am. Soc. for Engrng. Edn.; Am. Inst. of Elect. Engrs.; Eta Kappa Nu; Tau Beta Pi; Phi Eta Sigma. Contbr. to: Westinghouse Engr.; A.M.A. chives of Opthal.; Jour. of the Am. Dent. Assn. Serv. Rec.: S. Naval Reserve, 1944-46, Active Duty; Inactive, 1946-56. eas of Rsch.: Electric Power Systems Operation and Planning; mputer Applications to Electric Power Systems; Power Plant aluation.

ITH, Newton Dean (M.D.), 1702 Medical Arts Bldg., Fort rth 2, Tex. Home Add.: Rt. 1, Box 104J, Aledo, Tex. PROCTOLOGIC DIAGNOSIS AND SURGERY. b. Buffalo, N. Y., June 28, 1898. s. Joseph E. and Elizabeth (Green) S. Edn.: B.S., Univ. of Buffalo, 1923; M.D., ibid., 1932. m. Ruth Angell Turpin, Nov. 20, 1924. c.: Newton Dean, Jr.; Jean Elizabeth. Exp.: Internship, Univ. Hosp., Syracuse, N. Y., 1923; ibid., Rochester Gen. Hosp., 1923-24; Resident, Infant's Summer Hosp., Rochester, N. Y., 1924; Resident, Monroe Co. T.B. Sanitarium, 1925; Fellow, Gen. Surg., Mayo Clinic, Rochester, Minn., 1925-28; Fellow in Proctol., ibid., 1928; Consult. in Dept., Proctol., ibid., 1930; Assoc. Prof. of Proctol., Mayo Found. of the Univ. of Minn., 1935; Staff of Hosp., Mayo nic, Rochester, Minn., 1935-54. Mem.: Sigma Xi; A.A.A.S.; M.A.; Past Pres., Am. Proctologic Soc.; Mason. Contbr. to: merous Papers Concerning Proctologic Subjects in Several urs. Special Int.: Proctologic Diagnosis and Surgery; Entered vate Practice, Proctology, at Ft. Worth, Nov. 7, 1954.

ITH, Ralph Grafton (M.D.), Dir., Div. of New Drugs, Food d Drug Admn., Wash. 25, D. C. Home Add.: 1026 Noyes , Silver Spring, Md. PHARMACOLOGY. b. Canada, Mar. 1900. s. James and Sarat Jane (Karn) S. Edn.: B.A., iv. of Toronto, 1921; M.A., ibid., 1922; M.D., ibid., 1925; .D., Univ. of Chicago, 1928. m. Barbara Emily Parton, Aug. 1933. c.: Alan McKinley; Roger Malcolm; Robert Gordon; c James. Exp.: Instr., Asst. to Assoc. Prof., Pharmacol., iv. of Mich., Med. Schl., Ann Arbor, Mich., 1928-43; Prof. Pharmacol., Tulane Univ., Med. Schl., New Orleans, La., 43-50; Dir., Div. of New Drugs, Food and Drug Admin., sh., D. C., 1950—. Mem.: Am. Assn. for the Adv. of .; Soc. Exptl. Biol. and Med.; Am. Soc. Pharmacol. and ptl. Therapts.; Pan Am. Med. Assn.; Sigma Xi; Alpha Omega pha. Contbr. to: Jour. Pharmacol. and Exptl. Theraps.; Proc. c. Exptl. Biol. and Med.; Jour. Am. Med. Assn.; Am. Jour. ysiol. Areas of Rsch.: Pharmacology; New Drugs.

ITH, Richard S. (Mr.), Biol. Chmn., Haverford Twp. H. S., vertown, Pa. Home Add.: 460 Prospect Rd., Springfield, Pa. OLOGY EDUCATION AND CYTOLOGY. b. Middletown, Ohio, Dec. 1925. s. S. Randolph and F. Grace (Wagner) S. Edn.: B.S., State Coll., Kutztown, Pa., 1949; M.S., Temple Univ., 1953; N.S.F. Insts.; Orins, Oak Ridge, Tenn., 1955; Jackson Lab., Bar Harbor, Me., 1958; Duke Marine Lab., 1957; Purdue Univ., 1959; NSF Summer Fellowship, Ore. Inst. Marine Studies, 1961-63; AYI-NSF Advanced Biology, Ore. Univ., 1961-62. m. Miriam B. Seidel, June 24, 1950. c.: Bonnie Susan; Holly Ann; Kevin Lee; Kim Stephen. Exp.: Sci. Tchr., Bridgeport, Pa. H. S., 1949-53; Gen. Sci. Physics and Chem. Tchr., Ridley Park, Pa. H. S., 1953-56; Biol. Chmn., Haverford Twp. Sr. H. S., Havertown, Pa., 1956—. Hon. Pos.: Mem. of Darwinian Centennial Convention of H. S. Tchr. Grp., 1959; BSCS Summer Writing Conf. Participant, 1960; Independent Test Center, BSCS, 1960-62; Pilot Study, BSCS 2nd Levez Biol. Prog., 1962-63; NSTA Chmn., Adv. Biol. Grp. Discussion, Atlantic City Convention, 1959; Consultant on Enrichment Panel, 1962 NSTA Convention; Steering Comm., NSTA Future Scientists of Am. Program, 1960—; NSTA Youth Sci. Congress and Study Tour Comm., Mem., 1962; Biol. Comm., Pa. State NDEA Program in Adv. Biology. Mem.: Pa. Edn. Assn.; Natl. Sci. Tchrs. Assn.; A.A.A.S.; Pa Sci. Tchrs. Assn.; Natl. Assn. Biol. Tchrs.; Sci. Comm., 3 Year Curriculum Study, Pa. St. Dept. of Edn., 1960-63; Am. Mus. of Nat. Hist. Serv. Rec.: U.S.N., 1944-46. Areas of Rsch.: Radiation Biol. and Cytology.

SMITH, Robert Wilson, Jr. (Mr.), Supervisory Mathematician, U. S. Bur. of Mines, Pittsburgh 13, Pa. Home Add.: 7328 Idlewild St., Pittsburgh 8, Pa. MATHEMATICS. b. Philadelphia, Pa., Apr. 2, 1916. s. Robert W., Sr. and Henrietta (Freeman) S. Edn.: A.B., Temple Univ., 1941; M.A., Univ. of Pa., 1947. m. Helen Harris, Dec. 14, 1945. c.: Robert W., III; Joyce Yvonne; Derrick William. Exp.: Math. Tchr., Sec. Schl. Bd. of Edn.: Phila., Pa., 1946-48; Supervisory Mathematician, U. S. Bureau of Mines, 1948—; Instr. Math., Carnegie Inst. Technol., 1954—. Mem.: Curriculum Adv. Bd., "Forbes Trail" Alleghany Co. Voc. Schl.; Assn. Computing Machinery; A.A.A.S.; Combustion Inst.; Kappa Alpha Psi; Y.M.C.A. Contbr. to: Procs. of A.S.M.E.; Combusion Inst.; O.N.R. and Bur of Mines Special Reports of Technical Investigations Serv. Rec.: Supply Officer European Theater, 1941-46. Areas of Rsch.: Numerical Analysis and Computer Techniques; Special Studies of Thermodynamics of Combustion Gases.

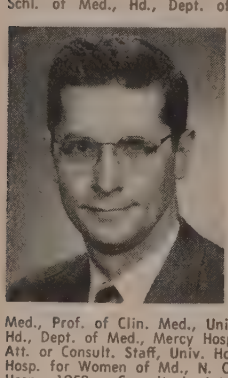
SMITH, Roger Cletus (Ph.D.), Emer. Prof., 1801 Poyntz Ave., Manhattan, Kans. ENTOMOLOGY AND ZOOLOGY. b. Dayton, Ohio, June 7, 1888. s. Oliver J. and Amelia (Cart) S. (dec.). Edn.: A.B., Miami Univ., Oxford, Ohio, 1911; A.M., Ohio State Univ. 1915; Ph.D., Cornell Univ., 1917. m. Ada E. Drown, June 15, 1915. c.: Dr. Roger Philip. Exp.: Prin., Fairview H. S., Dayton, Ohio, 1912-14; Assoc. Lectr., Milwaukee Pub. Museum, 1917-18; Scientific Asst., Bur. of Entomol., U.S.D.A., Charlottesville, Va., 1918-20; Asst. Prof., Assoc. Prof., Prof., Hd. of Dept. of Entomol., Kans. State Univ., 1920-53 (Retired); Hd. Dept. of Zool. and Entomol., Service Technique, Port-au-Prince, Haiti, 1928-29; Dir. Ecole Central, ibid., 1929-30; Allocations Specialist, War Manpower Commn., Natl. Roster, 1944 (on leave of absence); Home Staff Mem., I.C.A., India, Kans. State Univ. Team, 1955-58. Mem.: A.A.A.S.; Entomological Soc. of Am.; Kan. Acad. of Sci.; Phi Kappa Tau; Sigma Xi; Phi Beta Kappa; Phi Kappa Phi; Gamma Sigma Delta; Phi Mu Alpha; Rotary Internatl. Author: Guide to the Literature of the Zoological Scis., 1st ed., 1942, 6th Ed., 1962. Contbr. to: Jour. Econ. Entomol.; Annals Entomol. Soc. Am.; Sci.; Transactions Kans. Acad. of Sci.; and many others. Serv. Rec.: Natl. Roster in Wash., D. C., 1944. Areas of Rsch.: General Entomology, Alfalfa Insects Entomology Teaching, Climate and Insects.

SMITH, Septima Cecilia (Sc.D.), Prof. of Biol., Univ. of Ala., Box 1386, Univ., Ala. Home Add.: Apt. 11-A, The Morrison, Tuscaloosa, Ala. BIOLOGY-PARASITOLOGY. b. Dallas, Tex. d. Calvin Tate and Martha (Penn) S. Edn.: A.B., Univ. of Tex., 1922; M.A., ibid., 1923; Sc.D., Johns Hopkins Schl. of Hyg. and Pub. Hlth., 1927. Exp.: Asst. Prof., Univ. of Ala., 1927-29; Assoc. Prof., ibid., 1929-44; Prof., ibid., 1944—. Hon. Pos.: Charter Mem., One of the Founders and First Pres., Tuscaloosa Chapter, Am. Assn. of Univ. Women; Charter Mem., Assn. Southeastern Biolts.; Secy., Ala. Acad. of Sci. Mem.: Am. Assn. for the Adv. of Sci.; A.E.D. Contbr. to: Jour. of Parasitol.; Jour. of Ala. Acad. of Sci.; Sci.; Jour. of Hyg. Areas of Rsch.: Parasitology and Odonata.

SMITH, Waldo Edward (Mr.), Exec. Secy., American Geophys. Union, 1515 Massachusetts Ave., N.W., Washington 5, D. C. Home Add.: 3907 Jocelyn St., N.W., Washington 15, D. C. HYDRAULICS AND HYDROLOGY; GEOPHYSICS. b. New Hampton, Iowa, Aug. 20, 1900. s. Herbert Albert and Caroline Julia (Wachtel) S. Edn.: B.E. in C.E., Univ. of Iowa, 1923; M.S., ibid., 1924. m. Martha Althaus, June 14, 1927. c.: David Waldo Edward; Martha Carol Smith Nance. Exp.: Asst. Engr., Burns, McDonnell Consulting Engrs., Kansas City, Mo., 1924-26; Asst. Engr., Black and Veatch Consulting Engrs., ibid., 1926-27; Instr., Theoretical and Applied Mechanics, Univ. of Ill., 1927-28; Assoc. Prof., Civil Engrng. Dept. Head, Robert Coll., Istanbul, Turkey, 1928-31; Asst. Prof., Civil Engrng., N. D. State Univ., 1931-35; Hydr. Engr., Muskingum Watershed Conservancy Dist., Ohio, 1935-39; Hydr. Engr., Federal Govt., Ohio

and Washington, D. C., 1939-44; Exec. Secy., Am. Geophys. Union, Wash., D. C., 1944—; Prof. Lectr. in Civil Engrng., George Wash. Univ., 1946-60. Hon. Pos.: Pres., Natl. Capital Sect., Am. Soc. of Civil Engr., Wash., D. C., 1951-52; Natl. Dir., Dist. 5, Am. Soc. of Civil. Engrng., N. Y., 1961-64. Mem.: Am. Geophys. Union; Am. Soc. of Civil Engrs.; Am. Assn. Adv. Sci.; Cosmos Club; Tau Beta Pi; Sigma Xi; Sigma Tau. Contbr. to: Trans. Am. Geophys. Union; Proc. and Trans. Am. Soc. of Civil Engrs.; Civil Engrng.; American City. Serv. Rec.: S.A.T.C., 1918; ROTC, 1919-23; Reserves of Army, 1923-31. Areas of Rsch.: Hydrology.

SMITH, Vernon Milan (M.D.), Prof. of Clin. Med., Univ. of Md., Schl. of Med., Hd., Dept. of Med., Mercy Hosp., Balt., Md., Consult. in Internal Med. to the Surgeon Gen., U. S. Army (Ft. George G. Meade, Md.). Home Add.: 1526 York Rd., Lutherville, Md. INTERNAL MEDICINE AND GASTROENTEROLOGY. b. Tampa, Fla., Aug. 21, 1921. s. Frank H. and Emma (Brouillette) S. Edn.: M.D., Temple Univ. Schl. of Med., 1949. m. Kate Uhlig, Aug. 23, 1947. c.: Robin Lina; Vernon Milan. Exp.: Rotating Intern, Walter Reed Army Hosp., Wash., D. C., 1949-50; Asst. Res., Res., Sr. Res., Internal Med., ibid., 1951-53; Student, Basic Sci Course, Walter Reed Army Inst. of Rsch., 1953-54; Chf. of Vascular Clinic, Walter Reed Army Hosp., 1954-55; Chf. of Med. Serv., U.S.A. Hosp., Augsburg, Ger., 1955-57; Assoc. in Med., Prof. of Clin. Med., Univ. of Md., Schl. of Med., 1957—; Hd., Dept. of Med., Mercy Hosp., Balt., Md., 1959—. Hon. Pos.: Att. or Consult. Staff, Univ. Hosp., Mercy Hosp., Md. Gen. Hosp., Hosp. for Women of Md., N. Charles Gen. Hosp., Franklin Square Hosp., 1958—; Consult. in Internal Med. to Surgeon Gen., U. S. Army, 1960—. Mem.: Am. Med. Assn.; Med. and Chirurgical Faculty of Md.; Balt. City Med. Soc.; Am. Coll. of Physns., Fellow; Am. Coll. of Chest Physns.; Am. Geriats. Soc., Fellow; Am. Gastroenterol. Assn.; A.A.A.S., Fellow; Soc. of Medical Consultants to the Armed Forces; Am. Federation for Clinical Research; Assn. of Military Surgeons of the United States. Contbr. to: Anns. of Internal Med.; A.M.A. Arch. of Internal Med.; A.M.A. Arch. of Otolaryngol.; Dis. of the Chest; Gastroenterol. U. S. Armed Forces Med. Jour.; Blood; Am. Jour. of Clin. Pathol.; New England Jour. of Med.; Jour. of Am. Med. Assn.; Am. Jour. of Med. Sci.; Am. Surgeon; Am. Jour. of Gastroenterol. Serv. Rec.: U.S.A. Med. Corps. Areas of Rsch.: Gastroenterology; Endoscopic Photography; Penicillin Anaphylaxis.

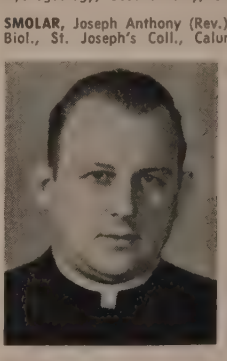


SMITH, William Russell (Ph.D.), Prof. of Biol. Scis., Lamar State Coll. of Technol., Beaumont, Tex. Home Add.: 4785 Dellwood Lane, Beaumont, Tex. BACTERIOLOGY—BACTERIAL SPORES, MEDICAL BACTERIOLOGY, GENERAL BACTERIOLOGY. b. Denton, Tex., Jan. 13, 1917. s. Ira Russell and Willie (Caskey) S. Edn.: B.S., N. Tex. State Coll., 1937; M.S., ibid., 1938; Ph.D., Univ. of Tex., 1955. m. Dorothy Youngblood, May 13, 1939. c.: Barbara Ann; Ronald Christopher. Exp.: Asst. Prof., Lamar State Coll. of Tech., 1951-55; Assoc. Prof., ibid., 1955-58; Prof., ibid., 1958—. Mem.: Sigma Xi; Soc. of Am. Bacteriologists; A.A.U.P.; Phi Sigma; Kappa Delta Pi; Lions. Serv. Rec.: Lt. (j.g.), U.S.N.R., 1944-46. Areas of Rsch.: Heat Activation and Chemical Activation of Bacterial Spores.

SMITH, William (O.D.), Optometrist and Orthopist, 9735 Wilshire Blvd., Beverly Hills, Calif. Home Add.: 6715 Sausalito Ave., Canoga Park, Calif. VISUAL OPTICS, ORTHOPTICS, OCULAR REFRACTION, PHYSIOLOGIAL OPTICS, PSYCHOLOGICAL OPTICS. b. Minsk, Russia, Jan. 27, 1899. s. Max and Rachel (Lotowsky) s. Edn.: Opt., Univ. of Mass.; P.G., O.D., Phila. Optical Coll., 1923. Hon. Deg.: D.Ocular Sc., May 12, 1927. m. Rose Fine, Apr. 16, 1929. c.: Miriam Louise. Exp.: In Private Optometric Practice in Boston, Mass., 1924-58; On Faculty, Mass. Coll. of Optometry, 1931-58; Dir., Orthoptic Clinic, Boston Dispensary Eye Clinic, N.E. Med. Cntr., 1931-58; Associated in Practice with Drs. Cogan and Simons in B.H., 1958—. Hon. Pos.: Consultant and Collaborator, Am. Flying Servs. Fdtn., W.W. II; N.E. Aviation Cadet Comm.; Consult, Reading Inst., Boston; Dept. Pub. Safety, Com. of Mass. and Div. of Maternal and Child Care. Mem.: Fellow, A.A.A.S.; Optical Soc. of Am.; Am. Inst. of Phys.; Am. Acad. of Optometry; Life Mem., Am. Optometric Assn.; N.E. Coun. of Opt.; Distinguished Serv. Fdtn. of Optometry; Mason; Beta Sigma Kappa; Pi Omicron Sigma. Author: Clinical Orthoptic Procedure, 1950, 1954; Collab., Dictionary of Visual Sciences, 1960. Contbr. to: Optical Journal and Review; Am. Journal Optom. and Archives of Opt.; N. E. Jour. Optom.; Archives de la Sociedad Americana de Oftalmologia y Optometria; Bogota; Columbia. Gen. Int.: Rsch. in Vision and Reading Problems of Brain Injured Children; Inventor: Numerous Appliances, Targets and Charts for use in Orthoptics and Visual Trng.; Inventor, Duo-lite Illuminating Comparator. Areas of Rsch.: Orthoptics; Visual Physiology; Physiological and Psychological Optics.

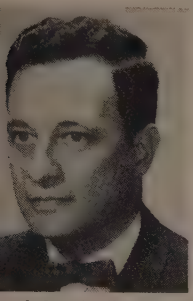
SMITTER, Yvor Hyatt (Ph.D.), Geologist-Hydrologist, Geraghty and Miller, 44 Sintsink Dr. East, Port Washington, L. I., N. Y. Home Add.: 1160 Fifth Ave., N. Y. 29, N. Y. GEOLOGY-HYDROLOGY. b. Pasadena, Calif., Aug. 24, 1926. s. Wessel H. and Faith (Winters) S. Edn.: B.A., Univ. of Calif., 1948; Ph.D., Univ. of Witwatersrand, So. Africa, 1958. m. Leila Burton, Jan., 1952. c.: Caroline; Matthew; Victoria. Exp.: Project Geologist, Inter American Geodetic Survey, Canal Zone, Panama, 1949-50; Rsch. Assoc., Bernard Price Inst., Univ. of Witwatersrand, Johannesburg, S. Africa, 1952-57; Co. Dir. IGY Program in Southern Africa, Geol. Survey of S. A., Pretoria, S. A., 1957-58; Consulting Hydrogeologist, Kingston, Jamaica, 1958-59; Consulting Hydrologist, Geraghty and Miller, N. Y., 1961—. Hon. Pos.: Chmn., Water Standards Sec., So. African Bureau of Standards; Comm. Mem., Univ. Rsch. Coun. Mem.: Am. Geophysical Union; Am. Assn. Adv. Sci.; Geochemical Soc.; Geological Soc. of S. A.; Internatl. Comm. on Irrigation and Drainage; Internatl. Assn. of Hydrologists; Sigma Gamma Epsilon; Commonwealth Scholars Soc. Author: Plants as Indicators of Ground Water in Southern Africa, 1955; Hydraulic Fracturing in Water Wells, 1956; A Geophysical Expedition to the Bechuanaland Protectorate, 1958. Co-Author: Code of Practice for Testing Boreholes, 1958. Contbr. to: Bull. of Internatl. Comm. on Irrigation and Drainage; Trans. of Geological Soc. of S. A.; Palaeontologia Africana; Jour. of South African Inst. of Civil Engrs.; Trans. Am. Geophysical Union; Bull. of Internatl. Assn. of Scientific Hydrology. Serv. Rec.: USN, 1944-46. Gen. Int.: Fulbright Scholar in Hydrogeology, 1952-54; Coun. for Scientific and Indl. Rsch. Award, 1955. Areas of Rsch.: Hydrogeology, Geochemistry, Geophysics.

SMOLAR, Joseph Anthony (Rev.), Dean of Students, Assoc. Prof. of Biol., St. Joseph's Coll., Calumet Ctr., E. Chicago, Ind. Home Add.: 4712 Magoun Ave., E. Chgo., Ind. EMBRYOLOGY. b. Whiting, Ind., Jan. 6, 1917. s. John S. and Terezia (Dedinsky) S. Edn.: A.B., St. Joseph's Coll., 1942; M.S., Institum Div., Thomae, Cinn., Ohio, 1945; M.A., Ind. Univ., 1950. Exp.: Assoc. Prof. of Biol., St. Joseph's Coll., 1947-60; Assoc. Prof. of Biol., ibid., 1960—; Dean of Students, ibid., 1955-58; Dean of Students, ibid., 1960—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Assn. of Coll. Personnel; Ind. Acad. of Sci. Contbr. to: Catholic Schl. Jour.; Procs. of the Society for Exptl. Biol. and Med.; Studies. Gen. Int.: Dir. of Displaced Persons Bureau for Lafayette Ind. Diocese, 1950. Areas of Rsch.: Developmental Physiology.



SMOLIK, Edmund Anton (M.D.), 100 North Euclid, St. Louis 8, Mo. Home Add.: 59 Middlesex Dr., St. Louis, Mo. NEUROSURGERY. b. Cleveland, Ohio, June 12, 1910. s. Joseph and Mary (Hrdina) S. Edn.: A.B., John Carroll Univ., 1932; M.D., Western Reserve Univ., 1936; M.S., Univ. of Louisville, 1940. m. Mary Virginia Davidson, Mar. 25, 1940. c.: Barbara Jane; Patricia Anne; Edmund Anton, Jr.; Sarah Margaret; Susan Carter. Exp.: Asst. in Gen. Surgery, Univ. of Louisville Schl. of Med., 1938-40; Instr. in Neurological Surgery, Washington Univ., 1943-45; Asst. Prof. of Neurosurgery, St. Louis Univ. Schl. of Med., 1945-50; Assoc. Prof. of Neurosurgery, Dir. of Sect. of Neurosurgery, ibid., 1950—. Mem.: A.M.A.; Sou. Med. Assn.; St. Louis Med. Assn.; St. Louis Surgical Assn.; St. Louis Soc of Neurol and Psychiatry; Mo. Neuro-Psychiatric Soc.; Miss. Valley Med. Soc.; Am. Coll. of Surgeons, Fellow; The Harvey Cushing Soc.; N. Y. Acad. of Scis.; Southwestern Surgical Congress; A.A.A.S.; Cong. of Neurological Surgeons; Central Neuropsychiatric Soc.; Sou. Neurosurgical Soc.; Interurban Neurosurgical Soc.; Sigma Xi. Contbr. to: Annals of Surgery; Proc. of Soc. for Exptl. Biol. & Med.; Surgery; Arch. of Neuro. and Psych.; Sou. Med. Jour.; Am. Jour. of Physiol.; Jour. of A.M.A.; Postgrad. Med; Miss. Valley Med. Jour.; St. Louis Med. Soc. Weekly Bull.; Mo. St. Med. Jour.; Jour. of Dis. of Nerv. System; Neurol.; Modern Med.; Jour. of Neurosurgery; Mo. Med.; Surgery, Gynecol. and Obst.; Am. Jour. of Clin. Pathol.; Med. Scl.; Surgical Forum; Am. Surgeon; Proc. First Internatl. Cong. of Neurological Scis.; Insurance Law Jour. Gen. Int.: Distinguished Alumni Medal, John Carroll Univ. Areas of Rsch.: Neurological Scis.

LIN, Edwin M(arvin (Ph.D.), Dean of Sci., Bridgeport Engrng. , Bridgeport, Conn. Home Add.: 82 Deep Spring Lane, Springdale, Conn. ORGANIC CHEMISTRY.



b. N.Y.C., April 14, 1924. s. Benjamin and Estelle (Brinn) S. Edn.: B.S., Univ. of City of N.Y., 1944; Ph.D., State Univ. of Iowa, 1949. m. Shirlee Jean Levin, Aug. 28, 1948. c.: Michael; Lori; Gregory. Exp.: Sr. Rsch. Chem., Am. Cyanamid Co., Stamford, Conn., 1949—; Assoc. Dean, Stamford Branch, Bridgeport Engrng Inst., 1959—; Dean of Sci., Bridgeport Engrng. Inst., 1962—. Mem.: Am. Chem. Soc.; Am. Soc. of Engrng. Educators; Phi Lambda Upsilon; Sigma Xi; Springdale Repub. Club. Author: s-Triazines and Derivatives, 1959. Contbr. to: Jour. of Am. Chem. Soc.; Tetrahedron Letters; Indus. & Engrng. Chem.; Organic Syntheses; . of Organic Chem.; Jour. of Polymer Chem. Serv. Rec.: S. Army, World War II. Areas of Rsch.: High Pressure istry, Acetylene Chemistry, Evening Engineering Education, lysis, Organic Synthesis.

TH, Murray G., Jr. (M.D.), Dir. of Biomed. Rsch., Smith e Precision Co., 1500 Spring Garden St., Philadelphia, Pa. e Add.: 1710 Delancey Pl., Philadelphia 3, Pa. CLINICAL RMACOLOGY, MEDICAL INSTRUMENTATION. b. Cambridge, ., Mar. 24, 1926. s. Murray G., Sr. and Inez (Mills) S. : M.D., Univ. of Pa., 1949. m. Martha Griffith, Aug. 1951. Exp.: Instr., Univ. of Pa. Med. Schl., 1957-60; Rsch. Dir., Smith Kline and French Labs., Philadelphia, 1960-62; Dir. of Biomed. Rsch., Smith Kline Precision Philadelphia, Pa., 1962—. Mem.: N. Y. Acad. Sci.; Am. c. Adv. of Sci.; Am. Geriatric Soc.; Soc. for Psychophysiol. .; Internatl. Fed. for Med. Electronics; Pa. Med. Assn.; Med. Assn.; Am. Assn. of Clinical Rsch. Contbr. to: Proc. Federated Socs.; Am. Jour. of Med. Sci.; Jour. Physiol.; th Physics Jour.; Jour. Applied Physiol. Serv. Rec.: U. S. , 1944-46, 1949-52. Areas of Rsch.: Clin. Pharmacol., Instrumentation, Acid-Base Balance, Respiratory Control.

THE, Hugh Heyne (Ph.D.), Assoc. Prof. of Sociology and An- ology, Brooklyn Coll., Brooklyn 10, N. Y. ANTHROPOLOGY SOCIOLOGY WITH EMPHASIS ON CULTURE AND MINORITY UP RELATIONS AND ASIAN STUDIES, ESPECIALLY JAPAN, CAN AFFAIRS AND INTERNATIONAL RELATIONS. b. Pitts- h, Pa., Aug. 19, 1913. s. William Henry and Mary Elizabeth hardt) . Edn.: A.B., Va. State Coll., 1936; M.A., Atlanta , 1937; Fisk Univ., 1938-39; Univ. of Chgo., summer, 1940; , Northwestern Univ., 1945; Columbia Univ., 1950-51. m. el Hancock Murphy, July 26, 1939. c.: Karen Pamela. Exp.: Instr. in Anthropol., Morehouse Coll., Atlanta, Ga., 1937; Rsch. and Admin. Asst., Am. Youth Comm. of Am. Coun. of Atlanta, Ga., 1938; Rsch. Asst., Fisk Univ., Dept. of Soc. Nashville, Tenn., 1938-39; Instr. in Sociol. ibid., 1938-39; Analyst, Community Survey of Negroes, Evanston, Ill., 1938- Rsch. Assoc., Dept. of Sociol., Atlanta Univ., Atlanta, Ga., ; Asst. Coordinator, Negro Land Grant Colls. Project for Co- ative Soc. Study, Atlanta, Ga., 1944; Prof. of Anthropol. and l., Morris Brown Coll., Atlanta, Ga., 1945-46; Asst. Dir., of Special Rsch., NAACP, N.Y.C., 1947-49; Rsch. Dir., W. raham and Assoc., N.Y.C., 1949-50; Prof. of Soc. Sci., Yama- Natl. Univ., Yamaguchi City, Japan, 1951-53; Assoc. Prof. ciol. and Anthropol., Brooklyn Coll., 1953—; Bd. Mem., Am. n. on Africa; African Studies Assoc.; Comm. for World Devel. World Disarmament; Operation Crossroads, Africa; Field r. in Africa of Operation Crossroads Africa, summer, 1960; r. to Permanent Mission of the U. S. to the U. N., 1961—. : Eastern Soc. Soc.; Inst. Race Rel. of Gr. Brit.; Fellow of an Studies Assn.; Am. Anthropol. Assn.; Japan Social Soc.; Emnol. Soc.; Soc. for Appl. Anthropol.; Sigma Xi; Alpha a Delta; Iota Sigma Lambda; Alpha Kappa Delta; Alpha Pi Alpha Phi Alpha; Hatsukakai; Mem. U. S. Deleg. to 16th Assembly of U. N.; U. S. Deleg. to 32nd Session of the U. N. omic and Social Council (Geneva); U. S. Delegation to 23rd ing of the UNICEF Executive Bd.; Delegate to 8th Biennial ing of U. S. Natl. Comm. for UNESCO; U. S. Delegation to . Resumed Conference on Reduction of Statelessness (all in U. S. Delegation to the Gov. Coun. of the Spec. Fund; Sess. of Econ. and Soc. Coun.; Coffee Conf.; Sub-Comm. revention of Discrim. and Protection of Minorities; 18th of Comm. on Human Rights; 16th Sess. Status of Women's .; 18th Sess. of Social Comm. Contbr. to: Social Forces; logical and Social Research; Syn Og Sen; Am. Journal ociology; Am. Sociological Review; Soc. Research; The n; New Republic; The Fortnightly, London; New Zealand ly News; Independent Woman; Commonweal; Phylon; Shakai hi; Am. Scholar; Crisis; Midwest Jour.; Jour. of Higher Progressive; Jour. Edn'l. Rsch.; Schl. and Soc.; United Na- World; Jour. of Edn.; Jour. of Negro Edn.; Am. Jour. Econ. Soc.; South Atlantic Quart.; Social Order; Annals N. Y. Sci.; Jour. Human Relations; Queen's Quart.; Anthropol. .; Midstream; Yale Rev., etc. Author: Chapters in Africa en by Americans (ed. by J. A. Davis); Social Control (ed. by J. S. Roucek). Co-Author: The New Nigerian Elite; Mem., Ed. Bds. of Sociological Abstracts, Jour. of Human Relations and Africa Today; Consultant on African and Asian Affairs to Institute of International Education, Unitarian Service Comm., Crossroads Africa Project; Research in Africa, 1957-58; Fisk Univ. Fellow; Hattie M. Strong Scholar; Social Science Research, Council Grant; Atlanta Univ. Fellow; Rosenwald Fellow; Am. Coun. Learned Soc. Grantee; Brit. Col. Office Award; Ford Fdtn. Fellow. Special Int.: Asian Studies with Emphasis on Postwar Devel. in Japan; Race Relation; Minority Group Study and Caste-Class Problems; Race and Culture Study; Cultural Problems and Internatl. Affairs of West Africa; Major Rsch. at Present Is an Intensive Study of the Japanese Eta, an Indigenous Caste Group in Japan; and African Problems in World Affairs, Leadership and Elite Groups in Africa, South of the Sahara; Internatl. Affairs.

SNELL, Junius Fielding (Ph.D.), Prof., Biochem., Ohio State Univ., Columbus 10, Ohio. Home Add.: 1240 McCoy Rd., Columbus 21, Ohio. BIOCHEMISTRY (MODE OF ACTION OF ANTIBIOTICS AND OTHER DRUGS, etc.).

b. Lovell, Wyo., Feb. 6, 1921. s. Heber C. and Hedwig (Stauffer) S. Edn.: B.S., Univ. of Tex., 1943; Ph.D., Univ. of Wis., 1950. m. Ethel Walker, 1944. c.: Brian Frederick; Carol Anne. Exp.: Rsch. Biochemist, Chas. Pfizer and Co., Brooklyn, N. Y., 1944-45; Dept. Hd., Radiobiochem. Dept., Chas. Pfizer and Co., Inc., Maywood, N. J., 1950-61; Prof., Biochem., Ohio State Univ., 1961—. Mem.: Am. Soc. of Biol. Chemists; Am. Chem. Soc.; Sigma Xi; Am. Assn. Adv. of Sci.; Am. Soc. for Microbiol.; Reticuloendothelial Soc.; Soc. of Nuclear Med.; Am. Inst. of Chemists; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Antibiotics and Chemotherapy; Antibiotics Annual; Jour. of Chem. Soc., London; Jour. of Bacteriol.; RES Bull.; Annals of N. Y. Acad. of Sci.; Atompraktiz. Gen. Int.: Biosynthesized the first radio active broad spectrum antibiotic (carbon-14 labelled oxytetracycline). Areas of Rsch.: Antibiotic biosynthesis, production, and mechanism of action; mode of action of drugs; radio biochemical techniques; Reticulo-Endothelial System.

SNIDER, Jean Whitaker (Mrs.), Med. Rsch. Technolt., 1430 Tulane Ave., Tulane Univ., Schl. of Med., New Orleans, La. Home Add.: P.O. Box 5, Lewisburgh, Mandeville, La. FOODS AND NUTRITION MAJOR: CHEMISTRY MINOR. b. Cumberland Gap, Tenn., July 10, 1921. d. Arthur Wheeler Whitaker and Flora (Southern) W. Edn.: B.S., Univ. of Tenn., 1942; Grad. Work, Columbia Univ. m. Nathan Hale Snider, Dec. 30, 1944. Exp.: Hd. of Dept. of Home Econs., Morganton H. S., Morganton, N. C., 1942-44; Hd. of Dept., Home Econs., Valhalla Jr.-Sr. H. S., Valhalla, N. Y., 1947-49; Med. Rsch. Techn., Tulane Univ. Schl. of Med., 1952—. Hon. Pos.: Pres., New Orleans Home Econs. Club, 1956-58; Secy., La. Home Econs. Club, 1958-60; Intl. Chmn. for La. Home Econs. Assn., 1960-62. Mem.: Tau Kappa Alpha; Alpha Phi Omega; Altrusa Internatl., Past Pres., New Orleans, La., 1959-60. Gen. Int.: Served as an Official Reporter for the Ninth Internatl. Congress on Home Economics, 1958; OSRD citation, Harvard Univ., 1944. Areas of Rsch.: Medicine; Curriculum for Home Economics; Nutrition and Metabolism.

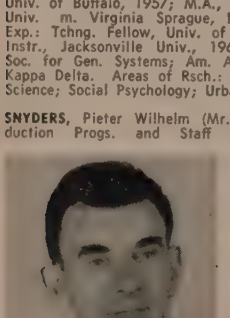
SNODGRASS, Oliver Theodore (Ph.D.), Chmn. Dept. of Math., N. Mex. Western Coll., Silver City, N. Mex. ALGEBRA, MATHEMATICS. b. March 14, 1902, Delta, Iowa. s. Orval E. and Syrena (Smith) S. Edn.: Student, Grinnell Coll., 1920-21; B.S., Dakota Wesleyan Univ., 1924; M.S., Univ. of Ia., 1927; Ph.D., Univ. of Mo., 1936. m. Lucile Noble of Vayland, S. D., Jan. 18, 1923. d. Wm. and Alice Noble. c.: Lucile Noble, Alice Theodora. m. (2) Mrs. Ella Lassiter, July 9, 1947. m. (3) Audrey H. Griffin, Dec. 20, 1954. Exp.: Prin., H.S., Bison, S. D., 1924-26; Prin., H.S., Wetonka, S. D., 1926-27; Instr. Math., Purdue Univ., 1927-28; Instr. Math., Montana Schl. of Mines, Butte, Mont., 1929-31; Correspondence Inst. in Math., Univ. of Mo., 1931-37; Prof. of Math., Yankton Coll., Yankton, S. D., 1937-42; Hd., Dept. of Math. and Sci., N. M. St. Tchrs. Coll., Silver City, N. M., 1942-48; Hd., Dept. of Math., N. M. Western Coll., Silver City, N. M., 1948—. Mem.: Sigma Xi; Pi Gamma Mu; Pi Mu Epsilon; Mason. Author: Coll. Algebra, 1940 (Edwards Bros.). Ph.D. Dissertation: Multiplicative Representation of the Elements of a Ring. Serv. Rec.: 1st Lt., Army Air Corps, 1943-45. Travel: U. S. and Mexico. Hobbies: Stamp Collecting; Hiking; Archaeology. Listed in A.M.S. Areas of Rsch: Algebra.

SNYDER, Frederic Winkler (Mr.), Head of Performance Evaluation, Human Factors Unit, The Boeing Co., Wichita Kan. Home Add.: 997 Reca, Wichita, Kan. HUMAN FACTORS EXPERIMENTAL RESEARCH; VISUAL PERCEPTION; PHYSIOLOGICAL PSYCHOLOGY. b. Bridgeton, N. J., Apr. 15, 1925. s. William E. and Flora E. (Winkler) S. Edn.: B.A., Univ. of Wichita, 1949; M.A., ibid., 1951. m. Carmita M. Watkins, Aug. 5, 1948. c.: Wendy Lea; James Allen; Dierdra Rae; Doretta Kaye. Exp.: Customer Engineer, IBM, Wichita, Endicott, Newark, 1942-43; Lab. Techn. in Psychol., Univ. of Wichita, 1947-49; Tchng. Fellow, Psychol., ibid., 1949-50; Instr. in Psychol., ibid., 1950-53; Pres., Wichita Apparatus Supply, Inc., Kan., 1953-56; Asst. Rsch. Psychol., Menninger Fdtn., Topeka, Kan., 1953-56; Rsch. Engr., Human Factors, The Boeing Co., Wichita, Kan., 1960—. Mem.: A.A.A.S.; Am. Psychol. Assn.; Kan. Psychol. Assn.; Mem., Armed Forces Natl. Rsch. Coun. Comm. on Hearing and Bioacoustics, 1961—; Kan. Acad. of Sci.; Psi Chi; Aesculapeus; Delta Epsilon; Alpha Kappa Delta. Co-Author: Vision with Spatial Inversion, 1952. Contbr. to: Perceptual and Water Skills; Jour. of Genetic Psychol.; Jour. of Psychol.; Trans. of Kan. Acad. of Sci.; Religious Edn.; Jour. of Exp. Psychol. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Human Factors; Perception; Effects of Vibration on Human Performance; Information Processing; Learning; Systems Analysis; Operational Performance Rsch. (Pilot Navigator, Electronic Counter-measures); Color Generation Techniques; Laboratory Instrumentation and Simulators; Engineering Psychology.

SNYDER, Freeman Woodrow (Ph.D.), Plant Physiologist, Box 226, E. Lansing, Mich. Home Add.: 1209 Cedarhill Dr., E. Lansing, Mich. PLANT PHYSIOLOGY. b. Phila., Pa., Dec. 6, 1917. s. Freeman and Mary A. (Shaffer) S. Edn.: B.S., Univ. of Idaho, 1938; Ph.D., Cornell Univ., 1950. m. Elizabeth Fink, Aug. 6, 1938. c.: Robert Gordon; Barbara Naneen. Exp.: Engr. Aid, Soil Conserv. Serv., Coll. Park, Md., 1942-43; Agri. Engr., ibid., 1946-47; Grad. Asst., Cornell Univ., Ithaca, N.Y., 1948-50; Asst. Agronomist, Univ. of Ark., 1950-53; Plant Physiol., CRD, ARS, U. S. Dept. of Agri., 1953—. Mem.: Sigma Xi; Am. Soc. Plant Physiol.; Botanical Soc. Am.; Am. Soc. Sugar Beet Technol.; A.A.A.S. Contbr. to: Jour. Am. Soc. Sugar Beet Technologists. Serv. Rec.: U. S. A. Areas of Rsch.: Mineral Nutrition, Germination and Physiology of Sugar Beets.

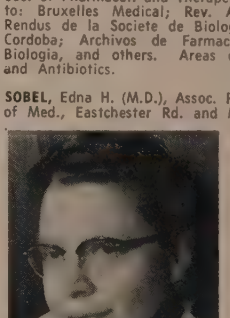
SNYDER, Norman Conrad (Ph.D.), Instr., Sociol., Jacksonville Univ., Jacksonville, Fla. Home Add.: 368 Tidewater Dr., Jacksonville 11, Fla. SOCIOLOGY—THEORY. b. Buffalo, N. Y., Jan. 23, 1933. s. Conrad M. and Gladys M. (Jones) S. Edn.: B.A., Univ. of Buffalo, 1957; M.A., ibid., 1960; Ph.D., (cand.), Emory Univ. m. Virginia Sprague, Nov., 1958. c.: Douglas Conrad. Exp.: Tchng. Fellow, Univ. of Buffalo, Buffalo, N. Y., 1957-58; Instr., Jacksonville Univ., 1961—. Mem.: Am. Sociol. Assn.; Soc. for Gen. Systems; Am. Assn. for the Adv. of Sci.; Alpha Kappa Delta. Areas of Rsch.: Sociological Theory; Philosophy of Science; Social Psychology; Urban Sociology; Sociology of Science.

SNYDERS, Pieter Wilhelm (Mr.), System Mgr., Radar Cross Reduction Progs. and Staff Scientist, Astronautics Scientific Staff, Chrysler Corp., Missile Division, Detroit, Mich. Home Add.: 5600 24 Mile Rd., Utica, Mich. MISSILES; SPACE FLIGHT AND RE-ENTRY; VEHICLE CONFIGURATIONS; PROPULSION; NUCLEAR ENGINEERING. b. Rotterdam, Holland, Feb. 18, 1921. s. W. and P. (Scheffer) S. Edn.: B.S., Techn. Coll., Holland, 1943; M.S., ibid., 1948. m. J. Van-Kalker, Jan. 25, 1945. c.: Sylvia Y. G.; Robert P. Exp.: Chf. Marine Engr., Shipowners, 1946-50; Consulting Engr., Dekker Propeller Ltd., Rotterdam, Holland, 1949-51; Chf. Techn., Dept., Auctor, Ltd., The Hague, Holland, 1951-53; Northeastern Engrng., Inc., Manchester, N. H., Sr. Design Engr., 1953-55; Sr. Design Engr., Convair, San Diego, Calif., Nuclear Proj. Office, Preliminary Design Dept., Aircraft and Missiles, 1955-60; Chrysler Corp. Missile Div., Detroit, Mich., Preliminary Design Dept., Scientist, 1960—; Staff Scientist, Scientific Staff, Systems Mgr., U.S.A.F. Penetration Aids Programs, 1961—. Hon. Pos.: Secy., Inst. of the Aerospace Scis., Detroit Sect.; Former Secy., Am. Rocket Soc., San Diego Sect.; Former Treas., Inst. of the Aerospace Scis., Detroit Section; Assoc. Fellow, I.A.S.; Sr. Mem., A.R.S. Mem.: A.A.A.S.; Am. Ordn. Assn.; U.S.A.F. Assn. Gen. Int.: Co-Inventor Different Propulsion Systems; Outleakage Proof Valve Connectors. Areas of Rsch.: Simplification of Existing and Future Solid and Liquid Rocket Propulsion Systems; Study of Improved Free Flight Rocket Techniques; A.S.W. Systems; Nuclear Propulsion; Advanced Re-entry Vehicle Configurations.



SOAJE-ECHAGUE, Eliseo (M.D.), Pharmacologist, Miles-Ames Rsch. Elkhart, Ind. Home Add.: 410 W. Franklin, Elkhart, Ind. CLINICAL AND EXPERIMENTAL PHARMACOLOGY. b. Cordoba, Argentina, Jan. 27, 1905. s. Emilio and Emma (Echague) S. Edn.: B.S., Monserrat Coll., 1923; M.D., Univ. of Cordoba, 1930. m. Martha Hayoit de Boislucy, Aug. 1934. Exp.: Instr., Internal Med., Cordoba Univ., 1933-37; Chief Serv. of Cardiology, Children's Hosp., Cordoba, Argentina, 1936-40; Prof., Materia Medica and Therapeutics, Univ. of Cordoba, 1940; Asst. Prof., Pharmacology and Therapeutics, Univ. of Buenos Aires, 1945-51; Sr. Pharmacol., Heyden Chemical, Princeton, N.J., 1951-54; Pharmacologist, Miles-Ames Rsch., Elkhart, Ind., 1954—. Hon. Pos.: Mem., Coll. of Physns., Cordoba, Argentina; Mem., Bd. of the VI Argentine Natl. Cong. of Med.; Vice-Pres., Pharmacol. Sect., ibid. Mem.: Argentine Soc. of Internal Med.; Argentine Soc. of Pharmacol. and Therapeutics; N. Y. Acad. of Sci. Contbr. to: Bruxelles Medical; Rev. Argentine of Cardiology; Compt. Rendus de la Societe de Biologie; Rev. Universidad Nacional de Cordoba; Archivos de Farmacia; Rev. Sociedad Argentina de Biologia, and others. Areas of Rsch.: Sedatives; Hypotensives and Antibiotics.

SOBEL, Edna H. (M.D.), Assoc. Prof. of Peds., Albert Einstein Coll. of Med., Eastchester Rd. and Morris Pk. Ave., Bronx 61, N. Y. Home Add.: 94 Lawrence Park Crescent, Bronxville, N. Y. PEDIATRIC ENDOCRINOLOGY. b. N. Y., N. Y., Nov. 2, 1918. d. Samuel Paul and Frances (Selkin) S. Edn.: B.A., Univ. of Wis., 1939; M.A., ibid., 1940; M.D., cum laude, Boston Univ., 1943. Exp.: Rsch. Assoc. and Instr., Children's Hosp. Rsch. Fdtn., Cincinnati, O., 1950-53; Rsch. Assoc. in Peds., Harvard Med. Schl., Boston, Mass., 1955-56; Assoc. Prof. of Peds., Albert Einstein Coll. of Med., 1960—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Fed. Clin. Rsch.; Am. Ped. Soc.; Am. Soc. Human Genetics; Endocrine Soc.; Nat. Soc. for Med. Rsch.; Rsch. Fellow of N. Y. Acad. Med.; Soc. Exptl. Biol. and Med.; Soc. Ped. Rsch. Coun.; Sigma Xi. Co-Author: Adrenal Function in Infants and Children, 1956, Contbrng. Author; Functional Endocrinology from Birth Through Adolescence, 1952. Contbr. to: Jour. of Peds.; Proc. of the Laurentian Conf.; New Eng. Jour. of Med.; Advances in Peds.; Peds.; Jour. Clin. Endocrinol. and Metab.; Am. Jour. Dis. Child.; Jour. Am. Med. Women's Assn.; Am. Jour. Roengenol.; Radium Ther. and Nuclear Med. Gen. Int.: Studies on Endocrine Function and Growth of Children. Areas of Rsch.: Studies on Endocrine Function and Growth of Children.



SOBEL, Albert Edward (Ph.D.), Dir. of Clin. Chem., Presby.-Univ. Hosp., 230 Lothrop St., Pittsburgh 13, Pa. and Assoc. Prof. Biochem., Univ. of Pgh., Schl. of Medicine, Pittsburgh, Pa. Home Add.: 207-15 39th Ave., Bayside 61, N. Y. CLINICAL CHEMISTRY. b. Luko, Hungary, Sept. 24, 1906; s. Bernhard and Regina (Schwartz) S. Edn.: B.S., Cooper Union, 1930; Ch.E., ibid., 1935; M.A., Columbia Univ., 1936; Ph.D., Polytech. Inst. of Brooklyn, 1940; m. Jeannette Schneider, Aug. 5, 1934. c.: Suzanne; Renee. Exp.: Lab. Asst., Dept. of Biochem., Rockefeller Inst., 1925-30; Staff Chemist, Pediatric Rsch. Lab., Jewish Hosp. of Brooklyn, 1931-33; Chemist-in-Charge, Pediatric Rsch. Lab., ibid., 1933-36; Hd., Dept. of Biochem., Jewish Hosp. of Brooklyn, 1936-62; Dir. of Clin. Chem., Presbitarian-Univ. Hosp. and Assoc. Prof., Univ. of Pgh., 1963—; Adj. Prof., Chem., Polytech. Inst., Brooklyn, 1946; Special Lectr., N. Y. St. Univ. Med. Schl., 1950; Mem., Med. Bd., ibid., 1950—. Hon. Pos.: Chmn., Internatl. Cong. on Clin. Chem., N.Y.C., 1956. Mem. Fellow, Am. Assn. of Clin. Chemists; Sigma Xi; Phi Lambda Upsilon; Am. Assn. Adv. Sci. Contbr. to: Trans. of the N. Y. Acad. of Scis.; Annals of the N. Y. Acad. of Scis.; Analytical Chem.; Jour.

ol. Chem.; Arch. of Biochem. and Biophysics; Biochem. Jour.; ochem and Biophys. Acta; Clin. Chem.; Proc., Soc. for Exptl. ol. and Med.; Sci.; Jour. Am. Chem. Soc. Josiah Macy Conf.; ediatrics; Am. Jour. of Disease of Children; Nutritional Jour.; our. of Mental Deficiencies; Jour. of Lab. and Clin. Med.; Jour. Vitamins and Hormones; Jour. of Exptl. Med.; Jour. of Clin. vestigation; Clin. Orthopedics; British Jour. of Bone and Joint urgery; Jour. of Investigative Dermatol.; Ind. State Jour.; candinavian Jour. of Lab. and Clin. Investigation; Jour. of ental Rsch. Gen. Int.: Recipient of the D. D. Van Slyke Award Clin. Chem., Feb. 16, 1960, N. Y. City; Ames Award in Clin. hem., Aug. 30, 1960, Montreal, Can.; Recipient of the Claude ernard Award, 1961; Ultramicro Methods of Clinical Chemis-y, Mechanism of Bone and Tooth Formation, Absorption and ransportation of Fat Soluble Vitamins.

OBERMAN, Robert Kenneth (Ph.D.), Chf. of Meteor Phys. Branch, eophys. Rsch. Directorate, Air Force, Cambridge Rsch. Labs., L. G. Hascom Field, Bedford, Mass. Home Add.: 62 Plymouth Rd., Wakefield, Mass. UPPER ATMOSPHERE AND SPACE PHYSICS. b. N.Y.C., Apr. 8, 1930. s. Julius and Helen (Mile) S. Edn.: B.S., City Coll. of N. Y., 1950; M.S., N. Y. Univ., 1952; Ph.D., ibid., 1956. m. Diana Gross, June 6, 1954. c.: Ellen; June. Exp.: Physicist, Gen. Electric, Vallecitos Atomic Lab., Pleasanton, Calif., 1955-57; Sr. Scientist, AVCO Rsch., and Adv. Devel. Div., Wilmington, Mass., 1957-59; Assoc. Prof., Northeastern Univ., Boston, Mass., 1959-60; Chief of Meteor Phys. Br., Geophys. Rsch. Directorate, Air Force, Cambridge Rsch. Labs., 1960—. Mem.: Am. Phys. Soc.; Am. Geophys. Union; Am.

ssn. for the Adv. of Sci.; Sigma Xi. Contbr. to: Phys. Rev.; ev. of Scientific Instruments; Physics of Fluids; Jour. of Geo-hys. Rsch.; Astronomical Jour. Gen. Int.: Micrometeorite Stud-es from Rockets and Satellites. Areas of Rsch.: Meteoritics; articulate Matter in Space; Cosmic Rays; Reentry Physics.

OFFER, Milton David (Ph.D.), Prof. of Chem., Smith Coll., North-mpton, Mass. Home Add.: RFD, Haydenville, Mass. ORGANIC CHEMISTRY; CHEMISTRY OF NATURAL PRODUCTS; SYNTHETIC AND STRUCTURAL INVESTIGATION IN FIELD OF NATURAL PRODUCTS. b. N.Y.C., Dec. 11, 1914. s. Henry A. and Hannah (Kleinman) S. Edn.: B.S., Univ. of Ark., 1937; M.A., Harvard Univ., 1939; Ph.D., ibid., 1942. m. Rosanne Smith, Feb. 16, 1957. c.: Katherine Barns; Frederic David; Roderick Wallace Robinson. Exp.: N.D.R.C. Post-doctoral Rsch. Fellowship, Purdue Univ., 1941-42; Instr., Chem., Smith Coll., 1942-44; Asst. Prof., ibid., 1944-50; Assoc. Prof., ibid., 1950-56 Prof., ibid., 1956—; Guggenheim Fellow, Oxford Univ., 1950-51; Natl. Sci. Fdtn. Sr. Postdoctoral Fellow, Harvard Univ., 1958-59. Mem.: N.Y.

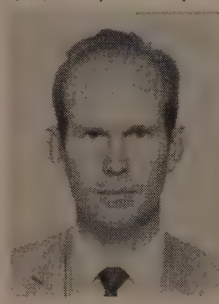
Acad. of Sci.; Am. Chem. Soc.; A.A.A.S.; A.A.U.P.; Soc. of Harvard Chemists; Sigma Xi; Harvard Club; Smith Coll Faculty Club; Leonard Club. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem.; Org. Synthesis; Chem. and Industry; Science. Areas of Rsch.: Synthetic and Structural Investigation in Field of Natural Products; Carbocyclic Substances and Alkaloids.

SOKOLOFF, Louis (M.D.), Chf., Sect. on Cerebral Metabolism, Lab. of Clin Sci., Natl. Inst. of Mental Hlth., Bethesda, Md. Home Add.: 2714 Harmon Rd., Silver Spring, Md. CEREBRAL CIRCULATION AND METABOLISM; MECHANISM OF ACTION OF THYROXINE. b. Phila., Pa., Oct. 14, 1921. s. Morris and Goldie (Levy) S. Edn.: A.B., Univ. of Pa., 1943; M.D., ibid., 1946. m. Betty Jane Kaiser, Jan. 24, 1947. c.: Ann Lynn; Kenneth Lee. Exp.: Rsch. Fellow, Instr., Univ. of Pa., Phila., Pa., 1949-55; Assoc. Chf., Sect. on Cerebral Metabl., Natl. Inst. Hlth., 1953-57; Chf., ibid., 1957—. Mem.: N. Y. Acad. of Scis.; Am. Assn. for the Adv. of Sci.; Am. Acad. of Neurol.; Am. Physiol. Soc.; Assn. for Rsch. in Nerv. and Mental Dis.; Phi Beta Kappa; Sigma Xi; Alpha Omega Alpha.

Contbr. to: Sci.; Jour. of Biol. Chem.; Biochimica et Biophysica Acta; Pharmacol. Revs.; Physiol. Revs.; Anesthesiol.; Neurol.; Jour. of Psychiat. Rsch.; Jour. of Clin. Investn. Serv. Rec.: U. S. Army, 1947-49. Areas of Rsch.: Mechanism of Action of Thyroxine; Cerebral Circulation and Metabolism; Peripheral Circulation; Neurochemistry.

SOLBERG, Myron (Ph.D.), Quality Control Mgr., Colonial Provision Co., Boston, Mass. Home Add.: 121 Burgess Ave., Westwood, Mass. FOOD TECHNOLOGY. b. Boston, Mass., June 11, 1931. s.: Alexander and Ruth (Graff) S. Edn.: B.S., Univ. of Mass., 1952; Ph.D., Mass. Inst. of Technol., 1960. m. Rona Bernstein, Aug. 26, 1956. c.: Sara Lynn. Exp.: Rsch. Asst., Mass. Inst. of Technol., 1958-60; Quality Control Mgr., Colonial Provision Co., Boston, Mass., 1960—. Mem.: Inst. of Food Technols.; Am. Chemical Soc.; Am. Soc. for Qual. Control; A.A.A.S.; Sigma Xi; Alpha Epsilon Pi; Westwood-Dover Conservation Club; Natl. Parks Assn. Contbr. to: Food Technol.; Food Sci.; Jour. of Milk and Food Technol. Serv. Rec.: U.S.A.F., 1952-54. Areas of Rsch.: Meat Sci. and Technol., Radiation Processing, Food Bacteriol.

SOLBRIG, Otto Thomas (Ph.D.), Asst. Curator, Gray Herbarium, Harvard Univ., 22 Divinity Ave., Cambridge 38, Mass. Home Add.: 12 Parker St., Arlington 74, Mass. BIOSYSTEMATICS, CYTOGENETICS AND EVOLUTION OF FLOWERING PLANTS (BOTANY). b. Buenos Aires, Argentina, Dec. 21, 1930. s. Hans J. and Rose Mabel (Muggleworth) S. Edn.: Ph.D., Univ. of Calif., 1959. m. Roberta Mae Chittum, Aug., 1956. Exp.: Botanist, Harvard Univ., Cambridge, Mass., 1959-61; Asst. Curator, ibid., 1961—; Instr., ibid., summer schl., 1961—. Mem.: Soc. Study of Evolution; AAAS; Am. Soc. Pl. Tax.; Int. Soc. Plant Taxonomists; New Eng. Botanical Club; Phi Beta Kappa; Sigma Xi. Contbr. to: Am. Jour. Bot.; Jour. Arnold Arb.; B. Soc. of Arg. Bot.; Revis. Fac. Agr. La Plata; Revis. Fac. Ciencias Agr., Mendoza. Areas of Rsch.: Cytology and Evolution of Compositae-Astereae; South American Flora.



SOLLERS-RIEDEL, Helen (Miss), Entomol., U.S.D.A., 1218 Floral St., N.W., Wash., D. C. Home Add.: 1218 Floral St., N.W., Wash. 12, D.C. PLANT PEST CONTROL DIVISION, A.R.S. b. Baltimore, Md., Sept. 29, 1911. d. William A. and Helen (Day) S. Edn.: B.S., Wilson Tchrs. Coll., 1934. m. F. A. Riedel, May 11, 1962. Exp.: Joined Insect Pest Survey of U. S. Bur. Entomol. and Plant Quarantine, Wash., D. C., 1937; Jr. Entomol., ibid., 1943-47; Asst. Entomol. in Insects Affecting Man and Animals, ibid., 1947-53; Entomol., Survey and Detection Opns. of Plant Pest Cont. Div., A.R.S., 1953—. Hon. Pos.: Pres., Twenty Council, 1949; Custodian of Entomology Soc. of Wash., 1950-52; Recording Secy., 1958-59; Assoc. Ed., Mosquito News, 1953—; Hon. Fellow of Natl. Soc. of India for Malaria and Other Mosquito-Borne Diseases; Director of Executive Council of Tropical Medicine Assn. of Washington, D. C., 1961-62. Mem.: Fellow, Royal Soc. of Trop. Med. and Hyg.; Plant Pest Control Club, Pres., 1960-61; The Twenty; Natl. Photographic Soc.; Entomol. Soc. of Wash.; Entomol. Soc. of Am; Entomol. Soc. of Can.; Am. Soc. Trop. Med. and Hyg.; Trop. Med. Assn. of Wash., D. C.; Am. Mosquito Control Assn. Author: "References to Literature of Interest to Mosquito Workers and Malariologists" Quarterly in Mosquito News; Wrote an annual review of mosquito work throughout the world. Contbr. to: Mosquito News; N. J. Mosquito Extermin. Assn.; Indian Jour. Malariology; U.S.D.A. Publications. Special Int.: Mosquitos; Taxonomy of Ticks. Travel: Poland, USSR, Finland, Denmark, England, Belgium, West Germany, East Germany, Canada, West Indies.

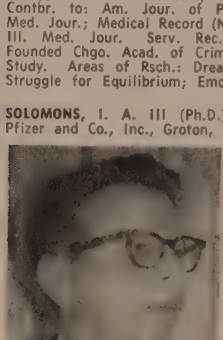
SOLLNER, Karl (Ph.D.), Chf. Physical Biochemist, Lab. of Physical Biol., Natl. Inst. of Health, Bethesda 14, Md. Home Add.: 3714 Manor Rd., Chevy Chase 15, Md. PHYSICAL AND COLLOID CHEMISTRY. b. Vienna, Austria, Jan. 9, 1903. s. Anton and Julie (Karplus) S. Edn.: Ph.D., Univ. of Vienna, 1926. m. Herta Rosenberg, 1934. c.: Barbara. Exp.: Rsch. Assoc. and Asst., Kaiser Wilhelm Inst. fur Physikalische Chemie, Berlin-Dahlem, Germany, 1927-33; Privat Dozent fur Chemie, Univ. of Berlin, 1933; Indusl. Consult., 1933—; Rsch. Guest, Univ. Coll., London, 1933-37; Rsch. Guest, Cornell Univ., 1937-38; Chemist to Assoc. Prof., Univ. of Minn., 1938-47; Prof., ibid., 1947—; Chf. Physical Biochem., Lab. of Physical Biol., Natl. Insts. of Health, 1947—. Mem.: Fellow, N. Y. Acad. Sci.; Fellow, Am.

Inst. of Chem.; Am. Chem. Soc.; Electrochem. Soc.; Soc. Gen. Physiol.; Wash. Acad. Scis.; A.A.A.S. Contbr. to: Jour. Am. Chem. Soc.; Jour. Physical Chem; Jour. Colloid Sci.; Jour. Gen.

Physiol.; Archives of Biochem. and Biophysics; Biochemica et Biophysica Acta; Trans. and Discussions of the Faraday Soc.; Zeitschr. fur Physikalische Chemie; Zeitschr. fur Electrochemie; Kolloid-Zeitschr.; and many others. Areas of Rsch.: Ultrasonics; Electrochemistry of Membranes; Permselective Membranes; Membrane Electrodes; Memrane Model Systems.

SOLOMON, Meyer (M.D.), M.D. Psychiatrist and Neurologist, 25 E. Wash. St., Chgo. 2, Ill. Home Add.: 5426 E. View Pk., Chgo. 15, Ill. PSYCHIATRY AND NEUROLOGY. b. N.Y.C., Dec. 3, 1887. s. Jacob and Caroline (Solomon) S. Edn.: M.D., Cornell Univ., 1909. m. Sadie Spielberger, Nov. 2, 1921. c.: Ralph Wilbur; Robert Stanley. Exp.: Consult. Neurolt., Hlth. Dept., City of Chgo., Ill., 1921-29; Dir. Psychiat., Instit. Municipal Court, Chgo., Ill., 1929-31; Att. Staff, Cook Co. Psychopathic Hosp., Chgo., Ill., 1930-44. Hon. Pos.: Dir. Psychiat., Inst. Mun. Court, Chgo.; Exec. Chmn., Dept. of Neurology and Psychiat., Mt. Sinai Hosp., Chgo.; Secy., Pres., Chgo. Acad. of Criminol.; Pres., Ill. Soc. for Personality Study; Pres., Chgo. Neurologic Soc.; Vice Pres., Am. Speech Correction Assn. Mem.: World Med. Assn.; World Fed. for Mental Hlth.; Am. Med. Assn.; Am. Psychiat. Assn.; Soc. for Scient. Study of Sex; Assn. for Rsch. in Nervous and Mental Diseases; Soc. for Biol. Psychiat.; Am. Assn. for Med. Psychiat.; Am. Assn for Adv. of Sci.; Cent. Neuropsychiat. Assn.; Ill. Psychiat. Soc.; Ill. Soc. for Personality Study; Ill. Sta. Med. Soc.; Chgo. Neurol. Soc.; Chgo Med. Soc. Contbr. to: Am. Jour. of Psychiat.; Internatl. Clinics; N. Y. Med. Jour.; Medical Record (N. Y.); Jour. of Abnormal Psychol.; Ill. Med. Jour. Serv. Rec.: W.W. I, 1918-19. Gen. Int.: Founded Chgo. Acad. of Criminol. and Ill. Soc. for Personality Study. Areas of Rsch.: Dreams and Dreaming; Stuttering; The Struggle for Equilibrium; Emotional Disorders.

SOLOMONS, I. A. III (Ph.D.), Chemotherapeutic Rsch., Charles Pfizer and Co., Inc., Groton, Conn. Home Add.: 20 Billard Rd., New London, Conn. ORGANIC CHEMISTRY. b. Savannah, Ga., Sept. 30, 1917. s. Isaiah Abraham, Jr. and Lena (Shulhafer) S. Edn.: B.S., Univ. of Ga., 1938; M.S., Tulane Univ., 1940; Ph.D., Brooklyn Poly. Inst., 1954. m. Marie Strauss, Sept., 1941. c.: Suzanne; Walter; Virginia. Exp.: Chemist, U. S. Food and Drug Admin., New Orleans, La., 1940-42; Chemist, Huntsville Arsenal, Huntsville, Ala., 1942-43; Mgr. Bklyn. Chem. Rsch. Group Supvr., Chas. Pfizer and Co., Inc., Bklyn., N. Y., 1943—; Asst. Dir. Chem. Rsch. and Devel. Dept. to Dir., Chemotherapeutic Rsch., Charles Pfizer and Co., Inc., Groton, Conn., April 1961—. Mem.: Am. Chem. Soc.; N. Y. Acad. of Sci.; AAAS; Soc. of Chem. Ind.; Phi Lambda Upsilon; Sigma Xi; Phi Beta Kappa; Phi Kappa Phi; Community Chest. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Biological Chem.; Jour. of Antibiotics and Chemotherapy; Science. Areas of Rsch.: Pharmaceuticals and fine Chemicals; Specialization-organic Chemist.



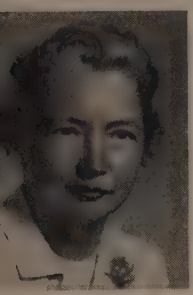
SOLOMON, Philip (M.D.), Physician-In-Chief for Psychit., Boston City Hosp., Boston, Mass. Home Add.: 1824 Beacon St., Brookline 46, Mass. PSYCHIATRY. b. Cleveland, Ohio, Apr. 16, 1907. s. Fred and Jennie (Solomon) S. Edn.: B.S., Harvard Univ., 1926; M.D., ibid., 1930. c.: Linda; Andrew L. Exp.: Interne, Neurol., Boston City Hosp., 1930-31; Interne, Med., 1931-32; ibid., 1932-33; Res. Neurolt., ibid., 1933-34; Austin Tchng. Fellow, Harvard Med. Schl., 1934-35; Austin Tchng. Fellow, Interne Psychiat., Boston Psychiat. Hosp., 1935-36; Rsch. in Electroencephal., Bradley Home, E. Providence, R. I., 1937-39; Psychiat., Habit Clinic for Child Guid., Boston, Mass., 1938-41; Instr., Neurol., Harvard Med. Schl., Jr. Visit. Neurolt., Boston City Hosp., 1938-46; Priv. Pract., Beverly Hills, Calif., 1946-52; Instr., Psychiat., Harvard Med. Schl., 1952-54; Clin. Assoc., ibid., 1954-56; Physn.-In-Chg., Outpatient Psychiat. Clinic, Boston City Hosp., 1956-57; Asst. Clin. Prof., Harvard Med. Schl., 1956-61; Dir., Psychiat. Serv., Boston City Hosp., 1956—; Physn. in Chf. for Psychiat., ibid., 1957—; Assoc. Clin. Prof., Harvard Med. Schl., 1961—. Hon. Pos.: Past Pres., Mass. Soc. for Rsch. in Psychiat.; Pres., Boston Soc. Psychiat. and Neurol.; Secy., Northern N.E. Dist. Br., Am. Psychiat. Assn. Mem.: Am. Bd. of Neurol. and Psychiat., Cert. in Neurol. and Psychiat.; Fellow, Am. Bd. of Med. Exams.; Am. Med. Assn.; Am. Psychiat. Assn.; Am. Orthopsychiat. Assn.; Boston Soc. for Neurol. and Psychiat.; Am. Acad. of Neurol.; Soc. for Psychoanalyt. Med. of Sou. Calif.; Am. Soc. for Electroencephal.; Am. Psychosomatic Soc.; Am. Psychoanalyt. Assn.; Norfolk Dist. Med. Soc.; Mass. Med. Soc.; Mass. Psychiat. Soc.; Mass. Soc. for Rsch. in Psychiat.; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Sci.; Boston Psychoanalyt. Soc. Contbrng. Author: Sensory Deprivation, 1961. Contbr. to: Am. Jour. of Med. Sci.; Jour. Am. Med. Assn.; Arch. Int. Med.; Jour. Clin. Invest. Serv. Rec.: U. S. Naval Reserve, 1941-46; Commander, 1944-46. Areas of Rsch.: Sensory Deprivation, Alcoholism.

SOLZBACHER, William A. (Ph.D.), Chief Monitoring Staff, Voice of America, U. S. Information Agency, Wash. 25, D. C. Home Add.: 6030 Broad St., Wash. 16, D. C. SOCIOLOGY; LINGUISTICS. b. Honnef (Germany), Feb. 1, 1907. s. Karl and Josefa (Schmitz) S. Edn.: Ph.D., Univ. of Cologne, 1931. m. Regina Reiff, July 27, 1931. c.: Josephine; Irene; Regina; Eve-Marie. Exp.: Assoc. Editor, Cath. Intercontinental Press, N. Y., 1942-50; Asst. Prof. of Hist. and Polit. Sci., Coll. of Mt. St. Vincent, 1950-51; Chief, Program Schedule Sect., Voice of Am., 1951-53; Edntl. Dir. of Study Tours, Affiliated Schls. and Seminars for Internatl. Study and Training, N. Y., 1953-54; Chief, Monitoring Staff, Voice of Am., 1954—. Hon. Pos.: Chmn., Internatl. Commn. on Esperanto and Sociol., 1950—; Pres., Esperanto Assn. of N. Am., 1948-54. Mem.: Am. Sociol. Assn.; Am. Hist. Assn.; Mod. Lang. Assn.; Linguistic Soc. of Am.; Acad. of Polit. Sci.; Am. Acad. Polit. and Social Sci.; Natl. Acad. of Econs. and Polit. Sci.; A.A.A.S. Author: Walther Rathenau als Sozialphilosoph, 1932; Devant Hitler et Mussolini, 1933. Co-Author: Esperanto: The World Interlanguage, 1948, 1959. Contbr. to: Encyclopedia Americana; New International Year Book; Grolier Ency. Gen. Int.: Led Internatl. Delegation which Presented Petition on Esperanto to the U. N., 1950; Dir. Esperanto Broadcasts of Voice of Am., 1960—. Areas of Rsch.: Language Problems in International Relations; Public Opinion Research; Sociology of Language; Radio.

SOMBERG, Seymour Ira (D.F.), Consulting Forester. Home Add.: 920 Monmouth Ave., Durham, N. C. FOREST MANAGEMENT AND FOREST ECONOMICS. s. Sidney J. and Rose (Zuckerman) S. Edn.: B.S.F., Ia. St. Coll., 1941; M.F., Duke Univ., 1946; D.F., ibid., 1962. m. Harriet Goldstein, May 6, 1947. c.: Debra Lynne; Benjamin Lawrence; Sandra Jeanne. Exp.: Consulting Forester, U. S. and Latin Am., 1946—; Lectr., Sou. Ill. Univ., 1962—. Hon. Pos.: Exec. Secy., Assn. of Consulting Foresters; Pres., Exec. Bd., A.-C.F.; Rev. Comm., A.F.A.; Forest Industries Coun., Assn. of Forestry Execs.; Chmn., Bd. and Vice-Pres., Tri-St. Land Development Comm.; Pres., Forestry Aids; Vice-Pres., Fla. Baltimore Corp. Mem.: Soc. of Am. Foresters; Assn. of Consulting Foresters; Am. Soc. of Photogrammetry; Congress on Mapping and Surveying; Am. Forestry Assn.; Lions Club; Caterpillar Club; Elks Club. Contbr. to: Jour. of Forestry; Forest Farmer; The Consultant. Serv. Rec.: U. S. Army Air Forces, W.W. II. Areas of Rsch.: Forest Mgmt.; Forest Econs.; Biometrics.

SOMMER, Leo Harry (Ph.D.), Prof. of Chem., The Pa. State Univ., Univ. Park, Pa. Home Add.: 533 Glenn Rd., State Coll, Pa. ORGANOSILICON CHEMISTRY. b. N. Y., N. Y., Sept. 21, 1917. s. Harry and Sarah (Sommer) S. Edn.: B.S., The Pa. State Univ., 1941; M.S., ibid., 1942; Ph.D., ibid., 1945. m. Sarah F. Cohen, Dec. 20, 1944. c.: Eric Steven; Jeffrey Mark; Scott Thomas. Exp.: Asst. Prof., The Pa. State Univ., 1947-52; Assoc. Prof., ibid., 1952-60; Prof., ibid., 1960—. Mem.: Am. Chem. Soc.; Chem. Soc., London; Sigma Xi. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Org. Chem.; Tetrahedron. Areas of Rsch.: Stereochemistry of Asymmetric Silicon and Mechanisms of Organosilicon Reactions.

MMERMEYER, Lucille Marie (Miss), Prof. in Nursing; Asst. n, Schl. of Nursing, Boston Univ., Schl. of Nursing, 264 Bay State Rd., Boston 15, Mass. Home Add.: 15 Wallace St., Newton Highlands, Mass. MICROBIOLOGY IN NURSING. b. Schenectady, N. Y., Apr. 3, 1913. d. August and Louise (Schwentker) S. Edn.: R.N., Schenectady Hosp. Assn. Training Schl. for Nurses, 1933; B.S., Russell Sage Coll., 1937; Ed.M., Boston Univ., 1944. Exp.: Sci. Instr., Ellis Hosp., Schenectady, N. Y., 1937-39; Sci. Instr. and Asst. Prin., New England Bapt. Hosp., Boston, Mass., 1939-43; Instr., Syracuse Univ., 1944-46; Asst. Prof., Univ. of Pittsburgh, 1946-49; In Chg. Nursing, Rsch. Lab., Communicable Disease Ctr., U. S. Pub. Health Serv., 1949-53; Asst. Prof., Boston Univ., Schl. of Nursing, 1953-54; Assoc.



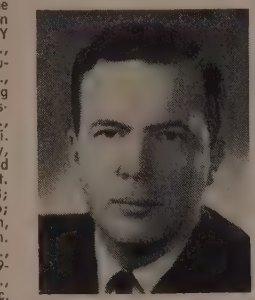
f. of Nursing, ibid., 1954-57; Asst. Dean, ibid., 1957-59; f. of Nursing, ibid., 1959—. Mem.: Pi Lambda Theta; Sigma ta Tau. Contbr. to: Nursing Rsch.; Jour. of Applied Micro-l.; Nursing Outlook. Author: Laboratory Manual and Study de in Microbiology for Nurses, 1956, 1960. Co-Author: Micro-logy for Nurses, 1956, 1960; Microbiology and Pathology for rses, 1956, 1960. Areas of Rsch.: Disinfection of Clinical rmometers; Disinfection and Sterilization, Microbiology Re-ed to Nursing Practice.

NDEL, Bess Seltzer (Ph.D.), Profl. Lectr., Communication, v. of Chicago, Chicago 37, Ill. Home Add.: 2052 Lincoln W., Chicago 14, Ill. BEHAVIORAL SCIENCE. b. Chicago, d. Simon Seltzer and Rose (Glueck) S. Edn.: Ph.B., v. of Chicago, 1931; Ph.D., ibid., 1938. m. Dr. Herman Sondel, Sept. 1, 1915. c.: Mrs. Shirley Ann Krueger. .: Consult. in Commn., Indus. Relations Ctr., Univ. of cago, 1950-55; ibid., Albert Ramond and Assocs., Inc., cago, Ill., 1955-57; Consult. in Commn., Univ. of Chicago, 57-59; Profl. Lectr., Commn., Univ. of Chicago, 1959—. Hon. .: Edn. Comm., Mayor's Comn. on Human Relations, 1955—; gislative Assembly, Speech Assn. of Am., 1955-58; Coun. tl. Soc. for the Study of Comn., 1959—. Mem.: Am. Assn. the Adv. of Sci.; Adult Edn. Soc. of Greater Chicago. thor: Are You Telling Them, 1947; Speak Up, A New proach to Communication, 1942, 1946, 1947; Communication, Field Theory, 1958; Everyday Speech, 1950; The Humanity Words, 1958. Contbr. to: Jour. of N.S.S.C.; Symposium ue; Guest Editor, Chicago Tribune. Areas of Rsch.: Sematics; ld Theory of Communication; Relation of Communication eory to More Exact Sciences (Physical, Biological).

NNICHSEN, Harold M. (Ph.D.), Dir. of Fiber and Saturant ch., Dewey and Almy Chem. Div. of W. R. Grace and , 62 Whittemore Ave., Cambridge 40, Mass. Home Add.: Robin Hood Rd., Arlington 74, Mass. ORGANIC CHEMISTRY-LYMER CHEMISTRY. b. Hancock, Minn., Apr. 4, 1912. s. nry Matthew and Mary (Hults) S. Edn.: A.B., Tex. Western iv., 1934; M.S., Harvard Engrng. Schl., 1935; Ph.D., Harvard iv., 1939. m. Thelma Lowenberg, Mar. 11, 1939. c.: san Elizabeth; Harold Eric. Exp.: Chemist, E. I. DuPont Nemours, Electrochem. Div., Niagara Falls, N. Y., 1939-; Grp. Leader, ibid., 1940-44; Techn. Serv. Mgr., Permacel v. of Johnson and Johnson, New Brunswick, N. J., 1944-; Asst. Tech. Dir., Permacel., ibid., 1948-52; Techn. Dir., d., 1952-55; Vice Pres., ibid., 1955-60; Dir. of Fiber and turant Rsch., Dewey and Almy, 1960—. Mem.: Am. Chem. c.; Am. Assn. for the Adv. of Sci.; Sigma Xi; N. Y. Acad. Sci.; Assn. of Rsch. Dirs.; Fellow, Am. Inst. of Chemists; pha Chi Sigma; Chemists Club. Areas of Rsch.: Polymers, hesives, Electrical Insulation Paper and Paper Saturation, essure Sensitive Tape; Technology of Coating and Laminating.

ONPAA, Henn H. (Ph.D.), Sr. Rsch. Scientist at Honeywell search Center, Hopkins, Minnesota. Home Add.: 6458 Westchester Circle, Minneapolis 27, Minn. SOLID STATE PHYSICS. b. Tallinn-Nomme, Estonia, Mar. 18, 1930. s. Karl Johannes and Antonie (Adamson) S. Edn.: Univ. of Tuebingen; B.A., Concordia Coll., 1951; M.A., Univ. of Ore., 1953; Ph.D., Wayne St. Univ., 1955. m. Eunice Marie Refsell, June, 1959. c.: Nancy Jo Ann. Exp.: Rsch. Fellow, Ia. St. Univ., Ames, Ia., 1956-57; Sr. Scientist, General Mills, Inc., Mpls., Minn., 1957-58; Assoc. Prof., Gustavus Adolphus Coll., St. Peter, Minn., 1958-59; Prin. Scientist, General Mills, Inc., Electronics Group, Minneapolis, Minn., 1959-62; Sr. Research Scientist, Honeywell Research Center, 1962—. Mem.: Am. Physical Soc.; Am. Inst. of Phys-; A.A.A.S.; Am. Assn. of Phys. Tchrs.; Pi Kappa Delta; Phi mbda Upsilon; Sigma Xi. Contbr. to: Internatl. Jour. of ysics and Chem. of Solids; Jour. of Applied Physics. Serv. c.: A.U.S., 1954-56. Areas of Rsch.: Solid State Physics; ansport Phenomena in Solids; Thermoelectricity.

SORENSEN, Robert C. (Ph.D.), Vice Pres. and Dir. of Rsch., D'Arcy Advtng. Co., 430 Pk. Ave., N. Y. 22, N. Y. Home Add.: 210 E. 72nd St., N. Y. 21, N. Y. SOCIOLOGY AND MASS COMMUNICATIONS. b. Lincoln, Nebr., Sept. 7, 1923. s. Christian A. and Annis S. (Chaikin) S. Edn.: A.B., Univ. of Chicago, 1944; M.A., ibid., 1948; Ph.D., ibid., 1954. m. Marjorie J. Mattson, Sept. 11, 1943. c.: Robert Christian; Arthur; Katherine Maren. Exp.: Dir. of Rsch., United Newspapers Mag. Corp., New York City, 1959-61; Dir. of Audience Research, Radio Free Europe, Munich, Germany, 1954-59; Operations Analyst, The Johns Hopkins Univ., Operations Rsch. Office, Wash., D. C., 1952-54; Asst. Prof. of Law, Univ. of Neb., Lincoln, Neb., 1948-52; Vice Pres. and Dir. of Rsch., D'Arcy Advtng. Co., 1962—. Hon. Pos.: Vice Chmn. of Techn. Comm., Advtng. Rsch. Fdtn. Mem.: Fellow, Am. Sociol. Soc.; Mem., Am. Soc. for Publ. Opinion Rsch.; Am. Mktng. Assn.; Am. Assn. for the Adv. of Sci.; Soc. for the Psychol. Study of Social Issues; Overseas Press Club; Mem. of Bd. of Dirs., Foster Parents Plan, Inc. Contbr. to: Jour. of Mktng.; N. Y. Univ. Law Rev.; Cornell Law Jour.; Mediascope; Journalism Quart.; Jour. of Criminal Law; Criminol. and Police Sci.; Am. Sociol. Rev. Gen. Int.: Consult. to Wide Variety of Communications Organs. and Legal Firms on Application of Communications and Marketing Problems to Public Affairs and Legal Problems. Areas of Rsch.: Communications Effectiveness; Political Warfare; Law and Behavioral Sciences; Advertising Research.



SORROWS, Howard Earle (Ph.D.), Dir., Technical Intelligence and Development, Corporate Rsch. and Engrng., Tex. Instruments, Inc., P. O. Box 5474, Dallas 22, Tex. Home Add.: 6431 Prestoncrest Lane, Dallas, Tex. PHYSICS. b. Hewitt, Tex., Aug. 10, 1918. s. George Jefferson and Lillian Grace (Gregory) S. Edn.: B.A., Baylor Univ., 1940; M.A., George Washington Univ., 1947; Ph.D., Catholic Univ. of Am., 1958. m. Martha Jane Summerville, Dec. 10, 1943. c.: Mary Margaret; Carolyn Clare; Joyce Jean; Lynn Louise. Exp.: Supvng. Electronic Scientist and Consultant, Natl. Bur. of Standards, Wash., D. C., 1941-53; Proj. Officer and Solid State and Supvry. Physicist, Office of Naval Rsch., Wash., D. C., 1953-59; Dir., Tech. Intelligence and Develop., Tex. Instruments, Inc., Dallas, Tex., 1959—. Hon. Pos.: Chmn., Papers and Meetings Committee, Dallas Sect., I.R.E.; Exec. Secy., Solid State Advisory Panel; Secy., Prog. Comm., Second Internatl. Conf. on Photoconductivity; Vice-Chmn., Wash., D. C., Chapt., Profl. Group on Electron Devices, I.R.E. Mem.: Am. Physical Soc.; Inst. of Radio Engrs.; A.A.A.S.; Am. Inst. of Electrical Engrs.; Am. Men of Sci.; Sigma Pi Sigma; Sigma Xi. Contbr. to: Proc. of Internatl. Conf. on Solid State Physics in Electronics and Telecommunications; Proc. I.R.E.; Natl. Bur. of Stds. Jour.; Am. Physical Soc. Jour.; A.I.E.E. Pamphlet. Areas of Rsch.: Solid State Physics; Surface Physics; Photoconductivity; Electromagnetic Measurements; Microwave Physics; Physical Electronics; Electronic Systems; Rsch. Planning and Mgmt.

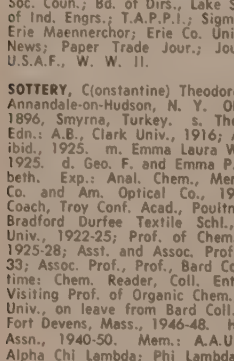
SORREL, William Edwin (M.D.), Psychiatrist and Educator, 263 W. End Ave., N. Y. City, N. Y. Home Add.: 23 Meadow Rd., Scarsdale, N. Y. PSYCHIATRY AND PSYCHOANALYSIS. b. N. Y., N. Y., May 27, 1913. s. Simon and Lee (Lesenger) S. Edn.: B.S., N. Y. Univ. 1932; M.A., Columbia Univ., 1934; M.D., Middlesex Univ., 1939; Postgrad. Training in Psychoanalysis and Psychotherapy, Postgrad. Ctr. for Psychotherapy, N. Y. C., 1944-46. m. Rita Marcus, 1950. c.: Ellyn Gail; Joy Shelley; Beth Mara. Exp.: Intern, Madison, Tenn. Sanit. and Hosp., 1939; Res. Physn., Alexian Bros. Hosp., St. Louis, Mo., 1940; Instrn., St. Louis Univ., Schl. of Med., St. Louis, Mo., 1940-41; Asst. Psychiat., Cent. State Hosp., Nashville, Tenn., 1941-42; Assoc. Psychiat., Eastern State Hosp., Knoxville, Tenn., 1942-44; Assoc. Attend. Neuropsychiat. and Chf. of Clin. Psychiat., Jewish Mem. Hosp., N. Y. City, 1945-59; Assoc. Attend. Psychiat. and Chf. of Child Psychiat., Lebanon Hosp., N. Y., Bronx, 1947-62; Visit. Psychiat., Fordham Hosp., N. Y., 1951; Assoc. Att. Psychiat., Beth David Hosp., N. Y. City, 1950-58; Assoc. Attend. Psychiat., Seton Hosp., N. Y., 1955-56; Psychiat. in Chf., Beth Abraham Hosp., N. Y., 1954-58; Psychiat. Consult., L. I. Univ. Guid. Ctr., 1955-57; Attend.

Psychiat., Gracie Square Hosp., 1959-62; Psychiat. in Chf., Yeshiva Univ., Psychiat. Clinic, 1950-61; Assoc. Psychiat., Morrisania City Hosp., N. Y., 1959—; Assoc. Attend. Psychiat., Grand Cent. Hosp., N. Y. City, 1958—; Asst. Prof., Psychiat., Yeshiva Univ., 1952-54; Assoc. Prof., ibid., 1954-58; Prof., ibid., 1959-61; Visit, Prof. of Psychiat., Hebrew Univ., Jerusalem, Israel, 1960; Psychiat. and Educator, N. Y. City, 1945—. Hon. Pos.: Delegate to Internatl. Congress on Ment. Hlth., London, England, 1948; N. Y. City Chmn., Comm. for Med. Stands. in Psychiat., 1952; Pres., Bronx Soc. of Neurol. and Psychiat., 1960; Pres., Am. Psychiat. Assn., Dist. Br., 1960-61; Vice Pres., Golden Years Fdtn. for Senior Citizens, 1961-62. Mem.: Fellow, Am. Psychiat. Assn.; Fellow, Am. Soc. of Psychoanalyt. Physns.; Fellow, Assn. for the Adv. of Psychotherapy; Fellow, Am. Acad. of Psychotherapy; A.M.A.; N. Y. State and Co. Med. Socs.; N. Y. Soc. for Clin. Psychiat.; Assn. for Rsch. in Nervous and Mental Dis.; Eastern Psychiat. Rsch. Assn.; Am. Assn. of Univ. Profs.; Am. Med. Writers Assn. Author: Neurosis in a Child, 1949; A Psychiatrist Views Child Adoption, 1954; Shock Therapy in Psychiatric Practice, 1957; The Schizophrenic Process, 1962.

SOTH, Roger Michael (Mr.), Registered Profl. Engr., Mgr., Industrial Engrng., Hammermill Paper Co., East Lake Rd., Erie, Pa. Home Add.: 5350 Wolf Rd., Erie, Pa. INDUSTRIAL ENGINEERING. b. Erie, Pa., June 19, 1922. s. Oscar Michael and Eleanor (Lamb). S. Edn.: Attended Wash. and Lee Univ., 1942; B.S., Pa. St. Univ., 1948. m. Mary Lee Crawford, July 10, 1943. c.: Perrie Marshall; Michael Lee. Exp.: Cost Acct., Hammermill Paper Co., Erie, Pa., 1948-50; Eval. Engr., ibid., 1950-53; Systems Engr., ibid., 1953-55; Ind. Engr., ibid., 1955-57; Hd., Stds. Sect., ibid., 1957-60; Mgr., Ind. Engrng., ibid., 1960—. Hon. Pos.: Co-founder, Vice-Pres., Pres., Dir., Erie Chapt., A.I.I.E.,; Dir. of Membership, Northeastern Region, A.I.I.E.; Regional Vice-Pres., A.I.I.E., 1960-62; Bd. of Trustees, Vice-Pres. of Administration, A.I.I.E., 1962-64; Treas., Vice-Pres., Pres., Erie Engrng. Soc. Coun.; Bd. of Dirs., Lake Shore Civic Assn. Mem.: Am. Inst. of Ind. Engrs.; T.A.P.P.I.; Sigma Chi; Erie Aviation Country Club; Erie Maennerchor; Erie Co. United Fund. Contbr. to: Paper Mill News; Paper Trade Jour.; Jour. of Ind. Engrng. Serv. Rec.: U.S.A.F., W. W. II.

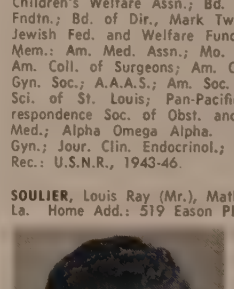
SOTTERY, C(onstantine) Theodore (Ph.D.), Prof. Chem., Bard Coll., Annandale-on-Hudson, N. Y. ORGANIC CHEMISTRY. b. July 30, 1896, Smyrna, Turkey. s. Theodore S. and Sophia (Merika) S. Edn.: A.B., Clark Univ., 1916; A.M., Columbia Univ., 1923; Ph.D., ibid., 1925. m. Emma Laura Walter of Guilford, Conn., Aug. 29, 1925. d. Geo. F. and Emma P. c.: Theodore Walter; Ann Elizabeth. Exp.: Anal. Chem., Merrimac Chem. Co., Wyman Gordon Co. and Am. Optical Co., 1916-17; Sci. Master and Athletic Coach, Troy Conf. Acad., Poultney, Vt., 1917-18; Instr. in Chem., Bradford Durfee Textile Schl., 1919-22; Lab. Instr., Columbia Univ., 1922-25; Prof. of Chem., Albright Coll., Myerstown, Pa., 1925-28; Asst. and Assoc. Prof. Chem., St. Stephens Coll., 1928-33; Assoc. Prof., Prof., Bard Coll., Columbia Univ., 1934—. Part-time: Chem. Reader, Coll. Entrance Examination Bd., 1930-32; Visiting Prof. of Organic Chem., Summer Session, 1943, Columbia Univ., on leave from Bard Coll.; Prof. of Chem., Univ. of Mass., Fort Devens, Mass., 1946-48. Hon. Pos.: Pres., Red Hook Nursing Assn., 1940-50. Mem.: A.A.U.P.; A.A.A.S.; A.C.S.; N.E.A.C.T.; Alpha Chi Lambda; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. of A.C.S.; Jour. of Biog. Chem. Ph.D. Dissertation: The Study of the Accelerating Effects of Glucose on Invertase from Honey. War Record: 47th Signal Serv. Co., Signal Serv. Co., Signal Corps, U. S. A., Univ. of Vt., W.W. I. Hobbies: Old Houses; Antique Furniture Refinishing. Listed in: A.M.S.; W. W. in the East; Biog. Encyc. of the World; Chem. Who's Who; Who Knows—and What; Ldrs. in Am. Edn.

SOUDER, Wilmer (Ph.D.), Consultant. Home Add.: 3503 Morrison St., Wash. 15, D. C. EXAMINATION OF QUESTIONED DOCUMENTS (HANDWRITING, TYPEWRITING, ERASURES, SUBSTITUTIONS, ETC.). b. Salem, Ind., 1884. s. Charles and Elizabeth (Newlon) S. Edn.: A.B., Ind. Univ., 1910; A.M., ibid., 1911; Ph.D., Univ. of Chicago, 1916. m. Lillie Martin, 1908. c.: Mrs. Martha Ella S. Leser. Exp.: Asst. in Physics, Univ. of Ind., 1908-11; Asst. in Physics, Univ. of Chicago, 1913-16; Physicist, Sect. Chf., Div. Chf., Consultant, Natl. Bur. of Standards, Wash., D. C., 1911-13, 1916-61. Hon. Pos.: Pres., Int. Assn. for Dental Rsch. Mem.: Dist. of Columbia Dental Soc.; Am. Dental Assn.; Am. Coll. of Dentists; Columbia Dental Study Club; Am. Chem. Soc.; Am. Physical Soc.; Int. Assn. Chfs. of Police; Int. Assn. for Identification; Sigma Xi; A.A.A.S.; Cosmos Club; Mason. Author: Physical Properties of Dental Materials 1940. Contbr. to: Jour.; D. C. Dental Soc.; Jour. Am. Dental Assn.; Am. Coll. of Dentists Jour.; Jour. of Columbia Dental Study Club; A.A.A.S. Jour. of Am. Physical Soc.; Jour. Int. Assn. for Dental Rsch.; Jour. of Int. Assn. Chfs. of Police; Jour. of Int. Assn. for Identification. Gen. Int.: U. S. Dept. of Commerce Award for Meritorious Serv.; Ind. Univ. Distinguished Alumni Serv. Award; Loaned to State of N. J. as Consultant in Lindbergh Case; Testified for the State of N. J. in Trial of Hauptmann.

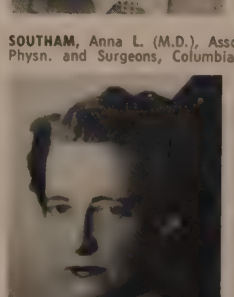


SOULE, Samuel David (M.D.), Assoc. Prof. of Clin. Obstetrics and Gynecology, Wash. Univ. Schl. of Med., St. Louis, Mo. Home Add.: 1152 Center Dr., St. Louis 17, Mo. GYNECOLOGY - OBSTETRICS. b. St. Louis, Mo., Feb. 27, 1904. s. Nathan M. and Sarah (Schucart) S. Edn.: M.D., Wash. Univ., 1928. m. Selma Hommel, Sept., 1935. c.: Oscar H. Exp.: Asst. in Obst. and Gyn., Wash. Univ. Schl. of Med., St. Louis, Mo., 1931-34; Instr. in Clinical Obst. and Gyn., ibid., 1934-42; Asst. Prof. of Clinical Obst. and Gyn., ibid., 1942; Co-Hd. Dept. of Obst. and Gyn., Jewish Hosp., St. Louis, Mo., 1942-52; Assoc. Prof. of Clin. Obst. and Gyn., Wash. Univ. Schl. of Med., St. Louis, Mo., 1951—; Sr. Obst. and Gyn., Jewish Hosp., St. Louis, Mo., 1953; Assoc. Gyn. to St. Louis Children's Hosp., Mo., 1953; Pres., Med. Staff, Jewish Hosp., St. Louis, Mo., 1955-57. Hon. Pos.: Program Comm., ACOG Dist. VII, 1959; Annual Prize Award Comm., Central Assn. of Obst.-Gyn., Chmn., 1960-61; Comm. to Study Tissue Comm. Decisions, A.C.O.G., 1960-61; Bd. of Dir., Jewish Federation of St. Louis; Bd. of Dir., Jewish Children's Welfare Assn.; Bd. of Dir., St. Louis Children's Rsch. Fndtn.; Bd. of Dir., Mark Twain Summer Inst., 1958-60; Coun., Jewish Fed. and Welfare Funds, Natl. Comm. Leadership Devel. Mem.: Am. Med. Assn.; Mo. Med. Assn.; St. Louis Med. Soc.; Am. Coll. of Surgeons; Am. Coll. of Obst. and Gyn.; St. Louis Gyn. Soc.; A.A.A.S.; Am. Soc. for Study of Infertility; Acad. of Sci. of St. Louis; Pan-Pacific Surgical Assn.; Internatl. Correspondence Soc. of Obst. and Gyn.; Soc. for Exptl. Biol. and Med.; Alpha Omega Alpha. Contbr. to: Am. Jour. Obst. and Gyn.; Jour. Clin. Endocrinol.; Jour. Mo. State Med. Assn. Serv. Rec.: U.S.N.R., 1943-46.

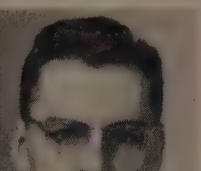
SOULIER, Louis Ray (Mr.), Math. Tchr., Lee Jr. H. Schl., Monroe, La. Home Add.: 519 Eason Pl., Monroe, La. PHYSICS. b. Hermitage, La., July 14, 1927. s. Pierre Nicholas and Lelia (Lejeune) S. Edn.: B.S., Northeast La. State Coll., 1961. m. Carla-Beth McKenzie, June, 1951. Exp.: Draftsman, Ford, Bacon and Davis, Monroe, La., 1951-53; Engr., Columbia Carbon Co., Monroe, La., 1953-60; Tchr., Lee Jr. H. Schl., Monroe, La., 1961—. Mem.: Natl. Coun. for Tchrs. of Math.; Northeast La. Math. Tchrs. Assn.; A.A.A.S.; La. Tchrs. Assn.; Monroe City Tchrs. Assn.; Classroom Tchrs. Assn.; Kappa Alpha. Serv. Rec.: U. S. Navy, 1945-46. Areas of Rsch.: Math. Education.



SOUTHAM, Anna L. (M.D.), Assoc. Prof., Obst. and Gyn., Coll. of Physn. and Surgeons, Columbia Univ., 630 W. 168th St., N. Y. 32, N. Y. Home Add.: 50 Orchard Rd., Demarest, N. J. OBSTETRICS AND GYNECOLOGY. b. Bonner Co., Idaho, Nov. 14, 1915. d. Peter Skow and Josephine (Lawrence) S. Edn.: B.S., Univ. of Idaho, 1942; M.D., Coll. of Phys. and Surgeons, Columbia Univ., 1947. m. Dr. Chester Southam, 1939. c.: Lawrence; Lenore; Arthur. Exp.: Instr., Coll. Phys. and Surg., Presby. Hosp. Coll., N. Y. City, 1954-56; Asst., ibid., 1954-56; Asst. Prof. and Asst. Attend., ibid., 1956-59; Assoc. Prof. and Assoc. Attend., Columbia Univ., ibid., 1959—. Mem.: Am. Soc. for Study of Sterility; Am. Coll. Obst. and Gyn.; Diplomate, Am. B. Obst. and Gynec. Author-Co-author: Human Infertility, 1958. Contbr. to: Fertil. and Steril.; Am. Jour. Obst. and Gynec.; Ann. N. Y. Acad. Sci.; Jour. Infert. and Steril.; Clin. Obst. and Gynec. Areas of Rsch.: Reproductive Physiology and Fertility.

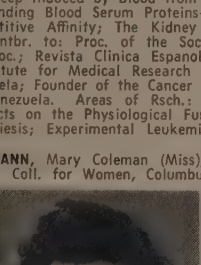


UTHWICK, Charles Henry (Ph.D.), Assoc. Prof. of Pathobiology, hns Hopkins Univ., Baltimore 5, Md. Home Add.: 6724 Glenkirk Rd., Baltimore 12, Md. ZOOLOGY, ECOLOGY. b. Wooster, Ohio, Aug. 28, 1928. s. Arthur F. and Faye (Motz) S. Edn.: B.A., Coll. of Wooster, 1949; M.S., Univ. of Wis., 1951; Ph.D., ibid., 1953. m. Heather Beck, July, 1952. c.: Steven Beck; Karen Leslie. Exp.: Asst. Prof. of Biol., Hamilton Coll., Clinton, N. Y., 1953-54; N.S.F. Post Doc. Fellow, Oxford Univ., Oxford, England, 1954-55; Asst. Prof. of Zool., Ohio Univ., Athens, Ohio, 1955-60; Assoc. Prof. Zool., ibid., 1960-61; Assoc. Prof. of Pathobiology, Johns Hopkins Univ., Baltimore, Md., 1961—. Hon. Pos.: Chmn., Liaison Comm. SABS, Ecological Soc. of Am.; Mem., NAS-NRC Primate Comm. Mem.: Phi Beta Kappa; gma Xi; Am. Soc. of Zoologists; A.A.A.S.; Am. Soc. of Mamalogists; Acad. of Zool.; Ecological Soc. of Am. Contbr. to: natomical Record; Bull. of Ecological Soc. of Am.; Ecology; ur. of Mammalogy; Proc. Zoological Soc. of London; Proc. of n. Philosophical Soc.; Am. Zoologist; Jour. of Wildlife Manageent. Gen. Int.: Biological Field Expeditions to Panama, Africa d India, 1951, 1955, 1959, 1960. Areas of Rsch.: Vertebrate pulation Dynamics, Primate Social Behavior.



UTO, Jose (M.D.), Prof. Scientist, Univ. of Tenn., Atomic ergy Commission, Oak Ridge, Tenn. Home Add.: 109 Evans Lane, Oak Ridge, Tenn. PHYSIOLOGY; CANCER RESEARCH. b. La Guardia, Spain, Sept. 9, 1913. s. Jose Souto and Consuelo Candeira S. Edn.: M.D., Univ. of Madrid, Spain, 1939. m. Maria-Dolores Boixados, 1946. c.: Bunderlai; Islara; Ersaid. Exp.: Asst. Doctor, Physiol. Dept., Univ. Halle, Germany, 1941-42; Assoc. Dir., Dept. Physiol., Univ. of Madrid, Spain, 1942-50; Prof., Physiol., Univ. Los Andes, Med. Schl., Venezuela, 1950-53; Dir., Inst. of Med. Rsch., ibid., 1950-53; Prof. Physiol., Cent. Univ., Venezuela, 1953-58; Assoc. Scientist, Univ. of Tenn., Atomic Energy Commission, 1958-62; Prof., Radiol. Physiol., ibid., 1962—. Hon. Pos.: Chmn., Dept. of Physiol., Univ. Los Andes, Venezuela; Chmn., Department of Physiology, ntral University, Venezuela. Mem.: A.A.A.S.; Am. Chemi- Soc.; Biol. Chemistry Soc.; Gerontology Soc.; Text Book of ysiology, as Lectured: Effect of Halogenated Aromatic Hydrobons on Proteins of Rat Tissues; Hematological Response in eep Induced by Blood from Irradiated Animals; Kinetics of the nding Blood Serum Proteins-Copper in the Presence of a Comtitive Affinity; The Kidney and the Blood Sugar Regulation. ntbr. to: Proc. of the Soc. for Exptl. Med. and Biol.; Fed. oc.; Revista Clinica Espanola. Gen. Int.: Founder of the Intute for Medical Research of the Univ. of Los Andes, Venela; Founder of the Cancer Chemotherapy Program, Cent. Univ., nezuela. Areas of Rsch.: Protein Metabolism; Radiation Efcts on the Physiological Functions; Cancer Metabolism; Leucoiesis; Experimental Leukemia; Cancer Chemotherapy.

ANN, Mary Coleman (Miss), Asst. Dean of Instruction, Miss. Coll. for Women, Columbus, Miss. Home Add.: Pelahatchie, Miss. BOTANY, BACTERIOLOGY. b. Pelahatchie, Miss., Jan. 26, 1915. d. Hal Hodges and Willie Belle (Lockwood) S. Edn.: M.Ed., Miss. Coll., 1958; B.S., Miss. St. Coll. for Women, 1937. Exp.: Lab. Tech., Johnson Clinic, Pelahatchie, Miss., 1950-57; Instr., Miss. St. Coll. for Women, Columbus, Miss., 1958-60; Asst. Dean of Instrn., ibid., 1960—. Mem.: A.A.A.S.; A.A.U.W.; A.A.-U.P.; N.E.A.; M.E.A.; Ala. Assn. Med. Tech.; Great Books Found.; Beta Beta Beta; Alpha Epsilon Delta; Pi Tau Chi; Miss. Acad. of Sci. Areas of Rsch.: Microbiology of Sewage Disposal Ponds; Amoebiasis; Endemic Typhus Fever.

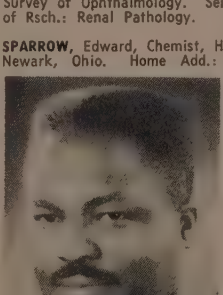


WMAN, Harold Gene (Ph.D.), Project Ldr., Nuclear Materials, M Co., St. Paul, Minn. Home Add.: 2591 Southlawn Dr., St. ul 9, Minn. CERAMICS. b. Murphysboro, Ill., July 21, 1923. Harold Thomas S. and Thelma (Crombar) Heisner; Daniel Patk. Edn.: B.S., Univ. of Ill., 1948; M.S., ibid., 1949; Ph.D., d., 1951. m. Gladys May Wright, Dec. 8, 1945. c.: Letitia n; Daniel Patrick. Exp.: Assoc. Ceramist, Titanium Alloy, vision of the National Lead Company, Niagara Falls, New rk, 1951-52; Rsch. Assoc., Knolls Atomic Power Laboratory, General Electric Company, Schenectady, N. Y., 1952-57; Ceramist, Atomic Power Equipment Dept., ibid., 1957; Materials Lab. Supvr., Nuclear Rsch., Central Rsch. Lab., Minn. Mining & Mfg. Co., St. Paul, Minn., 1957-60; Project Ldr., Nuclear Materials, 3 M Co., 1960—. Mem.: Am. Ceramic Soc.; Sigma Xi. Contbr. to: Jour. Am. Ceramic Soc.; Bull. Am. Ceramic Soc. War Record: Army of U. S., 1943-46. Areas of Rsch.: High Temperature Materials; Rsch. and Dev. on Refractory Coatings and Bodies, Especially Referring to the Dev. of High Temperature Components for Nuclear Reactors.

SPARBERG, Esther Braun (Ed.D.), Instr. of Chem., Hofstra Coll., Hempstead, N. Y. Home Add.: 25 Emerson Dr., Great Neck, N. Y. CHEMISTRY, HISTORY OF SCIENCE. b. New York, N. Y., June 17, 1922. d. Abraham Braun and Sarah (Kurnick) B. Edn.: B.S., Chem., Univ. of N. C., 1943; M.A., Columbia Univ., 1945; Ed.D., ibid., 1958. m. Lester Sparberg, Dec. 31, 1944. c.: Andrew; Alice. Exp.: Chemist, Interchem. Corp., N. Y., 1943; Techn., Rockefeller Inst. for Med. Rsch., N. Y., 1943-44; Chem. Tchr., Julia Richman H. S., New York, 1946-47; Rsch. Fellow, Tchrs. Coll., Columbia Univ., 1957-58; Instr. of Chem. and Natl. Sci., Hofstra Coll., Hempstead, N. Y., 1959—. Mem.: Am. Assn. for the Adv. of Sci.; History of Science Soc.; Am. Chem. Soc.; Kappa Delta Pi; Pi Lambda Theta. Contbr. to: Jour. Clin. Inves. Areas of Rsch.: History of Science.

SPARGO, Benjamin H. (M.D.), Assoc. Prof. of Pathology, Univ. of Chicago, 950 East 59th St., Chicago 37, Ill. Home Add.: 8631 University Ave., Chicago, Ill. PATHOLOGY. b. Six Mile Run, Pa., Aug. 11, 1919. s. Benjamin and Lillian (Rankin) S. Edn.: B.S., Univ. of Chicago, 1948; M.S., ibid., 1952; M.D., ibid., 1952. m. Barbara Scollard, Mar., 1942. c.: Janet; Patricia. Exp.: Instr. to Assoc. Prof., Dept. of Pathol., Univ. of Chicago, Chicago, Ill., 1954—. Hon. Pos.: Mem. Adv. Comm., Coun. on Clin. Chem., A.S.C.P.; Mem. Pathol. Study Sec. Mem.: Chicago Pathol. Soc.; Central Soc. for Clin. Rsch.; Soc. for Exptl. Biol. and Med.; A.A.A.S.; Am. Soc. for Exptl. Pathol.; Midwest Soc. of Electron Microscopists; Am. Assn. of Pathols. and Bacteriol.; Electron Microscope Soc. of Am.; Phi Beta Kappa; Sigma Xi; Alpha Omega Alpha. Contbr. to: Jour. of Natl. Cancer Inst.; Jour. of Lab. and Clin. Med.; Fed. Proc.; Transactions; Annals of N. Y. Acad. of Physicians; Circulation; Arch. of Pathol.; Annals of N. Y. Acad. of Sci.; Med. Clinics of No. Am.; Jour. of Investigative Dermatology; Jour. of Am. Med. Assn.; Am. Jour. of Path.; Proc. of 13th Annual Conf. on Nephrotic Syndrome; Survey of Ophthalmology. Serv. Rec.: U.S.A.F., 1941-46. Areas of Rsch.: Renal Pathology.

SPARROW, Edward, Chemist, Health Annex, U. S. Air Force Sta., Newark, Ohio. Home Add.: P. O. Box 745, Newark, Ohio. CHEMISTRY. b. Franklin, La., Mar. 11, 1922. s. Adam and Evelyn (Ambrose) S. Edn.: B.S., Xavier Univ., 1949; M.S., ibid., 1954. m. Juanita Childress Meade, Oct., 1957. Exp.: Chemist, Naval Supply Center, U. S. Naval Sta., Norfolk, Va., 1955-62; Chemist, Health Annex, U. S. Air Force, 1962—; Gen. Inorganic Chemistry Instr., Virginia State Coll., Norfolk Div., evening, 1960-61. Mem.: Am. Chem. Soc.; Am. Soc. for Test and Material; A.A.-A.S.; Omega Psi Phi. Contbr. to: Jour. Am. Chem. Soc. Serv. Rec.: A.U.S., 1943-45. Areas of Rsch.: Analytical Chemistry (Petroleum Testing); Organic Synthesis of Organic and Organometallic Compounds.

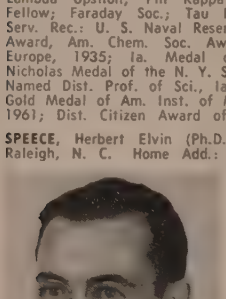


SPAWN, Gerald Bishop (Ph.D.), Prof., Head, Entomol.-Zool. Dept., S. D. St. Coll., Brookings, S. D. Home Add.: 1101 2nd St., Brookings, S. D. ENTOMOLOGY; ZOOLOGY; WILDLIFE TECHNIQUES AND CONSERVATION. b. Chester, S. D., Dec. 6, 1907. s. Charles Earl and Josephine (Nattrass) S. Edn.: B.S., S. D. St. Coll., 1931; M.S., ibid., 1933; Ph.D., Ia. State Univ., 1941. m. Erma Robar, Aug. 28, 1929. c.: Gerald Wesley; Donald Robar. Exp.: Jr. Refuge Mgr., U. S. Fish and Wildlife Serv., Mound City, Mo., 1935-38; Instr. to Assoc. Prof., S. D. State Coll., 1938-53; Prof., Head, Entomol.-Zool. Dept., ibid., 1953—. Mem.: Entomol. Soc. of Am.; A.I.B.S. Assn.; S. D.

Ornithologists Union; Phi Kappa Phi; Alpha Zeta; Gamma Sigma Delta; Kiwanis; Brookings Co. Conservation League; Am. Legion. Contbr. to: Ia. State Univ. Jour. of Sci.; S. D. Farm and Home Rsch. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Grasshoppers and their Control; European Corn Borer and Its Control.

SPEDDING, Frank Harold (Ph.D.), Dir., Inst. for Atomic Rsch. and Ames Lab. of the A.E.C., Ia. State Univ., Box 14-A, Univ. Sta., Ames, Ia. Home Add.: 520 Oliver Circle, Ames, Ia. CHEMISTRY; PHYSICS. b. Hamilton, Ont., Canada, Oct. 22, 1902. s. Howard Leslie and Mary Ann Elizabeth (Marshall) S. Edn.: B. of Ch.E., Univ. of Mich., 1925; M.S., ibid., 1926; Ph.D., Univ. of Calif., 1929. Hon. Degs.: LL.D., Drake Univ., 1946; D.Sc., Univ. of Mich., 1949; D.Sc., Case Inst. of Tech., 1956. m. Ethel Annie MacFarlane, June 21, 1931. c.: Mary Ann Elizabeth. Exp.: Tchng. Asst., Analyt. Chem., Univ. of Mich., 1923-25; Tchng. Fellow, Analyt. Chem., ibid., 1925-26; Tchng. Fellow, Chem., Univ. of Calif., 1926-29; Instr., Chem., ibid., 1929-30; Natl. Rsch. Fellow, Chem., ibid., 1930-32; Instr., Chem., ibid., 1932-34; George Fisher Baker Asst. Prof., Cornell Univ., 1935-37; Assoc. Prof., Phys. Chem., Ia. State Univ., 1937-41; Prof. of Chem., ibid., 1941—; Dir., Atomic Proj., Ia. State Univ., 1942-48; Dir., Inst. for Atomic Rsch., ibid., 1945—; Dir., Ames Lab. of the Atomic Energy Comn., ibid., 1948—; Prof. of Phys., Ia. State Univ., 1950—. Hon. Pos.: Mem. of Bd. of Govs., Argonne Natl. Lab., 1946-48; Mem. of Plutonium Proj. Coun.; Org. and Directed the Chem. Div. of the Plutonium Proj. at Chgo. for Atomic Bomb Rsch., 1942-43; Mem. of Atomic Bomb Comm.; Techn. Repr. for the Atomic Energy Comn. at the Geneva Conf. on Peaceful Uses of Atomic Energy, 1955; Atomic Energy Comn. and St. Dept. Rep. at the 5th World Power Conf. in Vienna, 1956. Mem.: Am. Phys. Soc., Fellow; Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon; Phi Kappa Phi; Am. Assn. Adv. of Sci., Fellow; Faraday Soc.; Tau Beta Pi; Am. Assn. Univ. Profs. Serv. Rec.: U. S. Naval Reserve, 1937-51. Gen. Int.: Langmuir Award, Am. Chem. Soc. Award, 1933; Guggenheim Prof. to Europe, 1935; Ia. Medal of the Am. Chem. Soc., 1948; Nicholas Medal of the N. Y. Sect. of the Am. Chem. Soc., 1952; Named Dist. Prof. of Sci., Ia. St. Univ., 1957; James Douglas Gold Medal of Am. Inst. of Mining, Metall. and Petrol. Engrs., 1961; Dist. Citizen Award of the State of Ia., 1961.

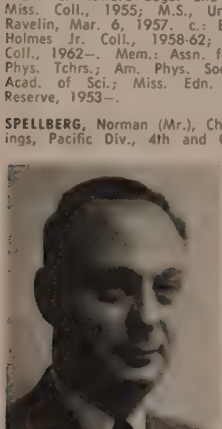
SPEECE, Herbert Elvin (Ph.D.), Assoc. Prof., N. C. St. Coll., Raleigh, N. C. Home Add.: 3408 Wade Ave., Raleigh, N. C.



MATHEMATICS. b. Meadowlands, Minn., Oct. 29, 1914. s. Ray M. and Grace Eva (Lytle) S. Edn.: B.A., York Coll., 1938; M.A., Tex. Christian Univ., 1943; M.S., N. C. St. Coll., 1951; Ph.D., Univ. of N. C., 1956. m. Ruth E. Lowrance, July, 1945. c.: Ray Elvin; Deborah Grace. Exp.: Sci. Tchr., Tivy H. S., Kerrville, Tex., 1946-47; Instr., Trinity Univ., San Antonio, Tex., 1947; Assoc. Prof., N. C. St. Coll., Raleigh, N. C., 1947—; Hd., Maths. and Sci. Edn., ibid., 1962—. Mem.: Am. Mathl. Assn.; A.A.A.S.; N. C. Acad. of Sci.; Natl. Coun. of Tchrs. of Maths.; Kappa Phi Kappa; Pi Mu Epsilon. Serv. Rec.: A.U.S., 1942-45. Gen. Int.: Dir. of N. C. Sci. Talent Search; Dir., NSF-Acad. Inst. in N. C., 1959-62. Areas of Rsch.: Collineations in Non-Riemannian Spaces.

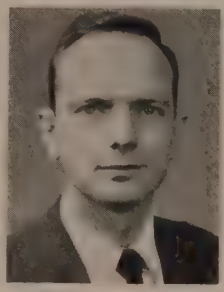
SPELL, William Howard (Mr.), Assoc. Prof. of Physics, Belhaven College, Jackson, Miss. Home Add.: 1058 Whitworth St., Jackson, Miss. SCIENCE EDUCATION. b. Louisville, Ky., Dec. 26, 1934. s. Howard Edgar and Josephine (Trotter) S. Edn.: B.S., Miss. Coll., 1955; M.S., Univ. of Miss., 1961. m. Barbara Ravelin, Mar. 6, 1957. c.: Billy; Jo Anne. Exp.: Phys. Instr., Holmes Jr. Coll., 1958-62; Assoc. Prof. of Phys., Belhaven Coll., 1962—. Mem.: Assn. for the Adv. of Sci.; Am. Assn. of Phys. Tchrs.; Am. Phys. Soc.; Natl. Sci. Tchrs. Assn.; Miss. Acad. of Sci.; Miss. Edn. Assn. Serv. Rec.: U. S. Naval Reserve, 1953—.

SPELLBERG, Norman (Mr.), Chief Chemist, DeSoto Chemical Coatings, Pacific Div., 4th and Cedar Sts., Berkeley, Calif. Home Add.: #1 Parklane Dr., Orinda, Calif. ORGANIC CHEMISTRY, SYNTHETIC RESINS AND COPOLYMERS. b. Chicago, Ill., Apr. 8, 1926. s. Louis and Dora (Rubin) S. Edn.: B.S., Univ. of Ill., 1948. m. Marjorie Francel, Oct. 23, 1954. c.: Geoffrey; Diane. Exp.: Chem., Sherwin Williams Co., Chicago, Ill., 1948-51; Chief Chem., DeSoto Chemical Coatings, Pacific Div., Berkeley, Calif., 1951—. Mem.: Am. Oil Chem. Soc.; Natl. Assn. of Corrosion Engrs.; Am. Assn. for Adv. of Sci.; Federation of Societies for Paint Technology; Psi Chi; Xi Gamma Iota. Serv. Rec.: U.S.A.A.F., 1944-46. Areas of Rsch.: Oil Copolymers; Alkyd Copolymers and Emulsion Polymers and Copolymers.

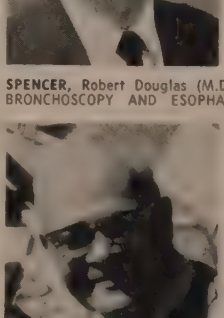


SPENCER, Grace Greenwood (Miss), Assoc. Prof., Chem., Unio Coll., Barbourville, Ky. Home Add.: Payson, Ill. ELECTRO ANALYTICAL CHEMISTRY. b. Pay son, Ill., Aug. 6, 1898. d. Glenn and Esther (Abbott) Edn.: B.S., Univ. of Ill., 1922 M.S., Iowa State Univ., 192 Exp.: Tchr., Chem. and Physics Averyville H. S., Peoria, Ill. 1922; Prin. and Chem. Tchr ibid., 1925-26; Rsch. Chemist Drackett Chem. Co., Cincinnati Ohio, 1926-34; Chemist and Offic Mgr., Tech. Labs., Sears Roebuck Co., Chicago, Ill., 1935-40; Rsch Libr., Solvay Process Co., Syra cuse, N. Y., 1941-42; Instr. Chem., Chicago City Jr. Coll. Chicago, Ill., 1943-52; Instr. Chem., Blackburn Coll., Carl ville, Ill., 1952-53; Lectr Chem., Sou. Ill. Univ., 1954 Instr. of Chem., Wis. State Coll. 1954-55; Head, Dept. of Chem., Hillsdale Coll., Hillsdale, Mich. 1955-59; Assoc. Prof. of Chem., Union Coll., Ky., 1960— Hon. Pos.: Natl. Treas., Iota Sigma Pi. Mem.: Am. Chemica Soc.; Am. Assn. Adv. Sci.; Am. Assn. of Univ. Prof.; Acad. o Polit. Sci.; Am. Acad. of Polit. and Soc. Sci. Hon. Frat. Iota Sigma Pi; Sigma Delta Epsilon. Civic Clubs: Am. Assn Univ. Women. Areas of Rsch.: Electroanalytical.

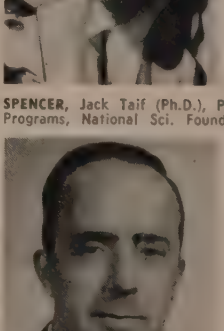
SPENCER, H. Garth, Asst. Prof. of Chem., Clemson Coll., Clem son, S. C. Home Add.: 32A Bradley, Clemson, S. C. PHYSICAL CHEMISTRY. b. Avon Park, Fla. May 19, 1930. s. James E. and Juanita (Adams) S. Edn.: B.S. Univ. of Fla., 1952; M.S., ibid. 1958; Ph.D., ibid., 1959. m. Mary Dean Wilkes, Mar. 30, 1956 c.: Stephen Dale; Susan Gale Exp.: Asst. Prof., Clemson Coll. 1959—. Mem.: Phi Beta Kappa Phi Kappa Phi; Kappa Delta Pi Contbr. to: Jour. Physical Chem. Jour. Polymer Sci.; Jour. Appl. Polymer Sci. Serv. Rec.: U.S.A.F., 1952-54. Areas of Rsch.: Synthetic Membranes, Their Structure, Their Diffusion and Electrical Properties; Kinetics of Cis-trans Isomerization Reactions.



SPENCER, Robert Douglas (M.D.), 31 South 9th St., Ashland, Pa. BRONCHOSCOPY AND ESOPHAGOSCOPIC. b. Kansas City, Mo., Mar. 16, 1889. s. William H. and Emily (Butler) S. Edn.: B.S., Pa. St. Univ., 1911; M.D., Univ. of Pa., 1916. m. Eleanor Becker, Sept. 29, 1945. Exp.: Asst. Bacteriologist, Bur. Agri. Industry, Dept. of Agri., 1911; Instr. in Zool., Pa. St. Univ., 1911-12; Med. Schl., Univ. of Pa., 1912-16; M.D., Pottstown Hosp., 1916, Staff, Philadelphia Gen. Hosp., 1917-18; Pathologist, Ashland St Hosp., 1920-29; General Practice Pvt., 1925—. Mem.: Acad. Natural Sci. of N. Y.; Acad. Natural Sci. of Philadelphia; Am. Assn. Adv. Sci.; Assn. Am. Physicians and Surgeons; Alpha Tau Omega Phi Chi; Rotary. Areas of Rsch.: Bronchoscope.



SPENCER, Jack Taif (Ph.D.), Program Dir., Facilities and Specia Programs, National Sci. Foundation, Wash., D. C. Home Add. 8302 Donnybrook Dr., Chevy Chase 15, Md. BOTANY, GENETICS, AGRONOMY. b. Mantua Ohio, Sept. 23, 1912. s. William Bernard and Margaret France (Taif) S. Edn.: B.S., Kent State Univ., 1935; M.S., Univ. of Wis. 1936; Ph.D., Ohio St. Univ., 1939 m. M. Edith Woolley, Apr., 1934 c.: George Woolley. Exp.: Agent Bur. of Plant Industry, U.S.D.A. Wooster, Ohio, 1936-40; Assoc. Agronomist, Univ. of Ky., Lexington, Ky., 1940-42, 1945-49; Div. Chf., Central Intelligence Agency Wash., D. C., 1949-61; Program Dir., Facilities and Special Programs, Natl. Sci. Found., Wash. D. C., 1961—. Mem.: Wash. Acad. of Sci.; Botanical Soc. of Am. Am. Soc. of Plant Physiologists Am. Gentic. Assn.; A.A.A.S.; Am. Inst. of Biological Scis.; Sigma Xi. Contbr. to: Jour. of Am. Soc. of Agronomy; Jour. of Agric. Rsch. Serv. Rec.: U.S.N.R., 1942-62. Gen. Int.: Citation for Distinguished Service to Sci., Sesquicentennial Celebration o



Kent St. Univ., 1960; Univ. Scholar, Univ. of Wis., 1935-36. Areas of Rsch.: Genetics of Grasses; Evolution; Inter- and Intra-Specific Hybridization; Systematics of Grasses; Management of Forage Plants; Biological and Chemical Warfare.

SPENCER, Roy Clarence (Ph.D.), Mgr., Antenna Rsch., Radio Corp. of Am., Moorestown, N. J. Home Add.: 102 Devon Rd., Riverton, N. J. PHYSICS, ANTENNAS, MICROWAVE OPTICS. b. Pennellville, N. Y., Apr. 14, 1901. s.: Clarence B. and Clarissa (Gillespie) S. Edn.: A.B., Cornell Univ., 1922; Ph.D., Columbia Univ., 1932. m. M. Blanche Wheelwright, 1929. c.: Barbara J.; Dana R. Exp.: Fellow in Astronomy, Swarthmore Coll., 1922-23; Heckscher Rsch. Asst. in X-Rays, Cornell Univ., 1923-24; Fellow in Physics, ibid., 1924-25; Radio Tube Devel. Engr., Westinghouse Lamp Co., Bloomfield, N. J., 1926-27; Instr. in Phys., Columbia Univ., 1927-31; Instr., Univ. of Neb., 1931-34; Asst. Prof., ibid., 1934-41; Assoc. Prof., ibid., 1941; Staff Mem., Radiation Lab., M.I.T., 1941-45; Chf., Antenna Lab., U.S.A.F., Cambridge Rsch. Ctr., Cambridge, Mass., 1946-55; Sr. Engrng. Specialist, Missile Systems Lab., Sylvania Elec. Products, Waltham Labs., Waltham, Mass., 1955-58; Prin. Staff Scientist, The Martin Co., Baltimore, Md., 1958-61; Assoc. Prof. of Physics, Drexel Inst. of Tech., 1960-61; Mgr., Antenna Rsch., Radio Corp. of Am., Moorestown, N. J., 1961—. Hon. Pos.: U. S. Dele. to International Scientific Radio Union (URSI), Sydney, Australia, 1952; The Hague, Netherlands, 1954; Boulder, Colo., 1957. Mem.: Fellow, I.A.A.S.; Fellow, Am. Phys. Soc.; Fellow, I.R.E.; R.E.S.A.; Sigma Xi; Optical Soc. of Am. Contbr. to: Jour. Applied Physics; Jour. Optical Soc.; Physical Rev.; Rev. Scientific Instruments; Sky and Telescope; Proc. I.R.E. and I.R.E. Profl. Group Trans. Gen. Int.: Various Contributions to Microwave Antennas, Microwave Optics and Applied Math. Special Int.: X-ray Spectroscopy; Antennas; Microwave Optics; Applied Math.; Orbits.

SPERANDIO, Glen Joseph (Ph.D.), Prof. of Pharm., Purdue Univ., Lafayette, Ind. Home Add.: 1306 Northwestern Ave., W. Lafayette, Ind. PHARMACY-HOSPITAL PHARMACY-CLINICAL PHARMACY. b. Glen Carbon, Ill., May 8, 1918. s. Henry A. and Marjorie L. (Dunstedter) S. Edn.: B.S., St. Louis Coll. of Pharm. and Scis., 1940; M.S., Purdue Univ., 1947; Ph.D., ibid., 1950. m. Dorys Bell, June 21, 1946. c.: James Glen. Exp.: Chemist, Grove Labs., St. Louis, Mo., 1940-43; Chemist, United Drug Co., St. Louis, Mo., 1943; Dept. Mgr., Wm. R. Warner Labs., ibid., 1943-44; Chemist, Grove Labs., ibid., 1944-46; Instr., Purdue Univ., 1947-50; Asst. Prof., ibid., 1950-53; Assoc. Prof., ibid., 1953-62; Prof., ibid., 1962—. Mem.: Sigma Xi; Rho Chi; Pi Lambda Upsilon; Kappa Psi. Co-Author: Scoville's Art of Compounding, 1951, 1957. Contbr. to: Jour. of Am. Pharm. Assn.; Am. Jour. of Hosp. Pharm.; Parenteral Drug Assn. Bull.; Jour. Soc. of Cosmetic Chemists; Drug and Cosmetic Industry; Drug Standards. Gen. Int.: Mem., Natl. Formulary Adv. Comm., 1955—. Areas of Rsch.: Product Formulation of Pharmaceuticals and Cosmetics; Hospital Pharmacy.

SPICHIGER, Jean-Robert Emile (Mr.), Instr., Econs. and Bus., Dillard Univ., New Orleans, La. Home Add.: 2127 Barrone St., New Orleans 13, La. ECONOMIST-LABOR ECONOMICS AND ECONOMIC THEORY. b. Managua, Nicaragua, Feb. 5, 1936. s. Robert George and Matilde (Calero) S. Edn.: B.B.A., Loyola Univ. of La., 1959; M.A., Tulane Univ., 1961. m. Denise Camille Bonne, Oct., 1961. Exp.: Instr. of Economics, St. Benedict's Coll., Atchison, Kan., 1961-62; Instr., Econs. and Bus., Dillard Univ., 1962—. Hon. Pos.: Faculty Comm. on Objectives; Student Adviser. Mem.: Am. Econ. Assn.; Southern Econ. Assn.; A.A.A.S.; Am. Acad. of Political and Social Science; A.A.U.P.; Pan American Club; Econ. Club. Gen. Int.: Received the Apologetics Award. Areas of Rsch.: Labor and Economic Development in Latin America.

SPERRY, Irvin Vincent (Ed.D.), Dir., Inst. for Child and Family Development, Women's Coll., Univ. of N. C., Greensboro, N. C. Home Add.: 301 Woodlawn Ave., Greensboro, N. C. CHILD DEVELOPMENT. b. St. Clair Co., Mich., Dec. 20, 1915. s. Lawton T. and Helen C. (Jones) S. Edn.: B.A., Eastern Mich. Univ., 1938; M.Ed., Wayne Univ., 1948; Ed.D., ibid., 1949. m. Charlene D. Boyl, 1939. c.: Patricia Ann; Helen Kay. Exp.: Instr., Coll. of Edn., Wayne Univ., 1947-49; Prof., Asst. Dean, Schl. of Home Econs., Univ. of Ga., 1949-55; Prof., Schl. of Home Econs., Women's Coll., Univ. of N. C., 1958-59; Dir., Inst. for Child and Family Development, ibid., 1959—. Mem.: Soc. for Rsch. in Child Development; Natl. Coun. on Family Relations; Am. Home Econs. Assn.; A.A.U.P.; Pi Gamma Mu; Phi Delta Kappa; Kappa Delta Pi; Masons. Contbr. to: Jour. of Home Econs.; Bull. of Natl. Assn. of Secd. Schl. Prins.; Jour. of Nursery Edn.; Adult Leadership. Serv. Rec.: U.S.A.F., 1943-45. Areas of Rsch.: Child Development; Family Relations; Parent Edn.

SPIEGEL, Herbert (M.D.), Physician, 19 E. 88th St., N. Y. 28, N. Y. Home Add.: 161 Kings Point Rd., Great Neck, L. I., N. Y. PSYCHIATRY AND PSYCHOANALYSIS. b. McKeesport, Pa., June 29, 1914. Edn.: B.S., Univ. of Md., 1936; M.D., ibid., 1939. m. Natalie Shainess, Apr. 24, 1944. c.: David; Ann. Exp.: Faculty, Wm. A. White Inst. of Psychiat., N. Y., N. Y., 1946—; Assoc. Psychiat., Coll. of Physns. and Surgeons, Columbia Univ., 1960—; Visit. Asst. Prof., Dept. of Psychiat., Emory Univ. Med. Schl., Atlanta, Ga., 1960—; Visit. Lectr., Dept. of Psychiat., Univ. of Chicago, Chicago, Ill., 1962—; Assoc. Att., Dept. of Psychiat., St. Luke's Hosp., N. Y., 1961—; Asst. Att. Psychiat, Vanderbilt Clinic, Presby. Hosp., 1961—; Assoc. Att. Psychiat., St. Vincent's Hospital, New York, 1962—. Hon. Pos.: Mem., Profl. Advry. Comm., Manhattan Society for Mental Health, 1956—; Mem., Board of Trustees, Rsch. in Schizophrenia Endowment, 1957—. Mem.: Am. Psychiat. Association; Am. Orthopsychiat. Association; Am. Psychosomatic Soc.; Am. Med. Assn.; N. Y. Med. Soc.; Wm. A. White Psychoanalyt. Soc.; Acad. of Psychoanalysis, Fellow; N. Y. Soc. of Clin. Psychiat.; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Med., Fellow. Contbr. to: Jour. of Am. Orthopsychiat.; Am. Jour. Psychiat.; N. Y. State Med. Jour.; Comprehensive Psychiat.; Dis. of the Nervous Syst. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Preventive Psychiatry; Hypnosis; Psychotherapy; Psychoanalysis.

SPIEGEL, John Paul (M.D.), Assoc. Clin. Prof. Psychiatry, Harvard Med. Schl., Lectr., Dept. of Social Relations, Harvard Univ., Cambridge 38, Mass. Home Add.: 10 Channing Pl., Cambridge 38, Mass. SOCIAL PSYCHIATRY, PSYCHOANALYSIS, SOCIOLOGY OF FAMILY. b. Chicago, Ill., Mar. 17, 1911. s. Modie Joseph and Lena (Straus) S. Edn.: B.A., Dartmouth Coll., 1934; M.D., Northwestern Univ. Med. Schl., 1938. m. Babette Schiller, 1935. c.: Heli M.; Adam; Mary; Pauline. Exp.: Chf., Psychiatric Clinic, Michael Reese Hosp., Chicago, Ill., 1946-51; Assoc. Dir., Inst. for Psychosomatic and Psychiatric Rsch. and Training, ibid., 1951-53; Lectr., Dept. Soc. Rel., Harvard Univ., Cambridge, Mass., 1953—; Assoc. Clin. Prof., Harvard Med. Schl., 1957—. Hon. Pos.: Chmn., Comm. on Family, Group for Adv. of Psychiatry. Mem.: Am. Psychiatric Assn.; Am. Psychol. Soc.; Am. Sociol. Assn.; Soc. for Appl. Anthropol.; Chicago Psychoanalytic Soc.; Group for Adv. of Psychiatry. Author: War Neuroses, 1945, co-author; Men Under Stress, 1945, co-author. Contbr. to: Psychiatry 17; Psychiatry 20; The American Handbook of Psychiatry; The Family of the Psychiatric Patient. Serv. Rec.: Consultant Psychiatrist, 12 A.A.F. Areas of Rsch.: Relations Between Culture, Family, and Mental Health and Illness; Integration of Social Science and Psychiatric Method and Theory.

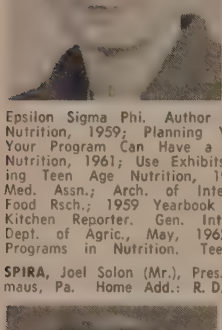
SPILLANE, Leo Jerome (Ph.D.), Asst. Rsch., Dir., Hydrocarbons Div., Monsanto Chemical Co., St. Louis 66, Mo. Home Add.: 44 Shady Valley Dr., Rt. 2, Chesterfield, Mo. PETROCHEMICALS, PETROLEUM CHEMISTRY. b. New Richland, Minn., Aug. 23, 1916. s. John J. and Anastasia (Gossman) S. Edn.: B.S., Coll. of St. Thomas, 1937; M.S., Univ. of Minn., 1940; Ph.D., ibid., 1942. m. Kathryn Grady, June, 1945. c.: Stacia; Margaret; Leo, Jr.; Kathleen; Janet; John; James. Exp.: Chemist, Allied Chem. and Dye Corp., Phila., Pa., 1942-48; Group Ldr., ibid., Morristown, N. J., 1948-50; Chf. Chemist, Reaction Motors, Inc., Rockaway, N. J., 1950-51; Group Ldr. to Mgr. Org. Rsch., Lion Oil Co., El Dorado, Ark., 1951-55; Asst. Rsch. Dir., Monsanto Chem. Co., El Dorado, Ark., St. Louis, Mo., 1955—. Hon. Pos.: Past Chmn., South Ark. Am. Chem. Soc.; Past Mem. Local Sec. Activities Comm. of Am. Chem. Soc. Mem.: Am. Chem. Soc.; Am. Rocket Soc.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Publications in Jour. Am. Chem. Soc.; Jour. Chem. Edn.; Analytical Chem.; Patents. Gen. Int.: Responsible for technical programs leading to improvements in the manu-

facture of detergent and plasticizer raw materials and to improved asphaltic coatings. Areas of Rsch.: Rsch. areas are those directed toward hydrocarbon upgrading, especially into the fields of olefins, aromatics and monomers for plastics.

SPIESS, Fred Noel (Ph.D.), Acting Dir., Scripps Inst. of Oceanography, Dir., Marine Physical Lab., Univ. of Calif., San Diego, Calif. Home Add.: 9450 La Jolla Shores Dr., La Jolla, Calif. MARINE GEOPHYSICS AND UNDERWATER ACOUSTICS AND UNDERSEA WARFARE. b. Oakland, Calif., Dec. 25, 1919. s. Fred Henry and Elva Josephine (Monck) S. Edn.: B.A., Univ. of Calif., 1941; M.S., Harvard Univ., 1946; Ph.D., Univ. of Calif., 1951. m. Sarah Scott Whitton, July 25, 1942. c.: Katherine Whitton; Mary Elizabeth; John Frederick; Helen Scott; Margaret Josephine. Exp.: Physicist, Radiation Lab., Univ. of Calif., 1951; Nuclear Engr., Knolls Atomic Power Lab., Schenectady, N. Y., 1951-52; Rsch. Physicist, Marine Physical Lab., Univ. of Calif., 1952-58; Dir., ibid., 1958—; Acting Dir., Scripps Inst. of Oceanography, ibid., 1961—. Mem.: Acoustical Soc. of Am., Fellow; Am. Phys. Soc.; A.G.U.; Sigma Xi. Contbr. to: Jour. Marine Rsch.; Trans. A.G.U.; Quart. of Applied Math. Serv. Rec.: U. S. Navy, 1941-46. Areas of Rsch.: Marine Geophysics; Underwater Acoustics; Undersea Warfare.

SPINDLER, Evelyn Blanchard (Ph.D.), Nutritionist, Federal Ext. Serv., U. S. Dept. of Agri., Wash. 25, D. C. Home Add.: Apt. 116, 1100 Sixth St., S.W., Wash. 24, D. C. NUTRITION. b. Charlton, Iowa. d. William A. and Mabel J. (Lyman). Edn.: B.S., Ia. State Univ., 1932; M.S., Univ. of Ariz., 1934; Ph.D., Univ. of Iowa, 1938. m. The Rev. Frank MacD. Spindler, July 16, 1956. Exp.: Instr., Univ. of Calif., Davis, 1938-41; Head, Nutrition Rsch., Golden State Co., Ltd., San Francisco, Calif., 1941-48; Nutrition Specialist, N. Mex. St. Univ., 1948-50; Nutritionist, Fed. Ext. Serv., U. S. Dept. of Agric., Wash., D. C., 1950—. Mem.: Am. Dietetics Assn.; Am. Home Econs. Assn.; Am. Assn. Adv. Sci.; Sigma Xi; Phi Kappa Phi; Omicron Nu; Alpha Nu; Iota Sigma Phi; Sigma Delta Epsilon; Epsilon Sigma Phi. Author of Bulletins: Improving Teen Age Nutrition, 1959; Planning Your Family Food Supply, 1961; Your Program Can Have a Forward Look in 4-H Foods and Nutrition, 1961; Use Exhibits and Posters as Aids in Improving Teen Age Nutrition, 1961. Contbr. to: Jour. of Am. Med. Assn.; Arch. of Internal Med.; Jour. of Pediatrics; Food Rsch.; 1959 Yearbook of Agric.; Ext. Serv. Rev.; The Kitchen Reporter. Gen. Int.: Superior Serv. Award, U. S. Dept. of Agric., May, 1962. Areas of Rsch.: Vitamin A. Programs in Nutrition. Teen Age Nutrition.

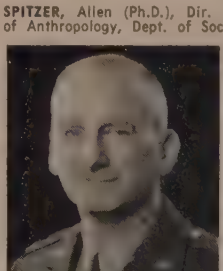
SPIRA, Joel Solon (Mr.), Pres., Lutron Electronics Co., Inc., Emmaus, Pa. Home Add.: R. D. #2, Allentown, Pa. ENGINEERING PHYSICS. b. N. Y. City, Mar. 1, 1927. s. Elias and Edna (Shenker) S. Edn.: B.S., Purdue Univ., 1948. m. Ruth Rodale, Nov. 7, 1954. c.: Susan Elinore. Exp.: Sr. Project Engr., Reeves Instrument Co., N.Y.C., 1952-59; Prin. Systems Analyst, I.T.T. Communications Systems, Inc., Paramus, N. J., 1959-61; Pres., Lutron Electronics Co., Inc., Emmaus, Pa., 1961—. Mem.: Am. Phys. Soc.; Am. Assn. Adv. Sci.; Inst. Radio Engrs.; Sigma Pi Sigma. Contbr. to: Inst. Radio Engrs. Serv. Rec.: U.S.N.R., 1945-46. Areas of Rsch.: Electronic Controls, Operations Analysis, Electronic Technology.



SPITLER, Harry Riley (Ph.D.), Dean of Central States Coll. of Physiatrics, Eaton, Ohio. Home Add.: 608 E. Main St., Eaton, Ohio. PHYSICAL MEDICAL SCIENCES OF THE HEALING ART. b. Sidney, Ohio, Apr. 1, 1889. s. Joseph and Martha (Good) S. Edn.: D.M., Am. Coll. of Mechanotherapy, 1909; D.O.S., Needles Inst. of Optometry, 1920; M.D., M.S., Kan. City Coll. of Med. and Surgery, 1923; Ph.D., Milton Univ., 1939. Hon. Deg.: D.S., Canadian Inst. of Therapeutics, 1943. m. Florence Wilcox, July, 1913. c.: Jay Ward. Exp.: Clinician, Battle Creek Sanatorium, Battle Creek, Mich., 1909-11; Dean, Coll. of Syntonic Optometry, Eaton, Ohio, 1933-61; Dean, Central States Coll. of Physiatrics, Eaton, Ohio, 1939-61. Hon. Pos.: Past 1st Vice-Pres., Am. Acad. of Optometry; Fellow, Coll. of Syntonic Optometry; Secy., Natl. Bd. of Examiners in Naturopathy; Past Pres., Ohio St. Bd. of Optometry. Mem.: A.A.A.S.; Am. Acad. of Optometry; Ohio St. Optometric Assn.; Am. Naturopathic Assn.; Mason; Sigma Phi Kappa; Phi Theta Upsilon. Author: The Syntonic Principle, 1939; Basic Naturopathy, 1948. Contbr. to: The Optometric Weekly; Optical Jour. Review; The Syntonogram. Gen. Int.: Founded the first Boy Scout Troop in Eaton; Responsible for establishment of present statutes governing practice of Optometry and Mechanotherapy in Ohio. Areas of Rsch.: Researching and Development of Syntonic Principle of Application of Specific Light Frequencies to Ocular Disorders.

SPITZ, E. William (O.D.), 613 Penn St., Reading, Pa. Home Add.: 224 Harvey Ave., Reading, Pa. OPTOMETRY. b. Coney Island, N. Y., Nov. 29, 1921. s. Louis and Bertha (Weiss) S. Edn.: O.D., Pa. State Coll. of Optometry, 1943. m. Fay Ziedman, Dec. 12, 1944. c.: Robert; Janet. Exp.: Visual Consultant, Gen. Battery and Ceramic Corp., Reading, Pa., 1960—. Hon. Pos.: Pres., Dir., Berks Co. Optometric Soc.; Mem., Inter-Professional Relations Comm., Pa. Optometric Assn.; Mem., Dept. of Publ. Information, Chmn., Resolutions Comm., Pa. Optometric Assn. Mem.: Am. Optometric Assn.; Am. Acad. of Optometry, Fellow; Am. Optometric Fdn.; A.A.A.S.; Gamma Omega Phi; Sertoma Internati. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Contact Lenses; Industrial Vision; Methods of Glaucoma Detection.

SPITZER, Allen (Ph.D.), Dir. of Anthropological Research, Prof. of Anthropology, Dept. of Sociology and Anthropology, St. Louis Univ., St. Louis 3, Mo. Home Add.: 3745 Lindell Blvd., St. Louis 8, Mo. CULTURAL ANTHROPOLOGY. b. Staten Island, N. Y., June 6, 1909. s. H. L. and Mary (Reser) S. Edn.: B.A., Rollins Coll., 1934; M.A., Stanford Univ., 1944; Ph.D., ibid., 1949; Grad. Student, Univ. of Berlin, Univ. of Vienna, Univ. of Calif. at Berkeley. m. Mary Lillian Robison, Dec. 25, 1939. Exp.: Instr., Stanford Univ., 1942-46; Prof., Dir. of Sociol. Rsch., San Francisco Coll. for Women, 1947-53; Assoc. Prof., Dir., Anthropological Rsch., St. Louis Univ., 1954-62; Prof. and Dir., Anthropol., ibid., 1962—; Rsch. Prof. of Anthropol., Univ. of Yucatan; Mex. City Coll.; Visiting Colleague, Univ. of Hawaii. Mem.: Am. Anthropol. Assn., Fel.; Am. Sociol. Assn., Fel.; Am. Cath. Sociol. Soc., Past Pres.; Cath. Anthropol. Assn., Past Pres.; Soc. for Appl. Anthropol.; Cent. States Anthropol. Soc.; Am. Ethnol. Soc.; Assn. for Current Anthropol.; A.A.U.P. Contbr. to: Anthropol. Qtrly.; Am. Cath. Sociol. Rev.; Rev. of Religious Rsch.; Human Organization; Jour. for the Scientific Study of Rel.; Am. Anthropologist; Alpha Kappa Deltan Jour.; Soc. Order; Sociological Abstracts, Advry. Ed. Serv. Rec.: U. S. Army, 1930-40; U. S. Natl. Guard since 1953—. Areas of Rsch.: Anthropological Field; Research, Puerto Rico, China, Hong Kong, Montana Blackfeet, Yucatan, Mexico, Florida Seminole, Jamaica, Germany, Austria.

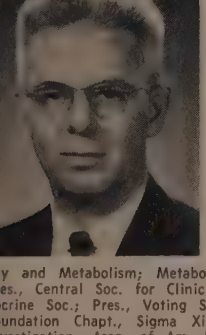


SPLINTER, William Eldon (Ph.D.), Prof., Dept. of Agril. Engrng., N. C. St. Coll., Raleigh, N. C. Home Add.: 31 Shepherd St., Raleigh, N. C. AGRICULTURAL ENGINEERING, BIOLOGICAL ENGINEERING. b. N. Platte, Neb., Nov. 24, 1925. s. William J. and Minnie (Calhoun) S. Edn.: B.S., Univ. of Neb., 1950; M.S., Mich. St. Univ., 1951; Ph.D., ibid., 1955. m. Eleanor Love Peterson, Jan. 10, 1953. c.: Kathryn Love; William John; Karen Ann. Exp.: Rsch. Instr., Mich. St. Univ., 1952; Instr., ibid., 1953-54; Rsch. Assoc. Prof., N. C. St. Coll., 1954-61; Prof., ibid., 1961—. Mem.: Am. Soc. Agril. Engrs.; Am. Assn. Adv. Sci.; Soc. of Automotive Engrs.; Beta Sigma Psi; Sigma Tau; Pi Mu Epsilon; Sigma Xi; Sigma Pi Sigma; Gamma Sigma Delta. Contbr. to: A.S.A.E. Jour. and Trans.; S.A.E. Jour.; Tobacco Sci. Jour. Econ. Entomol.; Trans., Am. Soc. Sugar Beet Technologists. Serv. Rec.: U. S. Navy Reserve, 1946-51. Areas of Rsch.: Electrostatic Precipitation of Pesticides, Bioengineering Relationships and Growth Dynamics of the Tobacco Plant; Human Engineering Transplanting Equip.; Harvesting Equip. for Tobacco and Sugar Beets.

SPRAGUE, George Frederick (Ph.D.), Rsch. Agronomist, U. S. Dept. of Agron., Beltsville, Md. Home Add.: 10206 Green Forest Dr., Silver Spring, Md. GENETICS, PLANT BREEDING. b. Crete, Nebr., Sept. 3, 1902. s. Elmer Ellsworth and Lucy Ken (Manville) S. Edn.: B.S., Univ. of Nebr., 1924; M.S., ibid., 1926; Ph.D., Cornell Univ., 1931. Hon. Degs.: D.Sc., Univ. of Nebr., 1958. m. Amy Millang, 1945. c.: Phyllis; Donald George, Jr.; Judy. Exp.: Assoc. Prof., Rsch. Agron., Univ. of Mo., Columbia, Mo., 1934-39; Rsch. Agron., U. S. Dept. Agri., Ia. State Univ., Prof., Ames, Ia., 1939-58; Rsch. Agron., U. S. Dept. Agri., ibid., 1939-58; Rsch. Agron., U. S. Dept. Agri., Beltsville, Md., 1958—. Hon. Pos.: Pres., Amer. Soc. Agron.

60; Pres., Crops Sci. Soc., 1951. Mem.: Agron. Soc. Crops i. Soc.; Genets. Soc.; Am. Genet. Assn.; Biomets.; Am. Soc. Phys.; Am. Nat.; Wash. Acad. Sci.; Alpha Zeta; Sigma ; Gamma Sigma Delta; Phi Kappa Pi. Author: Corn and rn Improvement, 1955. Contbr. to: Am. Soc. Agron.; Crop i.; Genetics. Areas of Rsch.: Corn Genetics and Breeding perimental Design.

RAGUE, Randall George (M.D.), Prof. of Med., Mayo Foundaon, Rochester, Minn. Home Add.: 1184 Plummer Circle, Rochester, Minn. INTERNAL MEDICINE; METABOLISM AND ENDOCRINOLOGY. b. Chicago, Ill., Sept. 22, 1906. s. William Roger and Margaret (Hennessy) S. Edn.: B.S., Northwestern Univ., Evanston, Ill., 1930; M.S., Northwestern Univ., Chicago, Ill., 1934; M.D., ibid., 1935; Ph.D. in Med., Univ. of Minn., 1942. m. Anne Whitcomb, Apr. 8, 1939. c.: Susan; Nancy; Linda; William Randall. Exp.: Consulting Physician, Sect. of Med., Mayo Clinic, Rochester, Minn., 1940—; Head of Sect., ibid., 1948—; Prof. of Medicine, Mayo Foundation, Grad. Schl., Univ. of Minn., 1953—. Hon. Pos.: Editorial Board of Diabetes; Jour. Laboratory and Clinical Medicine; Jour. Clinical Endocrinol-



y and Metabolism; Metabolism; Pres., Am. Diabetes Assn.; es., Central Soc. for Clinic Rsch.; Mem. of Coun., The Encrine Soc.; Pres., Voting Staff of Mayo Clinic; Pres., Mayo undation Chapt., Sigma Xi. Mem.: Am. Soc. for Clinical vestigation; Assn. of Am. Physicians; A.M.A.; A.A.A.S.; Am. ll. of Physicians; Minn. Soc. Internal Med.; Endocrine Sect., yal Soc. of Med.; Central Interurban (hon.) Clinical Club; gma Chi; Phi Rho Sigma; Phi Beta Kappa; Sigma Xi; Alpha nega Alpha. Contbr. to: Am. Jour. Physiol.; Jour. A.M.A.; oc. Staff Meet., Mayo Clinic; Jour. Clin. Endocrinol. and Metab.; ur. Lab. and Clin. Med.; Diabetes; Am. Jour. of Med.; Arch. t. Med.; Proc. Royal Soc. of Med.; Neurol.; Jour. Clin. Investigation; Ann. Int. Med.; Recent Progr. Hormone Rsch. Gen. t.: Recipient of Banting Medal, Am. Diabetes Assn; Reber edal of Philadelphia Metabolic Assn.; Victory Medal of Boston abetes Trust Fund. Areas of Rsch.: Diabetes Mellitus; Diseases of Adrenal Cortex.

PRENGER, Gerhard Ewald (Ph.D.), Rsch. Mgr., Sun Chem. rp., Wood River Jctn., R. I. Home Add.: 58 High St., haway, R. I. TEXTILE CHEMICALS. b. Berlin, Germany, n. 21, 1904. s. Ferdinand and Helene (Levecke) S. Edn.: .D., Berlin Univ., 1928. m. Sara McKee, July 15, 1933. p.: Asst., Tech., Hochschule Danzig, Danzig, 1929-31; ch., A. O. Smith Corp., Milwaukee, Wis., 1931-32; Rsch. emist, Am. Cyanamid Corp., Bridgeville, Pa., 1932-37; Chemist, n. Aniline and Film Corp., Linden, N. J., 1937-42; Chem. r., Metro-Atlantic, Inc., Centredale, 1948-59; Rsch. Mgr., Sun em. Corp., 1959—. Mem.: Am. Chem. Soc.; Am. Assn. C.C.; A.A.A.S

PRENGER, Robert Dean (Ph.D.), Prof. of Chem., Univ. of get Sound, No. 15th and Warner, Tacoma 6, Wash. Home Add.: 2723 N. 31st, Tacoma, Wash. ORGANIC CHEMISTRY. b. Tacoma, Wash., Jan. 20, 1918. s. Herbert and Helen (Orr) S. Edn.: B.S., Coll. of Puget Sound, 1940; M.S., Syracuse Univ., 1942; Ph.D., ibid., 1947. m. Mae L. Merwarth, Sept. 9, 1941. c.: Robert; Sally; Cindy. Exp.: Chemist, DuPont, Gibbstown, N. J., 1941-42; Asst. Prof. of Chem., Coll. of Pudget Sound, 1942-43; Instr. of Chem., Syracuse Univ., 1943-46; Prof. of Chem., Univ. of Pudget Sound, 1947—. Hon. Pos.: Chmn., Pudget Sound Sect., Am. Chem. Soc.; Dir., Pudget Sound Sci. Fair., 1953—. Mem.: Phi Sigma; Sigma Xi; Mu; Sigma Delta; Kappa Sigma. Contb.r to: Jour. Am. Chem. Soc.;

ur. of Organic Chem. Gen. Int.: Dist. Commander of S. Power Sqdn. Areas of Rsch.: Synthetic Organic Chemtry and Anitbodic Structures.

PRITZ, Norton (M.D.), Asst. Prof., Cornell Univ. Med. Coll., cond Cornell Med. Div., Bellevue Hosp., New York 21, N. Y. me Add.: 445 East 68th St., New York, N. Y. ACADEMIC EDICINE. b. Baltimore, Md., June 19, 1928. s. Harry H. d Sara (Malkin) S. Edn.: B.A., Johns Hopkins Univ., 1948; .D., Univ. of Md., 1952.. m. Marilyn Karmason, 1953. Exp.: st. Prof., Cornell Univ. Coll. of Med., N. Y., N Y., 1960—; stg. Investigator, Rockefeller Inst., N. Y., N. Y., 1961—; tablished Investigator, Health Rsch. Coun., N. Y., N. Y., 1959—. Mem.: Alpha Omega Alpha; Sigma Xi. Serv. Rec.: A.U.S., 1954-56. Areas of Rsch.: Clinical Investigation-Lipid Metabolism.

SPRINGBORN, Robert Carl (Ph.D.), Techn. Dir., P. O. Box 68, Marbon Chemical, Washington, W. Va. Home Add.: 1709 Forrest Hill Dr., Vienna, W. Va. ORGANIC CHEMISTRY AND HIGH POLYMERS. b. Geneva, Ill., Oct. 19, 1929. s. Carl F. and Mable N. (Lintner) S. Edn.: B.S., Univ. of Ill., 1951; Ph.D., Cornell Univ., 1955. m. Carolyn J. Kluesing, Sept., 1951. c.: Robert John; Debbie Lynn. Exp.: Chemist, Monsanto Chem., Springfield, Mass., 1954-57; Sr. Rsch. Chemist, Gillette Co., Chicago, Ill., 1957-58; Dir. of Rsch., Marbon Chem., Washington, W. Va., 1958-62; Technical Director, ibid., 1962—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs. and Federation of Societies for Paint Technology; A.A.A.S. Areas of Rsch.: Radio Chemistry, Organic Synthesis, Polymer Synthesis, and Applica-

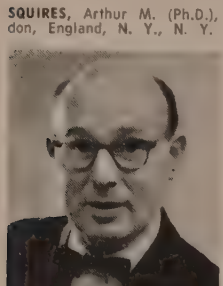
tions.

SPROULL, Wayne Treber (Ph.D.), Chief Rsch. Physicist, Western Precipitation Div., Joy Mftg. Co., 1000 W. Ninth St., Los Angeles, Calif. Home Add.: 3015 San Gabriel Ave., Glendale 8, Calif. PHYSICS OF AEROSOLS; SEPARATION OF SUSPENDED PARTICLES FROM GASES; X-RAYS. b. Racine, Wis., Aug. 3, 1906. s. John C. and Mabel C. (Warner) S. Edn.: B.S., Univ. of Akron, 1927; M.S., Lehigh Univ., 1929; Ph.D., Univ. of Wis., 1933. m. Ethel L. Miller, Aug. 18, 1934. c.: Thomas W.; Sally R. Exp.: Rsch. Asst., Wis. Alumni Rsch. Foun., Madison, 1932-33; Rsch. Physicist, Rsch. Labs. Div., Gen. Motors Corp., Detroit, Mich., 1933-46; Sr. Rsch. Engr., Rsch. Lab., Lockheed Aircraft Corp., Burbank, Calif., 1946; Chief, Liquid Propellant Rocket Sect., Jet Propulsion Lab., Calif. Inst. Tech., 1946-47; Chief Rsch. Physicist, Western Precipitation Div., Joy Mftg. Co., Los Angeles, 1948—. Mem.: Sigma Xi; Am. Physical Soc.; Am. Assn. Adv. Sci.; Air Pollution Control Assn. Author: X-Rays in Practice, 1946. Serv. Rec.: R.O.T.C., 1923-25. Areas of Rsch.: Electrical Precipitation of Suspended Particles from Gases; Effects of Suspended Particles on Corona Discharge; Effects of High Resistivity Particles on Discharges; Effects of Suspended Particles on Viscosity of Gases; Gas Flow in Ducts and Chambers; X-Rays, Radiography, X-Ray Diffraction; Electron Diffraction.

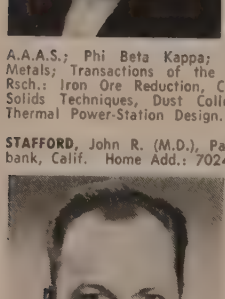
STAAR, Richard F. (Ph.D.), Prof., Polit. Sci., Emory Univ., Atlanta 22, Ga. Home Add.: 879 Clifton Rd., N.E., Atlanta 7, Ga. U.S.S.R. AND EASTERN EUROPE. b. Warsaw, Poland, Jan. 10, 1923. s. Alexander and Agnes Staar. Edn.: A.B., Dickinson Coll., 1948; A.M., Yale Univ., 1949; Ph.D., Univ. of Mich., 1954. m. Jadwiga Ochota, Mar. 28, 1950. c.: Monica; Christina. Exp.: Rsch. Specialist, Dept. of State, Wash., D. C., 1951-54; Assoc. Prof., Prof., Polit. Sci., Harding Coll., Ark., 1954-57; Prof. of Polit. Sci., Ark. State Coll., 1957-58; Lectr., Univ. of Md. in Germany, 1958-59; Assoc. Prof. of Polit. Sci., Emory Univ., 1959-62; Prof., 1962—. Mem.: Internatl. Polit. Sci. Assn.; Am. Polit. Sci. Assn.; Kappa Sigma; Phi Beta Kappa; Pi Sigma Alpha. Author: Political Administration of Red Army, 1951; Political Framework of Communist Poland, 1954; Communist Elite Stability, 1961; Sovietizing A Captive Nation, 1962. Contbr. to: Jour. of Central European Affairs; Am. Mercury; Jour. of Mod. History; Am. Slavic and East European Rev.; Southwestern Soc. Sci. Quarterly; Military Rev.; Polish Rev.; Cath. Historical Rev.; Western Polit. Quarterly; Etudes Slaves et Est-Europeennes; Jour. of Politics; Midwest Jour. of Political Sci.; Emory Univ. Quarterly; New Leader; Jour. of Public Law; Marine Corps Gazette; Il Politico; Chiarusco. Serv. Rec.: U. S. Marine Corps Reserve. Gen. Int.: Asst. District Commissioner, Boy Scouts of Am., 1955-57; Guest Speaker over Voice of Am., 1957, 1960, 1961; Lectr. in Strasbourg, France, 1958. Areas of Rsch.: Comparative Government and International Relations.

SQUIBB, John Franklin (Mr.), Earth Scientist, Needles Union H. S., Needles, Calif. Home Add.: Needles, Calif. BIO-GEOGRAPHY, GEOLOGY. b. Zanesville, Ohio, Feb. 21, 1931. s. Robert W. and Clarice B. (Stiles) S. Edn.: B.A., Ariz. St. Univ., 1956; M.A., ibid., 1960. Exp.: Tchr., Wilson Dist., G. S. Skiff Elem., 1956-59; Tchr., Wash. H. S., Phoenix, Ariz., 1959-60; Tchr., Mexico City Acad., Summer, 1960; Tchr., Cortez H. S., Phoenix, Ariz., 1960-61; Tchr., Chmn., Geog. and Geol., Needles H. S., and Calif. Adult Edn. Prog., Needles, Calif., 1961—. Hon. Pos.: Bd. of Dirs., Edni. Tours, Inc.; Pres., Geog. Sect., Ariz. Acad. of Sci.; Consult. Geologist, Needles Gem and Mineral Soc. Mem.: Gamma Theta Upsilon; Ariz. Acad. of Sci.; N.E.A.; C.T.A.; N.T.A.; ARCOSS, N.R.A.; Needles Gem and Mineral Soc.; Sigma Phi Epsilon. Contbr. to: Ariz. Acad. of Sci. Jour.; Latin Am. News Analyst; Glendale Herald, Glendale, Ariz. Gen. Int.: T. J. Croaff Delinquency Control Award, 1952; Coe Fellowship, 1961. Areas of Rsch.: Bio-Geography, Geology, Latin-American Geopolitics; Educational Improvement Research; Geography Syllabus; Geology Syllabus.

SQUIRES, Arthur M. (Ph.D.), Chemical Engrng. Consultant, London, England, N. Y., N. Y. Home Add.: 245 West 104th St., N. Y. 25, N. Y. PHYSICAL CHEMISTRY. b. Neodesha, Kans., Mar. 21, 1916. s. Charles Loren and Vera (Moore) S. Edn.: A.B., Univ. of Mo., 1938; Ph.D., Cornell Univ., 1947. Exp.: Chem. Engr., M. W. Kellogg Co., Kellex Corp., N. Y., N. Y., 1942-46; Asst. Dir., Process Development Dept., Hydrocarbon Rsch., Inc., N. Y., N. Y., 1946-51; Dir., Process Development Dept., ibid., 1951-59; Consultant, London, England, N. Y., N. Y., 1959—. Pres., N. Y. Pro Musica, 1953-59; Pres., The Cantata Singers, 1948-51. Mem.: Am. Chem. Soc.; Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; Am. Inst. of Chem. Engrs.; Iron & Steel Inst. (London); Am. Geographical Soc.; A.A.A.S.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Metals; Transactions of the Inst. of Chem. Engrs. Areas of Rsch.: Iron Ore Reduction, Coal and Oil Gasification, Fluidized Solids Techniques, Dust Collection, Low-Temperature Processes, Thermal Power-Station Design.



STAFFORD, John R. (M.D.), Pathologist, St. Joseph Hospital, Burbank, Calif. Home Add.: 7024 Pacific View Dr., Los Angeles 28, Calif. PATHOLOGY. b. Slater, Mo., Sept. 4, 1923. s. James Raymond and Freda (Hoener) S. Edn.: B.A., Univ. of Mo., 1944; B.S., ibid., 1944; M.D., Long Island Coll. of Med., 1946. Exp.: Demonstrator, Western Reserve Univ., Med. Schl., Cleveland, Ohio, 1950-51; Instr., Univ. of Colo. Med. Schl., Denver, Colo., 1954-55; Asst. Prof., ibid., 1955-61; Pathologist, St. Joseph Hosp., Burbank, Calif., 1961—. Mem.: Internatl. Acad. of Pathol.; Coll. of Am. Pathols.; Southern Calif. Soc. for Electron Microscopy; N. Y. Acad. of Sci.; A.A.A.S. Serv. Rec.: A.U.S., 1947-49. Areas of Rsch.: Morphology; Medical Teaching; Mitosis.



STAHL, Catherine Carr Hurt (Mrs.), Biol. Tchr., Jefferson Sr. H. S., Roanoke, Va. Home Add.: 3009 Lorraine Rd., N.W., Grove Park, Roanoke, Va. BIOLOGY. b. Salem, Va., Jan. 24, 1917. d. James Wheeler Hurt and Ellen (Smith) H. Edn.: B.S., in Edn., Longwood Coll., 1937. m. div., 1954. c.: Chester Stahl. Exp.: Sci. Tchr., Salem H. S., Salem, Va., 1937-43; Sci. Tchr., Garland Rodes H. S., Lynchburg, Va., 1951-57; Sci. Tchr., Meadowlawn Jr. H. S., St. Petersburg, Fla., 1957-61; Sci. Tchr., Dunedin Highland Jr. H. S., 1961-62; Biol. Tchr., Jefferson Sr. H. S., Roanoke, Va., 1962—. Hon. Pos.: Area Dir., Fla. Jr. Acad. of Sci.; Mem., F.E.A. Ins. Com., 1958-62; Membership Ch. of N.S.T.A., 1960-62; First Vice-Pres. of Pinellas Classroom Tchrs. Assn., 1960-61; Chmn., Conditions of Work Com. of Bldg. Rep. Coun., 1961-62. Mem.: Am. Assn. of Univ. Women; N. Edn. Assn.; Fla. Edn. Assn.; Natl. Sci. Tchrs. Assn.; Am. Assn. Adv. Sci.; Fla. Assn. of Sci. Tchrs.; Pinellas Co. Tchrs. Assn.; Fla. Future Sci. Fdtn. Gen. Int.: Sponsoring Jr. Acad. of Sci. Clubs, scuba diving to examine underwater ecol.; Have Organized and Sponsored Two Florida Jr. Acad. of Sci. Branches. Areas of Rsch.: Science; Invertebrate Zoology.

STAKMAN, Elvin Charles (Ph.D.), Prof. Emer., Univ. of Minn. Collaborator, U. S. Dept. of Agri., Consultant in Agri., Rockefeller Found., Inst. of Agri. Univ. of Minn., St. Paul, Minn. PLANT PATHOLOGY; MYCOLOGY b. May 17, 1885, Algoma, Wis. s. Frederick Stakman and Emelia (Eberhardt). Edn.: B.A., Univ. of Minn., 1906; M.A., ibid., 1910; Ph.D., ibid., 1913. Hon. Degs.: Dr. Nat. Sci., Univ. of Halle (Germany), 1938; D.Sc., Yale, 1950; D.Sc., Univ. of R. I., 1953; D.Sc., Univ. of Minn., 1954; D.Sc., Univ. of Wis., 1954, Ottawa; Appel Medal, 1957; Certif. of Merit, Bot. Soc. Am., 1956; Centennial Award, Mich. State Univ., 1955; Medalla del Merito Agronomico, Assoc. Colombiana de Ings. Agron., 1955; Emil Christian Hansen Gold Medal and Prize, 1928. m. Louise Jensen of Minneapolis, Minn., 1917. Exp.: Tchr. in Pub. Schls. of Minn., 1906-09; Instr., Plant Pathol., Univ. of Minn., 1909; Asst. Prof., 1913; Assoc. Prof., 1916; Prof., 1918; Hd. of Sect. of Plant Pathol., 1913; Chf., Div. of Plant Pathol. and Bot., 1940-53; Pathologist in Chg. of Barberry Eradication Campaign, U. S. Dept. of Agri., 1918; Pathologist and Agent, Bur. Plant Indus., U. S. Dept. Agri., 1919-34; Agent, U.S.D.A., 1934-55; Guest Prof., Univ. of Halle (Germany), 1930-31; Hitchcock Prof., Univ. of Calif., 1955. Hon. Pos.: Hon. Fellow, Bot. Soc. Edinburgh; Hon. mem., Ver. deutscher Pflanzenarzte; Hon. mem., Swedish Seed Assn.; Hon. pres., Mexican Phytopath. Soc.; Mem., Exec. Com., Natl. Sci. Bd., 1950-54; Mem., Div. of Biol. and Agri., Natl. Rsch. Coun., 1931-34; Vice-Chmn., 1937-38, 1947-48; Chmn., Crop Protection Comm., 1942-45; Mem., Agri. Bd., 1950-58; Mem., Exec. Comm., A.A.A.S., 1944-50; Pres., 1949; Mem., Adv. Comm. for Biol. Med., U. S. Atomic Energy Comm., 1948-54; Chmn., 1953-54; Consult., ibid., 1954-59; Scientific Mission to Japan, S.C.A.P., Dec., 1948; Advisor, U.N.E.S.C.O. Conf., Florence, 1950; Delegate to VI Gen. Conf., Paris, 1951; Mem., U. S. Delegation to 7th Gen. Conf., Paris, 1952; Mem., Natl. Coun. for U.N.E.S.C.O., 1950-56; Delegate, Pan-Pacific Sci. Congress, 1923; Delegate, Natl. Acad. of Sci. to 6th Internatl. Bot. Congress, 1935; Vice-Pres., Phytopathological Sect., 6th Internatl. Bot. Congress, 1935; Vice-Pres., Mycological Sect., 3rd Internatl. Congress for Microbiol., 1939; Pres., Sect. on Phytopathol., 7th Internatl. Bot. Cong., 1950; Del., VIII All-Pakistan Sci. Congress, 1956; Pres., Am. Phytopathological Soc., 1922; Chmn., War Comm., 1942-43; Editor-in-Chf., Phytopathol., 1925-29; Am. Ed. of Phytopathologische Zeitschrift, 1931—; Mem., Ed. Com., Annual Rev. of Microbiol., 1946-54; Hon. Fellow, Bot. Soc., Edinburgh; Mem., Norweg. Acad. Sci. and Letters (Hon. Soc.); Hon. Mem., Ver. deut. Pflanzenarzte; Swedish Seed Assn.; Soc. Mex. Hist. Nat. Mem.; Agr. Hist. Soc.; Am. Phytopath. Soc.; Am. Genetic Assn.; Am. Acad. Arts and Sci.; A.A.A.S.; Am. Soc. Naturalists; Am. Philos. Soc.; Bot. Soc. Am.; Brit. Myc. Soc.; Hist. Sci. Soc., Kais. Akad. Naturf (Halle); Indian Phytopathological Soc.; Minn. Acad. Sci.; Minn. Hist. Soc.; Myc. Soc. Am.; Natl. Acad. Sci., N. Y. Acad. Sci.; Philos. Sci. Assn.; Schweiz Bot. Gesell.; Torrey Bot. Club; Wash. Acad. Sci.; Yale Alumni Assoc., N.W. Hon. Mem.: Am. Coll. Allergists; Hon. Mem., Assn. Appl. Biol. (England); Hon. Mem., Canadian Phytopathol. Soc.; Hon. Mem., Japanese Phytopathol. Soc.; Hon. Mem., Soc. Rioplatense de Genetica (Arg.); For. Mem., Royal Swedish Acad. of Agri.; Hon. Mem., Karachi Bot. Soc.; Corres. Mem., Ver. f. Angew. Bot.; Phi Beta Kappa; Sigma Xi; Alpha Zeta; Gamma Sigma Delta (Distinguished Service Award, 1951); Gamma Alpha; Skylight Club. Co-author: Principles of Plant Pathology, 1957. Contbr. to: 290 articles in books, bulletins, and scientific journals.

STALLWOOD, Robert Antony (Ph.D.), Rsch. Physicist, Gulf Rsch. and Devel. Co., P. O. Drawer 2038, Pgh. 30, Pa. Home Add.: 384 Woodland Ave., Oakmont, Pa. NUCLEAR PHYSICS (APPLICATIONS). b. Oxbow, Sask., Canada, June 15, 1925. s. Robert Jabez and Florence M. (Taylor) S. Edn.: B.A.Sc., Univ. of Toronto, 1949; M.A., ibid., 1950; Ph.D., Carnegie Inst. of Techn., 1956. Exp.: Rsch. Physicist, Gulf Rsch. and Devel. Co., Pgh., Pa., 1956—. Mem.: Am. Phys. Soc.; Am. Assn. of Phys. Tchrs.; Am. Assn. for Adv. of Sci." Contbr. to: Phys. Rev.; Nuclear Sci. and Engrng. Areas of Rsch.: Application of Nuclear Science to Petroleum Industry; Neutron Activation Analysis; Masers; Meson Physics.

STALNAKER, John Marshall, Pres., Natl. Merit Scholarship Corp., 1580 Sherman Ave., Evanston, Ill. Home Add.: 569 Briar Lane, Northfield, Ill. IDENTIFICATION OF TALENT AND ITS DEVELOPMENT. b. Duluth, Minn., Aug. 17, 1903. s. William E. and Sara (Tatham) S. Edn.: B.S., Univ. of Chicago, 1925; M.A., ibid., 1928. Hon. Deg.: LL.D., Purdue Univ., 1956; LL.D., Centre Coll., 1960. m. Ruth Culp, July, 1933. c.: John Culp, Robert Culp; Judith Culp. Exp.: Asst. Prof., Purdue Univ., Lafayette, Ind., 1925-31; Examiner, Univ. of Chicago, Ill., 1931-36; Prof. Psychol., Princeton Univ., N. J., 1936-45; Assoc. Secy., Coll. Entrance Exam. Bd., ibid., 1936-45; Prof. Psychol., Stanford Univ., Calif., 1945-49; Dir. of Studies, Assn. Am. Med. Colls., Evanston, Ill., 1949-55; Pres., Natl. Merit Scholarship Corp., Evanston, Ill., 1955—. Hon. Pos.: Past Natl. Rsch. Coun. Chmn., Comm. on Service Personnel; Past Natl. Defense Rsch. Comm., Mem. Applied Psychol. Panel; Past Mem. Comm. on Foreign Serv. Exam., Dept. of State; Chmn., Bd. of Foreign Scholarships, Dept. of State; Chmn., Comm. on Measurement of Econ. Knowledge,

nsored by the Comm. on Econ. Devel. Mem.: Am. Psychologi- Assn.; Am. Statistical Assn.; Natl. Education Research Assn.; E.A.; Psychometric Soc.; A.A.A.S.; Phi Beta Kappa; Sigma Kappa Phi Sigma; Tau Kappa Epsilon. Gen. Int.: Received tinguished Civilian Service Award by Navy, 1946; Certificate Merit by President Truman, 1948. Areas of Rsch.: Tests and asurements; Selection of Talented.

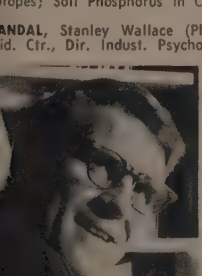
AMMELMAN, Mortimer Jacob (Ph.D.), Pres., The Atoms Prod- s Co., 13E 17 St., New York 3, N. Y. Home Add.: 10 East End Ave., New York 21, N. Y.

PHYSICAL CHEMISTRY-HYDORGEN-ION CONCENTRATIONS HUMIDIFI-CATION. b. New York, N. Y., Dec. 27, 1897. s. Joseph and Rose (Rattner) S. Edn.: B.A., Columbia Coll., 1920; M.A., ibid., 1921; Ph.D., ibid., 1924. m. Florence Siff, Nov., 1935. c.: Joseph Nathan. Exp.: Lab. Asst., Columbia Univ., N. Y., 1917-23; Chemist, Internatl. Arms and Fuse Works, Bloomfield, N. J., 1918; Chf. Chemist, Dusenberg Motors Corp., Elizabeth, N. J., 1918-19; Pres., The Atoms Products Co., N. Y., N. Y., 1925; Secy. Treas., C. F. Kirk Co., Bloomfield, N. J., 1932-35. Hon. Pos.: Past Pres., N. Y. Tobacco Table; Past Pres., Tobacco Salesman's Assn. of Am., . Mem.: Fellow, Am. Inst. of Chem.; Fellow, A.A.A.S.; Phi mbda Upsilon; Sigma Xi; B'nai B'rith Freedom Lodge. Contbr. Jour. of Am. Chem. Soc.; Tobacco Leaf; U. S. Tobacco Jour.; ail Tobacconist; Tobacco Jobber. Gen. Int.: Received Man of ar Award Tobacco Industry by N. Y. Tobacco Table, 1960.

ANBERRY, Chauncy Owen (Ph.D.), Prof. of Agric. Chem. and ls, Rsch. Soil Scientist, U.S.D.A. and Univ. of Ariz., Tucson, Ariz. Home Add.: 319 N. Vine, Tucson, Ariz. SOIL-WATER-PLANT RELATIONSHIPS, SOIL PHOSPHO-RUS IN CALCAREOUS SOILS, PLANT-ROOT STUDIES. b. Green-up, Ill., Nov. 25, 1913. s. Owen S. and Carrie T. (Barger) S. Edn.: B.S., Univ. of Mo., 1939; Ph.D., Wash. St. Univ., 1948. m. Ruth Ida Butler, Sept. 19, 1940 (div.). m. 2nd. Louise M. Bryan, Feb. 2, 1962. c.: Mark C.; Alan K. Exp.: Asst. in Soils, Wash. St. Univ., 1940-42; Asst. in Agron-omy, ibid., 1942-46; Asst. Agron-omist, ibid., 1946-50; Assoc. Soil Scientist, ibid., 1950-51; Soil Scientist, U.S.D.A. and Univ. of Ariz., 1951-57; Rsch. Soil Scien-tist, ibid., 1957—. Mem.: Alpha Zeta; Sigma Xi; A.C.S.; Gamma

ma Delta; Phi Lambda Upsilon; Am. Soc. of Agronomy; Am. l Sci. Soc.; Internatl. Soil Sci. Soc.; Western Soil Sci. Soc. ntbrng. Author: Advances in Phosphate Fertilization, 1962. ntbr. to: Proc. of Soil Sci. Soc. of Am.; Sci.; Soil Sci.; ronomy Jour.; Agric. and Food Chem. Areas of Rsch.: Use of otopes; Soil Phosphorus in Calcareous Soils; Plant-Root Studies.

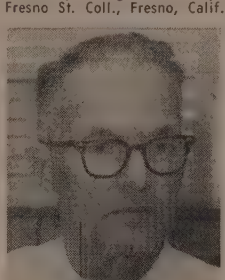
NDAL, Stanley Wallace (Ph.D.), Dir., Family Counseling and id. Ctr., Dir. Indust. Psychol. Coun., Dir., Internatl. Fdtn. for Adv. Study, Affiliate, Honolulu, Hawaii. Home Add.: 1242 Aalapapa Dr., Honolulu, Hawaii. CLINICAL PSYCHOLOGY. b. Yakima, Wash., June 10, 1922. s. Stanley and Levina (Triplett) S. Edn.: Ph.D., Univ. of Chicago, 1954. m. Bluebelle Reade S'iem, Nov., 1959. c.: Paul; Claudia; Gregory. Exp.: Dean of Students, Univ. Coll., Univ. of Chicago, Ill., 1953-54; Rsch. Assoc., Univ. of Chi-cago, ibid., 1954-56; Priv. Pract., Hawaii, 1956—; Dir., Family Coun-seling and Guid. Ctr., Honolulu, Hawaii, 1959—; Dir., Indust. Psy-chol. Coun., Honolulu, Hawaii, 1960—; Dir., Internatl. Fdtn. for Adv. Study, Hawaii Affiliate, 1961 —. Mem.: Sigma Xi; Am. Psy-chol. Assn.; Am. Acad. Psycho-



eraps.; Am. Pers. and Guid. Assn.; Am. Soc. Clin. Hypnosis; tl. Coun. on Family Relations; A.A.A.S.; Acad. Religion and ental Hlth.; Acad. of Psycholts. in Marital Counseling. Contbr. itor: "Critical Incidents in Psychotherapy," 1959. Contbr. to: ur. Consulting Psychol.; Grp. Psychotherapy. Serv. Rec.: U. S. rine Corps, 1942-45. Areas of Rsch.: Individual Psycho-erapy; Family and Group Psychotherapy; Executive Develop-nt; Personality Theory; Psychedelic Therapy and Research.

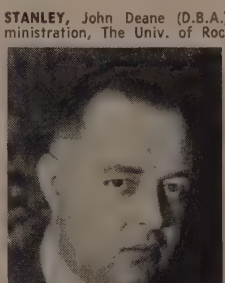
ANISIC, Milomir Mirkov Dr.-Ing. (Ph.D.), Prof., Purdue Univ., Lafayette, Ind. Home Add.: 801 Princess Dr., W. Lafayette, d. APPLIED MATH. AND MECHANICS; ELASTICITY; WAVES; ERMOELASTICITY; MAGNETOGASDYNAMICS; SHOCKS; TURBU-NCE; HYDROMAGNETIC TURBULENCE. b. Bujacic, Serbia - Yugoslavia, Aug. 19, 1914. s. Mirko and Ana M. (Bujisic) S. Edn.: Dipl.-Ing., Tech. Univ., Hannover, Germany, 1946; Dr.-Ing., ibid., 1949; Ph.D., Ill. Inst. of Tech., 1958. m. Miroslavia, Oct. 2, 1954 (div.). c.: Anna; Michael; Susan. Exp.: Scientist, Armour Rsch. Found., Ill. Inst. of Tech., 1950-56; Vis. Prof., Purdue Univ., 1956; Assoc. Prof., ibid., 1956-61; Prof., ibid., 1961—. Mem.: Sigma Xi; Am. Math. Soc.; Assn. of Am. Univ. Profs.; Assn. for Eng. Edn. Contbr. to: Qtly. of Applied Math.; Jour. of Aero/Space Scis.; Zeitschrift fur Angewandte; Math. und Mech.; Inginieur Archiv.; Forschung; Proc. of 8th and 9th Cong. for Mech.; Proc. for App. Math.; Jour. of Math., Belgrade Univ.; Pol. Tech. Inst. Jassy, Rumania. Areas of Rsch.: Un-steady Wing Theory; Thermoelasticity; Singular Integral Equa-tions; Boundary Value Problems; Hydromagnetic Turbulence; Waves; Applied Mathematics and Mechanics; Mathematical Physics.

STANLEY, George Mahon (Ph.D.), Prof., Chmn., Geol. Dept., Fresno St. Coll., Fresno, Calif. Home Add.: 545 E. Buckingham, Fresno 4, Calif. GEOMORPHOL-OGY, PLEISTOCENE LAKES. b. Detroit, Mich., Mar. 15, 1905. s. Louis Crandall and Jane C. (Ma-hon) S. Edn.: B.Sc., Univ. of Mich., 1928; M.A., ibid., 1930; Ph.D., ibid., 1932. m. Ellen Burden Stevenson, Aug. 14, 1934. c.: Martha Alice; George Pat-terson. Exp.: Instr. to Assoc. Prof., Geol. Dept., Univ. of Mich., 1930-48; Assoc. Geologist, U. S. Geological Survey, Lansing, Mich., 1945, 1946, summers; Assoc. Prof. to Prof. and Chmn., Geol. Dept., Fresno St. Coll., 1948—. Hon. Pos.: Trustee, Cranbrook Inst. of Sci., Bloomfield Hills, Mich. Mem.: Geological Soc. of Am., Fellow; Mich. Acad. of Sci.; Psi Upsilon; Phi Beta Kappa; Sig-



ma Xi; Michigamua. Author: Geology of the Cranbrook Areas, 1936; Prehistoric Mackinac Island, 1945; Geology of the Mackinac Straits Region, 1945. Contbr. to: Bull. of Geological Soc. of Am.; Jour. of Geol.; Papers of Mich. Acad. of Sci.; Am. An-tiquity. Areas of Rsch.: Shorelines of the Glacial Great Lakes; Pleistocene Lakes of the Great Basin; Playas and Stone Tracks on Playas.

STANLEY, John Deane (D.B.A.), Assoc. Prof., Coll. of Bus. Ad-ministration, The Univ. of Rochester, Rochester 20, N. Y. Home Add.: 67 Hillcrest Dr., Penfield, N. Y. ADMINISTRATION. b. King's Co., N. Y., Nov. 12, 1924. s. John Lawrence and Sophie (Two-roger) S. Edn.: A.B., Harvard Univ., 1948; M.B.A., Ind. Univ., 1950; D.B.A., ibid., 1954. m. Marjorie Thines, 1951. c.: John Harold; William Deane. Exp.: Asst. in Rsch., Ind. Univ., 1952-53; Asst. Prof., Univ. of Ark., 1953-55; Asst. Prof., Univ. of Buffalo, 1955-58; Assoc. Prof., Univ. of Rochester, 1958—. Mem.: The Acad. of Mgmt.; The Inst. of Mgmt. Scis.; Industrial Relations Rsch. Assn.; A.E.A.; A.F.A.; A.A.-A.S.; Beta Gamma Sigma; Roches-ter C. of C.; Harvard Club of Rochester. Contbrng. Author: Readings in Human Relations, 1959. Contbr. to: Jour. of the Acad. of Mgmt.; Personnel Jour.; Advanced Mgmt.; Personnel Administration. Serv. Rec.: U. S. Army, 1943-45, 1951-52. Areas of Rsch.: Organizational Theory, Decision Theory, Informal Organization.

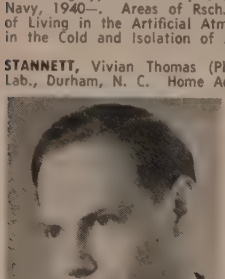


STANLEY, Norman Francis, Asst. Technical Dir., Marine Colloids, Inc., Rockland, Me. Home Add.: P. O. Box 446, Rockland, Me. CHEMISTRY AND TECHNOLOGY OF SEAWEED HYDROCOLLOIDS. b. Rockland, Me., May 6, 1916. s. Freeman A. and Winifred M. (Kent) S. Exp.: Rsch. Chem., Algin Corp. of America, Rock-land, Me., 1940-53; Rsch. Dir., ibid., 1953-59; Asst. Tech. Dir., Marine Colloids, Inc., Rockland, Me., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; Soc. of Rheology; Am. Rocket Soc.; British Inter-planetary Soc.; Internatl. Soc. for General Semantics. Areas of Rsch.: Marine Algae; Algal Polysaccharides; Water-soluble gums.

STANMEYER, William Robert (D.D.S.), Head, Professional and Rsch. Branch, Bureau of Med. and Surgery, Washington, D. C.; Head, Med.-Dent. Sci. Branch, Office of Naval Rsch. Home Add.: 5030 Alta Vista Rd., Bethesda, Md. DENTAL RESEARCH AND EDUCATION. b. Chicago, Ill., Sept. 2, 1914. s. Mrs. Minette Lefebre (Belfield) S. Edn.: B.S., Univ. of Ill., 1937; D.D.S., ibid., 1939. m. Charlotte Romanus, Sept. 7, 1940. c.: Nancy. Exp.: Officer in Charge, U. S. Navy Dental Technicians Schl., Great Lakes, Ill., 1946-52; U. S. Navy Med. Rsch. Lab., New London, Conn., 1953-59; Head, Professional Branch, Bureau of Med. and Surg., Washington, D. C., 1959—; Head, Intramural Navy Dental Rsch., ibid., 1960—; Head, Med. and Dental Div., Office of Naval Rsch., Washington, D. C., 1960—. Mem.: A.D.A.; A.A.A.S.; A.C.D.; I.A.D.R.; U. S. Naval Inst.; Sigma Phi Epsilon; Delta Sigma Delta; Omicron Kappa Upsilon; Masons. Contbr. Author: Aviation Medical Practice, 1960; Submarine Medical Practice, 1959. Contbr. to: Jour. of Dental Rsch.: Jour. of Periodontics;

Jour. of the Am. Dental Assn.; Military Med.; Jour. of Physiol.; Oral Surgery; Oral Med.; and Oral Pathol. Serv. Rec.: U. S. Navy, 1940—. Areas of Rsch.: Dental Research Involving Stress of Living in the Artificial Atmosphere of Atomic Submarines and in the Cold and Isolation of Antarctica.

STANNETT, Vivian Thomas (Ph.D.), Assoc. Dir., Camille Dreyfus Lab., Durham, N. C. Home Add.: 32 Lakeshore Dr., Chapel Hill, N. C. POLYMER CHEMISTRY. b. Langley, England, Sept. 1, 1917. s. Ernest and Dorothy Grace (Rustell) S. Edn.: B.S., London Polytechnic, 1939; Ph.D., Polytech. Inst. of Bklyn., 1950. m. Susanne Sulzbacher, May 30, 1946. c.: Rosemary. Exp.: Rsch. Chemist, Kopper Co., Pgh., Pa., 1951-52; Prof., Sta. Univ. Coll. of Forestry, Syracuse, N. Y., 1952-61; Assoc. Dir., Camille Dreyfus Lab., 1961—. Hon. Pos.: Secy., T.A.P.P.I. Synthetics Div. Mem.: Am. Chem. Soc.; Chem. Soc. T.A.P.P.I.; Fellow, N. Y. Acad. of Scis.; Sigma Xi; Phi Lambda Upsilon. Author: Cellulose Acetate Plastics, 1950; Handbook of Chemical Technol., 1953. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. Poly. Scl.; Jour. Appl. Poly. Sci.; Tappi. Areas of Rsch.: Kinetics and Mechanism of Polymerization; Cellulose Modifications; Permeability in Polymers.



STANTON, Alfred Hodgin (M.D.), Psychiatrist in Chf., McLean Hosp., Belmont, Mass. Home Add.: 15 Livermore Rd., Wellesley Hills 81, Mass. MEDICINE AND PSYCHIATRY. b. Washington, D. C., Oct. 15, 1912. s. Edmund C. and Sina Mary (Hodgin) S. Edn.: A.B., George Washington Univ., 1935; M.D., ibid., 1936. m. Harriet Metzger, Nov. 9, 1940. c.: William H.; Bruce F.; Abigal M. Exp.: Intern, Chicago Memorial Hosp., Chicago, Ill., 1936-37; Asst., Central Free Dispensary, Chicago, Ill., 1937-40; Fellow, Rush Med. Coll., Chicago, Ill., 1937-40; Assoc. Attending Neurologist, Cook Co. Hosp., Chicago, Ill., 1939-40; Resident, N. Y. St. Psychiatric Inst. and Hosp., N. Y. C., 1940-41; Resident, Chestnut Lodge Sanitarium, Rockville, Md., 1941-42; Attending Psychiatrist, ibid., 1942-51; Staff Psychiatrist, Wash. Inst. of Mental Hygiene, Wash., D. C., 1942-44; Asst. Prof. of Psychiatry, Boston Univ. Schl. of Med., 1953-56; Chf., Closed Ward Sect., Cushing V.A. Hosp. Psychiatry and Neurol. Serv., Framingham, Mass., 1951-52; Chf., Closed Ward Sect., Boston V.A. Hosp. Psychiatry and Neurol. Serv., 1952-55; Consultant, ibid., 1955—; Psychiatrist in Chf., McLean Hosp., Belmont, Mass., 1955—; Psychiatrist, Mass. Gen. Hosp., Boston, Mass., 1955; Consultant in Psychiatry; Mass. Eye and Ear Infirmary, Boston, Mass., 1956—; Lectr. in Psychiatry, Boston Univ. Schl. of Med., 1956-57; Assoc. Prof., Harvard Med. Schl., 1955—. Mem.: Am. Psychiatric Assn., Fellow; Boston Psychoanalytic Soc. and Inst., Inc.; Am. Psychoanalytic Assn.; Group for the Adv. of Psychiatry; Internatl. Psychoanalytic Assn.; Soc. for Applied Anthropol.; World Fed. of Mental Health; Boston Soc. of Psychiatry and Neurol.; Am. Psychosomatic Soc.; Mass. Med. Soc.; Middlesex S. Dist. Med. Soc.; Eastern Mass. League for Nursing; A.A.A.S., Fellow; Am. Acad. of Arts and Scis., Fellow; Assn. of the Am. Med. Colls. Co-Author: Personality and Political Crisis, 1951; The Mental Hospital, 1954. Contbr. to: Psychiatric Jour. Areas of Rsch.: Psychiatry; Rsch. in Psychiatric Hosps.; Social Process and Group Processes.

STANTON, Charles H. (Mr.), Process Engr., W. R. Grace & Co., New York, N. Y. Home Add.: 11 Cornell Dr., Great Neck, N. Y. CHEMICAL ENGINEERING. b. New York, N. Y., Mar. 31, 1923. s. Charles E. and Georgia (Kuck) S. Edn.: B.Ch.E., Rensselaer Poly. Inst., 1944; M.Ch.E., ibid., 1947. m. Jean Houst, 1949. c.: Keith C. Exp.: Development Engr., Bakelite Corp., Bound Brook, N.J.; Bloomfield, N. J., 1944-45; Instr. of Chem. Engr., Rensselaer Poly. Inst., Troy, N. Y., 1945-47; Sr. Process Engr., Jefferson Chem. Co., New York, N. Y., Port Neches, Tex., 1947-54; Sr. Process Engr., Development Engr., M. W. Kellogg Co., New York, N. Y., 1954-61; Sr. Process Engr., W. R. Grace & Co., New York, N. Y., 1961—. Mem.: Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Sigma Xi; Rsch. Soc. of Am.; Pi Kappa Phi. Gen. Int.: Registered Profl. Engr., N. Y. Areas of Rsch.: Chemical Engineering, Process Design of Petrochemical Plants, Thermodynamics and Phase Equilibria, Application of Digital Computers to the Prediction of Vapor-Liquid Equilibria of Complex Systems.

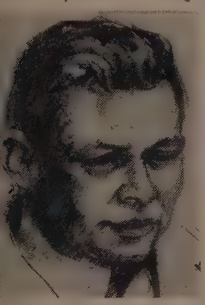
STANTON, Gilbert (D.D.S.), Dentist-Nutritionist, 745 Fifth Ave., New York 22, N. Y. Home Add.: 119 Malverne Ave., Malverne, N. Y. NUTRITION-PREVENTIVE DENTISTRY. b. N.Y.C., Sept. 9, 1918. Edn.: B.S., Univ. of Va., 1938; D.D.S., Univ. of Pa., 1943; M.S., Columbia Univ., 1957; Doc. Cand., ibid., 1962. m. Harriet L. Cooper, Jan., 1946. c.: Joyce Paula; Janet Bettie. Exp.: Vistg. Doc., Queens Gen. Hosp., Jamaica, N. Y., 1947-62; Rsch. Fellow, U. S. Veterans Admin. Hosp., Northport, N. Y., 1960—. Hon. Pos.: Consultant, Jour. of Am. Dental Assn.; N. Y. State Dental Jour.; Past Pres., Queens Co. Dental Soc., 1955. Mem.: N. Y. Acad. of Sci.; A.A.A.S.; Am. Dental Assn.; N. Y. State Dental Soc.; Queens Co. Dental Soc.; Sigma Xi; Phi Delta Kappa. Contbr. to: N. Y. State Dental Jour.; Queens Co. Dental Soc. Bull. Serv. Rec.: A.U.S., 1943-46. Gen. Int.: Research Leading to Clinical Control of Salivary Calculus, and of Dental Caries. Areas of Rsch.: Nutrition, Calcification.

STAPP, John Paul (M.D.), Asst. for Aerospace Med., U. S. Air Force Aerospace Med. Center, Brooks Air Force Base, Tex. Home Add.: 3003 Bluefield St., San Antonio 1, Tex. AEROSPACE MEDICINE; BIOPHYSICS. b. Bahia, Brazil, July 11, 1910. s. Charles F. and Mary Louise (Shannon) S. Edn.: B.A., Baylor Univ.; M.A., ibid., 1932; Ph.D., Univ. of Tex., 1940; M.D., Univ. of Minn., 1944. Hon. Deg.: Sc.D., Baylor Univ., 1956. m. Lilli Lanese, Dec. 23, 1957. Exp.: Instr., Decatur Baptist Coll., Decatur, Texas, 1932-34; Tchng. and Rsch. Fellow, Univ. of Tex., 1934-39; Grad. Tchng. Asst., Univ. of Minn., 1940-42; Internship, St. Mary's Hosp., Duluth, Minn., 1943-44; Active Duty, U. S. Army Med. Corps, 1944-46; Gen. Duty, Med. Officer, ibid., 1944-46; Tsch. Flight Surg., Project Officer, Edwards Air Force Base, Calif., 1946-51; Reserve Active Duty, ibid., 1946-48; Reserve, U. S. Air Force Med. Corps, 1948-58; Sect. Chf., Aeromed. Lab., Biophysics Branch, Wright Air Devel. Div., Wright-Patterson Air Force Base, Ohio, 1951-53; Chf., Aeromed. Field Lab., Holloman Air Force Base, N. M., 1953-58; Chf., Aerospace Med. Lab., Wright Air Devel. Div., Wright-Patterson Air Force Base, Ohio, 1958-60; Regular U. S. Air Force, 1958—; Asst. for Aerospace Med., Advanced Studies Group, U. S. Air Force Aerospace Med. Center, Brooks Air Force Base, Tex., 1960—. Hon. Pos.: Vice-Pres., Aeromed. Assn., 1956; Vice-Pres., Am. Rocket Soc., 1958; Pres., Am. Rocket Soc., 1959; Vice-Pres., Internatl. Astronautical Fed., 1960; Mem., Bioastronautics Comm., Natl. Acad. of Sci. Mem.: Fellow, Aeromed. Assn., Am. Rocket Soc.; Am. Astronautical Soc.; Diplomate, Am. Bd. of Preventive Med.; A.A.A.S.; A.M.A.; Sigma Xi; Internatl. Acad. of Astronautics, Fellow; Aerospace Med. Assn.; Am. Soc. of Automotive Engrs.; Assn. of Milit. Surgs.; Am. Coll. of Preventive Med.; Phi Beta Pi. Contbr. to: Aerospace Med.; Jour. of A.M.A.; Astronautics; Milit. Surg.; Rev. of Aeronautical Scis. Gen. Int.: Established Definitive Limits of Human Tolerance by Abrupt Mechanical Forces Encountered in Transport Crashes, Based on 12 Years of Quantitative Anal. Performed on Human, Animal and Anthropometric Dummy Experiments. Areas of Rsch.: Aerospace Med.; Biol. Sci.

STARCH, Daniel (Sc.D.), Founder and Chmn., Daniel Starch and Staff, Mamoroneck, N. Y. Home Add.: 14 Burgess Rd., Scarsdale, N. Y. PSYCHOLOGY AND MARKETING RESEARCH. b. La Crosse, Wis., Mar. 8, 1883. s. Frank and Theresa (Starch) S. Edn.: B.A., Morningside Coll. 1903; M.A., ibid., 1904; Ph.D. State Univ. of Iowa, 1906. Hon. Deg.: Sc.D., Morningside Coll. 1949. m. Amy Jane Hopson, Aug. 26, 1913. Exp.: Instr. in Psychol., State Univ. of Iowa, 1906-07; Instr. in Psychol., Wellesley Coll., 1907-08; Instr. and Assoc. Prof. Psychol., Univ. of Wis. 1908-19; Lectr. and Assoc. Prof. Business Psychol., Harvard Univ. 1919-26; Dir. Rsch., Am. Assn. of Advertising Agencies, 1924-32 Founder and Chmn., Daniel Starch and Staff, N. Y., 1919—. Mem.: Fellow, Am. Psychol. Assn.; Am. Mktg. Assn.; Am. Stat. Assn.; Fellow, A.A.A.S.; Sigma Xi; Gamma Alpha; Phi Delta Kappa; Psi Chi; Beta Gamma Sigma; Alpha Delta Sigma; Kappa Tau Alpha; Harvard Club, N. Y.; Scarsdale Golf Club. Author: Educational Psychology, 1919; Principles of Advertising, 1923; How to Develop Your Executive Ability, 1943. Contbr. to: Psychological Jours.; Jour. of Mktg.; Encyclopedia Britannica. Serv. Rec.: U. S. Army, 1917. Gen. Int.: Certificate of Achievement, Univ. of Iowa, 1947; Converse Award, Am. Mktg. Assn., 1951; Devised Method to Measure Readership of Advertisements, 1922; Devised Method for Measuring Product Sales Made by Advertising, 1959. Areas of Rsch.: Mktg. Rsch.

APP, Paul Ray (Ph.D.), Rsch. Chemist, Phillips Petroleum Co., rtlesville, Okla. Home Add.: 139 S.E. DeBell Ave., Bartlesville, la. ORGANIC CHEMISTRY. b. St. Louis, Mo., July 1, 1930. Paul A. and Mable B. (Williams) S. Edn.: B.S., Univ. of Mo., 53; Ph.D., ibid., 1960. Exp.: Rsch. Assoc., Univ. of Mo., Co-mbia, Mo., 1960; Rsch. Assoc., Mass. Inst. of Tech., Cambridge, ss., 1960-61; Rsch. Chemist, Phillips Petroleum Co., Bartles-e, Okla., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Chem. . of London; Pi Mu Epsilon; Sigma Xi. Contbr. to: Jour. of ganic Chem.; Jour. of Am. Chem. Soc. Serv. Rec.: U.S.N., 48-49, 1953-56. Areas of Rsch.: Steric Effects in Aliphatic stems; Carbanion Chem.; Aliphatic Azo and Hydrazo Com-unds; Synthesis and Reactions of B. Epoxyamines.

ARK, Richard Boies (M.D.), Assoc. Clinical Prof. of Surgery, l. of Physicians and Surgeons, New York City, N. Y. Home Add.: 200 East 66th St., New York 21, N. Y. PLASTIC AND RECONSTRUCTIVE SURGERY. b. Conrad, Ia., Mar. 31, 1915. s. Eugene and Hazel (Carson) S. Edn.: B.A., Stanford Univ., 1936; M.D., Cornell Univ. Med. Coll., 1941. m. Janet Collins, Sept., 1939. Exp.: Instr. in Surgery, N. Y. Hosp., Cornell Med. Center, N. Y. City, N. Y., 1950-52; Attending Plastic Surgeon, V.A. Hosp., Bronx, N. Y., 1951—; Asst. Prof. Surgery, N. Y. Hosp., Cornell Med. Center, N. Y. City, 1952-55; Consultant, Head and Neck Surgery, St. Mary's Hosp., Passaic, N. J., 1954—; Assoc. Prof. Surgery, N. Y. Hosp., Cornell Med. Center, N. Y. City, N. Y., 1955-56; Consultant, Plas-



Surgeon, Manhattan V.A. Hosp., N. Y. City, N. Y., 1957—; tending Surgeon in Charge of Plastic Surgery, St. Luke's Hosp., Y. City, N. Y., 1958—; Assoc. Clinical Prof. Surgery, Coll. of ysician and Surgeons, N. Y. City, N. Y., 1961—. Hon. Pos.: es., Sec. on Hist. Med., N. Y. Acad. of Med. and N. Y. State ed. Soc.; Pres., Fdtn. of Am. Soc. of Plastic and Reconstructive rgery. Mem.: Phi Delta Theta; Nu Sigma Nu. Author: Paul Hoeber Plastic Surgery, 1962. Contbr. to: Plastic and Re-nstructive Surgery; British Jour. of Plastic Surgery; Revista tino Americana de Cirurgia Plastica; Surgery Gyn. and Obs.; rgery; Arch. of Surgery; Bull. N. Y. Acad. of Med.; Armed rces Record. Serv. Rec.: A.U.S., 1943-46; Awarded Bronze ar. Areas of Rsch.: Homotransplantation, Vascularity of Trans-anted Tissues and Teratology.

ARKE, Albert Carl, Jr. (Ph.D.), Supvr. of Techn. Information rvs., Gen. Aniline and Film Corp., Easton, Pa. Home Add.: 5 Porter St., Easton, Pa. ORGANIC CHEMISTRY. b. Cleveland, io, Jan. 14, 1916. s. Albert Carl and Metta (Mellen) S. n.: B.S., Fla. Sou. Coll., 1936; Ph.D., Northwestern Univ., 40. m. Annette Louise Jensen, Sept. 20, 1941. c.: Robert arles; Richard Jensen; John Mellen. Exp.: Lab. Asst., Fla. u. Coll., 1935-36; Naval Stores Rsch. Fellow, Univ. of Fla., 36-37; Org. and Biochem. Lab. Instr., Dept. of Northwestern iv., Dent. Schl., 1937-40; Natl. Def. Rsch. Comm., Northwest-n Univ., 1940-42; Org. Rsch. Chemist, N. J. Plant of G.A.F., nden, N. J., 1942-43; Org. Rsch. Chem., Cent. Rsch. Lab. of G.A.F., ston, Pa., 1943-46; CRL Patent File Supvr. and Patent Schr., 46-48; Supvr. of Techn. Inform. Servs., Gen. Aniline and Film rp., 1955—. Hon. Pos.: Pres., Fla. Sou. Chapt., Phi Lambda silon, 1936; Councilman of St. Peter's Lutheran Church, 1956-; Deputy Dir. of Civil Defense of Easton, Pa., 1953-56. Mem.: i Gamma Mu; Phi Lambda Upsilon; Am. Chem. Soc.; Sigma Xi; n. Assn. Adv. Sci.; Fleas Club; Forks Township Fire Dept. ntbr. to: Jour. of Pharmacol.; Jour. of the Am. Chem. Soc.; ur. of the Am. Dent. Assn.; Jour. of Dent. Rsch.; Analyt. em.; Patents. Areas of Rsch.: Organic Chemistry; Physiologi-l Chemistry and Pharmacology; Warfare Agents; Color Pho-graphy; Polymers; Patent Soliciting and Prosecution; Safety; belling and Shipment of Chemicals; Pollution; Technical In-rmation Filing and Searching; Technical Reporting; Security; dministration; Indexing; Technical Library and Documentation; siness Methods, Equipment and Procedures.

ARR, Chauncey (Ph.D.), Vice-Pres., N. Am. Aviation, Inc., and es., Atomics Internatl. Div., Box 309, Canoga Pk., Calif. LECTRICAL ENGINEERING: PHYSICS. b. Newark, N. J., Apr. , 1912. s. Rubin (Dec.) and Rose (Dropkin) S. Edn.: E.E., nsselaer Poly. Inst., 1932; Ph.D., ibid., 1935. m. Doris Evelyn bel, March 20, 1938. c.: Ross M.; Ariel Ellen. Exp.: Rsch. llow, Harvard Univ., 1935-37; Rsch. Assoc., Mass. Inst. of ch., 1938-41; Rsch. Wk. for the Br. of Ships, Navy Dept., 41-42; Rsch., Manhattan Dist., Rad. Lab. of the Univ. of Calif. Berkeley; Tenn. Eastman Corp., Oak Ridge and the Clinton abs., Oak Ridge, Tenn., 1942-46; Chf. of Spec. Rsch., North n. Avn., Inc., Downey, Calif., 1946-49; Dir., Atomic Energy ch. Dept., ibid., 1949-55; Vice Pres., Nuclear Engrng. and fg., N. Am. Avn., Inc., Downey, Calif., 1955; Vice-Pres. and eneral Manager of Atomics International Division, North merica Aviation, Inc., Canoga Park, Calif., 1955-60; Vice-es., North Am. Aviation, Inc., and Pres., Atomics International ivision, 1960—. Hon. Pos.: Fellow, Am. Physics Soc.; Pres., m. Nuclear Soc., 1958; Advisory Panel for Univ. Research eactors, Natl. Sci. Fdtn.; Nucl. Adv. Grp., Maritime Admin. em.: Nucl. Energy Com., Natl. Assn. of Mfgrs.; Soc. of Nucl. ed. of So. Calif.; Sigma Xi; Eminent Mem., Eta Kappa Nu; ndustry Comm., Am. Power Conf.; Dir., Atomic Indust. Forum; Comm. on Commercial Uses of Atomic Energy, U. S. Chamber of Commerce; Dir., Scient. Rsch. Soc. of Am.; Sr. Mem., Am. Rocket Soc.; Calif. Sta. Adv. Coun. on Atomic Energy Devel. and Rad. Protn.; Clin. Prof., UCLA Med. Schl. Contbr. to: Phys.; Rev. Sci. Inst.; Pergamon Press, London; Nucleonics; Atomic Indust. Forum; Am. Mgmt. Assn.; Am. Pub. Power Assn.; Natl. Indust. Conf. Bd. Co-Author: Sodium Graphite Reactors, 1958. Gen. Int.: Rsch. Fellow, Rensselaer Poly. Inst., 1932-35; Charles A. Coffin Fellowship, Harvard Univ., 1935-37. Areas of Rsch.: Electrical Engineering; Physics.

STARR, George Herman (Ph.D.), Dir., Agr. Extension Serv., Univ. of Wyo. Home Add.: 1209 Kearney St., Laramie, Wyo. PLANT PATHOLOGY (HORTICULTURE AND AGRONOMY). b. Bismarck, Ill., Nov. 24, 1898. s. Fred Henry and Jennie Belle (Henry) S. (both dec.). Edn.: B.S., S. Dak. St. Coll., 1925; M.S., Univ. of Neb., 1928; Ph.D., Univ. of Minn., 1932. m. Meriel Louise Spooner, Sept. 1, 1927. c.: Robert Irving. Exp.: Prin., Tchr., Elkton H. S., Elkton, S. D., 1925-27; Instr.-Prof., Univ. of Wyo., 1931-53; Dir. of Agr. Extension, ibid., 1952—. Hon. Pos.: Chmn., Bean Rsch. Tech. Comm.; Reg. Chmn., Natl. Potato Certification Comm.; Chmn., Phytopathol. Publicity; Nat. Fertilizer Steering Comm.; Chmn., Supervisory Seminar (Extension) West. Sts.; Nat. Comm., Wis. Agr. Extension Ctr. for Adv. Study; Nat. Comm., In-Serv. Trng. for Rural Clergy; Pres., Wyo. Sigma Xi, 1941; Wyo. Faculty Adv., Alpha Zeta, 20 yrs.; Pres., Laramie Kiwanis Club, 1960. Mem.: Sigma Xi; Gamma Sigma Delta; Alpha Zeta; Farm House; Masonic Order; Grange; Farm Bureau; Laramie Kiwanis Club. Contbr. to: Phytopathol.; Am. Potato Jour.; Colo.-Wyo. Acad. of Sci.; Jour. of Bacter. Gen. Int.: Rel. Edn. Award (Presby. Ch.); Meritorious Award, Scouting. Areas of Rsch.: Wilt-Resistant Alfalfa; Chlorosis of Cottonwoods and Other Plants; Bacterial Blights and White Mold of Beans; Bacterial Ring Rot of Potatoes; Disease Control Through the Use of Antibiotics.

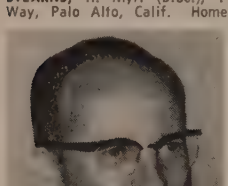
STAUBER, Leslie Alfred (Ph.D.), Prof. and Chmn. of Zool., Rutgers, The St. Univ., New Brunswick, N. J. Home Add.: 485 S. Randolphville Rd., New Market, N. J. PARASITOLOGY. b. Newark, N. J., June 6, 1907. s. Ernest G. and Laura Edith (Newton) S. Edn.: B.S., Rutgers, 1929; M.S., ibid., 1930; Ph.D., Chicago Univ., 1937. m. Mabel G. Fisher, July 27, 1930. c.: Amy Ann; William T.; T. Nelson. Exp.: Asst. Biol., Oyster Rsch. Lab., N. J. Agric. Expt. Sta., Bivalva, N. J., 1935-43; Assoc. in Pharmacol., Squibb Inst. for Med. Rsch., New Brunswick, N. J., 1943-44; Asst. Prof. to Prof., Rutgers Univ., 1944—. Hon. Pos.: Chmn., Parasitol. and Tropical Med. Study Sect., Natl. Inst. of Health, 1957-59, U.S.P.H.S.; Fellow, Squibb Inst., 1945-46. Mem.: Am. Assn. Adv. Sci.; Am. Soc. Zool.; Am. Soc. Parasitol., Pres., 1962; Soc. Protozool.; Am. Soc. Trop. Med. and Hyg.; Soc. Exptl. Biol. and Med.; Natl. Shellfisheries Assn.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. of Parasitol.; Jour. of Protozool.; Exptl. Parasitol.; Jour. Marine Rsch.; Proc. Soc. Exptl. Biol. and Med.; Biol. Bull.; Ecol.; Jour. Inf. Dis.; Endocrinol.; Ann. N. Y. Acad. of Sci.; Proc. Natl. Shellfish Assn.; Rice Inst. Pamphlets; Proc. Helm. Soc. Wash. Areas of Rsch.: Leishmaniasis, Immunology of Parasitic Protozoa, Host Resistance in Invertebrates, Oyster Pests and Parasites.

STAVROLAKIS, James Alexander (Sc.D.), Mgr. of Res., American-Standard, 834 E. Broadway, Louisville 4, Ky. Home Add.: 3312 Trinity Rd., Louisville 6, Ky. REFRACTORY MATERIALS. b. Storrs, Utah, Oct. 1, 1921. s. Alexander and Crystal (Haniotis) S. Edn.: B.S., Rutgers Univ., 1943; Sc.D., Mass. Inst. of Tech., 1949. m. Rachel Gallup, 1951. c.: Kristalia; Alexander; Marianthe. Exp.: Rsch. Engr., G. E. Co., Oak Ridge, Tenn., 1949-52; Supvr., Armour Rsch. Fdtn., Chicago, Ill., 1952-55; Asst. Mgr., Mallinckrodt Chem. Works, St. Louis, Mo., 1955-56; Mgr., Crucible Steel Co., 1956-61; Mgr. of Rsch., Am. Stand., 1961—. Mem.: Am. Chem. Soc.; Am. Soc. for Metals; Am. Ceramic Soc.; Am. Soc. Testing Materials; Sigma Xi; Toastmasters Internatl. Contbrng. Author: Refractories, 1949; Encyclopedia Chem. Technol., 1954; High Temperature Measurements, 1955. Contbr. to: Jour. Am. Ceramic Soc.; Bull. of Am. Ceramic Soc. Serv. Rec.: U. S. Air Force, 1943-46. Areas of Rsch.: Nuclear Power Applications; Material Devel. and Testing; Rsch. Admin.

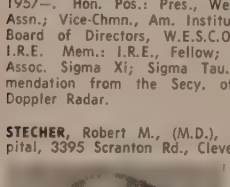
STEARN, Allen Edwin (Ph.D.), Prof. of Chemistry, Univ. of Mo., Columbia, Mo. PHYSICAL CHEMISTRY. b. Sept. 14, 1894, Lafayette, Ind. s. John H. and Louise (Hagerty) S. Edn.: A.B., Stanford, 1915; M.A., Stanford, 1916; M.S., Univ. of Ill., 1917; Ph.D., Univ. of Ill., 1919. m. Esther A. Wagner of Chicago, Ill., Jan. 20, 1920 d. Rev. M. and Emma Wagner. c.: Enid Wagner.

Exp.: Asst. Prof., Univ. W. Va., 1920; Instr., Univ. of Ill., 1919; Asst. Prof., Univ. of Mo., 1921-24; Rsch. Assoc., Calif. Inst. Tech., 1924-26; Assoc. Prof., Univ. Mo., 1926-38; Prof. and Chmn., Chemistry Department, ibid., 1938-58; Prof., ibid., 1958 -; Research and Development Chemist, Mallinckrodt Chemical Works, St. Louis, Missouri, summer, 1915-17. Hon. Pos.: A.S.C.; Sigma Xi; Phi Mu Alpha. Mem.: A.C.S.; A.A.U.P.; Mo. Acad. of Sci.; A.A.A.S.; Soc. Am. Bact.; Am. Assn. Pub. Health; Phi Beta Kappa; Sigma Xi; Phi Mu Alpha; Alpha Chi Sigma; Phi Lambda Upsilon. Author: An Elem. Outline of Analytical Chem., 1922; Studies in the Physico-Chemical Behavior of Bacteria, 1928. Contbr. to: Jour. A.C.S.; Jour. Chem. Phys.; Jour. Phys. Chem.; Jour. Bact.; Amer. Jour. Pub. Health; Jour. Lab. and Clin. Med.; Jour. Exptl. Med.; Jour. Gen. Psychol.; Jour. Biol. Chem.; Protoplasm; Jour. Inf. Dis.; Stain Tech.; Jour. Ind. Eng. Chem.; Erg. D. Enzymforsch. Ph.D. Dissertation: A Study of the Heats of Dilution of Certain Aqueous Salt Solutions. Special Int.: Chemical Kinetics.

STEARNS, H. Myrl (D.Sc.), Pres., Varian Assocs., 611 Hansen Way, Palo Alto, Calif. Home Add.: 246 La Cuesta Dr., Menlo Park, Calif. AUTOMATIC FREQUENCY CONTROLS, AUTOMATIC RANGING, RADAR, MICROWAVE TUBES AND ENGINEERING MANAGEMENT. b. Kiesling, Wash., Apr. 24, 1916. s. Horace William and Mary Leota (Bates) S. Edn.: B.S., Univ. of Ida., 1937; E.E., Stanford Univ., 1939. Hon. Deg.: D.Sc., Univ. of Ida., 1960. m. Ruth Lee, Sept. 30, 1939. c.: Pamela Maye; Keith Marshall; Gordon Bates; Sally Elizabeth. Exp.: Tchr. & Rsch. Asst., E.E. Dept., Stanford Univ., 1937-39; Asst. to Chf. Engr., Gilfillan Bros., Los Angeles, Calif., 1939-41; Proj. Engr., Sperry Gyroscope Co., L. I., N. Y., 1941-45; Rsch. Engr., Sperry Co., 1945-48; Exec. Vice Pres., Gen. Mgr., Varian Assocs., San Carlos, Calif., 1948-57; Pres., ibid., Palo Alto, Calif., 1957—. Hon. Pos.: Pres., West Coast Electronics Manufacturers Assn.; Vice-Chmn., Am. Institute of Electrical Engineers; Chmn., Board of Directors, W.E.S.C.O.N.; Chmn., Palo Alto Sub-Sect., I.R.E. Mem.: I.R.E., Fellow; A.A.A.S.; Am. Management Assn.; Assoc. Sigma Xi; Sigma Tau. Gen. Int.: Certificate of Commendation from the Secy. of Navy, 1946. Areas of Rsch.: Doppler Radar.

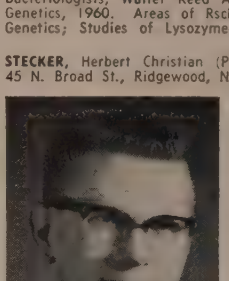


STECHER, Robert M., (M.D.), Physician, Metropolitan Gen. Hospital, 3395 Scranton Rd., Cleveland 9, Ohio. Home Add.: 12962 Lake Ave., Cleveland 7, Ohio. ARTHRITIS AND RHEUMATISM, GENETICS. b. Cleveland, Ohio, Dec. 1, 1896. s. Frederick W. and Lue (Morgan) S. Edn.: B.S., Dartmouth Coll., 1919; M.D., Harvard Med. Schl., 1923. Hon. Degree: Dr. of Human Letters, Fenn College, 1962. m. Florence McCarthy, April, 1926. c.: Mary Douthit; Robert Morgan, Jr.; Sally Hollington. Exp.: Physician, Metropolitan Gen. Hospital, Cleveland, Ohio, 1925—; Clin. Prof. of Med., Western Reserve Univ. Schl. of Med., Cleveland, Ohio, 1960—. Hon. Pos.: Bd. of Regents, Natl. Library of Med., Emreitus Trustee, Cleveland Med. Lib. Assn.; Chmn. of Bd., Cleveland Health Museum; Past Pres., ibid., 1950-61. Mem.: The Zool. Soc. of London, 1962; Cleveland Academy of Medicine; Ohio State Medical Assn.; Am. Medical Assn.; F.A.C.P.; Central Soc. for Clinical Research; Sigma Xi; Beta Theta Pi; Nu Sigma Nu; Am. Soc. of Human Genetics; Am. Rheumatism Assn., Pres., 1947-48. Contbr. to: Assorted Med., Rheumatism, Genetic Jour. Serv. Rec.: AUS, 1919. Gen. Int.: Trustee: Sloan-Kettering Inst. for Cancer Rsch., Charles F. Kettering Foundation, Cuyahoga Co. Hosp. Foundation, Pres.

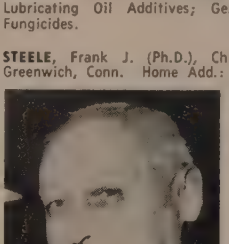


STECHSCHULTE (Sister) Agnes Louise, O.P., Coll. Instr., Barry Coll., 11300 N.E. 2nd Ave., Miami 38, Fla. Home Add.: Adrian Dominican Motherhouse, Adrian, Mich. MICROBIOLOGY. b. Owosso, Mich., Jan. 9, 1924. d. Louis and Agnes (Ford) S. Edn.: B.S., Siena Heights Coll., 1947; M.S., Univ. of Detroit, 1953; Ph.D., Catholic Univ. of Am., 1961. Exp.: Elem. Tchr., St. Dominic's Schl., Detroit, Mich., 1943-46; Elem. Tchr., St. Agatha's Schl., Gagetown, Mich., 1946-48; H. S. Sci. Tchr., St. Ambrose H. S., Detroit 15, Mich., 1948-53; H. S. Sci. Tchr., Aquinas H. S., Chicago, Ill., 1953-57; Grad. Student, Catholic Univ. of Am., Wash., D. C., 1957-60; Coll. Instr., Barry Coll., Miami, Fla., 1960; Chmn. of Biol. Dept., Barry Coll., 1961-62. Mem.: Soc. of Am. Bacteriologists; N. Y. Acad. of Sci. Hon. Frat.; Sigma Xi. Contbr. to: Bacteriological Proceedings. Gen. Int.: Rsch. Fellowship N.I.H., 1959-60; Fellowship, Soc. of Am. Bacteriologists, Walter Reed Army Inst. of Rsch. for Microbial Genetics, 1960. Areas of Rsch.: Salmonella Pullorum; Bacterial Genetics; Studies of Lysozyme-resistant mutants.

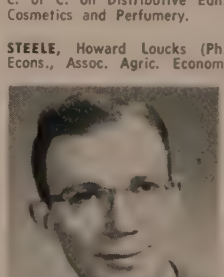
STECKER, Herbert Christian (Ph.D.), Pres., Stecker Chem., Inc., 45 N. Broad St., Ridgewood, N. J. Home Add.: One Bridle Way, Ho-Ho-Kus, N. J. ORGANIC CHEMISTRY. b. Ridgeland, Wis., May 4, 1917. s. George W. and Ingeborg B. (Lee) S. Edn.: B.S., Univ. of Wis., 1939; M.S., Univ. of Cincinnati, 1940; Ph.D., ibid., 1942. m. Berniece C. Jahnke, Aug., 1942. Exp.: Rsch. Chemist, General Chem. Co., N. Y., N. Y., 1942-43; Prod. Chem., U. S. Radium Corp., N. Y., N. Y., 1943-44; Rsch. Chem., E. I. du Pont de Nemours and Co., Wilmington, Del., 1944-47; Tech. Salesman, Edwal Lab., Inc., Chicago, Ill., 1947-49; Pres., Stecker Chem., Inc., Ridgewood, N. J., 1949—; Vice-Pres., Gallowhur Chem. Corp., N. Y., N. Y., 1951-52. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma. Contbr. to: Jour. of Soc. Cosmetic Chem.; Jour. of Am. Leather Chem. Assn. Areas of Rsch.: Instrumentation and Analysis, Radioactive compounds, Protein Reactions, Lubricating Oil Additives; Germicides, Organo-Metallic Chems., Fungicides.



STEELE, Frank J. (Ph.D.), Chief Pharmacist, Greenwich Hosp., Greenwich, Conn. Home Add.: 50 East Putnam Ave., Greenwich, Conn. PHARMACY, COSMETICS AND PERFUMERY. b. Hayfield Twp., Crawford Co., Pa., Apr. 16, 1905. s. John and Mary (Fleming) S. Edn.: Ph.G., Univ. of Pittsburgh, 1930; Sc.D., Metropolitan Univ., 1959; Ed.D., ibid., 1959; Ph.D., Stamford, 1951. m. Mildred H. Morse, June 12, 1939. Exp.: Scholarship and Student Asst. in Pharmacognosy, Univ. of Pittsburgh, 1925-28; Pharmacist, Western Pa. Hosp., 1928-39; Asst. Mgr., Nevan Drug Co., 1939-41; Pharmacist, Johns Hopkins Hosp., 1941-45; Chief Pharmacist, Greenwich Hosp., Conn., 1945—; Sci. Instr. in Gen. Sci. and Chem. for the Greenwich Bd. of Edn., 1961—. Hon. Pos.: Pres., Sci. Club, 1924-25; Pres., Charter Mem., Conn. Soc. of Hosp. Pharmacists, 1948-49. Mem.: New York Acad. of Science; National Assn. of Drs. in U. S.; Hon. Life Mem., Internatl. Faculty of Sci.; Hon. Life Mem., Natl. Assn. of Drug Clerks; Am. Pharm. Assn.; Am. Chem. Soc.; Soc. of Cosmetic Chem.; Societe Techniques des Parfumeurs de France; Can. Soc. Hosp. Pharm.; Am. Soc. of Hosp. Pharm.; Fellow A.A.A.S.; Am. Inst. Chems.; Am. Coll. of Apothecaries; Kappa Psi. Author: Hospital Bur. Formulary, 1957. Contbr. to: Am. Professional Pharmacist; Am. Druggist; Jour. Am. Soc. Hosp. Pharmacists; Am. Inst. Hist. Pharm. Gen. Int.: Sr. Vocl. Instr. in Cosmetics Scis. and Perfumery; Chmn., Employees Adv. Comm. C. of C. on Distributive Edn. Areas of Rsch.: Pharmaceutical Cosmetics and Perfumery.



STEELE, Howard Loucks (Ph.D.), Assoc. Prof. of Agricultural Econs., Assoc. Agric. Economist, Clemson Coll., Clemson, S. C. Home Add.: 206 Willow St., Clemson, S. C. ECONOMICS AGRICULTURAL ECONOMICS, AND MARKETING. b. Pittsburgh, Pa., Jan. 27, 1929. s. Howard Bennington and Ruby Alberta (Loucks) s. Edn.: B.S., Wash. and Lee Univ., 1950; M.S., Pa. State Univ., 1952; Ph.D., Univ. of Ky., Jan., 1962. m. Sally Elois Funk, June 6, 1952. c.: John F., David A.; Patricia Ann. Exp.: Grad. Asst., Pa. State Univ., 1951-52; Sales Manager, Greenville Dairy Co., Pa., 1952-56; Secy.-Treas., ibid., 1953-56; Asst. Agric. Economist, Clemson Coll., 1956-57; Assoc. Agri. Economist, ibid., 1957-58; Assoc. Prof., Assoc. Agri. Economist, ibid., 1958- Mem.: A.A.A.S.; Am. Farm Econ. Assn.; Am. Mktng. Assn.; Secy. of Technical Com., Southern Regional Mktng. Rsch. Proj. SM-13, 1962; Assn. of Southern Agric. Workers; Lions Internatl.; Sigma Nu; Mason; Natl. Forensic Union. Contbr. to: Pa. State Expt. Sta.; S. C. State Expt. Sta. Publications; Am. Milk Rev. Hobbies: Hunting; Fishing; Coin Collecting; Sunday Schl. and Church Work. Areas of Rsch.: Dairy Industry-production, Processing and Marketing; Consumption Economics; Advertising and Merchandising.



ELE, Oliver Leon (Mr.), Rsch. Dir., Funk Bros. Seed Co., omington, Ill. Home Add.: 804 Broadway, Normal, Ill. HY-BRID CORN BREEDING. b. Plasa Township, Ill., Apr. 8, 1915. s. B. W. and Mary V. (Eagle) S. Edn.: Ill. State Normal, 1934; B.S., Illinois Wesleyan Univ., 1940; Univ. of Ill., 1948. m. Ruth Holbert, June 21, 1941. c.: David; Dennis; Nancy. Exp.: Rsch. Assoc., Michael-Leonard Seed Co., Normal, Ill., 1936-40; Mgr., Rsch. Dept., Funk Bros. Seed Co., Bloomington, Ill., 1940-52; Assoc. Rsch. Dir., ibid., 1952-57; Rsch. Dir., ibid., 1957—. Mem.: A.A.A.S.; Soc. Agron.; Bot. Soc.; Genetics Soc.; Genetic Assn.; Rotary. Areas of Rsch.: Commercial Hybrid Corn Breeding in U. S., Italy, Spain, France, Brazil and Argentina.

ELE, Robert Miller (Mr.), Physicist, Oak Ridge Natl. Lab., Ridge, Tenn. Home Add.: Box 375, Norris, Tenn. X-RAY CRYSTALLOGRAPHY. b. Argyle, Iowa, Apr. 8, 1921. s. Kenneth Earl and Ruth (Miller) S. Edn.: B.S., Northwest Mo. Coll., 1943. m. Lou Pendleton, May 31, 1947. c.: Kenneth Martin; Luanne Scott. Exp.: Assoc. Prof., Physics, Centre Coll., 1943-44; Foreman Trainee, Tenn. Eastman Corp., Oak Ridge, Tenn., 1944; Instr. of Physics and Math., Miles H. S., Miles, Iowa, 1945; Tchr. Chem. and Math., Kemper Military School, Boonville, Mo., 1945-46; Chem., Gaseous Diffusion Plant, Union Carbide Nuclear Co., Oak Ridge, Tenn., 1946-49; Physicist, Oak Ridge Natl. Lab., 1949—. Mem.: Am. Crystallographic Assn.; Am. Chem. Soc.; Am. Soc. for Metals; Am. Assn. Adv. Sci.; Alpha Phi Omega. tbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: X-Ray Crystalraphy; Crystal Identifications and Structure; Phase Diagrams etals and Ceramics.

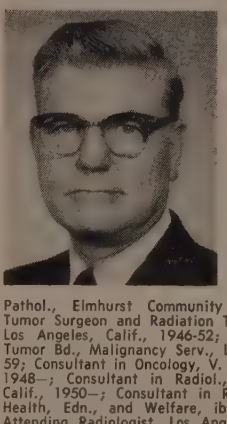
ERE, William Campbell (Ph.D., D.Sc.), Dir., The N. Y. Bot. den, N. Y. 58, N. Y. Home Add.: 122 Pk. Ave., Bronxville, Y. BOTANY: BRYOLOGY, CYTOLOGY, ECOLOGY, SYSTEMATICS, TOGEOGRAPHY. b. Muskegon, Mich., Nov. 4, 1907. s. James oaster and Lois (Campbell) S. Edn.: B.S., Univ. of Mich., 9; M.A., ibid., 1931; Ph.D., ibid., 1932. Hon. Deg.: Univ. Montreal, 1959; Univ. of Mich., 1962. m. Dorothy Clara orne, 1927. c.: Mrs. Lois Dorothy Beattie; Mrs. Alice Helen lombe; William Campbell, Jr. Exp.: Instr. to Prof., Univ. Mich., 1931-50; Chmn., Dept. of Bot., ibid., 1937-50; Prof., nford Univ., 1950-58; Grad. Dean, ibid., 1955-58; Dir., N. Y. Garden, 1958—; Prof., Columbia Univ., 1958—. Hon. Pos.: t Pres., Bot. Soc. of Am.; Past Pres., Am. Soc. of Nats.; t Pres., Am. Bryol. Soc.; Past Pres., Am. Soc. Plant Taxonts.; t Pres., Torrey Bot. Club; Past Pres., Calif. Bot. Soc.; Past s., N. Y. St. Assn. Mem.: Am. Assn. Adv. Sci.; Bot. Soc. Am.; Torrey Bot. Club; Ecol. Soc.; Am. Soc. for the Study Evolution; Am. Bryol. Soc.; Brit. Bryol. Soc.; Phi Kappa Phi. hor: Liverworts of Southern Michigan, 1940, 1950; Editor, y Years of Botany, 1956; This Is Life, 1962. Contbr. to: Jour. of oBt.; Ecol.; Am. Nat.; Bot. Gazette; Am. Midland ; Bryolt.; Revue Bryologique; Anns. Bryologici; Bot. Rev. as of Rsch.: Ecology; Systematics; Geographical Distribution; ology of Bryophytes; Tropical and Arctic Am.

G, Ronald Felix (D.D.S.), Oral Surgeon, 517 Pine St., James-n, N. Y. ORAL SURGERY. b. Erie, Pa., May 6, 1929. s. x G. and Helen (Nicholaus) S. Edn.: B.A., Gannon Coll. and v. of Pgh., 1952; D.D.S., Temple Univ., 1952; M.S., Univ. Minn., 1958. m. Beatrice Krahe, Oct., 1950. c.: Collette; leen; Ronald Felix, II. Exp.: Intern, Walter Reed A.M.C., h., D. C., 1952-53; Res. in Oral Surgery, Mayo Clinic, Roch-r, Minn., 1955-58; Oral Surgeon, Jamestown, N. Y., 1958—. Pos.: Chf. of Dental Staffs, W.C.A. Hosp. and Jamestown Hosp., Jamestown, N. Y. Mem.: Diplomate of Am. Bd. of Surg.; Am. Soc. of Oral Surgeons and Great Lakes Soc. of Surgeons; Am. Assn. Adv. Sci.; Internatl. Assn. for Dental s.; Omicron Kappa Upsilon; Psi Omega; Optimists; Am. on. Author: Malignant Lymphoma of the Maxilla and Mandi-1957. Contbr. to: Oral Surg.; Oral Med. and Oral Pathol.; al Digest; Internatl. Assn. for Dental Rsch. Serv. Rec.: S. Air Force, 1952-55. Areas of Rsch.: Lymphoma of Mandi- and Maxilla; Hematology and Oral Surgery, Reactions to l Anesthesia.

IN, Herman David (Dr.), Prof., Columbia Univ., N. Y. City Y. Home Add.: 200 Glendale Rd., Scarsdale, N. Y. SOCIAL RK; SOCIOLOGY. b. N.Y.C., Aug. 13, 1917. s. Charles and na (Rosenblum) S. Edn.: B.S.S., Coll. of the City of N. Y., 9; M.S., Columbia Univ., 1941; Dr. of Soc. Welfare, ibid. 8. m. Charmion Kerr, Sept. 15, 1946. c.: Karen; Susan mi. Exp.: Caseworker and Dir., Publ. Relation, Jewish Family ., N.Y.C., 1941-45; Dir., Welfare Dept., Am. Joint Distribution Comm., Paris, France, 1947-50; Prof., N. Y. Schl. of Social Work, Columbia Univ., 1945-47, 1950—. Hon. Pos.: Chmn., Curriculum Comm., Council on Social Work Edn., 1959-62; Chmn., Social Work Com., Trng. Sect., Natl. Inst. of Mental Health, 1960-62. Mem.: Am. Sociol. Soc.; Soc. for Psychol. Study of Social Issues; Soc. for Study of Social Problems; Am. Assn. of Social Workers; Am. Assn. Adv. Sci. Author: Curriculum Study of New York School of Social Work, 1960. Co-Editor: Social Perspectives on Behavior, 1958. Contbr. to: Social Work; Social Casework; Internatl. Social Serv. Rev.; Internatl. Social Work; Jour. of Jewish Communal Serv.; Social Serv. Rev. Areas of Rsch.: Internatl. Social Welfare; Organizational Theory and Administration; Applications of Social Science to Social Work Practice.

STEIGMANN, Frederick (M.D.), Dr., Dept. of Therapeutics; Attending Physician, Cook Co. Hosp., Chicago, Ill.; Assoc. Prof. of Med., Univ. of Ill., Chicago, Ill. Home Add.: 2044 Farwell Ave., Chicago 45, Ill. INTERNAL MEDICINE-GASTROENTEROLOGY. b. Austria, Apr. 25, 1905. s. Samuel and Frima (Reiff) S. Edn.: B.S., Univ. of Ill., 1928; M.D., ibid., 1932; M.S., ibid., 1938. m. Anna Ruth Dibblee, Feb. 14, 1937. c.: Judith Winfred; Richard Dibblee; Robert James. Exp.: Dir., Dept. of Therapeutics, Cook Co. Hosp., Chicago, Ill., 1940—; Attending Physician, ibid., 1946—; Assoc. Prof. Prof. of Med., Univ. of Ill., 1950—. Hon. Pos.: Mem. and Secy. of Bd. of Trustees, Hektoen Inst. for Med. Rsch. of Cook Co. Hosp., Chicago, Ill.; Chmn., Gastroenterol. Sect., ibid.; Chmn. Comm. on Residents in Internal Med., ibid.; Area Consult. in Gastroenterol. to V.A. Mem.: Sigma Xi; Alpha Omega Alpha; A.M.A.; Am. Gastroenterological Assn.; Soc. for Exptl. Biol. and Med.; Am. Coll. of Physicians; Cent. Soc. for Clin. Rsch.; Am. Coll. of Gastroenterology; Am. Assn. for the Study of Liver Disease; Soc. for Expti. Pharmacology and Therapeutics. Contbr. to: Jour. A.M.A.; Jour. Digestive Disorders; Jour. Lab. and Clin. Med.; Jour. Pharm. and Exp. Therapeutics; Proceedings Soc. Exp. Biol. and Med.; Archives Surg.; Jour. Pediatrics; Gastroenterol.; Archives Intern Med.; Jour. Clin. Investigation Annals Internal Med.; Am. Jour. Gastroenterol. Serv. Rec.: U. S. Naval Reserve, 1944-46. Areas of Rsch.: Gastroenterol.; Liver; Vitamins; Nutrition.

STEIN, Justin John (M.D.), Dept. of Radiol., Univ. of Calif., Los Angeles Schl. of Med., Los Angeles 24, Calif. Home Add.: 10451 Sunset Blvd., Los Angeles 24, Calif. RADIOLOGY. b. Haskell, Tex., Oct. 18, 1907. s. Justin John, Sr. and Annie Minnie (Frederick) S. Edn.: Pre-Med., Sou. Meth. Univ., 1926-29; M.D., Baylor Univ. Coll. of Med., Dallas, Tex., 1933. m. Lillian May Kolar of El Paso, Tex., Oct. 23, 1936. c.: Justine Johanna. Exp.: Spec. Student, Tumor Pathol., Mayo Fdtn., Rochester, Minn., 1933-34; Interne, Cincinnati Gen. Hosp., (under Univ. of Cincinnati Med. Schl.), Cincinnati, Ohio, 1934-35; Resident, X-Ray and Radium Therapy and Surgery, Edward Hines, Jr. Hosp., Hines, Ill., 1935-41; Consultant in Radiol. and Pathol., Westlake Hosp., Melrose Park, Ill., 1938-41; Consultant in Pathol., Elmhurst Community Hosp., Elmhurst, Ill., 1938-41; Tumor Surgeon and Radiation Therapist, Los Angeles Tumor Inst., Los Angeles, Calif., 1946-52; Attending Surgeon and Mem. of Tumor Bd., Malignancy Serv., Los Angeles Co. Hosp., ibid., 1948-59; Consultant in Oncology, V. A. Hosp., West Los Angeles, Calif., 1948—; Consultant in Radiol., Reg. Office, V. A. Los Angeles, Calif., 1950—; Consultant in Radiol., Outpatient Clinic, Dept. of Health, Edn., and Welfare, ibid., 1952; Mem., Tumor Bd. and Attending Radiologist, Los Angeles Co. Harbor Gen. Hosp., ibid., 1952—; Senior Surg. Staff, Calif. Hosp., 1945—; Mem., Exec. Med. Bd., Calif. Lutheran Hosp., 1950-53; Attending Staff, Desert Hosp., Palm Springs, Calif., 1950—; Attending Staff, Santa Monica Hosp., Santa Monica, Calif., 1952—; Attending Staff, Crenshaw Hosp., Los Angeles, Calif., 1953—; Consultant in Radiol., U. S. Naval Hosp., San Diego, Calif., 1959—; Prof. of Radiol., UCLA Schl. of Med., 1952—; Exchange Prof., Univ. of Mex., 1953; Del Amo Fellow to Spain from UCLA, 1958, 1961; Chief Radiotherapy Div., UCLA Medical Center, 1955—; Director, Cancer Rsch. Inst., UCLA Med. Center, 1956—. Hon. Pos.: Chmn., Com. on Disaster Med. Care, Calif. Med. Assn., 1950—; Mem., Calif. State Bd. of Med. Examiners, 1952—; Vice-Pres., ibid., 1955; Pres., ibid., 1956; Mem., Interim Com., Med. Schl. Cancer Coordinators, 1958—; Chmn., Com. on Cancer Edn. and Cancer Rsch., UCLA Med. Center, Los Angeles, Calif., 1955—; Surgeon Gen., Milit. Order of World War, 1954; Vice Pres., James T. Case Radiologic Edtn., 1959; Pres., ibid., 1960—; Mem., Univ. of Calif. Radiol. Safety Advisory Com., 1955—; Chmn., ibid., 1959—; Liaison Repr. from the Am. Coll. of Radiol. to the Cancer Com. of the Am. Coll. of Surgeons; Mem., Liaison Com., UCLA Schl. of Med. and Calif. Instt. for Cancer Rsch., 1955—; Vice Regent,



Internatl. Coll. of Surgns., 1953; Pres., Sou. Calif. Chpt., ibid., 1952, and many others. Mem.: Los Angeles Co. Radiol. Soc.; Radiol. Soc. of Southern Calif.; Pan American Med. Assn.; Med. Rsch. Assn. of Calif.; Am. Assn. for Adv. of Sci.; Am. Club of Theraputiec Radiologists; Am. Roentgen Ray Soc.; Diplomate, Am. Bd. of Radiol.; Diplomate, Internatl. Bd. of Surgery; Fellow, Am. Coll. of Surgeons; Fellow, Internatl. Coll. of Surgeons; Fellow, Royal Soc. of Med., England; Fellow, Am. Coll. of Radiol.; Calif. Med. Assn.; Am. Cancer Soc., Calif. Div.; Los Angeles Co. Med. Assn.; Aulmni Assn. of the Mayo Foundation; Soc. of Nuclear Med.; Pacific Roentgen Soc.; Radiologic Soc. of So. Calif.; Secy., Am. Radium Soc.; Radiol. Soc. of N. Am.; Phi Chi; Kappa Sigma; Los Angeles Surgical Soc.; James Ewing Soc. Serv. Rec.: U. S. Navy Med. Corps, 1941-46. Gen. Int.: Certified in Radiology, Am. Bd. of Radiology, 1937. Listed in: W. W. in the West; Am. Men of Sci.; W. W. Am.; Dir. of Medical Specialists; Who's Important in Med.; The Natl. Cyclopedia of Am. Biography.

STEINBERG, Sheldon (Mr.), Prin. Scientist, Rsch. Dept., Gen. Mills, Inc., Electronics Grp., 2003 E. Hennepin Ave., Mpls. 13, Minn. Home Add.: 5100 W. 29th St., St. Louis Pk. 16, Minn. PHYSICAL CHEMISTRY. b. N.Y.C., Feb. 11, 1925. s. Morris and Rose (Sherman) S. Edn.: B.A., Brooklyn Coll., 1948; M.A., ibid., 1955. m. Joyce Geffen, Jan. 31, 1948. c.: Mark Robert; Lynne Marcia. Exp.: Jr. Chemist, N. Y. City Dept. of Pub. Works, N. Y., 1948-50; Chemist, Armed Servs. Med. Procurement Agency, Brooklyn, N. Y., 1950-53; Rsch. Chemist, Columbia Univ., Mineral Beneficiation Labs., N. Y., 1953-55; Sr. Scientist, AVCO Corp., Dev. Div., Rsch. and Adv., Wilm., Mass., 1956-60; Prin. Scient., Gen. Mills Electronics, 1960 . Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci. Contbr. to: Am. Rocket Soc. Jour.; Classified Lit.; Sewage Wks. Jour. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Thermophysical Properties, Adsorption Phenomena, Aerosol Physics, High Temperature Chemistry, Plasma Jet Technology, Ablation Studies.

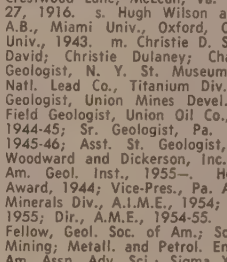
STEINER, M. Elisabeth (Miss), Consultant, Lightoiler, Inc., 346 Claremont Ave., Jersey City, N. J. Home Add.: 220 Brookdale Ave., Newark 6, N. J. PSYCHOLOGY. b. Newark, N. J. d. Frank Karl and Elisabeth (Pretory-Lang) S. Edn.: B.A., Douglass Coll., 1935; M.A., Columbia Univ., 1936. Exp.: Technical Examiner, Occupational Rsch. Prog., U.S.E.S., Newark, N. J., 1936-37; Med. Statistician, Am. Coll. of Dentists, N. Y., N. Y., 1939-40; Psychological Examiner, R. H. Macy Co., N. Y., N. Y., 1939-40; Rsch. Asst., Montreal Neurological Inst., Canada, 1941; Rsch. Asst., Dept. of Neuropsychiatry, Univ. of Wis., 1942-43; Rsch. Psychologist, Gen. Elec. Co., Bridgeport, Conn., 1943-54; Consultant, Lightolier, Inc., Jersey City, N. J., 1954—; Rsch. Psychologist, Temple Univ., Med. Ctr., 1959-61. Mem.: A.A.A.S.; Am. Psychological Assn.; Soc. for Projective Techniques; Eastern Psychological Assn.; Acad. of Religion and Mental Health; Psi Chi. Author: The Psychologist in Industry, 1949; The Cilinical Practice of Psychology, 1954. Co-Author: Large-Scale Rorschach Techniques, 1944, 1951; Manual for Psychodiagnostic Inkblots, 1946; Manual for Harrower Blots, 1960. Contbr. to: Jour. of Projective Techniques; Personnel. Areas of Rsch.: Large Scale Investigation with Projective Techniques; Evaluation of Professional Personnel; Personnel Rsch.

STEINMAN, Irvin David (Ph.D.), Dir., Professional Services, White Laboratories, Kenilworth, N. J. Home Add.: 15 Fifth St., E. Brunswick, N. J. MICROBIOLOGY. b. N. Y. C., N. Y., Nov. 7, 1924. s. Samuel and Nettie (Weissman) S. Edn.: A.B., Brooklyn Coll., 1948; M.S., Univ. of Chicago, 1949; Ph.D., Rutgers Univ., 1958. m. Carol Perlin, Aug. 22, 1954. c.: Jonathan Andrew. Exp.: Chemist, Haitian Am. Molasses Co., 1949-50; Instr. in Microbiol., N. Y. Univ. Coll. of Dentistry, 1951-54; Asst. Instr., Biol., Rutgers Univ., 1954-56; Rsch. Fellow, Inst. of Microbiol., Ibid., 1956-58; Mem. of Faculty, Monmouth Coll., 1958-59; Dir. of Biol. Services, U. S. Testing Co., 1958-61; Dir., Profl. Servs., White Labs., 1961—. Mem.: Am. Inst. Biol. Sci.; A.A.A.S.; Soc. Am. Bact.; Soc Indus. Microbiol.; A.A.U.P.; Internatl. Assn. for Dental Rsch.; N. Acad. Sci.; Soc. Cosmetics Chem.; Theobold Smith Soc.; Alpha Phi Omega; Phi Sigma Delta; Sigma Xi; Diplomate, Am. Bd. of Bio-Analysts; Fellow, Am. Coll of Bio-Analysis. Contbr. to: Stain Tech.; Jour. Beth Israel Hosp. Antibiotics Annual; Arch. Biochem. Biophys.; and others. Serv Rec.: U. S. Army, 1943-46; U.S.A.F.R. (MSC) Capt.

STEINMAN, Karl (Ph.D.), Psychoanalyst, 449 Waukena Ave Oceanside, N. Y. CLINICAL PSYCHOLOGY, PSYCHOTHERAPY. Brooklyn, N. Y., Mar. 10, 191 s. Louis I. and Mary (Zuckerma S. Edn.: B.S., City Coll. of Y., 1943; M.A., N. Y. Univ. Sch of Edn., 1949; Ph.D., ibid., 195 m. Rose Rosenstein, June, 1936 c.: Shailer Lawton. Exp.: Ps chotherapist, Asst. to Dir., Bleule Psychotherapy Group, Jamaic N. Y., 1951-55; Assoc. Rsch. Sc Creedmoor State Hosp., Queen Village, N. Y., 1951-53; Psych analyst, Private Practice, Ocea side, N. Y., 1953—; Dir., Ocea side Psycho. Group, Oceanside N. Y., 1955-58. Hon. Pos.: Vic Pres., Shailer Emery Lawto Foundation. Mem.: Am. Psychol Assn.; N. Y. State Psychol. Assn. N. Y. Soc. of Clin. Psychol. Nassau Co. Psych. Assn.; N. Acad. of Sci.; A.A.A.S.; Am. Acad. of Psycho.; Phi Beta Kappa Phi Delta Kappa. Author: The Validity of a Projective Tech nique in the Determination of Relative Intensity in Psychosis Serv. Rec.: AUS, 1943-45. Areas of Rsch.: Rsch. Methods Projective Techniques; Analytic Individual and Group Psycho therapy; Drug Dosage Level Determination; Neuro-Physiologica Basic for Behavior.

STEPHENSON, Robert Charles (Ph.D.), Exec. Dir., Am. Geol. Inst. 2101 Constitution Ave., N.W., Wash. 25, D. C. Home Add.: 420 Crestwood Lane, McLean, Va. GEOLOGY. b. Oxford, Ohio, Dec 27, 1916. s. Hugh Wilson and Flora Agnes (Meyer) S. Edn. A.B., Miami Univ., Oxford, Ohio, 1938; Ph.D., Johns Hopkin Univ., 1943. m. Christie D. Solter, Nov. 14, 1942. c.: William David; Christie Dulaney; Charles Kennedy. Exp.: Temporar Geologist, N. Y. St. Museum, 1941; Geologists Mining Engr. Natl. Lead Co., Titanium Div., Tahawus, N. Y., 1942-43; Fiel Geologist, Union Mines Devel. Co., Grand Jct., Colo., 1943-44 Field Geologist, Union Oil Co., Rocky Mtn. Div., Laramie, Wyo. 1944-45; Sr. Geologist, Pa. Topographic and Geologic Survey 1945-46; Asst. St. Geologist, ibid., 1946-52; Econ. Geologist Woodward and Dickerson, Inc., Phila., Pa., 1952-55; Exec. Dir Am. Geol. Inst., 1955—. Hon. Pos.: A.I.M.E. Grad. Studen Award, 1944; Vice-Pres., Pa. Acad. of Sci., 1953; Chmn., Indus Minerals Div., A.I.M.E., 1954; Chmn., Mining Br. Coun., A.I.M.E 1955; Dir., A.M.E., 1954-55. Mem.: Cosmos Club; Mining Club Fellow, Geol. Soc. of Am.; Soc. of Econ. Geolts.; Am. Inst. o Mining; Metall. and Petrol. Engrs.; Am. Assn. of Petrol. Geolts Am. Assn. Adv. Sci.; Sigma Xi.

STEPHENSON, Robert Lloyd (Ph.D.), Chf., Mo. Basin Projec Smithsonian Institution, 1517 O Street, Lincoln, Neb. Hom Add.: 1529 S. 26th St., Lincol Nebr. ANTHROPOLOGY (ESPEC ALLY NEW WORLD ARCHEOLOGY b. Portland, Ore., Feb. 18, 191 s. George A. and Myrtle L (Smith) S. Edn.: B.A., Uni of Ore., 1940; M.A., ibid., 194 Ph.D., Univ. of Mich., 1956. Georgie Ellen (Boydstun), Jan. 1945. Exp.: Field Asst., Arch Univ. of Ore., 1939-40; Archeologist, Univ. of Tex., W.P. Proj., 1940-41; Asst. Prof., Was and Jefferson Coll., 1941; Archeologist, River Basin Surveys, S. Austin, Tex., 1946-52; Asst. Pro (Part-time), Univ. of Nebr., 19 —; Chf., Mo. Basin Proj., Smit sonian Institution, Lincoln, Ne 1952—. Hon. Pos.: Chmn., Plai Conference for Archeol.; Chm Neb. Acad. of Scis.; Asst. Editor, Am. Antiquity; Assoc. Edit Plains Anthropologist. Mem.: A.A.A.S., Fellow; Am. Anthrop ogical Assn., Fellow; Soc. of Vertebrate Paleontol.; Soc. Am. Archeol.; Sigma Xi; Sigma Alpha Epsilon; Condon Clu Toastmasters Internatl. Author: Excavations at Pueblo Par 1960; The Prehistoric People of Accokeek Creek, 1959. Cont to: Am. Antiquity; Plains Anthropologist; Proc. of the N Acad. of Scis.; Bull. of the Tex. Archeological Soc. Serv. Re U. S. Marine Corps, 1942-46. Gen. Int.: Alice L. L. Fergu Fellow, Univ. of Mich.; Lakeview Logging Co. Fellow, Univ. Ore. Areas of Rsch.: Prehistoric Archeol. of N. Am.; G Geochronol. and Dating Methods; Ceramic Typology.

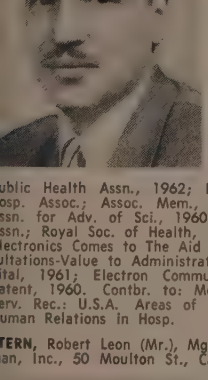


STERLING, Julian A. (M.D.), Surgeon, 1351 W. Tabor R Phila. 41, Pa. Home Add.: 1008 Sharpless Rd., Phila. 26, GENERAL SURGERY. b. Phila., Pa., Jan. 30, 1913. s. Alexan and Elsie (Walkowitz) S. Edn.: B.A., Univ. of Pa., 1932; M. ibid., 1936; M.S., ibid., 1948; Sc.D., ibid., 1951. m. Re Shaffer, Mar. 28, 1942. c.: Elsie P.; Ralph S. Exp.: Inte St. Luke's Hosp., Bethlehem, Pa., 1936-37; Res., Montefi Hosp., N.Y.C., 1937-38; Res., Phila. Jewish Hosp., 1946-48; G Surg., Phila., Pa., 1948—. Hon. Pos.: Past Pres., Del. Val Chapt. Am. Med. Writers Assn.; Editor-in-Chf. of the Jour. of

lbert Einstein Med. Ctr. Fellow: Phila. Acad. of Surg.; Phila. oll. of Physns.; Am. Coll. of Surgeons; Internatl. Coll. of rgeons; Am. Assn. Adv. Sci.; Hawthorne Surg. Soc.; N. Y. cad. of Scis. Author: Practical Guide to Surgical Management, 959; The Biliary Tract, 1955; Experiences with Congenital iliary Atresia, 1960. Contbr. to: Pa. Med. Jour.; Am. Jour. Gastroenterol.; Surg.; Am. Jour. of Surg.; Am. Jour. Dig. s.; Jour. Internatl. Coll. Surg.; Today's Health; Jour. Indian ed.; Anns. of Surg.; Am. Jour. of Pathol.; Surg., Gynec. and bst.; Pediatric Clinic N.A. Serv. Rec.: U. S. Army, 1941-46, ronze Star Medal. Gen. Int.: Ames Award, Am. Coll. of astroenterol., 1950; Testimonial Award, Clin. Congress of bdominal Surgeons, 1960; Dist. Serv. Award, Am. Legion, 1961; ist. Serv. to Med. Journalism, 1959, Awarded by Am. Med. riters Assn. Areas of Rsch.: Gallstones, Biliary Atresia, The ile Duct and the Papilla of Vater, Hepatic Function, Hemotodialy-s; Small Vessel Anastomoses and Homologous Organ Transplanta-on.

TERLING, Coleman Lee, Asst. Prof., Math., Grambling Coll., ox 528, Grambling, La. MATHEMATICS. b. Webster Parish, La., Nov. 23, 1922. s. Bennie B. and Mary Commander (Sterling) S. Edn.: B.S., Southern Univ., 1950; M.Ed., Tex. Sou. Univ., 1957. m. Helen Lilly, Jan., 1954. Exp.: Instr., Webster H. S., Minden, La., 1950-59; Asst. Prof., Grambling Coll., La., 1959—. Hon. Pos.: Dir., Grambling Regl. Sci. Fair; Chmn., Math. and Sci. Dept. of La. Edn. Assn.; Prince Hall Mason and Royal Arch Masonry; Asst. Chmn., La. Jr. Acad. of Sci.; Co-Sponsor, Alpha Delta Sigma; Sponsor, Gamma Gamma Chapter of Omega Psi Phi. Mem.: Math. Assn. of Am.; Natl. Coun. of Tchrs. of Math.; La. Acad. of Sci.; A.A.A.S.; La. Inst. of Sci.; Omega Psi Phi. Contbr. to: Maths. Assn. of Am.; Student Jour.; E.A. Jour. Serv. Rec.: AUS, 1943-45. Areas of Rsch.: Maths. ducation.

TERN, Arthur Leo (Mr.), Hosp. Adm., 3201 Kings Highway, klyn., N. Y. Home Add.: 2034 Seagirt Blvd., Far Rockaway, N. Y. HOSPITAL ADMINISTRATION-MEDICAL CARE. b. N. Y. C., Sept. 8, 1912. s. Max and Hattie (Steigerwald) S. Edn.: Attended Columbia Univ., 1950-52; Cornell Univ., 1952. m. Theresa (Waldman), July 10, 1938. c.: Barbara Ann; Harriet Iris. Exp.: Admn., Kings Hhway. Hosp., 3201 Kings Highway, Bklyn, N. Y., 1955—; Asst. Dir., Long Island Jewish Hosp., 270-05 76th Ave., New Hyde Park, L. I., N. Y., 1952-55; Sr. Adm., Asst., Jewish Hosp. of Brooklyn, 555 Prospect St., Brooklyn, N. Y., 1950-52. Hon. Pos.: Secy., Membership, A.P.H.A., N. Y. City and N. Y. State, Med. Care Sect., 1960—; Nominee: Am. Coll. of Hosp. Administrators. Mem.: Fellow, Am. ublic Health Assn., 1962; Public Health Assoc., N. Y.; Am. osp. Assoc.; Assoc. Mem., N. Y. Hosp. Assn.; Fellow, Am. ssn. for Adv. of Sci., 1960; Fellow of the Am. Pub. Health ssn.; Royal Soc. of Health, London, England; M.R.S.H. Author: lectronics Comes to The Aid of The Patient, 1955; Patient Consultations-Value to Administrator in Assessing Conditions in Hos-ital, 1961; Electron Communicaton Helps to Speed Care to atent, 1960. Contbr. to: Modern Hosp.; Lancet; Hosp. Mgmt. erv. Rec.: U.S.A. Areas of Rsch.: Patient Communications and uman Relations in Hosp.



TERN, Robert Leon (Mr.), Mgr. of Dev., Bolt Beranek and Newman, Inc., 50 Moulton St., Cambridge, Mass. Home Add.: 19A Oakland St., Lexington, Mass. INDUSTRIAL ECONOMICS; CHEMICAL ENGINEERING. b. Munich, Germany, Jan. 9, 1928. s. Frederic Allan and Alice Helene (Rosenblum) S. Edn.: S.B., Mass. Inst. of Tech., 1948. m. Virginia L. Waxman, May 6, 1956. c.: Adam Charles; Amy Louise. Exp.: Process Development Engr., Stauffer Chem. Co., Chauncey, N. Y., 1948-50; Chem. Economist, A. D. Little, Inc., Cambridge, Mass., 1953-54; Industrial Evaluations and Asst. Mgr., ibid., San Francisco, Calif., 1954-59; Mgr. of Dev., Bolt Beranek and Newman, Inc., Cambridge, 1959—. Mem.: Am. Inst. Chem. Engrs.; Am. Assn. Adv. Sci.; Sierra Club. Serv. Rec.: U. S. Army Chem. orps, 1950-52. Areas of Rsch.: Marketing of Technical Inven-ons; Chemical Economics; Industrial Evaluations in Foreign ountries.

STERN, Ferdinand (M.D.), Dir. of Med. Rsch., Stern's Med. Rsch. Lab., 1110 N.E. 163 St., North Miami Beach 62, Fla. Home Add.: 680 N.E. 162 St., North Miami Beach 62, Fla. BIOCHEMISTRY. b. Laibach, Austria, June 21, 1897. s. Bartholomew and Joan (Poncaire) S. Edn.: B.Sc., Second State Coll., 1917; M.D., Zagreb Univ., 1922; Ph.D., Vienna Univ., 1923. m. Bertha Denney, 1942. c.: Ferdinand. Exp.: Prof. of Clinical Pathology, Great Lake Coll., 1940-46; Clinical Pathologist, Mary Med. Center, Detroit, Mich., 1947-49; Clinical Pathologist, Brent General Hosp., Detroit, Mich., 1949-50; Stern's Med. Rsch. Lab., Miami, Fla., 1950—. Mem.: Am. Chemical Soc.; Am. Public Health Assn.; Royal Soc. of Health; London, England; A.A.A.S.; Am. Coll. of Bio-Analysts; N. Y. Acad. of Sci.; Alpha Kappa Delta Med. Frat. Areas of Rsch.: Radio-active-isotopes Diagnostically; Electrophoresis and Endocrinology.

STERNLICHT, Manny (Ph.D.), Chf. Clin. Psychologist, Willowbrook State Schl., Staten Island, N. Y. Home Add.: 143 Wilson Terr., Staten Island, N. Y. PSYCHOLOGY, CLINICAL AND EXPERIMENTAL. b. N. Y. C., N. Y., July 21, 1932. s. Oscar and Blanche (Sternlicht) S. Edn.: M.A., City Coll. of N. Y., 1954; M.S., Yeshiva Univ., 1958; Ph.D., ibid., 1960. m. Madeline Goldstein, April 18, 1954. c.: Elliot F.; Harold C.; Jeffrey M. Exp.: Lab. Asst., Exptl. Psychol., Yeshiva Univ., 1957-58; Clin. Psychol. Intern, Kings Co. Psychiatric Hosp., Brooklyn, N. Y., 1957-58; Clin. Psychol., Inst. for Juvenile Rsch., Rockford, Ill., 1959-60; Asst. Prof. and Hd., Dept. of Psychol., Rockford Coll., 1958-60; Consulting Psychotherapist, Staten Island Aid for Retarded Children, 1960—; Chf. Clin. Psychol., Willowbrook State Schl., Staten Island, 1960—. Mem.: Am. Psychol. Assn.; Eastern Psychol. Assn.; Midwestern Psychol. Assn.; Treas., Soc. for Client-Centered Counseling; N. Y. Soc. of Clin. Psychol.; Am. Group Psychotherapy Assn.; A.A.U.P.; A.A.A.S.; Internatl. Reading Assn.; Psi Chi; Am. Assn. on Mental Deficiency; Soc. for Clinical and Exptl. Hypnosis. Author: The House Test (Rsch. relating to Children), 1959; Mental Defective Institutionalization Study (Rsch. relating to Children), 1961. Areas of Rsch.: Construction and Employment of Projective Techniques; Perception and Needs; Mentally Defective; Remedial Reading; Group Psychotherapy.

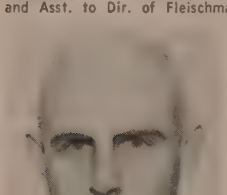
STEVENS, John David (M.D.), Neuro-Psychiatrist, V.A. Hosp., Sepulveda, Calif. MENTAL DISEASES. b. Vienna, Austria, Aug. 24, 1901. s. Max Spitzer and Ernestine (Pollack) S. m. Maryke Vlieger, 1935. c.: Leonora; Frederick; Elizabeth. Exp.: Public Health, Curacao, N. W. I., 1928-47; Clarinda Mental Health Inst., Ia., 1948-54; V.A. Hosp., Omaha, Nebr., 1954-58; Neuro-Psychiatrist, V.A. Hosp., Sepulveda, Calif., 1958—. Hon. Pos.: Knighted in the Order of Orange Nassau. Mem.: A.M.A.; A.P.A.; Am. Assn. Adv. Sci.; Shrine. Author: Nervenkrankheiten und Innere Sekretion, 1927. Contbr. to: West Jour. Surg. Obst. and Gyn.; Ann. West. Med. and Surg.; Jour. Iowa State Med. Soc.; Dis. Nervous Syst.; Arch. Neuro. and Psych.; Clin. Chem. Areas of Rsch.: Biochemical Basis of Schizophrenia.

STEVENS, Sue Cassell (Ph.D.), Supervisor Rsch. Lab., Veterans Administration Hosp., Lincoln, Nebr. Mailing Add.: Post Office Box 1363, Lincoln 1, Nebr. Home Add.: 5715 Lenox St., Lincoln, Nebr. CLINICAL CHEMISTRY. b. Roanoke, Va.. d. E. Bascom and Dora (Fox) S. Edn.: B.A., Goucher Coll., 1930; M.A., Columbia Univ., 1931; Ph.D., ibid., 1940. Exp.: Rsch. Biochemist, N. Y. Skin and Cancer Hosp., N. Y., 1932-35; Biochemist, Fifth Ave. Hosp., N. Y., 1935; Rsch. Chemist, Coll. of Physicians and Surgeons, Columbia Univ., 1935-39; Rsch. Chemist, N. Y. Orthopaedic Hosp., N. Y., 1940-41; Rsch. Chemist, Calif. Milk Products Co., Gustine, Calif., 1941-43; Rsch. Dairy Chem., Golden State Co., Ltd., San Francisco, Calif., 1943-46; Rsch. Dairy Chem., Swift and Co., Chicago, Ill., 1946-47; Dir. Rsch. and Quality Control, Steven Candy Kitchens, Chicago, Ill., 1947-48; Assoc. Prof. Chem. and Biol., MacMurray Coll. for Women, Jacksonville, Ill., 1948-49; Chf. Biochemist, U. S. Veterans Admin. Hosp., Dayton, Ohio, 1949-52; Rsch. Biochemist, ibid., 1952-56; Supervisor Rsch. Lab., ibid., Lincoln, Nebr., 1956—. Hon. Pos.: Natl. Vice Pres., Sigma Delta Epsilon, 1962.

Mem.: Am. Chem. Soc.; Fellow, A.A.A.S.; Am. Assn. of Clinical Chemists; Sigma Xi; Sigma Delta Epsilon; A.A.U.W. Contbr. to: Nebr. State Med. Jour.; Die Medizinische Welt; Am. Jour. of Cancer. Areas of Rsch.: Cancer, Electrolytes in Biological Fluids, Acid-Base Metabolism, Renal Function, Radioactive Isotopes, Clinical Chemistry.

STEVENSON, James Harold (Ph.D.), Chf., Fish Farming Exptl. Sta., U. S. Fish and Wildlife Service, Stuttgart, Ark. FISHERY BIOLOGY. b. Lawrence Co., Pa., Mar. 22, 1914. s. Robert Clarence and Sara (Armstrong) S. Edn.: B.S., Westminster Coll., 1935; M.A., Oberlin Coll., 1937; Ph.D., Okla. State Univ., 1950. m. Corinne Cox, 1940. c.: Mary Kay; Sara Ann. Exp.: Metallurgist, Carnegie-Illinois Steel Corp., Pittsburgh, Pa., 1939-42; Instr., Westminster Coll., New Wilmington, Pa., 1943-46; Chmn., Sci. Div., Little Rock Univ., Little Rock, Ark., 1946-60; Dir., Fish Farming Exptl. Sta., U. S. Fish and Wildlife Serv., Stuttgart, Ark., 1960—. Mem.: Am. Fisheries Soc.; Ark. Acad. of Sci.; Sigma Xi; Phi Sigma; Sigma Pi Sigma; Rotary. Contbr. to: Trans. of Am. Fisheries Soc.; Proc. of Ark. Acad. of Sci.; Progressive Fish Culturist. Areas of Rsch.: Research on Fishery Management of Reservoirs and Fish Culture.

STEWARD, John Plummer, Jr. (M.D.), Instr. in Basic Med. Sci. and Asst. to Dir. of Fleischmann Labs., Stanford Univ. Schl. of Med., Stanford, Calif. Home Add.: 2070 Webster St., Palo Alto, Calif. MEDICAL MICROBIOLOGY AND IMMUNOLOGY. b. Huntington Park, Calif., Oct. 9, 1927. s. John Plummer and Ora (Schroeppel) S. Edn.: B.A., Stanford Univ., 1948; M.D., ibid., 1955. Exp.: Post Doc., Rsch. Fellow, Med. Microbiology, Stanford Univ., Schl. of Med., Calif., 1958-60; Instr. in Basic Med. Sci. and Asst. to Dir. of Fleischmann Labs., ibid., 1960—; Vistg. Asst. Prof. of Biology, San Francisco State Coll., 1962. Mem.: Sigma Xi; Am. Acad. of Dental Med.; A.A.-A.S.; Am. Soc. Microbiol.; A.A.-U.P.; Alpha Kappa Lambda; Alpha Kappa Kappa. Contbr. to: Proc. of Soc. of Exptl. Biol. and Med.; Jour. of Clin. Rsch. Serv. Rec.: Flight Surgeon, U.S.N., 1956-58. Areas of Rsch.: Infection, Native Immunity.



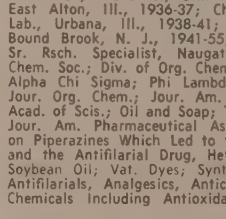
STEWART, Albert Clifton (Ph.D.), Asst. Rsch. Dir., Union Carbide Consumer Products, Box 6116, Cleveland 1, Ohio. Home Add.: 3859 E. 154 St., Cleveland 28, Ohio. CHEMISTRY. b. Detroit, Mich., Nov. 25, 1919. s. Albert Q. and Jeanne B. (Kaiser) S. Edn.: B.S., Univ. of Chicago, 1942; M.S., Univ. of Chicago, 1948; Ph.D., St. Louis Univ., 1951. m. Colleen M. Hyland, June 25, 1949. Exp.: Chemist, Sherwin Williams Paint Co., Chicago, Ill., 1943-44; Rsch. Asst., Univ. of Chicago, 1947-49; Instr. and Rsch. Assoc., St. Louis Univ., 1949-51; Sr. Chem., Oak Ridge Natl. Lab., Tenn., 1951-56; Prof. Chem. and Physics, Knoxville Coll., Tenn., 1953-56; Group Ldr., Natl. Carbon Co., Cleveland, Ohio, 1956-59; Lectr., John Carroll Univ., 1956-59; Asst. Rsch. Dir., Union Carbide Consumer Products Co., 1960—. Hon. Pos.: Bd. of Trustees, Treas., Cleveland Urban League; Bd. of Trustees, Pres., Cleveland Urban League. Mem.: Am. Chem. Soc.; Sigma Xi; A.A.A.S.; Rotary Club of Cleveland; Radiation Rsch. Soc.; Am. Nuclear Soc.; Alpha Phi Alpha; Oak Ridge Town Council. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Inorganic and Nuclear Chem.; Jour. of Phys. Chem. Serv. Rec.: U. S. Navy. Gen. Int.: Alumni Merit Award. Areas of Rsch.: Physical and Inorganic Chemistry; Radiation Chemistry.

STEWART, Charles Jack (Ph.D.), Assoc. Prof. of Chem., San Diego State Coll., San Diego 15, Calif. Home Add.: 8361 Beaver Lake Dr., San Diego 19, Calif. BIOCHEMISTRY. b. Rawlins, Wyo., June 17, 1929. s. William J. and Frieda (Swisher) S. Edn.: B.A., San Diego State Coll., 1950; M.S., Ore. State Coll., 1952; Ph.D., ibid., 1954. m. Cynthia H. Crittenden, Feb. 25, 1956. c.: Diana Frieda; Elizabeth Esther. Exp.: Rsch. Asst., Ore. State Coll., 1950-54; Fulbright Grantee, Univ. of Frankfurt, Germany, 1954-55; Instr. in Chem., San Diego State Coll., 1955-56; Asst. Prof. of Chem., ibid., 1956-61. Mem.: Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon; Lambda Chi Alpha. Contbr. to: Jour. Am. Chem. Soc.; Jour. Biol. Chem. Areas of Rsch.: Intermediary Metabolism; Syntheses and Biological Activity of Chemical Analogs of Metabolites.

STEWART, Harris Bates, Jr. (Ph.D.), Chief Oceanographer, U. S. Coast and Geodetic Survey, Washington 25, D. C. Home Add.: 2137 Bancroft Pl., N.W., Washington 8, D. C. OCEANOGRAPHY. b. Auburn, New York, September 19, 1922. s. Harris B. and Mildred (Woodruff) S. Edn.: A.B., Princeton Univ., 1948; M.S., Univ. of Calif., 1952; Ph.D., ibid., 1956. m. Elise Cunningham, February, 1959. c.: Dorothy Cunningham. Exp.: Hydrographic Engr., U.S.N., Hydrographic Office, 1948-49; Instr., The Hotchkiss Schl., 1949-51; Grad. Rsch. Asst., Scripps Inst. of Oceanography, 1951-56; Vice-Pres., Geological Diving Consultants, San Diego, Calif., 1953-57; Oceanographer, U. S. Coast and Geodetic Survey, Wash., D. C., 1957—. Mem.: A.A.A.S.; Am. Assn. Petrol. Geologists; Geological Soc. of Wash.; Am. Geophys. Union; Sigma Xi; Sci. Rsch. Soc. of Am. Contbr. to: Jour. of Geophys. Rsch.; Sci.; Bull. Am. Assn. Petrol. Geologists; Bull. Geological Soc. Am.; Tech. Bull., U. S. Coast and Geodetic Survey. Serv. Rec.: U.S.A.A.F., 1942-46. Areas of Rsch.: Marine Geol.; Ocean Currents; General Oceanography.

STEWART, Hugh Wendell (Ph.D.), (dec.), Sr. Rsch. Specialist, Naugatuck Chem., Naugatuck, Conn. Home Add.: Judd Hill Rd., Middlebury, Conn. ORGANIC CHEMISTRY. b. Dundee, Ky., May 11, 1912. s. Dr. James D. and Mattie (Pirtle) S. Edn.: B.S., Univ. of Ky., 1936; Ph.D., Univ. of Ill., 1941. m. Ruthmarie Rose, Sept. 5, 1936. c.: Kathryn Marie; Carol Ruth; Ann Elizabeth; James Alan. Exp.: Chemist, Olin Mathieson, Winchester-Western Div., East Alton, Ill., 1936-37; Chemist, U. S. Soybean Ind. Prods. Lab., Urbana, Ill., 1938-41; Rsch. Chem., Am. Cyanamid Co., Bound Brook, N. J., 1941-55; Sr. Rsch. Chem., ibid., 1955-56; Sr. Rsch. Specialist, Naugatuck Chem., 1956—. Mem.: Am. Chem. Soc.; Div. of Org. Chem.; Div. of Rubber Chem.; A.A.A.S.; Alpha Chi Sigma; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Org. Chem.; Jour. Am. Chem. Soc.; Annals of the N. Y. Acad. of Scis.; Oil and Soap; The Jour. of Lab. and Clinical Med.; Jour. Am. Pharmaceutical Assn. Gen. Int.: Initiated Research on Piperazines Which Led to the Discovery of New Anthelmintics and the Antifilarial Drug, Hetrazan. Areas of Rsch.: Cellulose; Soybean Oil; Vat. Dyes; Syntheses of Pharmaceuticals Including Antifilarials, Analgesics, Anticonvulsants, Antispasmodics; Rubber Chemicals Including Antioxidants, Antiozonants, Plasticizers.

STEWART, Joseph (Mr.), Asst. Dir., Chemicals Rsch. Div., Esso Rsch. and Engrng. Co., Linden, N. J. Home Add.: 31 Harvard Rd., Cranford, N. J. CHEMISTRY. b. Hoboken, N. J., Feb. 1, 1918. s. Harry and Sonya (Lauterstein) S. Edn.: B.S., Long Island Univ., 1938; M.S., Purdue Univ., 1939. m. Nora-Naomi Schiller, 1938. c.: Rudolph; John; Charles. Exp.: Plant Chemist, Works Supvr., Natl. Gypsum Co., Alexandria, Ind., 1939-42; Chemist, Group Leader, Sect. Hd., Asst. Dir., Chemicals Rsch. Div., Esso Rsch. and Engrng. Co., 1945—. Hon. Pos.: Chmn., Industrial and Engrng. Div., Am. Chem. Soc. Mem.: Am. Chem. Soc.; Am. Inst. Chem. Engrs.; The Chemists' Club. Contbr. to: Industrial and Engrng. Chemistry. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Petrochemicals; Geochemistry; Research Management; Process Development; Separations Techniques.



STEWART, Lever Flegal, Jr. (M.D.), Asst. Prof. of Neurol., Univ. of Va. Schl. of Med., Charlottesville, Va. Home Add.: 1935 Blue Ridge Rd., Charlottesville, Va. NEUROLOGY. b. Phila., Pa., May 10, 1924. s. Lever F. and Elizabeth (Reed) S. Edn.: B.A., Princeton Univ., 1947; M.D., Univ. of Penna., 1949; M.Sc., McGill Univ., 1956. m. Irma Lindsay, Nov. 1952. c.: Katherine Elizabeth Lever Flegal, III. Exp.: Asst. Prof. Neurol., Univ. of Va. Schl. of Med., Charlottesville, Va., 1958—; Neurologist, Hosp. of Univ. of Va., 1958—; Dir. Lab. of Clin. Neurophysiol., ibid., 1958—. Mem.: Am. Med. Assn.; Am. Acad. of Neurol.; Am. Elect. Encephalographic Soc.; Eastern Assn. of Electroencephalographers; Sou. E.E.G. Soc.; A.A.A.S. Author: Introduction to the Principles of Electroencephalography, 1961. Contbr. to: Tex. State Jour. of Med.; Jour. of Elect. and Clin. Neurophysiology; Epilepsia, Lawyer's Medical Cyclopedia. Serv. Rec.: A.U.S., 1952-54. Areas of Rsch.: Electroencephalography.

STEWART, John Conyngham (Ph.D.), Instr., Dept. of Geol., Brooklyn Coll., Brklyn. 10, N. Y. Home Add.: 950 Smith Lane, Woodmere, L. I., N. Y. GEOLOGY. b. N.Y.C., Feb. 10, 1930. s. Gustav Lurman and Sarah (Sage) S. Edn.: B.A., Trinity Coll., 1952; M.A., Princeton Univ., 1956; Ph.D., ibid., 1957. m. Ruth Walde, Nov. 22, 1956. c.: Leslie Ann; John Conyngham, Jr. Exp.: Geolt., NSF, Princeton, Harvard Rsch. Proj., Dordogne

nce, 1957-58; Jr. Geolt., Geophyst., Mobil Oil Co. de Vene-
la, Caracas and Anaco, Venezuela, 1958-61; Instr., Dept. of
., Brooklyn Coll., 1961—. Mem.: Geol. Soc. of Am.; Am.
n. Adv. Sci.; Am. Assn. Petrol. Geolt.; Soc. Econ. Paleontolts.
Mineralots.; Sigma Xi; Alpha Chi Rho. Contbr. to: Inter-
. Geol. Cong., XXI; Mont. Br. Mines and Geol.; Jour. of
imentary Petrol. Areas of Rsch.: General Area Geology,
omite and Cyclic Sedimentation.

WART, Lynn Martin (Ph.D.), Rsch. Assoc., Ind. Univ., Bloom-
on, Ind. Home Add.: 607 Campus View Apts., Bloomington,
Ind. BIOCHEMISTRY. b. Kansas City, Kans., Nov. 13, 1933. s. Ewell Martin and Ruth Juanita (Nelson) S. Edn.: B.S., Kans. Univ., 1955; M.R.E., Southwestern Baptist Theol. Sem., 1957; Ph.D., Kans. State Univ., 1962. Exp.: Rsch. Asst., Midwest Rsch. Inst., Kans. City, Mo., 1955; Assoc. Engr., Convair, Ft. Worth, Tex., 1956-57; Grad. Rsch. Asst., Kans. State Univ., Manhattan, Kan., 1958-62; Rsch. Assoc., Ind. Univ., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Lambda Upsilon; Sigma Xi. Areas of Rsch.: Carbohydrate Enzymes; Alpha Amylases.

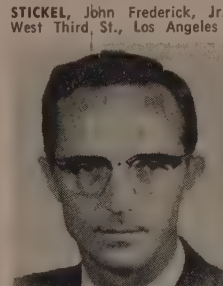
WART, Naomi Nora (Mrs.). Home Add.: 31 Harvard Rd.,
nford, N. J. PSYCHOLOGY. b. N. Y. C., June 21, 1918. d. Rudolph and Alta (Lee) Schiller. Edn.: B.A., Long Island Univ., 1938; M.S., Purdue Univ., 1940; Ph.D., ibid., 1944. m. Joseph Stewart, 1938. c.: Rudolph; John; Charles. Exp.: Personnel Rsch. Technician, The Adjutant General's Office, War Dept., 1944-45, 1946-47; Vocational Appraiser, V. A. Center, Rutgers Univ., 1945-46; Hd. Rsch. Dept., Cooperative Test Serv., New York City, 1947-49; Lectr., Grad. Schl. of Arts and Sci., N. Y. Univ., 1947-50; Dir. of Rsch., The Personnel Lab., N. Y. City, 1950-51; Consultant, ibid., 1951-53; Consultant, Edn. Testing Serv., Princeton, N. J., 1951-53; Staff Assoc., ibid., 1953-58. Fellow: Am. Psychological Assn.; A.A.A.S. Mem.: Am. Educonal Rsch. Assn.; Eastern Psychological Assn.; N. J. Acad. Sci.; Am. Statistical Assn.; Psychometric Soc.; Natl. Council Measurements Used in Edn. Contbr. to: Personnel Psychology; cational and Psychological Measurement; The Personnel and dance Jour. Gen. Inf.: Diplomate in Industrial Psy., Am. of Examiners in Professional Psychology. Areas of Rsch.: lligence, Aptitude and Achievement Tests, Personnel Selection, lic Opinion Research.

YERMARK, Al (Ph.D.), Head, Microchemical Dept., Hoffmann-
Roche, Inc., Nutley 10, N. J. Home Add.: 115 Beech St., ley 10, N. J. MICROCHEMISTRY. b. St. Louis, Mo., Jan. 29, 4. s. M. Benjamin and Jennie (Levy) S. Edn.: B.S., Washron Univ., 1928; M.S., ibid., 1928; Ph.D., ibid., 1930. m. et Lomberg, Aug. 9, 1941. Exp.: Organic Rsch. Chemist, mas & Hochwalt Labs., 1931-33; Organic Chem., Lab. of the Samuel Cox Hooker, 1933-36; Sr. Chemist, Hoffmann-La Roche, , Nutley, N. J., 1936—; Hd., Microchem. Dept., ibid., 1939—; y.-Treas., Analytical Gr., N. Jersey Sect., Am. Chem. Soc., 8-49; Chmn., ibid., 1951-52; Mem., Sub-Com. on Standardiza- Policy of the Coun. Policy Com., Am. Chem. Soc., 1953-55; nn., Com. on Microchem. Apparatus, Div. Analytical Chem., Am. m. Soc., 1947—; Assoc. Referee, Microchem. Methods, Assn. Official Agric. Chemists, 1950—; Pres., Metropolitan Microchem. , 1943-44; Pres., Scientific Rsch. Soc. of Am., Roche Br., 0-51; Chmn., Subcom. No. 29, on Microchem. Apparatus under n. E-1 on Methods of Testing, Am. Soc. for Testing Materials, 5—; Mem., Natl. Rsch. Coun. Com. on Analytical Chem., Natl. d. of Scis., Natl. Rsch. Coun., 1957-61; Pres., Comn. on Michem. Techniques, Sect. of Analytical Chem., Internatl. Union Pure and Applied Chem., 1958-66; Mem. Editorial Bd., Microm. Jour., 1958—; Mem. Adv. Bd., Analytical Chemistry, 1956- Mem.: Sigma Xi; A.A.A.S. Author: Quantitative Organic roanalysis, 1951, 1961. Contbrng. Author: Organic Analysis, 2, 1954; Treatise on Analytical Chemistry, 1962. Contbr. Proc. of the Internatl. Symposium on Microchem., 1958, '61; r. Am. Chem. Soc.; Anal. Chem.; Proc. Soc. Exptl. Biol. and d.; Anal. Edn., Ind. and Engr. Chem.; Record of Chemical gress; Jour. Assn. Offic. Agri. Chem.; Microchemical Jour. n. Int.: Recipient of "Fritz Pregl Plaque" for contributions to ntitative organic microanalysis, awarded by Austrian Microical Soc., 1961. Areas of Rsch.: Microchemistry.

CKEL, Delford LeFew (M.D.), Asst. Prof. of Surg., Duke Hosp.,
ham, N. C. Home Add.: 125 Newell St., Durham, N. C. RGERY. b. Falling Waters, W. Va., Dec. 12, 1927. s. Earnest tave and Ruth (Porterfield) S. Edn.: A.B., Chem., Duke v., 1949; M.D., ibid., 1953. m. Cathrine Linton, Sept. 13, 1952. c.: Nancy. Exp.: Intern, Duke Hosp., 1953-55; Asst., Duke Univ. Schl. of Med., 1957-59; Instr., ibid., 1959-62; Asst. Prof., Surg., ibid., 1962—. Mem.: Phi Beta Kappa; Pi Mu Epsilon; Nu Sigma Nu; Alpha Omega Alpha. Contbr. to: Anns. of Surg.; Jour. Surg. Rsch. Serv. Rec.: U. S. Naval Reserve, 1955-57. Areas of Rsch.: Thromboembolic Diseases and Organ Transplantation.

STIBITZ, George Robert (Ph.D.), Consultant in Applied Math., Underhill, Vt. Home Add.: R.F.D., Cambridge, Vt. APPLIED MATHEMATICS, COMPUTER LOGIC AND APPLICATIONS. b. York, Pa., April 30, 1904. s. George and Mildred (Murphy) S. Edn.: Ph.B., Denison Univ., 1926; M.S., Union Coll., 1927; Ph.D., Cornell Univ., 1930. m. Dorothea Lamson, Sept., 1930. c.: Mary G.; Martha A. Exp.: Math. Consultant, Bell Telephone Labs., New York City, N. Y., 1930-41; Tchn. Aide, OSRD, Various, 1941-49; Consultant, Self Emp., Underhill, Vt., 1946—. Hon. Pos.: Mem. Natl. Rsch. Comm. Computing Aids. Mem.: Sigma Xi; Phi Beta Kappa; Am. Math. Soc.; Assn. for Computing Machinery. Co-Author: Mathematic and Computers, 1957; Meteorological Data Computing Technique, 1949. Contbr. to: Natl. Defense Rsch. Coun.; Annal of Harvard Univ.; Encyclopedia Britannica; Am. Math. Monthly; Physical Review; Moore Schl. Lectures, Univ. of Pa. Areas of Rsch.: Application of Math. to Machine Tools, Gun Fire Control and Prediction, Adaptive Elements, Medical-Engineering Problems.

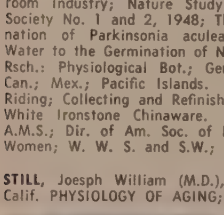
STICKEL, John Frederick, Jr. Assoc., Dames and Moore, 2333 West Third St., Los Angeles 57, Calif. Home Add.: 730 North Cypress, La Habra, Calif. ENGINEERING GEOLOGY AND GEOPHYSICS. b. Washington, D. C., Aug. 23, 1922. s. John F. and Dorothy (Keys) S. Edn.: B.A., W. Va. Univ., 1946; M.S., Washington University, 1949. m. Nov., 1949. c.: Daniel; George; Dorothy; Frederick; Elizabeth. Exp.: Geologist, W. Va. Geol. Survey, Morgantown, W. Va., 1941-43; Geologist, Missouri Geol. Survey, Rolla, Mo., 1946-47; Assoc., Washington Univ., St. Louis, Mo., 1947-49; Geophysicist, Frost Geophysical Corp., Tulsa, Okla., 1948-49; Partner, Wesley, Stickel and Co., Detroit, Mich., 1949-51; Geophysicist, United Geophysical Corp., Pasadena, Calif., 1951-52; Mgr. Geoph. Div., Dames and Moore, Los Angeles, Calif., 1952-56; Assoc., ibid., 1956—. Mem.: Am. Water Works Assn.; A.A.A.S.; Soc. of Exploration Geophysicists; European Assn. of Exploration Geophysicists; Northwest Mining Assn.; Am. Water Well; Am. Geophysical Union; Am. Geological Inst.; Calif. Assn. of Engrng. Geologists; Pacific Coast Gas Assn.; Phi Sigma Kappa. Contbr. to: Am. Water Works Jour.; Civil Engrng.; Soil Mechanics Jour. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Geophysics and Engrng. Geology as Applied to Civil Engrng.



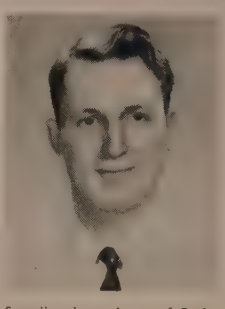
STIERNOTTE, Alfred Pol Nicholas Ferdinand (Ph.D.), Dockstader Prof. of Theol., Theol. Schl., St. Lawrence Univ., Canton, N. Y. Home Add.: 60 Miner St., Canton, N. Y. PHILOSOPHY OF SCIENCE: OIL CHEMISTRY. b. Couillet, Belgium, June 29, 1908. s. Pol Ghislain and Louisa Maria (Lebon) S. Edn.: B.S., Univ. of Alberta, Edmonton, 1935; B.D., Meadville Theol. Schl., 1944; Ph.D., Harvard Univ., 1952. m. Ada May Howard, July, 1945. Exp.: Asst. Chem., Royalite Oil Corp., Turner Valley, Can., 1935-40; Assoc. Editor, Beacon Press, Boston, Mass., 1951-52; Editorial Asst., Am. Scientist, New Haven, Conn., 1953-54; Asst. Prof. of Phil., Quinnipiac Coll., Hamden, Conn., 1955-60; Dockstader Prof. of Theol., Theol. Schl., St. Lawrence Univ., Canton, N. Y., 1960—. Mem.: A.A.A.S.; Philos. of Sci. Assn.; Am. Philos. Assn.; Am. Soc. for Aesthetics; Metaphysical Soc. of Am.; Am. Soc. for Legal and Political Philos.; Conn. Acad. of Arts and Science; Am. Theological Soc. Author: God and Space-Time, 1954; Frederick May Eliot: An Anthology, 1959; Mysticism and the Modern Mind, 1959. Contbr. to: Crane Review; The Humanist; Review of Metaphysics; Jour. of Royal Astronomical Soc. in Can.; Am. Scientist; Religion in Life. Areas of Rsch.: Philosophy of Sci.; Theology; Metaphysics.

STILES, Isabel Elizabeth (Ph.D.), Prof., Biol., Harris Tchrs. Coll., 5351 Enright Ave., St. Louis, Mo. Home Add.: Rt. 1, Clarksville, Tex. BOTANY (GENERAL AND PHYSIOLOGICAL); CYTOGENETICS. b. Annona, Tex., Oct. 30, 1902. d. Charles Dedrick and Maria Lou Allen (Martin) S. Edn.: B.S., No. Tex. St. Univ., 1926; M.S., Univ. of Wis., 1930; Ph.D., Univ. of Tex., 1944. Exp.: Tchr., Annona, Tex., Pub. Schls., 1922-23; Tchr., Masonic Home and Schl. of Tex., Ft. Worth, Tex., 1927-29; Tchr., No. Tex. St. Univ., 1930-32; Tchr., Iowa Park H. S., Iowa Park, Tex., 1933-34; Dir. and Prof. of Biol., Tex. Wesleyan, 1934-39; 1940-41; Rsch. Assoc., Cotton Investigation and Rsch., Univ. of Tex., 1941-44; Tchr., Tex. St. Univ. for Women, 1943-45; Tchr., Amarillo Coll., 1945-47; Assoc. Prof., Harris Tchrs. Coll., 1947; Prof., ibid., 1951—. Mem.: N.E.A.; Mo. State Tchrs. Assn.; Am. Soc. of Plant Physiologists; A.A.U.W.; Theta Sigma Upsilon; Pi Gamma Mu; Sigma Xi; Beta Beta Beta. Contbr. to: Plant Physiol. Author: The Relation of Water to the Germination of Corn and Cotton Seeds. Plant Physiology 23-201-222, 1948; Relations of Water to the Germination of Bean Seed. Plant Physiology 540-545, 1949; The Mushroom and the Mushroom Industry; Nature Study Bulletin; St. Louis Nature Study Society No. 1 and 2, 1948; The Relation of Water to the Germination of Parkinsonia aculeata Seed, 1960; The Relation of Water to the Germination of Nelumbo Lutea Seed, 1961. Areas of Rsch.: Physiological Bot.; General Bot.; Cyto-Gynetics. Travel: Can.; Mex.; Pacific Islands. Hobbies: Nature Study; Horseback Riding; Collecting and Refinishing Early Am. Furniture; Collecting White Ironstone Chinaware. Listed in: W. W. in Am. Edn.; A.M.S.; Dir. of Am. Soc. of Plant Physiologists; W. W. of Am. Women; W. W. S. and S.W.; Tex. Women of Distinction, 1962.

STILL, Joesph William (M.D.), Post Office Box 206, Claremont, Calif. PHYSIOLOGY OF AGING; PREVENTIVE MEDICINE AND PUBLIC HEALTH. b. Kansas City, Mo., Jan. 26, 1907. s. Joseph H. and Josephine L. (Dempsey) S. Edn.: M.D., Univ. of Neb., Coll. of Med., 1936. Exp.: Pvt. and Grp. Practice, Greenbelt, Md., 1939-41; V.D. Control Officer, Post Epidemiologist, Chf. of Dispensaries, Fort Belvoir, Va., 1941-43; Asst. to the Chief of Preventive Med. in the Theater Surgeon's Office, Mediterranean Theater of Operations, 1943-45; Chief of Med. Records and Statistics Office, V.A. Central Office, Wash., D. C., 1946; Dist. Health Officer, Va. St. Health Dept., Richmond, Va., 1947-49; Asst. Prof., Geo. Wash. Univ., Schl. of Med., Dept. of Physiol., Wash., D. C., 1949-58; Dir., Bucks Co. Dept. of Health, Doylestown, Pa., 1958-60; Self Emp., Consulting and Writing, Doylestown, Pa., 1960-61; Dir., Department of Health, Recreation and Welfare, Camden, New Jersey, 1961-62. Hon. Pos.: Mem. of Am. Bd. Preventive Med. and Public Health. Mem.: Am. Medical Association; Am. Pub. Health Assn., Fellow; Am. Physiological Soc.; Sigma Xi; Wash. Philosophical Soc.; Mem. Aging Comm. of Natl. Soc. Welfare Assembly; Mem. Wash. Acad. of Sci.; Mem. N. Y. Acad. of Sci.

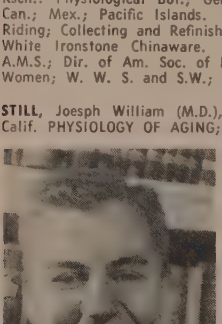


STINSON, Donald Leo (Ph.D.), Prof., Dept. Head of Petroleum Engrng., Univ. of Wyo., Laramie, Wyo. Home Add.: 1213 Garfield, Laramie, Wyo. PETROLEUM ENGINEERING (CHEMICAL ENGINEERING). b. Hominy, Okla., Oct. 8, 1930. s. Clarence Edward and Eva (Park) S. Edn.: B.S., Univ. of Okla., 1950; M.S., Univ. of Mich., 1951; Ph.D., ibid., 1957. m. Betty Hoehmann, Oct. 11, 1951. c.: Ellen Sue; Glen H.; Roger H.; Kathy Ann; Scott H.; Lee H. Exp.: Rsch. Engr., Phillips Petroleum Co., Bartlesville, Okla., 1953-58; Project Engr., Gulf Rsch. & Devel. Co., Harmarville, Pa., 1958-60; Prof., Head, Dept. of Petroleum Engrng., Univ. of Wyo., 1960—. Mem.: A.C.S.; Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; Am. Inst. of Chem. Engrs.; Am. Soc. for Engrng. Education; Gamma Alpha; Sigma Tau; Tau Beta Phi. Author: Miscibility of Natural Gas and Crude Oils, 1957. Areas of Rsch.: Miscibility of Natural Gas and Crude Oils, Secondary Recovery of Petroleum, High Pressure Phase Behavior.



STJERNHOLM, Rune Leonard (Ph.D.), Asst. Prof. Schl. or M Western Reserve Univ., Cleveland, Ohio. Home Add.: 2304 Be field Ave., Cleveland, Ohio. Bi CHEMISTRY, INTERMEDIARY M TABOLISM. b. Stockholm, Swede s. Harry Leonard and Margare (Soderlund) S. Edn.: B.S., Stoc holm Tekn. Inst., 1944; Ph.I Western Reserve Univ., 1958. Iris Bergstrom, Oct. 10, 1953. Linda Margaret; Birgitta Lil Exp.: Rsch. Fellow, Wenner-Gr Inst., Stockholm, 1945-52; Train in Biochem., Western Reser Univ., 1952-54; Fellow in Bi chem., ibid., 1954-58; Asst. Pro ibid., 1958—. Mem.: Am. Sc Biol. Chem.; Am. Chem. Soc.; Sc Am. Bacteriol.; Chem. Soc. (Lo don); Swedish Chem. Soc.; Sign Xi. Contbr. to: Jour. Biol. Chem Arch. Biochem. and Biophys Jour. Bacteriol.; Acta Chem Scandinavica. Areas of Rsch.: Carbohydrate Metabolism in Micr organisms.

STOBBE, Helen R(uth) (Ph.D.), Assoc. Prof. of Geol. and Geograph Dept. of Geol., Smith Coll., Northampton, Mass. Home Add Morris House, Smith Coll., Nort ampton, Mass. PETROLOGY. Brooklyn, N. Y., Mar. 13, 190 d. John Henry and Carolin (Brightson) S. Edn.: A.B., Smi Coll., 1924; M.A., Columbia Univ 1931; Ph.D., ibid., 1947. Exp Tchr., Stuart Hall, Staunton, Va 1924-26; Geol. Asst., Columb Univ., 1927-28; Geol. Asst Amerda Petroleum Corp., N.Y.C 1928-30; Curator, Geol. Dept Smith Coll., 1930-32; Instr., ibid 1932-40; Asst. Prof., ibid., 194 57; Assoc. Prof., ibid., 1957- Chmn., Dept., ibid., 1952-58; U. Geol. Survey (Part-time), 1954-5 Hon. Pos.: Pres., Sigma Xi, 195 52; Pres., Phi Beta Kappa, 195 58; Pres., Hampshire Co. Smit Club, 1947-49; Pres., Conn. Valle Br., A.A.U.W., 1958-60; Vice-Pres., St. Div., Mass. A.A.U.W Mem.: Sigma Xi; Phi Beta Kappa; A.A.A.S., Fellow; Mineralo Soc. of Am.; Geological Soc. of Am.; N. Y. Smith Club; Nat Women's Republican Club; A.A.U.W. Contbr. to: Am. Mineralo gist; Bull. of Geol. Soc. of Am.; Rocks and Minerals Mag.; Eco Geol.; Geol. Soc. Am. Proc.; New England Geol. Conf.; Smit Alumnae Quart. Areas of Rsch.: Pegmatites southwest of Custe So. Dak.; Volcanic Rocks of Northeastern N. Mex.; Eucolit Wausau County, Wis.; Monzonites in Beartooth Mountains, Re Lodge, Montana; Mineralogy and Petrology. Listed in: Am. Me of Sci.; W. W. in New England; W. W. of Am. Women.



STOCK, Mitchell, Benjamin (Mr.), Senior Partner, Nustor Products Co., 555 Knowlton St., Bridgeport, Conn. Home Add Congress St., Fairfield, Con SUBURBAN SANITATION AND LAN DRAINAGE: PUBLIC HEALTH ENG NEERING. b. New Haven, Conn Dec. 23, 1891. s. Bane and S phia (Cutler) S. Edn.: Ph.B Sheffield Sci. Schl., Yale Univ 1912; M.P.H., Yale Med. Sch 1929. m. Doris Loudon Sto (dec.), 1937. c.: Jack Ephraim Robert Winslow; Jonathan Curt Exp.: Sr. Partner, Nustone Pro ucts Co., Bridgeport, Conn 1914—. Hon. Pos.: Mem., Pub Health Council, Conn. State Hl Dept., 1955-57; Mem. Pub. Hl Coun., Conn. St. Hlth. Dep 1955-67. Mem.: Charter Mem New England Water Polluti Control Assn.; Am. Chem. So Conn. Soc. of Civil Engrs.; Y. Alumni in Med.; InterAm. Assn. of Sanitary Engrng.; Charter Mem Inst. of Food Technols.; Fellow, Pub. Health Assn.; Fellow, A Assn. for Adv. of Sci. Serv. Rec.: Chem. Warfare Serv., 19 Areas of Rsch.: Suburban Sewage Disposal Systems and La Drainage.

STOCK, C. Chester (Ph.D.), Vice-Pres. for Rsch., Sloan-Ketter Inst., Cancer Rsch., 410 E. 68th St., N. Y.; Dir., Walker Lab. & Chf., Div. Exptl. Chemotherap., Sloan-Kettering Inst., Cancer Rsc Rye, N. Y. Home Add.: 1 Gracie Terr., N. Y. 28, N. Y. CANC RESEARCH. b. Terre Haute, Ind., May 19, 1910. s. Orion La and Jessie May (Blood) S. Edn.: B.S., Ch.E., Rose Polytech. Ins 1932; Ph.D., Johns Hopkins Univ., 1937; M.S., Med. Bacteri N. Y. Univ., 1941. Hon. Degrs.: Sc.D., Rose Polytech. Inst., 19 m. Grace Elizabeth Knipmeyer, June 6, 1936. Exp.: Instr., B teriol., N. Y. Univ., 1937-41; Visit. Investr., Rockefeller In

p., 1941-42; Assoc., Sloan-Kettering Inst., 1946-50; Chf., Div. Expt. Chemotherapy, ibid., 1947—; Mem., ibid., 1950—; Prof. Biochem., Sloan-Kettering Div., Cornell Univ. Med. Coll., 1951 Assoc. Dir., Sloan-Kettering Inst., 1957-60; Scient. Dir., ibid., 0-61; Dir., Walker Lab., ibid., 1960—; Vice-Pres. for Rsch., ., 1961—. Hon. Pos.: Tech. Aide, Comm. on Treatment of Gas ualties, Natl. Rsch. Coun., 1942-45; Vice-Pres., N. Y. Acad. of , 1962—; Chmn., Com. on Internatl. Cancer Rsch., A.A.C.R., 2—; Mem., Scient. and Advry. Comm., Westchester Scout Coun., 1—; Chmn., N.Y.C. Sect., Soc. for Exptl. Biol. and Med., 1960 Mem., Chemo. Therap. Rev. Bd., Natl. Advry. Cancer Coun., 8-59; Mem., Editorial Bd., Jour. of Med. and Pharml. Chem., 8—; Mem., Screening Subcomm., Drug Eval. Panel, Cancer mother Natl. Serv. Ctr., 1957-61. Mem.: Am. Chem. Soc.; Am. n. for Cancer Rsch.; N. Y. Acad. of Med., Assoc. Fellow; Am. n. Adv. Sci.; N. Y. Acad. of Sci., Fellow; Soc. Exptl. Biol. and ., Am. Soc. Biol. Chemists; Harvey Soc.; Lambda Chi Alpha; na Chi Sigma; Tau Beta Pi; Blue Key; Sigma Xi. Gen. Int.: Scholarships; Hemingway Medal, 1932; Scholarship, 1933, The ns Hopkins Univ.; Cert. of Merit, Joint Army-Navy Award, 1948; field H. Schl. Dist. Alumnus Award, 1954. Areas of Rsch.: cer.

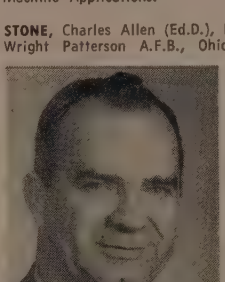
KSTAD, E. L. Robert (Ph.D.), Rsch. Fellow, American Cyanimid Pearl River, N. Y. Home Add.: 32 Pearce Parkway, Pearl River, N. Y. NUTRITION, BIOCHEMISTRY. b. China, Mar. 6, 1913. s. Christian and Elsie (Olsen). Edn.: B.S., Univ. of Calif., 1934; Ph.D., ibid., 1937. m. Edith Grandin, Sept., 1934. c.: Paul; Robert G. Exp.: Asst. Dir. Nutrition and Physiol. Research., Lederle Labs., Am. Cyanamid Co., Pearl River, N. Y., 1950-59; Dir. Rsch., Biol. Sci., Agric. Div., ibid., 1959-60; Rsch. Fellow, Lederle Labs., ibid., 1959—. Hon. Pos.: Chmn., Gordon Conf. of Am. Assn. for Adv. Sci. on Vitamins, 1950. Mem.: Am. Chem. Soc.; AAAS; Am. Soc. Biol. Chem.; Am. Inst. Nutr.; Biochem. Soc.; Poultry Sci. Assn.; Am. Soc. Animal Production; Soc. for Exptl. Biol. and Med. Contbr. to: The Vitamins; nual Rev. of Biochem.; Annual Rev. of Microbiology; Vitamins Hormones; Methods of Biochem. Analysis; Jour. Biol. Chem.; r. Am. Chem. Soc.; Proc. Soc. Exptl. Biol. and Med.; Poultry ; Arch. Biochem.; Jour. of Nutrition; Physiol. Rev. Areas of h.: General Field of Rsch. Biochemistry and Nutrition.

LL, Norman R(udolph) (Sc.D.), Prof. and Mem., The Rockefeller t., N. Y. 21, N. Y. Home Add.: 256 Snowden Lane, Princeton, N. J. PARASITOLOGY, WITH SPECIAL REFERENCE TO HELMINTHOLOGY; BIOLOGICAL AND MEDICAL RESEARCH AND TEACHING. b. N. Tonawanda, N. Y., Sept. 4, 1892. s. Charles J. and Fredericka (Jenzen) S. Edn.: B.S., Mt. Union Coll., 1915; M.S., Univ. of Mich., 1918; Sc.D., Johns Hopkins Univ., 1923. Hon. Deg.: D.Sc., Mt. Union Coll., 1941. m. 1st, Estella M. Scott, 1919 (dec.); 2nd, Helen Kennedy Stevens, 1951. c.: Henry C.; Margaret E. Stoll Dawson; Louise Maddux. Exp.: Sci. Tchr., Massillon, Ohio, H. Schl., 1915-17; Hd., Dept. of Biol., Central H. S. and Jr. Coll., Detroit, Mich., 1919-21; Mem., Commn. to Investigate Hookworm Disease, Puerto Rico, 1922, China, 1923-24, Panama, 26; Rockefeller Found. Fellow, Johns Hopkins Univ., 1921-23; oc. in Parasit, Peking Union Med. Coll., China, 1923-24; oc. in Helminthol., Schl. of Hyg. and Pub. Health, Johns Hopns Univ., 1925-26; Assoc. Mem., Rockefeller Inst. of N. Y., 27-62; Assoc. Mem. and Assoc. Prof., The Rockefeller Inst., Y., 1950-62; Prof. and Mem., ibid., 1962—. Hon. Pos.: m., Bd. of Edn., Princeton Twp., 1937-44; Chmn., Comm. vices, Princeton Defense Council, 1942-43; Delegate to XIV ernatl. Cong., Zool., Copenhagen, 1953, XV, London, 1958; m., Expert Adv. Panel Parasitol. Diseases, World Health Organtion, 1952-56, 1957-61, 1962—; WHO Hookworm Survey, West rica and Congo, 1961; Mem., Scientific Adv. Council, Am. Fdtn. Trop. Med., 1957—; Chmn., Editorial Comm., Internatl. Code of ol. Nomenclature, 1958-61; Editor, Jour. of Parasitology, 1938- ; Mem., Internatl. Commn. Zoological Nomenclature, 1944—; m., Editorial Bd., Exptl. Parasitol., 1951—; Mem., Adv. Panel, tematic Biol., Natl. Sci. Fdtn., 1955-58; Fellow, N. Y. ad. of Sci. Mem.: Am. Soc. of Zool.; Am. Soc. of Naturalists; . Soc. of Parasitols.; Am. Soc. Trop. Med. and Hyg.; N. Y. c. of Trop. Med.; Royal Soc. of Trop. Med. and Hyg.; Am. n. Adv. Sci.; Affiliate, Royal Soc. Med., London; Sigma Nu; mma Alpha; Phi Sigma; Delta Omega; Sigma Xi. Author: The rmy World, 1947. Serv. Rec.: U. S. Army, 1918; U.S.N.R., 1943-46. Areas of Rsch.: Epidemiology of Hookworm and Allied Helminthic Diseases; Immunity to Helminths; Axenic in Vitro Cultivation of Animal Parasites.

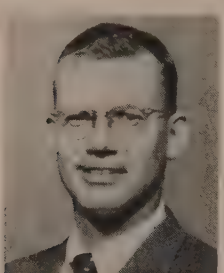
STOLLBERG, Robert Jay (Mr.), Prof. of Phys. Sci., San Francisco Sta. Coll., San Francisco, Calif. Home Add.: 3028 Oak Knoll Dr., Redwood City, Calif. SCIENCE EDUCATION FOR SECONDARY AND ELEMENTARY SCHOOLS; GENERAL EDUCATION PHYSICAL SCIENCE; CURRICULUM DEVELOPMENT; INSTRUCTIONAL MATERIALS AND TEACHER PREPARATION IN THESE AREAS, PARTICULARLY IN THE PHYSICAL SCIENCES. b. Toledo, Ohio, May 27, 1915. s. William Franklin and Myra (Hovey) S. Edn.: B.S., Univ. of Toledo, 1935; B.Edn., ibid., 1936; M.A., Columbia Univ., 1940; Ed.D., ibid., 1947. m. Noreen Davies, Jan. 1, 1943. c.: Sue Annette; Donna Beth; William Robert; James Edward. Exp.: Sci. Tchr., Rossford H. S., Rossford, Ohio, 1936-39; Asst. Prof. of Phys., Wabash Coll., Crawfordsville, Ind., 1946-47; Asst. Prof. of Edn., Purdue Univ., W. Lafayette, Ind., 1947-49; Prof. of Phys. Sci., San Francisco Sta. Coll., 1949—. Hon. Pos.: Pres., Natl. Sci. Tchrs. Assn., 1955-56; Delegate, White House Conf. on Edn., 1955; Mem., Pres. Com. on Scientists and Engrs.; Chmn., NSTA Conf. on Problems of Sci. Tchng., 1959. Mem.: Fellow, Am. Assn. for the Adv. of Sci.; Natl. Edn. Assn.; Natl. Sci. Tchrs. Assn.; Am. Inst of Physics; Am Assn. of Phys. Tchrs.; Natl. Assn. for Rsch. in Sci. Tchng.; Pi Mu Epsilon; Phi Delta Kappa; Kappa Delta Pi. Author: Suggestions for Teaching Electricity, 1941; Teachers Manual for Science Lab, 1959; Manual for Using the Electronics Educator, 1952; You and TV, 1955. Contbrng. Author: Rethinking Science Education, 1960; Policies for Science Education, 1960. Contbr. to: The Sci. Tchr.; Schl. Sci. and Maths.; Sci. Edn.; Calif. Schls. Serv. Rec.: U. S. Navy Reserve, 1941-45. Gen. Int.: Instructional TV Series Titled Space Science. Areas of Rsch.: Equipment and Facilities for Science Teaching; Pre-Service and In-Service Preparation of Science Teachers.

STOLUROW, Lawrence Marmer (Ph.D.), Coll. Prof.; Training Rsch. Lab., Dept. of Psychol. and Coll. of Edn., Univ. of Ill., 24 Lincoln Hall, Urbana, Illinois. Home Add.: 809 Dodds Dr., Champaign, Ill. PSYCHOLOGY. b. St Paul, Minn., Aug. 3, 1918. s. Peter J. and Ruth M. (Couplin) S. Edn.: B.A., Univ. of Minn., 1940; M.A., Cornell Univ., 1946; Ph.D., Univ. of Pittsburgh, 1947. m. Sylvia H. Goldfine (dec.), Aug. 9, 1941. c.: John; Sanders; Mara Elizabeth. Exp.: Rsch. and Tchng. Asst., Cornell Univ., 1942-43, 1946-47; Assoc. Prof., Univ. of Pittsburgh, 1947-51; Prof., Univ. of Ill., Urbana, Ill., 1951—. Hon. Pos.: Secy.-Trea., Div. I, of Am. Psychol. Assn.; Bd. of Scientific Affairs Special Comm. on Tchng. Machines, A.P.A. Mem.: Sigma Xi; A.A.A.S.; Midwestern Psychol. Assn.; Eastern Psychol. Assn.; Psi Chi. Author: Readings in Learning, 1953; Teaching by Machine, 1961. Contbr. to: Jour. of Expt. Psychol.; Jour. of Exptl. Edn.; Psychol. Monographs; Am. Jour. of Mental Deficiency; Educational and Psychological Measurement; Jour. of Dental Education; Jour. Comp. Physiol. Psychol.; Am. Psychol.; Delta Pi Epsilon; The Training School Bulletin; Scientific Monthly; Jour. of Ednl. Rsch. Serv. Rec.: U.S.A.F., 1942-46. Areas of Rsch.: Human Learning and Creative Problem Solving; Decision Making with Special References to Programed Learning and Tchng. Machine Applications.

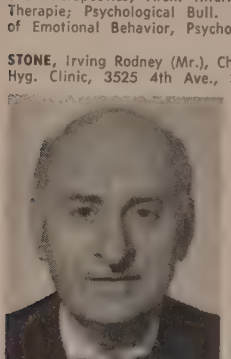
STONE, Charles Allen (Ed.D.), Dean, Schl. of Logistics, AFIT (AU) Wright Patterson A.F.B., Ohio. Home Add.: Box 4061, Bldg. 262, Area A, Wright Patterson A.F.B., Ohio. EDUCATION. b. Olathe, Calif., Nov. 5, 1917. s. Eugene M. (dec.) and Clara M. (Ballard, dec.) S. Edn.: B.A., San Jose St. Coll., Calif., 1946; M.A., Stanford Univ., 1947; Ed.D., ibid., 1950. m. Joyce Burdett, Aug. 6, 1961. c.: Carolyn Sue; Robin L.; Warren E. Exp.: Asst. Chf., Operations Div., Air Comd., Staff Coll., Maxwell A.F.B., Ala., Air Univ., 1952-55; Dir., Material 20th T.F.W., R.A.F. Stan., Wethersfield, England, 1955-58; Chf., Plans, Program, Policy Div., Dir. Maintenance Engr., Hq., U.S.A.F., 1958-62; Dean, Schl. of Logistics, AFIT (AU) Wright Patterson A.F.B., Ohio, 1962—. Contbr. to: Armed Forces Mgt. Serv. Rec.: U.S.A.F., 1940-46, 1951—. Gen. Int.: Holds the Air Medal, Bronze Star; Soldiers Medal; Dist. Flying Cross; Legion of Merit; Developed and Implemented Air Force Wide Maintenance Management Program. Areas of Rsch.: Logistics Management and Teacher Education.



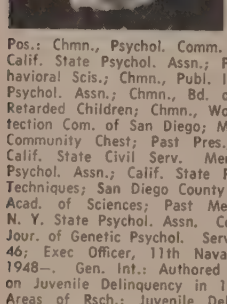
STONE, George Chester (Ph.D.), Rsch. Psychologist, Langley Porter Neuropsychiatric Inst., Parnassus Ave., San Francisco 22, Calif. Home Add.: Box 553, Fairfax, Cal. PHYSIOLOGICAL PSYCHOLOGY. b. Los Angeles, Calif., Feb. 21, 1924. s. Glenn Everett and Bessie Helen (Jones) S. Edn.: A.B., Univ. of Calif., Berkeley, 1948; M.A., ibid., 1951; Ph.D., ibid., 1954. m. Hannah Anita Zacharin, 1946. c.: Peter Franklin; Lisa Meredith; Sarah Ila. Exp.: Rsch. Assoc., Univ. of Ill., 1953-55; Psycho-pharmacologist, G. D. Searle and Co., Chicago, 1955-58; Rsch. Psychol., Calif. Dept. Ment. Hyg., 1958—; Lectr. in Med. Psychol. and Pharmacol., Univ. of Calif. Med. Schl., 1959—; Asst. Clin. Prof. of Med. Psychol., Dept. of Psychiatry, ibid., 1960—. Mem., Am. Psychol. Assn.; Western Psychol. Assn.; Behavioral Pharmacol. Soc.; Am. Assn. Adv. Sci.; Sigma Xi; Phi Beta Kappa. Contbr. to: Jour. Comp. and Physiol. Psychol.; Jour. Abnormal and Social Psychol.; Jour. Social Psychol.; Psychol. Monographs; Clin. Pharmacol. and Therapeutics; Arch. Internationales de Pharmacologie et de Therapie; Psychological Bull. Areas of Rsch.: Psychophysiology of Emotional Behavior, Psycho-pharmacology.



STONE, Irving Rodney (Mr.), Chf. Clinical Psychologist, St. Mental Hyg. Clinic, 3525 4th Ave., San Diego 3, Calif. Home Add.: 4596 Van Dyke Ave., San Diego 16, Calif. PSYCHOLOGY. b. N. Y. City, N. Y., Mar. 29, 1908. s. Samuel N. and Gussie (Cohen) S. Edn.: B.S. in Edn., N. Y. Univ., 1930; M.A., ibid., 1933. m. Rosanne Dewey, Jan. 9, 1954. c.: Leonard P.; Samuel N.; Joan; Martha. Exp.: Asst. Prof., Univ. of Fla., 1946-47; Staff Psychologist, Jewish Vocational Service, Cleveland, Ohio, 1947-48; Lectr., Cleveland Coll. of Western Reserve Univ., Cleveland, O., 1947-48; Lectr., Calif. Western Univ., San Diego, Calif., 1950-53; Instr., San Diego City Coll., 1953-57; Private Pract. in Psychol., San Diego, Calif., 1949—; Chf. Clinical Psychol., State Mental Hyg. Clin., San Diego, Calif., 1948—. Hon. Pos.: Chmn., Psychol. Comm. for the City of San Diego; Sec., Calif. State Psychol. Assn.; Pres., San Diego Acad. of the Behavioral Scis.; Chmn., Publ. Information Com. of the San Diego Psychol. Assn.; Chmn., Bd. of Dirs., San Diego Co. Assn. for Retarded Children; Chmn., Workshop Com. of the Juvenile Protection Com. of San Diego; Mem., Bd. of Dirs., San Diego Area Community Chest; Past Pres., Assn. of Clin. Psychologists in Calif. State Civil Serv. Mem.: Am. Psychol. Assn.; Western Psychol. Assn.; Calif. State Psychol. Assn.; Soc. for Projective Techniques; San Diego County Psychol. Assn.; Past Mem., N. Y. Acad. of Sciences; Past Mem., Am. Assn. of Univ. Profs.; N. Y. State Psychol. Assn. Contbr. to: Jour. of Social Psychol.; Jour. of Genetic Psychol. Serv. Rec.: U. S. Naval Reserve, 1941-46; Exec Officer, 11th Naval Dist. Naval Reserve Med. Co., 1948—. Gen. Int.: Authored and Moderated a 21 Week Series on Juvenile Delinquency in 1961-62 on Channel 8, San Diego. Areas of Rsch.: Juvenile Delinquency; Mental Health; Mental Retardation.



STOOPS, Robert Franklin, Sr. (Ph.D.), Rsch. Prof. of Ceramic Engrng.; Head of Pyrochem. Rsch. Section, Dept. of Engrng. Rsch., N. C. State Coll., Raleigh, N. C. Home Add.: 3705 Corbin Street, Raleigh, N. C. CERAMIC ENGINEERING. b. Winona, W. Va., June 16, 1921. s. Charles Lindsey, Sr. and Alta (Robinson) S. Edn.: B.S., Ceramic Engrng., N. C. State Coll., 1949; M.Sc., Ohio State Univ., 1950; Ph.D., ibid., 1951. m. Martha Sprouse, July 20, 1944; c.: Carol; Robert F., Jr. Exp.: Rsch. Engr., Harbison-Walker Refractories Co., Pittsburgh, Pa., 1951-52; Rsch. Engr. and Sr. Rsch. Engr., Metallurgical Products Dept., General Electric Co., Detroit, Mich., 1952-58; Rsch. Prof. of Ceramic Engr., N. C. St. Coll., 1958—. Mem.: Am. Ceramic Soc.; Natl. Inst. of Ceramic Engrs.; Phi Kappa Phi; Sigma Xi; Keramos; Tau Beta Pi. Contbr. to: Jour. Am. Ceramic Soc.; Analytical Chem.; W.A.D.C., Tech. Reports. Serv. Rec.: Army of U. S., 1943-46. Areas of Rsch: High Temperature materials; Sintering mechanisms; Effects of impurities, atomic structure and microstructure on the properties of materials



STORM, Leo Eugene (Mr.), Operations Analyst, United Aircraft Corp., Weather Syst. Ctr., Manchester, Conn. Home Add.: 452 Middle Turnpike, Manchester, Conn. STATISTICAL ENGINEERING, QUALITY CONTROL. b. Valeda, Kans., Aug. 29, 1928. s. Tharold E. D. and Audrey (Watt) S. Edn.: A.A., Coffeyville Coll., 1951; B.A., Okla. A. & M., 1953; Exp.: Mathematician, Northwestern Univ., Evanston, Ill., 1955; Quality Control Engr., Metro Botti Glass, Jersey City, N. J., 1955-56; Statistician, U. S. Testing Co., Hoboken, N. J., 1956; Assoc. Stat. Mem., Gen. Precision Lab., Inc., Pleasantville, N. Y., 1956-57; Statistician, Nuclear Fuel Operation, Olin Mathieson Chem. Corp., New Haven, Conn., 1957-61; Staff Quality Control Supvr., United Nuclear Corp., New Haven, Conn., 1961-62; Operation Analyst, United Aircraft Corp., 1961—. Mem.: Inst. of Mathematical Statistics; Am. Socs. for Quality Control; A.A.A.S.; Am. Meteorological Soc.; Am. Stat. Assn.; Soc. Indust. and Appl. Math. Contbr. to: Quality Control and Applied Statistics Abstracts; Industl. Quality Control; Metrika. Serv. Rec.: U.S.A.F., 1946-49. Areas of Rsch.: Statistical Methods in Quality Control, Engineering and the Physical Science.

STORMS, Lowell Hanson (Ph.D.), Clinical Psychologist, Asst. Prof., N.P.I., Univ. of Calif. Med. Ctr., Los Angeles 24, Calif. Home Add.: 12254 Darlington Ave., Los Angeles 49, Calif. PSYCHOLOGY. b. Schenectady, N. Y., Feb. 14, 1928. s. Charles A. and Afton (Hanson) S. Edn.: B.A., Univ. of Minn., 1950; M.S., ibid., 1951; Ph.D., ibid., 1956. m. Marilyn Hitchcock, June 16, 1955. c.: Christopher; Karen. Exp.: Psychologist, St. of Minn., Hastings, Minn., 1954-56; Clinical Psychol., Asst. Prof., N.P.I., Univ. of Calif., 1957—. Contbr. to: Psychological Rev.; Jour. of Exptl. Psychol.; Jour. of Consulting Psychol.; Jour. of Personality; Jour. of Mental Sci.; Brit. Jour. of Med. Psychol.; Jour. of Projective Techniques. Serv. Rec.: U. S. Army, 1946-48. Gen. Int.: Fulbright Scholar, U. S. Dept. of State, London, England, 1956-57. Areas of Rsch.: Clinical Psychol.; Learning Theory and Personality; Verbal Behavior; Assessment Techniques.

STORROW, Hugh Alan (M.D.), Assoc. Prof., Dept. Psychiatry, Univ. of Ky. Med. Ctr., Lexington, Ky. Home Add.: 3412 Bellefonte Dr., Lexington, Ky. PYCHIATRY. b. Long Beach, Calif., Jan. 19, 1926. s. Joseph Henry and Iva Bell (Strader) S. Edn.: A.B., Univ. Sou. Calif., 1946; M.D., ibid., 1950; m. Ruth Ann Maggard, Aug. 15, 1953. c.: Joe Leslie. Exp.: Instr. in Psychiat., Yale Univ. Schl. of Med., New Haven, Conn., 1955-56; Asst. Prof. in Psychiat., Univ. of Calif. Schl. of Med., Los Angeles, Calif., 1956-60; Assoc. Prof., Univ. of Ky. Schl. of Med., 1960—. Mem.: Am. Psychiat. Assn.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Ky. Psychiat. Assn.; Fayette Co. Med. Assn.; Ky. Med. Assn.; N. Y. Acad. of Sci.; Phi Beta Kappa; Theta Xi; Phi Rho Sigma. Contbr. to: Archives Gen. Psychiat.; Jour. of Nervous and Mental Disease; Archives Da Clinica Pinel, Porto Alegre, Brasil; So. Med. Jour. Serv. Rec.: U. S. Naval Reserve, 1943-50. Areas of Rsch.: Social Psychiat. The Measurement of Outcome in Psychotherapy; Psychology of Physical Disability.

STOUDT, Harry Nathaniel (Ph.D.), Assoc. Prof. of Biol., Glassboro St. Coll., Glassboro, N. J. Home Add.: 528 Highland Terrace, Pitman, N. J. BOTANY: MORPHOLOGY. b. Bernville, Pa., Dec. 27, 1908. s. Edwin D. and M. Masula (Strause) S. Edn.: B.S., Temple Univ., 1931; Ed.M., ibid., 1933; Ph.D., Johns Hopkins Univ., 1939. m. Helen I. Lutz, Sept. 9, 1934. c.: Catharine A. Exp.: Instr., Temple Univ., 1933-36, 1937-38, 1946-49; Grad. Asst., Johns Hopkins Univ., 1936-37, 1938-39; Head, Sci. Dept., L.C.C. Regional H. S., Lindenwold, N. J., 1941-46; Asst. Prof., Temple Univ., 1949-61; Assoc. Prof., Glassboro St. Coll., 1961—. Mem.: A.A.A.S.; A.A.U.P.; Bot. Soc. of Am.; International Soc. of Plant Morphologsigts; Pa. Acad. of Scis.; Sigma Xi; N. J. Edn. Assn.; Gamma Alpha; Am. Fern Soc. Contbr. to: Am. Jour. of Botany; Proc. of Pa. Acad. of Scis. Areas of Rsch.: Vegetative Propagation; Floral Morphology; Gametogenesis

TOSSEL, Ernest (Ph.D.), Consulting Chemist, 633 Court St., Brooklyn, N. Y. Home Add.: 203 W. 81 St., N. Y. 24, N. Y. PETROLEUM WAXES — METALLO-ORG. COLLOIDS; FOAM-REACTIONS. b. Vienna, Austria, Oct. 16, 1901. s. Maurice and Irma (Birnbaum) S. Edn.: Ph.D., Univ. of Vienna, Austria, 1925. m. Suzanne Vienne Vogel, 1947. Exp.: Gen. Mgr. and Exec. Vice Pres., Warwick Wax Co., N. Y., 1942-45; Consultant, Esso Argentina S. A., Buenos Aires, 1945-50; Consulting Chem., N. Y., San Francisco, 1950-55; Consulting Chemist, Argus Chem. Corp., Brooklyn, N. Y., 1956—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Petroleum Inst. of So. Am. Gen. Int.: Introduced in U. S. First Feasible Process for Oxidation of High Melting Petroleum Waxes from Crude Oil Wastes; Invented Several New Processes of Utilization of Petrol. Wastes. Areas of Rsch.: Flexible pulse column for reactions in foam phase, continuous separation of asphaltene dispersions in colloidal waxes from crude oils, agric. applications of metallo-organic phosphor-compounds.

STOUGHTON, Raymond Woodford (Ph.D.), Group Leader in Chem., Oak Ridge Natl. Lab., Box-X, Oak Ridge, Tenn. Home Add.: 104 Plymouth Circle, Oak Ridge, Tenn. RADIO CHEMISTRY AND PHYSICAL CHEMISTRY. b. Tehachapi, Calif., Aug. 6, 1916. s. Charles Henry and Minnie (Schluter) S. Edn.: B.S., Univ. of Calif., Berkeley, 1937; Ph.D., ibid., 1940. m. Genevieve Smith. c.: John; Marjorie; Ann; Robert. Exp.: Instr., Tex. A. & M. Coll., Coll. Sta., Tex., 1940-41; Rsch. Assoc., O. S. R. D. Work in Rad. Lab., Univ. of Calif., Berkeley, Calif., 1941-43; Grp. Leader, Metallurgical Lab., Chgo., Ill., 1943; Grp. Leader in Chem., Oak Ridge Natl. Lab., 1943—. Hon. Pos.: Editorial Bd. of Jour. of Inorg. and Nuc. Chem. Mem.: Sigma Xi; Phi Beta Kappa; Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Am. Phys. Soc.; Am. Nuclear Soc.; Chi Pi Sigma. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Jour. of Nuc. Sci. and Engrng.; Jour. of Chem. Edn.; Jour. Nuclear Energy Gen. Int.: Demonstrated that the Debye-Huckel Equation is as Useful to 250 C as it is at Room Temperature. Areas of Rsch.: Radiochemistry; Physical Chemistry of Solutions; Process Development; Neutron Cross Sections; Applications of High-Speed Computers to Chemical Problems.

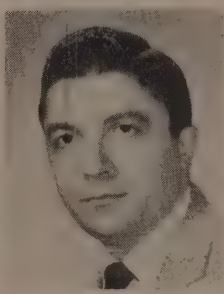
STOUT, Melville Bigham (Mr.), Prof. of Elec. Engrng., 2509 Electrical Engrng. Bldg., Univ. of Mich., Ann Arbor, Mich. ELECTRICAL ENGINEERING. b. Pittsburgh, Pa., Oct. 17, 1895. s. Melville and Mary Ann (Bigham) S. Edn.: B.S., Univ. of Mich., 1920; M.S., ibid., 1924. m. Laura Catherine Meisel of Pittsburgh, Pa., Sept. 14, 1922. d. Jesse and Laura Meisel. c.: Thomas Melville; Virginia Louise. Exp.: Elec. Engr., Westinghouse Air-brake Co., 1920-22; Instr. in Elec. Engrng., Univ. of Mich., 1922-28; Asst. Prof., 1928-35; Assoc. Prof., 1935-43; Prof., 1943—. Mem.: Am. Inst. Elec. Engrs.; Inst. Radio Engrs.; Inst. Soc. of Am.; Sigma Xi; Tau Beta Pi; Eta Kappa Nu. Author: Electrical Measurements, 1948; Basic Electrical Measurements, 1950. Contbr. to: Elec. Engrng.; Electronics. Serv. Rec.: Served in France, W. W. I, 1917-19. Listed in: W. W. in AM.; A.M.S.

STOUT, Myron (Mr.), Physiologist, Crops Res. Lab., Utah St. Univ., Logan, Utah. Home Add.: 1631 E. 1030 No., Logan, Utah PLANT PHYSIOLOGY (SUGAR BEETS). b. Rockville, Utah, June 30, 1903. s. Alfred F. and Dora M. (Hall) S. Edn.: B.S., Brigham Young Univ., 1926. m. Helen Gardner, June 21, 1927. c.: Inez Lorraine; M. Kent; Shirley G.; Mason G.; Jan; R. Jean. div. Sept. 13, 1957. 2nd m. Ruth M. Bowen, Feb. 9, 1958. Exp.: Chemist, Columbia Steel Corp., Iron Springs, Utah, 1926-29; Grad. Asst., Univ. of Utah, 1929-30; Physiologist, Agric. Res. Serv., U.S.D.A., 1936—. Hon. Pos.: Vice-Chmn., Chmn., Western Sect., Am. Soc. Plant Physiol.; Chmn., Physiol. Sect., Am. Soc. Sugar Beet Technolts. Mem.: Am. Soc. Plant Physiol.; Am. Assn. Adv. Sci.; Am. Soc. of Sugar Beet Technol.; Utah Acad. Sci.; Sigma Xi. Contbr. to: Jour. Agr. Res. Bot. Gaz.; Am. Chem. Soc.; Am. Soc. Sugar Beet Technolts.; Agr. and Food Chem. Gen. Int.: Award for Superior Service, U.S.D.A., 1955; Service Award, Utah St. Univ., 1962. Areas of Rsch.: Sugar Beet Physiology; Instrumental Analytical Techniques.

STOVER, Carl Frederick (Mr.), Sr. Polit. Scient., Stanford Rsch. Inst., 333 Ravenswood, Menlo Park, Calif. Home Add.: 1285 Hamilton Street, Palo Alto, California. b. Pasadena, Calif., September 29, 1930. s. Carl J. and Marguerite (Muller) S. Edn.: B.A., Stanford Univ., 1951; M.A., ibid., 1954. m. Catherine Swanson, Sept. 3, 1954. c.: Matthew; Mary. Exp.: Instr. in Polit. Sci., Stanford Univ., 1953-55; Fiscal Mgmt. Officer, Off. of the Secy. of Agri., 1955-57; Assoc. Dir., Conf. Program on Pub. Affairs, The Brookings Instn., 1957-59; Sr. Staff Mem., Governmental Studies, ibid., 1959-60; Asst. to the Chmn. of the Bd. of Editors, Ency. Brit., 1960-62; Sr. Polit. Scient., Stanford Research Institute, 1962—. Hon. Pos.: Mem., National Council, Am. Soc. for Pub. Admin., 1953-56; Pres., Wash., D. C. Chapt., Am. Soc. for Pub. Admin., 1958-59. Mem.: Am. Polit. Sci. Assn.; Am. Assn. Adv. Sci.; Phi Beta Kappa; Pi Sigma Alpha; Delta Sigma Rho; Channel City Club. Author: The Vigorous Mind, a short monograph, 1960; The Government of Science, 1962. Contbr. to: Am. Behav. Sci.; Personnel Admin.; Pub. Admin. Rev. Gen. Int.: Consultant to National Science Foundation, 1955; Consultant, National Conference of Christians and Jews, 1954; Consult., Kellogg Fdtn., 1951-54; Consult., Vets. Admin., 1959-60. Areas of Rsch.: Research Administration: Administrative Theory; Executive Education.

STOWELL, Ewell Addison (Ph.D.), Assoc. Prof., Biol., Albion Coll., Albion, Mich. Home Add.: 1541 E. Michigan Ave., Albion, Mich. BOTANY (MYCOLOGY). b. Ashland, Ill., Sept. 2, 1922. s. Leslie R. and Margaret V. (Flatt) S. Edn.: B.Ed., Ill. St. Normal Univ., 1943; M.S., Univ. of Wis., 1947; Ph.D., ibid., 1955. m. Barbara J. Edwards, June 21, 1953. Exp.: Instr., Univ. of Wis., Milw., Wis., 1947-49; Instr., Albion Coll., 1953-56; Asst. Prof., ibid., 1956-59; Assoc. Prof., ibid., 1959—. Mem.: Am. Assn. Adv. Sci.; Mycol. Soc. of Am.; Mich. Acad. of Sci.; Sigma Xi; Beta Beta Beta; Phi Eta Sigma. Contbr. to: Mycologia. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Sexuality of Ascomycetes; Taxonomy of Xylariaceae.

STRANGIO, Vincent Joseph (D.O.), Osteopathic Physician, 113 E. 9th St., Mich. City, Ind. Home Add.: S. Franklin St., Mich. City, Ind. OSTEOPATHIC MEDICINE. b. Brooklyn, N. Y., Mar. 26, 1923. s. Vincent F. and Anna (Reitano) S. Edn.: B.S., Northeast Missouri State Tchrs. Coll., 1950; D.O., Kirksville Coll. of Osteopathy and Surgery, 1950. m. Vera Philippo, 1946. c.: Christopher E.; Mark J. Exp.: Instr., Kirksville Coll. of Osteopathy and Surgery, 1950-51; Priv. Gen. Osteopathic Medical Practice, Mich. City, Ind., 1951—. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Am. Osteopathic Assn.; Ind. Assn. of Osteopathic Physns. and Surgs.; Sigma Sigma Phi; Mich. City Symphony Soc. and Orchestra. Contbr. to: Jour. of Osteopathy. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: Practical Psychotherapy in General Practice. Areas of Rsch.: Psychiatry, Para-Psychology and Scientology.



STRAUB, Lorenz George (Ph.D.), Dir., St. Anthony Falls Hydraulic Lab., Minneapolis 14, Minn. HYDRAULIC ENGINEERING—WATERWAYS AND STRUCTURES. b. Kans. City, Mo., June 7, 1901. s. Joseph Valentine and Marie (Weth) S. Edn.: B.S., Univ. of Ill., 1923; M.S., ibid., 1924; Ph.D., ibid., 1927; C.E., ibid., 1930. Exp.: Staff, Burns-McDonnell Engrng. Co., Hydraulic Structures Investigations and Design, 1924-25; Hd., Special Studies Dept., U. S. Engineering Dept., Kans. City District, 1929-30; Consulting Engr., Mpls., Minn., 1929—; Assoc. Prof., Dept. of Math. and Mechanics, Univ. of Minn., Mpls., Minn., 1930-34; Prof. of Hydraulics, ibid., 1935—; Dir., St. Anthony Falls Hydraulic Lab., ibid., 1938—; Hd., Dept. of Civil Engrng., ibid., 1945—. Hon. Pos.: Pres., Northwestern Section, Am. Soc. of Civil Engrs., 1937-38; Pres., District 7, ibid., 1938-39; Exec. Com., Hydraulics Div., ibid., 1946-51; Chmn., ibid., 1947-49; Pres., Minn. Section, Am. Soc. of Mech. Engrs., 1940-41; Natl. Council, Am. Soc. for Engineering Edn., 1939-42; Pres., Civil Engrng. Div., ibid., 1940-41; Chmn., Grad. Studies Div., ibid., 1948-49; Am. Geographical Union; Section of Hydrology, Vice-Pres., 1942-47; Pres., ibid., 1947-50; Vice Chmn., Exec. Council, Union of Internatl. Engrng. Organizations; Am. Member Permanent Com., Internatl. Assn. for Hydraulic Rsch., 1938-53; Pres., ibid., 1948-56, Honorary Mem., 1959; Natl. Rsch. Coun., Exec. Com., Engrng. and Indusl. Rsch. Div., 1952-56; Com. on Amphibious Operations, ibid., 1950-54; Com. on Ship. Structural Design, 1955-58; Panel Mem. in Geophys., Rsch. and Devel. Bd., 1948-53; Panel Chmn., ibid., 1949-53; Mem., U. S. Beach Erosion Bd., 1950—; Upper Miss. and St. Croix River Improvement Com., 1947—; Vice-Chmn., 1951—; Miss. River Parkway Com., 1947—; Afghan Tech. Inst., 1949—; Natl. Pres., Chi Epsilon, 1944-48. Mem.: Am. Soc. Civil Engrs.; Am. Soc. Mech. Engrs.; Am. Soc. for Engrng. Edn.; Am. Geophys. Union; Internatl. Assn. of Scientific Hydrology; Internatl. Assn. for Hydraulic Rsch.; Union of Internatl. Engrng. Orgs.; Vereines Deutscher Ingenieure; Natl. Assn. of Power Engrs., Hon. Mem.; Tau Beta Pi; Sigma Xi; Chi Epsilon; Gamma Alpha; Phi Kappa Phi; Sigma Tau; Cosmos Club, Washington, D. C. Contbr. to: Proc. Am. Soc. of Civil Engrs.; Engrng. News-Record; Publica-

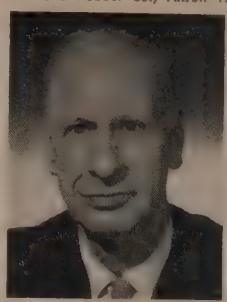
tions of Natl. Rsch. Council; Trans. Am. Geophysical Union; etc. Serv. Rec.: Received Navy Award for Distinguished Service in Ordnance Development, 1947; President's Certificate of Appreciation for Wartime Services, 1949. Gen. Int.: 1st Freeman Traveling Fellow in Am. Soc. of Civil Engrs. in Europe, 1927-29; Officer d'Academie, 1949, France; Order of Palms, France, 1950; Am. Soc. Civil Engrs., Rsch. Award, 1958; ASCE Norman Medal, 1960. Special Int.: Civil Engrng.; Hydraulics; Waterways; Structures.

STRAUMANIS, Martin Edward (Dr.), Rsch. Prof. of Metallurgy, Univ. of Mo., Schl. of Mines and Metallurgy, Rolla, Mo. INORGANIC CHEMISTRY. b. Krettingen, Lithuania, Nov. 23, 1898. s. Janis and Matilde (Sviders) S. Edn.: Eng. Chem. and Dr. Chem., Univ. of Latvia. m. Ieva Reinhards of Riga, Latvia, Apr. 25, 1927. d. Gustavs and Johanna R. c.: Lilita; Mara; Andrejs; Ilze; Liene. Exp.: Asst. Prof., Univ. of Latvia, Riga, Latvia, 1928-36; Assoc. Prof., ibid., 1936-37; Extraordinary Prof., ibid., 1937-42; Prof., ibid., 1942-44; Dir., Analytical and X-ray Lab. of the Univ. of Latvia, 1934-44; Sci. Worker, Inst. of Metal Chem., Univ. of Marburg, 1944-47; Rsch. Prof. of Metall., Univ. of Mo., 1947—; Visiting Prof. (Fulbright) at the Vienna Inst. of Technol., 1957-58. Mem.: Am. Chem. Soc.; Am. Crystal. Assn.; Electrochem. Soc.; Sigma Xi; Sigma Pi Sigma; Deutsche Bunsen Gesellschaft; Inst. of Metals. Author: The Electrochem. Theory of Corrosion of Metals, 1933; Short Inutro. into the Chem. of Complex Compounds, 1935; Precision Determination of Lattice Constants, 1940, '49, '59; Colloid Chem. Textbook, 1949, English Ed., 1954, '62. Contbr. to: Jour. Am. Chem. Soc.; Jour. Electrochem. Soc.; Jour. Applied Phys.; Phys. Rev Dr. Chem. Dissertation: The Rate of Dissolution of Zinc, Cadmium and Iron in Acids from the Standpoint of Local Currents. Travel: Latvia to Germany; Austria; Switzerland; Poland; Finland; Russia; Czechoslovakia; U.S.A. to Canada, England; France, Sweden, Spain; Portugal; Belgium; Holland. Hobbies: Music; Photography. Listed in W. W. in Am.; Who Knows—and What; A.M.S.; W. W. in Engrng.; W. W. in Am. Edn.; W. W. in Chem.; Poggendorff's Handbook. Special Int.: Physical Metallurgy, Corrosion and Deposition of Metals, Chemistry of Complex Compounds; X-ray Crystallography.

STRAUSS, Raymond Bernard (M.D.), Otolaryngol., Columbia-Presbyt. Med. Ctr., N. Y. 32, N. Y. Home Add.: 360 Tom Hunter Rd., Fort Lee, N. J. OTORHINOLARYNGOLOGY. b. N.Y.C., March 25, 1930. s. Victor and Fannie (Price) S. Edn.: A.B., Wash. Univ., 1950; Ph.D., Univ. of Fla., 1956; M.D., Western Res. Univ. Schl. of Med., 1958. m. Lois Kelly, June 12, 1958. Exp.: Clinician, Speech and Hearing Clinic, Univ. of Fla., Gainesville, Fla., 1951-54; Intern, Dept. of Med., Univ. Hosp., Cleveland, Ohio, 1958-59; Asst. Res., Dept. of Surg., Univ. Hosps., ibid., 1959-60; Res., Dept. of Otolaryngology, Columbia-Presbyt. Med. Ctr., N. Y., 1960—. Mem.: Am. Speech and Hearing Assn.; Am. Assn. for the Adv. of Sci.; Fla. Psychol. Assn.; N. Y. Co. Med. Soc.; N. Y. Sta. Med. Soc.; World Med. Assn.; Phi Beta Kappa; Alpha Omega Alpha; Nu Sigma Nu. Contbr. to: Annals of Otol., Rhinol. and Laryngol.; N. Y. St. Jour. of Med.; Am. Med. Assn. Archives of Otolaryngol. Serv. Rec.: U. S. Army Reserve, 1959—. Gen. Int.: Coakley Mem. Prize, Columbia Univ., 1958; Marie and Henry E. Heiner Fellowship Award in Otolaryngol., 1960-61. Areas of Rsch.: Microcirculation of the Internal Ear; Speech Pathology and Audiology; Otology.

STREET, Chan (Mr.), Owner, Street Lab. of Applied Physics, 805 El Segundo Blvd., El Segundo, Calif. Home Add.: 717 Indiana Ct., El Segundo, Calif. INSTRUMENTATION—ELECTRONICS, OPTICS, MECHANICS. b. Hinsdale, Ill., June 2, 1907. s. Frederick Goodrich and Eleanor Stuart (Conger) S. m. Jan Neidenfuer, June 15, 1957. Exp.: Chf. Engr., Federal Products Corp., Providence, 1935-40; Project Engr., Sperry Gyroscope Corp., Brooklyn, 1940-43; Physicist, Perkin-Elmer Corp., Glenbrook, Conn., 1943-45; Consult. Engr. in General Applied Physics, Stamford, Conn., Los Angeles, Calif., 1945-56; Sr. Rsch. Engr., Rocketdyne Inc., Santa Susana Mts., 1956-57; Owner, Street Lab. of Applied Physics, 1957—. Mem.: Hawaiian Acad. of Sci.; A.A.A.S.; Am. Rocket Soc.; Inst. of Radio Engrs. Contbr. to: Machine Design; Electronics; Instruments; Am. Machinist; Electronic Industries; Jour. of Audio Engrs. Soc. Gen. Int.: Absolute Pressure Standard Dead Weight Method; General Application of Spring Hinge Instrument Design; Bellamy Drift Indicator. Areas of Rsch.: Precision Instrumentation in Electronics, Mechanics and Optics.

STREET, John Northcott (Ph.D.), Vice Pres., Rsch., The Firestone Tire and Rubber Co., Akron 17, Ohio. Home Add.: 164 Durward Rd., Akron 13, Ohio. ORGANIC AND PHYSICAL CHEMISTRY. b. Belleville, Ontario, Can., Sept. 19, 1898. s. J. R. and Rose (Northcott) S. Edn.: A.B., Syracuse Univ., 1921; M.S., ibid., 1923; Ph.D., Univ. of Wis., 1926. m. Dorothy Hastings, Dec. 27, 1926. c.: Mrs. Betty Ann Sebring; Janet; Robert. Exp.: Rsch. Chemist, Firestone, Akron, Ohio, 1926-28; Asst. Dir. of Rsch., ibid., 1928-36; Dir. of Rsch., ibid., 1936-44; Asst. Dir. Chem. Labs., ibid., 1944-48; Dir. of Chem. Labs., ibid., 1949-61; Vice Pres., Rsch., ibid., 1961—. Hon. Pos.: Chmn., Rubber Div. of the Am. Chem. Soc., 1941-42. Mem.: Am. Chem. Soc.; Am. Inst. Chem. Engrs.; Am. Inst. Chemists; Am. Assn. for the Adv. of Sci.; The N. Y. Acad. of Scis.; Soc. of Chem. Ind., London; Phi Kappa Psi; Alpha Chi Sigma; Sigma Xi; Phi Lambda Upsilon. Author: Chemistry and Technology of Rubber, 1937. Contbr. to: Jour. Am. Chem. Soc.; Jour. App. Physics; Rubber Chem. and Technol.; Indust. and Engrng. Chem.; Trans. of the Am. Inst. of Chem. Engrs. Serv. Rec.: U. S. Army, 1918-1933 Gen. Int.: Mem., Technical Advisory Comm. to Reconstruction Finance Corp. on Planning and Installation of GR-S Synthetic Rubber Industry, 1942. Areas of Rsch.: Rubber; Plastics; and Petrochemicals.



STREITFELD, Murray Mark (Ph.D.), Asst. Prof., Univ. of Miami, Schl. of Med., Coral Gables, Fla. Home Add.: 1202 N.W. 33rd Ave., Miami, Fla. MICROBIOLOGY. b. N.Y.C., Sept. 16, 1922. s. David and Rose B. (Leinwand) S. Edn.: B.S., Coll. of the City of N. Y., 1943; M.Sc., McGill Univ., 1948; Studies at the Univ. of Sou. Calif., 1948-49; Ph.D., Univ. of Calif., L.A., 1952. m. Ruth Ann Brown, Sept. 22, 1945, div. 2nd m.: Karin M. Roehlig, May, 1962. c.: Stephen Victor. Exp.: Teaching Asst., McGill Univ., Montreal, 1947-48; Tchng. Asst., Univ. of Calif., Los Angeles, 1951-52; Rsch. Bacteriologist, Natl. Children's Cardiac Hosp., Miami, 1952-57; Instr., Univ. of Miami Schl. of Med., 1953-57; Asst. Prof., ibid., 1957-61; Rsch. Assoc., Variety Children's Rsch. Fdtn., Miami, 1957—. Hon. Pos.: Rsch. Assoc., 1960—; V.A. Hosp., Coral Gables, Fla. Branch, 1952, Branch Vice-Pres., 1953-54, 1960-62; Am. Soc. for Microbiol.; Natl. Councilor, 1955-58; Branch Secy., 1958-60. Mem.: Sigma Xi; Phi Sigma; Am. Soc. Microbiology; N. Y. Acad. of Science; A.A.A.S.; Am. Federation for Clinical Rsch.; Am. Heart Assn.; Fla. Public Health Assn. Contbr. to: U. S. Publ. Hlth. Reports; Jour. Bacteriol.; Proc. Soc. Exptl. Biol. and Med.; Jour. Lab. and Clin. Med.; Antibiotics Annual; Am. Jour. Med. Scis.; Jour. Inf. Dis.; Jour. Fla. Med. Assn.; Clin. Rsch. Proc.; A.M.A.; Jour. Dis. Children; Bacteriol. Proc.; Jour. Am. Dental Assn.; Dis. Chest; Fertility and Sterility; Nature; Proc. Conference on Antimicrobiol. Agents. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Patent on Device for Safety Pipetting; Contributions Leading to Improved Methods of Packaging for Safety of Dental Anesthetics from Microbiological Contamination. Areas of Rsch.: Antibiotics and Chemotherapy; Transmission of Dental Infection; Mechanisms of Pathogenesis of Streptococcal, Staphylococcal and Pseudomonas Infections; Studies of Penicillinase, Gamma Globulin; Skin Test for Rheumatic Activity.

STRICKLER, Alvin (Ph.D.), Prof., Emer., Evansville Coll., Evansville, Ind. CHEMISTRY. b. Caledonia, Mich., Sept. 1, 1889. s. John and Mary (Wagner) S. Edn.: A.B., Mich. St. Norm. Coll., 1913; B.S., Univ. of Mich., 1914; M.S., ibid., 1915; Ph.D., Univ. of Wis., 1921. m. Florence Forney of Frankfort, Mich., 1908. d. Christian F. c.: Barbara Ellen (dec.); William Hobart. Exp.: Country Schl. of Mich., 1907-09; Prin. of Schl., Daggett, Mich., 1909-10; Instr. to Asst. Prof., Mich. State Norm. Coll., 1912-18; Asst. to Chf. Chemist, Natl. Biscuit Co., 1918-19; Instr., Univ. of Wis., 1919-21; Hd., Chem. Dept., Evansville Coll., 1921-54; Prof. Emer., ibid., 1954; Asst. Prof. of Chem., Western Mich. Univ., 1958-59. Mem.: A.C.S.; A.A.A.S.; A.A.U.P.; Ind. Acad. of Sci.; Am. Inst. of Chem.; Phi Delta Kappa; Phi Lambda Upsilon; Sigma Xi; Kiwanis; Ind. Chem. Soc.; Alpha Chi Sigma. Author: Laboratory Manual for General Chem., 1923; Laboratory Manual for Organic Chem., 1935. Contbr. to: A.C.S.; Jour. Chem. Edn. Ph.D. Dissertation: Studies in Electroendismose. Serv. Rec.: Air Force, Capt. to Lt. Col., 1942-46. Hobbies:

orts; Scientific Crime Detection. Listed in: A.M.S.; Who ows—and What; W. W. in Central States; Lds. in Am. Sci; ternati. Blue Book.

RIER, Murray Paul (Ph.D.), Rsch. Chemist, McGraw-Edison Co., st Orange, N. J. Home Add.: 21 Cove Lane Rd., Whippany, N. J. PHYSICAL ORGANIC CHEMISTRY. b. N.Y.C., Oct. 19, 1923. s. Jack and Rose (Goldman) S. Edn.: B.Ch.E., Coll. of City of N. Y., 1944; M.S., Emory Univ., 1947; Ph.D., Univ. of Ky., 1952. m. Arlene Schimmel, Feb. 12, 1955. c.: Sheri Jeannette; Karen Barbara. Exp.: Rsch. Chem., Reaction Motors, Inc., Denville, N. J., 1952-56; Sr. Chemist, Air Reduction, Inc., Murray Hill, N. J., 1956-57; Section Hd., ibid., 1957-58; Chf. Chemist, Fulton Irgon Corp., Dover, N. J., 1958-59; Grp. Ldr., Rayonier, Inc., Whippany, N. J., 1959-60; Supvr., ibid., 1960-61; Rsch. Chemist, McGraw-Edison Co., West Orange, N. J. 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Am. Soc. for Testing

aterials; Sigma Xi; Pi Alpha; Lions Internatl. Contbr. to: ur. Am. Chem. Soc.; Jour. Am. Rocket Soc.; Sixth Internatl. mbustion Symposium. Serv. Rec.: U. S. Navy, 1944-46. Areas Rsch.: Quinoxaline Chemistry; Physical Testing and Correlation Properties with Structure for Rocket Propellants; Organic Coatgs, Plastics and Fibers; Viscose Chemistry.

TRIKER, Cecil (M.D.), Physician, 1019 Provident Bank Bldg., ncinnati 2, Ohio. Home Add.: 3885 Springhouse Lane, Cincinnati 17, Ohio. INTERNAL MEDICINE. b. Princeton, Ky., Sept. 25, 1897. s. Abraham and Belle (Eichman) S. Edn.: B.S., Univ. of Cincinnati, 1919; M.D., ibid., 1921. m. Delia W. Striker, July 7, 1929. c.: Cecil Lee; Theodore W. Exp.: Pres., Jewish Hosp., 1955-56; Assoc. Clin. Prof. of Med., Univ. of Cincinnati Coll. of Med., Cincinnati, Ohio, 1945; Att. Physn., Cincinnati Gen. Hosp., 1945. Hon. Pos.: Pres., Elect., Alumni Assn., 1940-41, Ohio Acad. of Med. History, 1960-61; Pres. and Founder, Am. Diabetes Assn., 1940-41; Secy., Am. Diabetes Assn., 1941-47; Mem. of Comm., Med. Food Requirements, 1942-45; Mem., Rsch. Study Grants Comm. Sect. Met. and Endocrinol.,

S. Publ. Hlth. Serv., 1948-51; Chief-Med. Adv. Bd. #2, ncinnati, U. S. Selective Serv., 1940-44. Mem.: Am. Assn. r the Adv. of Sci.; Fellow, Am. Coll. of Physns.; Am. iabetes Assn.; Am. Assn. for the History of Med.; Cent. Soc. r Clin. Rsch., Emerit.; Am. Bd. of Internal Med.; Alpha mega Alpha; Hon. Mem., Publ. Health Fed., Cincinnati; Pres., cad. of Med., Cin., 1951-52. Author: Famous Faces in iabetes, 1961. Gen. Int.: Recipient Banting Medal Am. Diabetes ssn. Areas of Rsch.: Diabetes Mellitus and Medical History.

TRINGFIELD, Victor Timothy (Mr.), Geologist, U. S. Geological rvey, Wash. 25, D. C. Home Add.: 4208 50th St., N.W., Wash., D. C. GEOLOGY; HYDROGEOLOGY; RADIOHYDROLOGY. b. Franklinton, La., Sept. 10, 1902. s. William Smith and Laura Amelia (Harvey) S. Edn.: B.S., B.A., La. St. Univ., 1925; M.S., Wash. Univ., 1927. m. Jessica Fairfax Hill, Oct. 19, 1929. c.: Barbara Louise; Beverly Anne. Exp.: Geologist, Tex. Co., Amarillo, Tex., 1927; Instr., Okla A. & M. Coll., 1927-28; Asst. Prof., N. Mex. Schl. of Mines, 1928-30; State Geologist, N. Mex. Bur. of Mines, Socorro, N. Mex., 1928-30; Geologist, U. S. Geol. Survey, Wash., D. C., 1930—. Hon. Pos.: Coun. and Chmn., Program Com., Soc. of Econ. Geologists; Vice-Pres., Geol. Soc. of Wash.; Chmn., Earth Sci. Panel, and Mem., Admissions

om., Wash. Acad. of Sci. Mem.: Fellow, Geol. Soc. of Am.; oc. of Economic Geologists; Am. Assn. of Petroleum Geologists; eol. Soc. of Wash.; Wash. Acad. of Scis.; Am. Geophys. Union; nternatl. Assn. of Hydrogeologists; Sigma Xi; Cosmos Club. ontbr. to: Fla. Geol. Survey; U. S. Geol. Survey Water-Supply aper; Am. Water Works Assn.; U. S. Geol. Survey Prof. Paper; con. Geol.; Jour. Am. Water Assn. Serv. Rec.: U. S. Army eserve, 1925-40. Areas of Rsch.: Geology, Hydrology, Hydrogy of Limestone Terraines; Artesian Water; Ground Water eology Movement of Radionuclides in Ground Water.

TROM, Robert Gregson (Mr.), Jr. Rsch. Geol., Space Scis. ab., Univ. of Calif., Berkeley 4, Calif. Home Add.: 2099 Key lvd., El Cerrito, Calif. LUNAR GEOLOGY; PETROLEUM GEOLOGY. b. Long Beach, Calif., Oct. 1, 1933. s. John I., Sr. and Ruth (Gregson) S. Edn.: B.S., Univ. of Redlands, 1955; M.S., Stanford Univ., 1957. m. Margaret Condie, Sept. 21, 1955. c.: Eric Gregson. Exp.: Geol., Standard-Vacuum Oil Co., White Plains, N. Y., 1957-60; Junior Rsch. Geol., Space Scis. Lab., Univ. of Calif., 1961—. Mem.: Am. Assn. of Petroleum Geols.; Astronom. Soc. of the Pacific; Am. Assn. for the Adv. of Sci. Serv. Rec.: U. S. Army Reserve, 1957—. Areas of Rsch.: Lunar Geology, Tectonics and Compositional Aspects of Lunar Geology.

STRINGHAM, Elwood Williams (Ph.D.), Prof. and Hd., Dept. of Animal Sci., Univ. of Manitoba, Can. ANIMAL HUSBANDRY. b. Alberta, Can., Dec. 10, 1917. s. George L. and Sarah Lovina (Williams) S. Edn.: B.Sc., Univ. of Alberta; M.Sc., ibid.; Ph.D., Univ. of Minn. m. Gabrielle Wellington of Ilkley, Yorkshire, England, June 9, 1944. d. Canon and Mrs. A. H. Wellington. c.: John David; Michael George; Peter Elwood; Richard Bryce; James Andrew Q. Exp.: Res. Asst., Dom. Dept. of Agri., Dominion Range Exptl. Sta., 1940; Livestock Fieldman, Dom. Dept. of Agri., Edmonton, Alberta, 1941; Instr., Animal Husb., Univ. of Minn., 1946-48; Asst. and Assoc. Prof., Div. of Animal Sci., Univ. of Manitoba, 1948-51; Prof., Dept. of Animal Husb., Ontario Agri. Coll., 1951-54; Prof. and Hd., Dept. of Animal Sci., Univ.

of Manitoba, 1954—. Mem.: Sigma Xi; Agri. Inst. of Can.; Can. Soc. of Animal Production; The Am. Soc. of Animal Production; Canadian Genetics Soc.; The Am. Genetics Assn.; The Am. Assn. for the Advancement of Sci. Ph.D. Dissertation: An Analysis of the Breeding Methods Employed in the Devel. of the Poland China Herd of Swine at the Minn. West Central Exptl. Sta. War Rec.: Navigation Officer, R.C.A.F., 1942-45. Travel: Germany; France; Can.; United Kingdom. Hobbies: Fishing; Hunting; Riding; Motoring. Listed in: A.M.S.; Canadian Who's Who.

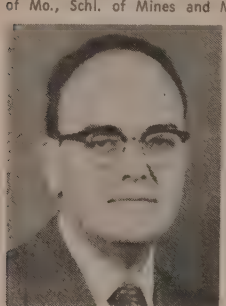
STRONG, Leonell Clarence (Ph.D.), Dir., Biol. Stan. of Roswell Park Mem. Instit., Buffalo, N. Y. Home Add.: 196 N. Buffalo St., Springville, N. Y. GENETICS, GERONTOLOGY WITH REFERENCE TO CANCER RESEARCH. b. Renova, Pa., Jan. 19, 1894. s. Clarence A. and Ella H. (Mead) S. Edn.: B.S., Allegheny Coll., 1917; Ph.D., Columbia Univ., 1922; Sc.D., Allegheny Coll., 1939. Hon. Degs.: M.D., Univ. of Perugia, Italy, 1957. m. Katherine Bittner, June 27, 1919. c.: L. C., Jr.; Wilson W. Exp.: Assoc. Prof., Bard Coll., N. Y., 1921-25; Rsch. Fellow, Harvard Univ., Cambridge, Mass., 1925-27; Instr., Assoc. Prof., Genetics, Univ. of Mich., Ann Arbor, Mich., 1927-30; Rsch. Assoc., Jackson Mem. Lab., Bar Harbor, Me., 1930-33; Instr., Rsch. Prof. of Anatomy, Yale Univ. Schl. of Med., New Haven, Conn.,

1933-53; Director, Biol. Stan., Prof. of Genetics, Roswell Park Memorial Institute, Springville, N. Y., 1953—. Hon. Pos.: Honorary M.D., Univ. of Pergia, Italy, 1957; Am. Member of Council of the Academy of Zool., Agra, India; Comm. of Gastric Cancer, Natl. Adv. Cancer Coun.; Hon. Mem., Roswell Park Surgical Soc. Mem.: Am. Naturalists; Am. Assn. Cancer Rsch.; Am. Genetic Soc.; Genetic Soc. of Am.; Gerontol. Soc. Am.; Fellow, N. Y. Acad. of Scis.; Soc. Exptl. Biol. and Med.; Corresponding Mem. French Assn. for the Study of Cancer; Royal Soc. of Med., London, England; Phi Beta Kappa; Sigma Xi; Phi Gamma Mu; Masons; Shriner; Hon. Life Mem., Springville C. of C.; Presby. Ch.; Past Pres., Rotary Internatl. Contbr. to: Cancer Rsch.; N. Y. Acad. of Symposium. Gen. Int.: Medals of Merit for the Univ. of Louvain and the Univ. of Liege; Lectured 27 times on this Trip, 1948 at Brussels, Liege, Louvain, Stockholm and Other European Cities. Areas of Rsch.: Genetics of Cancer; Mutations in Cancerous Tissue and Transplantable Tumors; Influence of Essential Oils on Incidence of Cancer in Mice; Hemoglobin in Relation to Susceptibility to Cancer, Relation of Hormones to Cancer; Tolerance to Salicyladehyde, Porphyrins; Xanthine Dehydrogenase; Genetic Analysis of Susceptibility to Tumors Induced by Carcinogens; Implantable Tumors; Induction of Mutations by Methylcholanthrene; Effect of Maternal Age or Litter Seriation upon Cancer Susceptibility and Polydactylia in Mice; Genetic Studies of Gerontology.

STRUBLE, Raimond Aldrich (Ph.D.), Prof. of Maths., N. C. State Coll., Raleigh, N. C. Home Add.: 2100 Dunnhill Dr., Raleigh, N. C. MATHEMATICS. b. Forest Lake, Minn., Dec. 10, 1924. s. Howard S. and Bernice M. (Aldrich) S. Edn.: B.S., Univ. of Notre Dame, 1947; M.S., ibid., 1949; Ph.D., ibid., 1951. m. Marilyn J. Mishler, 1946. c.: Barbara; Gregory; Vincent; Michele; Wayne. Exp.: Aerodynamicist, Douglas Air Craft Co., Santa Monica, Calif., 1951-53; Asst. Prof., Ill. Instit. of Tech., Chicago, Ill., 1953-56; Assoc. Prof., ibid., 1956-58; Assoc. Prof. to Prof., N. C. State Coll., 1958—. Mem.: Am. Math. Soc.;

Math. Assn. of Am.; Sigma Xi; Soc. For Indust. and Appl. Maths.; N. C. Acad. of Sci. Author: NonLinear Differential Equations, 1962. Contbr. to: Archives for Rational Mechs. and Analysis; Procs. of the Natl. Acad. of Scis.; Jour. of the Aeronautical Scis.; Jour. of App. Mechs.; ARS Jour.; Am. Math. Monthly; Jour. Soc. for Indust. and App. Maths.; Jour. of Mathl. Analysis and Applications; Jour. of Maths. and Mechs.; Jour. of Mathl. Phys. Serv. Rec.: U. S. Naval Reserve, 1943-46. Areas of Rsch.: NonLinear Differential Equations; NonLinear Oscillations; Motion of Artificial Satellites.

STRUNK, Mailand Rainey (Sc.D.), Prof., Chem. Engrng., Univ. of Mo., Schl. of Mines and Metallurgy, Rolla, Mo. Home Add.: 1207 Powell, Rolla, Mo. CHEMICAL ENGINEERING. b. Kans. City, Kans., Aug. 17, 1919. s. George R. and Helene A. (Andersen) S. Edn.: B.S.Ch.E., Kans. State Univ., 1941; M.S.Ch.E., Univ. of Mo. Schl. of Mines and Met., 1947; D.Sc., Ch.E., Wash. Univ., 1957. m. Mildred B. Strunk, Oct. 1, 1949. c.: Nora Helene; Amy Louise; Alice Elaine. Exp.: Technologist, Shell Oil Co., Wood River, Ill., 1947-54; Instr., Wash. Univ., St. Louis, Mo., 1954-57; Assoc. Prof., Univ. Mo. Schl. of Mines and Met., 1957-60; Prof., ibid., 1960—. Mem.: Am. Inst. of Chem. Engrs.; Mo. Soc. Prof. Engrs.; Am. Soc. Engrng. Edn.; Sigma Xi; Tau Beta Pi; Alpha Chi Sigma; Alpha Tau Omega; Toastmasters. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Heat and Mass Transfer.



STRYKER, William Lester (Mr.), Pres., Stryker Oil and Gas Co., Box 9, Fredonia, Kan. Home Add.: 832 Madison, Fredonia, Kan. GEOLOGY. b. Fredonia, Kan., Aug. 9, 1887. s. J. L. and Elizabeth Jos. (Chapman) S. Edn.: A.B., Univ. of Kan., 1910. m. Rua McBride, 1920. c.: Jos. M.; Sheila; E. M.; Diane. Exp.: Geologist, Carter Oil Co., Tulsa, Okla., 1910-20; Mgr., Stryker and Ladory Oil Co., Fredonia, Kan., 1920-36; Pres., Stryker Oil and Gas Co., ibid., 1936—. Mem.: A.A.P.G.; A.G.I.; Kan. Geol. Soc.; A. G. Soc.; Mason; Shriner; Elks; Lions; Retired Officers Assn.; Kan. Min. Ind. Coun. Serv. Rec.: U. S. Army, World War to Retirement.

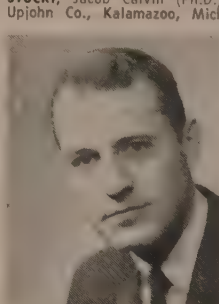
STUARD, Barbara Jean, Hd. of Sci. Dept., W. Tresper Clarke H. S., Edgewood Dr., Westbury, L. I., N. Y. Home Add.: 1860 Nassau St., Merrick, L. I., N. Y. ZOOLOGY. b. Philadelphia, Pa., Feb. 12, 1930. d. James and Jean (MacDonald) S. Edn.: B.A., Hofstra Coll., 1951; M.A., Wellesley Coll., 1955. Exp.: Rsch. Asst., Carnegie Inst. of Wash., Cold Spring Harbor, L. I., N. Y., 1951-52; Rsch. Asst., L. I. Biological Lab., Dept. of Genetics, ibid., 1952-53; summers, 1954-55; Tchng. Fellow, Wellesley Coll., Wellesley, Mass., 1953-55; Hd. of Sci. Dept., W. Tresper Clarke H. S., Westbury, L. I., N. Y., 1958—. Mem.: A.A.A.S.; Natl. Geographic Soc.; N. Y. State Sci. Tchrs. Assn.; Associate Mem., Am. Museum of Natural Hist.; Beta Beta Beta. Areas of Rsch.: Zoology.

STUART, Edward Bernard (Ph.D.), Assoc. Prof. of Chem. Engrng., 609 Engrng. Hall, Univ. of Pittsburgh, Pittsburgh, Pa. Home Add.: 3264 Nottingham Dr. Pittsburgh 35, Pa. CHEMICAL ENGINEERING. b. Swissvale, Pa., Aug. 31, 1924. s. Albert J. and Mary (Conley) S. Edn.: B.S., Univ. of Pittsburgh, 1948; M.S., ibid., 1949; Ph.D., ibid., 1955. m. Geraldine McQuillen, Feb., 1948. c.: Suzanne M.; David G.; Andrew L.; Brian E.; James G. Exp.: Instr., Univ. of Pittsburgh, Pa., 1948-49; Guest Lecturer, Univ. of W. Va., Morgantown, W. Va., 1949; Asst. Prof., Univ. of Pittsburgh, Pa., 1949-55; Assoc. Prof., ibid., 1955—. Mem.: Am. Inst. of Chem. Engrs.; ACS; AAAS; Pa. Soc. of Profl. Engrs.; Am. Soc. for Engrng. Edn.; Sigma Xi; Sigma Tau; Phi Lambda Upsilon; Omega Chi Epsilon; Omicron Delta Kappa; Pi Kappa Alpha. Author: Chemical Engineering Lab Experiments, 1961. Contbr. to: Chem. Engrng. Progress; Oil and Gas Jour.; Industrial and Engrng. Chem.; Insulation Magazine; Am. Engr.; A.I.Ch.E. Jour. Serv. Rec.: AAF, 1943-45. Areas of Rsch.: Liquid Phase Adsorption Chemical Engineering Process Design.

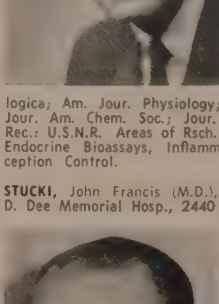
STUART, Helen G., Natl. Field Representative, United Cerebral Palsy Assn., 321 W. 44th St., New York 36, N. Y. Home Add.: 526 Harden St., Columbia, S. C. PUBLIC EDUCATION AND PUBLIC RELATIONS. b. Popular Bluff, Mo., Nov. 13, 1920. d. Frank Abner and Ida Leona (Hickman) Gwinn. Edn.: B.A., Univ. of Miami, 1943. m. Hardin Vereen, 1945 (dec.). c.: Jonathan Vereen. Exp.: Natl. Field Staff, Girl Scouts of U. S. A., New York City, N. Y., 1955-59; Exec. Dir., UCP of S. C., Columbia, S. C., 1960-61; Natl. Field Rep., United Cerebral Palsy Assn., N. Y. City, N. Y., 1961—. Mem.: Acad. of Certified Social Workers; Natl. Assn. of Social Workers; Delta Zeta; Pilot Internatl. Areas of Rsch.: Administration and Organization and Planning.

STUART, Robert Dennis (Ph.D.), Assoc. Prof., Northeastern Univ., Boston, Mass. Home Add.: 285 Marlborough St., Boston, Mass. PHYSICS; ELECTRONIC ENGINEERING; TEACHING ELECTROMAGNETIC FIELD THEORY; RESEARCH PHYSICS OF UPPER ATMOSPHERE AND COMMUNICATIONS. b. Wollaston, Northants, England, June 21, 1927. s. Arthur A. and Conetta L. (Bailey) S. Edn.: B.A., Christ's Coll., Cambridge Univ., 1947; M.A., ibid., 1951; Ph.D., ibid., 1953. Exp.: Rsch. Staff, Rsch. Lab. of Electronics, M.I.T., Mass., 1951-54; Sr. Scientific Officer, Royal Naval Sci. Serv., Admiralty Rsch. Lab., Teddington and Royal Aircraft Est., Farnborough, England, 1954-60; Assoc. Prof., Northeastern Univ., 1960—. Mem.: Inst. of Electl. Engrs.; Am. Inst. of Electl. Engrs.; Am. Geophysical Union; Inst of Radio Engrs.; Am. Soc. for Engrng. Edn.; Eta Kappa Nu. Co Author: Frequency Modulation, 1956. Author: Introduction to Fourier Analysis, 1961. Contbr. to: Proc. Inst. of Elect. Engrs., Brit. Jour. of Applied Physics. Areas of Rsch.: Ionospheric Physics and Communications Theory.

STUCKI, Jacob Calvin (Ph.D.), Hd. Dept. of Pharmacology, The Upjohn Co., Kalamazoo, Mich. Home Add.: 1103 Eldridge Dr., Kalamazoo, Mich. ENDOCRINOLOGY. b. Neillsville, Wis., Nov. 30, 1926. s. Rev. Benjamin and Ella (Kuester) S. Edn.: B.S., Univ. of Wis., 1948; M.S., Univ. of Wis., 1951; Ph.D., ibid., 1954. m. Naomi Bersch, Nov. 24, 1948. c.: Marcia V.; Heidi E.; J. Christopher. Exp.: Rsch. Asst., Dept. of Zoology, Univ. of Wis., 1948-54; Sr. Endocrinologist, The Wm. S. Merrell Co., Cincinnati, Ohio, 1954-57; Rsch. Assoc., The Upjohn Co., Kalamazoo, Mich., 1957-60; Hd. Dept. of Endocrinol., ibid., 1960-61; Hd. Dept. of Pharmacology, ibid., 1961—. Mem.: The Endocrine Soc.; Soc. for Exptl. Biol. and Med.; A.A.A.S.; Sigma Xi; Gamma Alpha. Contbr. to: Endocrinology; Acta Endocrinologica; Am. Jour. Physiology; Proc. Soc. Exptl. Biol. and Med.; Jour. Am. Chem. Soc.; Jour. Cell and Comp. Physiology. Serv. Rec.: U.S.N.R. Areas of Rsch.: Pharmacology of Steroid Hormones, Endocrine Bioassays, Inflammation, Physiol of Pregnancy, Conception Control.



STUCKI, John Francis (M.D.), Co-Dir., Dept. of Radiol., Thomas D. Dee Memorial Hosp., 2440 Harrison Blvd., Ogden, Utah. Home Add.: 3549 Baker Dr., Ogden, Utah. RADIOLOGY, NUCLEAR MEDICINE. b. Delta, Utah, Sept. 27, 1922. s. Herman W. and Anna (Nelson) S. Edn.: B.A., Univ. of Utah, 1943; M.D., Univ. of Utah Coll. of Med., 1946. m. Wanda Garner, Jan. 13, 1953. c.: Jan; John. Exp.: Resident and Resident Instr., Radiol., Univ. of Utah, Salt Lake City, Utah, 1950-53; Assoc. Radiologist, St. Vincents Hosp., Billings, Mont., 1953-54; Chief of Radiol., V. A. Hosp., Salt Lake City, Utah, 1954-55; Asst. Clin. Prof., Radiol., Univ. of Utah, Salt Lake City, Utah, 1954—; Co-Dir., Radiol., Thomas D. Dee Memorial Hosp., Ogden, Utah, 1955—. Mem.: Am. Coll. of Radiol.; Radiological Soc. of N. Am.; Soc. of Nuclear Med.; A.A.A.S.; Utah St. Radiol. Soc.; Diplomate, Am. Bd. of Radiol. Civic Clubs: Kiwanis Internatl.; C. of C. Serv. Rec.: U.S.A. Areas of Rsch.: Diagnostic and Therapeutic Radiology; Applications of Nuclear Science to Clinical Medicine; Cineradiography; Electrokymography.



STURGES, Stuart (Ph.D.), General Electric Co., Knolls Atomic Power Lab., Schenectday, N. Y. Home Add.: 32 Stewart Ave., South Glens Falls, N. Y. CHEMICAL ENGINEERING. b. Altamont, N. Y., July 1, 1913. s. Edward C. and Hila Filley (Scott) S. Edn.: Ch.E., Rensselaer Polytechnic Inst., 1935; M.S., ibid., 1939; Ph.D., ibid., 1941. m. Frances Ann Davison, Oct. 4, 1940. c.: Joanthan Tucker; Dugald Stuart. Exp.: Rsch. Assoc., Albany Med. Coll., 1935-37; Instr., Rensselaer Polytechnic Inst., 1937-39; Instr., Albany Med. Coll., 1939-40; Sr. Engr., Merck and Co., Inc., Rahway, N. J., 1940-42; Prin. Engr., Manhattan Dist. Corps of Engrs., New York, N. Y., 1942-46; Staff, Joint Task Force 1, Bikini Tests, 1946—; Pres., Adirondack Industries Inc., Ft. Edwards, N. Y., 1946-48; Project Engr., Gen. Elec. Co., Knolls Atomic Power Lab., Schenectady, N. Y., 1948-51; Mgr., Subcontracting Unit, ibid., 1951-55, Contracts Specialist S.A.R., ibid., 1955-57; Engr., Contract Operations Nuclear Core Operation, ibid., 1957-61; Special Technical Informational and

nts, ibid., 1961—. Mem.: A.C.S.; A.A.A.S.; Sigma Xi; Lambda Upsilon; Pi Kappa Alpha; Chemists Club; Univ. ; Masonic Bodies. Contbr. to: Jour. Biological Chem.; Sci.; . A.C.S. Areas of Rsch.: Analytical Methods, Continuous ess Design, Physical Properties Biological Compounds, Ma- ls of Construction, Limnology.

RKIE, Dana Gibson (Ph.D.), Agronomist, Auburn Univ., Auburn, Home Add.: 159 Burton St., Auburn, Ala. AGRONOMY. b. Smith's (Lee Co.), Ala., Aug. 5, 1897. s. William Thomas and Carrie (Gibson) S. Edn.: B.S., Ala. Polytechnic Inst., 1920; M.S., Ia. St. Coll., 1923; Ph.D., Mich. St. Coll., 1931. m. Mary McCullough, June 9, 1927. c.: Julia Ann; Mary Elizabeth; Peggy Joyce; Dana. Exp.: Instr., Tex. A. and M. Coll., 1920-22; Asst. Prof., Clemson Coll., 1923-25; Asst. Prof., Ala. Polytechnic Inst., 1925-27; Assoc. Prof., ibid., 1927-42; Prof., ibid., 1942—. Mem.: Sigma Xi; Am. Soc. of Agronomy; Phi Kappa Phi; Gamma Sigma Delta. Contbrng. Author: Forages, 1951; The Peanut, 1951; Field Crop Production, 1954. Contbr. to: Jour. Am. Soc. of Agronomy. Areas of Rsch.: Cotton Physiol.; Crops; Turf; Bamboo; Forage Crops.

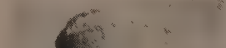
Helen Chien-fan (Ph.D.), Rsch. Chem., Borden Chem. Co., 0 Langdon St., Phila. 24, Pa. Home Add.: 5250 Roosevelt Blvd., Phila. 24, Pa. ORGANIC CHEMISTRY. b. Nanping, Fukien, China, Dec. 26, 1922. d. Ru-Chen and Seu-hsien (Wong) Su. Edn.: B.A., Hwa Nan Coll., China, 1944; M.S., Univ. of Nebr., 1951; Ph.D., ibid., 1953. Exp.: Asst., Hwa Nan Coll., Foochow, Fukien, China, 1944-47; Instr., ibid., 1947-49; Prof., Lambuth Coll., 1953-55; Rsch. Asst., Auburn Rsch. Fdtn., Auburn Univ., 1955-57; Rsch. Chem., Borden Chem. Co., 1957—. Mem.: Am. Chem. Soc.; A.A.A.S.; N. Y. Acad. of Scis.; Sigma Xi; Sigma Delta Epsilon; Iota Sigma Pi. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Heterocyclic Nitrogen Compounds; Sulfur Compounds; Chemotherapy.

GGS, Charles Wilson (Ph.D.), Asst. Prof., N. C. St. Coll., eigh, N. C. Home Add.: 1507 Walnut Trail, Raleigh, N. C. RICULTURAL ENGINEERING. b. Whiteville, N. C., May 30, 28. s. LeRoy and Ethel (Snow) S. Edn.: B.S., N. C. St. l., 1949; M.S., ibid., 1955; Ph.D., ibid., 1959. m. Jane nney, Dec. 18, 1949. c.: Charles, Jr.; Susan; Cynthia. .: Asst. Serv. Supvr., Internatl. Harvester, Fort Wayne, Ind., 49-51; Farm Supt., Br. Station, N. C. Agric. Expt. Sta., eenville, N. C., 1951-53; Rsch. Instr., N. C. St. Coll., 1954- Asst. Prof., ibid., 1959—. Mem.: Am. Assn. Adv. Sci.; . Soc. of Agric. Engrs., Chmn. Comm.; Gamma Sigma Delta; ma Xi; Sigma Pi Sigma; Phi Eta Sigma. Contbr. to: Agric. gr. Trans.; Tobacco Sci.; Jour. of Appl. Physiol. Gen. Int.: velopment of Mechanical Tobacco Harvester. Areas of Rsch.: ysical Properties of Tobacco Plants as Related to Mechanical ndling, Development of Principles; Techniques and Equipment Mechanization of Tobacco Production, Especially Tobacco rvesters; Human Engineering as Related to Agriculture; Effect Environment on Allowable Workloads for Humans, Mathemati- Models of Biological Systems.

GGS, Robert Carl (PhD.), Assoc. Anthropologist, Dunlap and socs, 429 Atlantic, Stamford, Conn. Home Add.: 12 Weeping Willow Lane, Bridgeport 4, Conn. ANTHROPOLOGY (IN SYSTEMS ENGINEERING). b. Portchester, New York, Feb. 24, 1932. s. Middleton O. and Almira M. (Barnes) S. Edn.: B.A., Columbia Coll., 1955; M.A., Columbia Univ., 1956; Ph.D., ibid., 1959. m. Rachel Brown, Sept., 1951. c.: Wayne Jeffery; Donald Keith. Exp.: Rsch. Asst., Am. Mus. of Natl. Hist., N.Y.C., 1956-59; Sr. Engr., The Martin Co., Baltimore, Md., 1959-60; Assoc. Anthrop., Dunlap and Assocs., Stamford, Conn., 1960—. Hon. Pos.: Regl. Editor, Asian Perspectives. Mem.: Am. Anthropological Assn.; Soc. for Applied Anthropology; Soc. for Am. Archeology; Conn. Arch. Soc.; Fellow, Am. Assn. Adv. Sci.; Phi ta Kappa; Delta Phi Alpha. Author: The Island Civilizations Polynesia, 1960; The Archeology of Nuku Hiva, 1961; Hidden orlds of Polynesia, 1962. Contbr. to: Am. Anthropol.; Am. tiquity; Asian Perspectives; Jour. of Polynesian Soc.; Jour. of Royal Anthropological Soc. of Great Britain and Ireland. Areas of Rsch.: Social, Cultural and Psychological Problems in: Weapons system design, space flight, military and civilian survival, psychological warfare. Testing anthropological concepts in practical situations.

SULLIVAN, Fred Marvin (Mr.), Instr., South St. Paul H. S., South St. Paul, Minn. Home Add.: 316-12th Ave., N., South St. Paul, Minn. GENERAL SCIENCE. b. Advance, Ind., Nov. 29, 1899. s. James Robert and Helena (Weber) S. Edn.: A.B., Wabash Coll., 1926; B.S., Butler Univ., 1941; Advanced Study, Univ. of Minn., 1946-47. m. Ruth Strandberg, 1946. Exp.: H. S. Instr., Boone Co., Ind., 1920-27; H. S. Instr., Crawfordsville, Ind., 1928-42; Instr., County Boys Schl., St. Paul, Minn., 1947-48; H. S. Instr., South St. Paul, Minn., 1948—. Mem.: Minn. Edn. Assn.; N.E.A.; Am. Assn. Adv. Sci.; Natl. Sci. Tchrs. Assn.; Lambda Chi Alpha; Masons; Am. Legion. Serv. Rec.: U. S. Army, 1918; Natl. Guard, 1936; U. S. Army, 1942-46.

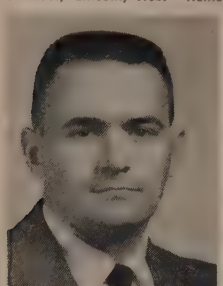
SULLIVAN, Ruth Anne (Mrs.), Asst. Prof. of Biol., Hamline Univ., Saint Paul, Minn. Home Add.: 316-12th Ave., North, South St. Paul, Minn. ANATOMY, HEMATOLOGY AND HISTOLOGY. b. Rochester, Pa., Feb. 16, 1907. d. Ernest John Knut and Ruth Lilly (Carlsson) Strandberg. Edn.: B.S., Hamline Univ., 1929; M.A., Univ. of Minn., 1931. m. Fred Marvin Sullivan, 1946. Exp.: Asst. in Biol., Univ. of Minn., 1929-31; Instr. in Biol., Ripon Coll., 1931-43; Assoc. Prof. of Biol., ibid., 1943-45; Asst. Prof. of Biol., Hamline Univ., 1945—. Mem.: A.A.A.S.; A.A.U.P.; Minn. Acad. of Sci.; Pi Gamma Mu; Kappa Phi; Sigma Delta Epsilon; Eastern Star; A.A.U.W.; Beta Beta Beta.



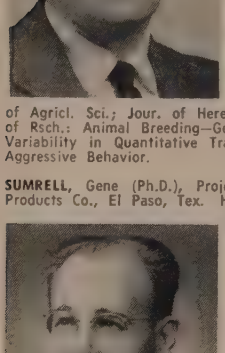
SULLIVAN, Walter Seager (Mr.), Sci. News Editor, N. Y. Times, Times Sq., N.Y.C. Home Add.: 66 Indian Head Rd., Riverside, Conn. GENERAL SCIENCE. b. N.Y.C., Jan. 12, 1918. s. Walter Seager and Jeanet (Loomis) S. Edn.: B.A., Yale Univ., 1940. m. Mary E. Barrett, 1950. c.: Elizabeth Ann; Catherine Ellinwood; Theodore Loomis. Exp.: Foreign Correspondent, China, Korea, Paris, Berlin, U. N., 1948-56. Field work for Am. Museum Nat. Hist., Alaska, 1934. U. S. Antarctic Expeditions, 1946-47, 1954-55, 1956-57; Chief Sci. Writer, N. Y. Times, 1958-62; Sci. News Editor, 1962—. Hon. Pos.: Governor, Arctic Inst. of No. Am.; Councillor, Am. Geographical Soc.; Mem., Exec. Bd., Am. Polar Soc. Mem.: A.G.U. Author: Quest for a Continent, 1957; Assault on the Unknown, 1961. Serv. Rec.: U. S. Navy, 1940-46. Areas of Rsch.: History of Science and Exploration.

SULZBERGER, Marion Baldur (M.D.), Techn. Dir. of Rsch., U. S. Army Med. Rsch. and Devel. Command, Wash., D. C. Home Add.: 3238 Arcadia Pl., N.W., Wash. 15, D. C. MEDICINE; DERMATOLOGY AND SYPHILIOLOGY, ALLERGY. b. N.Y.C., Mar. 12, 1895. s. Ferdinand and Stella Lee (Ullmann) S. Edn.: M.D., Univ. of Zurich, Zurich, Switzerland, 1926. Hon. Degs.: Doctor Hon. Causa, Cent. University of Venezuela, 1961. m. Roberta Zechiel Merrill, Sept. 7, 1958. c.: Mrs. Margaret Louise Dobo. Exp.: Prof. and Faculty Mem., N. Y. Post-Grad. Med. Schl., N. Y., 1926-40; Prof. and Chmn., Dept. of Dermatol., N. Y. Univ. Med. Ctr., N. Y., 1946-61; Techn. Dir. of Rsch., U. S. Army Med. Rsch. and Devel. Command, 1961—. Hon. Pos.: Past Pres., Soc. of Invest. Dermatol.; Am. Dermatol. Assn.; Pres., Internatl. League of Dermatol. Socs. Mem.: Am. Med. Assn.; Soc. of Invest. Dermatol.; Am. Dermatol. Assn.; Fellow, Am. Coll. of Phys.; Alpha Omega Alpha; Legion of Merit; Legion of Honor, France. Author: Dermatology: Diagnosis and Treatment, Co-Author, 1961; Traumatic Medicine and Surgery for the Attorney, Volume on Skin. Contbr. to: Natl. Rsch. Coun. Official Milit. Manuals Series; The Year Book of Dermatol. and Syphilol.; Jour. A.M.A.; Arch. Dermatol. and Syphilo.; Jour. of Allergy; Arch. Dermatol.; Med. Jour. and Rec. Serv. Rec.: U. S. Naval Reserve, 1917-19, 1941-46. Areas of Rsch.: Medicine: Medical Research, Medical Teaching by Audio-Visual Means.

SUMPTION, Lavon John (Ph.D.), Assoc. Prof., Animal Husb., Univ. of Neb., Lincoln, Neb. Home Add.: 3125 Shirley Court, Lincoln 7, Neb. GENETICS AND ANIMAL BREEDING. b. Groton, S. D., July 6, 1929. s. Erwin J. and Elna (Niva) S. Edn.: B.Sc., Univ. of Minn., 1951; M.Sc., ibid., 1955; Ph.D., ibid., 1957. m. Jacqueline Katzmark, June 25, 1951. c.: John; Gloria; Christine; Robin. Exp.: Asst. Animal Husbandman, N. W. Schl. and Station, Crookston, Minn., 1951-53; Rsch. Asst., Univ. of Minn., 1953-56; Asst. Prof., Assoc. Prof., Univ. of Neb., 1957—. Mem.: A.A.A.S.; Am. Soc. of Animal Sci.; Genetics Soc. of Am.; Am. Genetic Assn.; Neb. Acad. of Sci.; Farm-House; Alpha Zeta; Gamma Sigma Delta; Toastmasters. Contbrng. Author: Behavior of Domestic Animals, 1962. Contbr. to: Jour. of Agricl. Sci.; Jour. of Heredity; Jour. of Animal Sci. Areas of Rsch.: Animal Breeding—Genetic and Physiological Nature of Variability in Quantitative Traits; Animal Behavior—Mating and Aggressive Behavior.



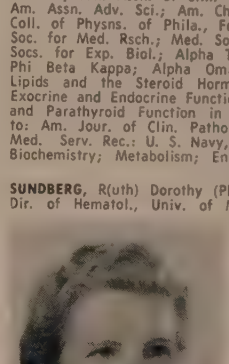
SUMRELL, Gene (Ph.D.), Project Leader, El Paso Natural Gas Products Co., El Paso, Tex. Home Add.: 201 W. Schuster Ave., El Paso, Tex. ORGANIC CHEMISTRY. b. Apache, Ariz., Oct. 7, 1919. s. Joe B. and Dixie (Hughes) S. Edn.: B.A., Eastern N. Mex. Univ., 1942; B.S., Univ. of N. M., 1947; M.S., ibid., 1948; Ph.D., Univ. of Calif., Berkeley, 1951. Exp.: Asst. Prof. in Chem., Eastern N. Mex. Univ., 1951-53; Rsch. Chem., J. T. Baker Chem. Co., Phillipsburg, N. J., 1953-58; Sr. Organic Chem., Southwest Rsch. Inst., San Antonio, 1958-59; Proj. Leader, Chemls. and Plastics Div., Food Machinery and Chem. Corp., Baltimore, 1959-61; Proj. Leader, El Paso Natural Gas Products Co., El Paso, Tex., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; N. Y. Acad. Scis.; Sigma Xi; RESA; Phi Sigma; Phi Kappa Phi; Kappa Mu Epsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Organic Chem.; Jour. Biol. Chem. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Organic Synthesis, Vinly Monomers, Polymers, Heterocyclics; Organometallics; Compounds Containing Sulfur, Phosphorus, Silicon, or Boron; Pharmaceuticals; Structure of Fatty Acids Present in Tubercle Bacillus.



SUN, David C. H. (M.D.), Chf., Gastrointestinal Rsch. Lab. and Gastroenterology, Vets. Admin. Hosp., Wash. 7, D. C. Home Add.: 8201 16th St., N.W., Silver Spring, Md. INTERNAL MEDICINE, GASTROINTESTINAL RESEARCH AND GASTROENTEROLOGY. b. Hangchow, China, Feb. 18, 1922. s. K. F. and Y. S. (Chow) S. Edn.: B.Sc., St. Johns Univ., China, 1944; M.D., Schl. of Med., ibid., 1946; M.Sc., Grad. Schl., Univ. of Pa., 1951; D.Sc., ibid., 1955. Exp.: Intern, St. Luke's and St. Elizabeth Hosp., Shanghai, China, 1945-46; Resident in Med., ibid., 1946-47; Intern, Pathol., Bethesda Hosp., Cincinnati, Ohio, 1947-48; Resident, GI, Univ. of Pa. Hosp., 1948-49; Fellow, Gastrointestinal, Grad. Hosp., Univ. of Pa., 1949-51; Rsch. Assoc., Schl. of Med., Temple Univ., 1951-54; Instr., Med., ibid., 1954-57; Assoc. Med., ibid., 1957-59; Asst. Prof., ibid., 1959-60; Assoc. Clin. Prof., Geo. Wash. Univ., D. C., 1960—; Spec. Lectr., Schl. of Med., Georgetown Univ., D. C., 1960—; Chief, Gastrointestinal, V.A. Hosp., D. C., 1960. Mem.: Am. Assn. Adv. Sci.; Am. Gastroenterol. Assn.; Am. Physiol. Soc.; Philadelphia Co. Med. Soc.; Am. Med. Assn.; Bockus Internatl. Soc. of Gastroenterol.; Rho Psi; Sigma Xi. Contbr. to: Gastroenterol.; Fed. Proc.; New England Jour. of Med.; Jour. Applied Physiol.; Annals of N. Y. Acad. Sci.; The Physiologist; Annals of Int. Med.; Am. Jour. Digest Dis.; Jour. Pharm. Exp. Therapeutics; Med. and Hygiene, Switzerland. Areas of Rsch.: Physiological, Biochemical and Applied Research in the Field of Gastrointestinal Tract; Malabsorption; Etiology and Management of Peptic Ulcer and Pancreatitis; Role of Chronic Alcoholism in Liver and Pancreatic Disease.

SUNDERMAN, Frederick William, Jr. (M.D.), Instr. in Med., Jefferson Med. Coll., 1025 Walnut St., Phila. 7, Pa. Home Add.: 1833 Delancey Pl., Phila. 3, Pa. CLINICAL PATHOLOGY; INTERNAL MEDICINE. b. Phila., Pa., June 23, 1931. s. F. William and Clara Louise (Baily) S. Edn.: B.S., Emory Univ., 1952; M.D., Jefferson Med. Coll., 1955. Exp.: Rsch. Asst., Div. of Metab. Rsch., Dept. of Med., Jefferson Med. Coll., 1953-56; Interne, Jefferson Med. Coll. Hosp., 1955-56; Fellow and [illegible] Assoc., ibid., 1956-58; Hd., Chem. Br., Lab. Div., U. S. [illegible] Med. Schl., Bethesda, Md., 1958-60; Instr., Med. and Mem[illegible] Div. of Metab. Rsch., Jefferson Med. Coll., 1960—. Hon. [illegible] Asst. Physn., Dept. of Med., Jefferson Med. Coll Hosp.. 196[illegible] Mem., Inhalation Toxicity Study Grp., Div. of Biol. and M[illegible] U. S. Atomic Energy Comm., 1961—; Consult. in Clin. Path[illegible] Harrisburg Hosp., Harrisburg, Pa., 1961—; Diplomate, Pa. [illegible] Bd. of Med. Examrs., 1956, Natl. Bd. of Med. Examrs., 19[illegible] Am. Bd. of Clin. Chem., 1960; Bd. Cert. in Clin. Path. by [illegible] Am. Bd. of Path., 1960. Mem.: Am. Soc. for Exp. Path.; [illegible] Soc. of Clin. Path., Fellow; Coll. of Am. Path.; Assn. of [illegible] Scients.; Am. Assn. of Clin. Chemists, Fellow; Am. Med. As[illegible] Am. Assn. Adv. Sci.; Am. Chem. Soc.; Physiol. Soc. of Phi[illegible] Coll. of Physns. of Phila., Fellow; Phila. Co. Med. Soc.; N[illegible] Soc. for Med. Rsch.; Med. Soc. of the St. of Pa.; Fed. of [illegible] Socs. for Exp. Biol.; Alpha Tau Omicron; Alpha Kappa Kap[illegible] Phi Beta Kappa; Alpha Omicron Alpha; Sigma Xi. Auth[illegible] Lipids and the Steroid Hormones in Clinical Medicine, 19[illegible] Exocrine and Endocrine Functions of the Pancreas, 1961; Thy[illegible] and Parathyroid Function in Clinical Medicine, 1962. Con[illegible] to: Am. Jour. of Clin. Pathol.; Clin. Chem.; Anns. of Inte[illegible] Med. Serv. Rec.: U. S. Navy, 1958-60. Areas of Rsch.: Clin[illegible] Biochemistry; Metabolism; Endocrinology.

SUNDBERG, R(uth) Dorothy (Ph.D., M.D.), Prof. of Anatomy [illegible] Dir. of Hematol., Univ. of Minn., Mpls., Minn. Home Ad[illegible] 6120 Zenith Ave., So., Mpls., Minn. HEMATOLOGY. b. Chic[illegible] Ill., July 29, 1915. d. C[illegible] William and Ruth Antoin[illegible] (Chalbeck) S. Edn.: B.S., U[illegible] of Minn., 1937; M.A., [illegible] 1939; Ph.D., ibid., 1943; M[illegible] ibid., 1953. m. Robert H. R[illegible] Dec. 24, 1941, Div., 1945. E[illegible] Technician, Anatomy, Univ. [illegible] Minn., 1937-39; Instr., Path[illegible] Wayne Univ., Detroit, Mi[illegible] 1939-41; Tchng. Asst., Anato[illegible] Univ. of Minn., 1941-46; A[illegible] Prof., ibid., 1946-53; Ass[illegible] Prof., ibid., 1953-60; Prof., ib[illegible] 1960; Dir., Hematol., ib[illegible] 1945. Hon. Pos.: Cert. P[illegible] (Hem.), 1960. Mem.: A.A.[illegible] A.A.A.S.; Fellow; A.S.U.P.; [illegible] Soc. Biol. and Exptl. Med.; N[illegible] Acad. Sci., Fellow; Minn. Soc. Pathol.; Internatl., Europ[illegible] and Am. Socs. of Hematol.; Sigma Xi; Alpha Epsilon Iota. C[illegible] tbr. to: Blood; Anat. Rec.; Jour. Lab. and Clin. Med.; Am. Jo[illegible] of Pathol. Areas of Rsch.: Lymphocytogenesis; Diagnostic He[illegible] tology; Granulomatous Lesions in the Bone Marrow; Lu[illegible] Enythematosis; Infectious Mononucleosis; Hodgkins Disea[illegible] Anemia and Hemochromatosis; Iron Metabolism.



SUOJANEN, Waino W. (Ph.D.), Prof. of Bus. Admin., Fla. St[illegible] Univ., Tallahassee, Fla. and Dir., Rsch. and Devel. Mgt. Pr[illegible] Elgin Air Force Base, Fla. Ho[illegible] Add.: 569 Pocahontas Dr., [illegible] Walton Beach, Fla. R &[illegible] MANAGEMENT, ORGANIZATI[illegible] MANAGEMENT. b. Maynard, Ma[illegible] Jan. 12, 1920. s. Waino I. [illegible] Milma (Lindroos) S. Edn.: B[illegible] Univ. of Vt., 1942; M.B.A., H[illegible] vard Univ., 1946; Ph.D., Un[illegible] of Calif., 1955. m. Doris St[illegible] son, Dec. 24, 1948. c.: Way[illegible] William; James Norman. Ex[illegible] Instr., Univ. of Vt., 1946-4[illegible] Staff Mem., Uarco, Inc., Oakla[illegible] Calif., 1947-49; Staff, NAFI Cor[illegible] Salem, Ore., 1949-50; Asst. Pro[illegible] Univ. of Calif., Berkeley, 1950-5[illegible] Assoc. Prof., U. S. Naval Po[illegible] grad. Schl., 1959-61. Hon. Po[illegible] Treas., Dir., Alameda Co. Me[illegible] Hlth. Assn., 1956-58. Mem.: A[illegible] Econ. Assn.; Acad. of Mgmt.; Phi Beta Kappa; Pi Gamma M[illegible] Beta Gamma Sigma; Beta Alpha Psi. Contbr. to: Mgmt.; Jo[illegible] of Taxation; Personnel; Supvry. Adv. Mgmt.; Actng. Re[illegible] Armed Forces Mgmt.; Armed Forces Comptroller. Serv. Re[illegible] Natl. Guard, 1937-40; Army of the U. S., 1942-46; U. S. Ar[illegible] Reserve, 1946—. Gen. Int.: Consult., Office of the Asst. Secy. [illegible] Defense-Comptroller, 1957-61; Lectr., A. F. Schl. of Logisti[illegible] 1956-60; Techn. Consult., Aerojet-Gen. Corp., 1960-61; Lec[illegible] Dept. of the Army, 1958—. Areas of Rsch.: Management [illegible] Research and Development in Business, Government and [illegible] University; The Application of the Research Findings of [illegible] Behavioral and Social Sciences to a Theory of Organization a[illegible] Management.

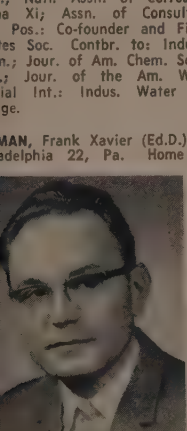
SUSICH, George (Dr.), Head of X-ray Diffraction and Microsco[illegible] Lab., Quartermaster Rsch. and Engrng. Center, Natick, Ma[illegible] Home Add.: 48 Fenelon Road, Framingham, Mass. PHYSICI[illegible] b. Temesvar, Hungary, Jan. 19, 1898 (U. S. Citizen, 1956). [illegible] Stephan von and Dora (von Graffay) von S. Edn.: Dipl. Engrn[illegible] Univ. Bonn am Rhein; Tech. Univ.: Vienna, Brunswick, Hannov[illegible] 1923; Dr. Engrng., Tech. Univ. Berlin-Charlottenburg, 1927. [illegible] Alma Thanner, 1934. c.: Stefanie (Foote); Erwin. Exp.: Gro[illegible] leader, Badische Anilin und Sodafabrik (I. G. Farben), Ludw[illegible] shafen am Rhein, Germany, 1921-47; U. S. Army, Quar[illegible]

er Rsch. Lab., Phila., Pa., 1948-54; Head X-ray Diffraction Microscopy, Rsch. and Engrng. Center, Natick, Mass., 1954 Mem.: A.A.A.S.; Sci. Rsch. Soc. of Am.; Am. Chem. Soc.; Physical Soc.; Fiber Soc; N. Y. Microscopical Soc.; Textile Great Britain; American-Hungarian Studies Fdtn. Contbr. olloid chemisches Taschenbuch; Fiat Final Reports; Zeitschrift hysik; f. physik Chem.; f. Krist.; Naturwissenschatten; cnuk; Rev. Gen. Caoutchouc; Anal. Chem.; Textile Research al; Am. Dyestuff Reporter; Science. Gen. Int.: Structure of lose Derivatives and of Natural Elastomers; Polymorphism rganic Dyes; Mechanism of Heterogeneous Catalysts; Mechanical Behavior of Textiles. Areas of Rsch.: Natural and Synthetic Polymers; Structural Properties of Crystalline Materials; les, Plastics, Elastomers, Metals, Dyestuffs; Body Armor; natl. Cooperation Among Scientists.

K, John G. (Ph.D.), Assoc. Prof., Chem., Marquette Univ., aukee, Wis. Home Add.: 3874 E. Cudahy Ave., Cudahy, Wis. NUCLEAR CHEMISTRY, PHYSICAL AND INORGANIC. b. Czecho-Slovakia, American born abroad. s. John, Sr. and Elizabeth (Vician) S. Edn.: B.S.Ch.E., Marquette Univ., 1931; M.S., ibid., 1932; Ph.D., ibid., 1947. m. Eleanor Mateer, July 28, 1943. c.: Eleanor Elizabeth; John Godfrey. Exp.: Head of Sci. and Math. Dept., Cudahy H. S., Cudahy, Wis., 1932-42; Rsch. Chemist, Orthmann Labs., Milwaukee, Wis., summers, 1935-40; Instr., Chem., Marquette Univ., 1947-50; Asst. Prof., Chem., ibid., 1950-56; Assoc. Prof., Chem., ibid., 1956—. Hon. Pos.: Consultant, Oak Ridge Natl. Lab.; Dept. Admin. Com., Dept. Chem., Marquette Univ., 1956; Chmn., Milwaukee Am. . Soc.; Comm. on Coll. Edn. Mem.: Am. Chem. Soc.; Am. ear Soc.; Am. Crystolographic Soc.; A.A.A.S.; Conf. on Elect. ation, Natl. Rsch. Coun.; N.E.A.; Tau Beta Pi; Sigma Xi; a Gamma Chi. Contbr. to: Jour. Chem. Edn.; Science; ytical Chem.; Analytica Chemica Acta. War Record: U. S. Force, Radar, 1942-46; Also Mem. Radar Rsch. and Devel. Gen. Int.: Rsch. Improvements in Tchng. in Secd. Schls. Colls., Tchr. Insts. Areas of Rsch.: Paper Chromatography, r-Phase Chromatography, Radiochemical Analysis, Radiation ge, Statistical Analysis, Clinical Chemistry.

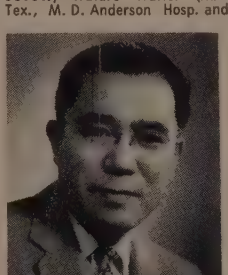
MAN, Sidney (Ph.D.), Technical Director, Water Service , Inc., 615 W. 131st Street, N. Y. 27, N. Y. WATER MISTRY. b. Brooklyn, N. Y., Aug. 29, 1914. s. Abraham nd Mollie (Molbegott) S. Edn.: B.S., magna cum laude, inst. of Brooklyn, 1934; Ph.D., M.I.T., 1937. m. Ann nberg, Aug. 20, 1939. c.: Peter Y.; George D., Carl A. : Rsch. Chemist, E. I. duPont de Nemours and Co., Wilton, Del., 1937-40; Successively Rsch. Chemist, Group and Chf. Rsch. Chemist, The Permutit Co., Birmingham, N. J., -46; Chf. Chemist, Liquid Conditioning Corp., Linden, N. J., -49; Chf. Chemist, Water Serv. Labs., Inc., N. Y. C., -62; Techn. Dir., 1961—. Mem.: Am. Chem. Soc.; Am. of Chemists; Soc. of Chem. Indus.; Am. Water Works .; Natl. Assn. of Corrosion Engrs.; Phi Lambda Upsilon; a Xi; Assn. of Consulting Chemists and Chem. Engrs. Pos.: Co-founder and First Pres., Metropolitan Water and es Soc. Contbr. to: Indus. and Engrng. Chem.; Analytical n.; Jour. of Am. Chem. Soc.; Jour. of Chem. Edn.; Corrosion .; Jour. of the Am. Water Works Assn. Five Patents. ial Int.: Indus. Water Conditioning; Corrosion; Ion Exge.

MAN, Frank Xavier (Ed.D.), Prof. of Sci. Edn., Temple Univ., adelphia 22, Pa. Home Add.: 498 Traverse Blvd., Kenmore 23, N. Y. CHEMISTRY AND SCIENCE EDUCATION. b. Newark, N. J., Dec. 20, 1927. s. Joseph L. and Ella (Joyce) S. Edn.: A.B., Montclair State Coll., N. J., 1949; A.M., ibid., 1952; Ed.D., Columbia Univ., 1956. m. Mabel Ranagan, Apr. 1, 1956. c.: Francis Joseph. Exp.: Sci. Instr., Middle Twp. H. S., Cape May Court House, N. J., 1949-51; Sci. Instr., Plainfield H. S., Plainfield, N. J., 1951-52; Technical Employee, Esso Engrng. and Rsch. Lab., Linden, N. J., 1952; Chem. Instr., West Orange H. S., West Orange, N. J., 1952-55; Asst. Prof. of Sci., Paterson State Coll., N. J., 1955-57; Chmn., Div. of Natural Scis., Inter Am. Univ. of Puerto Rico, 1957-58; Prof. of Science and n., General Studies Sci. Program, State Univ. of N. Y., . of Education at Buffalo, 1958-62; Prof. of Science Edn., ple University, 1962—. Hon. Pos.: Member, A.C.S.-T.A. Chem. Test. Comm; Exec Comm., Assn. for Edn. of rs. in Sci. Mem.: Fellow, A.A.A.S.; Am. Chem. Soc.; Natl. Tchrs. Assn.; A.A.U.P.; Phi Lambda Pi; Holy Name Soc.; n's Sustaining Soc. of Kenmore Mercy Hosp. Author: Exploring Chemistry—H. S. Text, 1961. Contbr. to: Jour. Chem. Edn.; Science Tchr.; N. Y. State Sci. Tchr.; Detroit Sci. Rev.; N. J. Sci. Tchr. Gen. Int: Developed Curriculum for training science teachers in Puerto Rico. Areas of Rsch.: Inorganic Chemistry; Particular Interest in Chemical Education.



SUTCLIFFE, Walter Draper (Mr.), Consultant, D. K. Sutcliffe and Assocs., 3639 Forest Hill Rd., Baltimore 7, Md. Home Add.: 3644 Forest Hill Rd., Baltimore 7, Md. GEODESY, TRIANGULATION, TRAVERSE. b. West Park, N. Y., July 17, 1891. s. John H. and Amanda (Burger) S. Edn.: C.E., Syracuse Univ., 1913. m. Edna F. Krum, Nov. 18, 1915. c.: Draper Krum. Exp.: Jr. Hydrographic and Geodetic Engr., U. S. Coast and Geodetic Survey, Wash., D. C., 1913-17; Mathematician, ibid., 1917-46; Geodetic Engr., Chf., Field Records Br., Div. of Geodesy, ibid., 1946-54; Consultant, D. K. Sutcliffe and Assocs., Baltimore, Md., 1954—. Hon. Pos.: Secy., Pres., Sect. of Geodesy, Am. Geophys. Union. Mem.: Wash. Acad. of Scis.; Wash. Soc. of Engrs.; Am. Cong. on Surveying and Mapping; Soc. of Am. Milit. Engrs.; Philos. Soc. of Wash.; Tau Beta Pi; Sigma Beta; Alpha Tau Omega; Varsity Club, Syracuse Univ. Author: Precise Traverse, Racine, Wisconsin to Vandalia, Illinois, 1922; Precise Triangulation, Traverse and Leveling in North Carolina, 1924; Manual of First Order Traverse, 1927; First Order Triangulation and Traverse in Arkansas, 1934. Gen. Int.: Awarded Silver Medal, U. S. Dept. of Commerce, 1953.

SUTOW, Wataru Walter (M.D.), Assoc. Pediatrician, Univ. of Tex., M. D. Anderson Hosp. and Tumor Inst., Houston, Tex. Home Add.: 3854 Palm St., Houston 4, Tex. PEDIATRIC ONCOLOGY; GROWTH AND DEVELOPMENT. b. Guadalupe, Calif., Aug. 31, 1912. s. Yasaku and Yoshi (Sato) S. Edn.: A.B., Stanford Univ., 1939; M.D., Univ. of Utah, 1945. m. Mary Korenaga, Sept. 5, 1937. c.: Ollie Ellen; Chiyono Jean; Edmund Keith. Exp.: Intern and Res., Univ. of Utah Schl. of Med., 1945-47; Hd., Pediatric Dept., Atomic Bomb Casualty Commn., Hiroshima, Japan, 1948-50, 1953-54; Rsch. Fellow in Pediatrics, Stanford Univ. Schl. of Med., 1950-51; Assoc. Pediatrician, University of Tex., M. D. Anderson Hosp. and Tumor Inst., 1954—; Assoc. Prof. of Pediatrics, Univ. of Tex. Postgrad. Schl. of Med., 1954—; Asst. and Assoc. Clin. Prof. of Pediatrics, Baylor Univ. Coll. of Med., 1954—; Rsch. Collaborator, Brookhaven Natl. Lab., Upton, L. I., 1957—. Mem.: Diplomate, Am. Bd. of Pediatrics; Fellow, Am. Acad. of Pediatrics; Soc. Rsch. in Child Development; Am. Assn. for Cancer Rsch.; Am. Fedn. for Clin. Rsch. Contbr. to: Pediatrics; A.M.A., Am. Jour. Diseases of Children; Jour. of Pediatrics. Serv. Rec.: U. S. Army Med. Corps, 1951-53. Areas of Rsch.: Pediatric Oncology; Growth and Development of Children; Radiation Effects on Children.

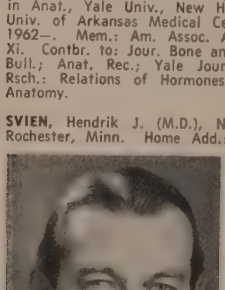


SUTTON, George Harry (Ph.D.), Assoc. Prof. of Geol. and Acad. Staff Member, Lamont Geo. Obs. of Columbia Univ., Palisades, N. Y. Home Add.: 275 Town Line Rd., Pear River, N. Y. EARTHQUAKE SEISMOLOGY; MARINE GEOPHYSICS; LUNAR AND PLANETARY GEOPHYSICS; GEODESY. b. Chester, N. J., Mar. 4, 1927. s. Paul L. and Anna M. (Becker) S. Edn.: B.S., Muhlenberg Coll., 1950; M.A., Columbia Univ., 1953; Ph.D., ibid., 1957. m. Fern M. Conklin, June 29, 1947. c.: Cynthia A.; George H.; Jennifer L.; Suzanne A. Exp.: Rsch. Asst. to Assoc., Acad. Staff Mem., Lamont Geo. Obs., Palisades, N.Y., 1950—; Rsch. Assoc. to Assoc. Prof., Geol., Columbia Univ., N. Y., 1955—; Chief Seismol., Institut pour la Recherche Scientifique en Afrique Centrale, Lwiro, Belgian, Congo, 1955-56. Hon. Pos.: Vice-Chmn., Seismological Soc. of Am., Eastern Section; Assoc. Editor, Journal of Geophysical Research. Mem.: Acoustical Soc. of Am.; Am. Assn. for the Advancement of Science; Am. Geophysical Union; Geological Soc. of Am.; Seismol. Soc. of Am.; Soc. of Exploration Geophysics; Sigma Xi; Omicron Delta Kappa. Contbr. to: Transactions, Am. Geophys. Union; Jour. of Geophys. Rsch.; Bull. of the Seismol. Soc. of Am.; Geophys.; Annales de Geophysique; Nature; Phys. and Chem. of Earth Series; Jour. of the Surveying and Mapping Div.; Procs. Am. Soc. of C. Engrs. Serv. Rec.: U. S. Merchant Marine, 1945-47. Areas of Rsch.: Teaching, Earthquake Seismograph Instrumentation; Earthquake Surface Waves, Earthtides and Free Oscillations; Marine Seismic and Gravimetric Exploration; Lunar and Planetary Seismic and Gravimetric Studies; Mechanical and Acoustical Properties of Ocean Sediments; Automatic Seismic Data Reduction and Analysis.

SUTTER, Everett Lee (Ph.D.), Consulting Psychologist, 2719 W. Harris, San Angelo, Tex. CRIMINAL PSYCHOLOGY. b. Seward, Pa., Nov. 14, 1920. s. Edward W. and Jenny (Reynolds) S. Edn.: A.B., W. Va. Wesleyan Coll., 1948; M.S., Pa. State Coll., 1949; Ph.D., Univ. of Tex., 1952. m. Mary Ann Law, Sept. 4, 1948. c.: Cynthia Ann; David Lee; Lynn Marie. Exp.: Human Resources Rsch. Center, Goodfellow A.F.B., Tex., 1952-54; Instr. and Consult. Psychologist, San Angelo Coll., 1954—. Mem.: Am. Psychol. Assn.; A.A.A.S.; Tex. Psychol. Assn.; Natl. Counsel on Family Relations; Soc. for General Systems Rsch.; Beta Beta Beta; Alpha Sigma Phi; Phi Delta Kappa; Psi Chi. Contbr. to: Texas Outlook. Serv. Rec.: U.S.N., 1943-46. Gen. Int.: Has done research in treatment of the un-curables and has successfully treated homosexuals, psychopathic personalities and numerous criminals. Areas of Rsch.: The Emotion of Hate.

SUZUKI, Howard K. (Ph.D.), Assoc. Prof. of Anatomy, Univ. of Ark. Med. Ctr., Little Rock, Ark. Home Add.: 1705 S. Taylor, Little Rock, Ark. PHYSIOLOGY OF BONES; NEONATAL ANATOMY. b. Ketchikan, Alaska, Apr. 3, 1927. s. George K. and Tsuya (Suzuki S. Edn.: B.S., Marquette Univ., 1949; M.S., ibid., 1951; Ph.D., Tulane Univ., 1955. m. Tetsuko Fujita, Sept. 13, 1952. c.: Georganne; Joan; James; Stanley. Exp.: Asst. in Biol., Marquette Univ., Mil., Wis., 1948-51; Asst. Herpetol., Univ. of Mich. Biol., Sta., Cheboygan, Mich., 1951; Asst. in Anat. and Zool., Tulane Univ., New Orleans, La., 1951-55; Instr. in Anat., Yale Univ., New Haven, Conn., 1955-58; Asst. Prof., Univ. of Arkansas Medical Center, 1958-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Assoc. Anat.; So. Anat. Assn.; Phi Sigma Xi. Contbr. to: Jour. Bone and Joint Surg.; Endocrinol.; Transpl. Bull.; Anat. Rec.; Yale Jour. Biol. Med.; Growth. Areas of Rsch.: Relations of Hormones to Bone; Phagocytosis; Neonatal Anatomy.

SVIEN, Hendrik J. (M.D.), Neurosurgeon, 200 First St., S.W., Rochester, Minn. Home Add.: 827 Eighth St., S.W., Rochester, Minn. NEUROSURGERY. b. Dennison, Minn., Feb. 28, 1911. s. Olaus J. and Caren (Bestul) S. Edn.: B.A., St. Olaf Coll., 1931; M.D., Univ. of Minn., 1938; M.S., Mayo Fdtn., Univ. of Minn., 1942. m. Nancy Gatch, June 8, 1946. c.: Karen; Dagny Elizabeth; Hendrik Thomas. Exp.: Neurosurgeon, Mayo Clinic, Rochester, Minn., 1948—; Assoc. Prof., ibid., Univ. of Minn., 1961—. Mem.: Am. Coll. of Surgeons; A.M.A.; Neurosurgical Soc. of Am.; Congress of Neurologic Surgeons; Am. Acad. of Neourologic Surgery; Harvey Cushing Soc.; Sigma Xi; Alumni Assn. of Mayo Fdtn.; Phi Beta Kappa; Iota Chi Sigma. Contbr. to: A.M.A.; Am. Coll. of Surgs.; Neurol.; Arch. Neourol.; Jour. Neurosurg. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Clin. Neurosurgical Rsch. Including Radioisotope Localization of Brain Tumors; Cerebral Edema; Plastic Investment of Aneurysms; Studies in Temporal Lobe Epilepsy.

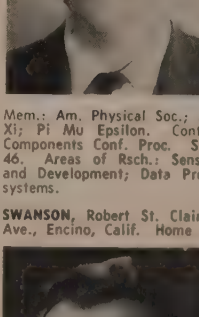


SVENSEN, Carl Lars (D.Sc.), Profl. Engr., Technical Writer, Austin, Tex. Home Add.: 905 W. 29th St., Austin 5, Tex. MECHANICAL ENGINEERING. b. Worcester, Mass., Apr. 8, 1884. s. Charles Michael and Margaret M. (Regan) S. Edn.: B.S., Tufts Univ., 1907; M.E., ibid., 1921; B.D., Central Univ., 1945. Hon. Degs.: LL.D., St. Edward's Univ., 1942; D.Sc., Academie et Universite Internationale, 1945. m. Ruth Rix, Aug. 10, 1931. Exp.: Asst. Engr., Am. Steel and Wire Co., Worcester, Mass., 1907-08; Instr. in Mech. Engrng., Tufts Univ., Medford, Mass., 1908-12; Hd., Machine Construction, Franklin Union, Boston, Mass., 1908-12; Misc. Engrng., 1913; Maint. Engr., Western Elect., N.Y.C., 1914; Instr. to Prof., Ohio Sta. Univ., Columbus, Ohio, 1914-23; Dir., Ohio Tech. Schl., 1916-20; Techn. Writer and Editor in Priv. Pract., 1923-25; Prof. and Hd. of Dept. of Engrng. Drawing, Tex. Tech. Coll., Lubbock, Tex., 1926-33; Priv. Pract. in Engrng. and Archit., Tex., 1933-42; Exec. Secy. Tex. Sta. Bd. of Reg. for Prof. Engr., Tex., 1942-57; Priv. Pract., Profl. Engrng. and Techn. Writer, Austin, Tex., 1957—. Hon. Pos.: Pres., Central School of Religion; Charter Mem., Texas Heritage Fdtn.; Knight Sovereign Imperial Order of St. George; Mem., Imperial Philo-Byzantine Univ., Pres., Natl. Coun. Sta. Bds. of Engrng. Exams., 1943-44; Rep., N.C.S.B.E.E. on ECPD, 1944-47. Mem.: A.S.M.E.; ASEE; Natl. Soc. Prof. Engr. Soc.; Fellow, Soc. Am. Reg. Architects; The Tex. Soc. Architects; Soc. of Tech. Writers and Publishers, Inc.; Am. Ind. Writing Instit.; Fellow, Tex. Acad. of Sci.; Sigma Xi; Tau Beta Pi. Author: A Handbook of Piping, 1918; Essentials of Drafting, 1918-43; Machine Drawing, 1921-23; The Art of Lettering, 1923-47; Drafting for Engrs., 1927-35; Aircraft Drafting, 1941. Co-author: Mechanical Drawing, 1919, 195 Architectural Drafting, 1929; Drafting Problem Layouts, Series 1935; Series B, 1942; Series C, 1952; Series D, 1953; A Manual of Blueprint Reading, 1944; Engineering Graphics, 1962.

SWAN, Kenneth Carl (M.D.), Prof. of Ophthal., Univ. of Ore. Med. Schl., Portland, Ore. Home Add.: 4645 S. W. Fairview, Portland, Ore. OHTHALMOLOGY. b. Kansas City, Mo., Jan. 1, 19 s. Carl E. and Blanche (Peters) S. Edn.: B.A., Univ. of Or 1933; M.D., Univ. of Ore. Med. Schl., 1936. m. Virginia Gro Feb. 5, 1938. c.: Stephen C.; Kenneth R.; Susan B. Ex Res. in Ophthal., St. Univ. of Ia., Ia City, Ia., 1937-40; Rs Assoc. and Asst. Prof., ibid., 1940-44; Prof. and Hd., Dept. Ophthal., Univ. of Ore., 1944—. Hon. Pos.: Former Trust and Chmn., Assn. for Rsch. in Ophthal.; Chmn., Am. Bd. Ophthal., 1960-61; Chmn., Sensory Dis. Study Sect., N. I. 1960-63. Mem.: Soc. of Exptl. Biol. and Med.; Am. Ophth Soc.; Am. Med. Assn.; Assn. Adv. Sci.; Sigma Xi; Alpha Ome Alpha. Contbrng. Author: Symposia on Strabismus and Gl coma, 1957, 1960. Contbr. to: Archives of Ophthal.; Am. Jo of Ophthal.; Investigative Ophthal.; Jour. A.M.A.; Procs. the Soc. of Exptl. Biol. and Med. Gen. Int.: Proctor Rs Medal in Ophthal., 1953. Areas of Rsch.: Ophthalmology, Op thalmic Pharmacology, Ophthalmic Pathology.

SWANSON, Gordon Ira (Ph.D.), Prof., Univ. of Minn., Mpl Minn. Home Add.: 1440 Raymond Ave., St. Paul 8, Min AGRICULTURE EDUCATION. b. Zimmerman, Minn., Aug. 7, 192 s. Charles H. and Alma H. (Collins) S. Edn.: B.S., cum laud Univ. of Cinn., 1942; M.S., ibid., 1949; Ph.D., ibid., 195 m. Dorothy E. Hanson, Jan. 13, 1946. c.: Dale Gordon; De Edward; Janet Marie; Charles Alan. Exp.: Tchr., H. Sch Alexandria, Minn., 1946-49; Instr., Univ. of Minn., 1949-5 Asst. Prof., ibid., 1954-55; Assoc. Prof., ibid., 1955-60; Pro ibid., 1960—. Hon. Pos.: Prog. Officer, UNESCO, Paris, Franc 1959-60; Pres. Elect, Phi Delta Kappa Internatl., 1962-6 Pres., ibid., 1964-65. Mem.: Gamma Sigma Delta; Phi Del Kappa; Fellow, Am. Assn. Adv. Sci. Contbr. to: Rev. of Ed Rsch.; Fatis Rev.; Internatl. Rev. of Edn.; Jour. of Ednl. Rsc Serv. Rec.: U. S. Marine Corps, 1942-46. Areas of Rsch.: Agr cultural Education.

SWANSON, Robert Earl (Ph.D.), Mgr., Technical Programs, Gener Products Div., Development Lab., Rochester, Minn. Home Add 1115 S.W. 7th St., Rochester Minn. TRANSISTORS; DATA PRO ESSING SYSTEM COMPONENT AND SUBSYSTEMS. b. Auror Neb., Dec. 20, 1919. s. C. L. an Ruth (Berg) S. Edn.: B.A. Has ings Coll., 1942; M.S., Univ. Ill., 1950; Ph.D., Kans. St. Univ 1953. m. Gloria Douthitt, Oc 17, 1944. c.: Richard L.; Charl E.; Paul A. Exp.: Asst. Prof. Physics, Univ. of Tulsa, 1949-51 Devel. Engr., I.B.M. Rsch., Poug keepsie, N. Y., 1953-58; Mgr., Adv. Tech., I.B.M. G.P.D. Deve Lab., Endicott, N. Y., 1958-61 Mgr., Engrng. Tech., I.B.M. Gr Staff, White Plains, N. Y., 1961 62; Mgr., Tech. Programs, I.B.M. General Products Div., Develop Lab., Rochester, Minn., 1962 Mem.: Am. Physical Soc.; A.A.A.S.; Inst. of Radio Engrs.; Sigm Xi; Pi Mu Epsilon. Contbr. to: Physical Review; Electronic Components Conf. Proc. Serv. Rec.: U. S. Naval Reserve, 1943 46. Areas of Rsch.: Sensitized Fluorescence; Transistor Desig and Development; Data Processing System Components and Sub systems.



SWANSON, Robert St. Clair (Mr.), Consultant, 4641 Hayvenhurst Ave., Encino, Calif. Home Add.: 4641 Hayvenhurst Ave., Encino Calif. AERONAUTICS AND ASTRO NAUTICS. b. Bridgeport, Nebr Oct. 14, 1915. s. Emal Williar and Josephine (St. Clair) S. Edn B.S., Univ. of Calif., 1938; M.S ibid., 1962. m. Ollie E. Welborn Aug. 18, 1952. c.: Carl Bergan Susan Claire. Exp.: Engr., NASA Hampton, Va., 1938-46; Hd., Ai frames Div., NAMTC, 1946-54 Hd., Aerodynamics and Thermo dyns. Div., Lockheed MSD, Va Nuys, Calif., 1954-58; Consultan Aerojet-Gen. Corp., Azusa, Calif 1958—; Consultant, Bendix Corp North Hollywood, Calif, 1961— Consultant, Northrop Corp., Ingl wood, Calif., 1958—; Consultan Encino, Calif., 1958—. Hon. Pos Chmn. of Los Angeles Reg. Am. Astronautical Soc. Mem. Inst. of Aero-Space Scis.; Am. Rocket Soc.; Am. Astronautica Soc.; Swedish Astronautical Soc.; Can. Aeronautical Inst . Contributing Author: Space Logistics, 1962. Contbr. to: Jou

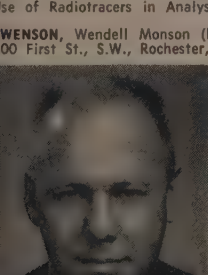
ro/Space Scis.; Astron. Scis. Rev.; Western Aviation; Aeroace Engrng. Serv. Rec.: U. S. Army Res., 1944-45; U. S. Naval s., 1949-54. Gen. Int.: Author of over 40 Published Tech. pers for Govt. and Industry. Areas of Rsch.: Astronautics pecially Rendezvous of Space Vehicles); Aeronautics (Free Flight d Wind Tunnel Test Techniques; Dynamic Stability); Preliminary sign; Weapon System Analysis.

VARTOUT, John Arthur (Ph.D.), Deputy Dir., Oak Ridge Natl. b., Union Carbide Nuclear Co., Oak Ridge, Tenn. Home Add.: 4 Norton Rd., Oak Ridge, Tenn. PHYSICAL CHEMISTRY. b. adison, Wis., Mar. 17, 1916. s. John F. and Mildred (Brownell) Edn.: B.A., Univ. of Buffalo, 1937; Ph.D., Northwestern Univ., 940. m. Ellen Rogers, Jan. 30, 1943. c.: William M.; Sue E. p.: Rsch. Chem., E. I. du Pont Co., Waynesboro, Va., Metalrgical Lab., Univ. of Chicago, Clinton Labs., Oak Ridge, Hanrd, Wash., 1940-45; Rsch. Chemist, Oak Ridge Natl. Lab., Oak dge, Tenn., 1945-49; Dir., Chem. Div., ibid., 1949-51; Asst. ch. Dir., ibid., 1951-55; Deputy Dir., ibid., 1955—. Hon. Pos.: ce-Pres., Am. Nuclear Soc., 1958-59; Bd. of Dirs., Am. Nuclear c., 1957-59, 1960-62. Mem.: Am. Chem. Soc.; Am. Nuclear c.; A.A.A.S.; Sigma Xi; Phi Beta Kappa; City Councilman, Oak dge, Tenn. Contbr. to: J.A.C.S.; Physical Revs.; Procs. of ternatl. Conf. on Peaceful Uses of Atomic Energy; Geneva, witzerland, 1955, 1958. Areas of Rsch.: Surface Chemistry, adiochemistry, Chemistry of Processes for Production of Pu, queous homogeneous Nuclear Reactors.

WEENEY, Martin Joseph, Jr. (Ph.D.), Postdoc., Ind. Univ. Med. r., 1100 W. Mich., Indpls., Ind. Home Add.: 5709 Melbourne Rd., Indpls., Ind. BIOCHEMISTRY. b. Pgh., Pa., May 22, 1933. s. Martin J., Sr. and Helen Marie (Ridosh) S. Edn.: B.S., Univ. of Santa Clara, 1956; Ph.D., St. Louis Univ., 1961. m. Rosemary Anne Faust, Aug. 2, 1958. c.: Kathleen Anne; Michael Joseph; James Martin. Exp.: Grad. Fellow, St. Louis Univ., St. Louis, Mo., 1956-61; Postdoc., Ind. Univ., Med. Ctr., 1961-63. Mem.: Sigma Xi; Am. Assn. Adv. Sci. Contbr. to: Fed. Procs. Areas of Rsch.: Carbohydrate Metabolism; Enzymes in Cancer; Biochemical Aromatization of Cyclohexanes.

WEET, Thomas Richard (Ph.D.), Assoc. Prof., Ohio State Univ., olumbus, Ohio. Home Add.: 2676 Wellesley Dr., Columbus 21, Ohio. ANALYTICAL CHEMISTRY. b. Jamaica, N. Y., Sept. 27, 1921. s. Thomas G. and Pearl (Collyer) S. Edn.: B.S., Queens Coll., N. Y., 1943; Ph.D., Ohio State Univ., 1949. m. Marilyn Hower, June 12, 1948. c.: Thomas Richard, Jr.; Ann Louise. Exp.: Rsch. Asst., Columbia Univ., Manhattan Project, N. Y., 1943-45; Rsch. Asst., Union Carbide & Carbon Corp., Manhattan Project, N. Y., 1945-46; Asst. Prof., Ohio State Univ., 1949-56; Assoc. Prof., ibid., 1956—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; Sigma Xi; Phi Lambda Upsilon. Author: Quantitative Analysis, 1952. Contbr. to: Analytical Chem.; Jour. Phys. Chem.; Jour. Am. Chem. Soc.; Jour. Chem. dn. Areas of Rsch.: Organic Reagents in Chemical Analysis; se of Radiotracers in Analysis.

WENSON, Wendell Monson (Ph.D.), Clin. Psychol., Mayo Clinic, 00 First St., S.W., Rochester, Minn. Home Add.: 1624 11 Ave., N.E., Rochester, Minn. CLINICAL PSYCHOLOGY. b. Marinette, Wis., Dec. 6, 1920. s. Emil and Sadie (Monson) S. Edn.: B.A., Gustavus Adolphus Coll., 1942; M.A., Univ. of Minn., 1950; Ph.D., ibid., 1958. m. Constance Elizabeth Norman, Apr. 2, 1943. c.: Wendell Norman; David Erik; Stephen Scott. Exp.: Chief Clin. Psychol., St. Peter St. Hosp., St. Peter, Minn., 1949-56; Assoc. Prof. and Chmn., Dept. of Psychol., Gustavus Adolphus Coll., St. Peter, Minn., 1957-59; Clin. Psychol., Mayo Clinic, Rochester, Minn., 1959—. Hon. Pos.: Dir., Annual Inst. on Aging; Mem., St. Bd. of Exams. of Psychols., St. of Minn. Mem.: Am. Psychol. Assn.; Minn. Psychol. Assn.; Minn. Human Genetics



eague; Gerontol. Soc., Inc.; Cert. Psychol., St. of Minn.; Sigma si. Contbr. to: Jour. of Clin. Psychol.; Jour. of Geriatrics; Archives of Neurol. and Psychia.; Jour. of Gerontol.; Psychiatric Quarterly; Minn. Med. Serv. Rec.: U. S. Navy Reserve, 1942-46. Gen. Int.: Fellowship in Inst. in Social Gerontol., Univ. of Conn., 1958. Areas of Rsch.: Automation Techniques in Personality Assessment; Perceptual Changes with Age.

SWETS, John Arthur (Ph.D.), Assoc. Prof. of Psychol., Mass. Inst. of Technol., Cambridge 39, Mass. Home Add.: 8 Blueberry Lane, Lexington, Mass. PSYCHOLOGY. b. Grand Rapids, Mich., June 19, 1928. s. John A. and Sara H. (Heyns) S. Edn.: B.A., Univ. of Mich., 1950; M.A., ibid., 1953; Ph.D., ibid., 1954. m. Maxine Crawford, July 16, 1949. c.: Stephen Arthur; Joel Brian. Exp.: Instr., Univ. of Mich., 1954-56; Asst. Prof., Assoc. Prof. of Psychol., Mass. Inst. of Technol., 1956—; Consultant, Bolt Beranek & Newman, Cambridge, Mass., 1958—. Mem.: Am. Psychologcal Assn.; Psychonomic Soc.; Eastern Psychological Assn.; Acoustical Soc. of Am.; A.A.A.S.; Armed Forces Natl. Rsch. Coun. Committee on Hearing and Bio-Acoustics, Sigma Alpha Epsilon; Sigma Xi. Contbr. to: Jour. Acoustical Soc. of Am.; Psychol. Rev.; Sci.; Psychometrika; Trans. I.R.E. Profl. Group on Info. Theory. Areas of Rsch.: Psychophysics, Decision Making, Perception, Computers in Psychol.

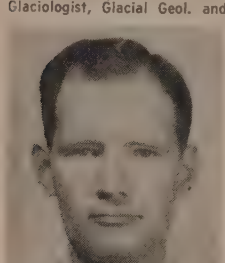
SWIFT, John Edward, (Ph.D.), Extension Entomologist, Univ. of Calif., Berkeley, Calif. Home Add.: 2614 Buenos Aires Crr., Walnut Creek, Calif. PESTICIDE RESIDUES, ECONOMIC ENTOMOLOGY. b. Butte, Mont., Aug. 20, 1916. s. John E. and Janet (Lee) S. Edn.: B.S., Univ. of Calif., 1943; Ph.D., ibid., 1958. m. Majorie Anne Wells, May 29, 1945. c.: Riley John; Joseph Timothy; Mary Ann Exp.: Fruit and Vegetable Stand Inspectr., Calif. Sta. Agric. Dept., Los Angeles, Calif., 1941-42; Farm Advisor, Univ. or Calif., El Centro, Calif., 1946-52; Ext. Entomolt., Univ. of Calif., Berkeley, Calif., 1952-60; Spec. Asst. to Dir., Agric. Expt. Sta., ibid., 1960—. Hon. Pos.: Editorial Bd., Pan Pacific Entomolt.; Mem., Exec. Bd., Pacific Br., E.S.A. Mem.: Am. Assn. for the Adv. of Sci.; E.S.A.; Pacific Coast Entomolt. Soc.; A.I.B.S.; Sigma Xi; Alpha Zeta. Contbr. to: Jour. Econ. Entomol. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Control of Economic Pests of Field and Vegetable Crops; Pesticide Residues All Crops; Cotton Pest Control.

SWINGLE, Donald Morgan (Ph.D.), Prin. Rsch. Scientist, U. S. Army Electronics Rsch. and Devel. Lab., Ft. Monmouth, N.J. Home Add.: 414 Prospect Ave., Neptune, N. J. PHYSICS; METEOROLOGY; ELECTRICAL ENGINEERING. b. Wash., D. C., Sept. 1, 1922. s. Louis Morgan and Anna Pearl (Fenby) S. Edn.: B.S., Wilson Tchr. Coll., 1943; M.S., N. Y. Univ., 1947; A.M., Harvard Univ., 1948; M.E.-Sc., ibid., 1949; Ph.D., ibid., 1950; M.B.A., George Wash. Univ., 1962. m. Hazel Elizabeth O'-Hara, Mar. 5, 1943. c.: Donna Beth; Donald Morgan, Jr.; Jonathan Warne. Exp.: Radio Engr., Signal Corps Engrng. Labs., Ft. Monmouth, N. J., 1946-47; Rsch. Asst., Harvard Univ., Cambridge, Mass., 1948-50; Physicist, U. S. Army Signal Rsch. and Devel. Lab., Ft. Monmouth, N. J., 1950-62; Prin. Rsch. Scient., ibid., 1962—. Mem.: Am. Soc. for the Adv. of Mgt.; Am. Meteorol. Soc.; Am. Geophys. Union; Am. Assn. for the Advancement of Science; Institute of Radio Engineers; Am. Institute of Elect. Engrs.; Natl. Soc. of Profl. Engrs.; Harvard Engrng. Soc.; N. J. Soc. of Profl. Engrs. Contbr. to: Proc. Inst. of Radio Engrs.; Bull. of the Am. Meteorol. Soc.; Jour. of Meteorol.; Trans. of N. Y. Acad. of Scis. Serv. Rec.: U. S. Army Air Corps, 1943-46. Gen. Int.: Prize Paper on Radar Observation of Atomic Clouds at 1st Army Sci. Symposium, 1947; Army Commendation Medal, 1946; U. S. Mem., Comm. for Instruments and Methods of Observation, World Meteorol. Organization, U. N., 1953—. Areas of Rsch.: Weather Radar; Nuclear Fallout; Mesometeorology; Radio-Meteorology; Applied Meteorology; Electronic Engineering; Weather Modification and Control; Indirect Techniques for Weather Observation.

SWITCH, Aloysius C. (Mr.), Proj. Engr., Thin Films, Gen. Electric Company, 600 Main Street, Johnson City, N. J. Home Add.: 645 Oak Street, Aurora, Illinois. CHEMISTRY. b. Hudson, Pa., June 30, 1921. s. Casper A. and Stefania (Silkowski) S. Edn.: B.S., Bucknell Univ., 1949. m. Margaret L. Love, Dec. 23, 1945. c.: Maureen L.; Deborah A. Exp.: Development and

Control Chemist, Seck-Devault Paint and Varnish Mfg. Co., Springfield, Ill., 1948-49; Development and Control Chemist, Inter-Chemical Corp., Chicago, Ill., 1949-51; Development Chem. Engr., Western Electric Co., Chicago, Ill., 1951-56; Sr. Chem. Engr. and Sr. Product Engr., Corning Glass Works, Bradford, Pa., 1956-59; Sr. Development Engr., Internatl. Resistance Co., Philadelphia, 1959-61; Sr. Development Engr. and Proj. Engr., Gen. Electric Co., Johnson City, N. Y., 1961—. Mem.: A.C.S.; A.A.A.S.; Am. Vacuum Soc. Serv. Rec.: U. S. Army Air Force, 1942-46. Gen. Int.: Patents Applied For: Automatic Soldering Equipment; Carbon Deposition Process and Associated Equipment. Areas of Rsch.: Compressed Gases Production; Organic Coatings; Deposited Thin Films.

SWITHINBANK, Charles Winthrop Molesworth (Ph.D.), Assoc. Rsch. Glaciologist, Glacial Geol. and Polar Rsch. Lab., Univ. of Mich., 1073 Natural Sci. Bldg., Ann Arbor, Mich. Home Add.: 3133 Baylis Dr., Ann Arbor, Mich. GLACIOLOGY; GEOGRAPHY OF THE POLAR REGIONS. b. Pegu, Burma, Nov. 17, 1926. s. Bernard Winthrop and Dorothea (Molesworth) S. Edn.: B.A., Pembroke Coll., Univ. of Oxford, England, 1949; M.A., ibid., 1953; Ph.D., ibid., 1955. m. Mary Stewart, 1960. c.: Anne Stewart Fellows. Exp.: Asst. Glaciologist, Norwegian British-Swedish Antarctic Expedition, Queen Maud Land, Oxford, England, 1949-55; Rsch. Fellow, Scott Polar Rsch. Inst., Cambridge, England, 1955-59; Rsch. Assoc., Univ. of Mich., 1959—. Mem.: A.A.A.S.; Sigma Xi; Am. Geophysical Union; Am. Geological Inst.; Royal Geographical Soc.; Glaciological Soc.; Swedish Soc. for Anthropol. and Geography; Arctic Inst. of N. Am.; Arctic Club; Antarctic Club. Author: Norwegian-British-Swedish Antarctic Expedition, 1949-52; Scientific Results, Vol. 3, 1957; Ice Atlas of Arctic Canada, 1960. Contbr. to: Jour. of Glaciol.; Geographical Jour.; Polar Record. Serv. Rec.: Royal Naval Volunteer Reserve, 1944-46. Areas of Rsch.: Morphol., Regime and Movement of Land Glaciers and Ice Shelves; Distribution of Sea Ice in Arctic Canada and Alaska.



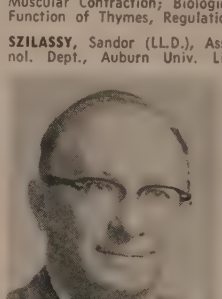
SWORD, Christopher Patrick (Ph.D.), Asst. Prof., Bacteriol., The Univ. of Kans., Lawrence, Kans. Home Add.: 1812 Miller Dr., Lawrence, Kans. MICROBIOLOGY (BACTERIAL HOST-PARASITE RELATIONSHIPS). b. San Fernando, Calif., Sept. 9, 1928. s. Christopher and Mary (Ross) S. Edn.: B.S., Loyola Univ. of Los Angeles, 1951; Ph.D., Univ. of Calif., Los Angeles, 1959. m. Mary Gerhardt, June 18, 1959. c.: Mary Anne; Carolyn Barbara. Exp.: Rsch. Assoc., Dept. of Bacteriol., 1958-59; Rsch. Assoc., Argonne Natl. Lab., Argonne, Ill., 1961; Asst. Prof., Dept. of Bacteriol., Univ. of Kans., 1959—. Mem.: Am. Soc. for Microbiol.; N. Y. Acad. of Scis.; Soc. for Gen. Microbiol.; Mo. Valley Br. of the Am. Soc. for Microbiol.; Sigma Xi. Contbr. to: Jour. of Bacteriol.; Jour. of Gen. Microbiol.; Am. Jour. of Clin. Pathol. Gen. Int.: Am. Soc. for Microbiol., President's Fellowship award, 1960. Areas of Rsch.: Host-parasite interactions in Listeria infections; Metabolic products of Staphylococci; Electron microscopy; Effects of microbial products on the ultrastructure of infected cells.

SZANTON, Victor L. (M.D.), 314 Elizabeth St., Derby, Conn. Home Add.: 7 William St., Ansonia, Conn. PEDIATRICS AND PEDIATRIC ALLERGY. b. N.Y.C., Oct. 24, 1905. s. Nathan and Marie (Lienthal) S. Edn.: B.A., Univ. of Ala., 1932; M.D., Duke Univ. Schl. of Med., 1936. m. Willette Klein, 1939. c.: Jonathan; Jeremy Minot. Exp.: Interne, Watts Hosp., Durham, N. C., 1936-37; Interne, Pediatrics, Jewish Hosp. of Brooklyn, 1937-38; Resident Pediatrics, Mt. Sinai Hosp., N. Y., 1938-39; Attending in Pediatrics, Griffin Hosp., Derby, Conn., 1952—; Asst. Attending in Pediatrics, New Haven Hosp., Conn., 1959—; Asst. Prof. of Pediatrics, Allergy, Albert Einstein Coll. of Med., Bronx, N. Y., 1958—; Dir., Pediatric Allergy Out-Patient Clinic, Hosp. of St. Raphael, New Haven, Conn., 1958—; Clinical Asst., Pediatrics in Ped. Allergy, Mt. Sinai Hosp., N. Y., 1948; Regional Consultant, Natl. Jewish Home for Asthmatic Children, Denver, Colo. Mem.: Am. College of Allergists; Am. Academy of Allergy; Am. Academy of Pediatrics; A.A.A.S.; New York Academy of Sciences; New England Pediatric Soc.; New England Allergy Soc. Contbr. to: Pediatrics; Annals of Allergy. Gen. Int.: Mem., Governors Com. for White House Conference for State of Conn., 1960; Editorial Bd., Jour. of Conn. St. Med. Soc. Areas of Rsch.: Biostatics (Incidence of major allergy in Pediatric population) Epidemiology of Salmonellosis, Audiology in the allergic child; Exfoliative Nasal Cytology in Measles.

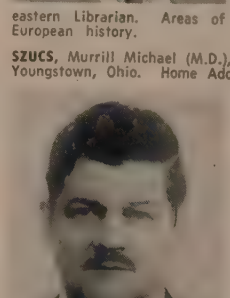
SZEKELY, Emery George (Ph.D.), Assoc. in Exp. and Applied Neurol.; Assoc. Electroencephalographer, Temple Univ. Med. Ctr., Broad and Ontario Sts., Philadelphia 41, Pa. Home Add.: 6042 N. 11th St., Phila. 41, Pa. NEUROPHYSIOLOGY (CENTRAL NERVOUS SYSTEM); EXTRAPYRAMIDAL SYSTEM. b. Songrad, Hungary, Nov. 4, 1904. s. J. George and Elizabeth (von Jancso) von S. Edn.: V.M.D., Schl. of Vet. Med., Budapest, 1926; Dr. Vet. Med., ibid., 1930; Ph.D., Univ. of Budapest, 1932. m. Helen von Klink, 1933. c.: Ildiko E. Exp.: Asst. I, Instr., Hung. Vet. Schl., Budapest, Hungary, 1928; Docent, Univ. of Budapest, 1944; Assoc., Temple Univ. Med. Ctr., 1951—. Mem.: A.A.A.S.; Am. Physiol. Soc.; Philadelphia Physiol. Soc. Contbr. to: E.E.G. Clin. Neurophysiol.; Arch. of Neurol.; Jour. Neuropathol. and Exptl. Neurol.; Confinia Neurol.; Arch. of Otolaryng. Areas of Rsch.: Neurophysiol.-Central Nervous System; Extrapyramidal System and Its Influence upon Tonus and Involontary Movement.

SZENT-GYORGYI, Albert (M.D., Ph.D.), Chf. Investr., Inst. for Muscle Rsch. at the Marine Biol. Lab., Woods Hole, Mass. Home Add.: Penzance Point, Woods Hole, Mass. MUSCLE RESEARCH; ELECTRONIC PHENOMENA IN BIOLOGICAL REACTIONS. b. Budapest, Hungary, Sept. 16, 1893. s. Nicolas and Josephine (Lenhossek) S. Edn.: M.D., Med. Schl., Univ. of Budapest, 1917; Ph.D., Univ. of Cambridge, England, 1927. m. Marta Borbiro, 1942. c.: Cornelia. Exp.: Prof., Med. Chem., Univ. of Szeged, Hungary, 1932-45; Prof., Med., Chmn., Univ. of Budapest, Hungary, 1945-47; Chf. Investr., Inst. for Muscle Rsch., Marine Biol. Lab., 1947—. Hon. Pos.: Chmn., Hungarian Acad. of Scis. Mem.: Royal Acad., Edinburgh; Natl. Acad. of Scis.; Academia Nauk, Moscow; Indian Acad. of Scis.; Indian Chem. Soc.; Acad. Ireland. Author: Oxidation, Vitamins, Health and Disease, 1938; Bioenergetics, 1957; Submolecular Biology, 1960; Chemistry of Muscular Contraction, 1947; Nature of Life, 1947; Chemical Physiology of Contraction in Body and Heart Muscle, 1953. Contbr. to: Jour. of Physiol.; Jour. of Biochem.; Nature; Procs. of the Natl. Acad. of Sci. Serv. Rec.: U. S. Hungarian Army, 1914-19. Gen. Int.: Cameron Prize, Acad. of Edinburgh; Nobel Prize in Physiol. and Med., 1937; Lasker Award. Areas of Rsch.: Muscular Contraction; Biological Oxidation; Ireland Bioenergetics, Function of Thymes, Regulation of Growth.

SZILASSY, Sandor (LL.D.), Asst. Prof. and Head, Sci. and Technol. Dept., Auburn Univ. Library, Auburn, Ala. Home Add.: 48 Woodland Terrace, Auburn, Ala. LIBRARY SCIENCE, PUBLISHING, CENTRAL EUROPEAN HISTORY AND LAW. b. Magyarbarnag, Hungary, April 9, 1921. s. Sandor, Sr. and Jolan (Fenyves) S. Edn.: LL.D., Pazmany Univ., Budapest, Hungary, 1944; M.A. in Lib. Sci., Ind. Univ., 1959. m. Clara Varkonyi, 1951. c.: Peter Sandor; Thomas Stephen. Exp.: Practicing Atty., Veszprem, Hungary, 1944-56; Asst. Librn., Anderson Coll., Ind., 1959-61; Asst. Prof. and Head, Sci. and Technol. Dept., Auburn Univ. Library, 1962—. Mem.: Ala. Lib. Assn.; A.A.U.P.; Hon. Mem., Booster Club, Anderson Coll. Contbr. to: Journalism Quart.; Lib. Jour.; Lib. Occurrent; Southeastern Librarian. Areas of Rsch.: Library Science, Law and European history.

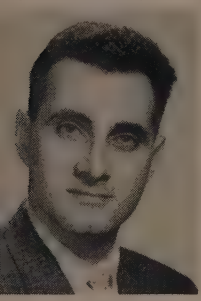


SZUCS, Murrill Michael (M.D.), Physician, 822 Dollar Bank Bldg., Youngstown, Ohio. Home Add.: 176 N. Glenellen Ave., Youngstown, Ohio. INTERNAL MEDICINE WITH RESEARCH IN RHEUMATOLOGY. b. Cleveland, Ohio, Oct. 28, 1906. s. Michael and Mary (Sabol) S. Edn.: B.S., John Carroll Univ., 1930; M.S., Ohio St. Univ., 1931; M.D., Marquette Univ., 1935. m. Mary Louise Davis, Oct. 2, 1937. c.: Murrill Michael; David Howard; Suzanne Marie. Exp.: Intern, St. Elizabeth Hosp., Youngstown, Ohio, 1935-36; Med. Resident, ibid., 1936-37; Pvt. Pract., Ohio, 1937-42, 1945—. Hon. Pos.: Trustee, Central St. Coll.; Mem., Am. Nuclear Soc.; Mem. of the Local Bd. of Edn. over 11 years; Mem. of the Hon. Bd., Marquette Univ.; Degree in Nuclear Med.; Natl. Mem., Cardiovascular Physiology Comm. for the Am. Coll. of Chest Physicians; Natl. Mem. of Publicity Comm. for Natl. Rheumatism Soc. Mem.: N. Y. Acad. Scis.; Am. Fed. for Clin. Rsch.; Phi Chi; Kiwanis; Elks; K. of C. Contbr. to: Ohio St. Med. Jour.; New England Jour. of Med. Listed in: W. W. in Midwest; W. W. in Med. in State of Ohio. Serv. Rec.: U. S. Navy, 1942-46. Areas of Rsch.: Circulation and Arthritis.



AFFEL, Charles (Ph.D.), Dir., Palm Beach Co. Guidance Ctr., 826 ernia St., West Palm Beach, Fla. Home Add.: 353 Cavalier l., Lake Worth, Fla. CLINICAL PSYCHOLOGY. b. Poland, Aug. , 1919. s. David and Yetta (Last) T. Edn.: B.S.S., City Coll. N. Y., 1949; M.A., N. Y. Univ., 1950; Ph.D., Ind. Univ., 1952. Roslyn Horne, 1941. c.: Randy; Jody. Exp.: Chf. Clin. ychologist, V.A. Mental Health Clinic, Providence, R. I., 1955-; Dir. of Rsch. and Training, Leon Co. Mental Health Clinic, llahassee, Fla., 1957-58; Dir., Palm Beach Co. Guidance Ctr., est Palm Beach, Fla., 1958—; Regional Consultant in Mental alth, Fla. St. Bd. of Health, 1961—. Hon. Pos.: Exec. Comm., a. Coun. of Clinic Dirs.; Advisory Bd., Fla. Coun. for Retarded ildren. Mem.: Am. Psychological Assn.; Fla. Psychological sn.; S.E. Psychological Assn.; A.A.A.S.; Phi Beta Kappa. Con- r. to: V.A. N.P. Tuberculosis Newsletter; Jour. of Abnormal d Soc. Psychol.; Jour. of Assn. for Physical and Mental Re- bilitation; Psychiatric Quart.; Am. Psychologist. Serv. Rec.: S. Army, 1941-45. Areas of Rsch.: Verbal Conditioning; Child velopment; Community Mental Health; Mental Retardation.

FT, Earl Jay (Ph.D.), Assoc. Prof. of Math., Rutgers, The St. iv., New Brunswick, N. J. Home Add.: 10 Paulus Blvd., New Brunswick, N. J. ABSTRACT AL-



GEBRA. b. N.Y.C., Aug. 27, 1931. s. David and Terry (Gordon) T. Edn.: B.A., Amherst Coll., 1952: M.A., Yale Univ., 1953; Ph.D. ibid., 1956. m. Hessy Levinsons, Jan. 18, 1959. Exp.: Asst. In- str., Yale Univ., 1955-56; Ritt Instr. in Math., Columbia Univ., 1956-59; Asst. Prof. of Math., Rutgers, The St. Univ., 1959-62; Assoc. Prof. of Math., ibid., 1962 —. Mem.: Am. Mathematical Soc.; Phi Beta Kappa; Sigma Xi. Con- tbr. to: Ill. Jour. of Math.; Proc. of the Am. Mathematical Soc.; Mich. Mathematical Jour.; Portu- galiae Mathmatica. Gen. Int.: Simpson Fellowship, Amherst Coll., 1952-53; Sterling Fellowship, Yale Univ., 1952-54; Award, Rutgers ch. Coun., 1962. Areas of Rsch.: Non-Associative Algebras, homology of Algebras with Operator Groups; Wedderburn De- mpositions and Whitehead Lemmas; Jordan Algebras; Lie Al- bras; Alternative Algebras.

GGART, Robert (Mr.), Pres., Robert Taggart, Inc., 400 Arling- n Blvd., Falls Church, Va. Home Add.: 525 Woodland Dr. MARINE RESEARCH AND DEVELOPMENT.

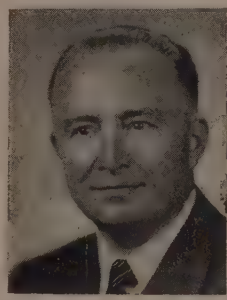
b. E. Orange, N. J., Oct. 31, 1920. s. Robert and Maude (Madsen) T. Edn.: B.S., Webb Inst. of Naval Architecture, 1942. m. Bettie Van Wormer, Nov. 11, 1954. c.: Karen; Robert, III; Kurt U. Frankl. Exp.: Naval Architect, U. S. Mari- time Comm., Chicago, Ill., Wash., D. C., 1942-47; Sonar Specialist, Naval Rsch. Lab., Wash., D. C., 1947; Marine Engr., Transporta- tion Corps Bd., N.Y.C., 1948-50; Hd., Ship Noise Br., U. S. Navy Bur. of Ships, Wash., D. C., 1950- 54; Tech. Admin., Reed Rsch., Inc., ibid., 1954-58; Pres., Robert Taggart, Inc., Falls Church, Va., 1958—. Mem.: Soc. of Naval Architects and Marine Engrs.; Northeast Coast Inst. of Engrs. d Shipbuilders; Am. Inst. of Phys.; Acoustical Soc. of Am.; n. Rocket Soc. Contbr. to: Trans., Soc. of Naval Architects and rine Engrs.; Jour. of Am. Soc. of Naval Engrs.; Marine En- ng.; Missiles and Rockets; Undersea Tech.; Jour. of Inst. of dio Engrs. Serv. Rec.: U. S. Navy, 1944-45. Areas of Rsch.: drodynamics, Acoustics, Ship Propulsion, Submarine Noise Con- l, Ship Structures.

KAGI, Shunsuke (D.Sc.), Contract Scientist, U. S. Army Cold gions Rsch. and Engrng. Lab., Hanover, N. H. Home Add.: 67 School St., Lebanon, N. H. SOIL PHYSICS, SOIL MECHANICS.

b. Fukuoka, Japan, Mar. 22, 1919. s. Toshio and Teiko (Itoh) T. Edn.: B.A., Univ. of Tokyo, 1943; D.Sc., Hokkaido Univ., 1956. m. Yasuko Sakakibara, May 8, 1943. c.: Masaaki; Asako; Yuko. Exp.: Asst., Schl. Agri. Univ. Tokyo, Tokyo, Japan, 1947-48; Asst. Prof., Tokyo Univ. Agri. Tech. Fuchu, Tokyo, 1948; Contract Scientist, U.S.A. CRREL, Hanover, N. H., 1960—. Mem.: Am. Soc. Civ. Engrng.; Soil Sci. Soc. Am.; Math. Soc. Japan; Japan Soc. Civ. Engrng.; Agri. Eng. Soc., Japan; A.A.A.S. Contbr. to: Soil Sci.; Jour. Applied Phys.; Jour. Agri. Eng. Soc., Japan. Areas of Rsch.: Soil Physics; Soil Mechanics; ermodynamics.

TAKEMORI, Akira Eddie (Ph.D.), Asst. Prof., St. Univ. of N .Y. Syracuse, N. Y. Home Add.: 221 Lewiston Dr., Syracuse 10, N. Y. PHARMACOLOGY. b. Stockton, Calif., Dec. 9, 1929. s. Matsutaro and Haruko (Teshima) T. Edn.: A.B., Univ. of Calif., 1951; M.S., ibid., 1953; Ph.D., Univ. of Wis., 1958. m. Valerie Williams, June 22, 1958. Exp.: Instr., St. Univ. of N. Y., 1959-61; Asst. Prof., ibid., 1961—. Mem.: Am. Soc. for Pharma- col. and Exptl. Therapeutics; A.A.A.S.; A.A.U.P.; N. Y. Acad. of Scis.; Sigma Xi. Contbr. to: Jour. of Pharmacol. and Exptl. Therapeutics; Jour. of Biological Chem.; Sci.; Annals of N. Y. Acad. of Scis. Serv. Rec.: U. S. Army, 1953-55. Gen. Int.: Postdoctoral Fellow, Am. Cancer Soc., Inst. for Enzyme Rsch., Madison, Wis., 1958-59. Areas of Rsch.: Metabolism of Drugs; Cellular Adaptation and Tolerance to Narcotic Drugs; Mechanism of Action of Narcotic Analgesics.

TALACKO, Joseph V. (Dr.), Assoc. Prof. of Math., Marquette Univ., Milwaukee 3, Wis. Home Add.: 135 So. 77th St., Milwaukee 14, Wis. MATHEMATICAL STATISTICS.

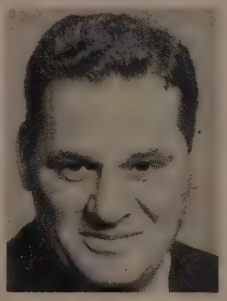


b. Czechoslovakia, June 24, 1909; U.S.A. Citizen, 1954. s. Josef and Katherine (Kopecky) T. Edn.: Ac- tuary, Univ. of Tech. Sci. in Prague, 1932; Dr.Sc., Charles Univ., Prague, 1935. m. Florence Jahlova, June 17, 1939. c.: Ag- nes M.; John T. Exp.: Rsch. Asst., State Ministry of Edn., Prague, 1932-34; Statistician, St. Health Inst., ibid., 1934-45; Chmn., Stat. Section, St. Ministry of Health, ibid., 1945-47; Lectr. in Math. Statistics, Univ. of Tech. Sci., ibid., 1945-47; Asst. Prof., Dept. of Math., Marquette Univ., 1948-56; Assoc. Prof., ibid., 1956 —. Hon. Pos.: Fellow of the Johns Hopkins Univ., United Na- tions, WHO Fellowship, 1947-48; Rsch. Assoc., Ford Foundation Faculty Fellowship, Univ. of Calif. at Berkeley, 1954-55. Mem.: Am. Math. Soc.; Math Assn. of Am.; Inst. of Math. Statistics; Am. Statistical Assn.; Econometric Soc.; Biometric Soc.; Am. Soc. for Quality Control; Am. Assn. for Adv. of Sci.; Pi Mu Epsilon. Author: A Contribution to the Math. Theory of the Growth of Population, 1939; Estimation of Future Changes of Czech Population, 1946. Listed in: Am. Men of Sci.; Who's Who. Areas of Rsch.: Theoretical Statistics and Stat. Methods; Demography; biometrics and medical statistics; Indus. statistics, Numerical methods and linear programming.

TALBERT, Luther Marcus (M.D.), Asst. Prof., Univ. of N. C., Chapel Hill, N. C. Home Add.: 175 Hamilton Rd., Chapel Hill, N. C. OBSTETRICS AND GYNECOL-

OGY. b. Abingdon, Va., Dec. 30, 1926. s. Marcus A. and Mary (Thompson) T. Edn.: B.A., Emory and Henry Coll., 1949; M.D., Univ. of Va., 1953. m. Annie Edmondson, 1949. c.: John; Luther; Martha. Exp.: Instr., Univ. of N. C., 1958-61; Asst. Prof., ibid., 1961—. Mem.: Alpha Omega Alpha; Am. Coll. of Obst. and Gynec.; Am. Soc. for the Study of Sterility; A.M.A.; Sou. Med. Assn.; Sigma Xi. Contbr. to: Am. Jour. of Obst. and Gynec.; Obst. and Gynec.; Sou. Med. Jour. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Blood Coagulation as Related to Obstetrics and Gyne- cology.

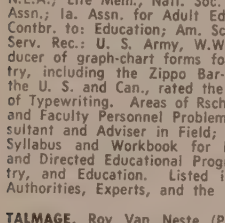
TALBERT, Oliver Rhett (M.D.), Assoc. Prof. of Neurol., Med. Coll. of S. C., Charleston, S. C. Home Add.: 20 Broughton Rd., Charleston, S. C. CLINICAL NEU-



ROLOGY. b. Greenwood, S. C., Mar. 30, 1921. s. John Tillman and Frances Mae (Knight) T. Edn.: B.S., Wofford Coll., 1942; M.D., Med. Coll. of S. C., 1945. m. Jean Heidenry, Nov. 24, 1948. c.: Rhett, Jr.; Jan Leigh; James Cannon; Layton McDonald. Exp.: Res. in Internal Med., Med. Coll. of Va. Hosp., Richmond, Va., 1948-51; Res. and Rsch. Fellow, Neurol., Mass. Gen. Hosp., Bos- ton, Mass., 1951-54; Assoc. in Neurol., Med. Coll. of S. C., 1954-56; Asst. Prof., ibid., 1956- 61; Assoc. Prof., ibid., 1961—. Mem.: Am. Med. Assn.; So. Med. Assn.; Assn. for Rsch. in Nervous and Mental Dis.; Am. Coll. of Phys., Assoc. Mem.; Am. Acad. of Neurol.; Kappa Sigma; Phi Beta Kappa. Contbr. to: Am. Med. Assn. Archives of Neurol.; Neurol.; World Neurol.; So. Med. Jour.; Jour. of the S. C. Med. Assn. Serv. Rec.: U. S. Army, 1945-48. Areas of Rsch.: Geographic Distribution of Multiple Sclerosis; Cerebral Effects on Respiration in Humans.

TALLMAN, Russell Warrick (Ph.D.), Owner, ZIPPO BAR-CHARTS (Motivation Charts), Jewell, Iowa. Home Add.: 2024 Avalon Rd., Des Moines 14, Ia. PSYCHOLOGY OF LEARNING; PRINCIPLES, MOTIVATION. b. Ames, Ia., Aug. 22, 1891. s. Francis Boone and Annette (McKim) T. Edn.: A.B., Highland Park Coll., 1916; B.S., Des Moines Coll., 1918; M.A., State Univ. of Ia., 1923; Ph.D., ibid., 1925. m. Carrie Nadine Wilson, Aug. 28, 1920. Exp.: Supt., Consol. Schls., Coin, Ia., 1916-17, 1919-20; Statistician, Office of Pres., Univ. of Ia., 1924-25; Chmn., Grad. Faculty, Prof. of Edn. and Psychol., Hd. of Dept., Western State Coll., Colo., 1925-30; Vice-Pres., ibid., 1928-30; Pres., Motivation Charts Inc. (Zippo Bar-Charts), Jewell, Ia., 1930—; Ia. State Dir., Emergency Edn., 1934-40; Dir., Workers Edn. Tchr. Trng. for Ia., Kan., Mo., State Univ. of Ia., summer, 1934; State Adminr., N.Y.A., 1936-40; Dir., Field Serv. and Consult., Classroom and Rural Tchrs., I.S.T.A., 1940-41; Field Rep., West. Div., Natl. Policy Commn., Wash., D. C., 1942-43; Dir., Supv. Trng., 842nd Spec. Depot, A.A.F., Des Moines, 1944-46; Chf., Employee Dev. Br. and Trng. Off., Omaha Reg. Off., War Assets Admin., 1946-47; Trng. Specialist and Consult., 1947—. Hon. Pos.: Mem., Ia. State Planning Bd., Comm. on Edn.; State Coordinator for N.E.A. Dept. of Adult Edn.; Pres., Ia. Adult Edn. Assn.; Consult. to Seventh Corps Area C.C.C., Ia. A.F.L., Ia.-Neb. C.I.O. Mem.: Fellow, A.A.A.S.; Ia. Acad. Sci.; Phi Delta Kappa; Life Mem., N.E.A.; Life Mem., Natl. Soc. for the Study of Edn.; Adult Edn. Assn.; Ia. Assn. for Adult Edn.; Am. Soc. Trng. Dirs.; Conopus. Contbr. to: Education; Am. Schl. Bd. Jour.; Psychol. Monographs. Serv. Rec.: U. S. Army, W.W. I. Gen. Int.: Inventor and Producer of graph-chart forms for education, government and industry, including the Zippo Bar-Charts used extensively throughout the U. S. and Can., rated the No. 1 Visual Aid for the Teaching of Typewriting. Areas of Rsch.: Research in Cost Studies, Student and Faculty Personnel Problems, Sources of School Revenue; Consultant and Adviser in Field; Co-Author, Guideline-Problem Series Syllabus and Workbook for Principles of Education; Organized and Directed Educational Programs for Adults in Business, Industry, and Education. Listed in: Who Knows—and What; Among Authorities, Experts, and the Specially Informed.

TALMAGE, Roy Van Neste (Ph.D.), Chmn., Dept. of Biol., Rice Univ., Houston, Tex. Home Add.: Wiess House, Rice Univ., Houston, Tex. ENDOCRINOLOGY. b. Moppo, Korea, Feb. 9, 1917. s. John Van Neste and Eliza Day (Emerson) T. Edn.: A.B., Maryville Coll., 1938; M.S., Univ. of Richmond, 1940; Ph.D., Harvard Univ., 1947. m. Helena Schlichter, June 6, 1942. c.: Helena Louise; John Van Neste; Charles Emerson. Exp.: Consultant, Radioisotope Unit, V.A. Hosp., Houston, Tex., 1950—; Prof., Biol. Dept., Rice Univ., 1954—; Chmn., Dept. of Biol., ibid., 1956—. Hon. Pos.: Chmn., 1962 Gordon Conferences on Chem., Physiol. and Structure of Bone and Teeth; Mem., Editorial Bds., Soc. of Exptl. Biol. and Med. and General and Comparative Endocrinology. Mem.: Am. Soc. of Zoologists; Am. Soc. of Physiologists; A.A.A.S.; The Endocrine Soc.; Soc. of Exptl. Biol. and Med.; Houston Museum of Natural Sci. Editor: The Parathyroids, 1961. Contbr. to: General and Comparative Endocrinology; Tex. Reports on Biol. and Med.; Soc. for Exptl. Biol. and Med.; Endocrinology; The Anatomical Record; Annals of the N. Y. Acad. of Scis. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Physiological Actions of the Parathyroid Hormone in Its Relationship to Calcium Homeostasis and Bone Metabolism

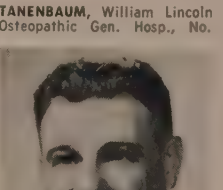


TAMAGNA, Irene Gorski (M.D.), Assoc. Clin. Prof., Med., The George Wash. Univ. Hosp., Wash., D. C. Home Add.: 7101 Conn. Ave., Chevy Chase, Md. MEDICINE-HYPERTENSION. b. Vienna, Austria, May 3, 1915. d. John Gorski and Helen (Gorski) G. Edn.: M.D., Women's Med. Coll. of Pa., 1943. m. Frank M. Tamagna, 1938. c.: Ellen Irma; Jane Francis. Exp.: Intern, Post Grad. Hosp., N. Y., 1943-44; Res., Goldwater Mem. Hosp., N. Y. Univ. Div., 1944-45; Goldwater Mem. Hosp., Columbia Univ. Div., 1945-46; Rsch. Asst. in Int. Med., Columbia Univ., 1946-47; Instr., Int. Med., The George Wash. Univ. Hosp., 1949-53; Assoc. in Int. Med., ibid., 1953-59; Asst. Clin. Prof., Med., ibid., 1959-62; Assoc. Clin. Prof. of Med., ibid., 1962—. Hon. Pos.: The George Wash. Univ. Hosp., Dir., Hypert. Clinic., 1949—; Dir., Med. Integration and Rehab. Unit, 1953—; Dir., Poliomyelitis Respiratory Ctr., The George Wash. Univ. Hosp., 1958-61; Dir., Rehabilit. Ctr., Ibid., 1962—. Mem.: Am. Heart Assn.; Fed. Clin. Rsch.; Wash. Heart Assn.; Am. Med. Assn.; Am. Soc. of Internal Med. Contbr. to: Proc. Am. Fed. Clin. Rsch.; Jour. Lab. Clin. Rsch.; Am. Heart Jour.; Am. Jour. Med. Sci.; Clin. Rsch. Procs.; Circulat.; Clin. Rsch.; Med. Annals of the Dist. of Columbia, Vol. 29. Areas of Rsch.: Hypertension; Total Patient Care (Comprehensive Medicine).

TAMASHIRO, Thomas K. (Mr.), Project Mgr., AETRON, a Div. Aerojet-General Corp., Covina, Calif. Home Add.: 410 N Citr Ave., Covina, Calif. INSTRUMENTATION AND CONTROL SYSTEM DESIGN. b. Paia, Maui, Hawa Aug. 4, 1926. s. Kokichi a n Mashi (Shinyashiki) T. Edn.: B.S E.E., Tri-St. Coll., 1951. c Cheryl M.; Venita T. Exp.: Sy tems Engr., Chance Vought Ai craft, Dallas, Tex., 1951-53; I strument Engr., Lockheed A i craft, Marietta, Ga., 1953; Proje Engineer, Jackson & Church Co Saginaw, Mich., 1953-55; Proje M g r . , AETRON, Aerojet-Gener Corp., Covina, Calif., 1955- Mem.: A.A.A.S.; Sigma Mu Sigm Areas of Rsch.: Large Rocket Te Facility and Range Instrument tion.

TAMM, Igor (M.D.), Assoc. Prof., The Rockefeller Inst.; Physicia to the Hosp., The Rockefeller Inst., N. Y. 21, N. Y. Home Add 445 E. 68th St., N. Y. 21, N. Y VIROLOGY AND CELL BIOLOGY b. Tapa, Estonia, Apr. 27, 192 s. Alexander and Olga (Weinberg T. Edn.: M.D., Yale Univ. Sch of Med., 1947. m. Olive E. Pi kin, May 9, 1953. c.: Caro Elizabeth; Eric Alexander; Elle Frances. Exp.: Intern in Med Grace-New Haven Comm. Hosp Univ. Serv. and Asst. in Med Yale Univ. Schl. of Med., 1947 48; Asst. Res. in Med., ibid. an Asst. in Med., ibid., 1948-49 Asst. and Asst. Physician, Th Rockefeller Inst., 1949-53; Assoc and Assoc. Physician, ibid., 1953 56; Assoc. Mem. and Assoc. Physi cian, ibid., 1956-57; Assoc. Prof and Assoc. Physician, ibid., 1957 58; Assoc. Prof. and Physician ibid., 1958—. Mem.: Harvey Soc.; A.A.A.S.; Fellow, N. Y. Acad Sci.; Am. Soc. for Microbiol.; Am. Assn. Immunologists; Am Soc. for Coll. Biol.; Soc. Exptl. Biology and Med.; Am. Soc Clin. Invest.; Am. Academy of Microbiology; Alpha Omega Alpha; Sigma Xi. Contbrng. Author: Annual Review o Microbiol., 1957; Strategy of Chemotherapy, 1958; Viral an Rickettsial Infections of Man, 1959; Current Therapy, 1960 Contbr. to: Jour. Bacteriol.; Yale Jour. Biol. and Med.; Proc Soc. Exptl. Biol. and Med.; Jour. Exptl. Med.; Biol. Bull.; Bull N. Y. Acad. of Med.; Jour. Immunol.; Science; Jour. Biol. Chem. Jour. Lab. and Clin. Med.; Virology. Areas of Rsch.: Interaction of Viruses with Receptors; Viral Multiplication and Selective In hibition of This Process by Benzimidazole Derivatives; Biosyn thesis of Nucleic Acids and Proteins; Virus-induced Alteration in Animal Cells; Viral Variation.

TANENBAUM, William Lincoln (D.O.), Radiologist and Oncologist Osteopathic Gen. Hosp., No. Miami Beach, Fla. Home Add. 21000 Highland Lakes Blvd., No Miami Beach, Fla. RADIOLOGY AND ONCOLOGY; RADIATION BI OLOGY. b. Phila., Pa., Feb. 12 1914. s. Morris and Katie (Rubin T. Edn.: D.O., Phila. Coll. o Osteopathy, 1937; M.Sc., ibid. 1951. m. Adeline Margolis, Dec 18, 1938. c.: Marlene J.; Jack H. Exp.: Faculty Mem., Phila. Coll. of Osteopathy, 1937-56; Dir. and Hd., Dept. of Radiology, Metropolitan Hosp., Phila., Pa., 1946-53; Consulting Radiologist and Oncologist, Detroit, Mich., 1954-58; Hd., Dept. of Radiol., Allentown Osteopathic Hosp., Allentown, Pa., 1958-61; Radiologist and Oncologist, Osteopathic Gen. Hosp., No. Miami Beach, Fla., 1961—. Hon. Pos.: Chmn. and Mem., Am. Osteopathic Bd. of Radiol., 1951-57; Mem., Internatl. Cong. Radiol., 1953-56; Diplomate, Am. Osteop. Bds. of Radiol., 1946. Mem.: Am. Coll. Osteop. Surgeons; Pa. Osteop. Soc. of Radiol.; World Med. Soc.; Detroit Nuclear Coun.; Am. Med. Writers Assn.; A.A.A.S.; Am. Osteopathic Assn.; Am. Osteop. Coll. of Radiol.; Mason; Shriner; Lambda Omicron Gamma; Fellow, Am. Osteop. Coll. of Radiology, 1947. Contbr. to: Radiol. and Oncology, 1937-58; Am. Osteopathic Assn. Jour.; Health; Pa. Chiropody Jour. Gen. Int.: Oak Ridge Inst. Nuclear Studies, 1949; University Erlangen, Germany, Med. Schl., 1953. Areas of Rsch.: Moving Beam X-ray and Supervoltage Therapy; Radiation Health Physics; Radiation Biology.



TANK, Gertrude (D.D.S.), Assoc. Prof., Nutrition Rsch. Lab., Schl. of Home Econs., Ore. St. Univ., Corvallis, Ore. Home Add.: 304 N. 28th St., Corvallis, Ore. DENTAL RESEARCH. b. Stuttgart, Germany, July 31, 1892. d. Rudolf and Marie (Lebrecht) Loewenstein (both dec.). Edn.: Diploma, Schl. of Home Econs.

iesbach, Ger., 1910; R.N., Babies' Hosp., Munich, Ger., 1912; .D.S., Temple Univ., Schl. of Dentistry, 1916. m. Dr. Wilhelm ank, 1920 (div.). c.: Ursula Gealey. Exp.: D.D.S., Pvt. Pract., uttgart, Germany, 1916-20; Attending Dentist, Community ealth Ctr., Dental Dept., Philadelphia, Pa., 1926-28; Dentist in ng., ibid., 1928-53; Assoc. Prof., Nutrition Rsch., Ore. St. Univ., 953—. Hon. Pos.: Pres., Pa. Soc. of Dentistry for Children. em.: Am. Dent. Assn.; Ore. St. Dent. Assn.; S. Willamette ent. Soc.; Internatl. Assn. for Dent. Rsch.; Fed. Dentaire Inter- ationale; Assn. Am. Women Dentists; A.A.A.S.; Sigma Xi; Am. oc. of Dentistry for Children; Ore. Soc. of Dentistry for Chil- ren; A.A.U.P.; Faculty Women's Club; C. of C.; Century Club. ontbr. to: Jour. of Am. Dent. Assn.; Jour. of Dent. Rsch.; Jour. Pediatrics; Ore. St. Univ. Technical Bull. Areas of Rsch.: ffect of Nutrition on the Teeth and Other Oral Conditions of ildren, Especially Effect of Fluorides, Selenium and Vanadium n Variation of Dental Caries Experience.

ANIMOTO, Ralph H. (Mr.), Asst. Chief, Labs. Br., Department of ealth, Honolulu 1, Hawaii. Home Add.: 1848 Tenth Ave., Honolulu 16, Hawaii. PUBLIC HEALTH; MICROBIOLOGY. b. Waipahu, Oahu, Hawaii, Dec. 6, 1914. s. Niroku and Ishi (Imamura) T. Edn.: B.S., Univ. of Hawaii, 1934; M.S., ibid., 1936; C.P.H., Univ. of Calif., 1939. m. Kinuyo Chikasuye, Apr. 3, 1937. c.: Theta Naomi; Delta Demi. Exp.: Lab. Technician, Bd. of Health, Hawaii, 1936-39; Junior Bacteriolst., ibid., 1939-45; Bacteriolst., Dept. of Health, Hawaii, 1945-48; Asst. Chf., Bur. of Labs., ibid., 1948—. Mem.: Am. Soc. for Microbiol.; A.A.A.S.; Royal Soc. of Health; Am. Acad. of Soc. and Polit. Sci.; A.P.H.A.; Hawaii Pub. Health Assn.; Hawaiian Acad. of Sci.; Western Br. A.P.H.A.. Contbr. to: Jour. of Bacteriol.; Hawaii Med.

our.; Am. Jour. Publ. Hlth.; Lab. World; Applied Microbiol. erv. Rec.: U. S. Public Health Service. Areas of Rsch.: olicine Producing Enteric Organisms, Differential Media for oliform Group of Bacteria; Staphylococcus Aureus-Phage Types, ariants and Sensitivities to Antibiotics; Fluorescent Antibody echnics.

ARANTA, Angelo (M.D.), Rsch. Dir., Irvington House, Irvington- n-Hudson, N. Y. Home Add.: 5500 Fieldston Rd., Riverdale, N. Y. INTERNAL MEDICINE; RHEUMATIC DISEASES; IMMUNOLOGY. b. Rome, Italy, Apr. 18, 1927. s. Giovanni and Luigina (Visca) T. Edn.: Lyc. Lic., Virgilio, Rome, Italy, 1943; M.D., Univ. of Rome, 1949. m. Bruna Norsa, Sept. 7, 1957. c.: Adriana. Exp.: Rsch. Assoc., Irvington House, 1955-60; Instr. in Microbiol., N. Y. Univ. Schl. of Med., 1955-57; Adjunct Asst. Prof. of Microbiol., ibid., 1958-60; Asst. Prof. of Med., ibid., 1960—. Mem.: A.A.A.S.; Am. Heart Assn.; Am. Rheumatism Assn.; Harvey Soc.; N. Y. Acad. of Sci. Contbr. to: Nature; Sci.; Am. Jour. of Med.; New England Jour. of Med.; Proc. of the Soc. for Exptl. Biol. and Med.; Lo Sperimentale. Areas of Rsch.:

heumatic Fever; Streptococcal Infections; Immunology.

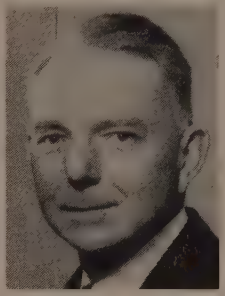
ANNOUS, Afif I. (Ph.D.), Area Officer, Near East and Africa, oreign Agric. Serv., U. S. Dept. of Agri., Wash., D. C. Home Add.: 6912 Oak Lane, Annandale, Va. AGRICULTURAL ECONOMICS, RURAL SOCIOLOGY, CULTURE DYNAMICS. b. Lebanon, Sept. 25, 1905. s. Ishak I. and Theodora (Yazbik) T. Edn.: B.A., American Univ., 1929; M.A., St. Lawrence Univ., 1938; Ph.D., Cornell Univ., 1940. m. Josephine Milkey, Sept. 16, 1941. c.: David; Paul. Exp.: Instr. and Rural Dev. Leader, Am. Univ., Beirut, Lebanon, 1931-37; Instr. and Rsch. in Rural Life, Univ. of Minn., 1941-43; Regional Specialist, Agric. Economist, Hd., Middle East Div., Foreign Agric. Relations, U.S.D.A., 1943-51; Deputy Dir., U. S. Operations Mission, Lebanon, 1951-54; Coordinator, U.S.D.A. Services to I.C.A., 1954-61; Chf., Africa and Middle

ast Branch, Foreign Agric., U.S.D.A., 1956-61; Area Officer, Near East and Africa, Foreign Serv., U. S. Dept. of Agri., Wash., . C., 1961—. Hon. Pos.: Mem., U. S. Agric. Mission to Middle ast, 1946; FAO Agric. Mission to Greece, 1946; U.N. Econ. Surv. Mission to Middle East, 1949; Advisory Editor, Middle East Jour. Mem.: A.A.A.S.; Acad. of Economics and Polit. Sci.; Am. Geographical Soc.; Rural Sociology; Am. Sociological Assn.; Soc. of Applied Anthropology; Soc. for Internatl. Dev.; Am. Acad. of Polit. and Soc. Sci.; Acad. of Polit. Sci.; NAH Planning Assn.; Sigma Xi. Contbr. to: Rural Sociology; Am. Sociological Rev.; Smithsonian Report; Foreign Agric.; Middle East Jour.; Human Organ.; Scientific Monthly. Areas of Rsch.: Agricultural Economics of Middle East and Africa. Rural Life and Social Orgn. of Middle East. Dynamics of Change and Development in Underdeveloped Countries.

TARGOW, Abram Morris (M.D.), Physician, 6333 Wilshire Blvd., Los Angeles 48, Calif. Home Add.: 1547 Club View Dr., Los Angeles 24, Calif. ALLERGY. b. Rochester, N. Y., June 19, 1907. s. Morris and Rose (Portan) T. Edn.: A.B., Univ. of Mich., 1927; Ph.D., Univ. of Chicago, 1933; M.D., Univ. of Chicago Schl. of Med., 1934. m. Jeanete Goldfield, Jan. 11, 1935. c.: Patricia Ann; Richard Irwin. Exp.: Instr. in Med., Univ. of Sou. Calif. Schl. of Med., 1944-47; Asst. Clin. Prof. of Med., ibid., 1947-59; Assoc. Clin. Prof. of Med., ibid., 1959—. Hon. Pos.: Vice-Pres., Amer. Coll. of Allergists, 1955-56; Pres., Los Angeles Allergy Soc., 1956. Mem.: A.A.A.S.; Amer. Acad. of Allergy. Contbr. to: Ann. of Allergy; Jour. of Allergy; Jour. Amer. Med. Assn. Areas of Rsch.: Allergy.

TARKINGTON, Raife Gideon (Mr.), Assoc. Head, Applied Photography Div., Eastman Kodak Co., Rochester, N. Y. Home Add.: 183 Hoffman Rd., Rochester 22, N. Y. PHOTOGRAPHY, CHEMISTRY. b. Columbia, N. C., Feb. 10, 1915. s. Luid C. and Mary Pritchard) T. Edn.: B.S.C., Va. Polytechnic Inst., 1936. m. Mary Peters, Oct., 1943 . c.: John Luid; Pamela Ann. Exp.: Rsch. Engr., Eastman Kodak Co., Rochester, N. Y., 1936-41; Staff Asst., ibid., 1946-58; Asst. Div. Head, ibid., 1958-60; Assoc. Div. Head, ibid., 1960—. Mem.: S.P.S.E.; S.P.I.E.; A.S.P.; P.S.A.; A.I.Ch.E.; A.A.A.S. Fellow; Phi Lambda Upsilon; Phi Kappa Phi. Contbr. to: Photogrammetric Engrng. Serv. Rec.: U. S. Army Air Force, 1941-46, Awarded Legion of Merit. Areas of Rsch.: Aerial Photography; Applied Photography; Photographic Engrng.; Military Intelligence.

TASKER, Roy Carleton (Ph.D.), Prof. of Biol., Chmn., Dept. of Biol., Bucknell Univ., Lewisburg, Pa. Home Add.: Westlawn, Lewisburg, Pa. ZOOLOGY. b. Angola, Ind., Feb. 19, 1896. s. James H. and Sarah (Green) T. Edn.: A.B., Hillsdale Coll., 1921; M.A., Univ. of Mich., 1922; Ph.D., Cornell Univ., 1934. m. Eleanor Augur, Sept. 1, 1923. c.: Lois Anne; William Allison. Exp.: Instr. of Biol., DePauw Univ., 1922-25; Instr. of Zool., Yenching Univ., Peking, China, 1925-26; Prof. of Biol., Dir. of Biological Supply Serv., Soochow Univ., Soochow, China, 1926-29; Instr. of Zool., Cornell Univ., 1931-34; Asst. Prof., Bucknell Univ., 1934-39; Assoc. Prof., ibid., 1939-48; Prof., ibid., 1948—; Chmn., Dept. of Biol., ibid., 1958—. Mem.: A.A.A.S.; Am. Soc. of Zoologists; Ind. Acad. of Scis.; Pa. Acad. of Scis.; A.A.U.P.; Sigma Xi; Phi Kappa Phi; Phi Sigma; Delta Sigma Phi; Omicron Delta Kappa. Contbr. to: Anatomical Rec. Serv. Rec.: U. S. Army, 1918. Gen. Int.: Fulbright Appointments as Lctr., Univ. Coll., Mandalay, Burma, 1950-51, Government Colls., Hyderabad, W. Pakistan, 1959-60. Areas of Rsch.: Fisheries Improvement and Ichthyol.; Gonopodium Development of Poeciliid Fishes; Comparative Anatomy.



TARSHIS, Maurice Steinmetz (Ph.D.), Dir., Tuberculosis Rsch., Med. Rsch. Lab., Veterans Admin. Hosp., Alexandria, La. MEDICAL MICROBIOLOGY AND IMMUNOLOGY. b. Hartford, Conn., Dec. 1, 1912. s. Sam and Ida (Jacobson) T. Edn.: B.A., Reed Coll., 1936; M.S., Ore. State Univ., 1939; Ph.D., Univ. of Ore. Med. Schl., 1951. Exp.: Sr. Instr., Dept. of Biol., Reed Coll., 1935-36; Tchng. Fellow, Dept. of Zool., Rsch. Asst., Dept. of Bacteriol., Ore. State Univ., 1937-39; Med. Bacteriologist-in-Chg., Sect. on Bacteriol., Emanuel Hosp., Portland, Ore., 1946; Med. Bacteriologist-in-Chg., Clinical Lab.; Chf., Rsch. Lab., V.A. Hosp., Walla Walla, Wash., 1946-48; Rsch. Fellow, Rsch. Assoc., Dept. of Bacteriol., Univ. of Ore. Med. Schl., 1948-51; Dir., TB Rsch. Lab.; Acting Dir., Gen. Med. Rsch.

Lab., V.A. Med. Tchng. Grp. Hosp., Memphis, Tenn., 1951-53; Dir., TB Bacteriol. Rsch. and Diagnostic TB Sect., V.A. Hosp., Oteen, N. C., 1953-54; Asst. Rsch. Bacteriol., Asst. Prof.-in-Chg., TB Rsch. Lab., Dept. of Bacteriol., Univ. of Calif., Berkeley, 1954-57; Dir., TB Rsch., Med. Rsch. Lab., V.A. Hosp., Alexandria, La., 1957—. Hon. Pos.: Mem., Com. Microbiol., V.A.-Armed Forces Conf's on Chemotherapy TB; Mem., Comm. Path. and Microbiol.; Amer. Coll. of Chest Physicians; Mem., Ed. Abstract Bd., Excerpta Medica. Mem.: Fellow, Am. Pub. Health Assn.; Fellow, Am. Med. Writer's Assn.; Fellow, A.A.A.S.; Mem., Hon. Assoc., Am. Coll. of Chest Physicians; Am. Thoracic Soc.; Am. Soc. Microbiol.; Royal Soc. of Health (England); N. Y. Acad. of Scis.; Scientific Rsch. Soc. of Am.; Soc. of Sigma Xi; Phi Sigma.

Contbr. to: Am. Rev. Resp. Dis.; Am. Jour. Pub. Health; Acta Tuberculosis Scand.; Tr. Res. Conf. in Pulm. Dis., V.A.-Armed Forces; Jour. Bact.; Amer. Jour. Clin. Pathol.; Jour. Lab. and Clin. Med.; Sci. Monthly; Med. Sci.; Dis. Chest; Tubercle. War Rec.: U.S. Army Med. Corps, 1943-46. Listed in: A.M.S.; W.W. in the West and South. Gen. Int.: Distinguished Service Citation, Am. Acad. TB Physicians, 1961. Areas of Rsch.: Bacteriology, Immunology and Chemotherapy of Tuberculosis; Infectious Diseases; Medical Microbiology and Immunology.

TATUM, Howard James (M.D.), Prof., Dept. of Obstetrics and Gynecology, Univ. of Ore. Med. Schl., 3181 S.W. Jackson Park Rd., Portland 1, Ore. Home Add.: 3912 Southwest Dakota St., Portland 1, Ore. EXPERIMENTAL AND GYNECOLOGIC CANCER. b. Philadelphia, Pa., May 22, 1915. s. Arthur Lawrie and Mabel E. (Webb) T. Edn.: B.A., Univ. of Wis., 1936; Ph.D., ibid., 1941; M.D., ibid., Schl. of Medicine, 1943. m. Mary Jane King, June 8, 1946. c.: Susan Lawrie; Arthur Howard; Robert King. Exp.: Instr., Dept. of Pharmacol. and Toxicol., Univ. of Wis. Grad. Schl., 1940-41; Instr., Dept. of Obstetrics and Gynecology, La. St. Univ. Schl. of Medicine, 1949-50; Asst. Prof., Dept. of Obstetrics and Gynecology, ibid., 1950-52; Assoc. Prof., ibid., 1952-58; Visiting Prof., Dept. of Obstetrics and Gynecology and Physiologic Scis., Univ. of Valle Schl. of Medicine, Cali, Colombia, South Am., 1957-58; Prof., Dept. of Obstetrics and Gynecology, Univ. of Ore. Med. Schl., 1958—. Hon. Pos.: Fellow, Am. Assn. Obst. and Gynec.; Assoc. Examiner, Am. Board of Obst. and Gynec.; Editorial Board, Western Jour. Surgery, Gynec. and Obst. Mem.: Am. Coll. of Obstetricians and Gynecologists; Soc. for Gynecologic Investigation; A.A.A.S.; Western Soc. for Clinical Rsch.; Chilean Soc. of Obstetrics and Gynecology; Soc. of Obstetricians and Gynecologists of Cauca Valley, Cali, Colombia, S. Am.; Ore. Soc. of Obstetrics and Gynecology; Sigma Xi; Phi Lambda Epsilon. Contbr. to: Jour. of Pharmacol. and Exptl. Therapeutics; Jour. of Clinical Investigation; Jour. of Lab. and Clinical Medicine; Am. Jour. of Obstetrics and Gynecology; New Orleans Med. and Surgical Jour.; Obstetrics and Gynecology; Wis. Med. Jour.; Bull. of Material Welfare; Clinical Obstetrics and Gynecology; Colombian Jour. of Obstetrics and Gynecology; General Practice. Serv. Rec.: U. S. Army, 1943-46.

TAUBER, Maurice Falcolm (Ph.D.), Melvil Dewey Prof. of Library Serv., Columbia Univ., N. Y. 27, N. Y. Home Add.: 460 Riverside Dr., N. Y. 27, N. Y. TECHNICAL OPERATIONS IN LIBRARIES; CONSULTANT ON PROBLEMS IN TECHNICAL AND SPECIAL LIBRARIES. b. Norfolk, Va., Feb. 14, 1908. s. A. Albert and Leona (Miller) T. Edn.: B.A., Temple Univ., 1930; Ed.M., Columbia Univ., 1939; Ph.D., Univ. of Chicago, 1941. m. Roseanne Begner, May 25, 1932. c.: Robert, Frederic J. Exp.: Prof., Columbia Univ., 1954—; Prof., ibid., 1949-54; Asst., Assoc. Prof., ibid., 1947-49; Asst. Dir. of Libraries, ibid., 1944-47; Asst. Prof., Chief of Preparations, Univ. of Chicago, 1941-44; Rsch. Asst., ibid., 1938-41; Various Positions, Temple Univ. ,1930-38. Mem.: A.A.A.S.; Am. Documentation Inst.; Am. Library Assn.; Special Libraries Assn. Author: Subject Analysis of Library Materials, 1952; Technical Services in Libraries, 1954; Cataloging and Classification, 1960; Feasibility Study on Establishment of Information Service in Educational Media, 1960. Co-Author: The University Library, 1945, 1956. Contbr. to: Industrial and Chem. Engr.; Library Quarterly; Coll. and Rsch. Libraries; Library Trends, etc. Areas of Rsch.: Organization of Collections in Libraries; Cataloging, Classification, Information Systems.

TAUSSIG, Helen Brooke (M.D.), Prof. of Peds., Johns Hopkins Hosp., Baltimore, Md. Home Add.: 1100 Hollins Lane, Baltimore 9, Md. MEDICINE. b. Cambridge, Mass., May 24, 1898. d. Frank William and Edith (Guild) T. Edn.: A.B., Univ. of Calif., 1921; M.D., Johns Hopkins Univ. Schl. of Med., 1927. Hon. Degs.: D.Sc.: Boston Univ. Schl. of Med., 1948; Goucher Coll., 1949; Woman's Coll. of Univ. of N. C., 1950; Northwestern Univ., 1951; Columbia Univ., 1951; Woman's Med. Coll. of Pa., 1951; Middlebury Coll., 1952; Western Coll. for Women, 1953; Univ. of Athens, Greece, 1956; Harvard Univ., 1959; Gottingen Univ., Germany, 1960; LL.D., Hood Coll., 1950. Exp.: Phys. In Chg., Harriet Lane Home Cardiac Clin., Johns Hopkins Hosp., 1930—; Assoc. Prof. Ped., Johns Hopkins Univ., 1946-59; Prof., ibid., 1951—. Hon. Pos.: Vice Pres., Am. Heart Assn.; Edl. Bd., Circulation; Pres., Heart Assn. of Md., 1952-54; Secy., ibid., 1959-60; Med. Adv. Bd., Med. Internat. Coop.; Bd. of Trustees, ibid. Mem.: Ped. Rsch. Soc.; Am. Ped. Soc.; Am. Heart Assn.; Md. Rheumatic Fever Assn.; Assn. Am. Phys.; Heart Assn. Med.; Am. Coll. Phys.; Internat. Acad. Pathol.; Brit. Cardiac Soc., hon.; Med. Internat. Coop.; Am. Coll. Cardiol.; Am. Bd. Peds.; Phi Beta Kappa; Alpha Omega Alpha; Am. Acad. Arts and Sci. Author: Congenital Malformations of the Heart, 2 Vols., 1960; rev., 1961. Contbr. to: Circulation; Ped. Clins. of N. Am.; Jour. of Peds.; Mod. Med.; Jour. Am. Med. Assn.; Jour. Thoracic and Cardiovascular Surg.; Am. Jour. Physiol.; Bull. Johns Hopkins Hosp.; Am. Jour. Dis. Child.; Am. Jour. Hyg. Gen. Int.: Women's Nt. Press Club Award, 1947; Chevalier Legion d'Honneur, 1947; Mead-Johnson Award, 1948; Passano Award, 1948; Feltrinelli Prize, Rome, Italy, 1954; Albert Lasker Award, 1954; Elizabeth Blackwell Cit., N. Y. Infirmary, 1954; Award of Merit, Am. Heart Assn., 1957; Eleanor Roosevelt Achieve. Award, 1957; Award of Merit, Gairdner Found., Can., 1959; Hon. Medal, Am. Coll. Chest Physicians, 1953. Areas of Rsch.: Pediatric Cardiology.

TAYLOR, Amos Elias (Ph.D.), Prof. of Econ., Am. Univ., Wash. 6, D. C. Home Add.: Parkton, Md. ECONOMICS INTERNATIONAL TRADE AND FINANCE. b. Glenville, Pa., July 4, 1893. s. William F. and Emeline (Albright) T. Edn.: A.B., Gettysburg Coll., 1915; M.A., Univ. of Chicago, 1920; Ph.D., Univ. of Pa., 1924. m. Leah Tipton, 1921. c.: Amos E. Taylor, Jr. Exp.: Instr. and Asst. Prof. of Econ., Univ. of Pa., 1920-29; Asst. Chf. and Chf., Finance Div., Bur. of Foreign and Dom. Commerce, 1930-40; Dir., Div. of Econ. Rsch., 1940-43; Dir., Bur. of For. and Dom. Commerce, U. S. Dept. of Commerce, 1943-47; Dir., Dept. of Econ. and Soc. Affairs, Pan Amer. Union and Exec. Secy., Inter-Am. Econ. and Soc. Coun., 1947-58; Prof. of Econs., Am. Univ., Wash., D. C., 1958—. Hon. Pos.: Pres., Cosmos Club, 1948; Pres., Torch Club of Wash., 1941; Vice-Pres., Amer. Econ. Assoc., 1945; Chmn. of Bd., Natl. Acad. of Econ. and Polit. Sci. Mem.: A.A.A.S.; Amer. Econ. Assn.; Natl. Acad. of Econ. and Polit. Sci.; Acad. of Polit. Sci.; Alpha Tau Omega; Phi Beta Kappa; Pi Gamma Mu. Author: Balance of International Payments of the U. S., 1931-40; Foreign Investments in the U. S., 1937. Contbr. to: Pa. Law Rev.; Jour. of Amer. Statistical Assn.; Ann. of Amer. Acad. of Polit. and Soc. Sci.; Jour. of Econ. and Bis. Hist. Areas of Rsch.: Internatl. Trade and Internatl. Finance; Econ. History.

TAYLOR, Dean, Jr. (Ph.D.), Staff, Weapons Department, U. S. Naval Academy, Annapolis, Maryland. Home Add.: 1016, Route No. 8, Battle Creek, Michigan. PHYSICAL CHEMISTRY. b. Mason, Mich., April 12, 1923. s. Dean, Sr. and Leila Marie (Acker) T. Edn.: B.S., U. S. Naval Acad., 1947; Ph.D., Case Inst. of Tech., 1960. m. Julia Steiner, (dec.), June 8, 1947. c.: Whitney Paige. Exp.: Commanding Officer, USS Barracuda, New London, Conn., 1959-60; Commanding Officer, USS Conger, ibid., 1960-61; Hd., Chem. Dept., Nuclear Power Schl., U. S. Navy Sub Base, ibid., 1961-62; Staff, Weapons Dept. U. S. Naval Acad., 1962—. Mem.: U. S. Naval Inst., Sigma Xi. Contbr. to: Industrial and Engrng. Chem. Serv. Rec.: U. S. Navy, 1947—. Areas of Rsch.: Surface Chem. General Work on Basic Theory of Adhesion Between Metal, Metal-Oxide and Polymer Interfaces. Work with and under Guidance of Dr. John E. Rutzler, Jr.; Explosives and Corrosion.

TAYLOR, Floyd Leo (Ph.D.), Chmn., Dept. of Math., Sou. Ore. Coll., Ashland, Ore. Home Add.: 869 Harmony Lane, Ashland, Ore. MATHEMATICS. b. Sargent, Neb., Feb. 22, 1921. s. Lee and Lula (DeBusk) T. Edn.: A.B., York Coll., 1943; M.A., Univ. of Sou. Calif., 1950; Ph.D., Univ. of Neb., 1952. m. Iona Shaw, Dec. 18, 1947. c.: Patricia Lee; James Floyd. Exp.: Instr., Gresham, Neb. H. S., 1945-46; Instr., York Coll., 1946-48; Chmn. ,Dept. of Math., Sou. Ore. Coll., 1952—. Mem.: Am. Mathematical Soc.; Math. Assn. of Am.; Phi Delta Kappa; Rotary. Serv. Rec.: U.S.A.F., 1942-45. Areas of Rsch.: Tchng. Math.; Training Math. Tchrs.

TAYLOR, John Peter, Col., U.S.A.F., 300 Winding Trail, Xenia, Ohio. b. Detroit, Mich., Feb. 10, 1917. s. John Peter and Pearl Ruth (Carter) T. Edn.: B.S., E.E., Univ. of Ariz., 1940; B.S., M.E., ibid., 1941. Hon. Deg.: Profl. Engr., Univ. of Ariz., 1955. m. Edith Rose Gardner, Nov. 23, 1957. c.: Craig Peter; John Peter. Exp.: Sr. Air Force Officer Guided Missile Com., Jt. Chfs. of Staff; Rsch. and Dev., Office of Secy. of Defense, 1947-50; Rsch. and Devel., White House, Interdepartmental Comm. on Scientific Rsch. and Devel., 1951-52; Staff Assignments in Hq. Air Rsch. and Devel. Command and Arnold Engrng. Devel. Center, 1952-54; Exec. to Chf. Scientist of U.S.-A.F.; Exec. to Special Asst. to the Secy. of the A. F., 1955-57; Wright Air Devel. Div., W-PAFB, Ohio, 1957-60; Aero. Systems Div., W-PAFB, Ohio, 1960—. Mem.: A.A.A.S.; Delta Chi; P.T.S. Contbr. to: Air Force Mag. Serv. Rec.: U.S.A.F., 1942—.

TAYLOR, Henry Longstreet (Ph.D.), Prof., Univ. of Minn., Minneapolis 14, Minn. Home Add.: 688 Fairmount Ave., St. Paul 5, Minn. PHYSIOLOGY. b. St. Paul, Minn., Feb. 2, 1912. s. Henry Longstreet and Ethelberta (Geer) T. Edn.: B.A., Harvard Coll., 1935; Ph.D., Univ. of Minn., 1942. m. Catherine Elliott, 1942. c.: David H.; James F.; Geoffery E. Exp.: Rsch. Assoc. in Physiology, Univ. of Minn., 1942-44; Asst. Prof., ibid., 1945-49; Assoc. Prof., ibid., 1949-56; Prof., ibid., 1956—. Hon. Pos.: Advisory Board on Quartermaster Research and Development of Natl. Acad. of Sci. Mem.: Am. Physiological Soc.; Am. Heart

Assn.; Soc. of Experimental Biol. and Med.; Am. Statistical Assn.; The Gerentological Soc.; The Am. Public Health Assn.; Sigma Xi; Alpha Chi Sigma. Co-author: The Biology of Human Starvation, 1950. Contbr. to: Am. Jour. Physiol.; Jour. of Clin. Invest.; Jour. of Biol. Chem.; Jour. of Applied Physiol. Sci.; Circulation; Am. Heart Jour.; Am. Jour. of Psychol.; Ann. of Int. Med.; Ann. of N. Y. Acad. of Sci.; Jour. of Exp. Biol. and Med. Areas of Rsch.: The Physiology of Physical Activity, Cardiovascular Function, Nutrition, The Epidemiology of Coronary Heart Disease.

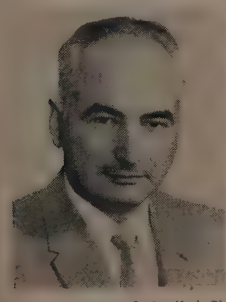
TAYLOR, Murray East (Ph.D.), Rsch. Engr., Boeing Co., 200 W. Mich., Seattle, Wash. Home Add.: 2553 N.E. 96th St., Seattle, Wash. CHEMISTRY, ORGANIC AND ANALYTICAL. b. Casselton, N. Dak., Apr. 14, 1915. s. Charles M. and Mabel (East) T. Edn.: B.S., Univ. of Wash., 1948; M.S., ibid., 1952; Ph.D., ibid., 1950. m. Edith Weisgerber, Sept. 30, 1950. c.: Charles P. Exp.: Microchemist, Univ. of Wash., 1948-52; Rsch. Instr., ibid., 1952-58; Rsch. Chemist, Boeing Co., 1958—. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem.; Annals of Surgery; Analytica Chimica Acta; Talanta. Serv. Rec.: U.S.A., 1942-46. Areas of Rsch.: Microchemistry, Synthesis of Organometallic Compounds, Thermochemistry.

TAYLOR, Ray Malcolm (D.D.S.), 3626 N. Western Ave., Oklahoma City 18, Okla. Home Add.: 1200 Larchmont Lane, Oklahoma City 16, Okla. STOMATOLOGY. b. Ind., July 27, 1917. s. Floyd and Grace (Clouse) T. Edn.: B.S., Ind. St. Coll., 1939; D.D.S., Northwestern Univ., 1943. m. Hazel Sharp, Sept. 15, 1940. c.: Pamela Rae; Ray Malcolm, Jr.; Patricia Kathleen; John Randall. Exp.: Instr., Northwestern Univ., 1943; Private Practice, Oklahoma City, Okla., 1946—. Mem.: A.A.A.S.; Natl. Geographic Soc.; Am Dental Assn; Royal Soc. of Health (Eng.); Federation Dentaire Internationale; Pi Gamma Mu; Chi Delta Chi; Mason; Shrine. Serv. Rec.: U. S. Army Air Force, 1943-46.

TAYLOR, Rennie (Mr.), Sci. Writer, 2248 Marlow Rd., Santa Rosa, Calif. GENERAL SCIENCE AND MEDICINE. b. Ponca, Nebr., May 1, 1896. s. Nathan Eliot and Georgiana (Crandall) T. Exp.: Sci. Writer, Associated Press, San Francisco, Calif., 1937-61; Sci. Writer, Santa Rosa, Calif., 1961—. Mem.: Astronomical Soc. of the Pacific; A.A.A.S.; Natl. Assn. of Sci. Writers; Mechanics Inst., San Francisco; Am. Polar Soc. Contbr. to: G.P.; Modern Medicine; Calif. Medicine. Serv. Rec.: U. S. Navy, W. W. I. Gen. Int.: Winner, A.A.A.S.-Westinghouse Sci. Writing Award, 1961.

TAYLOR, Ruby Shearer (Ph.D.), Pres., Taylor Edntl. Institutions, 1230 North Cascade Ave., Colo. Springs, Colo. Home Add.: 14 E. Williamette Ave., Colo. Springs, Colo. ADULT EDUCATION (Major, Home Study; Minor Residential Philosophic). b. Prairie City, Grant Co., Ore., Oct. 14, 1883. d. George and Georgiana (Gillenwaters) Shearer. Edn.: Ph.D., Taylor Univ. of Bio-Psycho-Dynamic Scis., 1936. m. John Sloan Brennan, Aug. 16, 1916 (dec.). 2nd. William Marcus Taylor, Sept. 1, 1931 (dec.). c.: Elizabeth Brennan Goff. Exp.: Critic, Ore. Normal Schl. (now Oregon Coll. of Edn.), Monmouth, Ore., 1907-09, 1911-13; Conductor, Private Schl. of Pri. Methods for Tchrs., Portland, Ore., summers, 1912-18; Primary Supvr., Portland, Ore., Pub. Schls., 1913-16; Primary Dept., Miss Catlin's Schl. for Girls, Portland, Ore., 1924-26; Dept. Psychol. of Childhood, Ore. Normal Schl., 1927-28; Asst. Supt. Schls., Mult. Co., Ore., 1928-30; Dean of Edn., Taylor Schl. of Bio-Psychol., 1930-47; Pres., Taylor Edntl. Institutions, 1947—. Mem.: Royal Soc. of Arts, London, Eng.; Quota Internatl.; A.A.A.S., 1933. Author: In Collab. with William Marcus Taylor: Bio-Psycho-Dynamic Educations. Areas of Rsch.: Pioneering in the Oft-Neglected Phase of Education.

TAYLOR, Thomas Tallott (Ph.D.), Asst. Prof., Univ. of Calif., Riverside, Calif. Home Add.: 3607 Washington St., Riverside, Calif. PHYSICS. b. Montpelier, Ind., Apr. 18, 1921. s. Harold R. and Nellie Jane (Root) T. Edn.: B.S., Purdue Univ., 1942; M.S., Calif. Inst. of Tech., 1953; Ph.D., ibid., 1958. m. Grace Bonaro, Sept. 6, 1958. c.: Francesca Marie; Thomas Tallott T., Jr. Exp.: Engr., Gen. Elec. Co., Schenectady, N. Y., 1942-46; Rsch. Physicist, Hughes Aircraft Co., Culver City, Calif., 1946-54; Consulting Physicist, Pasadena, Calif., 1954-58; Part-time Instr., Engrng. Ext., Univ. of Calif., Los Angeles, 1947-50, 1957-58; Asst. Prof. of Physics, Univ. of Calif., Riverside, 1958—. Mem.: Am. Physical Soc.; A.A.A.S.; Inst. of Radio Engrs.; Phi Kappa Theta; Sigma Pi Sigma; Sigma Xi. Contbr. to: Jour. of Applied Physics; Inst. of Radio Engrs. Trans. on Antennas and Propagation; Jour. Rsch. of Natl. Bur. of Standards. Areas of Rsch.: Electromagnetic Theory; Antennas; Scattering from Cylinders.



TAYLOR, Walter Penn (Ph.D.), (Ret.). Home Add.: 424 Harrison Ave., Claremont, Calif. ZOOLOGY, ECOLOGY, WILDLIFE MANAGEMENT, CONSERVATION EDUCATION. b. Elkhorn, Wis., Oct. 31, 1888. s. Benton B. and Helen Rebecca (West) T. Edn.: Ph.D., Univ. of Calif., 1914. m. Mary Elizabeth Fairchild, Aug. 5, 1912. c.: Theodore Walter; Harriet; Elizabeth; Benton Chester. m. 2nd, Clara Klippel Taylor, July 30, 1955. Exp.: Asst. Curator and later Curator of Mammals, Univ. of Calif. Museum of Vertebrate Zool., 1909-16; Biolst., Govt. Serv., 1916-51; Bur. of Biol. Surv., U. S. Dept. of Agric., 1916-40; Fish and Wildlife Serv., U. S. Dept. Interior, 1940-51; Univ. Ariz., 1932-35; Prof. Wildlife Mgt., Texas A. and M. Coll., 1935-47; Prof. of Zoology, Okla. A. & M. Coll., 1947-51; Visiting Prof. of Zool., Sou. Ill. Univ., 1957-58; Lectr. in Conservation Edn., Claremont Grad. Schl., 1954-62. Hon. Pos.: Pres., Am. Soc. of Mammalogists, 1940-41; Pres., Ecological Soc. of Am.; Pres., Wildlife Soc., 1943-44; Pres., Texas Acad. of Sci., 1944-45. Mem.: Phi Beta Kappa; Sigma Xi; A.A.A.S., Fellow; Fellow, Calif. Acad. of Sci.; A.I.B.S.; Pi Kappa Alpha; Rotary Club. Author: The Deer of North America, 1956. Co-Author: The Birds of Wash. State, 1953. Contbr. to: Sci.; Scientific Monthly; Northwest Sci.; Bull. Am. Inst. of Biological Sci.; Quarterly Rev. of Biol.; Univ. of Calif. Publications in Zool.; Transactions N. Am. Wildlife Conf.; Jour. of Forestry; Ecology; Jour. of Wildlife Management; Calif. Fish and Game; Nature Mag.; U.S.D.A. Publications; Texas Geographic Mag.; Am. Biol. Tchr.; Proc. and Trans. Texas Acad. of Sci.; Jour. of Mammalogy; Proc. Okla. Acad. Sci.; Le Vie del Mondo. Gen. Int.: Secy., Calif. Associated Societies for the Conservation on Wildlife, 1912-14; Chmn., Joint Comm. on Wildlife, The Wildlife Soc. and Natl. Rsch. Coun., 1946; Dir., Claremont Conservation Conf., 1944-45; Leader, Cooperative Wildlife Rsch. Units, 1935-51; Aldo Leopold Award for Service to Conservation, 1961. Areas of Rsch.: Vertebrate Ecology; Wildlife Management; Conservation Education.

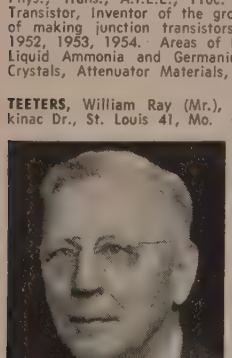
TAYLOR, William Laverne (Mr.), Physicist, Natl. Bur. of Standards, Boulder, Colo. Home Add.: Rt. 3, Box 375, Boulder, Colo. IONOSPHERE RESEARCH AND PROPAGATION. b. Corsicana, Tex., Oct. 17, 1926. s. Roy M. Taylor and Clara Jane (Chewning) Basham. Edn.: B.S., Okla. St. Univ., 1950. m. Norma Lee Koester, 1950. c.: Paula Jane; Robin Carol; Rebecca Ann. Exp.: Radio Physicist, Natl. Bur. of Standards, Washington, D. C., 1950-51; Radio Physicist, ibid., Anchorage, Alaska, 1951-52; Physicist (Atmospheric), ibid., Boulder, Colo., 1952—. Mem.: Internatl. Scientific Radio Union; Am. Geophysical Union; A.A.A.S.; Rsch. Soc. of Am.; Tau Kappa Epsilon; Sigma Pi Sigma; Chi Gamma Iota. Contbr. to: Recent Advances in Atmospheric Electricity; Jour. of Geophysical Rsch.; Jour. of Rsch. of the N.B.S.; Proc. of the I.R.E. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Very Low Frequency Propagation; Properties of the Ionosphere and Characteristics of Lightning Discharges.

TEAGUE, D.(wight) Maxwell (Ph.D.), Managing Engr., Chem. Rsch., Chrysler Corp., Detroit, Mich.; Lectr., Detroit Inst. of Tech., Evening, Detroit, Mich. Home Add.: 262 Lothrop Rd., Grosse Pointe Farms 36, Mich. ELECTRON MICROSCOPY, PHYSICAL CHEMISTRY, BIOLOGICAL CHEMISTRY, INDUSTRIAL CHEMICAL RESEARCH. b. Shepherd, Mich., July 30, 1916. s. Cassius H. and Helen (Winegar) T. Edn.: B.S., Wayne State Univ., 1938; M.S., ibid., 1941; Ph.D., Univ. of Mich., 1950. m. Ruth Ebbinghouse, Dec., 1939. c.: Dwight M., Jr.; Douglas D.; Susan L.; Bruce H.; Lucy H. Exp.: Rsch. Chem., Children's Fund of Mich., Detroit, Mich., 1938-41; Tchng. Asst., Univ. of Mich. Med. Schl., Ann Arbor, Mich., 1941-43; Instr., Evening, Wayne State Univ., Detroit, Mich., 1944-45; Dept. Hd. Chem., Chrysler Inst. of Engrng., Detroit, Mich., 1945-60; Manhattan Project, Chrysler Corp., 1943-46; Hd., Chem. Rsch., Chrysler Corp., 1946—; Lectr., Evening, Detroit Inst. of Tech., Detroit, Mich., 1960—. Hon. Pos.: Pres., Electron Microscope Soc. of Am., 1961; Secy., ibid., 1958-59; Chmn., Sub. XI of

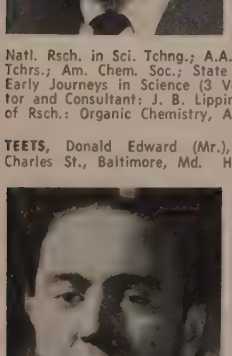
A.S.T.M. Comm. E-4; Electron Microstructure of Metals. Mem.: Am. Chem. Soc.; Am. Soc. for Testing Materials; Electron Microscope Soc. of Am.; A.A.A.S.; Mich. Coll. Chem. Tchrs. Assn.; Mich. Acad. of Sci.; Mich. Forum for Electron Microscopy; Tau Kappa Epsilon; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Proc. Am. Soc. Testing Mats.; Jour. Appl. Physics; Jour. Paint and Varnish Production. Gen. Int.: Developed several surface replication techniques for electron microscopy. Areas of Rsch.: Electron Microscopy, especially of Metals, Metal wear surfaces, paint. Biological Chemistry, instrumental analysis, absorption spectroscopy, physical chemistry; industrial friction materials, lubricants, adhesives, fuel cells and batteries.

TEAL, Gordon Kidd (Ph.D.), Asst. Vice-Pres., Rsch. and Engrng., Tex. Instruments, Inc., P. O. Box 5474, Dallas 22, Tex. Home Add.: 5222 Park Lane, Dallas 20, Tex. CHEMISTRY OF ELECTRONIC MATERIALS. b. Dallas, Tex., Jan. 10, 1907. s. Olin Allison and Azelia Clyde (Kidd) T. Edn.: A.B., Baylor Univ. ,1927; M.Sc., Brown Univ., 1928; Ph.D., ibid., 1931. m. Lyda Smith, Mar. 7, 1931. c.: Robert Carroll; Donald Fraser; Stephen O'Banion. Exp.: Technical Staff, Bell Telephone Labs., Murray Hill, N. J., 1930-53; Asst. Vice Pres. and Dir., Materials Rsch., Tex. Instruments, Inc., Dallas, Tex., 1953-55; Asst. Vice Pres. and Dir. of Rsch., ibid., 1955-62; Asst. Vice Pres. Rsch. and Engrng., ibid., 1962—. Hon. Pos.: Dir., Fellow, Mem., Editorial Bd., Inst. of Radio Engrs., Pres., Tex. Acad. of Sci.; Chmn., Exec. Comm., Dallas-Ft. Worth Coun. of Scientific Socs.; Consultant Dept. of Defense; Mem., Materials Advisory Bd., N.A.S.-N.R.C.; Chmn., Dallas-Ft. Worth A.C.S. Mem.: A.C.S.; Electrochem. Soc.; Am. Mgt. Assn.; A.A.A.S., Fellow; Soc. for Hist. of Technol.; Am. Physical Soc.; Sigma Xi; Sigma Pi Sigma; Dallas Museum of Contemporary Arts; Tex. Fine Arts Assn. Contbrng. Author: Transistor Technology, 1952. Contbr. to: Jour. A.C.S.; Jour. Chem. Phys.; Rev. of Mod. Phys.; Phys. Rev.; Jour. Applied Phys.; Trans., A.I.E.E.; Proc. I.R.E.; Co-developer, the Junction Transistor, Inventor of the grown junction single crystal method of making junction transistors; Am. Chem. Soc. Tour Speaker, 1952, 1953, 1954. Areas of Rsch.: Spectra of Heavy Hydrogen, Liquid Ammonia and Germanium Chem., Semiconductors, Single Crystals, Attenuator Materials, Photoelectric Emission.

TEETERS, William Ray (Mr.), Retired. Home Add.: 1015 Mackinac Dr., St. Louis 41, Mo. CHEMISTRY, EDUCATIONAL FIELD—PHYSICAL AND BIOLOGICAL SCIENCES. b. Hamilton Co., Ind., Mar. 1, 1887. s. Samuel D. and Mattie (Barnett) T. Edn.: A.B., Ind. Univ., 1910; M.A., Univ. of Wis., 1916. m. Ruth Barsh, June 7, 1910. c.: Lois Elizabeth Kerr; Frances Marian Elderkin; Martha Jane Heath; Robert B. Exp.: Math., Anderson, Ind. High Schl., 1910-11; Tchr., Physiography, Calumet, Mich. H. S., 1912-13; Tchr. Chem., Newport, Ky. H. S., 1913-17; St. Louis, Mo. Pub. Schls., 1917-57; Tchr. Chem., Soldan H. S., 1917-24; Supvr., Physical and Biological Sci., 1925-42; Administrative Asst. to Supt. of Instrn., 1942-57. Hon. Pos.: Pres., Central Assn. of Sci. and Math. Tchrs.; Fellow, A.A.A.S. Mem.: Natl. Rsch. in Sci. Tchng.; A.A.A.S.; Central Assn. Sci. and Math. Tchrs.; Am. Chem. Soc.; State and Natl. Edn. Assn. Co-author: Early Journeys in Science (3 Vols.), General Science, 1927. Editor and Consultant: J. B. Lippincott School Science Series. Areas of Rsch.: Organic Chemistry, Antiseptic Solutions.

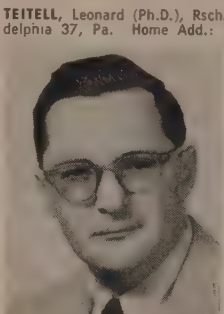


TEETS, Donald Edward (Mr.), Ashburton Pharmacy, 2303 N. Charles St., Baltimore, Md. Home Add.: Pinehurst on the Bay, Anne Arundel Co., Md. PHARMACY, CHEMISTRY. b. Aurora, W. Va., Mar. 17, 1900. s. Edward L. and Effie L. (Feather) T. Edn.: Ph.G., W. Va. Univ., 1924. m. Mary Katherine Hance, Apr. 27, 1935. Exp.: Owner, Ashburton Pharmacy, Baltimore, Md., 1940—. Mem.: A.A.A.S.; Am. Chemical Soc.; Alpha Kappa Phi. Contbr. to: Am. Chemical Soc. Jour.; Jour. Chemical Physics. Areas of Rsch.: Pharmacy, Thermodynamics, Molecular Vibrations, Specific Heats, Stroboscope, Raman Spectra, Mechanical Vibrating Models, Chemical Structure of Molecules from Vibrating Mechanical Models, Melting Point Curves.



TEBO, Leonidas Brockman, Jr. (Mr.), Aquatic Biologist, U. S. Pub. Health Serv., 1014 Broadway, Cincinnati, Ohio. Home Add.: 4099 Victory Pkwy., Cincinnati 29, Ohio. AQUATIC BIOLOGY. b. Des Moines, Iowa, July 6, 1926. s. Leonidas B., Sr. and Carita (Kirby) T. Edn.: B.S., Iowa State Univ., 1951; M.S., ibid., 1952. m. Margaret Ann Harrington, Sept. 25, 1947. c.: Michael Lee; Alan Gregory; Mary Tamerlane. Exp.: Rsch. Fellow, Iowa State Univ., 1951-52; Supv. Fishery Rsch., Wildlife Resources Comn., Raleigh, N. C., 1952-62; Aquatic Biologist, U. S. Pub. Hlth. Serv., Cincinnati, Ohio, 1962—. Mem.: Am. Fisheries Soc.; Am. Soc. of Limnol. and Oceanography. Contbr. to: Am. Midland Naturalist; Jour. Elisha Mitchell Scientific Soc.; Proc. Soc. of Am. Foresters; Progressive Fish Culturist; Proc. Southeastern Assn. Game and Fish Comm. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.: Aquatic Insects, Fishery Biology.

TEITELL, Leonard (Ph.D.), Rsch. Adviser, Frankford Arsenal, Philadelphia 37, Pa. Home Add.: 7704 Brocklehurst St., Philadelphia 15, Pa. MICROBIOLOGY, RADIATION CHEMISTRY. b. Philadelphia, Pa., Mar. 21, 1920. s. Albert A. and Blanche (Drexler) T. Edn.: B.Sc., Philadelphia Coll. of Pharmacy and Sci., 1941; M.A., Temple Univ., 1951; Ph.D., ibid., 1961. m. Ruth Preissman, July, 1941. c.: Murray Franklin; Ernest Floyd. Exp.: Chemist, Frankford Arsenal, Philadelphia, Pa., 1941-44; Chf., Biochemistry Sec., ibid., 1944-58; Rsch. Adviser, ibid., 1958—. Mem.: Am. Chemical Soc.; Botanical Soc. of Am.; Soc. for Industrial Microbiol.; A.A.A.S.; Sigma Xi. Contbr. to: Industrial and Engrng. Chemistry; Applied Microbiol.; Am. Jour. of Botany. Areas of Rsch.: Microbiol. of Manufactured Materials, Radiotracers, Radiation Chemistry, Tropicalization of Materials.



TEMMER, Georges M. (Ph.D.), Prof. of Phys., Fla. St. Univ., Tallahassee, Fla.. Home Add.: 1506 Argonne Rd., Tallahassee, Fla. EXPERIMENTAL NUCLEAR PHYSICS. b. Vienna, Austria, Apr. 10, 1922. s. Frederic M. and Margaret (Jeiteles) T. Edn.: B.-es-Sc., Univ. of Paris, 1940; B.S., Queens Coll., N. Y., 1943; M.A., Univ. of Calif., 1944; Ph.D., ibid., 1949. m. Odette Suzanne Fluchere, June 10, 1943. Exp.: Hd. Tchng. Asst., Univ. of Calif., 1946-49; Rsch. Assoc., Univ. of Rochester, 1949-51; Phys., Nat. Bur. of Standards, Washington, D. C., 1951-53; Staff Mem., Carnegie Instn., ibid., 1953-63; Prof. of Phys., Fla. St. Univ., 1960-63; Prof. of Phys., Rutgers Univ., 1963—. Hon. Pos.: Chmn., Fla. Interinstnl. Nucl. Comm.; Mem., Nat. Adv. Panel on Nucl. Structure; Mem., Oak Ridge Adv. Bd. on Nucl. Structure. Mem.: Am. Phys. Soc.; Sigma Xi. Trans.: Fundamentals of Quantum Mechanics, 1950; Quantum Mechanics, 1961. Contbr. to: Phys. Rev.; Rev. of Mod. Physics; Ann. Rev. Nucl. Sci.; Sci.; Comptes Rendus; Jour. Phys.; Phys. Letters. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int: Guggenheim Mem. Fellow, 1956-57; AEC Predoc. Fellow, 1948-49. Areas of Rsch.: Nuclear Reactions; Scattering; Low Temperature Nuclear Orientation; Nuclear Models; Medium Energy Accelerators.

TEMPLIN, Ralph Todd (Ed.D.), Prof. of Sociol., Central Sta. Coll., Wilberforce, Ohio. Home Add.: R.R. 1, Cedarville, Ohio. EDUCATION; SOCIOLOGY. b. LaCross, Kans., Feb. 2, 1896. s. Rev. Frank Lester and Maggie (Perrill) T. Edn.: B.A., Southwestern Coll., Winfield, Kans., 1920; S.T.B., Boston Univ., Schl. of Theol., 1923; M.A., Boston Univ. Grad. Schl., 1924; Ed.D., Tchrs. Coll., Columbia Univ., 1946. m. Lila Horton, June 18, 1920. s. Lawrence Howard. Exp.: Prin. and Mgr., Clancy Boys H. Schl., Methodist Mission, Muttra, U. P., India, 1925-40; Dir., The Schl. of Living, Suffern, N. Y., 1940-45; Community Counselor, Community Serv., Inc., Yellow Spgs., Ohio, 1946-47; Prof., Sociol., Central Sta. Coll., 1948—. Hon. Pos.: Ministerial Mem., Lexington Conf. of the Methodist Chu. Mem.: Am. Assn. of Univ. Profs.; African Studies Assn.; Alpha Phi Gamma. Author: Passage to Peace, 1962. Editor: Jour. of Human Relations. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Community Studies; Study and Realization of Democracy; Religion in Life.

TEPER, Lazare (Ph.D.), Dir. of Rsch., Internatl. Ladies' Garment Workers' Union, 1710 Broadway, N. Y. 19, N. Y. Home Add.: 650 W. End Ave., N. Y. 25, N. Y. ECONOMICS AND STATISTICS. b. Russia, Jan. 16, 1908. s. Gedeon and Esther (Bogatirsky) T. Edn.: Eq. B. es Sc., Univ. of Paris, 1926; A.M., Johns Hopkins Univ., 1930; Ph.D., ibid., 1931. Exp.: Rsch. Asst., Walter Hines Page Schl. of Internatl. Relations, Johns Hopkins Univ., 1931-34; Instr., Brookwood, Inc., 1934-36; Dir. of Rsch., Joint Bd. of Dressmakers, 1935-37; Dir. of Rsch., Internatl. Ladies' Garment Workers' Union, 1937—. Hon. Pos.: Chmn., Price Comm., Labor Adv. Coun. to the Bur. of Labor Stat.; Mem. of Census

iv. Comm. of Am. Stat. Assn. Mem.: Fellow, Am. Stat. Assn.; n. Econ. Assn.; Econometric Soc.; Am. Mktng. Assn.; Fellow, A.A.S.; Indust. Relations Rsch. Assn.; Am. Acad. Polit. Sci.; hns Hopkins Club. Author: Hours of Labor, 1932; The Women's rment Industry, 1937. Contbr. to: Jour. Am. Stat. Assn.; n. Econ. Rev. Serv. Rec.: U. S. Army, 1943-45. Areas of ch.: Labor Economics Statistics.

EPLICK, J. George (M.D.), Dir. of Radiol., Kensington Hosp., hila., Pa. Home Add.: 419 N. Sterling Rd., Phila. 17, Pa. EDICINE; RADIOLOGY. b. Phila., Pa., Sept. 29, 1911. s. muel and Rebecca (Liberman) T. Edn.: A.B., Univ. of Pa., 931; M.S., ibid., 1932; M.D., ibid., 1936. m. Selma Rosenblum, 937. c.: Steven; Richard; Ellen. Exp.: Dir., Curtis X-ray, efferson Med. Coll., Pa., 1944-48; Dir. of Radiol., Kensington osp., Pa., 1948—; Chief Radiol., Albert Einstein Med. Center, a., 1950-54; Chf. of Staff, Kensington Hosp., Phila., Pa., 1952-4; Visiting Radiol. Phila. Gen. Hosp., Pa., 1960—; Dir. of adiol., Oxford Hosp., 1957—; Assoc. in Radiol., Univ. of Pa. chl. of Med., 1960—. Hon. Pos.: Assoc. Ed., Jour. Albert Ein- ein, 1950-53. Mem.: A.A.A.S.; Radiol. Soc. of N. Am.; Am. rudeau Soc.; Roentgen Ray Soc.; Alpha Omega Alpha. Contbr. : Radiol.; Am. Jour. of Roentgen and Radiol. Therapy; Annals ntern. Med.; Am. Jour. of Urol.; Archives Intern. Med.; En- ocrinol.; Am. Jour. of Obstetrics and Gynecol. Serv. Rec.: . S. Coast Guard, 1944-46. Areas of Rsch.: Radiol.; Exptl. epato Splenography; High Voltage Roentgenography.

ERHUNE, William Barclay (M.D.), Med. Dir. and Founder, Silver ill Fdtn., New Canaan, Conn. Home Add.: Valley Road, New Canaan, Conn. PSYCHIATRY. b. Senoia, Ga., Nov. 2, 1893. s. William Barclay and Annie (Alexander) T. Edn.: M.D., Tulane Univ., 1915. m. Jane Denham (div.), March, 1919. c.: William Barclay, Jr.; Jane Elizabeth; Constance Ann. m. (2nd w.) Caroline Phelps Hunter, Dec. 26, 1961. Exp.: Assoc. Med. Dir., Riggs Fdtn., 1919-34; Founder and Med. Dir., Silver Hill Fdtn., N. Canaan, Conn., 1934—; Consultant, Neurol. Inst., Coll. Presby. Med. Center, N. Y., N. Y., 1934—; Assoc. Clin. Prof., Psychiatry, Yale Univ., 1938-60. Hon. Pos.: Diplomate, Am. Bd. Psychiatry and Neurol.; Examiner, Am. Bd. Psychiat. and Neurol.; Formerly Mem. of Coun., Am. Psychiatric Assn.; Vice Pres., Am. Psychiat. Assn.; Past Pres., Am. Psychopathol. Assn. Mem.: Am. Psychiat. Assn.; Am. Coll. of Physicians; N. Y. Acad. of Med.; Rsch. Soc. for Nerv. and Ment. Disorders; Am. Psychosomatic Soc., Inc.; New England Soc. Psychiatry and Neurol.; Conn. State Med. Soc.; N. Y. Psychiatric Inst.; Phi Beta Pi; Yale Club, N. Y.; Graduates Club, New Haven; Country Club, New Canaan; Sakonnett Country Club, R. I.; Sakonnett Yacht Club, R. I. Author: Living Wisely and Well, 1953; Intergration of Psychiatry and Medicine, 1953; Emotional Problems and What You Can Do About Them, 1955. Contbr. to: Conn. Med. Jour.; Med. Clinics of N. Am.; Progress in Psychotherapy; Jour. Am. Psychiatric Assn.; Jour. Am. Med. Assn.; Tex. Med. Jour.; Ark. Med. Jour.; Nebr. Med. Jour. Serv. Rec.: U. S. Army Med. Corps, 1917-19. Gen. Int.: First Med. Dir. of any State Mental Hyg. Soc. Areas of Rsch.: Brief Psychotherapy; Phobic Syndrome; Alcoholism; Intergration of Psychiatry and Medicine; Methods of Treatment of Alcoholism; Psychoneuroses; Administrative Psychiatry; Fears and Phobias; Leader in Field of Public Mental Hygiene.

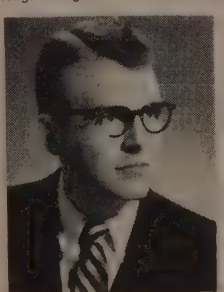
TERRELL, Charles William (Mr.), Mgr., Nuclear Rsch., Physics Rsch. Div., Armour Rsch. Fdtn., 10 West 35th St., Chicago 16, Ill. Home Add.: Apt. 907, 3100 S. Michigan, Chicago 16, Ill. REACTOR AND RADIATION PHYSICS. b. Louisville, Ky., May 10, 1927. s. John Upton and Adelaide (Crush) T. Edn.: B.S., E.E., Purdue Univ., 1952; B.N.E., N. C. State Coll., 1955; M.S., ibid., 1956. m. Emily Thomas, Nov. 8, 1952. Exp.: Synchrotron Staff, Phys. Dept., Purdue Univ., Ind., 1950-52; Rsch. Engr., Bendix Aviation Corp. Rsch. Labs., Detroit, Mich., 1952-54; Reactor Staff, Physics Dept., N. C. State Coll., 1954-57; Supvr., Reactor Operations of Armour Rsch. Reactor, 1957-59, Armour Rsch. Fdtn.; Supvr., Reactor Physics Rsch., Armour Rsch. Fdtn., 1959-61; Supvr., Nuclear and Radiation Physics Rsch., Armour Rsch. Fdtn., Chicago, Ill., 1961-62; Mgr., Nuclear Rsch., ibid., 1962—. Hon. Pos.: Gen. Nuclear Chmn., Am Power Conf., 1959-61. Mem.: Am. Physical Soc.; Am. Nuclear Soc.; Sigma Xi; Sigma Pi Sigma; Am. Inst. of Physics. Serv. Rec.: U. S. Army. Areas of Rsch.: Reactor Neutron, Nuclear, Radiation, Ionispheric Physics and Nuclear Instrumentation.

TERLINDEN, Dean William (Mr.), Math. Instr., Los Angeles City Schls., 450 N. Grand Ave., Los Angeles, Calif. Home Add.: 4415 Heather Rd., Long Beach 8, Calif. STATISTICAL CLIMATOLOGY. b. Waukesha, Wis., Feb. 20, 1921. s. Charles G. and Emma (Koch) T. Edn.: B.A., Carroll Coll., 1942; M.A., Long Beach St. Coll., 1954. m. Jane Boyer, 1950. c.: David; Donald. Exp.: Physics Instr., Harbor Jr. Coll., Wilmington, Calif., 1954-57; Math. Instr., Long Beach City Coll., 1958-59; Math. Instr., Los Angeles City Schls., Los Angeles, Calif., 1959—. Hon. Pos.: Past Pres., Carroll Coll. Club of Calif. Mem.: Am. Meteorological Soc.; A.A.A.S.; Am. Geophysical Union; Natl. Register of Scientific and Technical Personnel of Natl. Sci. Fdtn.; Natl. Honor Soc. for Secd. Schls.; M.I.T. Club of Sou. Calif. Contbr. to: Los Angeles Schl. Jour. Serv. Rec.: U.S.A.F., 1942-53; U.S.A.F.R., 1953—. Areas of Rsch.: Statistical Climatology; Micro-climatology; Radar Meteorology; Sferics.

TERRY, Richard D. (Mr.), Oceanographer, Autonetics, P. O. Box R-3, 3400 E. Anaheim Rd., Anaheim, Calif. Home Add.: 116 Carousel St., Anaheim, Calif. MARINE GEOLOGY. b. Salt Lake City, Utah, Jan. 29, 1924. s. Archie D. and Evangeline (Jensen) T. Edn.: A.B., Univ. of Sou. Calif., 1950; M.S., ibid., 1955. m. Mary C. Koinig, June 6, 1948. c.: Bryan R. Exp.: Rsch. Asst., Univ. of Sou. Calif., 1950-55; Rsch. Assoc., ibid., 1955-60; Private Consultant, Los Angeles, Calif., 1955—; Oceanographer, Autonetics, Anaheim, Calif., 1960—. Hon. Pos.: Hon. Mem., Club d'Aviation Sous-Marine de France. Mem.: Am. Geophysical Union; Am. Soc. Limnology and Oceanography; Geochemical Soc.; Geological Soc. of Am.; Soc. of Economic Paleontologists and Mineralogists; Undersea Equipment Rsch. Soc., England; Sigma Gamma Epsilon; Sigma Xi; N.S.F., Fellow; Mercedes Benz Club of Am. Author: Bibliography of Marine Geology and Oceanography, California Coast, 1951. Contbr. to: Petroleum Engr.; Jour. Sedimentary Petrology; Jour. of Geol.; Am. Geophysical Union Trans.; Geological Soc. of Am. Bull.; Pacific Petroleum Geologist; GeoTimes; Calif. Water Pollution Control Bd. Serv. Rec.: U.S. Navy, 1942-45. Areas of Rsch.: Sea Floor Topography, Marine Sediments, Chemical and Physical Oceanography; Design and Utilization of Deep-Diving Vehicles for Oceanographic Rsch.

TESI, Julius Michael (M.D.), Clinic Chf., 210 Garden Ave., Yorkville, Ohio. Home Add.: 212-4th St., Yorkville, Ohio. INTERNAL MEDICINE, COLLAGEN DISEASES, NUTRITION. b. Yorkville, Ohio, Apr. 13, 1918. s. Orlando Mitchell and Anna Mary (Serafini) T. Edn.: B.Sc., Ohio State Univ., 1940; B.A., ibid., 1942; M.D., ibid., 1947. m. Helen Rutkowski, 1947. c.: Patricia; Michael; Deborah; Pamela; Brian; Bruce. Exp.: Chf., Tesi Clinic, Yorkville, Ohio, 1949-60; Chf., Out Patient Clinics, Wheeling Hosp., Ohio, 1951-56; Asst. Chf., Cancer Clinic, ibid., 1956-57; Technical Advisor, Jah Rsch. Lab., 1957-60. Mem.: Ft. Steuben Acad. of Med.; Ft. Henry Acad. of Med.; Am. Diabetic Soc.; A.A.A.S.; Lambda Chi Alpha; Mason; Odd Fellow. Areas of Rsch.: Nutrition; Medical Electronic Technology; Electro Magnetic Phenomena.

TEXTER, E. Clinton, Jr. (M.D.), Assoc. Prof. of Med. and Dir. of Trng. Program in Gastroenterology, Northwestern Univ. Med. Schl., Chicago, Ill. Home Add.: 433 Cumnor Rd., Kenilworth, Ill. GASTROENTEROLOGY AND GASTROINTESTINAL PHYSIOLOGY. b. Detroit, Mich., June 12, 1923. s. Elmer C., M.D., and Helen (Rotchford) T. Edn.: A.B., Mich. St. Univ., 1943; M.D., Wayne St. Univ., 1946. m. Jane Curtis, Feb. 19, 1949. c.: Phyllis Cardew; Patricia Ann; Catherine Jane. Exp.: Intern, Providence Hosp., Detroit, Mich., 1946-47; Rsch. Fellow in Med., Cornell Univ. Med. Coll., 1948-50; Asst. Res. in Med., 3rd Div., N. Y. Univ., Goldwater Mem. Hosp., 1950-51; Instr. in Med., Duke Univ., Schl. of Med., 1951-53; Assoc. in Med., Northwestern Univ. Med. Schl., 1953-56; Asst. Prof. of Med., ibid., 1956-61; Assoc. Prof. of Med., ibid., 1961—; Dir. of Trng. Program in Gastroenterology, ibid., 1956—; Attending Physician, Passavant Mem. Hosp., Ill., 1954—; Chief of Gastroenterol., Serv., V.A. Rsch. Hosp., 1956—. Hon. Pos.: Chmn., Sub-sect. on Gastroenterol., Am. Fedn. for Clin. Rsch., 1956-57; Chmn., Gastroenterol. Rsch. Gr., 1959-60. Mem.: Alpha Omega Alpha; Am. Assn. for the Study of Liver Disease; Fellow, Am. Coll. of Physicians; Am. Gastroenterol. Assn.; Am. Gastroscopic Soc.; Central Clin. Rsch. Club; Central Soc. for Clin. Rsch.; Internatl. Soc. of Internal Med.; Am. Physiol. Soc.; Sigma Xi; Delta Chi; Theta Alpha Phi; Nu Sigma Nu; Players Club; Saddle and Cycle Club, Chicago; Kenilworth Club. Co-author: Peptic Ulcer—Diagnosis and Treatment, 1955. Contbrng. Author: Christophers Textbook of Surgery, 1956; 3rd Series of Modern Trends in Gastroenterology, 1961; Traumatic Medicine and Surgery for Attorneys, 1961. Contbr. to: Co-Editor, Am. Jour. Digest. Dis., 1955—; Am. Jour. Med.; Am. Jour. Med. Sci.; Am. Jour. Physiol.; Am. Jour. Roent. and Rad. Therapy; Ann. Int. Med.; Arch. Int. Med.; Blood; Circulation; Clin. Rsch.; Fedn. Proc.;

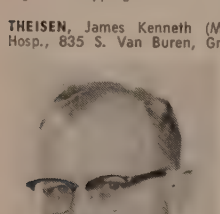


Gastroenterologia; Gastroenterol.; I.R.E. Trans. on Med. Electronics; J.A.M.A.; Jour. Clin. Invest.; Jour. Lab. and Clin. Med.; Med. Clin., N. Am.; Sou. Med. Jour.; Surg. Clin., N. Am. Serv. Rec.: Ward Officer and Chief of Heart Sta., U. S. Naval Hosp., St. Albans, L. I., N. Y., 1947-49. Gen. Int.: Mem., of Rsch. Com., Am. Gastroentol. Assn. Areas of Rsch.: Internal Medicine, Gastroenterology, Gastrointestinal Physiology (Motility, Secretion, Absorption).

TEWINKEL, Garrett Carper (Mr.), Gen. Engr., Coast and Geodetic Survey, Washington 25, D. C. Home Add.: 11612 Michale Court, Silver Spring, Md. PHOTOGRAMMETRY. b. Lamona, Wash., Jan. 20, 1909. s. Asa and May (Goodrich) (dec.) T. Edn.: B.Sc., St. Coll. of Wash., 1932; M.C.E., Syracuse Univ., 1940. m. Dorothy May Lilienthal, July 27, 1935. Exp.: Engrng. Draftsman, U. S. Soil Conservation Serv., Spokane, Wash., 1935-41; Engrng. Draftsman, Rsch. Photogrammetrist, Coast and Geodetic Survey, Washington, D. C., 1941—. Hon. Pos.: Pres., Am. Soc. of Photogrammetry; Faculty Chmn., Surveying and Mapping Curriculum, Grad. Schl., U.S.D.A. Mem.: Am. Soc. of Civil Engrs.; Am. Geophysical Union; Am. Congress on Surveying and Mapping; Alpha Kappa Lambda; Sigma Tau. Contbr. to:

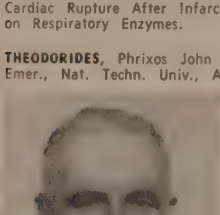
Manual of Photogrammetry; Photogrammetric Engrng.; Technical Bull.; Jour. of Coast and Geodetic Survey; Arch. of Internatl. Soc. of Photogrammetry; Revista Cartografica; Bollettino di Geodesia e Scienze Affini. Areas of Rsch.: Computational Photogrammetry Solid Analytic Geometry Applied to Aerial Photographic Surveying and Mapping.

THEISEN, James Kenneth (M.D.), Chf. of Surgery, St. Vincent Hosp., 835 S. Van Buren, Green Bay, Wis. Home Add.: 637 S. Monroe Ave., Green Bay, Wis. SURGERY, GENERAL AND THORACIC. b. Fond du Lac, Wis., Aug. 30, 1919. s. Alfred Nicholas and Marie S. (Schodron) T. Edn.: B.S., Univ. of Wis., 1941; M.D., ibid., 1944. m. Mary Gerend, Apr. 27, 1946. c.: Alfred N.; Timothy D.; Anthony R.; Robert J.; Joseph P.; Francis X. Exp.: Rsch. Fellow in Pharmacol., Univ. of Wis., 1941-42; Interne, St. Vincent Hosp., Cleveland, O., 1944-45; Resident, Pathol., ibid., 1947-48; Resident, Surgery, ibid., 1948-53; Chf. of Surgery, U. S. Army Hosp., Ft. Stewart, Ga., 1954-56; Chf. of Surgery, St. Vincent Hosp., Green Bay, Wis., 1959—. Mem.: Diplomate, Am. Bd. of Surgery; Fellow, Am. Coll.



of Surgeons; Assn. of Milit. Surgeons; Am. Soc. of Abdominal Surgeons; A.A.A.S.; Coun. on Cardiovascular Surgery of the Am. Heart Assn.; Phi Beta Pi. Serv. Rec.: U. S. Army, 1943-44, 1945-47, 1954-56. Areas of Rsch.: Venography in Relation to Surgical Problems, Operative Cholangiography, Carcinoma of the Thyroid Gland, Diverticulitis of the Colon, Intestinal Obstructions, Cardiac Rupture After Infarction, Effect of Morphine Addiction on Respiratory Enzymes.

THEODORIDES, Phrixos John (D.Sc.), Consulting Scientist; Prof. Emer., Nat. Techn. Univ., Athens, Greece; Cmdr. Royal Order Phoenix (Hellenic). Home Add.: 9906 Woodburn Rd., Silver Spring, Md. APPLIED MECHANICS, AEROPHYSICS, MAGNETISM. b. Serres (Greece), Oct. 9, 1892. s. Dr. John M. and Calypso (Emmanuel) T. Edn.: Maturitaet, Obere Realschule, Basel, 1911; M.M.E., 1917; D.Sc., 1921; Fed. Inst. Techn., Zuerich. c.: John. Exp.: Asst. Prof., Fed. Inst. Technol., Zurich, 1918-20; Prof. of Physics, Hellenic Univ., Smyrna, 1921-22; Prof. of Applied Mechanics, Univ. of Athens, Greece, 1923-46; Lectr., Aeron. Engrng. (Graduate Schl.), and Mem. Fac., Arts and Scis., Harvard Univ., 1946-51; Special Lectr., Mass. Inst. of Tech., 1947-49; Rsch. Physicist, U. S. Naval Ordnance Lab., Silver



Spring, Md., 1951-52; Rsch. Prof., Inst. Fluid Dynamics and Applied Math., Md. Univ., 1953-58; Consultant and Lectr., AGARD of NATO, Paris, 1955; Consultant, David Taylor Model Basin, Md., summer, 1958; Consultant Aerodynamics, Library of Cong., 1958-59. Hon. Pos.: Chmn., Div. Higher Technol. Edn., Greek Govt.; Dean Faculty Mech. and Elec. Engrng., Nat. Tech. Univ. of Athens; Charter Mem. and Pres., Hellenic Assn. for Studying and Testing Materials and Structures; Mem., Intern. Permanent Comm. for Testing Materials; Delegate United Nations on Natural Resources, 1949, etc. Mem.: Soc. Francaise Physique; Swiss Physical Soc.; Am. Physical Soc.; Inst. Aerospace Sci.; Royal Aeronaut. Soc., London; GAMM, Germany; SNG, Switzerland; WGL, Germany; A.A.A.S.; Athenian Club, Athens; Sigma Xi; Sci. Rsch. Soc. of Am.; Rotary Internatl.; Aero. Club of Wash.; Philos. Soc. of Wash. Author: Applied Mechanics, 1942; Research Reports; Fed. Lab. Test. Mat. and Rsch. Inst., Zurich, 1940; Internatl. Cong. of Applied Mechanics, 1956; Internatl. Cong. on Testing Materials, 1931 and 1937, etc. Contbr. to: C. R. Acad. Scis., Paris; Arch. Scis. Phys. et Natl.; Jour. Physique et Radium; Bull. Am. Physical Soc.; Helvetica Physica Acta; Zeitschrift Angew. Mathematik; u. Mechan.; Navord Reports; etc. Serv. Rec.: Royal Hellenic Army and Air Force, W.W. I, W.W. II. Gen. Int.: Atomic moments of magnetism by Rsch. in solid paramagnetics in function of temperature (Doct. Thesis, Zurich); Shock wave analysis in non-monatomic fluids, etc. Areas of Rsch.: Magenetism, Applied Mechanics, Aerophysics.

THEOBALD, Clement Walter (Ph.D.), Dir. of Rsch., E. I. duPont de Nemours, D-7012, Wilmington, Del. Home Add.: 108 Meriden Dr., Canterbury Hills, Hockessin, Del. ORGANIC CHEMISTRY. b. Lincoln, Nebr., Mar. 24, 1918. s. Clement F. and Eliza (Pollard T. Edn.: B.A., Univ. of Neb., 1939; M.A., ibid., 1940; Ph.D. Univ. of Ill., 1943. m. George Anna Lehr, May 2, 1936. c.: Shannon Jane; Mary Katherine; Joan Lehr. Exp.: Res. Chem., E. I. du Pont de Nemours, Chem. Dept., Wilmington, Del., 1943-51; Rsch. Supvr., E. I. duPont de Nemours, Chem. Dept., Wilmington, Del., 1951-53; Rsch. Mgr., ibid., Buffalo, N. Y., 1953-55; Lab. Dir., ibid., Yerkes Lab., Film Dept., 1955-57; Asst. Rsch. Dir., ibid., Wilmington, Del., 1957; Dir. of Rsch., ibid., 1957—. Mem.: Phi Beta Kappa; Sigma Xi; A.C.S.; A.A.A.S.; Alpha Xi Sigma; Phi Lambda Upsilon. Contbr. to: Jour. A.C.S. Areas of Rsch.: Polymer Chem.; Organic Synthesis.

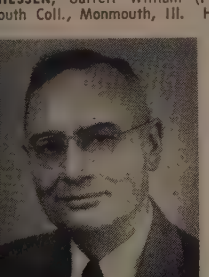
THIE, John Francis (D.C.), Nutritional Dir., Tpcs. Distr., 1198 No. Lake Ave., Pasadena, Calif. Home Add.: 1661 La Cresta Dr., Pasadena, Calif. MEDICINE-CHIROPRACTIC-NUTRITION. b. Detroit, Mich., Jan. 25, 1933. s. John C. and Mary (Butkiwich) T. Edn.: B.S., Univ. of So. Calif., 1954; D.C., Los Angeles Coll. of Chiropractic, 1957. m. Clara P. Wright, Dec., 1952. c.: John Francis, Jr.; Mari Lili. Exp.: Instr., Los Angeles Coll. of Chiropractic, 1954-55; Instr., So. Calif. Schl. of Nursing, 1953-54; Nutritional Dir., Tpcs. Distr., Pasadena, Calif., 1954—. Mem.: Natl. Con. of Phys. Therapy; Natl. Chiropractic Assn.; Am. Assn. for Adv. of Sci.; N.E.D.D. Found.; Sigma Alpha Epsilon; C. of C.; F. and A.M. Contbr. to: Natl. Chiropractic Assn.; Calif. Chiropractic Assn. Jour.; Healthways Mag. Areas of Rsch.: Iodine, Its Use in Nutrition—Nutrition and Its Relationship to Manipulative Therapy. Physical Therapy and Its Relationship to Nutrition.

THIENES, Clinton Hobart (M.D.), Dir. Emer., Inst. of Med. Rsch., Huntington Mem. Hosp., 734 Fairmount Ave., Pasadena 2, Calif. Home Add.: 2005 E. Skyview Dr., Altadena, Calif. PHARMACOLOGY AND TOXICOLOGY. b. Evansville, Ind., Aug. 9, 1896. s. William C. and Sarah Ann (Stinchfield) T. Edn.: A.B., Univ. of Ore., 1918; A.M., ibid., 1923; M.D., Univ. of Ore. Med. Schl., 1923; Ph.D., Stanford Univ., 1926. m. Ruth Susan Workman, June 20, 1923. c.: Arthur Howard; Paul E.; Geraldine May. Exp.: Asst. in Zool., Univ. of Ore., 1917-18; Instr. in Anatomy, ibid., 1919-22; Instr. in Pharmacol., ibid., 1922-25; Asst. Prof. of Pharmacol., ibid., 1926-29; Natl. Rsch. Council Fellow, Stanford Univ., 1925-26; Assoc. Prof. of Pharmacol., Univ. of Southern Calif., 1929-31; Prof. and Hd. of Dept. of Pharmacol., ibid., 1931-52; Dir., Inst. Med. Rsch., Huntington Memorial Hosp., Pasadena, Calif., 1952-62. Mem.: Am. Coll. Cardiol.; Am. Coll. Physicians; Am. Acad. Neurol.; Am. Acad. Forensic Scis.; L. A. Acad. Med.; N. Y. Acad. Sci.; Am. Indust. Hyg. Assn.; Am. Soc. Pharmacol. and Exptl. Therapeutics; A.A.A.S.; Soc. Exptl. Biol. and Med.; Los Angeles County Med. Assn.; Calif.

d. Assn.; A.M.A.; Indus. Med. Assn.; Los Angeles County
irt Assn.; Los Angeles Soc. Internal Med.; Psi Upsilon; Theta
ıpa Psi; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi.
hor: Field Manual in Toxicol. for Agril. Workers, 1938; Clin-
Toxicol., 1940; Fundamentals of Pharmacol., 1945. Contbr.
Proc. Soc. Exptl. Biol. and Med.; Jour. of Pharmacol. and
ıtl. Therapeutics; Arch. Internationales de Pharmacodynamie
de Therapie; Am. Jour. Physiol.; Arch. of Dermatol.; Jour. of
ectious Diseases, etc. Special Int.: Indus. Toxicol.; Chronic
otine Poisoning; Pharmacol. of Autonomic Drugs; Biochemistry
l Treatment of Multiple Sclerosis.

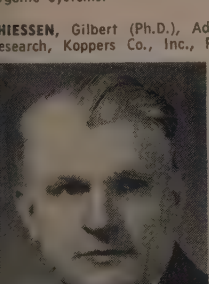
IES, Herman Roderick (Ph.D.), Gen. Mgr., Chem. Div., The
odyear Tire & Rubber Co., 1144 E. Market St., Akron 16,
io. Home Add.: 3794 Darrow Rd., Stow, Ohio. CHEMISTRY.
Peck, Kans., Sept. 27, 1895. s. Herman W. and Mary (Berry)
Edn.: A.B., Phillips Univ., 1917; M.S., Univ. of Chicago,
20. Hon. Deg.: Ph.D., Phillips Univ., 1958. m. Mildred W.
ss, June 24, 1923. c.: Lawrence P.; Patricia A. Exp.:
emist, Miller Rubber Co., Akron, Ohio, 1920-26; Asst. Dir.
Rsch., ibid., 1926-30; Rsch. Compounder, Goodyear Tire and
bber Co., 1930-32; Asst. Dir. of Rsch., ibid., 1932-43; Mgr.,
astics and Coatings Dept., ibid., 1943-44, 1945-48; Mgr., Chem.
., ibid., 1948-54; Gen. Mgr., Chem. Div., ibid., 1954—. Hon.
s.: Pres., Internatl. Inst. of Synthetic Rubber Producers, Inc.
em.: A.C.S.; Am. Inst. of Chem. Engrs.; Mfg. Chemists Assn.;
c. of Plastics Industry; Natl. Paint Varnish and Lacquer Assn.;
ternatl. Inst. of Synthetic Rubber Producers; University Club,
ron, Ohio. Contbr. to: Industrial and Engrng. Chem.; Paint,
l and Chem. Rev.; Rubber Age. Serv. Rec.: U. S. Army, 1917-
, 1944-45.

IIESSEN, Garrett William (Ph.D.), Chmn., Chem. Dept., Mon-
outh Coll., Monmouth, Ill. Home Add.: 408 N. 10th St., Mon-
mouth, Ill. ORGANIC ELECTRO-CHEMISTRY. b. Stanwood, Iowa, Jan. 9, 1902. s. William F. and Susan (Steiner) T. Edn.: A.B., Cornell Coll., 1924; M.S., Univ. of Ia., 1925; Ph.D., ibid., 1926. m. Isabel Davidson, July 10, 1940. Exp.: Instr., Chem.-Math., Geneva Coll., 1927-30; Prof., Chem., Monmouth Coll., 1930—; Chmn. Dept. Chem., Monmouth Coll., 1952—; Argonne Semester Chem. Tchr., Assoc. Colls. of Midwest, 1960-61. Hon. Pos.: Alt. Councilor Chmn., Ill.-Iowa Sect., Am. Chem. Soc.; Chmn., Electro-Organic Div., Electrochem. Soc.; Pres., Ill. Acad. Sci.; Fellow, A.A.A.S. Mem.: Am. Chem. Soc.; Am. Inst. Chem.; Electrochem. Soc.; A.A.A.S.; Ill. Acad. Sci.; Co-author: How to Solve Problems Contbr. to: Jour. Am. Chem. Soc.; Jour. Chem. Edn.; Trans. Ill. Acad. Sci.; The Sci. Tchr. Gen. at.: Recipient of Medal (1957) from Mfg. Chem. Assn., for Chem. chng. Areas of Rsch.: Kolbe Electrolysis; Conductivities of rganic Systems.



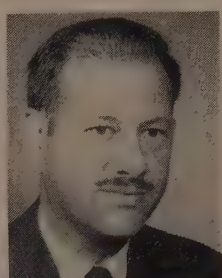
hi Beta Kappa; Sigma Xi. Physical Chemistry, 1944.

HIESSEN, Gilbert (Ph.D.), Admin. Asst. to Vice-Pres. and Dir. esearch, Koppers Co., Inc., Rsch. Dept., Box 128, Monroeville, Pa. Home Add.: 6401 Darlington Rd., Pittsburgh 17, Pa. CHEMISTRY—FUEL TECHNOLOGY. b. Kiel, Wis., Oct. 20, 1905. s. Reinhardt and Clara (Lindemann) T. Edn.: B.S., Univ. of Pittsburgh, 1925; Ph.D., ibid., 1930. m. Lucile Laun, June, 1931. c.: Clara Pauline; Doris Catherine; Julia; Lucile Ruth. Exp.: Analyst, U. S. Bureau of Mines, Intermittently, 1921-23; Grad. Asst., Univ. of Pittsburgh, Pa., 1926-29; Rsch. Chem., Am. Tar Prod. Co., Pittsburgh, Pa., 1929-31; Rsch. Chem., Ill. State Geological Survey, Urbana, Ill., 1931-37; Rsch. Chem., Tar Div., Koppers Co., Inc., Pittsburgh, Pa., 1937-42; Asst. Mgr. Devel., Tar and Chem. Div., ibid., 1942-46; Mgr. Devel., Chem. Div., ibid., 1946-48; Technical Adv., Chem. Div., ibid., 1948-50; ab. Sec. Mgr., Rsch. Dept., Pittsburgh, Pa., 1950-54; Tech. Asst. o Mgr., ibid., 1954-55; Asst. Mgr., ibid., 1955-58; Adm. Asst. o Dir. of Rsch. and Vice Pres., ibid., 1958—. Mem.: A.C.S.; .A.A.S.; Am. Inst. of Mining, Metallurgical and Petroleum ngrs.; Ill. State Acad. of Sci.; Am. Leather Chem. Assn.; ommercial Chem. Devel. Assn.; Pittsburgh Paint and Varnish rod. Club; Soc. of Chem. Industry; Alpha Chi Sigma; Phi ambda Upsilon; Sigma Xi. Contbr. to: Ind. Engr. Chem.; hemical Markets; Fuel in Sci. and Practice; Ill. State Acad. f Sci. Trans.; A.I.M.E. Tech. Pub.; Ind. Engr. Chem.; Ill. State eol. Survey; Ill. State Geol. Survey Bull.; Soc. of Plastics ngrs. Jour. Areas of Rsch.: Coal structure and constitution; echnology of tar products; technology of plastics.



iv., ibid., 1946-48;

THOMAS, Alan Toy (Mr.), Rsch. Assoc., Brown-Forman Distillers Corp., Louisville, Ky. Home Add.: 1525 Eskridge Ln., Louisville, Ky. b. May 15, 1921. s. Moses A. and Ruth (Lacefield) T. Edn.: B.Ch.E., Univ. of Louisville, 1943; M.S., ibid., 1947. m. Joycelyn Markert, Mar. 18, 1945. c.: Thomas D.; Tucker C. Exp.: Chemist, Brown-Forman Distillers, 1943-44; Apprentice Supervisor, ibid., 1944-45; Supervisor, ibid., 1945-54; Rsch. Engr. and Statistician, ibid., 1954-56; Rsch. Assoc., ibid., 1956-61; Project and Development Engineer, ibid., 1961—; Lectr. in Math., Univ. of Louisville, 1957-59. Mem.: Am. Chem. Soc.; Am. Soc. for Quality Control; Operations Rsch. Soc. of Am.; Am. Math. Soc.; Inst. Math. Stat.; A.A.A.S.; Sigma Pi Sigma. Contbr .to: Agricultural and Food Chemistry; Operations Rsch. Gen. Int.: Profl. Engr., State of Indiana. Areas of Rsch.: Ion Exchange; Chromatography; Design of Experiments; Operations Research.



THOMAS, Bernerd O. A. (Dr.), Periodontist, 668 Homer, Palo Alto, Calif. Home Add.: 250 Silvia Ct., Los Altos, Calif. PERIODONTOLOGY (CLINICAL ORAL PATHOLOGY). b. Hankinson, N. Dak., Dec. 14, 1912. s. George H. and Margaret E. (Thomas) T. Edn.: D.D.S., Univ. of Minn., 1935; B.A., ibid., 1936; M.S., ibid., 1939; D.D.S., Columbia Univ., 1940; Ph.D., ibid., 1946. m. Susan Mary Cederstrom, Nov. 3, 1935. c.: Judith Gaye; Leigh Elizabeth; Thomas Hugh; Richard Owen. Exp.: Intern, Minn. Gen. Hosp., Minneapolis, Minn., 1935-36; Fellow in Dent. Surgery, Mayo Fdn., Rochester, Minn., 1936-39; Instr., Dentistry, Columbia Univ., 1940-46; Prof. of Dentistry, Dept. Chmn., Univ. of Washington, 1946-56; Clin. Prof. of Periodontics, Coll. of Phys. and Surgeons, San Francisco, 1958—; Lectr. in Anatomy, Stanford Univ., Med. Schl., Palo Alto, 1958—. Hon. Pos.: Pres., Am. Acad. of Periodontol., 1961; Pres., Calif. Acad. Periodontol., 1962; Secy. Treas., Am. Bd. of Periodontol., 1958—. Mem.: Am. Assn. Adv. Sci.; Am. Acad. Periodontol.; Am. Acad. of Oral Pathol.; Internatl. Assn. for Dental Rsch.; Am. Assn. of Dental Schls.; Am. Acad. Gold Foil Operators; Psi Omega; Sigma Xi; Omicron Kappa Upsilon; Rotary Internatl.; Boy Scouts of Am. Contbig. Author: Oral Histology, 1945, 1948, 1952; Periodontics, 1960; Review of Dentistry, 1960. Contbr. to: Jour. of Am. Dental Assn.; Jour. of Comparative Neurology; Jour. of Dental Rsch.; Jour. of Periodontol. Serv. Rec.: U. S. Naval Reserve, 1953-55. Areas of Rsch.: Oral Histo-Pathology; Neuro-Anatomy; Oral Embryology; Dental Education.

THOMAS, David Tipton, (Ph.D.), Rsch. Assoc., Antenna Labs., and Asst. Prof., Ohio St. Univ., Columbus, Ohio. Home Add.: 3050 Derby, Columbus 21, Ohio. ELECTRONIC ENGINEERING, ELECTROMAGNETIC THEORY, SCATTERING OF ELECTROMAGNETIC WAVES. b. Barnesville, Ohio, Dec. 13, 1937. s. Louis W. and Mary E. (Tipton) T. Edn.: B.S. in E.E., Carnegie Inst. of Technol., 1959; M.S., Math., ibid., 1960; Ph.D., in E.E., Ohio State Univ., 1962. m. Linda Armstrong, June 19, 1960. Exp.: Grad. Tchng. Asst., Carnegie Tech., 1959-60; NSF Fellow, Ohio State Univ., 1960-61; Rsch. Assoc., Antenna Labs., ibid., 1961—. Mem.: Sigma Xi; I.R.E.; Tau Beta Pi; Phi Kappa Phi; Pi Mu Epsilon; Beta Theta Pi. Contbr. to: Jour. Geophys. Rsch. Gen. Int.: Modified Geometrical Optics Method for Scattering of Waves by Soft or Dielectric bodies. Areas of Rsch.: Scattering of Electromagnetic Waves; especially optical methods applied to plasma and dielectric bodies.

THOMAS, Clayton Lay (M.D.), Med. Dir., Tampax, Inc., Palmer, Mass. Home Add.: 791 Stony Hill Rd., Wilbraham, Mass. MEDICAL RESEARCH. b. Metropolis, Ill., Dec. 23, 1921. s. Robert and Birdie (Herring) T. Edn.: B.S., Univ. of Ky., 1944; M.D., Med. Coll. of Va., 1946; M.P.H., Harvard Univ. Schl. of Publ. Health, 1958. m. Margaret Gellner, Dec. 15, 1950. c.: Robert; Clayton; Wendy; Gwynne. Exp.: Intern, Montreal Gen. Hosp., Montreal, Can., 1946-47; Student, U. S. Naval Schl. of Aviation Med., 1950-51; Instr., U. S. Naval Schl. of Aviation Med., 1953-54; Asst. Resident in Med., Asst. Clin. Instr., Univ. of Utah Coll. of Med., 1954; Chf. Resident in Med., Clin. Instr., ibid., 1955; Clin. Asst. in Med., 2nd and 4th Harvard Med. Servs., Boston City Hospital, Rsch. Assoc., Mallory Inst. of

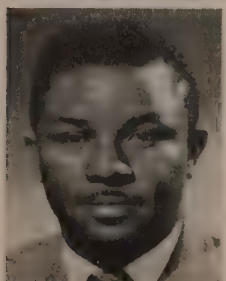
Pathol., 1956-57; Special Consultant, Flight Safety Foundation, N. Y. C., 1957; Rsch. Assoc., Cornell Univ. Med. Schl., 1961; Asst. Attending Obstetrician and Gynecologist, N. Y. Hosp., 1961, Hon. Pos.: Consultant, Parachutes, Inc. Mem.: Am. Coll. of Preventive Med.; Am. Publ. Health Assn.; Industrial Med. Assn.; Am. Assn. for Health Physical Edn. and Recreation; Acad. of Religion and Mental Health; Am. Coll. of Sports Med.; Assn. of Am. Med. Colls.; N. Y. Acad. of Scis.; Aerospace Med. Assn.; Internatl. Fertility Assn.; Am. Schl. Health Assn.; Mass. Med. Soc.; A.M.A.; Am. Soc. for the Study of Sterility; A.A.A.S.; Phi Chi. Contbr. to: Diabetes; Am. Jour. of Med. Scis. Serv. Rec.: U. S. Navy, 1943-54. Areas of Rsch.: Rsch. of Physiology of Reproduction, Including Menstruation; Sports Medicine; Aero space Medicine; Med. Ecology.

THOMAS, Edward Utley (Mr.), Engr., Electronics, Grumman Aircraft Engrng. Corp., Bethpage L. I., N. Y. Home Add.: Ridge Rd., Syosset, L. I., N. Y. ELECTROMECHANICAL RELAYS AND THEIR APPLICATION: CIRCUIT BREAKERS AND SWITCHES, AND CONTACTS. b. Pittsburgh, Pa. Feb. 3, 1912. s. Isaac Biddle and Elizabeth M. (Utley) T. Edn.: B.S., Yale Univ., 1935. m. Jean B. Landers, July, 1949. Exp.: Staff Electl. Engr., Specialties, Inc., Syosset, L. I., N. Y., 1944-58; Devel. Engr., Servo Corp. of America, Hicksville, L. I., N. Y., 1958-60; Engr., Grumman Aircraft Engrng. Corp., Bethpage, L. I., N. Y., 1960 –. Hon. Pos.: I.R.E. Banquet Comm., 1956; Mem. SAE A-2R Military Relay Comm. Contbrng. Editor: Electromechanical Design Mag.; Internatl. Comm. for Standardization of Switches, Electronic Industries Assn. Mem.: Am. Inst. Elec. Engrs.; I.R.E.; I.A.S.; I.S.A.; S.A.M.E.; Y.E.A.; A.A.A.S. Contbr. to: Proc. of Natl. Assn. of Relay Mfgrs., 1961. Serv. Rec.: Civilian Tech. Adv., 1941-44. Areas of Rsch.: Railway Signaling, Hot Box Detection, Relays, Circuits, Ship Degaussing, Aircraft Fire Control.

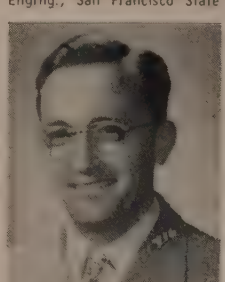
THOMAS, Elizabeth Flowers (Ph.D.), Assoc. Prof. of Clothing and Textile Rsch., Tex. Woman's Univ., Univ. Hill Stan., Denton, Tex. Home Add.: 601 Emory Dr., Denton, Tex. TEXTILE AND CLOTHING RESEARCH. b. Jacksboro, Tex., Feb. 21, 1907. d. Columbus Flowers and Mary Elizabeth (Bray) F. Edn.: B.S., Columbia Univ., 1933; M.S., Tex. Woman's Univ., 1952; Ph.D., ibid., 1955. m. Albert R. Thomas, June, 1932. c.: Albert R., Jr.; Jane Thomas Barton. Exp.: Prin., Lynn Pub. Schl., Muenster, Tex., 1928-30; Tchr., Postoak Pub. Schl., Postoak, Tex., 1930-32; Tchr., Chico Indep. Schl., Chico, Tex., 1943-48; Grad. Study, Tex. Woman's Univ., 1948-55; Prof., ibid., 1955 –. Hon. Pos.: Fellowship for Grad. Study from the Am. Viscose Corp. Mem.: Sigma Xi; Iota Sigma Pi; Delta Kappa Gamma; Phi Upsilon Omicron; Am. Assn. of Chemists and Colorists; The Fashion Grp. Contbr. to: Am. Dyestuff Reporter; Mod. Textiles Mag. Areas of Rsch.: Cotton Utilization and Research in Textile Finishing and Dyeing.

THOMAS, Frank Almerine, Jr. (Ph.D.), Dean of Engrng., Lamar St. Coll. of Technol., Beaumont, Tex. Home Add.: 5694 Azalea Dr., Beaumont, Tex. MECHANICAL ENGINEERING. b. Atlanta, Ga., Jan. 14, 1924. s. Frank Almerine and Lois (Hall) T. Edn.: B.S., Purdue Univ., 1947; M.S., Ga. Inst. of Technol., 1949; Ph.D., ibid., 1958. m. Dorothy Havens, June 8, 1947. c.: Sarah; Nancy; Frank A., III. Exp.: Industrial Hygienist, Ga. Dept. of Publ. Health, Atlanta, Ga., 1947-49; Industrial Hygienist, U. S. Atomic Energy Comm., N. Y. C., 1949-51; Instr., Ga. Inst. of Technol., 1951-54; Asst. Prof., ibid., 1954-58; Head, Dept. of Mechanical Engrng., Lamar St. Coll. of Technol., 1958 –; Dean, Schl. of Engrng., ibid., 1961 –. Hon. Pos.: Deacon, Vice-Chmn., Sabine Sect., A.S.M.E.; Region X Delegate and Secy., R.D.C., A.S.M.E. Mem.: Sigma Xi; T.S.P.E.; N.S.P.E.; A.S.E.E.; Pi Tau Sigma A.S.M.E.; Kappa Sigma. Contbr. to: Industrial Hygiene Jour. Serv. Rec.: U. S. Marine Corps, 1943-46. Areas of Rsch.: Thermodynamics, Heat Transfer, Transport Properties.

THOMAS, Freddie Levy, (Mr.), Rsch. Asst., Univ. of Rochester Schl of Med., Rochester, N. Y. Home Add.: 26 Skuse St., Rochester 5, N. Y. BIOLOGY. b. Norfolk, Va., Feb. 10, 1918. s. James Purnell and Hallie (Armstrong) T. Edn.: B.S., Wagner Coll., N. Y., 1950. m. Margaret C. Banks, Feb. 9, 1957. Exp.: Rsch. Technologist, Eastman Kodak, Rochester, N. Y., 1952-60; Rsch. Asst., Univ. of Rochester, 1961 –. Mem.: Am. Assn. Adv. Sci.; Univ. Archaeol. Soc. of Brigham Young Univ.; Soc. of Photographic Scientists and Engrs.; Tissue Culture Assn.; Assn. for the Study of Negro Life and History; Phi Sigma Kappa; Rochester C. of C. Gen. Int.: Former Editor, Rochester Peoples Weekly; Lectured widely in African and Aframerican Hist. Areas of Rsch.: Tissue Culture, Photographic Science, African History, Philosophies of the East (Buddhism, Hinduism, etc.), Cell Biology.

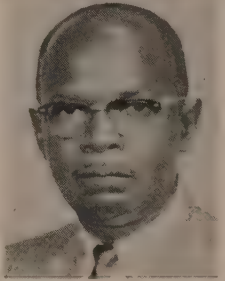


THOMAS, Gerald Andrew (Ph.D.), Chmn., Div. of Sci., Math. and Engrng., San Francisco State Coll., San Francisco, Calif. Home Add.: 410 Hillcrest Blvd., Millbrae, Calif. CHEMISTRY. b. Birmingham, Ala., Oct. 8, 1911. s. William A. and Amy (Richards) T. Edn.: B.S., Birmingham-Southern Coll., 1932; M.S., ibid., 1932; Ph.D., Univ. of Fla., 1952. m. Irvil Jones, 1940. c.: Julia Ann; Gerald; Floy; Lucy. Exp.: Tchr., Mortimer Jordan H. S., Morris Ala., 1932-33; Tchr., Woodlawn H. S., Birmingham, Ala., 1933-39; 1940-41; Rsch. Chem., Niagara Alkali Co., Niagara Falls, N. Y., 1941-45; Instr., Asst. Prof., Assoc. Prof., Univ. of Fla., 1946-57; Chmn., Div. of Sci., Math. and Engrng., San Francisco State Coll., 1957–. Hon. Pos.: Bus. Mgr. and Assoc. Editor, FLACS, 1948-57. Mem.: Sigma Xi; A.A.A.S.; Beta Beta Beta; Theta Chi Delta; Gamma Sigma Epsilon; Kappa Phi Kappa; Phi Kappa Phi; Alpha Chi Sigma; Alpha Phi Omega. Contbr. to: Jour. Am. Chem. Soc. Areas of Rsch.: Terpenes; Physical Properties and Chemical Structure; Nucleonics.



THOMAS, Harold E. (Ph.D.), Dir., Strawberry Inst. of Calif., Rt. 2, Box 458 Morgan Hill, Calif. PLANT PATHOLOGY, STRAWBERRY BREEDING. b. Watsonville, Calif., March 25, 1900. s. Joseph Henry and Myrtle (Burnside) T. Edn.: B.S., Univ. of Calif., 1924; Ph.D., ibid., 1928. m. Helene Diepen, June 24, 1934. c.: Donal Diepen; Darryl Leroy. Exp.: Jr. Pathologist, Univ. of Calif., Berkeley, 1927-30; Asst. Plant Pathologist, ibid., 1930-37; Assoc. Plant Pathologists, ibid., 1937-45; Asst. Prof. of Plant Pathol., ibid., 1939-45; Dir. and Plant Pathologist, Strawberry Inst. of Calif., Morgan Hill, Calif., 1945 –. Hon. Pos.: Pres., Cent. Santa Clara Valley Water Conservation Dist., 1950-54. Mem.: Am. Assn. Adv. Sci., Fellow; Am. Phytopathol. Soc.; Gamma Alpha; Lions Club. Contbr. to: Jour. of Agric. Rsch.; Phytopathol.; Hilgardia. Gen. Int.: Developed with Earl V. Goldsmith, most of strawberry varieties now used commercially in Calif. Areas of Rsch.: Horticulture and Diseases of Strawberries; Breeding Strawberries for Resistance to Disease and Market Adaptability.

THOMAS, Heriberto Victor (Mr.), Rsch. Assoc., St. Joseph Hospital, 501 So. Buena Vista Ave., Burbank, Calif. Home Add.: 372 W. Harriet St., Altadena, Calif. LIPID METABOLISM, INDOLE METABOLISM, BIOCHEMISTRY OF AGING PROCESS. b. Panama, R. de P., Mar. 17, 1917. s. Alberto E. and Sra. Dona Nena Beatricio J. de T. Edn.: Perito Mercantil, Natl. Inst. of Panama, 1938; A.B., Univ. of Sou. Calif., 1950; M.S., ibid., 1954. m. Orvella Bridges, Dec., 1950. c.: Fermin A. Exp.: Bookkeeper, Anglo Pacific Trading Co., Panama, R. de P., 1938-42; Asst. Purchasing Agent, Cerveceria Nacional, Panama, R. de P., 1942-46; Rsch. Fellow, Univ. of Sou. Calif., 1951-53; Rsch. Biochemist, ibid., 1955-61; Co-investigator, Dept. Exptl. Medicine, St. Joseph Hospital, Burbank, Calif., 1961– Mem.: Med. Rsch. Assoc. of Calif.; A.A.A.S.; Albertus Magnus Guild; Am. Chem. Soc. Contbr. to: Am. Jour. of Gastroenterology; New England Jour of Medicine; Jour. of Nutrition; Am. Jour. of Physiol.; Jour. Clinical Endocrinology & Met. Areas of Rsch.: Lipid Metabolism, Indole Metabolism, Biochemistry of Aging Process.



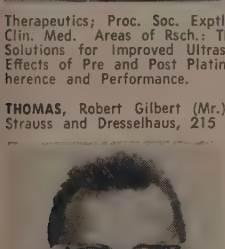
THOMAS, John Gordon (Mr.), Ext. Entomol., Tex. Agril. Ext. Serv., Coll. Sta., Tex. Home Add.: Rm. 105 Agr. Bldg., Texas Tech, Lubbock, Tex. ENTOMOLOGY. b. Pampa, Tex., Dec. 8 1936. s. John Wesley and Casie (Huckabee) T. Edn.: B.S., Entomol., Tex. A and M. Coll., 1959; B.S., Agr. Econs., ibid., 1961; M.S., Entomol., ibid., 1961. m. Janice Davis, June 6, 1959. Exp.: Com. Beekeeping, W. F. Gillespie (summer), Plainview, Tex., 1952, '53, '54; Lab. Asst., Entomol. Lab., Tex. A. and M. Coll. (part-time schl. employment), 1955-59; Rsch. Lab. Asst., Entomol. Dept., ibid., (summer), 1955, '56; Survey Entomol., Tex. Agri. Ext. (summer), 1957, '58; Ext. Entomol., ibid., 1960–. Hon. Pos.: Secy.-Treas., Entomol. Soc., 1957-58; Chronicler, Alpha Zeta, 1957-58; Chancellor, ibid., 1958-59; Tex. Delegate, Natl. Alpha Zeta Biennial Conclave, Lexington, Ky., 1958, Student Body Pres., Tex. A. and M. Coll., 1958-59; Vice Pres., ibid., 1957-58; Freshman Class Pres., Great Issues, Publicity Chmn.; Pres., A. and M. Chapter of Tex. Acad. of Sci.

ollegiate Acad., 1957-58; Class Agent (1959), Tex. A. and M. oll., State Pres., Tex. Acad. of Sci., Coll. Acad., 1958. Mem.: ntomol. Society of Am.; Southwestern Branch of the Entomol. ociety of Am.; Phi Eta Sigma; Phi Kappa Phi; Alpha eta; Am. Assn. Adv. of Sci. Contbr. to: Jour. of Econ. En- omol.; Sci.; Am. Bee Jour.; Am. Cotton Congress. Serv. Rec.: . S. Army, 1955. Gen. Int.: Recipient of Natl. War Memorial cholarship, Alpha Zeta Award for Grad. Work; Outstanding ophomore in Agriculture; Distinguished Student (8 semesters); irst Place Rsch. Paper, Tex. Acad. of Sci. Coll. Acad. Competi- ion, 1957; Selected Phi Kappa Phi; Phi Eta Sigma; Who's Who n Am. Colls. and Univs.; Recipient of Julia Ball Lee Scholar- hip (4-yrs.); Recipient of National Cotton Council Scholarship, 961-62. Areas of Rsch.: Effects of Weather on Honey Produc- ion; Biol. Comparisons of a Resistant and Susceptible Strain of oll Weevil; Studies in the Production on Royal Jelly.

'HOMAS, Joseph Calvin (Ed.D.), Asst. Prof. of Sci., Florence St. oll., Florence, Ala. Home Add.: 1614 Winston St., Florence, Ala. SCIENCE EDUCATION, PHYSICAL SCIENCE, CHEMISTRY (INORGANIC). b. Churubusco, Whitley Co., Ind., May 2, 1933. s. George William and Trilby M. (Miller) T. Edn.: A.B., Asbury Coll., 1954; M.A., Univ. of Ky., 1955; Ed.D., ibid., 1961. m. Elisabeth Johnson, June 11, 1955. c.: Brenda Louise. Exp.: Sci. Instr., Asbury Coll., 1955-59; Asst. Prof. of Sci., Florence St. Coll., 1961—. Mem.: A.C.S.; A.A.A.S.; A.A.U.P.; N.E.A.; Phi Delta Kappa; Kappa Delta Pi. Gen. Int.: Lctr., Physical Sci. for Natl. Sci. Fndn. Summer Insts. for Secd. Schl. Sci. Tchrs. Areas of Rsch.: Programs of Preparation for Secd. Schl. Sci. Tchrs.; Elem. Schl. Tchrs. in the Area of Sci.; Grad. Degrees in Sci. Edn.

THOMAS, Richard Waine (Mr.), Metallurgist, G. M. Diesel Equipment Div., 2100 Burlingame, Grand Rapids 1, Mich. Home Add.: 1314 Blanchard S.W., Grand Rapids 8, Mich. ULTRASONICS AND ELECTROPLATING. b. Olney, Ill., May 11, 1921. s. G. Waine and Mona N. (Edwards) T. Edn.: B.S., Coll. of William and Mary, 1943. m. Louise Van Norman, June 9, 1945 . c.: Sandra Sue; Kathleen Louise. Exp.: Asst. Rsch. Pharmacologist, Parke, Davis and Co., Detroit, 1943-52; Chf. Chemist, Continental Motors Milit. Div., Muskegon, Mich., 1952-55; Metallurgist, G.M. Diesel Equipment Div., Grand Rapids, 1955—. Mem.: Fellow, Am. Assn. Adv. Sci.; Mich. Acad. Sci.; Am. Soc. for Metals; Lambda Chi Alpha; Lambda Phi Sigma; etc. Contbr. to: Gen. Motors Engrng. Jour.; Jour. of Pharmacol. and Exptl. Therapeutics; Proc. Soc. Exptl. Biol. and Med.; Jour. Lab. and Clin. Med. Areas of Rsch.: The Development of Soil Compatible Solutions for Improved Ultrasonic Cleaning; The Study of the Effects of Pre and Post Plating Stresses on Chromium Plate Adherence and Performance.

THOMAS, Robert Gilbert (Mr.), Chf. Engrng. Geologist, Stetson, Strauss and Dresselhaus, 215 W. 7th St., Rm. 720, Los Angeles 14, Calif. Home Add.: 605 North Toland Ave., West Covina, Calif. GROUND WATER GEOLOGY AND ENGINEERING GEOLOGY. b. Elk Lick, Pa., Apr. 23, 1926. s. Thomas J. and Wanda K. (Backus) T. Edn.: B.S., Stanford Univ., 1949. m. Nora A. Ball, Oct. 1944. c.: Dana L. Exp.: Sr. Engrng. Geologist, Calif. Dept. Water Resources, Los Angeles, Calif., 1949-61; Chf. Engrng. Geologist, Stetson, Strauss & Dresselhaus, Inc., Los Angeles, Calif., 1961—. Hon. Pos.: Past Chmn., Los Angeles Sect., Calif. Assn. Engrng. Geologists. Mem.: Am. Geophysical Union; Geochemical Soc.; Sou. Calif. Acad. of Scis.; Calif. Assn. of Engrng. Geologists; Assn. of Computing Machinery; Music Theater Guild. Contbr. to: Am. Geophysical Union; Internatl. Assn. Scientific Hydrol.; Sou. Calif. Acad. of Scis. Serv. Rec.: U. S. Air Force, 1944-46. Areas of Rsch.: Pleistocene Geologic Problems of the Southwestern U. S. in Connection with Ground Water Investigations. Quantitative Solution of Ground water problems, especially using analog techniques.



THOMAS, Royle Price (Ph.D.), Agronomist, (Ret.) Internatl. Min. and Chem. Corp., Old Orchard Rd., Skokie, Ill. Home Add.: 3238 Park Pl., Evanston, Ill. SOIL CHEMISTRY AND FERTILIZER TECHNOLOGY. b. Sullivan, Ind., Sept. 26, 1897. s. John Moore and Eva (Price) T. Edn.: B.S., Univ. of Ill., 1919; M.S., Ia. St. Coll., 1925; Ph.D., Univ. of Wis., 1928. m. Florence Guthrie Koch, Mar. 31, 1923 . c.: Richard Lowell. Exp.: Asst., Soil Expt. Fields, Univ. of Ill., 1919-24; Grad. Fellow, Ia. St. Coll., 1924-25; Grad. Instr., Univ. of Wis., 1925-28; Assoc. Prof., Univ. of Md., 1928-37; Prof., ibid., 1937-51; Agronomist, internatl. Minerals & Chem. Corp., Skokie, Ill., 1951-62. Mem.: Sigma Xi; Gamma Sigma Delta; Gamma Alpha; A.A.A.S., Fellow; Am. Soc. of Agronomy; Soil Sci. Soc. of Am.; Chicago Farmers Club; Chicago Assn. Commerce and Industry. Contbr. to: Soil Sci.; Jour. Am. Soc. of Agronomy; Soil Sci. Soc. of Am. Proc.; Commercial Fertilizer. Areas of Rsch.: Soils, Fertilizers, Lawns.

THOMAS, Walter Ivan (Ph.D.), Assoc. Prof. of Agronomy, Pa. St. Univ., University Park, Pa. Home Add.: 523 Sunset Rd., University Park, Pa. PLANT BREEDING AND GENETICS. b. Elwood, Nebr., Mar. 27, 1919. s. Percy E. and Ethel (Major) T. Edn.: B.S., Ia. St. Univ., 1949; M.S., ibid., 1953; Ph.D., ibid., 1955. m. Margaret Thompson, Feb. 15, 1941. c: Linda Ann. Exp.: Assoc., Ia. St. Univ., 1950-55; Asst. Prof., ibid., 1956-58; Assoc. Prof., Pa. St. Univ., 1959—. Mem.: Am. Soc. of Agronomy; A.A.A.S.; Am. Inst. of Biological Scis.; Alpha Gamma Rho; Gamma Sigma Delta; Alpha Zeta; Sigma Xi; Phi Mu Alpha. Contbr. to: Agronomy Jour.; Crop Sci.; Food Technol. Serv. Rec.: U. S. Marine Corps, 1942-46, 1950-52. Areas of Rsch.: Inheritance of Cytoplasmic Male Sterility; Pollen Restoration; Prolificacy; Gametophyte Factor and Insect Resistance in Zea Mays.

THOMAS, Winfred (Ph.D.), Prof. of Agronomy, Ala. A. & M. Coll., Normal, Ala. Home Add.: 2300 Hammonds Ave., Huntsville, Ala. AGRONOMY. b. Geneva, Tex., June 6, 1920. s. Nugent W., Sr. and Vastie (Canton) T. Edn.: B.S., Prairie View Coll., 1943; M.S., Cornell Univ., 1947; Ph.D., Ohio St. Univ., 1954. m. Irene Montgomery, Aug. 2, 1943. c.: Carolyn Marie. Exp.: Instr. of Agronomy, Ala. A. & M. Coll., 1947-51; Rsch. Asst., Ohio Agric. Expt. Station, Wooster, Ohio, 1951-53; Prof. of Agronomy, Ala. A. & M. Coll., 1953—. Mem.: Am. Soc. of Agronomy; Soil Sci. Soc. of Am.; Crop Sci. Soc.; Frontiers Internatl. Contbr. to: Agronomy Jour. Serv. Rec.: U. S. Army Air Corp, 1943-46. Areas of Rsch.: Mineral Nutrition; Protein Relationships of Plants.

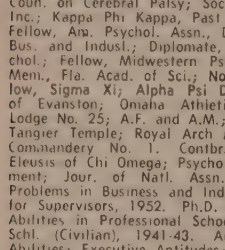
THOMAS-HAZELL, Joseph A. (Mr.), Scientist, P. O. Box 157 Zone 14, New York 14, N. Y. PSYCHIATRY AND CYBERNETICS. b. Denver, Colo., Apr. 2, 1923. s. Joseph A. and B. J. (White) Thomas-Hazell. Edn.: Univ. of Colo., 1947. Exp.: Scientist, N. . City 14, N. Y., 1958—; In Charge of Electronics, Dept. of Zool., Columbia Univ. and Barnard Coll., New York City 27, N. Y., 1959—; Asst. Supvr., Sci. Honors Program, Columbia Univ., 1960—. Mem.: A.A.A.S. Gen. Int.: 3 Original Papers Presented: Symposium on Psychosynthesis, Psychosynthesis V Intl. Congress for Psychotherapy, Vienna, 1961; 3-D Model of Total Personality III Intl. Congress of Psychiatry, Montreal, 1961; 3-D Model of Total Personality in Field, Vienna, 1961. Areas of Rsch.: Psychiatry and Cybernetics.

THOMASSON, Raymond Franklin (Mr.), Sr. Chem., Chicago, Ill. Home Add.: 211 Wyoming St., Charleston 2, W. Va. CHEMISTRY, BIOLOGY AND MEDICAL SCIENCES. b. Ansted, W. Va. s. Charles Leslie and Mary Margaret (Holley) T. Edn.: A.B., W. Va. Univ., Morgantown, W. Va., June, 1940; B.S., ibid., 1940. Exp.: Wright-Aeronautical Corp., Lockland, Ohio, 1940-41; U. S. Rubber Co., Indianapolis, Ind., 1945-47; Monsanto Chem. Co., Miamisburg, Ohio, 1947-53; Chicago and Northwestern Railroad, Chicago, Ill., 1953-57; Santa Fe Railroad, Chicago, Ill., 1957—. Mem.: A.I.C.; A.F.C.A.; A.A.A.S.; A.C.S.; Chicago Academy of Sci.; The Franklin Inst. of Pa.; W. Va. Acad. of Sci.; Ind. Acad. of Sci.; A.O.A.; A.S.TM Serv Rec.: Intelligence Corps. Areas of Rsch.: Metals, Fuels, Lubricants.

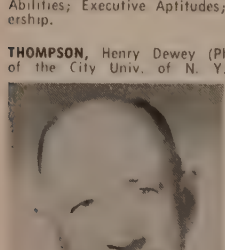
THOMPSON, Charles Eugene (Ph.D.), Acting Chief, Mental Hygiene Clinic, Chief, Clinic Psychology Service, Veterans Administration Regional Office, 1405 West Broadway, Louisville, Kentucky. Home Add.: 1171 Castlevale Dr., Louisville 17, Ky. CLINICAL PSYCHOLOGIST. b. Wash., D. C., Dec. 25, 1913. s. John Samuel and Mary (Foss) T. Edn.: B.A., Southwestern Mo. Univ., 1938; M.S., Univ. of Okla., 1939; Ph.D., Tulane Univ., 1949. m. Mary Winans, (div.) Aug. 11, 1941. c.: Phyllis Lynn; Donna Gayle. m. 2nd, Phyllis Connell Udlock, Aug. 11, 1960. c.: Richard Henderson; David Connell. Exp.: Mem., Texas Board of Health, 1941-42; Clinical Psychologist, Veterans Admin., N. Little Rock, Ark., 1947-61; Acting Chief, Mental Hygiene Clinic, Veterans Admin. Reg. Office, Louisville, Ky., 1961—; Chief, Clin. Psychol. Service, ibid., 1962—. Hon. Pos.: Pres., N. Little Rock Rotary Club, 1955-56; Mem., Bd. of Dirs., Am. Red Cross, Pulaski Co., Ark.; Chmn., Govs. Comm. for the Employment of the Handicapped, 1955-58; Mem., Pres. Comm. for the Employment of the Physically Handicapped, 1956-59. Mem.: Am. Psychol. Assn.; Pulaski Co. Med. Soc.; A.A.A.S.; Internatl. Cong. of Psychotechnol.; Am. Edn'l. Rsch. Assn. Contbr. to: Okla. Acad. of Sci.; Tex. Acad. of Sci.; Okla. Tchrs. Assn.; Am. Psychol. Assn.; Midwest Psychiatric Assn.; Am. Edn. Assn.; Ark. State Alcoholic Conv.; Louisville Psychol. Soc.; Ky. Psychol. Soc.; and others. Contbrng. Author: Thompson Modification Thematic Apperception Test, 1949; Psychosmatic Aspects of Dentistry, Therapeutic Treatment of Hospitalized Alcoholics. War Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Shaef Investigating Staff on Neuropsychiatric Disorders.

THOMPSON, Claude Edward (Ph.D.), Prof., Hd., Dept. of Psychol. and Sociol., Dir. of Testing and Counseling, Jacksonville Univ., Jacksonville 11, Fla. Home Add.: 3321 Cesery Blvd., Jacksonville 11, Fla. PSYCHOLOGY. b. Ford, Ky., Sept. 19, 1910. s. Clyde Ernest and Lulu Ann (Dawes) T. Edn.: B.A., Wittenberg Univ., 1934; M.A., ibid., 1936; Ph.D., Ohio State Univ., 1939. m. Harriet Marian Hicks, Sept. 18, 1937. d. Myrtle Hicks of Omaha, Neb. c.: Sandra Kathleen; Claudia Eleanor. Exp.: Psychologist, U. S. Pub. Health Serv., 1939-40; Asst. Prof., Northwestern Univ., 1940-45; Assoc. Prof., Assoc. Dir., Mich. State Univ., 1945-46 Consulting Psychol., Bakers Assocs., 1946-60, Trng. Dir., Montgomery War Staff Psychol., Booz, Allen and Hamilton, 1943-44, 1944-45; Prof., Dir. of Testing and Counseling, Jacksonville, Univ., Fla., 1960—; Hd., Dept. of Psychol. and Sociol., Jacksonville Univ., 1961—. Hon. Pos.: Comm. Chest; Coun. on Cerebral Palsy; Soc. for Crippled Children and Adults, Inc.; Kappa Phi Kappa, Past Pres.; Past Pres., Psi Chi. Mem.: Fellow, Am. Psychol. Assn., Div. of Clin. Counseling and Guid.; Bus. and Indust.; Diplomate, A.B.E.P.P. in Bus. and Indl. Psychol.; Fellow, Midwestern Psychol. Assn.; S. E. Psychol Assn.; Mem., Fla. Acad. of Sci.; Northeastern Fla. Psychol. Assn.; Fellow, Sigma Xi; Alpha Psi Delta; Delta Sigma Pi; Univ. Club of Evanston; Omaha Athletic Club; Engrs. Club; St. John's Lodge No. 25; A.F. and A.M.; 32nd Degree Mason; A.A.O.N.M.S.; Tangier Temple; Royal Arch Masons; Delta No. 60, Mt. Calvary Commandery No. 1. Contbr. to: Jour. of Applied Psychol.; Eleusis of Chi Omega; Psychol. Bull.; Edn. and Psychol. Measurement; Jour. of Natl. Assn. of Trng. Dirs. Author: Human Problems in Business and Industry, 1948; Personnel Management for Supervisors, 1952. Ph.D. Dissertation: Motor and Mechanical Abilities in Professional Schools. Serv. Rec.: U. S. Naval Trng. Schl. (Civilian), 1941-43. Areas of Rsch.: Nature of Human Abilities; Executive Aptitudes; Creativity; Group Dynamics; Leadership.

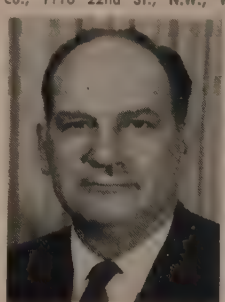
THOMPSON, Henry Dewey (Ph.D.), Prof. of Geol., Hunter Coll. of the City Univ. of N. Y., N. Y. 68, N. Y. Home Add.: Brodheadsville, Pa. GEOLOGY, GEOMORPHOLOGY AND STRUCTURE. b. Montebello, Nelson Co., Va., May 21, 1898. s. William Henry and Sarah Jane (Bartley) T. Edn.: A.B., Bridgewater Coll., Va., 1922; A.M., Columbia Univ., 1927; Ph.D., N. Y. Univ., 1935. Hon. Deg.: ScD., Bridgewater Coll., 1961. m. Pearle Cline, Sept. 1, 1923. c.: Effie Jeanne; William Henry; Frances May. Exp.: Tchr., Cowen H. S., Cowen, W. Va., 1922-24; Prin., ibid., 1924-28; Instr., Concord Coll., Summers, 1926, 1928; Instr., Geol., Hunter Coll., 1928-35; Asst. Prof., ibid., 1935-40; Assoc. Prof., ibid., 1940-55; Prof., Geol., ibid., 1955—; Chem., Dept. of Geol. and Geog., ibid., 1942-47. Hon. Pos.: Chmn., Sect. of Geol., N. Y. Acad. of Scis., 1947-48. Mem.: N. Y. Acad. of Scis., Life Mem.; Geol. Soc. Am., Fellow; A.A.A.S., Fellow; Sigma Xi. Author: Fundamentals of Earth Science, 1947; 1960. Contbr. to: Geol. Soc. Am. Bull.; Jour. of Geol.; N. Y. Acad. Scis., Annals and Transactions; Jour. of Geol. Edn. Serv. Rec.: Tchr. of Milit. Map Making, U. S. Army, Map Serv., 1942-44. Gen. Int.: Awarded the Kunz Medal by the N. Y. Acad. of Scis., 1949; 1958. Areas of Rsch.: Applachian Structure and Geomorphology. Photogrammetry and Air Photo Interpretation.



THOMPSON, James David (Ph.D.), Dir., AdmIn. Sci. Center, Univ. of Pittsburgh, Pittsburgh, Pa. Home Add.: 601 Clyde St., Pittsburgh 13, Pa. ADMINISTRATIVE SCIENCE; SOCIOLOGY. b. Indianapolis, Ind., Jan 11, 1920. s. Earl C. and Alta G. (Wilson) T. Edn.: B.S., Ind. Univ., 1941; M.A., ibid., 1947; Ph.D., Univ. of N. C., 1953. m. Mary L. Mettenbrink, Apr. 18, 1946. c.: Gregg R.; Janet C. Exp.: Asst. Prof. of Journalism, Univ. of Wis., 1947-49; Rsch. Supvr., Univ. of N .C., 1951-53; Rsch. Assoc., ibid., 1953-54; Asst. Prof. of Admin., Cornell Univ., 1954-56; Assoc. Prof. of Admin., ibid., 1956-57; Dir., Admin Sci Center, and Prof of Sociol., Univ. of Pittsburgh, 1957—. Mem.: Am. Sociol. Assn.; Am. Soc. Pub. Admin. Contbr. to: Founding Editor of Admin. Sci Quart.; Am. Sociol. Rev.; Am. Jour. of Sociol.; Social Forces; Journalism Quar. Serv. Rec.: U. S. Army, 1941-45. Areas of Rsch.: Administrative Science; Human Organization.



THOMPSON, John Irvin (Mr.), Pres., John I. Thompson and Co., 1118 22nd St., N.W., Washington 7, D. C. Home Add.: 2718 Olive Ave., N.W., Washington 7, D. C. ENGINEERING AND SCIENTIFIC ADMINISTRATION. b. Bellefonte, Pa., Jan 12, 1907. s. George Boal and Magdalene (Callaway) T. Edn.: C.E., Pa. St. Univ., 1925. m. Gwenyth Bruyere, 1927. c.: John I., Jr., Owen Bruyere; Daniel Bush. Exp.: Track Supvr., Central R.R. Co. of N. J., N. Y. C., 1925-30; Plant Engr., Bristol-Myers Co., Hillside, N. J., 1930-37; Chf., Campbell Soup Co., Camden, N. J., 1937-43; Instr., Wharton Schl., Univ. of Pa., 1939-42; Consultant, U. S. Navy Dept., Washington, D. C., 1940-45; Pres., Chf. Engr., John I. Thompson and Co., Washington, D. C., 1945—. Hon. Pos.: Chmn., Program Comm., Natl. Conference on the Administration of Rsch. Mem.: A.S.M.E.; I.F.T.; A.A.A.S.; S.A.M.E.; S.A.M.; A.S.M.; Centre Co. Historical Soc.; A.O.A.; N.S.P.E. Contbr. to: Food Technol.; Food Engrng.; Spice Mill; Factory; Food Rsch.; Mechanical Engrng. Areas of Rsch.: Military Arms and Organization; Corporate Mgmt.



THOMPSON, Lorin Andrew, Jr., (Ph.D.), Dir., Bureau of Population and Econ., Prof., Grad. Schl. of Bus. Admin., Monroe Hall, Univ. of Va., Charlottesville, Va. Home Add.: 1521 Oxford Rd., Charlottesville, Va. PSYCHOLOGY, DEMOGRAPHY. b. Greeley, Colo., Jan. 23, 1902. s. Lorin Andrew, Sr. and Annie Hertzog T. Edn.: B.A., Ohio St. Univ., 1923; M.A., ibid., 1924; Ph.D., ibid., 1927. m. 1st: Dorothy Wright, Jan. 26, 1924, (dec.). m. 2nd: Amelia Harney, Aug. 13, 1938. c.: Mrs. Margaret T. McNamara; Mrs. Joan T. Libby; William Oxley; Sylvia L.; Richard F.; Ellen Marie; Winifred Harney. Exp.: Asst. Prof., Assoc. Prof., Prof., Ohio Wesleyan Univ., 1927-34; Dir. of Rsch., Dir. Regnl. Dept. of Econ. Security, Cincinnati, Ohio, 1934-40; Dir., Population Study, Va. St. Planning Bd., Richmond, Va., 1940-44; Dir., Bur. of Population and Econ. Rsch., Univ. of Va., 1944—. Hon. Pos.: Pres., Am. Assn. of Univ. Burs. of Bus. and Econ. Rsch.; Bd. of Dirs., Population Assn. of Am.; Chmn., City Planning Comm., Charlottesville, Va. Mem.: Am. Statistical Assn.; Am. Econ. Assn.; A.A.A.S., Fellow; Sou. Econ. Assn.; Delta Upsilon; Rotary. Author: Interview Aids and Grade Questions for Employment Offices, 1935; Prospects and Trends in Unemployment Compensation, 1954. Contbrng. Author: The Urban South, 1953; Readings in Applied Psychology, 1953. Contbr. to: Social Forces; Jour. of Am. Statistical Assn.; Soc. Psychol.; Personnel Jour.; Income and Wealth; Natl. Bur. of Econ. Rsch. Areas of Rsch.: Demography, City and Regional Planning; Economic Analysis and Forecasting.

THOMPSON, Lucien "Luke" O. (Mr.), Independent Geologist, Box 652, Midland, Tex. Home Add.: 1501 W. Pecan, Midland, Tex. PETROLEUM GEOLOGY. b. Eau Claire, Wis., Sept. 10, 1916. s. Lucien O. and Ferne (Nicholes) T. Edn.: B.A., Univ. of Minn., 1938; M.A., ibid., 1939. m. Jeannette Moran, Apr. 27, 1940. c.: Christopher R.; William N.; James L.; Lucien O., III; Jeannette A.; Margaret E. Exp.: Area Geologist, Standard Oil Co., Midland, Tex., 1941-46; District Geologist, ibid., 1946-48; District Geologist, Slick Oil Co., Midland, Tex., 1948-50, District Geologist Heyser and Heard, Midland, Tex., 1950-51; Div. Geologist, Fairmont Petroleum Corp., Midland, Tex., 1953-58; Chf. Geol., ibid., 1958-60; Independent Geologist, Midland, Tex., 1960—. Mem.: A.A.A.S.; A.A.P.G.; W.T.G.S., Sigma Gamma Epsilon; G.S.A. Areas of Rsch.: Petroleum Exploration.

THOMPSON, Norman Ray (Ph.D.), Assoc. Prof. of Dairy Sci., Va. Poly. Inst., Blacksburg, Va. Home Add.: Blacksburg, Va. DAIRY SCIENCE (DAIRY CATTLE BREEDING). b. Hesperia, Mich., Nov. 11, 1912. s. Harvey R. and Jessie (Bunting) T. Edn.: B.S., Mich. State Coll., 1940; M.S., Univ. of Tenn., 1942; Ph.D., Mich. State Univ., 1955. m. Irene McCall, Feb 2, 1943. c.: Irene, David R.; James R., Ellenore A. Exp.: Fellow, Dairy Husbanding, Univ. of Tenn., 1941-42; Tchr. of Vocat. Agric., Rudyard, Mich., 1946-48; Asst. Prof., Dairy Husbandry, Va. Poly. Inst., 1948-53; Assoc. Prof., ibid., 1953—. Mem.: Am. Dairy Sci. Assn.; Am. Soc. of Animal Production; Biometric Soc.; Va. Acad. of Sci.; Am. Assn. Adv. of Sci.; Alpha Zeta; Sigma Xi. Contbr. to: Jour. of Dairy Sci., Jour. of Animal Sci., Biometrics; The Va. Jour. of Sci.; Internatl. Jour. of Abstracts (of) Statistical Theory and Method. Serv. Rec.: U. S. Navy, 1942-45. Areas of Rsch.: Dairy Cattle Breeding; Genetics of Populations; Physiology of Domestic Animals, Biometrical Techniques and Applications.

HOMPSON, Milton J(ohn), Prof.; Chmn., Dept. of Aero-Space ngr.; Assoc. Dir. Defense Rsch. Lab., Univ. of Tex., Austin

12, Tex. Home Add.: 205 McConnell Dr., Austin 4, Tex. AERO-SPACE ENGINEERING. b. Grand Rapids, Mich., July 28, 1904. s. Schuyler D. and Jennie (Albertson) T. Edn.: B.S.E., Aeronautical Engrng., Univ. of Mich., 1925; M.S.E., ibid., 1926; Sc.D., Aerodynamics, Warsaw (Poland) Poly. Inst., 1930. m. Helen B. Frank, Aug. 23, 1931. c.: Richard D.; Barbara J. Exp.: Instr., Engrng. Math., Univ. of Mich., 1926-28; Guggenheim Fellow, Aerodynamics, Warsaw Polytechnic Inst., 1928-30; Consultant, Expert Witness, Aerodynamic Problems, Lockheed Aircraft Corp., Burbank and Van Nuys, Calif.; Bell Aircraft Corp., Buffalo, N. Y.; Zenith Radio Corp., Wincharger Div., Sioux City, Ia. and Chicago, Ill.; Gen. Motors Corp., Fisher Body Div., Detroit, Mich., 1930—; Asst. Prof. of Aero. Engr., Univ. of Mich., 1930-37; Assoc. Prof., ibid., 1937-41; Prof. of Aeronautics, Dept. of Mechanical Engrng., Univ. of Tex., 1941-42; Prof., Chmn., Dept. of Aero. Engrng., ibid., 1942—; Supvr. of Aero. Group, Johns Hopkins Univ., Applied Physics Lab., 1945; Assoc. Dir.; Supvr. of Aeromechanics Div., Defense Rsch. Lab., Univ. of Tex., 1945—; Vice Pres., Honeman Assoc., Inc., Cons. Engrs., 1961—. Hon. Pos.: Panel on Target Drones, Research and Devel. Bd., Dept. of Defense; Panel on Drag, Comm. on Aeroballistics, Navy Bur. of Ordnance; Navy Bur. of Ordn. Bumblebee Aero. Panel and Wind Tunnel Schedule Evaluation Comm.; Aerodynamics and Ballistics Panel, Guided Missiles Comm., Joint Chfs. of Staff, 1945-46; Chmn., Panel on Drag, Bur. of Ordnance Comm. on Aeroballistics, 1953-56. Mem.: Soc. of Automative Engr.; Tex. Soc. of Professional Engrs.; Am. Soc. of Engrng. Edn.; Assoc. Fellow, Inst. of Aero-Space Scis.; Fellow, A.A.A.S.; Am. Soc. of Mechanical Engrs.; Am. Astro. Soc.; Am. Rocket Soc.; Sigma Xi; Tau Beta Pi; Sigma Gamma Tau; Exchange Club. Contbr. Author: Theory of Single Burbling, 1934 (with C. Witoszynski); Fluid Mechanics, 1937 (with R. A. Dodge). Contbr. to: Jour. Aero. Sci.; Prace Instytutu Aerodynamiczego Warszawa. Gen. Int.: Edn. and Rsch. in Aero-Space Engrng. Areas of Rsch.: Aero-Space Engrng.

THOMPSON, Quentin Elwyn (Ph.D.), Scientist, Rsch. Dept., Monsanto Chemical Co., 1700 S. Second St., St. Louis 77, Mo. Home Add.: 7405 Concordia Rd., Belleville, Ill. CHEMISTRY (ORGANIC). b. Woodstock, Ill., Oct. 20, 1924. s. Loren and Helen (Baker) T. Edn.: B.S., Bradley Univ., 1948; Ph.D., Univ. of Wis., 1951. m. Joyce Nelson, June, 1949. c.: Mark; Lloyd; Marian. Exp.: Rsch. Chemist, Monsanto Chemical Co., St. Louis, Mo., 1951-59; Scientist, ibid., 1959—. Mem.: Am. Chemical Soc.; Sigma Xi. Contbr. to: Jour. of Am. Chemical Soc.; Jour. of Organic Chemistry; Chemistry and Industry. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Ozone Chemistry, Organophosphorus and Organo Sulfur Chemistry, Organic Synthesis.

THORENSEN, Ragnar (Ph.D.), Tech. Dir., Magnavox Rsch. Labs., 2829 Maricopa St., Torrance, Calif. Home Add.: 152 Vista del Parque, Redondo Beach, Calif. COMMUNICATIONS AND COMPUTERS. b. Siglufjordur, Iceland, Feb. 5, 1921. s. Hinrik and Svanlaug (Arnason) T. Edn.: B.S.E.E., Univ. of Calif., 1943; M.A.E.E., Stanford Univ., 1945; Ph.D., ibid., 1949. m. Constance Allen, Jan. 9, 1942. c.: Hinrik O.; A. Sigrid; Kristen A.; Trygve H. Exp.: Tech. Staff, Gen. Elect. Electronics Labs., Syracuse, N. Y., 1949-51; Chief Engr., Digital Computer Sect., Natl. Bur. of Standards Inst. for Numerical Analysis, U.C.L.A., 1951-53; Tech. Dir., Magnavox Rsch. Labs., Torrance, Calif., 1953—. Hon. Pos.: Mgr., Joint Western Computer Conf., 1954; Various Comns., I.R.E. Prof. Group on Computers, 1953-55. Mem.: I.R.E.; A.I.E.E.; A.C.M.; A.A.A.S.; Sigma Xi. Contbrng. Author: Computer Handbook, 1962. Contbr. to: Proc. I.R.E.; Proc. Western Joint Computer Conf. Areas of Rsch.: Electronic Digital Computer Design; Original Research on High-Speed Magnetic and Electrostatic Memories; Digital Communications and Control, Including Work on Correlation Detection Techniques.

THOMS, Richard K. (Ph.D.), Mgr., Pharmacology, Toxicology and Control, Lloyd Bros., Inc., Cincinnati 29, Ohio. Home Add.: 269 Compton Rd., Cincinnati 15, Ohio. PHARMACOLOGY. b. Indianapolis, Ind., Dec. 16, 1921. s. Walter L. and Rosemary (Koerner) T. Edn.: B.S., Purdue Univ., 1943; M.S., ibid., 1945; Ph.D., ibid., 1948. m. Donna Davis, Feb. 26, 1945. c.: Michael; Steve; Dorothy; Peter. Exp.: Prof. of Pharmacol., N. D. State Coll., 1949-51; Prof. of Pharmacol., Univ. of Conn., 1951-60; Mgr., Pharmacol., Toxicol. and Control, Lloyd Bros., Inc., Cincinnati, Ohio, 1960—. Mem.: Am. Pharmacol. Assn.; A.A.A.S.; N. Y. Acad. of Sci.; Sigma Xi; Kappa Psi; Phi Lambda Upsilon Contbr. to: Jour. of Pharm. Scis.; Obstetrics and Gynecology; Anat. Rec.; Proc. Soc. of Exptl. Biol. and Med. Areas of Rsch.: Psychopharmacology.

THORESEN, Asa Clifford (Ph.D.), Asst. Prof. of Biol., Andrews Univ., Berrien Springs, Mich. Home Add.: 1407 Kephart Rd., Berrien Springs, Mich. ZOOLOGY WITH EMPHASIS IN ORNITHOLOGY. b. Blenheim, New Zealand, Sept. 9, 1930. s. Francis Olaf B. and Helen (Hagan) T. Edn.: B.A., Emmanuel Missionary Coll., 1954; M.A., Walla Walla Coll., 1958; Ph.D., Ore. State Univ., 1960. m. Shirley Avona Scarr, Aug. 31, 1952. c.: Davona Gae; Meylan Craig. Exp.: Tchng. Fellow, Ore. State Univ., 1957-60; Visiting Prof., Walla Walla Coll., 1960; Asst. Prof. of Biol., Andrews Univ., 1960—. Mem.: Am. Ornitholocal Union; Cooper Ornithological; Am. Soc. of Mammalogists; A.A.A.S.; Am. Museum of Natural History; A.I.B.S.; Phi Sigma; Sigma Xi. Contbr. to: Condor. Serv. Rec.: U. S. Army, 1954-56. Areas of Rsch.: Rsch. on the Bird Family, Alcidae.

THORNTON, Madeline Josephine (M.D.), Assoc. Prof., Obstetrics And Gynecology, 1300 Univ. Ave., Madison 6, Wis. Home Add.: 2718 Arbor Dr., Madison 5, Wis. MEDICINE-OBSTETRICS AND GYNECOLOGY. b. Schenectady, N. Y., Mar. 29, 1901. d. Joseph Thomas, Sr. and Evangeline (Reed) T. Edn.: A.B., Syracuse Univ., 1923; M.D., Johns Hopkins Med. Schl., 1927. Exp.: Resident House Officer, Obstetrics, Johns Hopkins Hosp., 1927-28; Intern, Med. Serv., Rsch. and Edn., Hosp., Chicago, Ill., 1928-29; Res., Obstetrics and Gynecology, Wis. Gen. Hosp., Madison, Wis., 1929-31; Instr., Obs. and Gyn., Univ. of Wis. Med. Schl., 1931-34; Asst. Prof., Obs. and Gyn., ibid., 1934-42; Assoc. Prof., Obs. and Gyn., Univ. Wis. Med. Schl., 1942—; Assoc. Obs. and Gyn., Univ. Hosp., 1942—; Diplomate, Am. Bd. Obs. and Gyn. Mem.: Sigma Xi; Am. Coll. Surgeons; Am. Coll. Obstetricians and Gynecologists; Central Assn. Obs. and Gyn.; N. Y. Acad. Scis.; Alpha Gamma Delta; Altrusa Internatl. Contbrng. Author: Physiology of Labor, 1933. Contbr. to: Am. Jour. Obs. and Gyn.; Jour. Am. Med. Assn.; Jour. of Clin. Investigation. Areas of Rsch.: Use of Vaginal Tampons; Tryptophane Metabolism in Pregnancy.

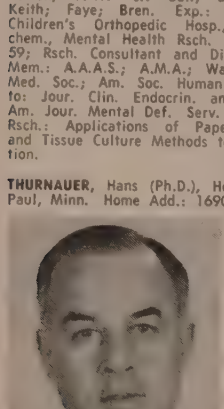
THUERING, George Lewis (Mr.), Prof. of Industrial Engrng. and Dir. of the Dept. of Mgmt. Engrng., Penn. St. Univ., University Park, Pa. Home Add.: 1167 Oneida St., State College, Pa. INDUSTRIAL ENGINEERING. b. Milwaukee, Wis., Sept. 2, 1919. s. Louis C. and Elsie (Luetzow) T. Edn.: B.S., Univ. of Wis., 1941; M.S., Penn. St. Univ., 1949; M.E., Univ. of Wis., 1954. m. Lillian M. Cline, Dec. 7, 1945. c.: Jean C. Exp.: Mfg. Engr., Lockheed Aircraft Corp., Burbank, Calif., 1941-47; Asst. Prof., Penn. St. Univ., 1947-51; Supvr., Lockheed Aircraft Corp., Marietta, Ga., 1951-52; Assoc. Prof., Pa. State Univ., 1952-56; Prof., Penn. St. Univ., 1956—. Mem.: Am. Soc. of Mech. Engrs.; Am. Soc. for Engrng. Edn.; Am. Inst. of Indust. Engrs.; Soc. for Adv. of Mgmt.; Alpha Pi Mu; Pi Tau Sigma. Contbr. to: Trans. Am. Soc. of Mech. Engrs.; Jour. Am. Soc. for Engrng. Edn.; Adv. Mgmt. Gen. Int.: Registered Prof. Engr., Pa. Areas of Rsch.: Industrial Engineering.

THROWER, Wendell Burton (M.D.), Asst. Prof., Med. Coll. of S. C., Charleston, S. C. Home Add.: 476 Maybank Highway, Charleston, S. C. THORACIC SURGERY. b. Ridgeville, S. C., July 29, 1926. s. W. J. Burton and Claire J. (Smith) T. Edn.: A.B., Duke Univ., 1947; M.D., Med. Coll. of S. C., 1951. m. Joan Snook, Apr. 25, 1953. c.: Mary Jeanne; Eden Wendell; Joan Anne. Exp.: Residency, Harvard (5th) Surg. Serv., Boston City Hosp., 1951-56; Fellow in Thoracic Surg., Peter B. Brigham Hosp., Rsch. Fellow, Harvard Med. Schl., 1956-58; Asst. Prof., Full-Time Staff, Thoracic Surgery, Med. Coll. of S. C., 1959—. Mem.: Am. Coll. of Surgeons; Internatl. Cardiovascular Soc.; Sou. Thoracic Surgical Assn.; Soc. for Vascular Surgery; Am. Assn. for Thoracic Surgery; Am. Coll. of Chest Physicians; Am. Soc. for Artificial Internal Organs; Southeastern Surgical Con-

gress; S. C. Surgical Soc.; S. C. Med. Assn.; Assn. of Am. Med. Colls. Contbr. to: Arch. of Int. Med.; Jour. of Thoracic Surgery; Jour. of A.M.A.; N. England Jour.; The Pharmacologist; Am. Jour. of Cardiol.; Surgery, Gynecol. and Obstetrics; Jour. S. C. Med. Assn.; Surgical Forum; Fed. Proc.; Circulation; Circulation Rsch.; Arch. of Surgery. Serv. Rec.: U. S. Maritime Serv. and Merchant Marine, 1944-46. Areas of Rsch.: Cardiovascular Surgery; Pharmacol. and Physiol.

THULINE, Horace Crockett (M.D.), Dir. of Labs., Rainier Schl., Buckley, Wash. Home Add.: 8205 104th St., S.W., Tacoma, Wash. MEDICAL RESEARCH. b. India, Aug. 18, 1922. s. Winfred N. and Evangeline (Crockett) T. Edn.: B.S., Seattle Pacific Coll., 1949; M.D., Univ. of Wash., 1953. m. Blanche Letson, 1941. c.: Gail; Dale; Mark; Lynn; Clare; Wade; Keith; Faye; Bren. Exp.: Asst. and Assoc. Dir. of Labs., Children's Orthopedic Hosp., Seattle, Wash., 1954-56; Biochem., Mental Health Rsch. Inst., Ft. Steilacoom, Wash., 1956-59; Rsch. Consultant and Dir. of Labs., Rainier Schl., 1959—. Mem.: A.A.A.S.; A.M.A.; Wash. State Med. Assn.; Pierce Co. Med. Soc.; Am. Soc. Human Genetics; Nu Sigma Nu. Contbr. to: Jour. Clin. Endocrin. and Metab.; Arch. Pediat.; Lancet; Am. Jour. Mental Def. Serv. Rec.: U.S.M.C., 1944-46. Areas of Rsch.: Applications of Paper Chromatography, Electrophoresis and Tissue Culture Methods to the Problems of Mental Retardation.

THURNAUER, Hans (Ph.D.), Head, Ceramic Dept., 3 M. Co., St. Paul, Minn. Home Add.: 1690 Bohland Ave., St. Paul 16, Minn.



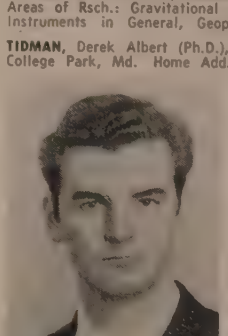
TECHNICAL CERAMICS. b. Nuremberg, Germany, June 11, 1908. s. Kuno and Lisa (Wolf) T. Edn.: Dipl. Ing., Techn. Univ. Berlin, 1931; M.Sc., Univ. of Ill., 1932; Ph.D., Techn. Univ. Berlin, 1958. m. Lotte Oettinger, 1935. c.: Peter; Dorothy; Marion. Exp.: Cer. Engr., Steatite Products, Stourport, England, 1932-35; Vice Pres., Dir., R., Am. Lava Corp., Chattanooga, Tenn., 1935-55; Ceramic Dept. Head, 3 M. Co., St. Paul, Minn., 1955—. Mem.: Am. Ceramic Soc., Fellow; Am. Chemical Soc.; A.A.A.S., Fellow, Keramos; Electrochemical Soc. Contbr. to: Jour. Electrochemical Soc.; Jour. Am. Ceramic Soc.; Ceramic Age; Ceramic Industry; Insulation. Areas of Rsch.: Technical Ceramics.

THURMAN, Ernestine Hogan Basham (Ph.D.), Exec. Secy., (Entomologist), Div. of Rsch. Grant, Natl. Insts. of Health, Bethesda 14, Md. Home Add.: 5617 Sonoma Rd., Bethesda 14, Md. MEDICAL ENTOMOLOGY: RESEARCH AND CONTROL OF VECTORS AND VECTOR-BORNE DISEASES (SPECIALITY—MOSQUITOES). b. Atkins, Ark., Mar. 7, 1920. d. Walton Cloud and Clara LaVanche (Lewis) H. Edn.: B.S., Coll. of Ozarks, 1944; Tulane Univ. Grad. Schl., 1944; Ph.D., Univ. of Md., 1958. m. Deed Cleveland Thurman, Jr., Apr. 18, 1948. Medical Entomologist, Sanitarian, Pub. Helt. Serv., (Lt. Commander), (dec.) Apr. 18, 1953. c.: Phyllis Lujane; Deed Cleveland, III. Exp.: Rsch. Asst., Tulane Univ., 1944; Entomologist, Malaria Control in War Areas and Communicable Disease Center, Public Health Service, Jacksonville, Fla., 1945-48; Entomol. in Chg., Identification Unit, Communicable Dis. Ctr., Public Health Serv., Bur. Vector Control, Berkeley, Calif., 1948-51; Entomol., Natl. Microbiol. Inst., Natl. Insts. of Health, Bethesda, Md., 1951; Com. Off., Pub. Health Serv., 1951—, Sr. Scientist (R) (Comdr.); Malaria Control Training Adviser, Div. Internatl. Health, Pub. Health Service, U. S. Operations Mission to Thailand (in Thailand) (Diplomatic rank of Attache), 1951-53; Entomol. and Special Consultant, Div. Internatl. Health, Pub. Health Service, USOM Thailand (in Washington, D. C.), 1953-54; Exec. Sec., Div. of Rsch. Grants, Natl. Insts. of Health, Pub. Health Service, Bethesda 14, Md., 1954—. Hon. Pos.: Science Advisor, National Cathedral Schl. for Girls, Washington, D. C.; Secy.-Treas., Calif. Chapt. of Am. Soc. Profl. Biologist, 1949-51; Chmn., Pub. Relations Com., Am. Mosquito Control Assn., 1954-56; Chmn., Good Neighbor Club, Am. Mosquito Control Assn., 1957—; Vice Pres., Phi Delta Gamma, 1958— (Sigma Chapter); Natl. Ext. Dir., 1960-62. Mem.: Wash. Acad. Sci.; Ent. Soc. Wash., Recording Secy., 1960-61; Ent. Soc. Am.; Am. Soc. Trop. Med. Hyg.; Trop. Med. Assn., Wash., D. C.; A.P.H.A.; A.A.A.S.; Am. Mosq. Control Assn., Recording Secy., 1960—; Rsch. Sci. Am.; Soc. Sys. Zool.; Am. Soc. Parasit.; Fla. Ent.; Wildlife Disease Assn.; Acad. Zool., India; Roy. Soc. Health, London; Siam Soc.; Sigma Delta Epsilon, National 1st Vice Pres., 1962; Phi Delta Gamma; Sigma Xi; Pi Kappa Delta, and Phi Kappa Phi; C.O.A.I., P.H.S. Contbr. to: Ann. Ent. Soc. Am.; Mosq. News; Proc. Ent. Soc. Wash.; Jour. Wash. Acad. Sci.; Jour. Parasit.; Fla. Ent.; Pan-Pac. Ent.; Proc. N. J. Mosq. Exter. Assn.; Am. Soc. Prof. Biol. News. Travel: England; Egypt; Saudi Arabia; India; Burma; Thailand; Japan; Can; Panama Gen. Int.: Recipien MacAnear Medal for Oratory, Coll. Ozarks, 1940; Alumni Achievement Award, 1959; Named Honorary Texas Citizen, 1960; Professional Woman of 1960, D. C. Federation of Bus. and Prof. Women. Areas of Rsch.: Jointly with the late Lt. Comdr. Dee C. Thurman, Jr., the first intensive investigation was made o the mosquito fauna of Northern Thailand in connection wit programs of control of mosquito-borne diseases in Southeas Asio. Comdr. Deed Thurman died in Thailand of malaria afte devoting ten years (two in Thailand) to the conthrol of malari and other vector-borne diseases. He had published extensivel making valuable contributions to the fiield of Medical Entomology Commander Ernestine B. Thurman continues the research.

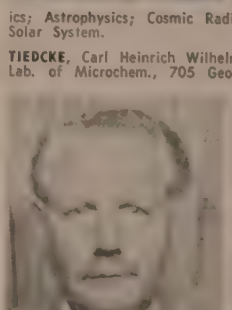
THYSSEN-BORNEMISZA, Stephen (Ph.D.), Independent Geoscientist 1937-25th Ave., S.W., Calgary, Can. Home Add.: Hotel Nacional De Cuba, Havana.

GEOPHYSICAL EXPLORATION AND INSTRUMENT BUILDING; DEVELOPMENT OF NEW METHODS IN GEOPHYSICAL EXPLORATION. b. Rechnitz, Austria, July 26, 1907. s. Henry and Margrit Thyssen-Bornemisza (de Kaszoni). Edn.: Ph.D., Univ. of Budapest, 1932. Exp.: Asst. Physicist, Wash. Univ. Schl. of Med., 1930-31; Prof. of Geophys., Univ. of Muenster, W. Germany, 1938-40; Independent Phys., Geophys. Consultant, Havana, Cuba, 1949-60; Chief Scientist and Managing Dir., Seismos Geophysical Co., Hanover, W. Germany, 1935-49; Independent Geoscientist, Havana, Miami, Calgary, Can., 1950—. Hon. Pos.: Hon. Citizen of the Hanover Tech. Inst. Mem.: A.A.A.S.; Soc. of Exploration Geophysicists; Am. Geophys. Union; Alberta Soc. of Petrol. Geol. Author: Unified System Concept., 1955; Von Wesen des Lebens und der Seele, 1948. Contbr. to: Geophysics; Jour. A.S.P.G.; Gerlands Beitr. Angew. Geophysik-Germany; Can. Oil and Gas Indus.; Jour. of Radiology; Jour. of Pharm.; Microtecnic; Annales de Geophysique; Product Engrng. Areas of Rsch.: Gravitational Instruments and Methods, Precision Instruments in General, Geophysical Exploration in General.

TIDMAN, Derek Albert (Ph.D.), Assoc. Prof., Univ. of Maryland, College Park, Md. Home Add.: 8020 Barron St., Takoma Park, Md. THEORETICAL PLASMA AND SPACE PHYSICS. b. London, England, Oct. 18, 1930. s. Albert Horace and Florence Violet (Oscar) T. Edn.: A.R.C.S., B.Sc., Royal Coll. of Sci., London Univ., 1952; Ph.D., D.I.C., ibid., 1955. m. Pauline Harrell, Apr. 28, 1959. c.: Katherine Susan. Exp.: Asst. Prof., Univ. of Chicago, 1957-60; Asst. Prof., Univ. of Md., 1960-61; Assoc. Prof., ibid., 1961—; Consultant, Natl. Aeronautics and Space Admin., Greenbelt, Md., 1962—. Mem. Am. Physical Soc.; Geophysical Union; Philosophical Soc. of Wash.; Sigma Xi. Contbr. to: Phys. Rev.; Physics of Fluids; Geophys. Jour.; Nuovo Cimento; Jour. of Nuclear Physics. Areas of Rsch.: Theoretical Plasma Physics; Astrophysics; Cosmic Radiation; Plasma Phenomena in the Solar System.



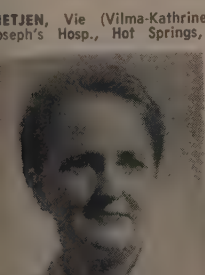
TIEDCKE, Carl Heinrich Wilhelm (Mr.), Founder and Dir. of the Lab. of Microchem., 705 George St., Teaneck, N. J. MICROCHEMISTRY; TOXICOLOGY; CRIMINOLOGY. b. Luebeck, Germany, Mar. 1, 1903. s. Christian and Eleonore (Lovensten) T. Edn.: D.Sc., Univ. of Hamburg, July, 1928. m. Lisa Becker, May 28, 1948. Exp.: Asst., Chem. Inst. of Univ. of Hamburg, 1928-31; Asst. Rsch. Inst. of Clin. Pharmacol., ibid., 1931-34; Hd. of Chem. Dept., Rsch. Inst. for Tuberculosis, ibid., 1934-37; Dir. of Lab. of Microchem., N. Y., 1937—; Consultant to the Rsch. Depts. of the U. S. Army, Navy and Air Force. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; N. Y. Acad. of Sci.; Austrian Microchem. Soc.; German Chem. Soc.; Pres., Literary Soc., N. Y. C., 1958-60; Dir. of Musicales of the Liederkranz Soc., N. Y. C., 1944-54. Contbr. to: Mikrochemie; Microchemica Acta; Jour. fuer Praktische Chemie; Zeitschrift fuer Lebens und Genussmittel; Klinische Wochenschrift; Industrial and Engrng. Chem. Areas of Rsch.: Application of Microchemical Methods to Organic and Inorganic Chemistry in General and Medicinal, Pharmaceutical, Dye, Oil and Rocket Fuel Chemistry in Particular. Iodine. Metabolism Studies; Chemical and Pharmacological Studies on the Constituents of Coffee and Tea. Studies on Vegetable Oils; Studies on the Composition of Tubercle Bacilli.



WELL, Herbert Collier (Ph.D.), Prof., Chmn., Biochem. Dept., ..y. of Tex., Southwestern Med. Schl., Dallas, Tex. Home ..: 4228 Stanhope, Dallas 5, Tex. BIOCHEMISTRY. b. Mexia, .., Sept. 30, 1897. s. John Minor and Eva (Collier) T. ..: A.B., M.A., Baylor Univ., 1919; Ph.D., Johns Hopkins ..y., 1930. m. Cogdell Suttle, Nov. 16, 1919. Exp.: Instr. ..Chem., Tex. A. and M., Coll. Sta., Tex., 1924-27; Asst. ..f. of Chem., Carnegie Inst. of Technol., 1928-30; Instr. ..Pediatrics (Rsch.), Johns Hopkins Univ., 1930-33; Instr. in ..chem., Duke Univ., 1935-36; Assoc. Prof. of Biochem. and ..icology, Wake Forest Coll. of Med. Sci., 1936-38; Prof. ..Biochem., Chmn., Biochem. Dept., Baylor Univ. Coll. of Med., ..8-43; Prof., Chmn., Biochem. Dept., Southwestern Med. ..l., Southwestern Med. Foundation, 1943-49; Prof., Chmn., ..chem. Dept., Univ. of Tex., 1949—. Mem.: A.C.S.; A.A.A.S., ..low; Am. Soc. of Biological Chemists; Soc. for Exptl. Biol. ..Med.; Am. Inst. of Nutrition; Am. Assn. of Clin. Chemists; ..: Acad. of Sci.; Sigma Xi; Phi Rho Sigma. Contbr. to: ..r. of Biological Chem.; Fed. Proc.; Jour. of Nutrition; ..troenterology; Proc. for Exptl. Biol. and Med.; Jour. of ..n. Nutrition; Am. Jour. Physiological. Serv. Rec.: S.A.T.C., ..18. Areas of Rsch.: Biochem.; Absorption, Metabolism and ..nsport of Lipids.

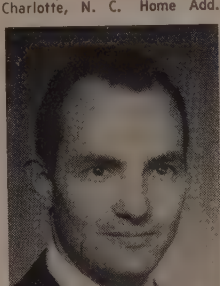
EDEMAN, Walter von Dohlen (Mr.), Special Consult., Natl. ..nitation Found., Schl. of Public Health, Univ. of Mich., Ann Arbor, Mich. Home Add.: 115 Lake Dr. East, Wayne, N. J. PUBLIC HEALTH ENGINEERING (Standards for Food Service Equipment). b. Brooklyn, N. Y., Apr. 23, 1891. s. John Albert and Antionette Marie (von Dohlen) T. Edn.: B.E., Union Coll., 1913; M.C.E., ibid., 1914. m. Edna Marie Komfort, Aug. 3, 1915. c.: Robert K.; David V.; Walter D., Jr.; E. Jean T. Fallon; Doris Anne T. Johnson. Exp.: Sanitary Bacteriologist, U. S. Pub. Health Service, Cincinnati, Ohio, 1915-17; Asst. Sanitary Engr., City Engrng. Dept., Cleveland, Ohio, 1917-18; Asst. Sanitary Engr., U. S. Public Health Service, Americus, Ga., 1918-20; City Engr. and Supt. Water, City of Americus, Ga., 1920-22; Special Staff Mem., Internatl. Health Bd., Rockefeller Found., Philippine Islands, 1922-24; Asst. Sanitarian to Dir. of Milk and Rest. San., N. Y. State Health Dept., Albany, N. Y., 1925-50; Res., Lecturer, Schl. Public Health, Univ. of Mich., Ann Arbor, Mich., 1950-59; Exec. Dir., Natl. Sanitation Found Testing Lab., Ann Arbor, Mich., 1950-59; Special Consult., ..id., 1959—. Mem.: A.A.A.S.; Am. Pub. Health Assn. The ..oyal Soc. of Health, London; Phi Gamma Delta; Sigma Xi; Delta ..mega. Contbrng. Author: Public Health Engineering, 1950; ..nerson's Administrative Medicine, 1950. Contbr. to: Jour. of ..ublic Health; Jour. of Milk and Food Technol. Gen. Int.: ..uthor of Motion Picture Film, Twixt the Cup and the Lip. ..reas of Rsch.: Microbiology of Milk and Food and Standardization of Food Service Equipment.

JETJEN, Vie (Vilma-Kathrine), Physical Therapy Director, St. ..oseph's Hosp., Hot Springs, Ark. Home Add.: Box 320 Hot Springs, Arkansas. PHYSICAL THERAPY; GUIDANCE AND PERSONNEL AND TEACHING. b. Milwaukee, Wis., Feb. 14, 1911. d. D. William and Minnie F. (Leiner) T. Edn.: B.A., Milwaukee-Downer Coll., 1934; M.A., Leland Stanford Jr. Univ., 1955; Cert. in Phys. Therapy, Stanford Univ., 1949; Diploma, Ward-Belmont Jr. Coll., 1931. Exp.: Jr. Physical Therapist, Tucson Med. Center, Tucson, Ariz., 1949-50; Dir. of Phys. Therapy, ibid., 1950; Phys. Therapist, Univ. of Mo. Hosps., Columbia, Mo., 1950-54; Jr. Phys. Therapist, Bethany Hosp., Kansas City, Kans., 1954-55; Physical Therapy Dir., St. Joseph's Hosp., Hot Springs, Ark., 1956—. Hon. Pos.: Pres., Ark. Chapt., Am. Phys. Therapy Assn., 1959-61. Mem.: Am. Phys. Therapy Assn.; Am. Registry of Phys. Therapists; Am. Assn. Adv. of Sci.; Am. Assn. Univ. Women. Serv. Rec.: Grad. of Army Air Forces Radio Instructors Schl., St. Louis Univ., 1943 (civ. status). Areas of Rsch.: Physical Therapy; Administration, Geriatric Program, Occupational Attitudes, Psychosomatic Aspects, Posture Programs in Schools.



TIEDJENS, Victor Alphons, Dir. of Rsch. and Vice Pres., Growers Chem. Corp., Milan, Ohio. Home Add.: 7 Newton St., Norwalk, Ohio. SOIL AND PLANT NUTRITION. b. June 13, 1895, Brillion, Wis. s. John and Anna C. (Nelesen) T. Edn.: B.S., Univ. of Wis., 1921; M.S., ibid., 1922; Rutgers Univ., Ph.D., 1932. m. Dorothy Janet Dopp, June 2, 1923. d. Frank E. and Lillian Dopp, Wild Rose, Wis. c.: Dorothy Loraine; Penelope Emily. Exp.: Lab. Asst., Univ. of Wis., 1919-23; Asst. Rsch. Prof. Veg. Gardening, Mass., 1923-29; Rsch. Fellow in Horti., Rutgers, 1929-32; Dir. of Rsch., Yoder Bros., 1932-34; Assoc. Prof. Veg. Gard., Rutgers, 1934-45; Dir., Va. Truck Expt. Sta., 1945-51; Dir. of Rsch., "Na Churs" Plant Food Co., 1951-55; Dir. of Rsch. and Vice Pres., Growers Chem. Corp., Milan, Ohio, 1955—. Hon Pos.: Dir., Sect. O.A.A.A.S., 1941-45; Vice Pres., ibid., 1951-52; Recd. Thomas Roland Award, Mass. Hort. Soc., 1953. Mem.: A.A.A.S.; Am. Chem. Soc.; A.S.H.A.; A.S. Pl. Phys.; Am. Soc. Agron.; Farm House; Delta Theta Sigma; Alpha Zeta; Sigma Xi; Phi Kappa Phi; Phi Sigma; Rotary; Knights of the Round Table. Author: Ency. of Veg. Garden., 1943; Chem. Garden. for the Amateur, 1939; A Practical Guide to Successful Farming, 1944; The Handy Book of Garden., 1950. Ph.D. Dissertation: Relationships of Ampholytes to Assimilation and Recovery of Ammonium and Nitrate Nitrogen in Plant Tissue. War Rec.: Ensign in Navy, W.W. I. Hobbies: Fishing; Golf. Listed in: W.W. in Am.; W.W. in East; W.W. in South and Southwest; Harvard Alumni Dir.; A.M.S.; Who Knows—and What; W.W.A.

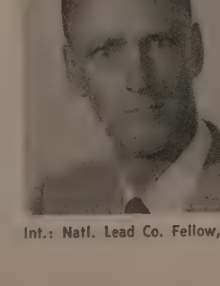
TILLETT, Charles Walter, III (M.D.), Physician, 1511 Scott Ave., Charlotte, N. C. Home Add.: 2200 Sherwood Ave., Charlotte, N. C. OPHTHALMOLOGY. b. Charlotte, N. C., Aug. 14, 1920. s. Charles W., II and Gladys (Avery) T. Edn.: A.B., Univ. of N. C., 1942; M.D., Johns Hopkins Med. Schl., 1946. m. Grace Montana, Aug. 9, 1952. c.: Charles W., IV; James Manson; Grace Montana. Exp.: Clin. Asst. Prof., Dept. of Ophthalmol., Univ. of N. C. Med. Schl. Mem.: Am. Acad. of Ophthal. and Otolaryngol.; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Am. Jour. of Ophthal. Visual Aids in Office Pract. Serv. Rec.: U. S. Army, 1947-49. Areas of Rsch.: Use of Optical Aids in Individuals with Subnormal Vision; Wound Ballistics Involving Eye Injury.



TILLEY, Ethel (Ph.D.), Prof. of Psychol. and Philosophy, Meredith Coll., Raleigh, N. C. Home Add.: 2715 Clark Ave., Raleigh, N. C. PSYCHOLOGY. b. Bellevue, Pa., Dec. 12, 1894. s. J. Frank and Dollie (Smashey) T. Edn.: A.B., Ohio Wesleyan Univ., 1922; M.A., Boston Univ., 1926; Ph.D., ibid., 1936. Exp.: Prof. of Psychol. and Dean of Women, Hastings Coll., 1937-43; Prof. of Psychol., Sullins Coll., 1944-46; Dean of Students, Greensboro Coll., 1946-48; Prof. of Psychol. and Philosophy, Brenau Coll., 1948-51; Prof. of Psychol. and Philosophy, Meredith Coll., 1951—. Hon. Pos.: Chmn., Coll. Sect., Natl. Assn. Deans of Women. Mem.: Am. Psychol. Assn.; A.A.A.S.; Sou. Soc. for Philosophy and Psychol.; Interam. Psychological Soc.; Internatl. Coun. of Psychologists; Am. Philosophical Assn.; Phi Beta Kappa; Pi Gamma Mu. Areas of Rsch.: Psychol. in Religious Edn. and Writing.

TILLMAN, Arthur George (Ph.D.), Retired, Prof. of Geol. and Geog., W. Ill. State Univ., Macomb, Ill. GEOGRAPHY. b. La Crosse, Wis., May 1, 1890. s. Philip and Elizabeth (Scharpf) T. m. Florence Whitbeck of Madison, Wis., Aug. 8, 1928. d. Nellie May Smith and Ray Hughes Whitbeck. c.: Clifford (dec.); Roderick; Elizabeth. Edn.: State Normal Schl., La Crosse, Wis., 1912; B.A., Univ. of Wis., 1917; M.A., Univ. of Wis., 1926; Ph.D., Univ. of Wis., 1928. Exp.: Hd. of Commercial Dept., Columbus, Wis., H. S., 1912-15; Hd. of Geog. Dept., Riverside H. S., Milwaukee, Wis., 1919-25; Asst., Dept. of Geog. and Geol., Univ. of Wis., 1925-28; Hd. of Dept. of Geol. and Geog., W. Ill. State Univ., 1928-57; Retired, ibid., 1957—. Mem.: Assn. of Am. Geog.; Natl. Geog. Soc.; Ill. State Acad. of Sci.; Ill. Geol. Soc.; Phi Sigma Epsilon; Natl. Coun. of Geog. Tchrs.; Kiwanis; Sigma Xi; Gamma Theta Upsilon; Gamma Alpha; Sigma Zeta; Tri-State Geol. Soc. Ph.D. Dissertation: Geog. of Miss. River Gorge from Winona, Minn., to La Crosse, Wis. Rschs. of Gen. Int.: Glacial Geol.; Meteorol. War Rec.: Army Y.M.C.A. Sect. in U.S.A., during part of W.W. I; and Med. Corps in A.E.F. Travel: U.S.A.; Can.; Alaska; Europe; Guatemala; Mex.; N.W. Africa. Hobbies: Photography; Travel; Astron.; Meteorol. Listed in: A.M.S.; W.W. in Ill.

TILTON, Robert Lansing (Mr.), Devel. Engr., Pittsburgh Plate Glass Co., Glass Rsch. Ctr., Harmarville, Pa., Dir., Allied Technol., Inc., Pittsburgh, Pa. Home Add.: 6 Davidford Dr., Wexford, Pa. CHEMICAL ENGINEERING. b. Toms River, N. J., June 17, 1919. s. Roy H. and Grace (Richtmeyer) T. Edn.: B.S., Lehigh Univ., 1941; M.S., ibid., 1948. m. Betty B. Barbour, June 30, 1956. c.: Keith R.; Lisa Mae. Exp.: Asst. Supt., Trojan Powder Co., Plum Brook Ordn. Wks., 1941-44; Sr. Rsch. Engr., Allied Chemical Corp., Hopewell, Va., 1948-54; R. and D. Engr., Callery Chemical Co., Callery, Pa., 1954-59; Devel. Engr., Pittsburgh Plate Glass Co., Pittsburgh, Pa., 1959—; Dir., Allied Technol., Inc., 1962—. Mem.: A.A.A.S.; Am. Inst. of Chemical Engrs.; Am. Chemical Soc. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: Natl. Lead Co. Fellow, Lehigh University, 1946-48. Areas of

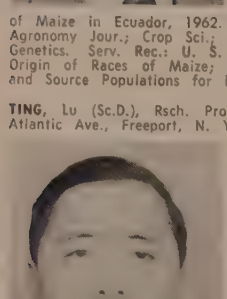


Rsch.: Heat Transfer; High Vacuum; High Pressure; Explosives; High Energy (Boron) Fuels.

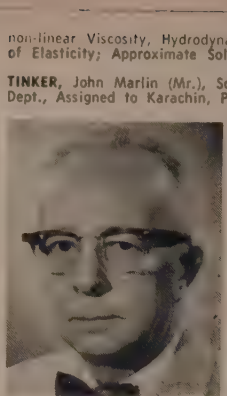
TILTON, Elvin Wayne (Mr.), Entomologist-In-Charge, Stored-Rice Insects Lab., Agricultural Mktng. Serv., U.S.D.A., P.O. Box 5035, Houston 12, Tex. Home Add.: 1002 Ruell, Houston, Tex. ENTOMOLOGY (STORED-PRODUCTS). b. Highland, Kans., Jan. 8, 1925. s. John and Hattie (Gibson) T. Edn.: B.S., Kans. State Univ., 1950; M.S., ibid., 1951. m. Geneva J. Sneed, June, 1950. c.: Rebecca Jeanne. Exp.: Instr., Kans. State Univ., 1951-54; Entomologist, Stored-Rice Insects Lab., Agricultural Mktng. Serv., U.S.D.A., Houston, Tex., 1956—. Mem.: A.A.A.S.; Entomological Soc. of Am. Contbr to: Jour of Econ. Entomol. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Stored-Products Entomol., Small-Grain Insects; Apiculture.

TIMOTHY, David Harry (Ph.D.), Assoc. Prof., Dept. Crop Sci., N. C. State Coll., Raleigh, N. C. Home Add.: 13 Furches St., Raleigh, N. C. GENETICS AND CYTOGENETICS. b. Pittsburgh, Pa., June 9, 1928. s. David Edgar and Harriett P. (Stein) T. Edn.: B.S., Pa. State Univ., 1953; M.S., ibid., 1955; Ph.D., Univ. of Minn., 1956. m. Marian C. Whiteley, Sept. 5, 1953. c.: Marjorie Jo; Marian Elisabeth. Exp.: Asst. Geneticist, The Rockefeller Round., Bogota, Colombia, S. Am., 1956-57; Assoc. Geneticist, ibid., 1958-61; Assoc. Prof., N. C. State Coll., Raleigh, N. C., 1961—. Mem.: A.A.A.S., Fellow; Am. Soc. of Agronomy; Sigma Xi; Gamma Sigma Delta; Gamma Alpha; Phi Epsilon Phi; Delta Tau Delta. Co-Author: Races of Maize in Bolivia, 1960; Races of Maize in Chile, 1961; Races of Maize in Ecuador, 1962. Contbr. to: Agricultural Tropical; Agronomy Jour.; Crop Sci.; N. C. Symposium on Quantitative Genetics. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Origin of Races of Maize; Modes of Gene Action; Heterosis and Source Populations for Its Utilization.

TING, Lu (Sc.D.), Rsch. Prof., Poly. Inst. of Brooklyn, 527 Atlantic Ave., Freeport, N. Y. Home Add.: 5 Dartmouth Dr., Plainview, N. Y. FLUID DYNAMICS. b. China, Apr. 18, 1925. s. K. Y. and Y. F. (Yao) T. Edn.: B.S., Chaio Tung Univ., China, 1946; S.M., Mass. Institute of Technol., 1948; M.S., Harvard Univ., 1949; Sc.D., N. Y. Univ., 1951. m. Alice Y. D. Pan, June 2, 1951. c. Luke; Diana; Mary. Exp.: Rsch. Assoc., N. Y. Univ., 1951-52; Spec. Design Engr., Foster Wheeler Corp., N. Y., 1952-55; Rsch. Assoc., Polytech. Inst. of Brooklyn, 1955-57; Rsch. Asst. Prof., ibid., 1957-58; Rsch. Assoc. Prof., ibid., 1958-60; Rsch. Prof., ibid., 1960—. Mem.: Soc. for Indust. and Applied Math.; Am. Phys. Soc.; Inst. of Aerospace Sci.; Sigma Xi. Contbr. to: Jour. of Aeronautical (Aerospace) Scis.; Jour. of Fluid Mechanics; Jour. of Math. and Physics; Aerospace Engrng. Quart. of Appl. Math.; ARS Jour.; Jour. of Applied Mechanics; Physics of Fluids; Astronautica Acta. Areas of Rsch.: Diffraction of shock waves and acoustic waves, Wing body interference in supersonic flow, Viscous flow, Deformation of thinshells, Dynamic and heat transfer problems in reentry trajectory, Optimum problems in power flight and in orbital transfer.



TING, Tsuan Wu (Ph.D.), Asst. Prof., Dept. of Engrng. Mechanics, Univ. of Tex., Austin, Tex. Home Add.: 1013 Ellingson Lane, Austin 5, Tex. PRINCIPLES OF CONTINUUM MECHANICS, LINEAR AND NON-LINEAR THEORY OF ELASTICITY, PLASTIC DEFORMATION, FLUID MECHANICS, THERMODYNAMICS. b. Anking, China, Oct. 10, 1922. s. Che Kao and Lu Bee (Liu) T. Edn.: B.S., China Natl. Central Univ., 1947; M.S., Univ. of R. I., 1956; A.M., Ind. Univ., 1959; Ph.D., ibid., 1960 m. Eutrice Yu Chu Liu, Oct. 12, 1957. c.: Pauline Carol. Exp.: Assoc. Engr., The 60th Arsenal, Formosa, China, 1947-53; Sr. Rsch. Mathematician, Gen. Motors Rsch. Labs., Warren, Mich., 1960-61; Asst. Prof., Dept. of Engrng. Mechanics, Univ. of Tex., 1961—. Mem.: Am. Mathematical Soc.; Mathematical Assn. of Am.; Phi Kappa Phi. Contbr. to: Physical Rev.; Jour. of Chemical Physics; Industrial and Engrng. Chemistry; Jour. of Math. and Mechanics; The Am. Mathematical Monthly; Arch. for Rational Mechanics and Analysis. Areas of Rsch.: Flow of Fluids with non-linear Viscosity, Hydrodynamic Lubrication, Non-linear Theo of Elasticity; Approximate Solutions of Boundary-value Problem



TINKER, John Marlin (Mr.), Scientific Attache, Foreign Serv., Dept., Assigned to Karachin, Parkistan, U. S. Embassy, APO 27 New York. Home Add.: 106 We 42nd St., Wilmington, Delawar ORGANIC CHEMISTRY. b. W quoketa, Iowa, Apr. 28, 1897. Frederick Seward and Hel Celeste (Goodenow) T. Edn.: B.S Univ. of Chicago, 1918. m. (1 W.) Janet Irene Casto (dec.), Ju 12, 1920. m. (2nd W.) Adela Louise Camerano, Apr. 24, 19 c.: Dr. John Frank; Dr. Dorot Jane McManus; Dr. Irene Celes Walker; Robert Frederick. Exp Rsch. Chemist, Newport Chem. C Carrollville, Wis., 1919-21; Che Chemist, ibid., 1921-34; Div. H DuPont Co., Jackson Lab., Wi mington, Del., 1934-38; Asst. Di ibid., 1938-43; Lab. Dir., Orche Rsch., ibid., 1943-62; Scientif Attache, Foreign Serv., St. Dept Karachi, Pakistan, 1962—. Mem.: Am. Association of Ad of Science; Am. Association of Textile Chem. and Colorist Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Inst. Chemists; Am. Phys. Soc.; Armed Forces Chem. Assn.; Chem Soc., London; Faraday Soc., London; Franklin Inst.; Soc. f Applied Spectroscopy; Soc. Chem. Industry, Am. Sect.; Soc. Dyers and Colorists; Tech. Assn. of the Pulp and Paper Industr Aircraft Owners and Pilots Assn.; DuPont Aero Club; DuPo Country Club; Wilmington Country Club; Wilmington Drama Leag Wilmington University and Whist Club; Mason. Contbrng. A thor: Hydrofluoric Acid as a Condensing Agent, 1939; (II) Nuclea Alkylations in the Presence of Hydrofluoric Acid, 1939; Reaction of 3 hexene, (I) Reactions with Sulfuric Acad, Halogens an Halogen Acids, 1939; (II) Condensations with Aromatic Hydra carbons and Phenols, 1939. Service Rec.: U. S. Air Force, 1918 19. Gen. Int.: Civilian with Atomic Energy Com.; Office o Scientific. and Dev., 1946.

TINKER, Miles Albert (Ph.D.), Consultant in Applied Psychology Santa Barbara, Calif. Home Add.: 991 Winther Way, P.O. Bo 3193, Santa Barbara, Calif. PSY CHOLOGY. b. Huntington, Mass. Aug. 22, 1893. s. Benjamin F and Katie (Hoag) T. Edn.: A.B Clark Univ., 1921; A.M., ibid 1922; Ph.D., Stanford Univ., 1927 m. (1) Eva Luella Carter, 192 (dec.), 1947; (2) Katherine Rank 1948. c.: Milton Elliott; Gordo Edwin; Karen Jane. Exp.: Tchng Fellow, Clark Univ., 1921-23 Tchng. Fellow, Stanford Univ 1925-1927; Instr. Edn., ibid. 1926; Asst. Prof., Psychology Univ. of Minn., 1927-1935; As soc. Prof., ibid., 1935-1942; Prof. ibid., 1942-1959; Consultant: Il lumination, Reading Difficulties Scientific Typography, 1959— Mem.: Fellow, Am. Psychol. Assn Mid-Western Psychol. Assn.; Natl Soc. Study Edn.; Internatl. Reading Assn.; Sigma Xi; Delt Delta Mu; Alpha Epsilon Upsilon. Author: Teaching Elementary Reading, 1952, 1962; Legibility of Print, 1962. Co-Author Experiments in Psychology, 1929; How to Make Type Readable 1940; Introduction to Methods in Experiment Psychology, 1958 Reading Difficulties, 1957. Contbr. to: Jour. Exptl. Psychol. Psychol. Rev.; Jour. Ednl. Psychol.; Am. Jour. Psychol.; Jour Gen. Psychol.; Jour. Genet. Psychol.; Am. Jour. Optom.; Jour Appl. Psychol.; Psychol. Bull.; Edn. War Rec.: U.S.N.R., 1918 Area. of Rsch.: Visual Preception; Hygiene of Illumination Scientific Typography; Eye Movements in Reading; Psychology in Teaching of Reading.

TINKLE, Donald Ward (Ph.D.), Assoc. Prof. Biol., Tex. Tech Coll Lubbock, Tex. Home Add.: 4805 42nd St., Lubbock, Tex VER TEBRATE ZOOLOGY, PARTICU LARLY THE POPULATION ECOLOGY OF REPTILES AND SYSTEMATICS OF REPTILES. b. Dallas, Tex. Dec. 3, 1930. s. Maurice W and Rubye Lucille (Still) T. Edn B.S., Sou Methodist Univ., 1952 M.S., Tulane Univ., 1955, Ph.D ibid., 1956. m. Marjorie A White, 1951. c.: Randall Troy Donna Lynn. Exp.: Asst. Prof W. Tex. State Coll., 1956-57 Assoc. Prof., Tex. Tech. Coll 1957—. Hon. Pos.: Ed., S.W Natrlst.; Bd. of Govnrs., Am. Soc Ichthyol. and Herpetol. Mem.: Am. Inst. Biol. Sci.; Ecol. Soc Am.; Am. Soc. Ichthyol. and Herpetol.; Herpetol. League; Ne therlands Herpetol. Soc.; Am Soc. Mammalog.; S.W. Assn Natrlsts.; Sigma Xi; Am. Assn. Univ. Profs.; Soc. Study Evol

ba Sigma. Contbr. to: Tulane Studs. in Zool.; Ecol.; eia; Am. Midl. Natrlst.; S.W. Natrlst. Areas of Rsch.: ulation Ecology of Reptiles; The Study of Evolution at the ulation Level Through Detailed Study of the Ecology and osystematics of Local Populations.

KLE, William John (Ph.D.), Prof., Anderson Coll., Anderson, Home Add.: Eaton, Ind. GENETICS. b. Grant Co., Ind., 20, 1892. s. John William and Mary (Miller) T. Edn.: , Manchester Coll., 1916; M.A., Ohio State Univ., 1927; D., ibid., 1932. m. Lula Rench, 1916. c.: Helen; David. .: Prof., Taylor Univ., 1932-39; Prof., LaVerne Coll., 1941- Prof., Taylor Univ., 1944-48; Prof. (Ret.), Anderson Coll., 6-58. Hon. Pos.: Chmn., Div. of History of Sci., Ind. d. of Sci. Mem.: A.A.A.S.; Am. Genetic Assn.; Ind. Acad. Sci.; Am. Scientific Affiliation. Author: Fundamentals of logy, 1939. Contbrng. Author: Science and Christian Faith, 9. Contbr. to: Jour. of Heredity; Proc. of Ind. Acad. of ; Jour. of Am. Scientific Affiliation; Schl. Sci. and Math. as of Rsch.: Human Heredity; Relationship of Sci. and istianity.

DALE, Wendell Holmes (Ph.D.), Retired, E. I. DuPont de mours and Co., Wilmington, Del. Home Add.: 915 Westover Rd., Wilmington, Dela. PLANT PATHOLOGY AND GENETICS, DEVELOPMENT OF PEST CONTROL CHEMICALS. b. Georgiana, Ala., Jan. 5, 1892. s. William Riley and Josephine L. (Higdon) T. Edn.: B.S., Ala. Poly. Inst., 1914; M.S., Univ. of Wis., 1915; Ph.D., ibid., 1917. m. Elizabeth E. Koch, 1920. c.: Glenn E.; Marilyn E. Exp.: Scientific Asst., U. S. Dept. of Agric., 1916-18; Assoc. Botanist and Bact. in Chg., N. C. State Univ., 1918-19; Plant Pathologist, U.S.D.A., 1919-26; Mgr. of Rsch. and Development of Pest Control Chemicals, E. I. DuPont Co., 1926-49; Technical Adviser, ibid., 1949-54. Mem.: Am. Assn. for Adv. of Sci.; A.I.B.S.; Nat. Agr. Chem. Assoc.; Am. Phyto-

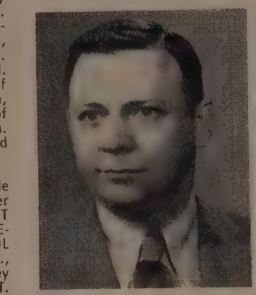
thological Soc.; Sigma Xi; Phi Sigma; Gamma Sigma Delta, n. Inst. of Biol. Sciences. Contbr. to: Phytopathology; Jour. gr. Rsch.; U.S.D.A. Farmers and Tech. Bulls. Areas of Rsch.: ecial Knowledge in Plant Diseases and Their Control Through rietal Resistance (of Host Plants); Relation of soil temp. to ant disease development. Hybridization of smut fungi changed ncept of infection of barley by loose smut fungus. Rice straight ad control. Development of Better Fungicides Insecticides and her Pest Control Products.

SLOW, Richard Frederick (M.D.), Chf. Pharmacologist, Wyeth bs., Inc., Rsch. and Devel. Div., Box 8299, Philadelphia 1, Pa. PHARMACOLOGY; PHYSIOLOGY. b. Czernowitz, Austria, Mar. 6 1906. s. Frederick T. Edn.: M.D., Univ. of Vienna, 1931; Dr. of Med. Sci., Univ. of Warsaw, 1936. m. Sybil Ray, June 29, 1946. Exp.: Asst., Dept. General and Exptl. Pathol., Univ. of Warsaw, 1934-36; Sr. Asst., ibid., 1936-38; Rsch. at Pharmacotherapeutic Lab., Univ. of Amsterdam, Netherlands, 1937-38; Asst., Johns Hopkins Univ. Med. Schl. and Johns Hopkins Hosp., 1939-40; Rsch. in Pharmacotherap. and Endocrinol. in the Dept. of Pediatrics and the Dept. of Embryol., Carnegie Inst. of Wash. in Baltimore, 1939-40; Postgrad. Rsch. Harvard Med. Schl., Dept. of Pharmacol., Boston, Mass., 1940-43; Assistant,

eter Bent Brigham Hosp., Boston, Mass., 1942-43; Dir. of Biol. sch. Labs., Schering Corp., Bloomfield, N. J., 1943-52; Chf. harmacologist, Wyeth Labs., Inc., Rsch. and Devel. Div. Internatl. harmacol. Meeting., Phila., Pa., 1953—. Mem.: Fellow, N. Y. cad. Sci.; Fellow, A.A.A.S.; Am. Physiol. Soc.; Am. Soc. for harmacol. and Exptl. Therapeutics; Soc. for Exptl. Biol. and Med.; Am. Cancer Soc.; Am. Chem. Soc.; The Endocrine Soc.; erman Pharmacol. Soc.; Swiss Soc. of Physiologists and harmacologists; The Internatl. Physiol. Congress. Contbr. to: bstracts, Internatl. Physiological Congress; Am. Jour. Physiol.; our. Pharmacol. Expt. Therap.; Endocrinol.; Federation Proc.; roc. Soc. Exptl. Biol. and Med.; Science. Gen. Int.: Studies n Corticotropic Hormone (ACTH), Antithyroid Drugs, 1940-43; ntihistaminic and other Pharmacotherapeutic Agents, 1943-53. pecial Int.: Pharmacotherapeutics.

TITTMAN, Jay (Ph.D.), Head, Nuclear Physics Sect., Rsch. Ctr., Schlumberger Well Surveying Corp., Ridgefield, Conn. Home Add.: 164 Southern Blvd., Danbury, Conn. NUCLEAR PHYSICS (NEUTRON AND GAMMA RAY PHYSICS). b. Bayonne, N. J., Dec. 28, 1922. s. Martin D. and Julia (Rosenblum) T. Edn.: B.A., Drew Univ., 1943; M.A., Columbia Univ., 1948; Ph.D., ibid., 1951. m. Eleanor Gelber, June 4, 1944. c.: Carol; Nancy; Barbara. Exp.: Rsch. Scientist, Govt. Contract Div., Columbia Univ., 1948-51; Assoc. Rsch. Physicist, Rsch. Physicist, Sect. Head, Rsch. Ctr., Schlumberger Well Surveying Corp., Ridgefield, Conn., 1951—. Mem.: Am. Physical Soc.; A.A.A.S.; Sigma Xi. Contbr. to: Physical Rev.; Revs. of Scientific Instruments; Jour. of Applied Physics; I.R.E. Trans. on Nuclear Sci. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Slow Neutron Physics; Gamma Ray and Neutron Transport; Neutron Inelastic and Capture Gamma Rays; Scintillation Spectroscopy; Nuclear Instrumentation.

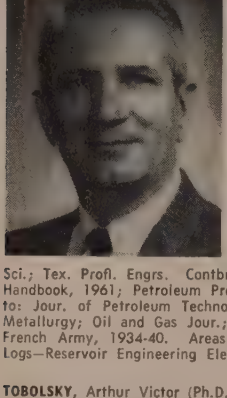
TITIEV, Mischa (Ph.D.), Prof. of Anthropol., The Univ. of Mich., Ann Arbor, Mich. Home Add.: 910 Heather Way, Ann Arbor, Mich. CULTURAL ANTHROPOLOGY. b. Kremenchug, Russia, Sept. 11, 1901. s. Jacob and Rose (Ornstein) T. Edn.: A.B., Harvard Univ., 1923; A.M., ibid., 1924; Ph.D., ibid., 1935. m. Estelle Berman, Aug. 12 1935. Exp.: Natl. Park Serv., 1935; Summer Asst. in Anthropol., Harvard Univ., 1936; Instr. in Anthropol., The Univ. of Mich., 1936-39; Asst. Prof. of Anthropol., ibid., 1939-44; Assoc. Prof. of Anthropol., ibid., 1944-51; Prof., ibid., 1951—. Hon. Pos.: Fellowship, Lab. of Anthropol., 1932; Grant-in-aid, Soc. Sci. Rsch. Coun., 1951; Fulbright to Australian Natl. Univ., 1954. Mem.: Am. Anthropol. Assn.; A.A.A.S.; Am. Ethnol. Soc.; Am. Soc. for Phys. Anthropol.; Archaeological Inst. of Am.; Am. Inst. of Pacific Relations; Soc. for Asian Studies; Phi Kappa Phi; Sigma Xi; Citizen's Coun. of Ann Arbor. Author: Old Oraibi, 1944; The Science of Man, 1954; Intro. to Cultural Anthropology, 1959. Contbr. to: Am. Anthropologist; Jour. of Am. Folklore; Scientific Monthly; Mich. Acad. of Sci., Arts, and Letters; Museum Notes, Museum of Northern Ariz. Gen. Int.: Field Trips to Hopi Indians of Ariz.; Field Trip to Araucanian Indians of Chile; Field Trip to Japanese Settlers of Peru; Dir. of Field Station, Univ. of Michigan's Center for Japanese Studies, Okayama, Japan. Areas of Rsch.: Hopi Indian Culture; Culture of Rural Japan.



TITUS, Harry W(altner) (Ph.D.), Technical Counselor, Dir. of Rsch., Lime Crest Rsch. Lab., R.D. 1, Box 192, Newton, N. J. Home Add.: Lakeview and Maple Aves., Andover N. J. ANIMAL NUTRITION. b. Laramie, Wyo., Mar. 30, 1896. s. Edward DeWillow and Emma Elizabeth (Waltner) T. Edn.: A.B., The Univ. of Wyo., 1918; A.M., ibid., 1925; Ph.D., George Washington Univ., 1931. m. Annie Laurie Greene, 1923. c.: Harry Edwin. Exp.: Assoc. Prof., Animal Nutrition, Nutrition Chemist, N. M. Coll. of Agri. and Mechanical Arts, 1921-26; Assoc. Biochemist, Biochemist, Sr. Biochemist, Bur. of Animal Ind., U.S.D.A. Beltsville, Md., 1926-43; Head, Feed Specialties Div., War Food Adm., Wash., D. C., 1943-44; Technical Counselor, Dir. of Rsch., Lime Crest Rsch. Lab., Newton, N. J., 1944—. Mem.: Am. Inst. of Nutrition; Am. Soc. of Biological Chemists; Am. Chemical Soc.; Soc. for Exptl. Biol. and Med.; Poultry Sci. Assn.; Am. Soc. for Animal Production; Am. Dairy Sci. Assn.; Soc. for Applied Spectroscopy; Animal Nutrition Rsch. Coun.; Wash. Acad. of Scis.; N. Y. Acad. of Scis.; World's Poultry Sci. Assn.; A.A.A.S.; Rotary. Author: The Scientific Feeding of Chickens, 1941, '49, '56, '61; Some Applications of the Equation of the Curve of Dimishing Increment in Animal Nutrition, 1959. Contbr. to: Poultry Sci.; Proc. of the Soc. for Exptl. Biol. and Med.; Jour. of Nutrition. Areas of Rsch.: Animal Nutrition, Especially Poultry Nutrition; The Trace Elements, Digestibility, Metabolizable Energy.

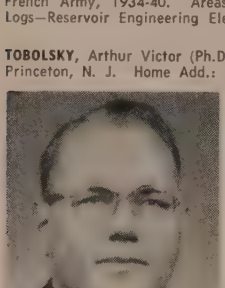
TITUS, Harvey Lind (Mr.), Pres., Carbon Black Export, Inc., 420 Lexington Ave., N. Y. 17, N. Y. Home Add.: 48 Diamond Crest Lane, Stamford, Conn. b. Cambridge, Mass., May 30 1908. s. Harvey O. and Daisy (Adams) T. Edn.: A.B., Harvard Coll., 1928; LL.B., Boston Coll. Law Schl., 1936. m. Beverly Clatur, Jan. 24, 1948. c.: Jonathan; Timothy Robert; Meredith Anne; Martha Permittie. Exp.: Asst. to Exec. Vice Pres., Cabot Corp., Boston, 1936-40; Asst. Gen. Mgr., ibid., 1940-41; Dir. of Food Tech., ibid., 1941-43; Vice-Pres., Valley Vitamins, Inc. McAllen, Tex., 1943-45; Pres., Carbon Black Export, Inc., N. Y., 1946—; Vice-Pres., BBT Corp.; Vice Pres., Bauma Air Corp., N. Y.; Vice-Pres., August Sauter of Am., Inc., N. Y. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Inst. Food Tech.; Am. Bar. Assn.; Bar. Assn. of City of Boston; Bar Assn., City of New York; Harvard Club of New York; Traffic Club of N. Y.; Chems. Club of N. Y. Contbr. to: Proc. Soc. for Exptl. Biol. and Med.

TIXIER, Maurice Pierre (Mr.), Mgr. of Field Interpretation, Box 2175, Houston, Tex. Home Add.: 2319 Bolsover, Houston 5, Tex.



WELL LOGS—ELECTRICAL, NUCLEAR, SONIC LOGS. b. Clermont Ferrant, France, Feb. 1, 1913. s. Lambert and Clementine (Baconnet) T. Edn.: Engr., Diploma, Ecole d'Arts and Metiers, Erquelinnes, Belgium, 1932; Engr. Diploma, Ecole Superieure d'Electricite, Paris, France, 1933. m. Allene Kaderli, 1939. c.: Linda Suzanne; Annette Louise. Exp.: District Mgr., Schlumberger Well Surv. Corp., Midland, Tex., 1935-39; Area Mgr., ibid., Casper, Wyo. and Denver, Colo., 1941-49; Mgr. of Interpretation, ibid., Houston, Tex., 1949—. Mem.: A.I.M.E.; A.A.P.G.; Am. Geophysical Union; A.A.A.S.; A.P.I.; S.E.G.; Houston Geological Soc.; Soc. of Profl. Well Log Analysts.; Tex. Acad. of Sci.; Tex. Profl. Engrs. Contbrng. Author: Petroleum Exploration Handbook, 1961; Petroleum Production Handbook, 1962. Contbr. to: Jour. of Petroleum Technol.; Canadian Inst. of Mining and Metallurgy; Oil and Gas Jour.; Am. Petroleum Inst. Serv. Rec.: French Army, 1934-40. Areas of Rsch.: Interpretation of Well Logs—Reservoir Engineering Electrochemistry.

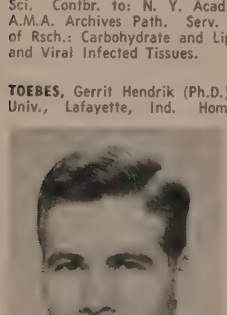
TOBOLSKY, Arthur Victor (Ph.D.), Prof. of Chem., Princeton Univ., Princeton, N. J. Home Add.: 191 Snowden Lane, Princeton, N. J.



POLYMER CHEMISTRY; PHYSICAL CHEMISTRY. b. N.Y.C., May 16, 1919. s. William H. and Ruth (Lemanowitz) T. Edn.: A.B., Columbia, 1940; Ph.D., Princeton, 1944. m. Dorothy Epstein, Jan. 18, 1943. c.: Margo; William; Steven. Exp.: Prof. of Chem., Princeton, 1944—. Hon. Pos.: Assoc. Editor, Am. Scientist; Assoc. Editor, Jour. of Polymer Sci. Mem.: Sigma Xi. Author: Physical Chemistry of High Polymers, 1950; Organic Peroxides, 1954; Properties and Structure of Polymers, 1960. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Chem. Phys.; Jour. of Polymer Sci. Areas of Rsch.: Relation Between Structure and Properties of Polymers; Mechanism of Polymerization.

TODD, William McClintock (Ph.D.), Asst. Prof., Microbiology, Univ. Miss. Schl. Med., Jackson, Miss. Home Add.: 5158 Ridgewood Rd., Jackson, Miss. MICROBIOLOGY; BIOCHEMISTRY OF VIRAL INFECTIONS. b. Colon, Republic de Panama, July 17, 1925. s. William McClintock and Martha (Deaton) T. Edn.: B.S., Univ. Ga., 1950; M.S., Vanderbilt Univ., 1955; Ph.D., ibid., 1957; U.S.P.H.S. Post-doctoral, Biochemistry, ibid., 1960. m. Sue Deaton, Sept. 2, 1947. c.: William McClintock; Timothy Andrew. Exp.: Instr. Microbiology, 1955-57; Asst. Prof. Microbiology, 1957-58; Rsch. Assoc., Biochem., 1958-60; Asst. Prof., Microbiology, 1960—. Mem.: A.A.A.S.; Sigma Xi; S.A.B.; N. Y. Acad. Sci. Contbr. to: N. Y. Acad. Sci.; Proc. Soc. Biol. and Med.; A.M.A. Archives Path. Serv. Rec.: A.U.S., 1943-46, T/5. Areas of Rsch.: Carbohydrate and Lipid Chemistry as Applied to Normal and Viral Infected Tissues.

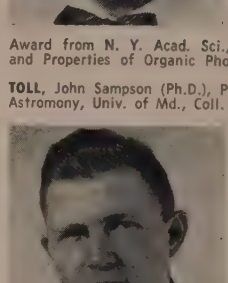
TOEBES, Gerrit Hendrik (Ph.D.), Asst. Prof. of Hydraulics, Purdue Univ., Lafayette, Ind. Home Add.: 124 Sumac Dr., West Lafayette, Ind.



HYDROMECHANICS, HYDRAULICS. b. Ginniken, Holland, Jan. 30, 1927. s. Herman and Janna (van de Panne) T. Edn.: Ir. Civ. Engr., Technological, Univ. of Delft, Holland, 1953; Ph.D., Mass. Inst. of Tech., 1959. m. Grieke Swagerman, July 23, 1954. c.: Henry William; Ingrid Marianne; Helen Jeanette. Exp.: Jr. Engr., Norges Vasserkraftvesen, Korgen, Norway, 1952; Instr., Amsterdam Polytech. Inst., Amsterdam, Holland, 1953-54; Project Engr., Bongearts, Inc., Consultants, The Hague, Holland, 1954-55; Hydraulic Engr., Camp, Dresser and McKee, Consultants, Boston, Mass., 1955-56; Tchng. Asst., Mass. Inst. of Technol., 1956-57; Rsch. Asst., ibid., 1957-59; Asst. Prof., Purdue Univ., 1959 . Mem.: Koningklyk Instituut van Ingenieurs; Am. Soc. of Civil Engr.; Am. Soc. of Mech. Engr.; Internatl. Assn. of Hydraulic Rsch.; Am. Soc. of Engr. Edn.; Sigma Xi. Contbr. to: Trans. ASCE; Trans. ASME; Proc. IAHR. Areas of Rsch.: Hydroelastic Vibrations, Wake Mechanics, Turbulence.

TOLKMITH, Henry (Sc.D.), Assoc. Scientist, The Dow Chem. Co. Midland, iMch. BIO-ORGANIC CHEMISTRY. b. Berlin, Germany Feb. 13, 1910. s. Erich and Hedwig (Boehm) T. Edn.: Sc.D. Techn. Univ., Berlin, 1935. m. Valentine Otzup-Gorny, June 23 1937. c.: Peter; Valentine. Exp. Instr., Techn. Univ., Berlin, 1936 Asst. Prof., ibid., 1937; Chem. I. G. Farben, Germany, 1938-39 Prod. Mgr., ibid., 1940-45; Chem Consult., ibid., 1946-47; Rsch Chem., Dow Chem. Co., Midland Mich., 1948-58; Assoc. Scientist ibid., 1959—. Mem.: A.A.A.S. Fellow; Am. Chem. Soc.; N. Y Acad. Sci.; Chem. Soc. (London) Contbr. to: Jour. Am. Chem. Soc. Jour. Org. Chem.; Ann. N. Y Acad. Sci. Gen. Int.: Naturalized Citizen of U.S.A., 1956; More than 70 patents concerning organophosphorus compounds; Cressy Morrison Award from N. Y. Acad. Sci., 1958. Areas of Rsch.: Structure and Properties of Organic Phosphorus Compounds.

TOLL, John Sampson (Ph.D.), Prof. and Hd. of Dept. of Phys. and Astromony, Univ. of Md., Coll. Park, Md. Home Add.: 2 Newlands St., Chevy Chase Md. THEORETICAL PHYSICS. b. Denver, Colo. Oct. 25, 1923. s. Oliver Wolcott and Merle d'Aubigne (Sampson) T. Edn.: B.S., Yale Univ., 1944; M.S., Princeton Univ., 1948; Ph.D., ibid., 1952. Exp.: Managing Editor and Acting Chmn., Yale Scientific Mag., 1943-44; Asst. in Instrn., Princeton Univ., 1946-48; Proctor Fellow, Princeton Univ. 1948-49; Grant from Friends of Elem. Particle Theory Rsch. for study in France, 1950; Theoretical Physicist, Los Alamos Scientific Lab., Los Alamos, N. Mex., 1950-51; Staff Mem. and Assoc. Dir., Project Matterhorn, Forrestal Rsch. Center, Princeton Univ., 1951-53; Prof. and Hd. of Physics and Astronomy Department, University of Md.. 1953—. Hon. Pos.: Chairman, University of Md. Com. on Faculty Research, 1956-59; George Beckwith Medal for Proficiency in Astronomy, 1944; Benjamin Barge Prize in Math., 1943; Outstanding Citizen Award, City of Denver Centenniel, 1959; John Simon Guggenheim Mem. Fdn. Fellow, 1958-59; Pres., Chesapeake Sect., Am. Assn. of Physics Tchrs., 1955-56; Mem., Natl. Coun., ibid., 1956-57; Natl. Coun. and Natl. Exec., Com. Mem., Federation of Am. Scientists, 1954; Pres., ibid., 1961-62; Vice-Pres., Univ. of Md. Chapt. of A.A.U.P., 1960-62, Pres., 1962-63; V-Chmn., Univ. of Md. Coll. of Arts and Sci. Academic Coun., 1960-61; U. S. Delegate and Hd. of Scientific Secretariat to Internatl. Conf. on High Energy Physics, Rochester, N. Y., 1960; Guest Prof., Inst. for Theoretical Physics, Lund, Sweden, 1959 and 1961. Mem.: Phi Beta Kappa; Sigma Xi; Pres., Univ. of Md. Chapt., 1959-60; Sigma Pi Sigma; Am. Assn. of Phys. Tchrs.; Am. Phys. Soc.; Am. Assn. for Adv. of Sci.; A.A.U.P.; Wash. Acad. of Sci.; Philos. Soc. of Wash.; United World Federalists. Contbr. to: Helv. Phys. Acta; Il Nuovo Cimento; Phys. Rev.; Ann. of Physics; Bull. of the Am. Phys. Soc.; Sci.; Yale Scientific Mag. Ph.D. Dissertation: The Dispersion Relation for Light and Its Application to Problems Involving Electron Pairs. War Record: U. S. Naval Reserve, 1944-46. Listed in: Am. Men of Sci.; Ldrs. in Am. Sci.; W. W. in Am. Areas of Rsch.: Quantum Field Theory and Elementary Particles, With Particular Emphasis on Dispersion Relations and Analytic Properties.



TOLPIN, Jacob G. (Ph.D.), Technical Assoc., Rsch. Dept., Standard Oil Co. (Ind.), Whiting, Ind. Home Add.: 8133 Ingleside Ave., Chicago 19, Ill. CHEMISTRY, PETROLEUM REFINING. b. Ostrog, Russia, Apr., 1896. s. Moses and Ch. Leah (Slepak) T. Edn.: Ph.D. Univ. of Kiev, 1919; M.A., Columbia Univ., 1927. m. Rebecca Gordon, Jan., 1925. c.: Malkah Tolpin-Notman. Exp.: Tchng., Rsch. in Organic Chem., Writing on Science, 1926-36; Editor, Survey of Foreign Petroleum Lit., Process Mgmt. Co., N.Y.C., 1937-40; Editor, Survey of Foreign Petroleum Lit., Universal Oil Products Co., Chicago, 1941-46; Professorial Lectr. in Russian, Northwestern Univ., 1944—; Technical Assoc., Rsch. Dept., Standard Oil Co. (Ind.), 1947—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Inst. Chem. Soc.; Am. Inst. Chem.; Am. Assn. of Tchrs. of Slavic and East European Langs. Author: Readings and Exercises in Russian for Scientists, 1947; Searching the Russian Technical Lit., 1960. Contbr. to: Journ. of Engrng. Edn.; Advances in Catalysis; Jour. Chem. Edn.; Mod. Lang. Jour.; Chem. and Engrng. News; Am. Slavic and E. Euro

an Rev.; Chem. Engrng. Progress. Gen. Int.: Continuous Rsch. the Russian technical literature for thirty years contributed ich to the understanding of Russian contributions to science; ganized the first course of Russian specifically for Scientists 944). Areas of Rsch.: Petroleum Refining and Russian Contri- tions to It; Chemical Rsch. in the U.O.O.R.

LSTOY, Ivan (Ph.D.), Sr. Rsch. Sci., Columbia Univ., Hudson bs., Dobbs Ferry, N. Y. Home Add.: 330 E. 46th St., New York, N. Y. PHYSICS AND GEOPHYSICS (THEORETICAL). b. Baden-Baden, Germany, Mar. 30, 1923. s. Andre and Mary (Schouvaloff) T. Edn.: Lic. es Sc., Sorbonne, 1945; M.A., Columbia Univ., 1947; Ph.D., ibid., 1950. m. Marie Louise Simon, 1946, (div., 1961). c.: Alexandra. Exp.: Rsch. Asst., Columbia Univ., Lamont Geol. Obs., 1946-51; Sr. Rsch. Engr., Stanolind Oil anc Gas Co., Tulsa, Okla., 1951-53; Sr. Rsch. Sci., Columbia Univ. Hudson Labs., 1953—. Mem.: Fellow, Acoust. Soc. Am.; Am. Phys. Soc.; A.A.A.S.; Am. Geophys. Union; Soc. Exptl. Geophys.; Sigma Xi. Contbr. to: Jour. of Acoust. Soc. of Am.; Qtly. Appl. Math.; Jour. Geophys. Rsch.; eophys.; Bull. Seis. Soc. Am.; Bull. Geol. Soc. Am.; Trans. m. Geophys. Union; Proc. I.U.T.A.M. Symposium; Proc. 3rd ano nd I.C.A. Cong. Areas of Rsch.: Theory of Wave propagation; nderwater Acoustics; Submarine Geophysics; Seismology.

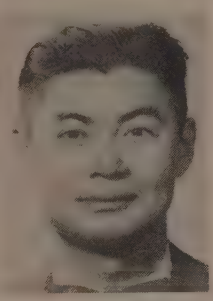
OMBAUGH, Clyde W(illiam) (Mr.), Astronomer, N. Mex. St. Univ., Iniv. Park, N. Mex. Home Add.: 636 S. Alameda St., Las Cruces, N. Mex. OBSERVATIONAL PATROL OF MOON AND PLANETS. b. Streator, Ill., Feb. 4, 1906. s. Muron D. and Adella P. (Chritton) T. Edn.: B.A., Univ. of Kan., 1936; M.A., ibid., 1939; D.Sc., Ariz. Univs., 1960. m. Patricia Edson, June 7, 1934. c.: Annette Roberta; Alden Clyde. Exp.: Asst., Lowell Obs., 1929-38; Asst. Astronomer, ibid., 1938-43; Instr., in Sci., Ariz. St. Coll., Navy V-12, 1943-45; Visit. Asst. Prof., Astron., Univ. of Calif., 1945-46; Astron., Opt. Physicist, White Sands Proving Ground, 1946-55; Astron., N. Mex. St. Univ., 1955-61; Assoc. Prof., ibid., 1961—. Hon. Pos.: Mem., Internatl. Mars Comm. Mem.: Sigma Xi; Sigma Pi Sigma; Am. Astronomical Soc.; Am. Rocket Soc.; Astronomical Soc. of the Pacific; Meteoritical Soc. Contbr. to: Publications of Astronomical Soc. of Pacific; Astronomical Jour.; Am. Astronomical Soc. Papers. War Record: Comdr., Civilian Def., Flagstaff, Ariz., 1942-45. Gen. Int.: Discovered Ninth Planet Pluto, 1930; Proposed new hypothesis to explain all of the surface features on Mars, 1950; Proposed and directed the search for small natural satellites of the Earth, 1953-58. Areas of Rsch.: The design and use of planetary telescopes; Observer and authority on the planet Mars and the moon; Optical-photographic instrumentation of Rockets and Satellites.

TOPPER, Robert C(arlton) (Ph.D.), Consulting Psychologist, 9729 Van Dyke Rd., Dallas 18, Tex. PSYCHOLOGY, CLINICAL. b. Wayne Co., Ohio, Sept. 8, 1915. s. S. T. and Loyola (Ferguson) T. Edn.: B.S., Ashland Coll., 1936; M.A., Ohio St. Univ., 1937; S.S., Univ. of Chicago, 1938; Ph.D., Ind. Univ., 1947. m. N. Marguerite Ekdahl, Oct. 24, 1937. c.: Patricia Anne; Robert C., Jr.; Arthur Rand; Matson Alan. Exp.: Hd., Dept. Psychol., Centenary Coll., 1941-43; Asst. Prof., Emory Univ., 1946-48; Chf., Clinical Psychol. Serv., Vet. Admin., Atlanta, Ga. and Tuscaloosa, Ala., 1947-49; Consult. Psychologist, Rohrer, Hibler and Replogle, Dallas, Tex., 1949-54; Admin. Asst. to Pres., Tex. Industries, Inc., ibid., 1954-56; Consulting Psychologist, ibid., 1954—. Mem.: Fellow, Am. Psychol. Assn.; Southwestern Psychol. Assn.; Texas Psychol. Assn.; War Record: U. S. Army, 1943-46. Areas of Rsch.: Company Organization; Functions of Chf. Executives; Exec. Development; Supervision for Execs.

TOONE, Elam C., Jr. (M.D.), Prof. of Med., Med. Coll. of Va., Richmond, Va. Home Add.: 4307 Cambridge Rd., Richmond, Va. MEDICINE, INTERNAL MEDICINE, RHEUMATOLOGY. b. Richmond, Va., Nov. 4, 1908. s. Elam C. and Elizabeth (Ryland) T. Edn.: A.B., Hampden-Sydney Coll., 1929; M.D., Coll. of Va., 1934. m. Adelaide Salter, Apr. 21, 1936. c.: Margaret S.; Elam C. Exp.: Asst. in Med., Med. Coll. of Va., 1936-37; Instr., ibid., 1938-40; Assoc., ibid., 1941-46; Asst. Prof., 1946-49; Assoc. Prof., 1950-60; Prof., ibid., 1960—. Hon. Pos.: Pres., Richmond Acad. of Med., 1957; Chmn. of Bd. of Trustees Richmond Acad. of Med., 1958; Chmn. Med. Comm. Va. Chapt. Arthritis and Rheumatism Found. Mem.: Am. Med. Assn.; Am. Clinical and Climatological Assn.; Am. Rheumatism Assn.; Am. Fed. for Clin. Investigation; Am. Coll. of Physicians and Diplomat Am. Bd. of Internal Med. Contbr. Author: Progress in Arthritis, 1958. Contbr. to: Annals of Internal Med.; Am. Jour. of Med.; Am. Jour. of Med. Sci.; Arthritis and Rheumatism; Am. Med. Assn.; Va. Med. Monthly; Surgery; Am. Jour. of Tropical Med.; Southern Med. Jour.; Geriatrics. Serv. Rec.: U.S.A. Areas of Rsch.: Connective Tissue Diseases.

TOTTEN, Henry Roland (Ph.D.), Prof. of Botany, Univ. of N. C., Chapel Hill, N. C. Home Add.: 110 Laurel Hill Rd., Chapel Hill, N. C. BOTANY. b. Matthews, N. C., Nov. 6, 1892. s. William Theophilus and Jeannette Frances (Barham) T. Edn.: A.B., Univ. of N. C., 1913; M.A., ibid., 1914; Ph.D., ibid., 1923. Hon. Deg.: LL.D., Atlantic Christian Coll., 1957. m. Addie Williams, 1923. Exp.: Asst. in Botany, Univ. of N. C., 1913-14; Instr. in Botany, ibid., 1914-17; Asst. Prof., ibid., 1923-25; Assoc. Prof., ibid., 1925-29; Prof. of Botany, ibid., 1929—. Hon. Pos.: Pres., Assn. of Southeastern Biologists; Pres., N. C. Acad. of Sci. Mem.: Botanical Soc. of Am.; A.A.A.S.; Am. Soc. of Plant Taxonomists; Internatl. Assn. of Plant Taxonomists; N. C. Acad. of Sci.; S. C. Acad. of Sci.; Fla. Acad. of Sci.; Tenn. Acad. of Sci.; Sou. Appalachian Botanical Club; Am. Pharmaceutical Soc.; Sigma Xi. Author: Laboratory Guide in Pharmaceutical Botany and Pharmacognosy, 1928, 1932, 1937, 1941, 1948, 1952. Co-Author: Trees of North Carolina, 1916; Trees of the Southeastern United States, 1934, 1937, 1945. Contbr. to: Jour. of Elisha Mitchell Scientific Soc.; A.S.B. Bull. Serv. Rec.: U. S. Army, 1917-19, 1942-46. Areas of Rsch.: Dendrology; Pharmacognosy; Taxonomy of Seed Plants.

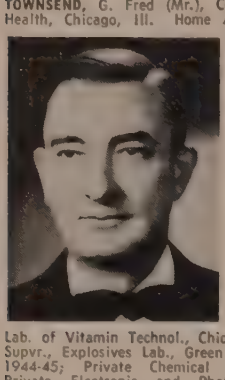
TOU, Julius Tsu-lieh (D.Eng.), Prof., Dept. of Elec. Engrng., Dir. Computer Sci. Lab., Northwestern Technological Inst., Evanston, Ill. Home Add.: 2010 Sheridan Rd., Evanston, Ill. COMPUTER SCIENCE AND INFORMATION TECHNOLOGY. b. Wusih, China, Aug. 15, 1926. s. F. T. and M. Y. (Ku) T. Edn.: B.S., Natl. Chiao-Tung Univ., China, 1947; M.S., Harvard Univ., 1950; D.Eng., Yale Univ., 1952. m. Lisa Cheng, Dec. 22, 1956. c.: Albert; Frederick; Ivan. Exp.: Project Engr., Rsch. Div., Philco Corp., Phila., Pa., 1952-55; Asst. Prof., Moore Schl., Univ. of Pa., 1955-57; Assoc. Prof., Purdue Univ., 1957-60; Dir., Control and Inf. Syst. Lab., ibid., 1960-61; Prof. of Elec. Engrng., Northwestern Univ., Dir., Computer Sci. Lab., ibid., 1961—. Hon. Pos.: Vice-Chmn., Discrete Systems Subcommittee, A.I.E.E. Mem.: I.R.E.; A.S.E.E.; Sigma Xi. Author: Digital and Sampled Data Control Systems, 1959. Contbr. to: I.R.E. Proc.; I.R.E. Trans.; P.G.E.C.; P.G.A.C.; A.I.E.E. Trans.; N.E.C. Proc.; Jour. of Franklin Inst.; Jour. of Applied Physics; Proc. of A.C.M.; Proc. of Internatl. Fed. of Automatic Control, Symposium of Internatl. Assn. of Cybernetics. Gen. Int.: Gordon McKay Scholar, 1949. Areas of Rsch.: Digital Control; Sampled-Data Theory; Optimum Control; Computer Technol.; Information Systems; Artificial Intelligence; Decision Theory; Self-Organizing and Learning Systems; Computer Sci.



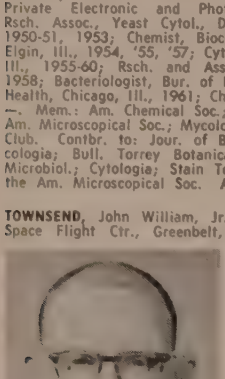
TOURTELLOTTE, Wallace William (M.D., Ph.D.), Assoc. Prof., Neurol., Univ. of Mich. Med. Schl., Ann Arbor, Mich. Home Add.: 2264 Manchester Rd., Ann Arbor, Mich. NEUROLOGY. b. Great Falls, Mont., Sept. 13, 1924. s. Nathaniel Mills and Francis (Victoria) T. Edn.: Ph.B. and B.S (Anat.), Univ. of Chicago, 1945; Ph.D. (Biochem. Pharm.), ibid., 1948; M.D., ibid., 1951. m. Jean Ester Toncray, Feb. 14, 1953. c.: Wallace William, Jr.; George Mills; James Millard, Warren Gerard. Exp.: Instr., Univ. of Chicago, 1948-51; Intern, Strong Mem. Hosp., Rochester, N. Y., 1951-52; Res. in Neurol., Univ. of Mich. Med. Schl., 1954-57; Asst. Prof., ibid., 1957-59; Assoc. Prof., ibid., 1959—. Hon. Pos.: Diplomat of National Boards, 1952; Diplomat of Am. Bd. of Neurol., 1960; First Comm. of Neurochem., World Fed. of Neurol.; First Committee of NINDB to evaluate therapy in multiple sclerosis. Mem.: Fellow, A.A.A.S.; Am. Acad. of Neurol., Fellow; Am. Assoc. of Neuropath., Assoc.; Univ. of Mich. Sci. Club; Washtenaw Co. Med. Soc.; Mich. St. Med. Soc.; A.M.A.; Assn. for Rsch. in Nervous and Mental Diseases; Central Soc. for Neurological Rsch.; Phi Kappa Psi; Sigma Xi; Nu Sigma Nu. Contbr. to: Fed. Proc.; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Obst. and Gynecol.; Cancer Rsch.; Jour. Pharm. and Exptl. Therapy.; Arch. of Biochem. and Biophysics; Am. Jour. of Roentgenol.; Radium Therapy and Nuclear Med.; Radiation Rsch.; Univ. of Mich. Med. Bull.; Trans. of Am. Neuro. Assn.; Neurol.; Anal. Chem.; Jour. Lab. and Clin. Med.; Symposium on Tay-Sach's Dis. (Mar., 1961). IVth Intl. Cong. of Neuropath. (Munich, Sept., 1961); Symposium on Multiple Sclerosis, VIIth Intl. Cong. of Neurol. (Rome, Sept., 1961); J.A.M.A.; World Neurology; A.M.A.J. Dis. Child.; Acta Neuropath. (Vienna); Pediatrics; U.S.N.R., (M.C.), 1952-60. Gen. Int.: S. Weir Mitchell Award, Am. Acad. of Neurol., 1959. Areas of Rsch.: Multiple Sclerosis, especially searching for the etiology.

TOVREA, Verner B. (Mr.), Instr., Biol., Everett Jr. Coll., Everett, Wash. Home Add.: 1912 10th, Everett, Wash. BIOLOGY. b. Mount Vernon, Wash., Aug. 8, 1925. s. Basil Raymond and Ruth (Gustafson) T. Naudack. Edn.: B.A., Western Wash. St. Coll., 1952; M.A., Stanford Univ., 1958. m. Leona M. Hamblin, Feb., 1952. c.: David; Lee Ann; Susan; Michael. Exp.: Instr., Boistfort No. 234, Klaber, Wash., 1952-59; Acting Prin., ibid., 1955-57 and 1958-59; Visiting Sci. Faculty, Western Wash. St. Coll., summers, Bellingham, Wash., 1959-60.; Instr. Biol., Everett Schl. Dist. No. 2, Everett, Wash., 1959—. Serv. Rec.: A.U.S., 1944-46. Gen. Int.: Recipient, AYI, Stanford Univ., 1957-58; Recipient, NSF Summer Inst., Radiation Biol., Univ. of Wash., summer, 1962.

TOWNSEND, G. Fred (Mr.), Chemist, St. of Ill. Dept. of Pub. Health, Chicago, Ill. Home Add.: Princeton, Ill. ANALYTICAL CHEMISTRY. b. Farmersville, Tex., Aug. 28, 1911. s. Fred and Myrtle (Opperman) T. Edn.: A.B., Ill. Coll., 1934; M.S., Ind. St. Coll., 1950; Grad., Chicago Coll. Med. Lab. Tech., 1943; Grad., Worsham Coll. Mortuary Sci., 1957; Natl. Bd. Certif., 1957; L.F.D., 1957; L.E., 1959. m. Hazelmae Clark, Dec. 25, 1936. c.: Constance; Phyllis; Fredericka. Exp.: Technician, Mineral Point Zinc Co., DePue, Ill., 1937; Chemist, Ill. Yeast Co., Princeton, Ill., 1938, '39; Chf. Chemist, Sargent Feed Co. and Vy Lactos Labs., Inc., Des Moines, Ia., 1940-41; Raw Materials Chemist, Des Moines Ordnance Plant, Des Moines, Ia., 1942; Lab. Dir., Clinton Products Co., Clinton, Ia., 1943; Biologist, Lab. of Vitamin Technol., Chicago, Ill., 1943; Chemist and Asst. Supvr., Explosives Lab., Green River Ordnance Plant, Dixon, Ill., 1944-45; Private Chemical Work, Princeton, Ill., 1944-47; Private Electronic and Photographic Work, ibid., 1947-48; Rsch. Assoc., Yeast Cytol., Dept. Biol. Rsch., Sou. Ill. Univ., 1950-51, 1953; Chemist, Biochem. Rsch. Lab., Elgin St. Hosp., Elgin, Ill., 1954, '55, '57; Cytologist, Wahl-Henius Inst., Chicago, Ill., 1955-60; Rsch. and Asst., Worsham Coll. Mortuary Sci., 1958; Bacteriologist, Bur. of Biologics, St. of Ill. Dept. of Pub. Health, Chicago, Ill., 1961; Chemist, Bur. of Toxicol., ibid., 1962—. Mem.: Am. Chemical Soc.; A.A.A.S.; Am. Soc. of Microbiol.; Am. Microscopical Soc.; Mycological Soc. of Am.; Torrey Botanical Club. Contbr. to: Jour. of Bact.; Jour. Tenn. Acad. Sci.; Mycologia; Bull. Torrey Botanical Club; Sci.; Canadian Jour. of Microbiol.; Cytologia; Stain Technol.; The Microscope; Trans. of the Am. Microscopical Soc. Areas of Rsch.: Yeast Cytology.



TOWNSEND, John William, Jr. (Dr.), Asst. Dir., NASA Goddard Space Flight Ctr., Greenbelt, Md. Home Add.: 25 Windward Dr., Severna Park, Md. SPACE SCIENCE AND TECHNOLOGY. b. Wash., D. C., Mar. 19, 1924. s. John W. and Elenore (Eby) T. Edn.: B.A., Williams Coll., 1947; M.A., ibid., 1949. Hon. Deg.: Sc.D., Williams Coll., 1961. m. Mary Lewis, 1948. c.: Bruce Alan; Nancy Dewitt; John William, III; Megan Lewis. Exp.: Grad. Asst., Williams Coll., Williamstown, Mass., 1947-49; Br. Hd., Naval Rsch. Lab., Wash., D. C., 1949-58; Asst. Dir., NASA Goddard Space Flight Ctr., 1958—. Mem.: Am. Phys. Soc.; Am. Meteorol. Soc.; Am. Geophys. Union; Am. Rocket Soc.; Scient. Rsch. Soc. of Am.; Phi Sigma Kappa. Contbr. to: Phys. Rev.; Rev. of Scl. Instrn.; Jour. of Geophys. Rsch.; Jet Propulsion; Annales de Geophysique. Serv. Rec.: U. S. Air Force, 1943-46. Areas of Rsch.: Mass Spectrometry, Composition of the Atmosphere, Upper Air Physics, Space Physics.



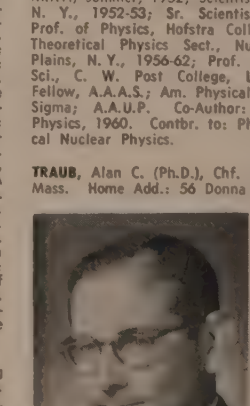
TRAEGDE, S. Carl (Mr.), Mgr., Coatings Dept., Central Processing Co., Springfield, Ore. Home Add.: Box 97, Rt. F, Noti, Ore. PROTECTIVE COATINGS CHEMISTRY. b. Boston, Mass., Apr. 25, 1918. s. Salve G. C. and Muriel (Day) T. Edn.: B.S., Ore. St. Univ., 1957. Hon. Deg.: Dr. of A. and S., Los Angeles Univ. of Applied Edn., 1950. m. Lois Knuth, Jan. 22, 1955. c.: Deborah; Sonja. Exp.: Chemist, Monsanto Chem. Co., Everett, Mass., 1944-46; Chemist, Hercules Powder Co., Mansfield, Mass., 1947; Chemist, Amercoat Corp., South Gate, Calif., 1949-52; Chemist, Expt. Sta., Corvallis, Ore., 1953-57; Rsch. Chemist, Iverson Paints, Inc., Eugene, Ore., 1958-61; Mgr., Coatings Dept., Cent. Processing Co., 1961—. Mem.: A.C.S.; A.A.A.S.; Am. Horticultural Soc. Areas of Rsch.: Protective Coating Chem.; Cybernetics, Perception, Vocational Counseling and Floriculture.

TRAGER, Edith Crowell (Ph.D.), Assoc. Prof., Dept. of English, San Jose State Coll., San Jose, Calif. ANTHROPOLOGICAL LINGUISTICS. b. N. Y. C., Oct. 13, 1924. d. Noyes Allyn and Ethel (Crossland) Crowell. Edn.: A.B., Wilson Coll., 1944; M.A., Hunter Coll., 1946; Ph.D., Univ. of Pa., 1960. m. George Trager, Mar., 1951 (div.). c.: George; Jane; James; Geoffrey; John. Exp.: Scientific Linguist, Bd. of Geographic Names, U. S. Dept. of the Interior, Washington, D. C., 1949-53; Asst. Prof., Am. Univ., 1954-56; Rsch. Linguist, Walter Reed Army Inst. of Rsch., 1960-61; Assoc. Prof., Dept. of Eng., San Jose State Coll., 1961—. Mem.: Linguistic Soc. of Am.; Am. Anthropological Assn.; Modern Language Assn. Contbr. to: International. Jour. of Am. Linguistics; Studies in Linguistics; Language Learning. Areas of Rsch.: Descriptive Linguistics; Am. Indian Linguistics; Russian, French, Spanish, Phonology.

TRAGER, George Leonard (Ph.D.), Prof. of Anthropol. and Linguistics, Univ. of Buffalo, Buffalo 14, N. Y. Home Add.: 27 Chateau Terr., East, Buffalo 26, N. Y. ANTHROPOLOGICAL LINGUISTICS. b. Newark, N. J., Mar. 22, 1906. s. Leon and Anna (Emilfork) T. Edn.: Litt.B., Rutgers Univ., 1926; M.A., Columbia Univ., 1929; Ph.D., ibid., 1932. m. 1st, Sadie Grabelle, June 24, 1929 (dec.), m. 2nd, Edith Crowell, Mar. 1, 1951 (div.), m. 3rd, Felicia Harben, June 10, 1961. c.: George W.; Jane; James C.; Geoffrey C.; John N. Exp.: Asst. Prof., Yale Univ., 1942-43; Branch Chf., Div. of Geography, U. S. Dept. of Interior, Wash., D. C., 1944-46; Prof., Univ. of Okla., 1946-48; Prof., Dir. of Rsch. Foreign Serv. Inst., U. S. Dept. of St., Wash., D. C., 1948-53; Visiting Prof., Georgetown Univ., 1954-55; Asst. Dir. for Rsch., Human Relations Area Files, Wash., D. C., 1955-56; Prof., Univ. of Buffalo, 1956—. Hon. Pos.: Exec. Comm., Linguistic Soc. of Am.; Pres., ibid., Editor, Studies in Linguistics; Natl. Sci. Found. Grants, 1959, 1962-64; Fellow, Ctr. for Adv. Study in the Behavioral Sci., 1962-63. Mem.: Am. Anthropological Assn, Fellow; Am. Ethnological Soc.; Am. Folklore Soc.; A.A.A.S., Fellow; Societe de Linguistique; Societe des Americanistes; Wash., D. C. Acad. of Sci.; N. Y. Acad. of Sci.; Sigma Xi. Co-Author: Outline of Linguistic Analysis, 1942; An Outline of English Structure, 1951; The Analysis of Culture, 1953. Contbr. to: Language; Southwestern Jour. of Anthropol.; Am. Anthropologist; Studies in Linguistics; Anthropological Linguistics; Internatl. Jour. of Am. Linguistics; Encyc. Britannica. Areas of Rsch.: Language and Culture of the Taos Indians of New Mex.; Anthropological Theory; Linguistic Theory and Analysis.

TRALLI, Nunzio T(homas) (Ph.D.), Prof. of Phys., Assoc. Dir. of Div. of Sci., C. W. Post Coll., L. I. Univ., Greenvale, L. I., N. Y. Mail Add.: 21 Doxey Dr., Glen Cove, L. I., N. Y. THEORETICAL PHYSICS. b. N.Y.C., Dec. 5, 1917. s. Carmine and Anna Maria (D'Onofrio) T. Edn.: B.S., Coll. of the City of N. Y., 1939; M.S., N. Y. Univ., 1944; Ph.D., ibid., 1951. m. Eva E. Escales, Aug. 15, 1957. Exp.: Physicist, U. S. Testing Co., Inc., N. J., 1940-43; Powers Electronic and Comm. Co., Inc., N. Y., 1943-45; Instr. in Engrng. Sci. and Mgmt. War Trng., Manhattan Col., 1943; Asst. Prof. of Physics, St. John's Univ., 1944-50; Assoc. Prof. of Physics, ibid., 1950-51; Rsch. Assoc., Natl. Defense Rsch. Com., Tiffany Fdn., N. Y., 1945; Physicist, Oak Ridge Natl. Lab., summer, 1949; Scientist, Atomic Energy Div., The H. K. Ferguson Co., Inc., N. Y., 1951-52; Physicist, Nuclear Engrng. Project, M.I.T., summer, 1952; Scientist, Walter Kidde Nuclear Labs., Inc., N. Y., 1952-53; Sr. Scientist, ibid., 1953-55; Adjunct Assoc. Prof. of Physics, Hofstra Coll., Hempstead, L. I., 1953-62; Hd., Theoretical Physics Sect., Nuclear Dev. Corp. of Am., White Plains, N. Y., 1956-62; Prof. of Physics, Assoc. Dir. of Div. of Sci., C. W. Post College, L. I., University, 1962—. Mem.: Fellow, A.A.A.S.; Am. Physical Soc.; Am. Nuclear Soc.; Sigma Pi Sigma; A.A.U.P. Co-Author: Some Mathematical Methods of Physics, 1960. Contbr. to: Physical Rev. Special Int.: Theoretical Nuclear Physics.

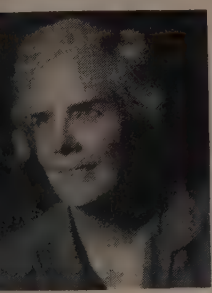
TRAUB, Alan C. (Ph.D.), Chf. Rsch. Engr., Fenwal, Inc., Ashland, Mass. Home Add.: 56 Donna Rd., Framingham, Mass. PHYSICS. b. Hartford, Conn., Jan. 20, 1923. s. Samuel and Sadie (Cohn) T. Edn.: B.S., Trinity Coll., 1947; M.S., Univ. of Cincinnati, 1949; Ph.D., ibid., 1952. m. Lois Sylvia Speckter, Aug. 5, 1951. c.: Lauren Jean; Karen Lynne. Exp.: Rsch. Physicist, Am. Optical Co., Southbridge, Mass., 1952-56; Rsch. Physicist, Fenwal, Inc., Ashland, Mass., 1956—; Rsch. Mgr., 1960-61; Chief Rsch. Engr., ibid., 1961—. Mem.: Optical Soc. Am.; A.A.A.S.; Inst. Radio Engineers. Contbr. to: Am. Journal of Physics; Journal Optical Soc. of Am. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Mass Spectroscopy; Spectrophotometry and Colorimetry; Design and Preparation of Thin Films; Stereoscopy; Infrared Detection and Measurement; Combustion Optics; Photo and Thermal Detectors; Fiber Optics.



AUB, Robert (Col.), (MSC, Ret.), Rsch. Prof. of Microbiol., iversity of Md. School of Medicine, Baltimore, Md. Home Add.: 5702 Bradley Blvd., Bethesda 14, Md. MEDICAL ENTOMOLOGY. b. N.Y.C., Oct. 26, 1916. s. D. S. and Jeannette (Moses) T. Edn.: B.S., Coll. of the City of N. Y., 1938; M.S., Cornell Univ., 1939; Ph.D., Univ. of Ill., 1947. m. Renee Gluck, Aug. 18, 1939. c.: Jeannette R.; Roger D. Exp.: Chf., Dept. of Entomol. (or Parasitology), Walter Reed Army Inst. of Rsch., 1946-55; Commanding Officer, U. S. Army Med. Rsch. Unit, Malaya, 1955-59; Chief, Entomol. Rsch. Sect., Army Med. Rsch. and Devel. Command, Wash., D. C., 1959-62; Rsch. Prof. of Microbiol., Univ. of Md. Med. Schl., 1962—; Field Dir. of Five U. S. Army Med. Rsch. Units to Malaya and N. Borneo, 1948-55;

eld Dir., Field Team of Commission of Hemorrhagic Fever, Korea, 952. Mem.: Wash. Acad. of Sci.; Am. Soc. Trop. Med. and Hyg.; m. Soc. Parasitol.; Entomol. Soc. of Am.; Wash. Entomol. Soc.; iol. Soc. of Wash.; Helminthol. Soc. of Wash.; Wash. Soc. Trop. ed.; Soc. Systematic Zool.; Am. Mosquito Control Assn.; Phi eta Kappa; Sigma Xi. Author: Siphonaptera of Mexico and entral Am., 1950. Contbr. to: Am. Jour. Hyg.; Am. Jour. arasitol.; Am. Ent. Soc. Am.; Jour. Ent.; Proc. Ent. Soc. Wash.; tudies from Inst. for Med. Rsch. Fed. of Malaya; Jour. Wash. cad. Sci.; Am. Jour. Trop. Med. and Hyg.; Trans. Royal Etn. Soc.; mithsonian Miscel. Collections; Am. Mus. Novitates; Proc. Biol. oc. Wash.; Jour. Mammalogy; etc. Serv. Rec.: U. S. Army, 942-62. Gen. Int.: Recd. Award for Scientific Achievement in iological Scis., Wash. Acad. Sci., 1955; Certificate for Outstandng Ability in Field of Entomology, U. S. Army, 1954. Areas of sch.: Contributions in Chemoprophylaxis, Control and Epidemiolgy of Scrub-Typhus; Epidemiology of Korean Hemorrhagic Fever; ontrol of Mosquitos, Leeches, Rats; Ecology of Viral and Rickttsial Diseases; Systematics of Fleas and Mites; Ecology and Conrol of Vectors and Reservoirs of Disease.

RAVELL, Janet (Mrs. John W. G. Powell) (M.D.), Personal Physician to the President, The White House, Wash. 25, D. C.; Clin. Assoc. Prof. of Med., Geo. Wash. Univ. Schl. of Med., Wash. 6, D. C. MEDICINE; MUSCLE PAIN, CLINICAL PHARMACOLOGY, SEATING DESIGN. b. N.Y.C., Dec. 17, 1901. d. Willard and Janet (Davidson) T. Edn.: B.A., Wellesley Coll., 1922; M.D., Cornell Univ. Med. Coll., 1926. Hon. Deg.: Dr. of Med. Scis., Women's Med. Coll. of Pa., 1961; D.Sc., Wilson College, 1962. m. John W. G. Powell, June 6, 1929. c.: Janet Powell McAlee; Virginia Powell Street. Exp.: Instr., Pharmacology, Cornell Univ. Med. Coll., 1930-47; Asst. Prof. of Clin. Pharmacol., Cornell Univ. Med. Coll., 1947-51; Assoc. Prof., ibid., 1951-61; Assoc. Physician, Cardiovascular Rsch. Unit, Beth Israel

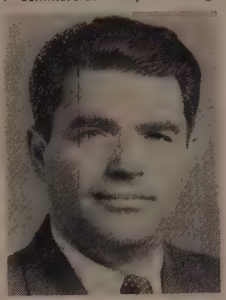


New York City, 1941— (on leave of absence); Physician to Out-Patients, Med., New York Hospital, 1943—; Associate Visiting Cardiology, Sea View Hosp., Staten Island, N. Y., 1936-45; Personal Physician to Pres. Kennedy, The White House, Wash., D. C., 1961—; Clin. Assoc. Prof. of Med., George Washington Univ., Schl. of Med., 1961—. Mem.: Diplomate, Natl. Bd. of Med. Examiners; Am. Med. Assn.; Med. Soc. State of N. Y.; N. Y. County Med. Soc.; Med. Soc. of D. C.; N. Y. Acad. of Med.; N. Y. Acad. Sci.; Am. Soc. Pharmacol. and Therap.; Soc. Exptl. Biol. and Med.; Harvey Soc.; Am. Rheumatism Assn.; D. C. Rheumatism Soc.; Am. Med. Women's Assn.; Am. Assn. Adv. Sci.; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Jour. Pharmacol. and Exptl. Therap.; Arch. Internatl. de Pharm. et de Therap.; Brit. Jour. Pharmacol.; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Physiol.; Science; Jour. Am. Pharmaceut.; Anat. Rec.; Jour. Am. Med. Assn.; Am. Jour. Med.; Annals N. Y. Acad. Sci.; Am. Heart; Circulation; Arch. Int. Med.; Jour. Clin. Investing; Postgrad. Med.; Med. Clin. N. Am.; Jour. Am. Med. Women's Assn.; Jour. Prosthetic Dent.; Psychosomatic Med.; Jour. Pediatrics; Am. Jour. Phys. Med.; and many others. Gen. Int.: Principal investigator under rsch. grants from: Natl. Heart Inst. of Natl. Insts. of Health, U. S. Pub. Health Serv.; Josiah Macy, Jr. Found.; Franz T. Stone Fund of Cornell Univ.; Joseph P. Kennedy, Jr., Found. Areas of Rsch.: Clinical Pharmacology; Cardiac Drugs; Skeletal Muscle Pain and Trigger Mechanism; Seating Design.

TRAXLER, Arthur Edwin (Ph.D.), Exec. Dir., Ednl. Records Bureau, 21 Audubon Ave., New York 32, N. Y. Home Add.: Hawthorne Way, Hartsdale, N. Y. PSYCHOLOGY. b. Irving, Kans., Feb. 19, 1900. s. Edwin Clifford and Ora R. (Wells) T. Edn.: B.S., Kans. St. Tchrs. Coll., 1920; M.A., Univ. of Chicago, 1924; Ph.D., ibid., 1932. m. Mabel Yearout, 1924. c.: Karen. Exp.: Supt., Small Schl. Systems, Kans., 1920-28; Psychologist, Univ. of Chicago H. S., 1931-36; Rsch. Assoc. to Exec. Dir., Ednl. Records Bur., N. Y. C., 1936—. Hon. Pos.: Pres., Am. Ednl. Rsch. Assn.; Pres., Natl. Coun. on Measurements in Edn. Mem.: A.A.A.S., Vice Pres, Sect. Q; Am. Psychological Assn.; Am. Personnel and Guidance Assn.; Phi Delta Kappa; Kappa Delta Pi. Author: Techniques of Guidance, 1945, 1957. Co-Author: Guidance Service, 1953, 1960; The Improvement of Reading, 1946, 1961. Contbr. to: Schl. Rev.; Elem. Schl. Jour.; Schl. and Soc.; Ednl. and Psychological Measurement; Jour. of Ednl. Rsch.; The Reading Tchr.; Am. Personnel and Guidance Jour. Areas of Rsch.: Ednl. Measurement; Improvement of Reading; Guidance and Counseling.

TREADWELL, Margaret Read Goodale (Mrs. Louis Mead), Lectr., Dept. of Prev. Med. and Comm. Hlth., Univ. of Kan. Med. Ctr., Kan. City, Kan. HEALTH EDUCATION. b. Amherst, Mass. d. Robert Chester and Helen (Brennan) Goodale. Edn.: A.B., Radcliffe Coll., 1924; M.S., Harvard Univ., 1951. m. Louis Mead Treadwell (dec. 1942). c.: Alvin Hill, II (dec.); Timothy Burke. Exp.: Editorial Staff, Readers Digest, 1942-44; Exec. Dir., Citizens Comm. on Cts. of N. Y. St., 1946-48; Rsch. Fellow, Cornell Univ. Med. Coll., 1952-54; Assoc., Dept. of Postgrad. Med. Edn., Univ. of Kan. Med. Schl., 1954-62; Lectr., Dept. of Preventive Med. and Community Health, ibid., 1962—. Hon. Pos.: Pres., Am. Assn. of Univ. Women of Kansas City, Kan. Mem.: Am. Pub. Health Assn., Fellow; A.A.A.S., Fellow; Kan. Pub. Health Assn.; Assn. of Am. Med. Colls.; Soc. of Pub. Health Educators; Women's City Club; Women's C. of C. Areas of Rsch.: Judicial Organization; Dr.-Patient Relationship and Health Scis. Evaluations; Schl. Health.

TREGER, Abraham (Mr.), Rsch. Assoc. in Biol., Bio-Rsch. Inst., 9 Commercial Ave., Cambridge 41, Mass. Home Add.: 11 Nightingale Street, Dorchester, Mass. PHYSIOLOGY OF NORMAL AND ABNORMAL GROWTH. CARCINOGENIC HAZARDS IN DAILY LIFE; CANCER CHEMOTHERAPY. b. Brest Lit. Poland, Jan. 12, 1909. s. Simon and Esther (Steingard) T. Edn.: M.S., Univ. of Warsaw, 1937. m. Judith Schechner, May, 1949. c.: Jacob; Estelle. Exp.: Hd., Microbiol. Lab., City of Pruzana, Poland, 1939-41; Hd., Bact. Dept., Sanatorium Gauting, Munich, Germany, 1945-51; Rsch. Asst., Tufts Univ. Med. Schl., 1952-57; Rsch. Assoc., Bio-Rsch. Inst., Cambridge, Mass., 1957—. Mem.: A.A.A.S.; New England Animal Care Panel. Contbr. to: Proc. Soc. Exptl. Biol. and Med.; Cancer Rsch.; Proc. Assoc. Cancer



Rsch.; Endocrinology; Progress in Exptl. Tumor Rsch. Areas of Rsch.: Biol.; Bacteriol.; Cancer Rsch.

TRELOGAN, Harry C. (Ph.D.), Administrator, Statistical Reporting Serv., U.S.D.A., Wash. 25, D. C. Home Add.: 3625 N. Piedmont St., Arlington 7, Va. AGRICULTURAL ECONOMICS. b. Versailles, Pa., Dec. 29, 1908. s. Charles H. and Annie May (Dowie) T. Edn.: B.S., W. Va. Univ., 1931; M.S., Univ. of Minn., 1933; Ph.D., ibid., 1938. m. Ruth Grytbak, June 21, 1937. c.: Robert Martin; Peter Dowie; Susan Lynn; Jeanne Karen. Exp.: Rsch. and Tchng. Asst., Univ. of Minn., 1931-36; Instr., ibid., 1936-38; Economist, Farm Credit Admin., Wash., D. C., 1939-41; Adminstr. of Dairy and Poultry War Food Orders, War Food Admin., 1941-47; Administrator of Agri. Marketing Rsch. Programs, U.S.D.A., 1947-61; Administrator, Stat. Reporting Service, U.S.D.A., Wash., D. C., 1961—. Hon. Pos.: Pres., Am. Farm Econ. Assn., 1957-58; Chmn., Agri. Comm., Am. Mktng. Assn., 1952-55; Mem., U. S. Coun., Internatl. Assn. of Agri. Economists, 1953-61; Fellow, A.A.A.S. Mem.: Am. Farm Econ. Assn.; Am. Dairy Sci. Assn.; A.A.A.S.; Am. Mktng. Assn.; Internatl. Assn. of Agri. Economists; Agri. Research Institute; Dairy Society International; Alpha Zeta; Alpha Gamma Rho; Gamma Sigma Delta; Gamma Alpha. Co-Author: Agricultural Market Prices, 1951; Contbrng. Author: Dairy Science, 1939, '51; Natl. Standards in a Modern Economy, 1956; Systems of Units, 1959. Contbr. to: Jour. of Farm Econs.; The Jour. of Marketing; Jour. of Dairy Science. Gen. Int.: Superior Serv. Award, U.S.D.A., 1952; Distinguished Serv. Award, U.S.D.A., 1960. Areas of Rsch.: Agril. Mktng.; Statistical Anal.; Dairy Technology.

TRENT, Eva Mae (Mrs.), Mathematician, U. S. Naval Rsch. Lab., Wash., D. C. Home Add.: 413 Tenn. Ave., Alexandria, Va. Summer Home Add.: 19 Bridle Path, High Knob, Front Royal, Va. MATHEMATICS. b. Bloomfield, Ind., Mar. 11, 1909. d. The Rev. Charles E. and Eliza (Abrams) Manes. Edn.: A.B., Ind. Univ., 1930; Grad. Study at Ind. Univ. and Miss. St. Univ. m. Dr. Horace Maynard Trent, July 29, 1933. c.: Marilyn Trent Grunkemeyer; Sandra. Exp.: Counselor, Westminster Found., Bloomington, Ind., 1930-31; Rate Procedures Analyst, Pub. Serv. Co. of Ind., 1931-33; Instr. in Math., Ind. Univ., 1934; Instr. of Edn., Miss. St. Univ., 1937; Mathematician, U. S. Naval Rsch. Lab., 1956—. Mem.: A.A.A.S.; Am. Geophysical Union; Am. Meteorological Soc.; Zeta Tau Alpha; Beverly Hills Woman's Club; Philosophical Soc. of Wash.; Scientific Rsch. Soc. of Am.

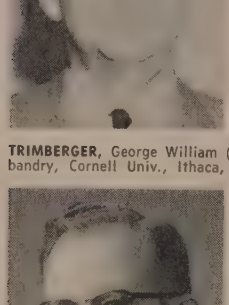
(RESA). Contbr. to: Am. Geophysical Union; U. S. Naval Rsch. Lab. Reports. Listed in: W. W. Am. Women. Areas of Rsch.: Atmospheric Electricity and Its Relation to Meteorology; Improved Instruction of Mathematics in Elementary and Secondary Schools.

TRENOR, Albert Delafield (Mr.), 7180 Saranac St., San Diego 15, Calif. b. N.Y.C., Jan. 29, 1888. s. John D. and Ida A. (Cole) T. Edn.: M.E., Stevens Tech., 1911; M.S., Princeton Univ., 1912. m. Bernice W. T., Sept. 24, 1918. c.: Patricia T. Reed; Pamela T. Fisher. Exp.: Engr., Hammond Radio Rsch. Lab., 1913-28; Vice-Pres. and Asst. Treas., Hammond Rsch. Corp., 1928-53. 3 dozen U. S. patents. Vice-Pres., Radio Engrng. Co. of N. Y.; Dir., Hammond Museum; Officer, Civ. Air Patrol, 1942-53; Instr. in Avn., Endicott Coll., 1944-53; Pres. and Treas., Cape Ann Flying Club, 1940-53; Instr. in Sci., Calif. Western Univ., 1954-57. Mem.: A.S.M.E., Assoc. Mem., I.R.E.; Fellow, Royal Soc. Arts and Sci., London; A.A.A.S.; Tau Beta Pi; Alpha Sigma Phi.

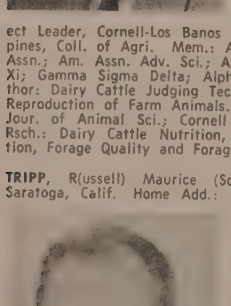
TREVES, Gino Robert (D.Sc.), Sr. Rsch. Chemist, FMC Corp., Princeton, N. J. Home Add.: 9 Adams Dr., Princeton, N. J.

MEDICINAL CHEMISTRY, AGRICULTURAL CHEMISTRY. b. Turin, Italy, April 6, 1917. s. Elia Emanuel and Ines (Cassin) T. Edn.: D.Sc., Turin Univ., 1939; M.S., Cornell Univ., 1942. m. Clotilde Sonnino, June 1, 1952. c.: George Francis; Claire. Exp.: Rsch. Chemist, Littauer Pneumonia Rsch. Fund, N. Y. Univ., 1942-43; Chief Chemist, Schieffelin and Co., N.Y.C., 1943-55; Sr. Rsch. Chemist, FMC Corp., Princeton, N. J., 1956—. Mem.: Am. Chem. Soc.; A.A.A.S. Contbr. to: Jour. of Am. Chem. Soc. Serv. Rec.: U. S. Army, 1945-46. Areas of Rsch.: Autonomic Drugs, Agric. Herbicides and Fungicides.

TRIMBERGER, George William (Ph.D.), Prof., Dept. of Animal Husbandry, Cornell Univ., Ithaca, N. Y. Home Add.: 41 Woodcrest Ave., Ithaca, N. Y. ANIMAL NUTRITION, REPRODUCTION AND ARTIFICIAL INSEMINATION. b. Neilsville, Wis., Dec. 8, 1909. s. George P. and Margaret (Mersberger) T. Edn.: B.S., Univ. of Wis., 1933; M.S., Univ. of Neb., 1942; Ph.D., Univ. of Neb., 1948. m. Eleanor G. Brown, Aug. 18, 1938. c.: Ellen Kay; George Michael; Pamela Ann. Exp.: Chf. Dairy Herdsman, Univ. of Neb., 1934-40; Instr., Dairy Husbandry, ibid., 1940-44; Instr., Dairy Husbandry, Cornell Univ., 1944-45; Asst. Prof., Dairy Husbandry, ibid., 1945-47; Assoc. Prof., Dairy Husbandry, ibid., 1947-50; Prof., Dairy Husbandry, ibid., 1950—; Visiting Prof., Univ. of Philippines, 1955-57. Hon. Pos.: Project Leader, Cornell-Los Banos Contract Gr., Univ. of the Philippines, Coll. of Agri. Mem.: Am. Genetic Assn.; Am. Dairy Sci. Assn.; Am. Assn. Adv. Sci.; Am. Soc. Animal Production; Sigma Xi; Gamma Sigma Delta; Alpha Zeta; Alpha Gamma Rho. Author: Dairy Cattle Judging Techniques, 1957. Contbrng. Author: Reproduction of Farm Animals. Contbr. to: Jour. of Dairy Sci.; Jour. of Animal Sci.; Cornell Univ. Rsch. Bulletins. Areas of Rsch.: Dairy Cattle Nutrition, Reproduction, Artificial Insemination, Forage Quality and Forage Appetite.



TRIPP, R(ussell) Maurice (Sc.D.), Pres., Tripp Rsch. Corp., Saratoga, Calif. Home Add.: 15231 Quito Rd., Saratoga, Calif.



GEOLOGICAL ENGINEERING. b. Holton, Kans., July 12, 1916. s. Maurice H. and Belle (Cottrell) T. Edn.: Geol. Engr., Colo. Schl. of Mines, 1939; M.Geo.Engr., ibid., 1943; Sc.D., Mass. Inst. of Technol., 1949. m. Catherine Burr, Aug. 12, 1937. c.: Catherine Ann; Peggy Marie; Elizabeth Belle; R. Maurice, II; David Graham; Timothy Lane; Mary Alice. Exp.: Dir. of Sonic Rsch. Corp., Boston, Mass., 1954-58; Dir. of Cimota Exploration Co., Dallas, Tex., 1952-56; Dir., Torginol of Am., Las Vegas, Nev., 1961; Faculty, Colo. Schl. of Mines, 1942-45; Asst. to Pres., Geotechnical Corp., Cambridge, Mass., 1945-47; Consultant, ibid., 1947-49; Vice Pres., Research, Inc., Dallas, Tex., 1949-55; Pres., Tripp Research Crop., Saratoga, Calif., 1955—; Pres., Tripp Products, Inc., ibid., 1961. Hon. Pos.: Tex. Governor's Advisory Comm. on Atomic Energy; Pres., Golden Youth Coun.; Radioactive Stds. Com., Natl. Rsch. Coun. Mem.: Am. Assn. of Petrol. Geol.; Soc. Expt. Geophysicists; Soil Sci. Soc. of Am.; Geol. Soc. of Am.; Am. Inst. of Min. and Met. Engr.; Inst. Radio Engr.; Soc. Econ. Paleo. and Min.; Am. Assn. Adv. Sci.; Sigma Alpha Epsilon; Tau Beta Pi; Sigma Xi; Sigma Gamma Epsilon; Natl. Coun. of Boy Scouts of Am. Contbr. to: A.A.P.G. Bull.; Jour. of Geophysics; Mines Mag. Areas of Rsch.: Geochemical and Geophysical Mineral Exploration, Relation between Radioactive elements, Clay minerals and organic matter in sediments, Building materials and Construction Techniques, Depth perception, X-ray, Mineral Beneficiation.

TROAN, John (Mr.), Sci. Writer, Scripps-Howard Newspaper Alliance, Wash., D. C. Home Add.: 3500 Kent St., Kensington, Md. SCIENCE JOURNALISM (SCIENCE COMMUNICATIONS). b. Jessup, Pa., Aug. 23, 1918. s. Andrew and Veronica (Troanovitch) T. Edn.: A.B., Pa. State Univ., 1939. m. Varcey Morrissey, Oct. 23, 1943. c.: Larry E.; Judy A.; Mary Lou; Geoffrey J. Exp.: Staff Writer, Pittsburgh Press, Pittsburgh, Pa., 1939-47; Sci. Writer, ibid., 1947-56; Sci. Editor, ibid., 1956-58; Sci. Writer, Scripps-Howard Newspaper Alliance, Wash., D. C., 1958—. Hon. Pos.: Pres., Vice Pres., Secy.-Treas., Exec. Comm., Natl. Assn. of Sci. Writers; Bd. of Dirs., Founder, Coun. for Adv. of Sci. Writing. Mem.: Fellow, A.A.A.S.; Am. Rocket Soc.; Am. Nuclear Soc.; Natl. Assn. of Sci. Writers; Coun. for Advancement of Sci. Writing; Sigma Delta Chi; Pi Gamma Mu; Pi Delta Epsilon; Kensington Md. Citizens Assn. Editor: Pennsylvania Cancer Manual, 1954-58. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: One of Pittsburgh's "100 Outstanding Young Men" by Time Magazine, 1953; Man of Year in Communications by Pittsburgh Jr. C. of C., 1956; Cited for Public Service in Science, Engineering and Education by Carnegie Inst. of Technol., 1957. Areas of Rsch.: Sci. Communication.

TROJANO, Alexander Robert (Sc.D.), Head, Dept. of Metallurgy, Case Inst. of Technol., Cleveland, Ohio. Home Add.: 36550 Jackson Rd., Chagrin Falls, Ohio.

PHYSICAL METALLURGY. b. Boston, Mass., Sept. 5, 1908. s. Alexander Robert, Sr. and Erma (Leonardi) T. Edn.: B.A., Harvard Univ., 1931; M.S., ibid., 1937; D.Sc., ibid., 1939. m. Anne MacIver, July 5, 1938. c.: Alexander Robert, Jr.; Thomas Edward. Exp.: Prof., Head, Dept. of Metallurgy, Univ. of Notre Dame, 1939-49; Prof., Head, Dept. of Metallurgy, Case Inst. of Technol., 1949—. Hon. Pos.: Chmn., Numerous Committees, A.S.M. and A.I.M.E. Mem.: A.S.M.; A.I.M.E.; A.S.T.M.; I.S.I.; Sigma Xi; Harvard Club of Cleveland. Contbr. to: Jour. A.S.M.; A.I.M.E. Trans.; British Iron and Steel Inst. Bull.; Revue de Metallurgie; Jour. N.A.C.E.; Nature. Gen. Int.: Hunt Medal, A.I.M.E.; Howe Medal, A.S.M.; Campbell Memorial Lectr., ASM, 1959; Trustee, ASM, 1962—. Areas of Rsch.: Physical Metallurgy; Phase Transformations; Gases in Metals; Mechanical Behavior, etc.

TROBAUGH, Frank Edwin, Jr. (M.D.), Dir., Blood Bank; Dir., Section of Hematol. and Clinical Labs., Presby.-St. Luke's Hosp., 1753 W. Congress Pkwy., Chicago 12, Ill. Home Add.: 465 Poplar St., Winnetka, Ill.

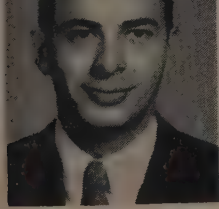
INTERNAL MEDICINE, SPECIALIZING IN HEMATOLOGY AND HEMATOLOGY RESEARCH, BLOOD BANKING. b. West Frankfort, Ill., Oct. 20, 1920. s. Frank E., Sr. and Lee Margaret (Rabe) T. Edn.: A.B., Univ. of Ill., 1940; M.D., Harvard Med. Schl., 1943. m. Marjorie Mills, Sept. 8, 1951. c.: Sarah Lee; Thomas Frank; Amy Bain. Exp.: Intern in Pathol., Boston City Hosp., 1944; Instr. in Med., Dept of Pathol., Instr. in Pathol., Tufts Coll. Med. Schl., 1944-45; Asst. in Pathol., Harvard Med. Schl., 1944-45; Chief Resident in Pathol., Boston City Hosp., 1944-45; Intern, Harvard Med. Services, ibid., 1948-49; Asst. Resident, ibid., 1949-50; Resident, ibid., 1950-51; Teaching Fellow in Med., Harvard Med. Schl., 1950-51; Dir. of Service Labs. and Instr. in Hematol. and Clinical Lab. Procedure, ibid., 1950-51; Instr. in Clinical Med., Wash. Univ. Med. Schl., 1951-54; Visiting Physician, St. Louis City Hosp., Mo., 1951-54; Asst. Physician, Barnes Hosp., Mo., 1952-54; Mem. of Assoc. Staff, Mo. Bapt. Hosp., Mo., 1952-54; Asst. Attending Physician, Presby. Hosp of the City of Chicago, Ill., 1954-58; Asst. Prof. of Med., Rush Univ. of Ill., Coll. of Med., 1954-56; Asst. Prof. of Med., ibid., 1956-59; Assoc. Attending Physician in Med., Presby.-St. Luke's Hosp., 1959-60; Attending Physician in Med., ibid., 1960—; Dir., Sect. of Hematol. and Clinical Labs., Dept. of Med., ibid., 1954—; Dir., Blood Bank, ibid., 1954—; Assoc. Prof. of Med., Univ. of Ill. Coll. of Med., 1959—. Hon. Pos.: Pres., Ill. Assn. of Blood Banks, 1962-63; Vice-Pres., Ill. Assn. of Blood Banks, 1960—; Secy., Am. Assn. of Blood Banks, 1960—. Mem.: A.A.A.S.; Am. Assn. of Blood Banks; Am. Bd. of Internal Med.; Fellow, Am. Coll. of Physicians; Am. Federation for Clinical Rsch.; Am. Med. Assn.; Am. Soc. of

ematol.; Boylston Med. Soc.; Central Clinical Rsch. Club; Chicago ed. Soc.; Chicago Soc. of Internal Med.; Ill. Assn. of Blood nks; Ill. Med. Soc.; Inst. of Med.; Internatl. Transfusion Soc.; o. Med. Soc.; N. Y. Acad. of Sci.; Central Soc. for Clinical ch.; Sigma Xi; Soc. of Nuclear Med.; St. Louis Med. Soc.; ni Beta Kappa; Phi Kappa Phi; Alpha Chi Sigma; Sigma Xi. ntbr. to: Arch. of Pathol.; Am. Jour. of Med.; Med. Clinics of orth Am.; Am. Jour. of Clinical Pathol.; Jour. of Lab. and inical Med. Serv. Rec.: U. S. Army, 1945-47. Areas of Rsch.: udy of Red Cell Dynamics in Various Disease States; Study of est for Determining Bone Marrow Viability; Study of Bone Mar- w Viability; Study of Bone Marrow Viability under Different orage Conditions, Investigation of Serum Proteins in Various isease States, Evaluation of Chemotherapeutic Agents in Leu- emias and Lymphomas.

ROISI, Raphael Angelo (Ph.D.), Vice Pres., In Chg. of Rsch. nd Development, Coopers Creek Chem. Corp., W. Conshohocken, a. Home Add.: 100 E. Valley Rd., Plymouth Valley, Pa. HEMISTRY, BIOLOGY, EDUCATION. b. Avellino, Italy, Feb. 4, 1904. s. Joseph and Lucia (D'Urso) T. Edn.: B.A., Temple niv., 1927; M.A., Univ. of Pa., 1930; M.Sc., ibid., 1932; h.D., ibid., 1933. m. Carmina Rosanio, June 10, 1931. c.: oseph; Lucille; Carol Ann. Exp.: Instr., Temple Univ., 1927- 9; Assoc. Prof., ibid., 1929-42; Rsch. Chemist, Rohm and aas Labs., Philadelphia, Pa., 1942-45; Vice Pres. and Dir. f Rsch. and Development, Coopers Creek Chem. Corp., 1946—. ion. Pos.: Pres., Alpha Phi Delta. Mem.: A.C.S.; A.A.A.S.; A.U.P.; Paint and Varnish Club; Colloid Chem.; Analytical hem. Div. of A.C.S.; Kappa Phi Kappa; Sigma Psi; Ednl. dvancement. Contbr. to: Jour. Wistar Inst. of Sci. Areas f Rsch.: Physiol.; Histology and Cytology, Inheritance; Micro- issection of Cell and Cell Culture; Organic Synthesis; Protec- ive Coatings for Metals, Leather, Wood, etc.; Polymerization, urface Chem.; High Specialty in Emulsifiers and Emulsification specially of Resins, Coal Tar Pitch, Asphalt, Oils; Development f Epoxide esters; Formulation Expoxy coatings; Special emulsions or paper coating; Lamination and increasing moisture vapor ransmission resistance.

TROUT, Verdine Elza (Mr.), Sci. Co-ordinator, Sand Springs Public Schl., Sand Springs, Okla. Home Add.: 1008 Maple Ave., Sand Springs, Okla. SCIENCE EDUCATION (BIOLOGICAL). b. Waurika, Okla., Sept. 19, 1924. s. Geroge Edwin and Mable Elza (Booth) T. Edn.: B.S., Southeastern State Coll., 1949; M.Ed., Okla. Univ., 1953. m. Lawana Lewis Hooper, June, 1952. c.: Robert Edwin. Exp.: Sci. Tchr., Comanche Publ. Schl., Okla., 1949-53; Sci. Co-ordinator, Sand Springs Public Schl., Okla., 1954—; Quality Controle Rsch., Fibercast Corp, Sand Springs, (Part-Time), 1956-57. Hon. Pos.: Tulsa County Sci. Fair Bd. Mem.: A.A.A.S.; Okla. Acad. of Sci.; Natl. Educatior Assn.; Natl. Sci. Tchr. Assn.; Phi Delta Kappa; Okla. Edn. Assn.; Sigma Tau Gamma; Blue Key; C. of C. Contbr. to: The Sci. Tchr.; The H. S. Jour. Serv. Rec.: Army Air Corps; Air Force. Gen. Int.: Tch. of the Year, 1961-62, Sta. of Okla.; Natl. Fdtn. Fellowship for Work on Doctor's Degree, Colo. Sta. Coll. Areas of Rsch.: Science Education in the area of Biological Science Education.

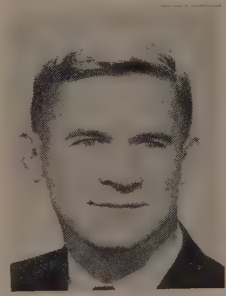
TROUT, Virgil R. (Rev.), Minister, Visiting Campus Lecturer, Philosophy and Apologetics for Churches of Christ, Sunset Church of Christ, 3723 34th, Lubbock, Tex. Home Add.: 5312 27th, Lubbock, Tex. PHILOSOPHY OF SCIENCE; METEROLOGY. b. Milo, Okla., July 29, 1927. s. H. C. and Annie (Miller) T. Edn.: Spartan Schl. of Aeronautics, Tulsa, Okla., 1945; Cameron Coll., Lawton, Okla., 1947; Southwestern St. Coll., Weatherford, Okla., 1952; Univ. of Tex., Austin (Special Studies), 1957—; Awarded equiv. of Adv. degree through USAF Meterology. m. Gwen Zorger, June 6, 1947. c.: Johnny Allen; Richard Edward. Exp.: Counselor of Religious Therapy, V. A. Hosp., Dallas, Tex., 1953-54; Chaplain, Federal Correctional Inst., Dallas Co., 1953-54; Instr., Navagation and Advanced Flight Operations for USAF, Cameron State Coll., Lawton, Okla., 1955-56; Campus Lecturer Christianity and Scientific Concepts of Cornell Univ., 1956-57-58; Okla. St. Univ., 1958; Mich. St., 1958; MIT, 1958; Kansas State, 1959; Sul Ross, 1959; Panhandle A. and M., 1959; Univ. of Calif., 1959; Geo. Pepperdine Coll., 1959; Tex. Tech., 1960; Ibaraki Christian Coll., Japan, 1961; Univ. of Miss., Univ. of Wichita, Harding Coll., Memphis St., 1960; Univ. of Tex., 1960—; Chaplain, Ch. of Christ, Univ. of New Mex., 1957-59; Reljgious Advisor, ibid., 1959. Mem.: A.A.A.S.; Victoria Institute of Great Britain; Am. Meteorological Soc. Contbr. to: Kerygma (Theological Quarterly); Christian Bible Tchr. Service Rec. Instr., U.S.A.F. Meteorology Navigation and Flight Operations. Areas of Rsch.: Psychology of Religion; Philosophy of Science and History.



TROWBRIDGE, Arthur Carleton (Ph.D.), Prof. of Geol., Emer., State Univ. of Ia., Iowa City, Ia. Home Add.: 325 Morningside, Dr. Iowa City, Ia. GEOLOGY. b. Glasgow, Mo., Mar. 4, 1885. s. Samuel Hoyt and Julia (Goodhue) T. Edn.: B.S., Univ. of Chicago, 1907; Ph.D., ibid., 1911. m. Sue Bussey, 1911. c.: Charles Lambert; Carolyn Frances T. Edwards. Exp.: Instr., Univ. of Chicago, 1909-11; Prof., State Univ. of Ia., 1911-52; Hd. Dept. Geol., ibid., 1934-52; Prof. Emer., ibid., 1952—; Dir. and St. Geol., Iowa Geol. Survey, 1934-47. Hon. Pos.: Chmn., Comm. on Sedimentation. Mem.: Fellow, Geol. Soc. Am.; A.A.A.S.; Am. Assn. Petr. Geol.; Soc. Econ. Paleontol. and Mineralog.; Ia. Acad. Sci.; Assn. St. Geol.; Nat. Assn. Geol. Tchrs.; Phi Kappa Sigma; Gamma Alpha; Sigma Xi. Author: Tertiary and Quaternary Geology of the Lower Rio Grande Region of Texas, 1934. Contbr. to: Jour. Geol.; Bull. Geol. Soc. Am.; Bull. Am. Assn. Petr. Geol.; Econ. Geol.; Am. Jour. Sci.; Jour. Sed. Petrol.; Ia. Acad. Sci. Areas of Rsch.: General Geology; Geomorphology; Stratigraphy; Pleistocene Geology; Sedimentology.

TROZZOLO, Anthony Marion (Ph.D.), Mem. of Tech. Staff, Bell Telephone Labs., Murray Hill, N. J. Home Add.: 60 Elm. St., Murray Hill, N. J. ORGANIC CHEMISTRY. b. Chicago, Ill.; Jan. 11, 1930. s. Pasquale and Francesca (Vercillo) T. Edn.: B.S., Ill. Inst. of Technol., 1950; S.M., Univ. of Chicago, 1957; Ph.D., ibid., 1960. m. Doris Stoffregen, Oct. 8, 1955. c.: Tom; Susan; Patricia; Michael. Exp.: Asst. Chemist, Chicago Midway Labs., Chicago, Ill., 1952-53; Assoc. Chemist, Armour Rsch. Fdn., ibid., 1953-56; Natl. Sci. Fdn. Fellow, Univ. of Chicago, 1957-59; Mem. of Tech. Staff, Bell Telephone Labs., Murray Hill, N. J., 1959—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; Chem. Soc., London; A.A.A.S.; Metropolitan Microchem. Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Anal. Chem.; Jour. Org. Chem.; Proc. Internatl. Symposium on Microchem. Techniques; Gordon Rsch. Conf. on Organic Reactions. Areas of Rsch.: Physical Organic Chemistry; Carbenes; Electron Spin resonance spectroscopy; Charge transfer complexes; Dichroism; Photochemistry.

TRUCE, William Everett (Ph.D.), Prof. of Chem., Purdue Univ., Lafayette, Ind. Home Add.: 156 Creighton Rd., W. Lafayette, Ind. ORGANIC CHEMISTRY. b. Chicago, Ill., Sept. 30, 1917. s. Stanley C. and Frances C. (Novak) T. Edn.: B.S., Univ. of Ill., 1939; Ph.D., Northwestern Univ., 1943. m. Eloise J. McBroom, June 16, 1940. c.: Nancy Jane; Roger William. Exp.: Prof. of Chem., Purdue Univ., 1946. Hon. Pos.: Vice Pres., Purdue Sect., Sigma Xi; Exec. Officer, Natl. Org. Symposia of Am. Chem. Soc., 1959-61. Mem.: Am. Chem. Soc.; Chem. Soc., London; Sigma Xi; Phi Lambda Upsilon; Phi Beta Kappa; Alpha Chi Sigma. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem.; Chem. Revs. Gen. Int.: Guggenheim Fellow, 1957. Areas of Rsch.: Organic Sulfur Chemistry; Acetylenes; Vinylic Halides; Organic Theory.

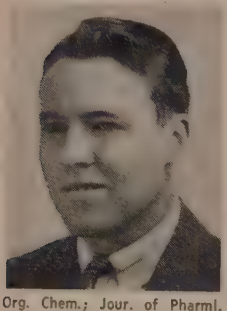


TRUCHLY, Georges (M.D.), Chief, Sect. Orthopaedic Surgery, N.Y. Vet. Admin. Hosp., 408 First Ave., N. Y. 10, N. Y. Home Add.: 408 First Ave., N. Y. 10, N. Y. ORTHOPAEDIC SURGERY. b. Uzhorod, Czechosolvakia, Apr. 27, 1922. s. Ivan and Ketherine (Zdoryk) T. Edn.: M.U.C., Komensky Univ., Bratislava, Czechoslovakia, 1943; M.D., Leopoldino-Franciscea Univ., Innsbruck, Austria, 1946; M.S., Orthopaedic Surg., N. Y. Univ. Postgrad. Med. Schl., N. Y., 1961. Exp.: Instr. in Surgery, Wash. Univ. Schl. of Med., Mo., 1952-53; Instr. in Orthopaedic Surgery, N. Y. Univ., 1956-59; Asst. Clin. Prof. of Ortho. Surg., ibid., 1959-61; Assoc. Clin. Prof., Ortho. Surgery, ibid., 1961—. Mem.: Am. Acad. of Orthopaedic Surgs., Fellow, Orthopaedic Rsch. Soc.; Am. Bd. of Orthopaedic Surgeons, Diplomate; Am. Coll. of Surgeons, Fellow, A.A.A.S.; Am. Med. Assn.; Am. Geriatrics Soc.; Ukrainian Inst. of Am.; Carpathian Alliance; Carpathian Ski Club. Contbr. to: Jour. of Bone and Joint Surgery; Jour. of Am. Med. Assn.; Clin. Orthopaedics; Jour. Ukrainian Med. Assn. of N. Am. Areas of Rsch.: Surgery of spine and shoulder; bone immunology; Reconstructive surgery of paralized lower extremities.

TRUANT, Aldo, (Ph.D.), Dir. of Rsch., Astra Pharmaceutical Products, Inc., Neponset St., Worcester, Mass. Home Add.: 64 Beechmont St., Worcester, Mass. PHARMACOLOGY. b. Udine, Italy, Nov. 17, 1920. s. Liberale and Adele (Berzzati) T. Edn.: B.A., Univ. of Western Ontario, Can., 1944; Ph.D., Yale Univ., 1949. m. Lelia Serena, Oct., 1947. c.: Cynthia; Sandra;

Marc; Alida. Exp.: Asst. Prof. Pharm., George Wash. Univ. Schl. of Med., Wash., D. C., 1948-50; Asst. Prof. Pharm., Tufts Univ. Schl. of Med. and Dental Med., Boston, Mass., 1950-53; Assoc. Prof. Pharm., ibid., 1953-55; Dir. of Biological Rsch., Astra Pharmaceutical Prod., Inc., Worcester, Mass., 1955—; Assoc. Prof. Affiliate, Dept. of Biol., Clark Univ., Worcester, Mass., 1959—. Mem.: Am. Soc. for Pharm. and Exptl. Therapeutics; N. Y. Acad. of Sci.; A.A.A.S.; A.A.U.P.; Assn of Am. Med. Coll.; The Pharmacological Soc. of Can.; Sigma Xi. Contbr. to: Endocrinology; Yale Univ. Jour. Biol. and Med.; Proc. Soc. Exp. Biol. and Med.; Jour. Pharm. and Exp. Therap.; Arch. Int. Pharmacodyn. et de Therapie; Oral Surg., Oral Med., Oral Path.; Anes. and Anal.; Acta Chir. Scand.; Acta Anes Scand. Serv. Rec.: Can. Armed Services. Areas of Rsch.: Neuropharmacology; Local Anestthetics; Analgesics.

TRUITT, Benjamin Price, (Ph.D.), Prof. of Chem., North Tex. Sta. Univ., Denton, Tex. Home Add.: 1901 Wippoorwill, Denton, Tex. ORGANIC CHEMISTRY. b. Cooke Co., Tex., Oct. 30, 1919. s. John Franklin and Klonnie Viola (Bowles) T. Edn.: B.S., N. Tex. Sta. Univ., 1941; M.S., ibid., 1942; Ph.D., Univ. of Tex., 1944. m. Linda Elaine Boyd, 1939. c.: Linda Elaine; Sharon Gael. Exp.: Rsch. Chemist Gen. Aniline Works, Grasselli, N. J., 1944-45; Asst. Prf., Chem., N. Tex. Sta. Univ., 1945-47; Prof., Chem., ibid., 1951—. Hon. Pos.: Visit. Prof., Univ. of Ill., Urbana, Ill., 1955; Dallas Ft. Worth, Sec. of Am. Chem. Soc., Vice-Pres., Tex. Acad. Sci. Mem.: Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon; Tex. Acad. of Sci.; Alpha Chi Sigma; Kiwanis. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Chem. Gen. Int.: Prof. Football Referee (AFL); Extensive Work in Field of Cancer Chemotherapy. Areas of Rsch.: Organic and Pharmaceutical Chemistry Heterocyclic Chemistry.



TRYCZYNSKI, Emil Walter (Mr.), Pharmacologist, Toxicologist Rsch. Div., Warren-Teed Prods. Co., 582 Goodale St., Columbus, Ohio. Home Add.: 2437 Atwood Terrace, Columbus, Ohio. PHARMACOLOGY. b. Chicago, Ill., Feb 2, 1925. s. Walter and Emilia (Dziurzynski) T. Edn.: B.S., De Paul Univ., 1950. Exp.: Pharmacologist, Baxter Labs., Morton Grove, Ill., 1950-57; Pharmacologist, Lloyd Bros. Pharmaceutical Co., Cincinnati, 1958-61; Pharmacologist and Toxicologist, Research Div., Warren-Teed Products Co., 1961—. Mem.: Am. Assn. Adv. Sci. Contbr. to: Jour. Lab. Clin. Med.; Endocrinology; Am. Jour. Clin. Path. Serv. Rec.: U. S. Army, W. W. II. Areas of Rsch.: Radiation Biology.

TSALTAS, Theodore Theodosios (M.D.), Assoc. Prof. Pathol., Jefferson Med. Coll., Philadelphia, Pa. Home Add.: 1338 Prospect Hill Rd., Villanova, Pa. PATHOLOGY; BIOCHEMISTRY. b. Athens, Greece, Sept. 26, 1923. s. Theodosios T., M.D., and Penelope (Tantis) T. Edn.: M.D., Univ. Athens Medical School, 1948; Certificate of Biochemistry Training, U.S.P.H.S., 1953. m. Margaret Owen, M.D., May 19, 1956. c.: Theodore Theodosios, Jr.; Penelope Elizabeth. Exp.: Asst., Dept. of Physiol., Univ. Athens, 1946-52; Fellow, U.S.P.H.S., Walter Reed Medical Center, 1952-53; Asst., Rockefeller Inst., N. Y., 1953-55; Instr., N. Y. Univ. Coll. Med., 1955-58; Asst. Prof., Jefferson Med. Coll., 1958-60; Assoc. Prof., ibid., 1960—. Mem.: Am. Soc. Exp. Path.; Harvey Soc.; New York Acad. Scis.; A.A.A.S.; Am. Soc. Clin. Rsch.; Gerontological Soc.; Philadelphia Physiological Soc.; Merion Civic Assn.; Am. Heart Assn. Contbr. to: Jour. Exp. Med.; Proc. Soc. Exp. Biol. Med.; Lancet; Jour. A.M.A.; Jour. Clin. Invest.; Fed. Proc.; Jour. Am. Oil Chem. Soc.; Clinical Chem. Serv. Rec.: Greek Royal Air Force. Gen. Int.: Development of Atherosclerosis as Related to Blood and Dietary Lipids; Formation of Cartilage Matrix. Areas of Rsch.: Lipid-Lipoprotein Chemistry; Atherosclerosis; Cartilage Chemistry; Tumor Chemotherapy; Pathology.

TRUMBORE, Forrest Allen (Ph.D.), Mem. of Tech. Staff, Bell Telephone Labs., Murray Hill, N. J. Home Add.: 1134 Gresham Rd., Plainfield, N. J. ALLOY THERMODYNAMICS, CRYSTAL GROWTH, (PHYSICAL CHEMISTRY). b. Denver, Colo., Dec. 28, 1927. s. Harry A. and Lola (Pusey) T. Edn.: B.S., Dickinson Coll., 1946; Ph.D., Univ. of Pittsburgh, 1950. m. Victoria Novak, Jan. 20, 1951. c.: Harry; Brian. Exp.: Aeronautical Rsch. Scientist, N.A.C.A., Lewis Flight Propulsion Lab., Cleveland, Ohio, 1950-52; Mem. of Tech. Staff, Bell Telephone Labs., Murray Hill, N. J., 1952—. Mem.: A.C.S.; Electrochem. Soc. A.A.A.S.; Sigma Xi; Phi Beta Kappa; Phi Lambda Upsilon. Contbr. to: Jour. Electrochem. Soc.; Jour. Applied Physics; Jour. Physics and Chem. of Solids; Jour. A.C.S.; Jour. Chem. Physics; Bell System Tech. Jour.; Jour. Physical Chem.; Acta Metallurgica. Areas of Rsch.: Solid Solubilities and Electrical Properties of Impurity Elements in Semiconductors; Growth of Semiconductor Crystals; Thermodynamics of Solid Solutions.

TSCHUDY, William (Dr.), Pvt. Rsch., 81 No. Buena Vista St., Redlands, Calif. ALTERNATING CURRENT RECTIFICATION (ELECTRONICS), COMBUSTION ENGINEERING. b. Basle, Switzerland, s. William and Fanny (Puempin) T. Edn.: E.E. and M.E., Federal Tech. Univ., Zurich, Switzerland, 1908; D.Sc., ibid., 1912. Exp.: Rsch. Engr., Siemens-Schuckert Co., Berlin, Germany, 1908-10; Asst. Prof. of Elec. and Physical Labs., Federal Tech. Univ., Zorich, Switzerland, 1910-12; Rsch. Engr., Westinghouse Elec. and Mfg. Co., E. Pittsburgh, Pa., 1913-15; Mechanical Designer and Draftsman, U. S. Bur. of Mines, Pittsburgh, Pa., 1915-16; Elec. and Mechanical Designer, Carnegie Steel Co., Pittsburgh, Pa., 1916-18; Engr. in Chg. of Construction and Operation, Port Huron Gas and Elec. Co., Mich., 1918-19; Pvt. Rsch., N. Y. and Switzerland, 1919-23; Elec. and Mechanical Designer, Sou. Calif. Edison Co., Los Angeles, Calif., 1923-25; Consulting, Construction and Rsch. Engr., Los Angeles and San Francisco, Calif., 1925-41; Designing Engr. in Div. of Operation and Engrng., Imperial Irrigation District, Imperial, Calif., 1941-42; During War, Calif. Shipbuilding Corp., Terminal Island, Calif., 1942-46; Test Engr., Todd Pacific Shipyards, Inc., San Pedro, Calif., 1946-47; Consulting, Construction and Rsch. Engr., Gardena, Calif., 1947-55; Gen. Engr., D.P.W.O., U.S.N., San Diego, Calif., 1955-60; Pvt. Rsch., Redlands, Calif., 1960—. Mem.: Fellow, A.A.A.S. Contbr. to: Archiv fuer Elektrotechnik, 1913; Elec. World; Bull. Assn. Suisse des Electriciens; etc. Gen. Int.: Pointed out in a report to the Temporary Natl. Econ. Com. on hand of experiences made serious defects in patent litigation, followed more recently by various detail reports on that subject to the U. S. Senate Judiciary Com. and House Judiciary Com.; Tschudy large capacity mercury arc rectifier based upon theorem of vacuum or density regulation, U. S. Patent, also Patents in England, France, Germany and Switzerland; Developed first vacuum gauge in U.S.A. applied to large capacity mercury arc rectifier, U. S. Patent. Special Int.: Vacuum Gauge for large capacity mercury arc rectifiers, Tschudy large capacity mercury arc rectifier based upon theorem of vacuum or density regulation, Combustion of natural and liquid gases (Smokeless orchard heating system); Separation of oxygen from air, Power and ship installations and special test methods. Listed in: Am. Men of Sci.

TSO, Tien Chioh (Ph.D.), Plant Physiologist, Tobacco Investigations, Crops Rsch. Div., Agricultural Rsch. Serv., U. S. Dept. of Agriculture, Beltsville, Md. Home Add.: 4306 Yates Rd., Beltsville, Md. PHYTOCHEMISTRY AND PHYSIOLOGY OF TOBACCO PLANTS, PARTICULARLY BIOSYNTHESIS AND BIOGENESIS OF ALKALOIDS. b. China, July 25, 1917. s. Ya-Fu and Su-Hwa (Wang) T. Edn.: B.S., Univ. of Nanking, 1941; M.S., ibid., 1944; Ph.D., Pa. St. Univ., 1950. m. Margaret Yu-Yi Lu, 1949. c.: Elizabeth; Paul. Exp.: Exec. Secy., Tobacco Improvement Bur., Nanking, China, 1946-47; Rsch. Chemist, General Cigar Rsch. Lab., Lancaster, Pa., 1950-52; Rsch. Assoc., Univ. of Md., 1953-59; Plant Physiologist, Tobacco Investigations, Crops Rsch. Div., Agricultural Rsch. Serv., U. S. Dept. of Agriculutre, Beltsville, Md., 1959-62; Senior Rsch. Plant Physiologist, 1962—. Mem.: Am. Chemical Soc.; A.A.A.S.; Agronomy Soc.; Am. Soc. of Plant Physiologists; Sigma Xi; Gamma Sigma Delta; Phi Lambda Upsilon. Co-author: Annual Review of Plant Physiology, 1958. Contbr. to: Jour. of Am. Chemical Soc.; Arch. Biochem. & Biophys.; Agri. & Food Chem.; Plant Physiol.; Nature; Jour. Heredity; Tobacco Sci.; Bot. Bull. of Academia Sinica. Serv. Rec.: War Area Serv. Corps, 1944-45. Areas of Rsch.: Application of Isotopes in Plant Rsch., Plant Disorders Caused by Mineral Deficiency, Growth Regulators, Frenching, Genetic Tumors, Production of Tobacco. Pathways of Alkaloid formation and Alkaloid Metabolism.

HUPP, Edward John (Mr.), Professional Staff, Gen. Electric TEMPO, Santa Barbara, Calif. Home Add.: 524 La Marina, Santa Barbara, Calif. METEOROLOGY—ATMOSPHERIC PHYSICS. b. Union City, N. J., Aug. 5, 1925. s. Edward William and Hazel Dell (Krone) T. Edn.: B.S., Mass. Inst. of Technol., 1951; M.S., ibid., 1952. m. Jeanne Doris Button, Aug., 1947. c.: Jeanne Lynn; Edward Walter; Lee Ann. Exp.: Rsch. Asst., Mass. Inst. of Technol., 1951-52; Sr. Engr., Cook Rsch. Labs., Skokie, Ill., 1952-56; Group Leader, Aerojet General Co., Azusa, Calif., 1956-59; Professional Staff, General Electric Co., TEMPO, Santa Barbara, Calif., 1959—. Mem.: Am. Meteorological Soc.; Am. Geophysical Union; A.A.A.S. Contbr. to: Proc. of the Infrared Information Symposium; Bull. of the Am. Meteorological

c. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Atmospheric Transmission of Electromagnetic Radiation, Physical Meteorology.

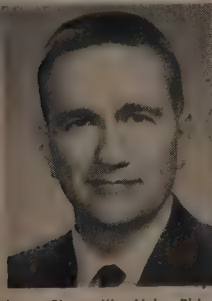
, Anthony Tsuchien (Ph.D.), Asst. Prof., Dept. of Chem., Utah ate Univ., Logan, Utah. BIOCHEMISTRY. b. Taipei, Formosa, g. 12, 1930. s. Tsungming and Song-Sui (Lin) T. Edn.: S., Natl. Taiwan Univ., Formosa, 1953; M.S., Univ. of Notre me, 1956; Ph.D., Stanford Univ., 1960. m. Kazuko Yamamoto, y 3, 1957. c.: Marcia Lynn; Janice Kay; Caroline Kim. p.: Rsch. Assoc., Stanford Univ., 1961; Rsch. Assoc., Yale iv., 1961-62; Asst. Prof., Dept. of Chem., Utah State Univ., 62—. Mem.: A.C.S.; Phi Lambda Upsilon; Sigma Xi; A.A.S., Areas of Rsch.: Nucleic Acid; Virus; Cytochrome c and lated Peptides; Lipoprotein Lipase.

ICK, Russell Raymond, Jr. (Mr.), Biol. Tchr., Sr. H. S., Unirsity City, Mo. Home Add.: 629 W. Woodbine Ave., Kirkood 22, Mo. ZOOLOGY, PHYSIOLOGY. b. Martin, Tenn., June 1934. s. Russell R., Sr. and Mae (Garrelts) T. Edn.: B.S., nion Univ., 1956; M.A., George Peabody Coll., 1957. m. Marrie Anderson Gay, 1959. Exp.: Asst. Coordinator, Korean rogram, George Peabody Coll., 1957-59; Instr. of Biol., ibid., 959-60; Asst. to Dir., N.S.F. Inst., summers, 1960, '61, '62; chr., H. S., University City, Mo., 1961—; Biol. Tchr. and Asst. Dir., N.S.F. Inst., George Peabody Coll., summer, 1962. Mem.: enn. Acad. of Sci.; A.A.A.S.; Kappa Delta Pi; Phi Delta Kappa; ri-Beta. Areas of Rsch.: Physiol.; Genetics.

UCKER, Joseph Aloysius, Jr., (Ph.D.), Consultant-Ednl. Methods, 08 W. 19th St., Wilmington, Del. Home Add.: 508 W. 19th St., Wilmington 2, Del. EDUCATIONAL PSYCHOLOGY; MILITARY PSYCHOLOGY; EDUCATIONAL MEDIA. b. Wilmington, Del., May 28, 1916. s. Joseph A., Sr., and Edna Mae (McJilton) T. Edn.: A.B., Catholic Univ. of Am., 1939; M.A., Tchrs. Coll., Columbia Univ., 1947; Ph.D., Columbia Univ., 1950. m. Mary Frances Calinan, Oct. 27, 1947. c.: Kathryn; Kevin; Gregory; Stephen. Exp.: Rsch. Scientist, Air Force Personnel and Training Rsch. Ctr., Denver, Colo., 1949-59; Dir. of Rsch., Ednl. Sci. Div., U. S. Industries, Inc., Santa Barbara, Calif., 1959-61; Dir., Tucker-Signatron, Inc., Wilmington, Del., 1961—. Mem.: A.A.A.S.; Am. Psychological Assn., Fellow; Natl.

Edn. Assn. Contbr. to: Psychological Reports. Serv. Rec.: U.S.A.F., W. W. II. Areas of Rsch.: Auto-Instructional Methods; Personnel Sub-System Development; Training Devices.

TUCKER, Robert Gene, (Ph.D.), Mgr. of Scientific Servs., Baxter Labs., Inc., Morton Grove, Ill. Home Add.: 830 Northwoods Dr., Deerfield, Ill. NUTRITION. b. Springfield, Mo., Sept. 14, 1918. s. Chauncey Noland and Stella Ethel (Crawford) T. Edn.: A.B., Southwest Mo. St. Coll., 1940; M.S., Univ. of Minn., 1948; Ph.D., ibid., 1950. m. Margie Lea Littlefield, June 10, 1946. c.: Curtis Gene; Todd Martin; Monica Alisa Lou. Exp.: Chemist, M.F.A. Milling Co., Springfield, Mo., 1940-46; Rsch. Biochemist, V.A. Hospital, Nashville, Tenn., 1951-55; Sr. Scientist, Smith Kline & French Labs., Philadelphia, Pa., 1955-60; Mgr., Scientific Servs., Baxter Labs., Inc., Morton Grove, Ill., 1960—. Mem.: Am. Inst. of Nutrition; Am. Chemical Soc.; Canadian Biochemical Soc.; A.A.A.S., Fellow; Am. Documentation



Inst., Sigma Xi; Alpha Phi Omega; Toastmasters Internatl. Contbr. to: Jour. of Nutrition. Serv. Rec.: U. S. Army, W. W. II. Areas of Rsch.: Human Nutrition; Mineral Metabolism; Pharmaceuticals; Documentation; Chemical Warfare.

TUCKER, Ruth Emma (Ph.D.), Prof., Food & Nutrition, Univ. of R. I., Kingston, R. I. Home Add.: Kingston, R. I. FOOD AND NUTRITION. b. Warrensburg, Ill., 1901. d. Joseph T. and Bessie (Batchelder) T. Edn.: A.B., Univ. of Ill., 1923; M.S., ibid., 1925; Ph.D., Univ. of Chicago, 1948. Exp.: Asst. Prof., Kans. St. Coll., 1925-37; Prof., Univ. of Alaska, 1937-42; Prof., Univ. of R. I., 1944—. Mem.: A.A.A.S.; Assn. of Vitamin Chemists; Am. Pub. Health Assn.; Am. Dietetics Assn.; Am. Home Econs. Assn.; Sigma Xi; Phi Kappa Phi; Iota Sigma Pi; Sigma Delta Epsilon; Omicron Nu. Contbr. to: Jour. of Am. Dietetics Assn.; Jour. of Nutrition; Expt. Stations Bulls. Areas of Rsch.: Food and Nutrition.

TULLAR, Richard Montgomery (Mr.), Assoc. Prof. of Zool., Pierce Coll., Woodland Hills, Calif. Home Add.: 8438 Amigo Ave., Northridge, Calif. ZOOLOGY, SPECIFICALLY VERTEBRATE PALEONTOLOGY. b. Tacoma, Wash., Aug. 30, 1910. s. Dr. Arthur G. and Mabel (Snoke) T. Edn.: A.B., Univ. of Calif., Los Angeles, 1933; M.S., Univ. of Calif., Berkeley, 1947. c.: Richard M.; Karalee J. Exp.: Asst. in Biol., U.C.L.A., 1931-33; Tchng. Fellow, Univ. of Calif., 1933-34; Biologist and Refuge Mgr., U. S. Fish and Wildlife Serv., Portland, Ore., 1935-43; Chem. Engr., Timm Aircraft, Van Nuys, Calif., 1943-45; Instr. and Sci. Chmn., San Fernando, Calif., H. S., 1945-47; Assoc. Prof., Pierce Coll., 1947—. Mem.: Sou. Calif. Acad. of Sci.; Southwestern Anthropological Assn.; A.A.A.S.; A.A.U.P. Author: Syllabus in Applied Animal Science, 1949; Bovine Semen, 1951; Molecular Structure and Biological Phenomena, 1961; Ichthyosaurs in General and at Pierce in Particular, 1961. Contbr. to: Jour. of Mammalogy. Areas of Rsch.: Vertebrate Paleontol.; Physiological Genetics and Molecular Biol.

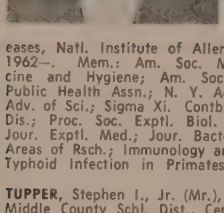
TULLOCH, Lynn Hardyn, (Mr.), Prof. of Math., Southwest Tex. State Coll., San Marcos, Tex. Home Add.: 607 Barbara Dr., San Marcos, Tex. MATHEMATICS. b. Belton, Tex., April 23, 1907. s. John Henry and Annie Laurie (Andrews) T. Edn.: A.B., Baylor Univ., 1928; M.A., Brown Univ., 1932. Exp.: Instr. in Math., Baylor Univ., 1928-30; Head, Math. Dept., Victoria Jr. Coll., Tex., 1934-37; Head, Math. Dept., Ranger Jr. Coll., Tex., 1937-38; Hd., Dept. of Math., San Antonio Jr. Coll., 1938-46; Assoc. Prof., Prof., Southwest Tex. State Coll., 1946—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Soc. of Industrial and Applied Math.; Am. Assn. Adv. of Sci.; Canadian Math. Congress; Societe Mathematique de France; Indian Math. Soc.; Tex. Acad. of Sci.; Sigma Xi; Am. Assn. Univ. Profs.; Tex.

Coll. Classroom Tchrs. Assn.; Tex. State Tchrs. Assn. Serv. Rec.: U.S.A.A.F., 1942-45. Gen. Int.: Fellow, Natl. Sci. Fdtn. Faculty, The Univ. of Tex., 1957-58. Listed in: W. W. in the South and Southwest; W. W. in Tex.; Am. Men of Sci.; Natl. Social Dir. Areas of Rsch.: Theory of Integration, Differential and Integral Equations, Vector and Tensor Analysis, Various Phases of Mathematical Analysis.

TULLOCK, Gordon (J.D.), Assoc. Prof., Univ. of Va., Charlottsville, Va. STATISTICS, ECONOMICS, APPLICATIONS OF MATHEMATICS TO THE SOCIAL SCIENCES. b. Rockford, Ill., Feb. 13, 1922. s. George D. and Helen Crum T. Edn.: J.D., Univ. of Chicago, 1948. Exp.: Foreign Service Officer, Dept. of State, 1948-56; Rsch. Dir., Princeton Panel, 1957-58; Rsch. Fellow, Univ. of Va., 1958-59; Asst. Prof., Univ. of S. C., 1959-61; Assoc. Prof., Univ. of Va., 1961—. Mem.: Am. Economic Soc.; Am. Rocket Soc.; A.A.A.S.; Sigma Chi; Sigma Xi. Contbr. to: Jour. of the Am. Statistical Assn.; PROD; Economic History Review, Jour. of Political Economy; Am. Economic Review; Science. Serv. Rec.: U.S.A., 1943-45. Author: A Practical Guide for Ambitious Politicians; Co-author: The Calculus of Consent. Areas of Rsch.: Application of Advanced Mathematical and Theoretical Techniques to Political Structures, Particularly Bureaucracies and Legislatures. Applications of Economic Theory to Oriental History.

TULLY, Joseph George (Ph.D.), Microbiologist, Lab. of Bacteriol Diseases, Natl. Inst. of Allergy and Infectious Diseases, Natl. Inst. of Health, Bethesda 14, Md. Home Add.: 11832 Charles Rd., Silver Spring, Md. MICRO-BIOLOGY. b. Sterling, Colo., July 14, 1925. s. Joseph G. and Hazel (Kidder) T. Edn.: B.S., Univ. of Portland, 1949; M.S., Brigham Young Univ., 1951; Ph.D., Univ. of Cincinnati, 1955. m. Melba M. Weber, Dec. 21, 1957. Exp.: Grad. Asst., Brigham Young Univ., 1949-51; Univ. Scholar, Univ. of Cincinnati, 1951-55; Asst. Prof. of Microbiol., ibid., Coll. of Med., 1955-57; Attending Microbiolst., Cincinnati Gen. Hosp., 1956-57; Microbiolst., Div. of Special Operations, Walter Reed Inst. of Rsch., 1957-61; Chf., Dept. of Microbiol., ibid., 1961-62; Microbiologist, Lab. of Bacteriol. Diseases, Natl. Institute of Allergy and Infectious Diseases, N.I.H., 1962—. Mem.: Am. Soc. Microbiol.; Soc. of Tropical Medicine and Hygiene; Am. Soc. of Parasitologists; Fellow, Am. Public Health Assn.; N. Y. Academy of Sci., Fellow; Am. Assn. Adv. of Sci.; Sigma Xi. Contbr. to: Am. Jour. Hyg.; Jour. Infect. Dis.; Proc. Soc. Exptl. Biol. and Med.; Jour. of Immunology; Jour. Exptl. Med.; Jour. Bacteriol. Serv. Rec.: U.S.N., 1943-46. Areas of Rsch.; Immunology and Pathogenesis of Enteric Diseases, Typhoid Infection in Primates, Bacillary Dystentery.

TUPPER, Stephen I., Jr. (Mr.), Area Chmn., Math. and Sci., K-12, Middle County Schl. Dist., Centerreach, N. Y. Home Add.: Box 933, Setauket, N. Y. PHYSICS. b. West Lebanon, N. H., June 30, 1922. s. Stephen I. and Eva (Dolloph) T. Edn.: B.S., Boston Univ., 1949; M.A., ibid., 1949. m. Louise H. Edson, July, 1945. Exp.: Tchr., Grafton H. S., Grafton, Mass., 1949-51; Tchr., Windham H. S., Willimantic, Conn., 1951-58; Maths. Lecturer, Univ. of Conn., Storrs, Conn., 1953-58; Engr., United Aircraft, East Hartford, Conn., 1943-54; Area Chmn., Math. and Sci., K-12, Middle Co. Schl. Dist., Centerreach, N. Y., 1958—. Hon. Pos.: Membership Chmn., Suffolk Co. Sci. Tchrs. Assn. Mem.: N. Y. State Tchrs. Assn.; N.E.A.; Federation of Am. Scientists; N. Y. State Math. Tchrs. Assn.; A.A. A.S.; Elks; B.P.O. Contbr. to: Edn. Jour. Serv. Rec.: A.U.S. Areas of Rsch.: Math. and Science Grades K-12.

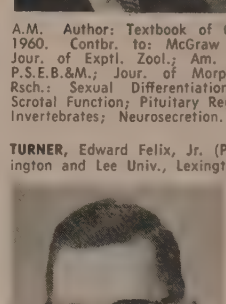


TURKEL, Henry (M.D.), Physician, 8000 W. 7 Mile Rd., Detroit, Mich. HEMATOLOGY—BIOCHEMISTRY. b. Austria, June 29, 1903. s. Hillel and Frieda (Segal) T. Edn.: B.A., Ohio State Univ., 1931; M.A., Univ. of Mich., 1932; M.D., Univ. of Mich. Schl. of Med., 1936. Hon. Deg.: D.Sc., Univ. of Phoenix, Italy, 1958; D.Sc., Lane Colege, 1960. m. Sarah R. Marcus, July 17, 1959. c.: Margot; Ellen; Hope; Robert. Exp.: Rsch.—Turkel Instruments Co., since, 1959, Lectr., U. S. Army, Navy, Air Force, V. A. and Civilian Hosps. and and Med. Schls. in U. S., Cuba, Europe; Consultant, U. S. Army Edn. and Trng. Div., S.G.O., 1947-55. Mem.: Amer. Med. Assn., Med. Soc. Dist. of Columbia; Royal Soc. Med., London; Amer. Acad. Gen. Prac.; Amer. Geriatric Soc.; Amer. Acad. Allergy; Acad. Psychosom. Med.; Association of Military Surgeons U. S.; International Society of Hematology; New York Acad. Sci.; R.E.S.A.; Amer. Chem. Soc.; Amer. Pharm. Assn.; Amer. Med. Writers Assn.; and others. Author: Trephine Technique of Bone Marrow Infusions and Tissue Biopsies, 9th ed., 1960. Contbr. to: War Med.; J.A.M.A.; Bull. War Med.; Jour. Parenteral Ther.; Amer. Jour. Dis. Child.; Int. Med. Dig.; Jour. of Operations (Japan); Jour. Lab. and Clin. Med.; Lab. Dig.; Anesthesiology; Arch. Surg.; Jour. Urol. War Record: Lectr., U. S. Armed Hosps. Gen. Int.: Awarded Natl. Order of Merit, Carlos J. Finley, Grade of Officer, 1957, Havanna, Cuba. Areas of Rsch.: Hematology; Mental and Physical Retardations including Mongoloids.

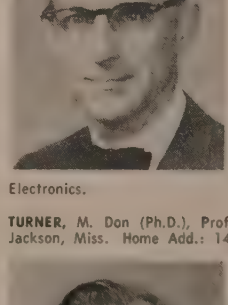
TURNER, Clair Elsmer (Sc.D.), Chief, Health Education, World Health Organization, 47 Bis Route, Florissant, Geneva, Switzerland. PUBLIC HEALTH. b. Harmony, Maine, Apr. 28, 1890. s. Frederick Orrison and Mary Frances (Chalmers) T. Edn.: A.B., Bates Coll., 1912; A.M., Harvard Univ., 1913; C.P.H., Harvard M.I.T., Schl. of Pub. Health, 1917; Dr. P.H., M.I.T., 1928; Ed.M., Boston Univ., 1944; M.P.H., Harvard Schl. of Pub. Health, 1947. Hon. Deg.: Sc.D., Bates Coll., 1937. m. Naomi Cocke, Dec. 24, 1924. c.: Mary Frances, Frederick Clair. Exp.: Instr., Bates Coll., 1913-14; Instr., Asst. Prof., Assoc. Pro Prof. and Hd., Dept. of Pub. Health, M.I.T., 1914-44; C Health Edn. Officer, Inst. of Inter-Am. Affairs, 1944-45; Inst Assoc. Prof. of Hyg., Tufts Coll. Med. and Den. Schl., 1917 Visiting Prof., Schl. of Pub. Health, Univ. of Calif., 1945-4 Asst. to the Pres., Natl. Fdn. for Infantile Paralysis, N N. Y., 1946-58; Consultant, WHO-UNESCO, 1961 . Hon. Po Pres., Internatl. Union for Health Edn. of the Pub., 1953-5 Chief Advisor, ibid., 1956-62; Chief, Health Education, Wo Health Organization, 1962—; Trustee, Bates Coll., 1922—. Mem A.A.A.S.; Am. Acad. Arts and Sci.; A.P.H.A.; A.M.A.; A Acad. Physical Edn.; N.E.A.; Phi Delta Kappa; Phi Beta Kapp Delta Sigma Rho; Sigma Xi; Delta Omega Contbr. to: A Jour. Pub. Health; Jour. Health and Physical Edn.; etc. Speci Int.: Health Edn.

TURNER, C. Donnell (Ph.D.), Prof. of Biol., Duquesne Uni Pittsburgh 19, Pa. ENDOCRINOLOGY. b. Curryville, Mo., No 30, 1903. s. Jesse H. and Jenn (Flatford) T. Edn.: A.B., We minster Coll., 1926; M.A., Un of Mo., 1930; Ph.D., ibid., 193 Exp.: Instr., Hardin Coll., 192 29; Asst. Prof., Univ. of G 1930-35; Assoc. Prof. Pro Northwestern Univ., 1937-4 Prof., Utica Coll. of Syracu Univ., 1948-50; Prof., Univ. Rangoon, Burma, 1949-50; Prof Meiji Digaku, Tokoyo, Japa 1950-60; Prof., Duquesne Univ 1960—. Mem.: A.A.A.S.; A Soc. of Zoologists; Endocrine Soc Soc. Exptl. Biol. and Medicin Am. Assn. Anatomists; N. Acad. of Sci.; Endocrine Soc Japan; Limnol. Soc. Am.; A.A U.P.; Internatl. Fertility Assn Gamma Alpha; Acacia; A.F. A.M. Author: Textbook of General Endocrinology, 1948, 195 1960. Contbr. to: McGraw Hill Ency. of Sci. and Technol Jour. of Exptl. Zool.; Am. Jour. of Anatomy; Endocrinolog P.S.E.B.&M.; Jour. of Morphol.; Anatomical Rec. Areas Rsch.: Sexual Differentiation; Testicular Transplantation a Scrotal Function; Pituitary Regulation of Gonads; Regeneration Invertebrates; Neurosecretion.

TURNER, Edward Felix, Jr. (Ph.D.), Chmn., Physics Dept., Wash ington and Lee Univ., Lexington, Va. Home Add.: 23 Universit Pl., Lexington, Va. PHYSICS. Newport News, Va., Apr. 2 1920. s. Edward F. and Margu rite Elizabeth (Fox) T. Edn. B.A., Wash. and Lee Univ., 1950 B.S., ibid., 1950; M.S., Mass Inst. of Tech., 1952; Ph.D., Univ of Va., 1954. m. Paulin Swartz, 1945. c.: Andrea; Elaine Paula. Exp.: Asst. Prof., Georg Washington Univ., 1954-57; A soc. Prof., Wash. and Lee Univ Va., 1957-59; Prof., ibid., 195 —; Chmn., Physics Dept., ibid 1961—. Mem.: Phi Beta Kappa Sigma Xi; Sigma Pi Sigma; Am Inst. of Physics; Am. Assn. Physics Tchrs.; Wash. Philosophi cal Soc.; Va. Acad. of Sci. Serv Rec.: U. S. Army, W.W. II. Area of Rsch.: Solid State Physics Electronics.



TURNER, M. Don (Ph.D.), Prof. of Biochem., Univ. Med. Center Jackson, Miss. Home Add.: 1406 Wilhurst, Jackson, Miss. PSYS IOLOGY; BIOCHEMISTRY. b. Pleas anton, Tex., Nov. 15, 1928. M. S. and Maude (Fritzgerald T Edn.: B.S., Baylor Univ., 1950 M.S., ibid., 1951; Ph.D., Univ of Tenn., 1955. m. Anne Cole Apr 17, 1953. c.: John B Deborah Ann; James S. Exp Instr. of Clinical Physiol., Univ of Tenn., 1954-55; Asst. Prof Rsch. Surg., Univ. of Miss., 1955 57; Asst. Prof. Physiol. Chem. ibid., 1957-61; Attending P Physiol., V. A. Hosp., Jackson Miss., 1958—; Consultant to Dept of Surg., Univ. Med. Center, ibid 1957-61; Assoc. Prof., Rsch. Surg. Asst. Prof., Physiol., ibid., 196 —; Consultant to Oak Ridge Inst of Nuclear Studies, 1962—. Hon Pos.: Secy., Miss Sect. of Am Chem. Soc., 1958. Mem.: Am. Physiol. Society; Fellow, A.A. A.S.; Am. Heart Assn.; Am. Chem. Society; Muscular Dystrophy Assn. of Am.; Sigma Xi; Alpha Phi Omega. Contbr. to Jour. Applied Physiol.; Surg.; Gynecol. and Obstetrics; Annal Surg.; Surgical Forum; Fed. Proc.; Surg.; Am. Jour. Surg Areas of Rsch.: Radiation Rsch.; Radioactive Tracer Techniques Protein Metabol.; Transfer Rates; Blood Flow; Steroids.



TTLE, Elsie Florence (Miss), Prof., North Greenville Jr. Coll., erville, S. C. Home Add.: 1014 Franklin, Normal, Ill. GEOGRAPHY; GEOLOGY. b. Livingston Co., Ill., Dec. 19, 1896. d. W. A. and Fannie Mae (Algeo) T. Edn.: B.Ed., Ill. State Normal Univ., 1930; M.A., George Peabody Coll. for Tchrs., 1931. Exp.: Tchr., Gr. Schls. in Ill. and Iowa, 1916-20, 1921-25, 1927-28; Instr., Geog., St. Tchrs. Coll., Memphis, Tenn., 1931; Tchr., Geography, Grammar Schl., Bastrop, La., 1935-37; Supvr. and Critic Tchr., Eastern State Tchrs. Coll., Commerce, Tex., (leave of absence), 1937; Instr., Geol., Geog., North Greenville Jr. Coll., S. C., 1938—. Hon. Pos.: Chmn., Guidance. Mem.: Am. Assn. of Univ. Profs.; A.A.A.S.; Natl. Coun. for Geographic Edn.; Southeastern Div. of the Am. Assn. of Geogra-

ers; Sou. Sociological Assn., ontinent and England and Gamma Mu. Areas of preciate, to Learn and to Summer of 1960—Tour of Europe, Ireland); Gamma Theta Upsilon; Rsch.: Helping the Students to Apply the Subjects.

UL, Johannes (Ph.D.), Sr. Rsch. Physicist, Bell and Howell Rsch. nter, Pasadena, Calif. Home Add.: 149 West Montecito Avenue, Sierra Madre, Calif. CHEMICAL PHYSICS, SURFACE PHYSICS AND CHEMISTRY. b. Tarvastu, Estonia, May 23, 1922. s. Johan and Emilie (Tulf) T. Edn.: Diploma, El. Eng., The Stockholm Technical Inst., Sweden, 1947; B.S., The Univ. of Stockholm, Sweden, 1955; Sc.M., Brown Univ., 1957; Ph.D., ibid., 1960. m. Marjatta Murtoniemi, July 14, 1957. Exp.: Tchr., The Stockholm Technical Inst., Stockholm, Sweden, 1947-49; Rsch. Engr., The Electrical Prospecting Co., ibid., 1949-53; Computation Engr., L. M. Ericsson Telephone Co., ibid., 1954-55; Rsch. Asst., Brown Univ., 1955-57, 1958-60; Rsch. Assoc., ibid., 1960; Rsch. Physicist, Am. Cyanamid Co., amford, Conn., 1960-62; Sr. Rsch. Physicist, Bell and Howell sch. Ctr., 1962—. Mem.: The Am. Physical Soc.; The Am. nemical Soc.; Am. Assn. for Adv. of Sci.; Sigma Xi. Contbr. : Jour. Phys. Chem. Solids; Jour. Am. Chemical Soc.; Anal. nemistry; Jour. Phys. Chemistry. Areas of Rsch.: Adsorption of ases on Solids, Low-Energy Electron Diffraction, Contact Catalysis, ltra-High Vacuum Technique.

UVE, Richard Larsen (D.Sc.), Head, Engrng. Rsch. Br., U. S. aval Rsch. Lab., Wash., D. C. Home Add.: 9211 Crosby Rd., Silver Spring, Md. CHEMISTRY (PHYSICAL, INORGANIC AND ENGINEERING). b. Canton, S. D., Feb. 1, 1912. s. Anthony G. and Ida Marie (Larsen) T. Edn.: B.A., Am. Univ., 1935. Hon. Deg.: D.Sc., Carleton Coll., 1961. m. Maxine Duvel, 1936. c.: Richard L., II; Christine. Exp.: Technologist, U. S. Dept. of Agri., Wash., D. C., 1931-32; Chemist, Rsch. Assoc., Inc., Wash., D. C., 1935-38; Assoc. Chemist, U. S. Naval Rsch. Lab., ibid., 1938-41; Rsch. Chemist, ibid., 1941—. Hon. Pos.: Chmn., Local Section, A.I.-Ch.E. Mem.: Am. Chem. Soc.; Am. Inst. Chem. Engrs.; Combustion Inst.; A.A.A.S.; Soc. Chem. Ind., London; R.E.S.A. (Sigma Xi). U. S. Naval Inst.; Alpha Chi

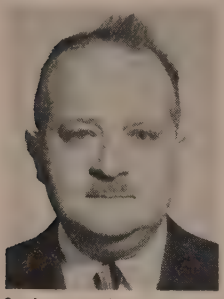
Sigma; Cove Pt. Cit. Assn.; Wood. Pk. Civic Assn. Contbrng. Editor: Handbook of Fire Protection, 1954. Contbr. to: Ind. and Engrng. Chem.; U. S. Naval Inst. Proc.; Fire Engrng.; Quarterly Natl. Fire Prot. Assn. Gen. Int.: U. S. Navy Civ. Serv. Award; Dept. of Defense Superior Accomplishment Award. Areas of Rsch.: Chemistry of Fire Extinguishment; Foam Extinguishment methods and materials; Flame Propagation; Surface Chemistry; Special Explosives; Chem. and Phys. Optics of Dyes; Fire Fighting Equipment Design; Naval Emergency Equipment Requirements; Combustion Inhibition; Shark Biol.

TWISS, Sumner Barnes (Ph.D.), Pres., Cycleweld Chem. Products Div., Chrysler Corp., 5437 W. Jefferson Ave., Trenton, Mich. Home Add.: 20264 Canal Dr., Grosse Ile, Mich. CHEMISTRY AND CHEMICAL ENGINEERING. b. Hartford, Conn., Mar. 24, 1917. s. Ernest Benjamin and Ethel May (Florence) T. Edn.: B.S., Trinity Coll., 1939; Ph.D., Johns Hopkins Univ., 1944. m. Jeanette Gougeon, Apr. 1, 1961. c.: Sumner B., Jr.; Pamela Ann. Exp.: Rsch. Chemist, DuPont Co., Phila., Pa., 1939-40; Instr., Johns Hopkins Univ., 1940-44; Asst. Prof., Wayne St. Univ., 1944-46; Dir., A.A.A.S., Gordon Rsch. Conf., Detroit, Mich., 1945-46; Project Engineer, Chrysler Corp., Detroit, Mich., 1946-48; Dept. Hd., ibid., 1948-55; Asst. Chf. Engr., ibid., 1955-59; Pres., Cycleweld Chem. Products Div., ibid., Trenton, Mich., 1959—. Hon. Pos.: Past Vice-Chmn., S.A.E. Brake Subcomm.; Past Pres., Johns Hopkins Alumni of Mich.; Past Pres., Excalibur, Knights of the Round Table; Adv. Comm., Detroit Sales Exec. Club; Vice-Pres., Adhesives Coun., Rubber and Plastic Adhesives and Sealers Mfgrs. Mem.: A.C.S.; Am. Inst. of Chemists; A.A.A.S.; Am. Soc. of Lubrication Engrs.; Soc. of Automotive Engrs.; Electrochem. Soc.; Chem. Specialties Mfgrs. Assn.; Phi Beta Kappa; Sigma Xi; Phi Lambda Upsilon; Y.M.C.A.; Scarab Club; Grosse Ile Golf and Country Club; Rotary Club. Author: Advancing Fronts in Chemistry, 1945; Polymerization of Isoprene with Alkali Metal, Organic Compounds, 1944. Contbr. to: Corrosion Mag.; I.S.A. Jour.; Trans. of A.S.M.E.; Lubrication Engrng.; A.S.L.E. Trans.; Detroit Chem.; Jour. of Air Pollution Control Assn.; Instrument News; A.S.T.M. Bull.; A.D.H. Age; Official Digest of Paint and Varnish Products; A.S.T.M. Proc.; Metro. Detroit Sci. Revue; Jour. of Phys. Chem.; Trans. of Metallurgical Soc. of A.I.M.E.; S.A.E. Trans. Areas of Rsch.: Development of Accelerated Corrosion Techniques; Theory of Noise in Brakes; Mechanism of Lubricated Wear with EP Additives; Techniques of Measurement of Air Pollution; Disc Shear Test Adhesives; Mechanism of Weathering of Automotive Finishes; Polymerization of Isoprene; Mechanism of Adhesion of Polar Compounds; Mechanism of Sintering of Iron Powders; Development of Adhesives and Sealants; Polymerization Processes and Properties of High Polymers; Rsch. Mgmt.

TYLER, Eunice Nickerson (Ph.D.), Prof. of Pub. Health Edn., Schl. of Pub. Health, Univ. of N. C., Chapel Hill, N. C. Home Add.: P. O. Box 818, Chapel Hill, N. C. PUBLIC HEALTH EDUCATION. b. East Haven, Conn., Apr. 30, 1909. d. Herbert Clayton and May E. (Forbes) Nickerson. Edn.: Ph.B., Pembroke Coll. in Brown Univ., 1931; M.P.H., Yale Schl. of Pub. Health, 1933; Ph.D., ibid., 1946. m. Herman Yale Tyler, 1940 (div. 1945). Exp.: Rsch. Asst. and Milbank Mem. Fund Fellow, Yale Univ. Schl. of Pub. Health, 1933-34, 1934-35; Supvr. of Records and Statistics, Hartford Visiting Nurses Assn., Hartford, Conn., 1935-41; Assoc. Health Edn. Consultant, Asst. Health Edn. Consultant, U. S. Pub. Health Serv., Wash., D. C., 1942-44; Assoc. Prof., Schl. of Pub. Health, Univ. of N. C., 1945-53; Prof. of Public Health Edn., ibid., 1953—; Temporary Advisor, World Health Organization, 1962—. Hon. Pos.: Health Education Sect. Repr., Assn. Com. on Eligibility, Am. Pub. Health Assn., 1944-46, 1951-52; Sect. Repr., Com. on Nomination of Exec. Bd. Mems., ibid., 1946-47; Chmn., Nominating Com., Health Edn. Sect., Am. Pub. Health Assn., 1959-60; Mem., Long Range Planning Comm., Soc. of Pub. Health Educators, 1958-59, 1959-60; Chmn., Bd. of Trustees, Comm. to Study Eligibility Requirements, 1956-57; Pres., N. C. Assn. of Health Educators, 1949-50; Mem., Constitution and By-Laws Comm., Adult Edn. Assn. of the U.S.A., 1953-54, 1954-55; Mem., State-Wide Advisory Com., N. C. Library Community Project, 1959—; Consultant, S. C. St. Bd. of Health, 1945-60. Mem.: Am. Natl. Coun. for Health Edn. of the Public; Internatl. Union for Health Edn. of the Pub.; Am. Pub. Health Assn., Fellow; Sou. Br., A.P.H.A.; N. C. Pub. Health Assn.; Soc. of Pub. Health Educators; N. C. Assn. of Health Educators; Adult Edn. Assn. of the U. S.; Southeastern Adult Edn. Assn.; Am. Assn. Adv. Sci.; Am. Assn. Univ. Profs.; Elisha Mitchell Scientific Soc.; Fed. of Am. Scientists; Pembroke Coll. of Brown Univ. Alumni Assn.; Assn. of Yale Alumni in Pub. Health; Delta Omega; Delta Kappa Gamma; Am. Assn. of Univ. Women; League of Women Voters of Chapel Hill; Chapel Hill Assn. for Aging and Community Relationships; U.N.C. Faculty Club. Contbr. to: Health Educators at Work; Yale Jour. of Biol. and Med.; H. S. Jour. Areas of Rsch.: Public Health Education.

TYLER, Stanley Warren (Lt. Col.), Military Asst. Advry. Gp., Addis Ababa, Ethiopia. Home Add.: U.S.A. Elm, Maag—Ethiopia, APO 319, New York, N. Y. CHEMISTRY. b. Lynn, Mass., Oct. 24, 1911. s. Walter E. and Marian S. (Tebbetts) T. Edn.: B.S., Univ. of Mass., Amherst, Mass., 1933; Mass. Inst. of Technol., 1941-42; B.A., Staley Coll., Mass., 1950; M.A., ibid., 1952. Hon. Deg.: D.A., Staley Coll., 1953. m. Irene M. Stancyk, Apr. 7, 1934. c.: Warren Tyler; Claire T. Murphy. Exp.: Tchr., Lynn, Mass. H. S., 1933-35; Prod. Chemist, Forbes Lithograph Co., Chelsea, Mass., 1935-36; Asst. Chemist in Charge, Rsch. Chemist, Chas. M. Cox Co., Malden, Mass., 1936-52; Prof. Biol. and Anat., Staley Coll., 1951-53; Inspector General, Dept. of Army, N. Y. Field Office, 1953-55; Advisor to

Korean Army, K.M.A.G., 1955-57; Chf., Pitman Dunn Labs., 1957-61; Milit. Asst. Advry. Gp., Addis, 1961—. Mem.: A.A.A.S.; Rsch. Engrng. Soc. of Am.; Affiliate of Sigma Xi; Natl. eGog. Soc.; Alpha Sigma Phi; Masonic Orders; Eastern Star. Contbr. to: Indusl. and Engrng. Chem.; Analytical Chem. Serv. Rec.: U. S. Army, W.W. II, 1942-46, Korean Conflict, 1952—. Areas of Rsch.: Vitamins, Amino Acids, Nutritional Requirements of Bacteria Trace Minerals in Nutrition, Biotics, Antibiotics, Biochemistry, Explosives.



TYTELL, Martin Kenneth (Mr.), Document Analyst, N. Y. Inst. of Criminology, 115 W. 42nd St., N.Y.C. Home Add.: 3031 Scenic Pl., Riverdale 63, N. Y. ANALYSIS OF QUESTIONED TYPEWRITTEN DOCUMENTS, CRIMINALISTICS, DESIGNER AND BUILDER OF SPECIAL PURPOSE TYPEWRITERS. b. N.Y.C., Dec. 20, 1913. s. Isaac and Fanny (Maslow) T. Edn.: B.S.E., St. Johns Univ., 1943; M.B.A., N. Y. Univ., 1955. m. Pearl Lily Kessler, 1945. c.: Peter Van; Pamela Van. Exp.: Lectr., Brooklyn Coll., 1955; Lectr., N. Y. Univ., Grad. Schl. of Pubi. Administration, 1955-58; Hd., Dept. of Scientific Investigation and Document Examination, N. Y. Inst. of Criminology, N. Y. City, 1955—. Hon. Pos.: Nominating Comm., Am. Soc. of Criminology, 1960, '61. Mem.: A.A.-A.S.; Am. Soc. of Criminology. Contbrng. Author: The World's Greatest Spy Stories, 1954; Crime in America, 1961. Author: Management's Problems with Questioned Documents, 1955. Serv. Rec.: U. S. Marine Corps, 1939-40; U. S. Army, 1943-45. Gen. Int.: Established that typewriters can be forged; Maintains modern questioned document lab. in N.Y.C.; Maintains shop for conversion of type writers to special scientific purposes, N.Y.C.

TYTELL, Pearl L. (Mrs.), Examiner of Disputed Documents, Offic and Lab.: 116 Fulton Street, New York, New York. Home Add. 3031 Scenic Pl., Riverdale 63 N. Y. IDENTIFICATION OF HAND WRITING AND TYPING AND DE TECTION OF FORGERY. b. N. Y City, Aug. 29, 1918. d. Harr and Yetta (Feigenbaum) Kessler Edn.: B.S., N. Y. Univ., 1962 m. Martin K. Tytell, May 23 1943. c.: Peter; Pamela. Exp. Lectr., N. Y. Univ., 1955-57 Lectr., Brooklyn Coll., 1956; Fac ulty, N. Y. Inst. of Criminology 1956—. Mem.: A.A.A.S.; Eastern Bus. Tchrs. Assn.; Internatl. Assn of Chfs. of Police; N. Y. Univ Club; Home Owners Along the Hudson Assn. Gen. Int.: Lectr to Police Intelligence Units, Fed eral Bar Assn., Federal Probation and Parole. Areas of Rsch.: Handwriting in Varying Degrees of Intoxication, Stroke Compared with Speed of Writing; Identification of Annonymous Letters, Disguised Writings.

U

BELL, Earl (Mr.), Sci. Editor, New York Herald Tribune, N. Y. , N. Y. Home Add.: 482 Summit Ave., Hackensack, N. J. CIENCE WRITING. b. Brooklyn, N. Y., June 21, 1926. s. harles A. and Hilda (Kramer) U. Edn.: B.S., City Coll. of , Y., 1948. m. Shirley Leitman, Feb. 12, 1949. c.: Lori Ellen; ichael Charles. Exp.: Messenger, Secy., Reporter, Sci. Editor, . Y. Herald Tribune, N.Y.C., 1943—. Hon. Pos.: Pres., Natl. ssn. of Sci. Writers; Pres., Coun. for the Advancement of Sci. riting; Vice-Pres., Nuclear Energy Writers Assn.; Dir., Natl. ealth Coun. Mem.: Am. Geophysical Union; Am. Crystallo- raphic Assn.; Phi Beta Kappa. Contbr. to: Am. Scientist; Acta rystallographica. Serv. Rec.: U. S. Navy, 1944-46. Gen. Int.: sker Prize; A.A.A.S. Westinghouse Prize. Areas of Rsch.: rystallography.

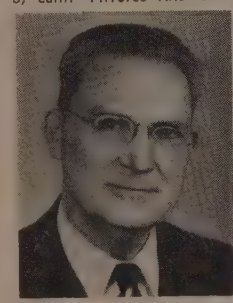
ENO, Sueo (D.Sc.), Prof., Inst. of Astrophysics, Coll. of Sci., niv. of Kyoto, Kyoto, Japan. Home Add.: 36 Higashicho, Matsugasaki, Sakyoku, Kyoto, Japan. ASTROPHYSICS AND THEORETICAL PHYSICS. b. Tokyo, Japan, Feb. 26, 1911. s. Tokuzo and Kuwa (Koketsu) U. Edn.: Rigakushi, Inst. of Astrophysics, Univ. of Kyoto, 1937; D.Sc., ibid., 1957. m. Misa Kato, July 14, 1940. c.: Hisae; Fumihiko. Exp.: Asst. Prof., Univ. of Kyoto, Japan, 1950-59; Maitre de Recherche, Inst. d'Astrophysique, (CNRS), Paris, France, 1957-58; Visiting Prof., Univ. of Calif., 1960-61; Consultant, The RAND Corp., Santa Monica, Calif., 1960-62; Prof., Coll. of Sci., Univ. of Kyoto, Japan, 1959—. Mem.: Am. Astronomical Soc.; Am. Mathematical Soc.; Am. Geophysical Union; Am. Rocket Soc.; Internatl. Astronomical Union; Astronomical Soc. of Japan. Co-Author: The Sun, 1958. Contbrng. Author: Recent Astronomy, 1959. Contbr. to: Astrophysical Jour.; Jour. of Mathematical Analysis and Applications; Jour. of Math. and Mechanics; Annales d'Astrophysique; Compte Rendues des Acad. Scie., Paris; Proress of Theoretical Physics; Publ. of Astronomical Soc. of Japan. Areas of Rsch.: Irreversible Transport Processes (Radiative Transfer, Neutron Diffusion, X-ray Diffusion, Radiation Fluid-Dynamics and Kinetic Theory of Dilute Ionized Gases).

ULLMAN, Montague (M.D.), Dir., Dept. of Psychiatry, Maimonides Hosp., Brooklyn 19, N. Y. Home Add.: 55 Orlando Ave., Ardsley, N. Y. PSYCHIATRY. b. New York, N. Y., Sept. 9, 1916. s. William and Nettie (Eisler) U. Edn.: B.S., Coll. of the City of N. Y., 1935; M.D., N. Y. Univ. Coll. of Med., 1938. m. Janet Simon, Jan. 26, 1941. c.: Susan; William; Lucy. Exp.: Asst. Clin. Prof. of Psychiatry, N. Y. Univ. Coll. of Med., 1959-61; Assoc. Prof. of Psychiatry, State Univ. of N. Y., 1961—; Dir., Dept. of Psychiatry, Maimonides Hosp. of Brooklyn, 1961—. Mem.: Am. Psychiat. Assn.; N. Y. Co. Med. Soc.; Soc. of Med. Psychonalysts; Acad. of Psychoanalysis; N. Y. Acad. of Scis.; A.A.A.S.; Assn. for Rsch. in Nervous and Mental Disease; Soc. of Biological Psychiatry; Alpha Omega Alpha. Author: Behavioral Changes in Patients Following Strokes, 1962. Contbr. to: Jour. Nerv. Ment. Dis.; Am. Jour Psychother.; Psychiatry; Jour. Clin. and Exper. Psychopathology; Am. Jour. Psychother.; Arch Neurol.; Cerebral Vascular Diseases. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Dream Theory; Brain Damage and Behavior; Hypnosis.

UDY, Murray Cowley (Ph.D.), Vice-Pres., Rsch., Strategic-Udy Processes Co., 3986 Royal Ave., Niagara Falls, N. Y. Home Add.: 818 Cayuga Dr., Niagara Falls, N. Y. METALLURGY. b. Farmington, Utah, May 26, 1916. s. Marvin J. and Tessa (McMurray) U. Edn.: B.S., Lehigh Univ., 1938; M.S., ibid., 1939; Ph.D., Ohio State Univ., 1941. m. Mary Elizabeth Smith, June 17, 1939. c.: Anne Kathryn; James Marvin; Richard Louis; Alan Craig; Rebecca Lynne; Joseph Murray. Exp.: Rsch. Fellow, Battelle Mem. Inst., 1939-41; Rsch. Metallurgist, ibid., 1941-51; Asst. Chief, Ferrous Metals Div., ibid., 1951-56; Dir. of Rsch., Strategic-Udy Processes Co., Niagara Falls, N. Y., 1956-59; Vice Pres., Rsch., Strategic-Udy Metallurgical and Chemical Processes, Ltd., 1959—; Strategic Materials Corp., 1959—. Hon. Pos.: Member-at-Large, Exec. Comm., Electrothermics and Metallurgy Division, Electrochem. Soc.; Member-at-Large, Exec. Comm., Niagara Frontier Council, Boy Scouts of Amer., 1959—; Board of Directors, La Salle Y.M.C.A. Mem.: Am. Soc. for Metals; Am. Inst. of Mining and Metallurgical Engrs.; Am. Foundrymen's Soc.; Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; A.A.A.S.; Electrochem. Soc.; Can. Inst. of Mining and Metallurgy; Can. Inst. of Chem. Engrs.; Niagara Club; Sigma Xi; Theta Chi. Contbr. to: Trans. A.S.M.; Trans. A.I.M.E.; Trans. A.F.S.; Metal Progress; Jour. of Electrochem. Soc. Areas of Rsch.: Gaseous Reduction of Ores; Use of Boron in Alloy Steels; Metallurgy of Beryllium, Ferroalloys, etc. from Low-Grade and Off-Grade Materials; Sulfate Process Alumina.

ULLOM, Madeline Marie (Lt. Col.), Nurse, Fitzsimons Gen. Hosp., Box 6036, Denver 30, Colo. Home Add.: O'Neill, Neb. NURSING EDUCATION. b. O'Neill, Neb., Jan. 1, 1911. d. John and Mary Louise (Jones) U. Edn.: B.S.N.Ed., Incarnate Word Coll., San Antonio, 1948; M.S.N.Ed., Cath. Univ., 1951. Exp.: Jefferson Hosp., Philadelphia, Clinic, Obstetrical Nurse, 1937-38; Walter Reed Gen. Hosp., Wash., D. C., Gen. Duty, 1938-40; Sternberg Gen. Hosp., Corregidor, Santo Tomas Pl., Gen. Duty, 1940-45; Educational Coordinator, Brooke Gen. Hosp., San Antonio, Tex., 1950; Director, Advanced Medical Tech. Crs., Fitzsimons Gen. Hosp., Denver, 1953-54; Chief Nurse, 130 St. Hosp., Heidelberg, 1954-56; Asst. Ch. Nurse, Wm. Beaumont Gen. Hosp., El Paso, Tex., 1956-60; Asst. Chf. Nurse, Fitzsimons, Gen. Hosp., Denver, Colo., 1960—. Hon. Pos.: Chmn., Natl. Security Comm., El Paso Bus. and Profl. Womens Club; Dir., Dist. Eight, Tex. Fed. Bus. and Prof. Womens Club; First Vice Pres. and Pres., El Paso League for Nursing; Chmn., Workshops in Nursing in El Paso; Chmn., Prog. Comm. Dist. One Tex. Grad. Nurses Assn. Mem.: A.A.U.W., Denver Br.; Pilot Club of Denver; Bus. and Profl. Womens Club, Denver; A.A.A.S.; Pi Gamma Mu; Sigma Theta Tau; Am. Hosp. Assn.; Assn. Milit. Surgeons; Am. Nurses Assn.; Natl. League for Nurses; Natl. Assn. Prac. Nurse Edn. and Svc., Inc. Contbr. to: Pennsylvania Nurse; Womans Home Comp. Serv. Rec.: Army Nurse Corps., 1938—. Areas of Rsch.: Problems and Utilizational Nursing Service Personnel.

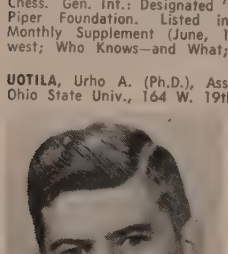
UNDERWOOD, John Bennett (Mr.), 2905 Benvenue Ave., Berkeley 5, Calif. PHYSICS AND CHEMISTRY. b. LaMoure, N. D., Sept. 22, 1884. s. John K. and Ellen S. (Styles) U. Edn.: B.S., Kans. State Univ., 1922. m. Myrtle Shoup, Oct. 9, 1915 (dec.). 2nd m. Ona L. Alexander, Jan. 15, 1938, (dec.). 3rd m. Leliah E. McCammon, March 27, 1945. c.: Esther Hill; Paul; Ruth Foster; David; Carol Dale. Exp.: Principal, Rural High Schl., Leonardville, Kans., 1922-25; Prin., H. S., Grass Valley, Calif., 1928-31; Hd., Sci. Dept., ibid., 1931-50. Hon. Pos.: Editor, Calif. Scholarship Fed. Bull.; Registrar of Eligibility Inst., H. S. Honor Soc.; Chmn., Program Western Astronomers. Mem.: A.A.A.S.; Natl. Sci. Tchrs. Assn.; Penninsula Astronomical Assn.; Mason; Order of the Eastern Star. Author: Venus, 1914. Contbr. to: Am. Jour. of Physics; Schl. Sci. and Math.; The Edni. Focus; The Dynamic Atom Model. Serv. Rec.: U. S. Navy, 1903-07. Areas of Rsch.: Atomic Models; Electrostatic Machines; Elem. Lab. Sci. Demonstration Devices; Gravitational Attraction.



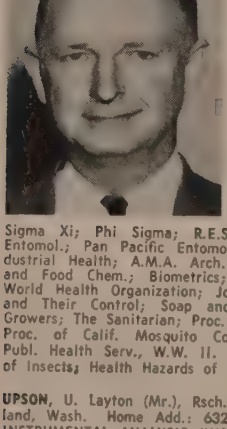
UNZ, Hillel (Ph.D.), Prof. of Elec. Engrng., Elec. Engrng. Dept., Univ. of Kan., Lawrence, Kan. ELECTROMAGNETIC FIELDS AND WAVES. b. Darmstadt, Germany, Aug. 15, 1929. s. Dr. Moshe and Rivka (Kiken) U. Edn.: B.S., Israel Inst. of Technol., Haifa, Israel, 1953; Dipl. Engr., ibid., 1961; M.S., Univ. of Calif., Berkeley, 1954; Ph.D., ibid., 1957. m. Ruth Adam, Aug. 28, 1960. Exp.: Rsch. Asst., Univ. of Calif., Berkeley, 1953-57; Asst. Prof., Univ. of Kan., 1957-59; Assoc. Prof., ibid., 1959-62; Prof., Elec. Engrng., ibid., 1962—; Rsch. Assoc., Ohio St. Univ., s.s., 1961, '62. Mem.: Sigma Xi; Inst. of Radio Engrs. Contbr. to: Jour. of Atmospheric and Terrestrial Physics, Oxford, Eng.; Proc. of Inst. of Radio Engrs.; Trans. Inst. of Radio Engrs., Prof. Gr. on Antennas and Propagation. Serv. Rec.: Israel Defense Forces, 1948-49. Areas of Rsch.: Electromagnetic Field Theory, Boundary Value Problems, Micorwave Networks, Antenna Arrays and Electronic Scanning, Scattering and Diffraction, Propagation in the Ionosphere and Magnetoionic Theory, Propagation in Bounded Gyrotropic Media, Parametric Nonlinear Interaction with Electromagnetic Waves.

UNDERWOOD, Ralph Sylvester (Ph.D.), Prof. of Math., Tex. Tech. Coll., Lubbock, Tex. MATHEMATICS. b. Anoka, Minn., Oct. 3, 1891. s. Charles M. and Lettie A. (Barrett) U. Edn.: B.A., Univ. of Minnesota, 1916; M.A., ibid., 1917; Ph.D., Univ. of Chicago, 1930. m. Zelda Wisdom Ray of Lubbock, Tex., Feb. 1, 1930. d. Wm. and Effie Jackson Ray. Exp.: Instr. of Math., Purdue Univ., 1919-22; Asst. Prof. of Math., Ala. Poly. Inst., 1922-27; Assoc. Prof. of Math., Tex. Tech. Coll., 1927-31; Prof. of Math., ibid., 1931—. Mem.: Am. Math. Assn.; A.A.U.P.; A.A.A.S.; Tex. Acad of Sci.; Phi Beta Kappa; Sigma Xi; Optimist Club. Author: Jaunts into Space, 1935; Silhouette Mathematics, 1961. Co-Author: Living Math., 1940 (revised, 1949), Analytic Geometry, 1947, revised, 1956 (both with Dr. F. W. Sparks); Intermediate Algebra, 1947 (with Thomas R. Nelson and S. Selby; Practical Trigometry, 1956 (with H. E. Woodward). Contbr. to: Sci. Monthly; Am. Math. Monthly; Trans. of the M.S.A.; The Sky; Popular Astronomy, etc. Originated "Extended Analytic Geometry"—a field of mathematics. War Record: Pfc., Co. D, 55th Engrs., U. S. Army, 1918-19. Travel: France; U. S.; Can.; Mex. Hobbies: Writing; Chess. Gen. Int.: Designated "Piper Professor of 1959" by M. S. Piper Foundation. Listed in: A.M.S.; Who's Who in Am., Monthly Supplement (June, 1948); Who's Who in the Southwest; Who Knows—and What; Who's Who in Am. Edn.

UOTILA, Urho A. (Ph.D.), Assoc. Prof., Dept. of Geodetic Sci., Ohio State Univ., 164 W. 19th Ave., Columbus 10, Ohio. Home Add.: 4319 Miralu Lane, Columbus 21, Ohio. GEODESY. b. Poytaya, Finland, Feb. 22, 1923. s. Antti Samuli and Vera Justiina (Kyto) U. Edn.: B.S., Finland's Inst. of Technol., 1946; M.S., ibid., 1949; Ph.D., Ohio State Univ., 1959. m. Helena Vanhakartano, 1949. c.: Heidi Elizabeth; Kirsi Margaret; Elizabeth Martia; Julie Christine. Exp.: Surveyor and Geodesist, Finnish Govt., Finland, 1945-46, 1948-51; Geodesist, Swedish Govt., Sweden, 1947; Rsch. Asst., Ohio State Univ., 1952-53; Rsch. Assoc., ibid., 1953-58; Lctr. in Geodesy, ibid., 1955-57; Assoc. Supvr., ibid., 1958-61; Supvr., ibid., 1961—; Asst. Prof., ibid., 1959-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Geophysical Union; Am. Congress on Surveying and Mapping; Am. Soc. of Photogrammetry; A.A.A.S.; Sigma Xi. Author: Investigations on the Gravity Field and Shape of the Earth, 1959. Contbr. to: Jour. of the Ohio State Univ.; Annales Scientiarum Fennicae. Serv. Rec.: Finish Army, 1942-44. Areas of Rsch.: Geodesy; Spheropotential and Geopotential Surfaces, Gravity and gravitation; Adjustment computation.



UPHOLT, William Martin (Ph.D.), Chf., Rsch. Grants, Environmental Health, U. S. Publ. Health Serv., Wash. 25, D. C. Home Add.: 525 E. Indian Spring Dr., Silver Spring, Md. PUBLIC HEALTH BIOLOGY; TOXICOLOGY OF INSECTICIDES. b. Grand Rapids, Mich., July 16, 1914. s. Henry and Liefy (Veenboer) U. Edn.: B.S., Univ. of Calif., Berkeley, 1935; M.S., ibid., 1936; Ph.D., ibid., 1939. m. Glynn Beckham, Sept. 1, 1940. c.: William Boyce; Robert Henry. Exp.: Asst. Entomologist, S. C. Expt. Station, Clemson, S. C., 1939-42; Entomologist, Calif. Spray-Chemical Corp., Orlando, Fla., 1942-44; Scientist, U. S. Pub. Health Serv., 1944—. Mem.: A.A.A.S.; Entomological Soc. of Am.; Am. Soc. of Tropical Medicine and Hygiene; Pacific Coast Entomological Soc.; Am. Publ. Health Assn.; Sigma Xi; Phi Sigma; R.E.S.A. Contbr. to: Jour. of Econ. Entomol.; Pan Pacific Entomologist; Sci.; A.M.A. Arch. of Industrial Health; A.M.A. Arch. of Ophthalmol.; Jour. of Agric. and Food Chem.; Biometrics; Publ. Health Reports, Bull. of World Health Organization; Jour. of Natl. Malaria Soc.; Pests and Their Control; Soap and Sanitary Chemicals; Am. Fruit Growers; The Sanitarian; Proc. of Wash. St. Horticultural Assoc.; Proc. of Calif. Mosquito Control Assn. Serv. Rec.: U. S. Publ. Health Serv., W.W. II. Areas of Rsch.: Chemical Control of Insects; Health Hazards of Pesticides.



UPSON, U. Layton (Mr.), Rsch. Chemist, Gen. Electric Co., Richland, Wash. Home Add.: 632 Basswood Ave., Richland, Wash. INSTRUMENTAL ANALYSIS (INSTRUMENTATION). b. Grants Pass, Ore., Mar. 26, 1911. s. U. LeRoi and Melvia P. (Ireland) U. Edn.: B.S., Ore. St. Univ., 1938; M.S., Univ. of Ida., 1940. m. Theda J. Spicer, Sept. 2, 1944. c.: U. Leland; Stephen Spicer; Jeffrey Alan. Exp.: Chemist, Consolidated Water Power and Paper Co., Wisconsin Rapids, Wis., 1941-42; Chemist, Willamette Valley Wood Chem. Co., Springfield, Ore., 1946-47; Chemist, Gen. Elec. Co., Richland, Wash., 1948—. Mem.: Phi Lambda Upsilon; Pi Mu Epsilon; Sigma Tau; Delta Sigma Phi; A.C.L.U.; N.A.A.C.P. Contbr. to: Nucleonics; Electronics; Anal. Chem. Serv. Rec.: U. S. Army, 1942-44. Areas of Rsch.: Chemical and Radiochemical Instrumentation.

URBAN, Jerome Anderw (M.D.), Assoc. Attending Surgeon, Mem. Center, N. Y. City, N. Y. Home Add.: 5 Hillview Dr., Scarsdale, N. Y. SURGERY, particularly ONCOLOGIC. b. N. Y., Jan. 26, 1914. s. Frank A. and Jeanette E. (Blank) U. Edn.: B.A., Columbia Coll., Columbia Univ., 1934; M.D., Coll. of Physicians and Surg., ibid., 1938. m. Xenia N. Poloushkin, Aug. 21, 1944. c.: Alexandra; Xenia; Jere. Exp.: Asst. Attending Surgeon, Mem. Center, N. Y., 1950-61; Assoc. Attending Surg., ibid., 1961—; Instr. in Surg., Cornell Univ. Med. Schl., 1950-61; Asst. Clinical Prof. of Surg., Cornell Univ. Med. Schl., 1961—; Assoc. Visiting Surg., James Ewing Hosp., N. Y., 1961—; Mem.: Am. Coll. of Surgeons; Am. Bd. of Surg.; Am. Radium Soc.; Pan Pacific Surgical Assn.; N. Y. Surgical Soc.; International. Surg. Gr.; James Ewing Soc.; Am. Assn. for Cancer Rsch.; A.A.A.S.; Adirondack League; Camp Fire Club of Am.; Larchmont Yacht Club. Contbrng. Author: Breast Cancer and its Diagnosis and Treatment, 1955; Cancer of the Breast, 1959; Treatment of Tumors of Breast, Chest and Esophagus, 1960. Contbr. to: Cancer; Surgical Clinics of N. Am.; Postgrad. Med., CA; Proc. of Third Natl. Cancer Conf.; Am. Jour. of Roentgenol.; The Jour. of the S. C. Med. Assn.; Harlem Hosp. Bull.; Mod. Med.; ACTA Unio Internationalis Contra Cancrum. Serv. Rec.: U. S. Naval Reserve Med. Corps, Western Pacific Theatre, 1944-46. Gen. Int.: Devised an original surgical procedure extending the conventional surgical attack to include the en bloc in continuity excision of both primary lymph node drainage depots of the breast, internal mammary as well as auxillary, a successful, practical operative procedure. Areas of Rsch.: Clinical Rsch. in Breast Cancer, extended Operative attack and means of improving early clinical diagnosis, both efforts aimed at improving the primary treatment of Breast Cancer.

URE, Barbara (M.D.), Psychiatrist, 119 E. 84th St., N.Y.C. PSYCHIATRY. b. Minneapolis, Minn., Mar. 11, 1928. d. William and Carolyn (Jensen) U. Edn.: B.A., Ohio Wesleyan Univ., 1948; B.S., M.D., Univ. of Minn. Med. Schl., 1953. Exp.: Fellow, Child Dev. Ctr., N.Y.C., 1957-59; Supvr., Hillside Hosp., Glen Oaks, N. Y., 1959-62; Chf. of Adol. Psy., ibid., 1962—. Hon. Pos.: Bd. of Dirs., N. Y. Coun. on Child Psychiatry. Mem.: A.A.A.S.; A.M.A.; A.P.A.; Alpha Omega Alpha; A.E.I. Areas of Rsch.: Child and Adolescent Psychiatry.

URICK, Robert Joseph (Mr.), Sr. Rsch. Physicist, Naval Ordnance Lab., Silver Spring, Md. Home Add.: 606 Apple Grove Rd., Silver Spring, Md. UNDERWATER SOUND. b. Brooklyn, N. Y., Apr. 1, 1915. s. Rudolph and Anna (Zilinsky) U. Edn.: B.S., Brooklyn Coll., 1935; M.S., Calif. Inst. of Technol., 1939. m. Julia Allison, 1953. c.: Robert; Marianna. Exp.: Asst. Seismologist, Shell Oil Co., The Tex. Co., Houston, Tex., 1936-42; Physicist, U. S. Navy Radio and Sound Lab., San Diego, Calif., 1942-45; Physicist, Naval Rsch. Lab., Wash., D. C., 1945-55; Prof., Ordnance Rsch. Lab., Pa. State Univ., 1955-58; Physicist, U. S. Navy Mine Defense Lab., Panama City, Fla., 1958-60; Physicist, Naval Ordnance Lab., Silver Spring, Md., 1960—. Mem.: Acoustical Soc. of Am., Fellow; Am. Geophysical Union; Am. Meteorological Soc. Contbr. to: Jour. of the Acoustical Soc. of Am.; Jour. Marine Rsch.; Jour. Marine Rsch., Jour. Geophysical Rsch.; Proc. Inst. of Radio Engrs. Areas of Rsch.: Sound Propagation and Scattering; Noise in the Sea; Underwater Acoustic Systems; Acoustic Transducers; Acoustic Theory.

URMER, Albert Heinz (Ph.D.), Sr. Aerospace Psychologist, McDonnell Aircraft Corp., St. Louis, Mo. Home Add.: 1608 Fontana Dr., Creve Coeur 41, Mo. PHYSIOLOGICAL PSYCHOLOGY. b. Vienna, Austria, Oct. 31, 1929. s. Sol and Maria (Jacubowics) U. Edn.: A.B., Wash. Univ., 1951; M.A., Univ. of Tex., 1953; Ph.D., ibid., 1957. m. Diane Leverant, Sept. 2, 1952. c.: Michelle Randi; Cynthia Robin. Exp.: Rsch. Scientist, Radiobiol. Lab., Univ. of Tex., 1955-57; Psychophysiologist, Rancho Los Amigos Hosp., Downey, Calif., 1957-60; Psychologist, Martin Co., Denver, Colo., 1960-61; Sr. Aerospace Psychologist, McDonnell Aircraft Corp., St. Louis, Mo., 1961—. Mem.: Am. Psychological Assn.; A.A.A.S.; Delta Phi Alpha. Contbr. to: Jour. Comparative and Physiological Psychol.; Jour. Clinical Psychol.; Perceptual and Motor Skills; Psychological Reports; Jour. of Genetic Psychol.; Jour. General Psychol.; Engrng. Psychol.; E.E.G. and Clinical Neurophysiol. Serv. Rec.: U. S. Air Force, 1951-55. Gen. Int.: Air Univ. Fellow, 1956. Areas of Rsch.: Effects of Brain Damage on Perception and Behavior; Psychophysiol. of Space Flight.

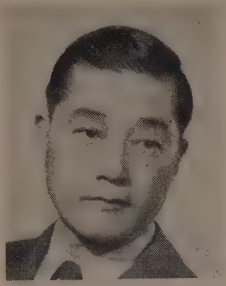
ING, Gerard Phelps (Mr.), Development Scientist, Weyerhaeuser Longview, Wash. Home Add.: 1230 Kessler Blvd., Longview, Wash. WOOD TECHNOLOGY. b. Pittsburgh, Pa., Oct. 23, 1924. s. Raymond and Dorothy (Phelps) U. Edn.: B.S., Univ. of Fla., 1950; M.S., ibid., 1951. m. Margaret Louise Ohman, Aug. 6, 1949. c.: Constance Margaret; Scott Phelps; Carrie Elizabeth. Exp.: Rsch. Asst. in Wood Tech., Univ. of Fla., 1950-51; Rsch. Wood Technologist, Timber Engrng. Co., Wash., D. C., 1951-54; Asst. to Dir. of Rsch., ibid., 1955-56; Asst. Lab. Mgr., ibid., 1957-59; Developmt. Scientist, Weyerhaeuser Co., Longview, Wash., 1959—. Mem.: Soc. of Wood Sci. and Tech.; Forest Products Rsch. Soc.; Phi Kappa Phi; Phi Sigma; Xi Sigma Pi. Contbr. to: Forest Products Jour.; Quar. Jour. of the

. Acad.; Flooring; Furniture Prods.; Canadian Woodworker; od Rsch. War Rec.: U. S. Army, 1943-46. Areas of Rsch.: Wood idue Utilization; Particleboard; Fiberboard; Plywood; Wood atomy; Adhesives; Lumber End and Edge Gluing; Wood ninating; Fasteners; Finishes and Overlays; Floor, Wall and of Constructions; Doors; Quality Control.

SIN-SMITH, Rolf (Mr.), Mgr., Space Systems Projects, Los geles, Calif. Home Add.: 3606 Woodhill Canyon Rd., Studio City, Calif. GLACIAL GEOLOGY AND PALEOCLIMATOLOGY. b. Buffalo, Erie Co., N. Y., Aug. 18, 1930. s. Arne and Ruth (Frederick) U-S. Edn.: B.Sc., Ohio St. Univ., 1952; M.A., ibid., 1957. m. Janice Dammeyer, Aug. 8, 1953. c.: Todd; Kristen; Scott. Exp.: Assoc. Geophysicist, IBM Space Guid. Cen., Owego, N. Y., 1957-60; Adv. Sys. Repr., IBM Fed. Sys. Div., Huntsville, Ala., 1960-62; Mgr., Project Coord., Space Systems Ctr., ibid., Los Angeles, Calif., 1962—. Mem.: American Geophys. Union; A.A.A.S.; Armed Forces Comm. and Electronics Assn.; Geol Soc. Am.; Sigma Xi; Assn. U. S. Army. Contbr. to: Theory of Inertial Guidance, 1961. Serv. Rec.: U. S. Army, 1954-56.

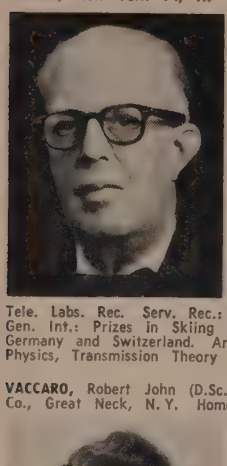
en. Int.: Lectr. in Geophysics, N. Y. State Univ., Harpur ell., 1961. Areas of Rsch.: Paleoclimatology and Glacial eology; Glacial Geomorphology. Space Guidance and Information Systems; Ballistic Missile Defense Systems.

UYEHARA, Yukuo (Mr.), Prof. Japanese, Chmn., Dept. of Asian and Pacific Lang.; Chmn., Far East Studies, Grad. Schl., Univ. of Hawaii, Honolulu, Hawaii. Home Add.: 3031-B Puhala Rise, Honolulu, Hawaii. JAPANESE LANGUAGE AND LITERATURE. b. Kumamoto, Japan, Aug. 9, 1905. s. Hidemasa and Tsune (Miyabe) U. Edn.: B.A., Univ. of Hawaii, 1931; M.A., ibid., 1936. m. Dorothy Harue Teshima, 1937. c.: Kay Midori. Exp.: Instructor, Japanese, Univ. Hawaii, 1933-43; Asst. Prof., Japanese, ibid., 1943-47; Assoc. Prof., Japanese, ibid., 1947-56; Prof. Japanese, ibid., 1956—; Chmn., Dept. of Asian and Pacific Lang., ibid., 1961—. Hon. Pos.: Dir., Marine Language Schl., 1941; Chmn., Dept. Asian and Pacific Langs., 1947-56; Chmn., Far East Studies, Grad. Schl., 1953; Chmn., N.D.E.A., Language Fellowship Comm.; Language Consultant, Philosophy East and West; Rsch. Scholar, Tokyo Univ., 1955. Mem.: Far Eastern Assn.; A.A.A.S.; Am. Folklore Soc.; Am. Oriental Soc.; Phi Kappa Phi; Hui Tomoe; Honolulu Acad. Arts; Pacific and Asian Affairs Coun.; Lions Club. Author: Songs for Children Sung in Japan, 1940; Nikkei Bunka, 1955; A Grass Path, 1955; Introduction to Japanese, 1956. Co-Author: Japanese Peasant Songs, 1944. Contbrng. Author: Three Japanese Plays, 1959. Contbr. to: Social Process in Hawaii; Jour. Oriental Literature. Gen. Int.: Translation of Japanese Plays, Poems and Songs. Areas of Rsch.: Japanese Language and Literature.

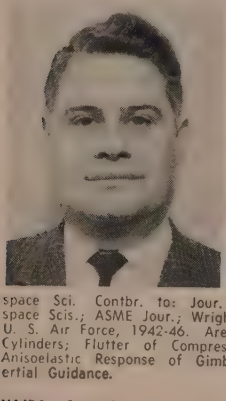


UZNANSKI-BOTTEI, Rita Marlene (Ph.D.). Home Add.: 19341 Wedgewood Dr., South Bend, Ind. ANALYTICAL CHEMISTRY. b. Chicago, Ill., Aug. 13, 1933. d. Matthew Edward and Bernice Catherine (Rutkowski) Uznanski. Edn.: B.A., Rosary Coll., 1954; Ph.D., Univ. of Ill., 1958. m. Rudolph S. Bottei, Aug. 13, 1960. c.: Roberta Ann. Exp.: Grad. Asst., Univ. of Ill., 1954-58; Instr., St. Ambrose Coll., 1958-59; Asst. Prof., ibid., 1959-60; Consult., Bendix Avn. Corp., Davenport, Iowa, 1959-60; Visit. Lectr., St. Mary's Coll., 1960-61. Mem.: Am. Chem. Soc.; Sigma Xi; A.A.A.S.; Ill Acad. of Sci.; Iota Sigma Pi; Sigma Delta Epsilon. Contbr. to: Sci.; Med. Physics. Areas of Rsch.: X-ray Analysis; Radioisotope Techniques.

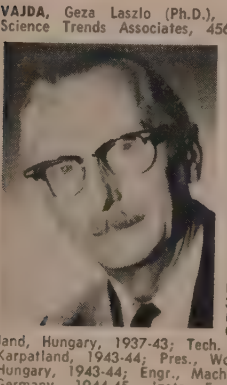
VAAGE, Emil Fridstein (Mr.), Rsch. Engr., Bell Tele. Labs., 463 W. St., New York 14, N. Y. Home Add.: 8801 Shore Rd., Brooklyn 9, N. Y. THEORY OF TRANSMISSION CIRCUITS AND ELECTRONIC SWITCHING. b. Risor, Norway, Aug. 1, 1900. s. Jakob and Mathilde (Gundersen) V. Edn.: B.A., Frogner Schl., Oslo, Norway, 1919; Dipl. Eng., E.E., Tech. Univ., Darmstadt, Germany, 1926; M.E., Polytech. Inst., Brooklyn, N. Y., 1932. m. Astrid Strandheim, 1928. c.: Bjorn Fridstein. Exp.: Rsch. Engr., Am. Tele. and Tele., Broadway, N. Y., 1927-34; Rsch. Engr., Bell Tele. Labs., N. Y., 1934—. Mem.: Am. Inst. of Elect. Engrng.; Am. Math. Soc.; Norwegian Am. Hist. Soc.; Pres., Norw. Club, Brooklyn, New York, 1959—; Pres., Norwegian Children's Home, 1962—. Contbr. to: Bell System Tech. Jour.; Bell Tele. Labs. Rec. Serv. Rec.: Royal Norway Airforce, 1920-27. Gen. Int.: Prizes in Skiing and Track and Field in Norway, Germany and Switzerland. Areas of Rsch.: Applied Math. and Physics, Transmission Theory and Electronic Circuits.



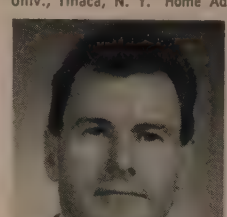
VACCARO, Robert John (D.Sc.), Rsch. Engr., Sperry Gyroscope Co., Great Neck, N. Y. Home Add.: 9 Prospect Rd., Centerport, L. I., N. Y. AERODYNAMICS—INERTIAL GUIDANCE. b. New York City, Sept. 2, 1923. s. Paul and Anna (Amato) V. Edn.: B.S., N. Y. Univ., 1946; M.S., ibid., 1950; D.Sc., ibid., 1955. m. Marion Dia, June 15, 1947. c.: Ann Marie; Barbara; Paul; Robert; Richard; Adele; Gina; Gregory. Exp.: Aerodynamicist, Chance Vought Aircraft Co., Stratford, Conn., 1946-48; Rsch. Asst., Dept. of Aero Engrng., N. Y. Univ., N. Y., 1949-50; Instr., Dept. of Mech. Engrng., ibid., 1950-52; Rsch. Assoc., Dept. of Aero Engrng., ibid., 1952-55; Project Dir., Rsch. Div., ibid., 1955-57; Rsch. Engr., Sperry Gyroscope Co., Great Neck, N. Y., 1957—. Mem.: Sigma Xi; Instit. of Aerospace Sci. Contbr. to: Jour. of App. Mech.; Jour. of Aerospace Scis.; ASME Jour.; Wright Air Devel. Ctr. TR. Serv. Rec.: U. S. Air Force, 1942-46. Areas of Rsch.: Bukling of Sandwich Cylinders; Flutter of Compressor and Turbine Blade Systems; Anisoelastic Response of Gimbal Systems Under Vibration, Inertial Guidance.



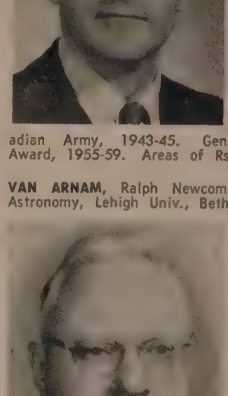
VAJDA, Geza Laszlo (Ph.D.), Pres. and Chief Physicist, Adv. Science Trends Associates, 4561 W. 160 St., Lawndale, Calif. MECHANICAL SCIENCE; SOLID STATE; THEORETICAL PHYSICS; ELECTRONICS; ELECTRICS; MATHEMATICAL SCIENCE; ATOMIC PHYSICS. b. Gyulavari, Hungary, June 27, 1898. s. Karoly and Gizella (Tanka) V. Edn.: M.E., Univ. of Tech., Budapest, Hungary, 1920; M.E., Acad. of Industry and Tech., Kassa, Hungary, 1921; B.S., Univ. of Sorbonne, Paris, Fr., 1926; Ph.D., ibid., 1927; E.E., German Univs., Jena, Berlin, Gottingen, 1929; Ph.D., Kaiser Wilhelm Inst., Berlin, Germany, 1929. m. Gizella Olessak, 1930. Exp.: Engr., Chief Engr., "Edison" Radio and Electro Rsch., Tornalja, Hungary, 1927-37; Chief Engr., Royal Hungarian Ministry, Budapest, 1937-43; Tech. Counsellor, Govt. Comm., Karpatland, Hungary, 1937-43; Tech. Counsellor, City Engrng., Huszt, Karpatland, 1943-44; Pres., Wood Machine Factory, Korosmezo, Hungary, 1943-44; Engr., Machine Factory Fahr., Gottmadingen, Germany, 1944-45; Instr. Engr., Radio Broadcasting Station, Stuttgart, Germany, 1946-51; Tool Design Engr., Scaife Co., Oakmont, Pa., 1951-52; Instr., Ursuline Acad., Pittsburgh, Pa., 1952-54; Engr., Pittsburgh Waterproof Co., ibid., 1952-54; Engr., Nider Tool. Co., Inc., Lawndale, Calif., 1954-57; Design Engr., Topp Industries, Inc., Los Angeles, Calif., 1957-58; Design Engr., Vironic Rsch. Corp., Redondo Beach, Calif., 1958; Cons. Engr., Am. Industries, Gardena, Ibid., 1958; Sr. Physicist, Acoustica Associates, Inc., L. A., Calif., 1958-59; Chief Physicist, Halex, Inc., El Segundo, Calif., 1959-60; Pres. and Chief Physicist, Advanced Sci. Trends Assoc., Lawndale, Calif., 1960—. Hon. Pos.: Hon. Life Mem., Kaiser Wilhelm Max Planck Inst.; Hungarian Natl. Sci. Soc., 1944. Mem.: The Royal Hung. Acad. of Sci.; Acoustical Soc. of Am.; Am. Crystallographic Assn.; Am. Geophys. Union; Am. Inst. of Physics; Am. Assn. Physics Tchrs.; Karpatland Reg. Engrng. Soc.; Kaiser Wilhelm Inst.; Am. Adv. Sci. Acad. Contbr. to: Royal Hungarian Sci. Edition; Royal Hungarian Acad. of Sci. Contbrng. Author: Physics for H. S. Gen. Int.: Patents for: First Electric Clock, "Laplace", Kassa, Hungary; Automat. Elect. Signal System for Railroads; Autom Bottle Washer; Mirror Reflex Televis.; Radio Tech. Inventio Mercury Switch. Aeras of Rsch.: Mechanical Science; S State; Theoretical Physics; Electronics; Electrics; Mathemat Science; Atomic Physics.



VALLENTYNE, John Reuben Way (Ph.D.), Prof. of Zool., Corn Univ., Ithaca, N. Y. Home Add.: Jacksonville, N. Y. BIOCHEMI TRY, LIMNOLOGY. b. Toron Ont., Can., July 31, 1926. Harold James and Alice M (Laurie) V. Edn.: B.A., Quee Univ., 1949; Ph.D., Yale Un 1953. m. Ann Vera Tracy, 19 c.: Peter Lloyd; Stephen W. Jane Leslie. Exp.: Lectr. in Bi Queen's Univ., 1952-54; As Prof. of Biol., ibid., 1954- Visiting Fellow, Geophysical La Wash., D. C., 1956-57; Ass Prof., Zool., Cornell Univ., 19 62; Prof., ibid., 1962—. Me A.A.A.S.; Internatl. Limnologi Assn.; Sigma Xi; Ecol. Soc. Am.; Am. Soc. Limnology a Oceanography; Geochemical S Contbr. to: Geochim. et Cos ochim.; Acta; Limnol. and Oce ography; Ecol. Serv. Rec.: C adian Army, 1943-45. Gen. Int.: Jour. Fund Silver P Award, 1955-59. Areas of Rsch.: Limnology; Paleobiochemist



VAN ARNAM, Ralph Newcomb (Mr.), Assoc. Prof. Math. a Astronomy, Lehigh Univ., Bethlehem, Pa. ASTRONOMY. b. Ju 7, 1902, Beaver Falls, N. Y. Floyd W. Van Arnam and (Wardell) V. Edn.: E.E., Corn Univ., 1926; M.S., ibid., 192 m. Elfriede Maim of Tallin Estonia, June 14, 1958. Ex Instr., Math. and Astron., Lehi Univ., 1928-42; Leader of Sol Eclipse Expedition from Yerk Observatory of Univ. of Chica to New Eng. in Aug., 1932; M tallurgical Engr., Bethlehem St Co., 1944-46; Asst. Prof. Mat and Astron., Lehigh Univ., 194 61; Assoc. Prof. Math. and A tronomy, ibid., 1961—. Mem Fellow, A.A.A.S.; Astron. Soc. Pacific; Math. Assn. of Am.; A Astron. Soc.; Royal Astron. So of Canada; Societe Astronomiq de France; Sigma Xi. Contbr. t politan Opera); "North Country Life"; Assoc. Ed., "North Count Life." Hobby: Music. Listed in: A.M.S. Special Int.: Orbi of Binary Stars.



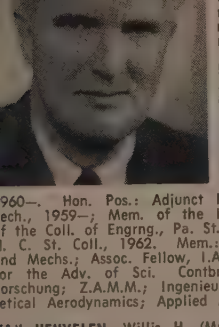
van BREEMEN, Verne L. (Ph.D.), Dir., The Mercy Inst. f Biomedical Rsch., 2920 East 16th Ave., Denver Colo. Home Add 1370 South Jersey Way. Denve Colo. ELECTRON MICROSCOP CYTOLOGY AND HISTOLOGY. BIO OGY. b. Zion, Ill., Oct. 19, 192 s. John E. A. and Alice I. (Maltb van B. Edn.: B.S., Kletzing Col Iowa., 1946; M.S., State Uni of Iowa, 1948; Ph.D., ibid., 195 m. Eileen Barbara Hines, Jun 11, 1949. c.: Verne Howard; P ter Anthony; Richard Bruce. Exp Rsch. Asst. in Zool., State Uni of Iowa, 1947-51; Rsch. Asso in Anatomy, Univ. of Calif. Sch of Med., Los Angeles, 1951-5 Instr. in Anatomy, Univ. of Col Schl. of Med., 1953-54; Asst. Pro of Anatomy, ibid., 1954-59; Ass Prof. of Anatomy (Volunteer ibid., 1959—; Rsch. Consultan in Pathol., Denver Gen. Hosp Denver, Colo., 1957—; Visiting Prof., Anatomy, Univ. of Miam Schl. of Med., Coral Gables, Fla., 1959; Dir., Mercy Inst. fo Biomed. Rsch., Denver, Colo., 1959—. Hon. Pos.: Lederle Medic Faculty Award, 1954-56; Pres., Mountain States Soc. of Electro Microscopists, 1954-60; Secy.-Treas., Rocky Mtn. Sect., Soc. fo Exptl. Biol. and Med., 1957-60. Mem.: Am. Acad. of Neurol. Am. Assn. Adv. of Sci.; Am. Assn. of Anatomists; Am. Soc. o Zool.; Biol. Stain Commn.; Electron Microscope Soc. of Am. Mtn. States Soc. of Electron Microscopists; N. Y. Acad. of Scis. Soc. for Expmtl. Biol. and Med.; Gamma Alpha. Contbr. to Jour. of Biophys. and Biochem. Cytol.; Am. Jour. of Anatomy Anatomical Record; Am. Jour. of Pathol.; Expmtl. Cell Rsch. Serv Rec.: U. S. Army, 1942-46. Areas of Rsch.: Electron microscop cytology and histology, and analytic cytology. Research o normal and dystrophic striated muscle; on normal nerve cells an those affected by drugs; on lung and pulmonary hyaline mem brane disease; on renal tubule epithelium; on renal metaboli of proteins and metalloproteins; on interstitial cell testicula tumors.

NCE, Rupert Bayless (Ph.D.), Kenan Prof. of Sociol., Univ. of C., Chapel Hill, N. C. Home Add.: 501 Dogwood Dr., Chapel , N. C. DEMOGRAPHY: HUMAN ECOLOGY. b. Plummerville, ., Mar. 15, 1899. s. Walter Johnson and Lula M. (Bayless) V. .: B.A., Henderson St. Tchrs. Coll., 1920; M.A., Vanderbilt v., 1921; Ph.D., Univ. of N. C., 1928. Hon. Deg.: LL.D., ndrix Coll., 1938; LL.D., Univ. of Ark., 1954. m. Rheba ile Usher, June 5, 1930. c.: David Rupert; Donald Ernest; tor Stuart. Exp.: Prin., H. S., Talihina, Okla., 1921-23; tr. in English, South Ga. Coll., 1923-26; Rsch. Assoc. to an Prof., Univ. of N. C., 1928—. Hon. Pos.: Sou. Regional nm., S.S.R.C.; Tech. Adv. Comm. on Pop., U. S. Bur. Census; l. Health Sec., N.I.H.; Pres., Am. Sociological Assn.; Pres., ulation Assn. of Am.; Pres., Sou. Sociol. Soc. Mem.: Am. iol. Assn., Fellow; Alpha Kappa Delta; Phi Beta Kappa; nbda Chi Alpha. Author: Human Factors in Cotton Culture, 29; Human Geography of the South, 1932; Research Memo- dum on Population Redistribution Within the United States, 38; All These People, 1945; New Farm Homes for Old, 1946; loring the South, 1949; The Urban South, 1954; Travels in New South, 1962. Contbr. to: Editor, Social Forces; Am. ciological Rev.; Am. Jour. of Sociol.; Milbank Quarterly. n. Int.: Mayflower Cup, 1932; Rosenwald Foundation Fellow, 45; Lord and Taylor $1,000 Award, 1951. Areas of Rsch.: pulation and Demography; Human Ecology and Regionalism pecially of the U. S. South.

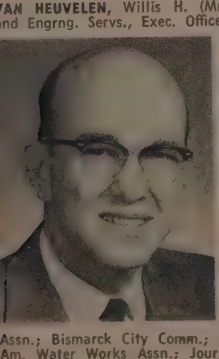
NDER BEEK, Leo Cornelis (Ph.D.), Assoc. Prof. Biol., Western ch. Univ., Kalamazoo, Mich. Home Add.: 102 Cherry Hill Dr., lamazoo, Mich. PLANT PHYSIOLOGY. b. Netherlands, Aug. , 1918. s. Alex, Sr. and Pearl (Van Vogelpoel) V. Edn.: A., Western Mich. Univ., 1952; M.S., Univ. of Mich., 1953; .D., ibid., 1957. m. Mary Noreen O'Neill, June 10, 1944. Peter Shane; Kelley Anne; Catherine Sue; Michael Leigh. p.: Lab. Asst., Univ. of Mich., Ann Arbor, Mich., 1952-53; hng. Fellow, ibid., 1953-54; Rsch. Fellow, ibid., 1954-56; st. Prof., W. Mich. Univ., 1956-58; Assoc. Prof., ibid., 1958—. n. Pos.: Past Pres., Phi Sigma, Univ. of Mich.; Vice-Pres., M.U. Faculty Senate, 1961-62. Mem.: Sigma Xi; Soc. of ant Physiol.; Beta Beta Beta; Phi Sigma; Delta Upsilon; Kappa o Sigma. Contbr. to: Plant Physiol. Serv. Rec.: U. S. Army, 41-46. Gen. Int.: Magna Cum Laude, Wm. Univ., 1952. reas of Rsch.: Plant Growth Regulators.

NDERSLICE, Thomas (Dr.), General Elec. Co., Schenectady, N. Y.

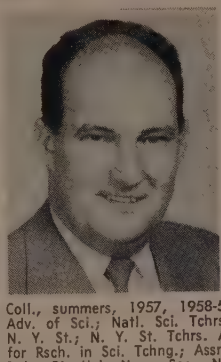
NDREY, Julius Friedrich (Dr.), Prin. Scientist, Chief, Phys. ch. Group, Martin Co., Space Sys. Div., Baltimore 3, Md. Home Add.: 22 Bangert Ave., Perry Hall, Md. APPLIED MATHEMATICS; FLUID DYNAMICS; PHYSICS. b. Hanover, Germany, Jan. 24, 1908. s. Max and Marie (Pajeken) V. Edn.: German Tchng. Cert., Univ. of Gottingen, Germany, 1935; Diploma Mathematician, ibid., 1942; Doctor rerum naturalium, ibid., 1946. m. Ursula H. Schulze, Apr. 4, 1945. c.: Hanns Friedrich; Jobst Peter. Exp.: Rsch. Scientist, Aerodynamische Versuchsanstalt, Gottingen, 1936-45; Scientific Adv., Musterschmidt K. G., ibid., 1946-49; German Scientist, Admiralty Rsch. Lab., Teddington, England, 1949-53; Martin Co., Baltimore, 1953—, Prin. Scientist, Chief, Phys. Rsch. Group, ibid., 960—. Hon. Pos.: Adjunct Prof. of Maths., Drexel Inst. of ech., 1959—; Mem. of the Indust. and Prof. Advisory Coun. f the Coll. of Engrng., Pa. St. Univ., 1961—; Consultant of the . C. St. Coll., 1962. Mem.: German Soc. for Applied Math. nd Mechs.; Assoc. Fellow, I.A.S.; Am. Rocket Soc.; Am. Assn. or the Adv. of Sci. Contbr. to: Jet Propulsion; Luftfahrtorschung; Z.A.M.M.; Ingenieur-Archiv. Areas of Rsch.: Theoetical Aerodynamics; Applied Mathematics and Physics.



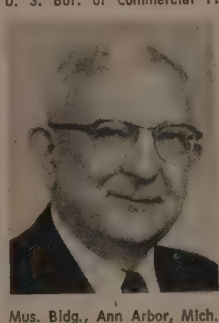
VAN HEUVELEN, Willis H. (Mr.), Chf. of Environmental Health nd Engrng. Servs., Exec. Officer, St. Health Dept., Capitol Bldg., Bismarck, N. D. Home Add.: 814 17th St., Bismarck, N. D. SANITARY ENGINEERING. b. Archer, Ia., Apr. 18, 1914. s. Rev. Bernard and Kathrine (deFyter) V. Edn.: B.A., Huron Coll., 1935; M.S., Univ. of Colo., 1940. m. Ragna C. Odegard, Aug. 11, 1937. c.: Alan; Sally; Gary. Exp.: Chem. Instr., Johnson Co. H. S., Buffalo, Wyo., 1935-42; Chem. Instr., Bismarck Jr. Coll., 1942-46; Dir., Div. of Water Supply and Pollution Control, N. D. St. Health Dept., 1946-57; Chf. of Environmental Health and Engrng. Servs., Exec. Officer St. Health Dept., Bismarck, N. D., 1957—. Mem.: Natl. Soc. of Profl. Engrs.; Am. Water Works Assn.; Water Pollution Control Fed.; Am. Pub. Health Assn.; Bismarck City Comm.; Rotary Club. Contbr. to: Jour. of Am. Water Works Assn.; Jour. of Water Pollution Control Fed.; N. D. Water and Sewage Works Conference Bull. Areas of Rsch.: Sewage and Waste Disposal; Treatment of Sewage by Stabilization Lagoons.



VAN HOUTEN, William Joseph (Mr.), Sci. Co-ordinator, Union Free Schl. Dist. No. 4, Northport, N. Y. Home Add.: 314 Fourth St., Northport, N. Y. SCIENCE EDUCATION. b. Paterson, N. J. July 2, 1921. s. Henry G. and Grace S. (Clark) V. Edn.: B.S., Manhattan Coll., 1943; M.A., Columbia Univ., 1945; M.S., Clarkson Coll. of Tech., 1960. m. Rosemary O'Reilly, 1944. c.: William J.; Stephen H.; Rosemary. Exp.: Tchr., Manhattan Coll. H. Schl., N.Y.C., 1943-44; Tchr., Tuxedo U. Schl., Tuxedo Park, N. Y., 1944-46; Sci. Co-Ord. and Tchr., Northport Pub. Schls., 1946-62; Lectr., Sci., Mitchel Coll., Hempstead, N. Y., 1960-62; Lectr., Edn., Molloy Coll., Rockville Centre, N. Y., 1962—; Sci.-Co-Ord., Union Free Schl. Dist. No. 4, Northport, N. Y., 1962—. Hon. Pos.: NSF Fellowships Clarkson Coll., summers, 1957, 1958-59-60. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Sci. Tchrs. Assn., Life; Sci. Tchrs. Assn. of N. Y. St.; N. Y. St. Tchrs. Assn.; Natl. Edn. Assn.; Nat. Assn. for Rsch. in Sci. Tchng.; Assn. for Edn. of Tchrs. in Sci.; Kappa Delta Pi; Holy Name Soc.; Nocturnal Adoration Soc. Gen. Int.: Served on Comms. and Appeared on the Programs of Natl., St. and Local Sci. Tchrs. Assn. Areas of Rsch.: Science Education K-12.



VAN LOPIK, Jack Richard (Ph.D.), Chf., Area Evaluation Section, Geosciences Dept., Texas Instruments, Inc., Dallas 35, Tex. Home Add.: 5752 Brookstown Dr., Dallas 30, Tex. GEOLOGY. b. Holland, Mich., Feb. 25, 1929. s. Guy M. and Minnie (Grunst) V. Edn.: B.S., Mich. St. Univ., 1950; M.S., L.S.U., 1953; Ph.D., ibid., 1955. m. Grace A. Manning, Aug. 9, 1952. c.: Charles Robert. Exp.: Field Investigator, Coastal Studies Inst., L.S.U., 1951-54; Project Supvr., U.S.A. Engr. Waterways Expt. Sta., Baton Rouge, La., 1954-55; Asst. Chf., Geol. Branch, U.S.A. Engr., Waterways Expt. Sta., Vicksburg, Miss., 1955-60; Chf., Milit. Projects Sect. and Asst. Chf., Geol. Branch, U.S.A. Engr., Waterways Expt. Sta., Vicksburg, Miss., 1960-61; Chf., Area Evaluation Sect., Geosciences Dept., Tex. Instruments, Inc., Dallas 35, Tex., 1961—. Hon. Pos.: 1960 Chmn., Am. Soc. of Photogrammery Comm. on Photo Interpretation. Fellow: Geological Soc. of Am.; Senior Member, Am. Astronautical Soc. Mem.: Am. Soc. of Photogrammetry; Am. Geophysical Union; Am. Assn. of Petroleum Geologists; Assn. Am. Geog.; Natl. Assn. of Doctors in United States; Am. Rocket Soc.; Soc. of Economic Paleontologists and Mineralogists; Soc. of Am. Military Engineers; Sigma Xi; Sigma Gamma Epsilon. Co-Author: Geology of the Mississippi River Deltaic Plain in Southeastern Louisiana, 1958; Manual of Photographic Interpretation, 1960; Advances in Space Science, 1961. Contbr. to: Bull., Geolgoical Soc. of Am.; Photogrammetric Engrng. Serv. Rec.: U. S. Army. Areas of Rsch.: Military and Engineering Geology; Geomorphology; Interpretation of Photographic and Other Electromagnetic Images; Coastal, Deltaic, and Fluviatile Sedimentation; Lunar Geology.



VAN OOSTEN, John (Ph.D.), Chief, Biol. of Great Lakes Fishes, U. S. Bur. of Commercial Fisheries, Univ. Museums Bldg., Ann Arbor, Mich. Home Add.: 5 Research Dr., Ann Arbor, Mich. ICHTHYOLOGY. b. Grand Rapids, Mich., Dec. 10, 1891. s. Dick and Anna (Brouwer) V. Edn.: A.B., Univ. of Mich., 1918; A.M., ibid., 1921; Ph.D., ibid., 1926. m. Lillian Sherman, June 28, 1917. c.: Patricia Ann McWilliams. Exp.: Asst., Dept. of Zool., Univ. of Mich., 1918-21; Temp. Asst., U. S. Bur. of Fisheries, Univ. Mus., Ann Arbor, Mich., 1920; Field Asst., ibid., 1921-23; Fishery Expert, ibid., 1923-25; Field Asst., ibid., 1925-27; Chf., Great Lakes Fishery Investigation, U. S. Bur. Fish, and U. S. Fish and Wildlife Serv., 1927-49; Chf., Biol. of Great Lakes Fishes, U. S. Bur. of Coml. Fisheries, Univ. Mus. Bldg., Ann Arbor, Mich., 1949-61; U. S. Mem. of the Internatl. Fact Finding Commn. of Fisheries, Lake Champlain, 1929; Chmn., Lake Erie Advisory Com., 1932-35; Am. Fisheries Soc., 2nd Vice-Pres., 1939-40, 1st Vice-Pres., 1940-41; Pres., 1941-46, editor, 1937-40, hon. mem., 1952—; U. S. Mem. of the Internatl. Bd. of Inquiry for the Great Lakes Fisheries, 1940-42; Regional Consult. and Area Coordinator, Office of Coordinator of Fisheries,

U. S. Dept. of the Interior, 1942-45. Mem.: Fellow, A.A.A.S.; Am. Fisheries Soc.; Am. Soc. of Ichthyologists and Herpetologists; Am. Soc. of Limnology and Oceanography; Am. Inst. of Fishery Rsch. Biologists; Internatl. Assn. of Limnology; Mich. Acad. of Sci., Arts and Letters; Phi Sigma; Sigma Xi; Gamma Alpha; Soc. of Ichthyology and Hydrobiology (India). Author: The Age and Growth of Fresh-water Fishes. In: A Symposium on Hydrobiology, 1941; The Great Lakes Whitefish. In: Fading Trails, 1942; The Skin and Scales. In: The Physiology of Fishes, 1957; Great Lakes Fauna, Flora and Their Environment, A Bibliography, 1957. Contbr. to: Zoologica; Bull. U. S. Bur. of Fisheries and U. S. Fish and Wildlife Service; Report, U. S. Comm. of Fisheries; Trans. Am. Fisheries Soc.; Trans. N. Am. Wildlife Conf.; Progressive Fish-Culturist; Rsch. Report, U. S. Fish and Wildlife Serv.; Am. Forests; Am. Wildlife, and others. Areas of Rsch.: Life Histories of Great Lakes Fishes; Abundance and Depletion of Great Lakes Fishes and the Factors Involved; Experiments with Fishing Gear; Studies of Regulations of Commercial Fishes; Limnology and Pollution of Great Lakes.

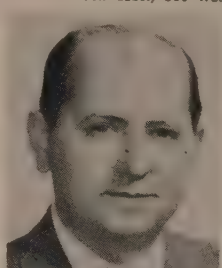
VAN METER, David (Ph.D.), Mgr., Communication Scis. Lab., Litton Systems, Inc., Waltham, Mass. Home Add.: 1716 Cambridge St., Cambridge 38, Mass. STATISTICAL COMMUNICATION THEORY. b. Southampton, N. Y., Mar. 27, 1919. s. Ralph Albert and Eudora (Tuttle) V. Edn.: B.S., M.S., Mass. Inst. of Technol., 1943; M.A., Harvard Univ., 1953; Ph.D., ibid., 1955. m. Mary Kun, Feb. 4, 1950. Exp.: Mem., Tech. Staff, Bell Telephone Labs., N.Y.C., 1943-46; Asst. Prof., Pa. St. Univ., 1946-52; Lab. Head, Melpar, Inc., Watertown, Mass., 1955-60; Lab. Mgr., Litton Systems, Inc., Waltham, Mass., 1960—. Hon. Pos.: Chmn., I.R.E. Professional Group on Information Theory. Mem.: Sigma Xi; I.R.E. Contbr. to: Trans. I.R.E.; Jour. Soc. Industrial and Applied Math. Areas of Rsch.: Statistical Communication Theory.

VAN PELT, Arnold Francis, Jr. (Ph.D.), Prof. of Biol. and Chem., Tusculum Coll., Greeneville, Tenn. ECOLOGY. b. Orange, N. J., Sept. 24, 1924. s. Arnold Francis and Fredericka (Kleiber) V. Edn.: B.A., Swarthmore Coll., 1945; M.S., Univ. of Fla., 1947; Ph.D., ibid., 1950. m. Gladys Smith, 1947. c.: Stephen; Susan. Exp.: Assoc. Prof. of Biol., Appalachian St. Tchrs. Coll., 1950-54; Assoc. Prof., Tusculum Coll., 1954-55; Prof., ibid., 1955—. Mem.: A.A.A.S.; Assn. of S. E. Biologists; Ecological Soc. of Am.; Soc. of Systematic Zool.; Sigma Xi; Phi Sigma; Phi Sigma Kappa. Contbr. to: Am. Midland Naturalist; Jour. of Tenn. Acad. of Scis.; Fla. Entomologist; Entomol. News. Gen. Int.: N.S.F. Grants, 1955-56; N.S.F. Summer Insts., 1958, '59, '61; N.S.F. Summer Conf., 1961. Areas of Rsch.: Investigations in the Ecol. of Ants in Regions of Fla., Sou. Blue Ridge Province.

VAN PELT, John Robert (D.Sc.), Pres., Mich. Coll. of Mining and Technol., Houghton, Mich. Home Add.: 1400 E. College Ave., Houghton, Mich. GEOLOGY. b. Denver, Colo., Apr. 2, 1896. s. John Robert and Ellen R. (Warren) V. P. Edn.: B.A., Cornell Coll., 1918; B.S., E.M., Mich. Coll. of Mining and Technol., 1922; Grad. Study, Univ. of Chicago, 1926-28. Hon. Deg.: D.Sc., Cornell Coll.; LL.D., Chicago Med. Schl. m. Frances Church, Dec. 27, 1929. c.: Peter; Richard; Ellen. Exp.: Instr., Asst. Prof., Cornell Coll., 1922-26; Grad. Asst., Univ. of Chicago, 1926-28; Asst. Geologist, Assoc. Geologist, Ill. St. Geol. Survey, summers, 1927-30; Curator, Geol., Mining and Metallurgy, Museum of Sci. and Industry, Chicago, Ill., 1928-30; Asst. Dir., ibid., 1930-40; Tech. Dir., ibid., 1940-45; Supvr., Battelle Mem. Inst., 1945-51; Pres., Mont. Schl. of Mines, Dir. Mont. Bur. Mines and Geol., 1951-56; Pres., Mich. Coll. of Mining and Technol., 1956—. Hon. Pos.: Pres., Western Soc. Engrs.; Vice-Pres., A.I.M.E.; Mem., Representing Mont., Western Interst. Commn. on Higher Edn.; Trustee, Cornell Coll.; Vice-Chmn., Trustees, Mich. Tech. Foundation; Vice-Chmn., Trustees, Mich. Tech. Canadian Foundation; Dir., Detroit and Northern Savings and Loan Assn.; Dir., Copper Range Co.; Mem., Engrs. Coun. for Professional Development, Edn. and Accrediting Comm. Mem.: Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; A.A.A.S., Fellow; Am. Soc. for Engrng. Edn.; Theta Tau; Gamma Alpha; Phi Beta Kappa; Tau Beta Pi; Sigma Xi; Rotary. Contbr. to: Am. Scientist; Mining Engrng.; Jour. of Engrng. Edn., etc. Serv. Rec.: U. S. Army, W.W. I; Expert Consultant, Office of Secretary of War, W.W. II. Areas of Rsch.: Mining Geol.; Engrng. Edn.

VAN RYSSELBERGHE, Pierre (Ph.D.), Lectr., Rsch. Assoc. Chem., Stanford Univ., Stanford, Calif. Home Add.: 551 Santa Rita Ave., Palo Alto, Calif. ELECTROCHEMISTRY, CHEMICAL THERMODYNAMICS. b. May 18, 1905, Brussels, Belgium. s. Francois and Jeanne (Alvin) Van R. Edn.: Candidat-Ingenieur, Univ. of Brussels, 1924; Engr., ibid., 1927; M.A., Chem., Stanford, 1928; Ph.D., Chem., ibid., 1929. m. Lily Chloupek, San Francisco, Calif. d. Erwin and Grace Chloupek. c.: Jane Frances; Pierre Louis; Jacqueline Grace. Exp.: Fellow, Com. for Relief in Belgium Edn. Foundation, Inc. (C.R.B., now Belgium Am. Edn. Foundation), Stanford, 1927-29; Instr. in Chem., ibid., 1929-31; Asst. Prof. of Chem., ibid., 1931-41; Asst. Prof. of Chem., Univ. of Ore., Eugene, Ore., 1941-42; Assoc. Prof. of Chem., ibid., 1942-45; Prof. of Chem., ibid., 1945-56; Stanford Univ., 1956—; Visiting C.R.B. Lectr. to Belgium (Belgian Am. Edn. Found.), 1935-36; Dir., Rsch. Proj. on "Polarographic Study of Corrosion Phenomena," for Office of Naval Rsch., 1946-51; A.E.C., 1952-56; Pres., Com. of Electrochem., Thermodynamics and Kinetics, 1949-54; Fulbright Visiting Prof., Italy, 1950-51. Hon. Pos.: Chmn., Ore. Acad. of Sci., 1961—. Mem.: Am. Chem. Soc.; A.A.A.S.; Assn. of Engrng. Graduates from the Univ. of Brussels; Alumni of C.R.B.; Electrochem. Soc.; Natl. Assn. of Corrosion Engrs.; History of Sci. Soc.; Societe de Physique; Fellow, Am. Inst. of Chemists; Mem. Electrochem. Comm. of Internatl. Union of Pure and Appl. Chem.; Ore. Acad. of Sci.; N. Y. Acad. of Scis., Fellow, 1957; Sigma Xi; Phi Lambda Upsilon; Pi Delta Phi (French Hon. Soc.). Author: L'Affinite with Th. De Donder, Paris, 1936; Thermodynamic Theory of Affinity, a Book of Prin. with Th. De Donder, Stanford Univ. Press, 1936; Electrochemical Affinity, 1955. Contbr. to: J.A.C.S.; Jour. Phys. Chem.; Jour. Chem. Edn.; Bulletin of the Belgian Acad. of Sci., etc. Ph.D. Dissertation: The Incombatibility Between Any Theory of Complete Dissociation and Migration Data. Travel: Can.; Belgium; France; England; Germany; Italy; Spain; etc. Lived in Belgium until the age of 22.

VAN SAVAGE, John Fabian (Mr.), Electronics Engr., Internatl. Tele. and Tel. Labs., 500 Wash. Ave., Nutley, N. J. Home Add.: 37 Partch Pl., Edison, N. J. MICROWAVES. b. Elizabeth, N. J., Aug. 20, 1922. s. William and Wladislava (Ambrulavich) V. Edn.: B.S., Fairleigh Dickinson Univ., 1956. m. Philomena Beaton, Oct. 11, 1952. c.: Joyce; Eleanor. Exp.: Electronics Engr., Western Electric Co., 1942-47; Supvr., Fada Radio and Elect. Co., 1950-51; Customer Engr., Internatl. Bus. Mach., N. Y., 1951-53; Electronics Engr., I.T.T. Labs., 1953—. Mem.: Inst. of Radio Engrs.; Am. Phys. Soc.; Am. Ord. Assn.; Am. Assn. for the Adv. of Sci.; Armed Forces Communications and Electronics Assn.; Air Forces Assn. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Radar; Communications.



VAN'T RIET, Bartholomeus (Ph.D.), Asst. Prof., Dept. of Chem., Univ. of Va., Charlottesville, Va. Home Add.: 1439 Westwood Rd., Charlottesville, Va. ANALYTICAL AND NUCLEAR CHEMISTRY. b. Arnhem, Netherlands, June 25, 1922. s. Leendert (dec.) and Pietje (Wingelaar) V. Edn.: B.Sc., Vrije Univ., Amsterdam, Netherlands, 1950; Ph.D., Univ. of Minn., 1957. m. Judith F. Rottschaefer, June 28, 1955. c.: Rudolf Dirk; Willem Leendert; Margaret Elaine. Exp.: Tchng. Asst., Vrije Univ., Amsterdam, Netherlands, 1948-51; Tchng. Asst., Univ. of Minn., 1951-56; Instr., ibid., 1956-57; Instr., Univ. of Va., 1957-58; Asst. Prof., ibid., 1958—. Mem.: A.C.S.; Pi Lambda Upsilon; Sigma Xi; Alpha Chi Sigma. Contbr. to: Jour. Physical Chem.; An. Chim. Acta. Gen. Int.: Dir., N.S.F. Rsch. Participation Progs. Areas of Rsch.: Mechanism of Precipitation and of Heterogeneous Exchange; Application of Radioisotopes in Chem.; Dissolution of Urinary Calculi; Electrochem.

VANVIG, Andrew (Ph.D.), Prof. and Hd., Div. of Agric. Econs., Univ. of Wyo., Laramie, Wyo. Home Add.: 1308 Custer St., Laramie, Wyo. AGRICULTURAL ECONOMICS. b. Ranger, N. D., Mar. 28, 1922. s. Sivert and Martha (Vekamoen) V. Edn.: B.S., N. D. St. Univ., 1942; M.S., Cornell Univ., 1943; Ph.D., Univ. of Minn., 1951. Exp.: Asst. Prof., Univ. of Ariz., Tucson, Ariz., 1952-55; Assoc. Prof., ibid., 1955-57; Prof. and Hd. of Div. of Agric. Econ., Univ. of Wyo., 1957—. Mem.: Am. Farm Econs. Assn.; W. Farm Econs. Assn.; Am. Soc. of Farm Mgrs.; Internatl. Conf. of Agric. Econts.; Kappa Sigma Chi; Blue Key; Alpha Zeta; Gamma Sigma Delta; Pi Gamma Mu; Phi Kappa Phi. Contbr. to: Jour. of Farm Econs. Gen. Int.: Recipient of Travel Fellowship to Internatl. Conf. of Agric. Econts., Mysore, India, 1958. Areas of Rsch.: Agricultural Finance, Production Economics, Farm and Ranch Management, Agricultural Policy.

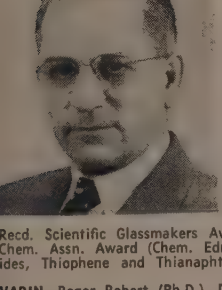
VAN SICKLE, John V. (Ph.D.), Prof. of Econ., Emeritus, Wabash Coll., Crawfordsville, Ind. Home Add.: 617 Thornwood Rd., Crawfordsville, Ind. REGIONAL AND INTERNATIONAL ECONOMIC RELATIONS. b. Denver, Colo., Apr. 30, 1892. s. James H. and Caroline (Valentine) V.S. Edn.: A.B., Haverford Coll., 1913; M.A., Harvard Univ., 1921; Ph.D., ibid., 1924. m. Louise Patterson, June 12, 1926. c.: Patricia; James; Shaila. Exp.: Instr. and Tutor, Div., Hist., Govt. and Econ., Harvard Coll., 1915-17; Asst., Am. Embassy Paris, France, 1919-20; Asst. Sec., Am. Secn. Reparations Commn., Austria, 1920-21; Asst., Tech. Adviser to Austrian Govt., 1921-23; Asst. and Assoc. Prof., Econ., Univ. of

ch., 1924-28; Fellowship and Grant-in-Aid Secy., Soc. Sci. h. Coun., N.Y.C., 1928-29; Asst. Dir., Soc. Scis., Rockefeller n., 1929-38; Prof. of Econ., Vanderbilt Univ., 1938-46; Prof. Econ., Wabash Coll., 1946-60; Prof. Emer., ibid., 1960—; mn., Dept. Econ., Vanderbilt Univ., 1940-45; Rsch. Prof., ibid., 45-46; Chmn., Dept. of Econ., Wabash Coll., 1946-60. Mem.: i Beta Kappa; Am. Econ. Assn.; Sou. Econ. Assn.; Mt. Pelerin c. Author: Direst Taxation in Austria, 1928; Planning for the uth, 1943. Co-author: Introduction to Economics, 1954. ntbr. to: Quarterly Jour. of Econ.; Jour. of Land Econ.; uthern Econ. Jour.; KYKLOS. War Record: U. S. Army, 1917- . Gen. Int.: Adviser to Chinese Nationalist Govt., Formosa, 54.

AN WINKLE, Glenn Louis (Mr.), Hd., Solid State Display Sect., ar Siegler, Inc., 110 Ionia Ave., N.W., Grand Rapids 2, Mich. Home Add.: 2343 Plymouth Dr., S.E., Grand Rapids, Mich. INSTRUMENTATION AND THE DEVELOPMENT OF ELECTROLUMINESCENT DISPLAYS. b. Middletown, N. Y., May 18, 1931. s. Fred R. and Virginia (Krumm) V. Edn.: B.S. Chem., Pa. St. Univ., 1955. m. Esther Savidge, Dec. 19, 1951. c.: Louis G.; Linda S.; Alan R. Exp.: Rsch. Assoc., Mellon Inst. of Indust. Rsch., Pittsburgh, Pa., 1955-57; Design Engr., Union Switch and Signal Div., Westinghouse AB, Swissvale, Pa., 1957-58; Supvr., Melpar, Inc., 1958-62. Mem.: I.S.A.; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Armed Forces Chem. Assn. Contbr. to: I.S.A. Jour. Serv. Rec.: U. S. Army, 1951-54. Gen.

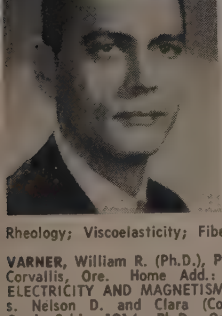
nt.: Conceived and Built a New Type of Velocity Servo Intetrator; Designed and Marketed a Flexible Program Controller for sch. Use. Areas of Rsch.: Electroluminescent Display Tech iques Crystal Growing and Purification of Intermetalic Semionductors; Instrumentation for Chemical Detection, Mainly for ield and Space Applications.

AN ZYL, Gerrit (Ph.D.), Prof. of Chem., Hope Coll., Holland, Mich. Home Add.: 824 Central Ave., Holland, Mich. CHEMISTRY, ORGANIC. b. Sioux Co., Ia., July 29, 1894. s. Cornelius and Helena (Van Es) Van Z. Edn.: A.B., Hope Coll., 1918; M.S., Univ. of iMch., 1921; Ph.D., ibid., 1924. Hon. Deg.: Sc.D., Hamline Univ., 1952. m. Bertha Brower, Aug. 31, 1921. c.: Neil; Allison Lynn; Gail Byron; Verna Ruth. Exp.: Asst., Univ. of Mich., 1920-23; Prof. of Chem., Hope Coll., 1923—. Hon. Pos.: Pres., Mich. Coll. Chem. Tchrs. Assn. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Mich. Coll. Chem. Tchrs. Assn.; Midwest. Assn. of Coll. Chem. Tchrs.; N. Y. Acad. of Scis.; Gamma Alpha; Sigma Xi; Holland Profl. Club. Contbr. to: Jour. Am. Chem. Soc. Serv. Rec.: U. S. Army, W.W. I. Gen. Int.:



Recd. Scientific Glassmakers Award in Chem. Edn., 1955; Mfng. Chem. Assn. Award (Chem. Edn.), 1962. Areas of Rsch.: Epoxides, Thiophene and Thianaphthene, Amino Acids.

VARIN, Roger Robert (Ph.D.), Dir. of Rsch., Riegel Textile Corp., Ware Shoals, S. C. Home Add.: 136 E. Tallulah Dr., Greenville, S. C. POLYMER PHYSICS AND CHEMISTRY. b. Bern, Switzerland, Feb. 15, 1925. s. Robert Francois and Anna (Martz) V. Edn.: Bach., Stadtisches Gymnasium, Bern, Switzerland, 1944; Ph.D., Univ. of Bern, Switzerland, 1951; Rsch. Fellow, Harvard Univ., 1951-52. m. Annemarie Louis, May 24, 1951. c.: Roger R. R.; Edward C. H.; Viviane A. H. Exp.: Rsch. Chemist, E. I. DuPont de Nemours and Co., Wilmington, Del., 1952-57; Rsch. Assoc., ibid., 1957-62; Dir. of Rsch., Riegel Textile Corp., Ware Shoals, S. C., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Rsch. Soc. of Am.; Internatl. Assn. for Cybernetics. Contbr. to: Jour. Am. Chem. Soc.; Helv. Chim. Acta. Areas of Rsch.:



Rheology; Viscoelasticity; Fiber Physics.

VARNER, William R. (Ph.D.), Prof. of Physics, Ore. St. Univ. (ret.), Corvallis, Ore. Home Add.: 3215 Johnson St., Corvallis, Ore. ELECTRICITY AND MAGNETISM. b. Wallowa, Ore., Aug. 3, 1889. s. Nelson D. and Clara (Coke) V. Edn.: E.E., Westinghouse Grad. Schl., 1914; Ph.D., Ore. St. Univ., 1934. m. Netta E. Griffin, Feb. 2, 1924. c.: Mrs. Ilda Florence Cox. Exp.: Elec., Westinghouse E. and M. Mfg. Co., Pittsburgh, Pa., 1914-16; Elec. Engr., Duquesne Steel Co., Pa., 1916-18; Physics Tchr., Ore. St. Univ., Ore., 1918-61; Tchr. Electronics, Mineral Co. Tech. Schl., Hawthorne, Nev.; Prof., Ore. St. Univ. (ret.), 1961—. Mem.: Sigma Pi Sigma; Sigma Xi. Author: The Fourteen Systems of Units, 1948, '61. Areas of Rsch.: Corrosion of Underground Pipes.

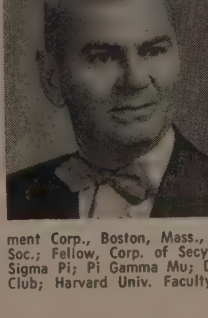
VAUGHN, Charles Melvin (Ph.D.), Prof. and Chmn. Dept., Dept. Zoology, State Univ., South Dakota, Vermillion, S. Dak. Home Add.: 21 S. Pine St., Vermillion, S. Dak. PARASITOLOGY; INVERTEBRATE ZOOLOGY. b. Deadwood, S. Dak., Nov. 23, 1915. s. Roy F. and May (Smith) V. Edn.: J.S., Morton Jr. Coll., 1934; B.A., Univ. of Ill., 1939; M.A., ibid., 1940; Ph.D., Univ. of Wis., 1943. m. Mattie Christine Isaacson, Sept. 6, 1941. c.: Martha Frances; Richard Charles. Exp.: Tchng. and Rsch. Asst., Zoology, Univ. of Wis., 1940-43; Asst. and Assoc. Prof., Zoology, Miami Univ., Oxford, 1946-50; Assoc. Dir., Sr. Parasitologist, Instr. Parasitology, Bowman Gray Schl. Med., Inst. Trop. Med., Winston-Salem, N. C., 1950-52; Assoc. Dir. and Sr. Parasitologist, Field Ser. Unit, Am. Foundation Trop. Med., N. Y., 1952-53; Prof. and Hd., St. Univ. S. Dak., Dept. of Zoology, 1953-61; Prof. and Chmn., ibid., 1961—; Dir., Academic Year Inst., Jointly Sponsored by Univ. and Natl. Sci. Foundation, 1958—. Mem.: A.A.A.S.; Ohio Acad. Sci.; Royal Soc. Trop. Med. and Hygiene; Am. Soc. Zoologists; Am. Micro. Soc.; Am. Soc. Parasitologists; Soc. Protozoologists; S. Dak. Acad. Sci.; Am. Inst. Biol. Scis.; Phi Beta Kappa; Phi Kappa Phi; Sigma Xi; Phi Sigma; Kappa Delta Pi; Gamma Alpha; Lions; Masons; Oriental Consistory; El Riad Temple. Contbr. to: Sci.; Jour. Parasitology; Am. Midland Natl.; Am. Jour. Trop. Med. and Hygiene; Annals Med. Soc.; Med. Jour. Serv. Rec.: A.U.S., 1st Lt.-Major, 1943-46; M.S.C.-U.S.A.R., Major- Lt. Col., 1946—. Gen. Int.:

Scholar, Zoology, Univ. of Ill., 1939-40; China Med. Bd. Fellow, summer, 1956, in Central Am. Studying Parasitology and Tropical Med. Areas of Rsch.: Parasitology and Protozoology; Helminth and Malaria Surveys, U. S. and Overseas; Insecticides and Molluscicide Testing and Drug Evaluation; Physiology and Life History Studies of Molluscs and Other Invertebrate Animals; Science Education and Subject Matter Training of Teachers.

VAVOULIS, Alexander (Ed.D.), Instr., Chem., Stockton Coll., Stockton, Calif. Home Add.: 2363 Polk Way, Stockton, Calif. CHEMISTRY. b. Pittsburgh, Pa., Dec. 28, 1924. s. William and Katherine (Zervas) V. Edn.: B.A., Brooklyn Coll., 1951; M.A., ibid., 1953; Ed.D., Univ. of the Pacific, 1962. m. Jean Carlisle, Mar. 12, 1955. c.: Theodore Grafton; David William. Exp.: Asst. Prof., Chem., Davidson Coll., N. C., 1953-55; Instr., Chem., Univ. of N. C., 1955-58; Instr., Chem., Wright Jr. Coll., Ill., 1958-59; Instr., Chem., Univ. of the Pacific, 1960-61; Instr., Chem., Stockton Coll., 1961—. Mem.:

Am. Chem. Soc.; Phi Delta Kappa; Sci. Tchrs. of Central Calif.; Stockton Town Meeting Com., A. A. U. N. Author: Laboratory Manual for General Chemistry, 1960. Contbr. to: Analytical Chem.; Mikrochemie; Inorganic Syntheses; Calif. Jour. of Edni. Rsch.; Schl. Sci. and Math.; Jour. of Chem. Edn. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Teaching; Undergraduate Analytical Chemistry.

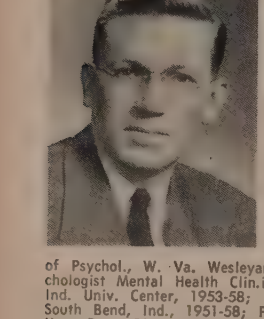
VAUGHN, James Abbott (Ph.D.), Pres., New England Mgt. Corp., 419 Boylston St., Boston 16, Mass. Home Add.: 581 Cambridge St., Allston 34, Mass. ECONOMICS; ECONOMIC RESEARCH AND ECONOMIC HISTORY. b. Boston, Mass., Mar. 2, 1909. s. William H. and Mary Etta (Blackburn) V. Edn.: B.B.A., Boston Univ., 1937; M.B.A., ibid., 1939; Ph.D., ibid., 1950; LL.B., Suffolk Univ., 1942; J.D., Blackstone Coll. of Law, 1948; Grad. Work: Harvard and N. Y. Univ. Hon. Deg.: LL.D., Blackstone Coll. of Law, 1949. m. Thelma Louise Fisher, Oct. 10, 1936. Exp.: Tchr., Hist. and Eng., Vermont Acad., 1942-43; Faculty Mem., Boston Univ., 1943-45; Faculty Mem., Dir. of Public Relations, Simmons Coll., 1945-51; New England Mgr., James Flett Org., Boston, Mass., 1951-56; Pres., New England Management Corp., Boston, Mass., 1956—. Mem.: Fellow, Royal Econ. Soc.; Fellow, Corp. of Secys.; Am. Econ. Assn.; A.A.U.P.; Delta Sigma Pi; Pi Gamma Mu; Delta Pi Epsilon; Boston Univ. Faculty Club; Harvard Univ. Faculty Club. Author: The Business Trust,



1948; Political Influence of Unions, 1950; This Business of Fund Raising, 1951. Areas of Rsch.: Economic Rsch. and Economic History.

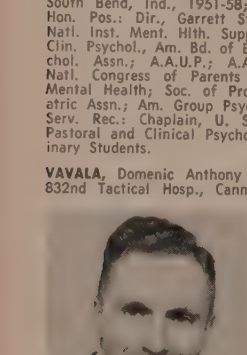
VAUSE, Edwin Hamilton (Mr.), Vice-Pres., Charles F. Kettering Found., 42 N. Main, Dayton, O. Home Add.: 6420 Durban Ct., Dayton, O. CHEMICAL ENGINEERING. b. Chicago, Ill., Mar. 30, 1923. s. Harry Russell and Sylvia Clair (Webster) V. Edn.: B.S., Univ. of Ill., 1947; M.S., ibid., 1948; M.B.A., Univ. of Chicago, 1952. m. Harriet Evelyn Oestmann, June 30, 1951. c.: Karen Lee; Russell Edwin; Kurt Hamilton; Dirk Charles; Luke Edward. Exp.: Asst. Gen. Foreman, Standard Oil Co., Whiting, Ind., 1948-57; Dir. Lab. Adm., Mead Johnson and Co., Evansville, Ind., 1957-60; Vice-Pres. and Adm. Asst., C. F. Kettering Fndn., 1960—. Hon. Pos.: Chmn. Chicago Sect., A.I.Ch.E., 1956; Vice-Chmn., Schl. of Bus., Univ. of Chicago, 1961 and 1962 Fund Drive. Mem.: Am. Inst. Chem. Engrs.; Am. Assn. for the Adv. of Sci.; R.E.S.A.; Reg. Profl. Engr. in Ill. and Ind.; Alpha Delta Phi; B.P.O.E.; Kiwanis. Contbr. to: Purdue Indust. Waste Conf. Procs. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Liquid-Liquid Extraction, High Pressure Reactions, Petroleum Refining Technology, Research and Business Administration, General Management of Scientific Organizations.

VAYHINGER, John Monroe (Ph.D.), Prof. of Pastoral Psychol. and Counseling, Garrett Biblical Inst., Northwestern Univ. Campus, Evanston, Ill. Home Add.: 1318 Hinman Ave., Evanston, Ill.



EXPERIMENTAL AND CLINICAL PSYCHOLOGY. b. Upland, Ind., Jan. 27, 1916. s. Paul Johnson and Harriett Estelle (Palmer) V. Edn.: A.B., Taylor Univ., 1937; B.D., Drew Theol. Sem., 1940; M.A., Columbia Univ., 1948; M.A., Drew Univ., 1951; Ph.D., T. C., Columbia Univ., 1956. m. Ruth Catherine Imler, Sept. 17, 1939. c.: John Earl; Karen Lynn. Exp.: Pastor, Brooksburg Meth. Ch., Ind., 1938; Pastor, Ogilville Meth. Ch., Ind., 1939; Pastor, E. Branch Meth. Ch., N. Y., 1940-42; Pastor, Kenoza Lake Meth. Ch., N. Y., 1942-43; Pastor, Sharon Meth. Ch., Conn., 1943-44; Instr., Drew Theol. Sem., 1948-49; Hd., Dept. of Psychol., W. Va. Wesleyan Coll., 1949-51; Chf., Clin. Psychologist Mental Health Clin.ic, S. Bend, Ind., 1951-58; Lectr., Ind. Univ. Center, 1953-58; Pastor, Portage Chapel Meth. Ch., South Bend, Ind., 1951-58; Prof., Garrett Theol. Sem., 1958—. Hon. Pos.: Dir., Garrett Study on Motivation in the Ministry, Natl. Inst. Ment. Hlth. Supported, 1962-64. Mem.: Diplomate in Clin. Psychol., Am. Bd. of Examiners in Profl. Psychol.; Am. Psychol. Assn.; A.A.U.P.; A.A.A.S.; N. Y. Conf. of Meth. Ch.; Natl. Congress of Parents and Tchrs.; Acad. of Religion and Mental Health; Soc. of Projective Techniques; Am. Orthopsychiatric Assn.; Am. Group Psychotherapy Assn. Ministry Studies Bd. Serv. Rec.: Chaplain, U. S. Army, 1944-47. Areas of Rsch.: Pastoral and Clinical Psychology; Motivation Research with Seminary Students.

VAVALA, Domenic Anthony (Ph.D.), Chf. of Physiological Trng., 832nd Tactical Hosp., Cannon A.F.B., N. M. Home Add.: 340 Rugby St., Providence 5, R. I.



PHYSIOLOGY. b. Providence, R. I., Feb. 1, 1925. s. Salvatore and Maria G. (Grenci) V. Edn.: Certificate in Basic Engrng., Yale Univ., 1944; B.A., Brown Univ., 1947; M.S., Univ. of R. I., 1950; M.A., Trinity Univ., 1954; Diploma, Air Univ., U.S.A.F. Schl. of Avn. Med., 1954; Dipl., Academic Instr. Course, Air Univ., Extension Course Inst., 1955; Dipl., Course in Milit. Justice, Air Univ., Extension Course Inst., 1956; Ph.D. in Physiol. Degree, Phoenix Univ., 1957; Ph.D. in Physiol. Degree, Minerva Univ., 1957; M.Edn., Univ. of Houston, 1958. Exp.: Rsch. Asst. in Tumor Rsch., Univ. of R. I., 1950; Asst. in Entomological Rsch., ibid., 1950; Rsch. Asst. in Pharmacol., Boston Univ. Schl. of Med., 1950-51; Med. Asst., U.S.A.F., Med. Serv., 1951; Physiologist, Osaka Army Hosp., Osaka, Japan, 1951-52; Rsch. Avn. Physiologist, Dept. of Physiol. and Biophysics, U.S.A.F. Schl. of Avn. Med., Randolph A.F.B., Tex., 1952-54; Rsch. Avn. Physiologist, 3605th U.S.A.F. Hosp., Ellington A.F.B., Tex., 1955-57; Writer and Producer of T.V. Series presented on KUHT-TV, Houston, Tex., 1956; Consult. in Avn. Physiol., Film Production Dept. of the Radio-TV Dept. of the Univ. of Houston, 1956; Rsch. Avn. Physiologist and Chf. of Physiological Trng., A.F. Hosp., Ellington A.F.B., Tex., 1957; Rsch. Avn. Physiologist and Hd., Academic Sect., Dept. of Physiological Trng., U.S.A.F. Hosp., Lackland A.F.B., Tex., 1957-58; Vis. Prof. of Altitude Physiol., Incarnate Word Coll., San Antonio, Tex., 1958-59; Rsch. Avn. Physiologist and Chf. of Physiological Trng., 832d Tactical Hosp., Cannon A.F.B., N. Mex., 1958; Faculty Mem., Extension Div., Eastern N. Mex. Univ., Portales, N. Mex., 1959—; Faculty Mem., Adult Edn. Div., Clovis Municipal Schls., Clovis, N. Mex., 1960. Hon. Pos.: Ed.-in-Chf., The N.A.D.U.S. Jour., Official Publication of The Natl. Assn. of Doctors in the U. S.; Academician in the Div. of Sci. of the Accademia di Studi Superiori MINERVA of Milan, Italy, 1960. Secy.-Treas., The Natl. Assn. of Doctors in the U. S. Mem.: Phi Sigma; A.A.A.S.; Tex. Acad. of Sci.; Aerospace Med. Assn.; Assn. of Milit. Surgeons of the U. S.; Kappa Delta Pi; Unione Nazionale Laureati; Phi Kappa Phi. Contbr. to: U.S.A.F. Med. Jour.; Tex. Jour. of Sci.; The Milit. Surgeon; Jour. of Avn. Med.; Milit. Med.; Jour. of the Am. Med. Assn.; Phi Kappa Phi Jour. Serv. Rec.: U.S.A.F. Med. Serv. Gen. Int.: Distinguished Serv. Award by Clovis, N. Mex., Jr. C. of C.; One of Three U.S.A.F. Nominees for Ten Outstanding Young Men of 1959; Nominee for One of the Nation's Ten Outstanding Young Men Awards by U. S. C. of C., 1960; Recipient, Gold Medal of Academic Palms, by Minerva Univ., Milan, Italy, awarded for "cultural merits and fidelity to the University"; Mem., Adv. Bd., "Who Is Who in Adult Edn." Areas of Rsch.: Cardiovascular and Respiratory Physiology; Higher Education.

VEIGELE, William John, Jr. (Ph.D.), Assoc. Rsch. Scientist, The Martin Marietta Corp., Denver, Colo. Home Add.: 7724 S. Depew Way, Littleton, Colo.

PHYSICS: SOLID STATE PHYSICS. b. N. Y., June 18, 1925. s. William John, Sr. and Lena (Daun) V. Edn.: B.A., Hofstra Coll., 1949; M.A., ibid., 1951; Ph.D., Univ. of Colo., 1960. m. Sue Jane Schwagerman, Jan. 25, 1956. c.: William John, III; Diane Ruth. Exp.: Engr., N. Y. Testing Labs., N. Y., 1949-50; Physicist, Fairchild Camera and Instrument Corp., N. Y., summers, 1951-55; Instr., William Coll., Williamstown, Mass., 1951-52; Instr., Hofstra Coll., N. Y., 1952-57; Instr., Univ. of Colo., Boulder, Colo., 1957-58; Physicist, U. S. Natl. Bur. of Standards, Boulder, Colo., 1958-59; Fellowship, Natl. Sci. Found. Sci. Faculty, 1959-60; Prof. and Hd. of Physics Dept., Parsons Coll., Ia., 1960-61; Assoc. Rsch. Scientist, The Martin Marietta Corp., 1961—. Mem.: Am. Phys. Soc ; Am. Assn. of Physics Tchrs.; Am. Assn. for the Adv. of Sci.; N. Y. Acad. of Sci.; Sigma Pi Sigma; Sigma Alpha; Sigma Alpha Sigma. Contbr. to: Am. Phys. Soc.; Natl. Bur. of Standards Publs ; Air Force Office of Scientific Rsch. Serv. Rec.: U. S. Navy, 1943-46; U. S. Naval Reserve, 1947—. Areas of Rsch.: Solid State Physics; Nuclear Magnetic Resonance; Cryogenics.

VELOTTI, Louis, Jr. (O.D.), Optometrist, 2 East Green St., Hazleton, Pa. Home Add.: 517 No. Vine St., Hazleton, Pa. PARASITOLOGY, OPTOMETRY. b. Uniontown, Pa., Nov. 17, 1925. s. Louis and Mary (Mavsillio) V. Edn.: B.S., Franklin and Marshall Coll., 1948; M.S., The Univ. of Miami, 1950; O.D., The Pa. State Coll. of Optometry, 1955. m. Catherine Marino, 1953. c.: Thomas. Exp.: Curator, Dept. of Zool., The Univ. of Miami, 1950-51; Optometrist, Pvt. Pract., Hazleton, Pa., 1955 —. Mem.: Pa. Acad. Sci.; A.A.A.S.; Phi Sigma Kappa; Omega Delta; Beta Beta Beta; Unico; Jr. C. of C.; I.S.D.A. Contbr. to: Optometric Weekly. Gen. Int.: Contact Lenses. Areas of Rsch.: Parasitology, Contact Lenses.

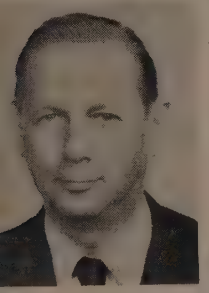
VERNON, Leo Preston (Ph.D.), Dir., Chas. F. Kettering Rsch. Lab., Yellow Springs, Ohio. Home Add.: 202 Northwood Dr., Yellow Springs, Ohio.

BIOCHEMISTRY (PHOTOSYNTHESIS). b. Roosevelt, Utah, Oct. 10, 1925. s. William M. and Roseltha (Bingham) V. Edn.: B.A., Brigham Young Univ., 1948; Ph.D., Ia. St. Coll., 1951. m. Fern Trunkey, Sept. 5, 1946. c.: Ricky; Elise; Martin; Jillaine. Exp.: Fellow, Univ. of Wis., 1951-52; Rsch. Assoc., Wash. Univ., 1952-54; Prof., Brigham Young Univ., 1954-61. Mem.: A.C.S.; Am. Soc. of Biological Chemists; Am. Soc. of Plant Physiologists; Am. Soc. of Microbiol.; Sigma Xi; Biophysical Soc. Contbr. to: Jour. A.C.S.; Jour. Biol. Chem.; Plant Physiol.; Arch. Biochem. Biophys.; Biochem. Biophys. Acta; Acta Chem. Scand. Serv. Rec.: U. S. Army, W. W. II. Areas of Rsch.: Photosynthesis; Respiratory Enzymes.

VERA, Harriette Dryden (Ph.D.), Dir., Qual. Control, Lab. Products, Becton, Dickinson Co., Rutherford, N. J. Home Add.: 401 Brook Rd., Towson 4, Md. Bus. Add.: 2201 Aisquith St., Baltimore 18, Md. MICROBIOLOGY. b. Washington, Pa., Feb. 22, 1909. d. Theodore Dunlap and Marian Dryden (Thomas) V. Edn.: A.B., Mt. Holyoke Coll., 1930; Ph.D., Yale Univ., 1938. Exp.: Asst., Dept. Zool., Mt. Holyoke Coll., 1930-31; Tchr., Dept. of Biol., New Haven H. S., 1931-37; Fellow, Yale Univ., 1937-38; Instr.-Asst. Prof., Dept. Physiol., Goucher Coll., 1939-43; Rsch. Microbiologist, Baltimore Biological Lab., Becton, Dickinson Co., 1943-60; Dir., Quality Control of Lab. Products, Becton, Dickinson Co., 1960—. Mem.: Am. Acad. Microbiology; A.A.A.S.; Am. Soc. Profl. Biologists; Am. Pub. Health Assn.; N. Y. Acad. of Sci.; Parenteral Drug Assn.; Royal Soc. Health; Am. Soc. for Microbiology, Soc. Indusl. Microbiol.; Sigma Xi; Quota Internatl. of Baltimore. Contbr. to: Jour. Bacteriol.; Am. Jour. of Pub. Health; Applied

crobiol.; The Pub. Health Lab. Serv. Rec.: U. S. Army. Areas Rsch.: Microbiological Culture Media and Specifications Sterili- Testing; Microbiological Test Methods and Specifications.

RZEANO, Marcel (M.D.), Assoc. Prof. of Biophys., Univ. of if., Med. Ctr., Los Angeles 24, Calif. Home Add.: 28908 Grayfox Drive, Malibu, Calif. NEUROPHYSIOLOGY; BIOPHYSICS. b. Romania, Dec. 1, 1911. s. Mille and Clara (Verzeano) V. Edn.: M.D., Med. Schl. of the Univ. of Pisa, Italy, 1936. Exp.: Rsch.: Fellow, Harvard Med. Schl., Boston, Mass., 1947-49; Rsch. Assoc., ibid., 1949-50; Asst. Rsch. Anatomist, Schl. of Med., Univ. of Calif. at Los Angeles, 1951-53; Asst. Prof. of Biophys., ibid., 1953-57; Assoc. Prof., ibid., 1957 —. Mem.: Am. Physiol. Soc.; Am. EEG Soc.; Am. Acad. of Neurol.; The Biophys. Soc.; The Royal Soc. of Med.; Internatl. Brain Rsch Organ. Contbr. to: Jour. of Neurophysiol.; Jour. of General Physiol.; Vision Rsch. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.:



ight of the Crown of Italy, 1945. Areas of Rsch.: The Elec ical Activity of the Brain; Physiology of the Nervous System.

ESSELS, Robert Donald (Mr.), Nuclear Health Physicist, Alfred E. nith State Office Bldg., P. O. Box 7036, Albany, N. Y. Home Add.: 133 Van Buren Rd., Scotia, N. Y. ATOMIC ENERGY, HEALTH PHYSICS. b. Long Beach, Calif., Mar. 8, 1927. s. Frederick A. and Berniece L. (Cole) V. Edn.: B.S., The Principia Coll., Ill., 1949. m. Lois Ann Nitchman, Oct., 1949. c.: Eric Donald; Heather Ann. Exp.: Health Physicist, Knolls Atomic Power Lab., Schenectady, N. Y., 1950-52; Tech. Adminstr., U. S. Atomic Energy Commn., Schenectady, N. Y., 1952-55; Tech. Pub. Relation, General Elec. Co., Schenectady, N. Y., 1955-56; Acting Dir. of Inspection Division, U. S. Atomic Energy Commn., Schenectady, N. Y., 1956-57; Asst. to Mgr., ibid., 1957-59; Nuclear Health Physicist, N. Y. St. Office of Atomic Develop., Alfred E.

mith St. Office Bldg., 1959—. Mem.: Am. Nuclear Soc.; Health hysics Soc.; Am. Soc. for Pub. Admin.; Nuclear Energy Writers ssn.; Am. Assn. Adv. Sci. Areas of Rsch.: Radiation Pro- ection; Ecology of Environmental Release of Radioactivity, Regu- atory Control of Atomic Energy, Atomic Energy Pub. Relations.

VICKERS, William Ward (Ph.D.), Project Scientist, Technical perations, Inc., Burlington, Mass. Home Add.: 11 Morse Rd., ewtonville 60, Mass. HYDROLOGY. b. San Francisco, Calif., une 21, 1923. s. William A. and Anna Mae (Hanahan) V. dn.: B.A., U.C.L.A., 1954; M.A., ibid., 1956; Ph.D., McGill niv., 1962. m. Vivian Phillips, July, 1955. c.: Holly Ann; Valter Cordell. Exp.: Fulbright Scholar, Norwegian Polar Inst., Oslo, Norway, 1956-57; Prin. Investigator, Antarctic Ice Accumu- ation Proj., Arctic Inst. of N. Am., 1957-61; Sr. Scientist, Tech- nical Operations, Inc., Burlington, Mass., 1961—. Mem.: A.A.- A.S.; Am. Geophysical Union; Sigma Xi; N. Y. Explorers Club. Contbr. to: Am. Geophysical Union Trans.; Bull. of Ohio St. Univ. Rsch. Fdn.; Ency. Americana. Serv. Rec.: U. S. Marine Corps, 1943-48. Areas of Rsch.: Snow and Ice Hydrology and Cloud Physics.

VICKERY, Eugene Livingstone (M.D.), Physician, 202 So. Schuyler St., Lena, Ill. Home Add.: 602 Oak St., Lena, Ill. GENERAL PRACTICE OF MEDICINE; MEDICAL HISTORY. b. Fairmount, Ind., Nov. 27, 1913. s. Lee Otis and Grace (Hawkins) V. Edn.: B.Sc., Northwestern Univ., 1935; M.B., ibid., 1940; M.D., ibid., 1941. m. Millie Margaret Cox, Dec. 21, 1941. c.: Douglas Eugene; Constance Michelle; Anita Sue; Jon Livingstone. Exp.: Active Staff Mem., St. Francis and Freeport Meml. Hosps., Freeport, Ill., 1946 —; Health Officer, Lena, Ill., 1948 —; Chmn., Med. Recs. Comm., Freeport Meml. Hosp., 1956—; Local Surg., I.C.R.R., Lena, Ill., 1961—. Hon. Pos.: Health Dir., Stephenson Co. Civil Defense Org. Bd. Tr., Meth. Ch.; Lena Lib. Bd. Mem.: Phi Beta Kappa; Am. Assn. for the Adv. of Sci.; Am. Acad.

of Gen. Pract.; A.M.A.; Asst. Milit. Surg. of U. S.; Rev. Officers Assn.; Alpha Phi Omega; Phi Chi; Scabbard and Blade; Freeport Country Club; Am. Legion; Lions. Author: Medical Department History, 1945. Serv. Rec.: U. S. Army Med. Corps, 1941-46; Major, Exec. Officer and Med. Historian, Office of Chf. Surgeon, Africa-Middle East Theatre; Legion of Merit.

VIELHAUER, Harold George (Mr.), Chief, Spacecraft Systems, Wright-Patterson A.F.B., Ohio. Home Add.: 1359 Fudge Dr., Xenia, Ohio. BIOLOGY; CHEMISTRY. b. Cincinnati, Ohio, Jan. 17, 1927. s. Harvey J. and Lucile (Rabe) V. Edn.: B.S., Univ. of Cincinnati, 1949; Grad. Study, Univ. of Md., 1951-52; Univ. of Dayton, 1959-62; Miami Univ., Oxford, Ohio, 1960-62. m. Margaret Opp, Feb. 20, 1960. c.: Harold George; Margaret Lucile. Exp.: Rsch. Control Chemist, Carlisle Chem. Works, Cincinnati, Ohio, 1949-50; Rsch. and Devel. Officer, U.S.A.F., 1950-58; Bio-Chemist, U. S. Govt., Dept. of Air Force, Wright-Patterson A.F.B., 1959—. Mem.: Am. Rocket Soc.; Lambda Chi Alpha. Serv. Rec.: U. S. Navy, 1945-46; U. S. Army (U.S.M.A.) Cadet, 1946-47; U. S. Air Force, 1950-58. Gen. Int.: Responsible for the Devel. of U. S. Air Force Airborne Sampling System, 1955; Outstanding Performance Rating, 1961, and Cash Award for Sustained Superior Performance, 1961. Areas of Rsch.: Bio-astronautics; Spacecraft Systems Integration.

VIESSMAN, Warren, Jr. (D.Engr.), Asst. Prof. of Civil Engrng., N. M. St. Univ., University Park, N. M. Home Add.: 1150 Calle Del Sol, Las Cruces, N. M. SANITARY ENGINEERING, HYDROLOGY. b. Baltimore, Md., Nov. 9, 1930. s. Warren and Helen (Berlincke) V. Edn.: B.E., Johns Hopkins Univ., 1952; M.S.E., ibid., 1958; D.Engr., ibid., 1961. m. Gloria Scheiner, May 12, 1953. c.: Wendy; Suzanne; Stephen. Exp.: Engr., W. H. Primrose & Assoc., Md., 1955-57; Project Engr., Johns Hopkins Univ., 1957-61; Asst. Prof., N. M. St. Univ., 1961—. Mem.: A.S.C.E.; A.G.U.; Sigma Xi; Scabbard and Blade. Contbr. to: A.S.C.E. Hydraulics Jour. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Conducted Extensive Hydrologic Rsch. on Small Urban Watersheds.

VINAL, William Gould (Ph.D.), Prof. Emer., Nature Edn., Univ. of Mass., Amherst, Mass. Home Add.: RFD 2, Grove St., Norwell, Mass. BIOLOGY. b. South Scituate, Mass., Nov. 29, 1881. s. William Raymond and Mary Ellen (Farrar) V. Edn.: B.S., Harvard Univ., 1906-07; A.M., ibid., 1907; Ph.D., Brown Univ., 1922. Hon. Deg.: Ed.D., R. I. Coll., 1961. m. Lillie Hale Downing, 1908. c.: Dr. Raymond Gould; Meriel Hale; Vinal Draper. Exp.: Hd. Dept. Biol. and Geog., Marshall Coll., Huntington, W. Va., 1907; Hd. Dept. Geog., State Tchrs. Coll., Salem, Mass., 1910; Hd. Dept. Nature Edn., R. I. Coll. of Edn., Providence, R. I., 1911-25; N. Y. St. Coll. Forestry; Syracuse Univ., 1925-27; Schl. of Edn., Western Reserve Univ., 1927-36; Natl. Recreation Assn., Nature Recreation Hqrs., N.Y.C., 1936-37; Prof., Nature Edn., Univ. of Mass., Amherst, Mass., 1937-51; Prof., Nature Edn., Sargent Coll., Boston Univ., 1951. Hon. Pos.: Vice-Pres., Mass. Soc. for the Prevention of Cruelty to Animals; ibid., Am. Humane Edn. Soc., 1961. Mem.: Am. Nature Study Soc.; Fellow, A.A.-A.S.; Sigma Xi. Author: Nature Guiding, 1926; Nature Recreation, 1940; Outdoor Schoolroom for Outdoor Living, 1952; Rise and Fall of Ye Districk School in Plimouth Plantation, 1958. Contbrng. Author: Light from a Thousand Camp Fires, 1960. Contbr. to: Science Edn.; The Mirror; Norwell News; Schl. Sci. and Math.; Camping. Gen. Int.: Citation by Nat. Assn. for Rsch. in Sci. Tchng., 1960; Guest Speaker, Governor's Conf., Oakland, Md., 1960. Areas of Rsch.: Biological Survey of Certain Portions of Cape Cod for National Park Service.

VINCENT, Charles David (Lt.), U.S.N., Operations Officer, U.S.S. Vesole (DDR-878), Charleston, S. C. Home Add.: 447 Georgia Ave., Hunley Pk., Charleston, S. C. APPLIED MATHEMATICS. b. Los Angeles, Calif., June 16, 1935. s. John Theodore and Regina Mae (Christopher) V. Edn.: A.B., Harvard Coll., 1957. m. Helen Hale Johnson, Sept. 6, 1961. c.: Alexandra Caroline. Exp.: Mathematician, System Dev. Corp., Santa Monica, Calif., 1958-59; Computer Systems Analyst, Navy Bur. of Personnel, Wash., D. C., 1960; Operations Officer, U.S.S. Vesole, Charleston, S. C., 1960—. Mem.: Soc. for Indus. and Applied Math.; Assn. for Computing Machinery; Ephebian Soc., Los Angeles, Calif.; Army Navy Club, Wash., D. C.; Army Navy Country Club, Wash., D. C. Serv. Rec.: U. S. Navy, 1960—. Areas of Rsch.: Computer Programming Systems Analysis.

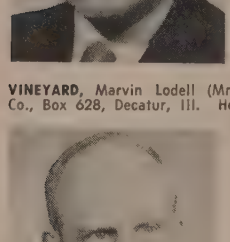
VINCENT, Lloyd Drexell (Ph.D.), Prof., Dir. of Physics Dept., Sam Houston St. Tchrs. Coll., Huntsville, Tex. Home Add.: 2001 Ave. R., Huntsville, Tex. PHYSICS (NUCLEAR). b. DeQuincy, La., Jan. 7, 1924. s. Sam and Lila M. (Dickerson) V. Edn.: B.S., Univ. of Tex., 1952; M.A., ibid., 1953; Ph.D., ibid., 1960. m. Johnell Stuart, Aug. 7, 1947. c.: Drexell Stuart; Sandra. Exp.: Asst. Prof., Univ. of Southwestern La., 1953-55; Instr. of Physics, Tex. A. and M. Coll., 1955-56; Assoc. Prof., Univ. of Southwestern La., 1956-58; Rsch. Scientist, Tex. Nuclear Corp., Austin, Tex., 1959-60; Prof., Dir., Dept. of Physics, Sam Houston State Tchrs. Coll., 1960—. Mem.: Sigma Pi Sigma; Am. Physical Soc.; Sigma Xi; A.A.P.T.; Gideons Internatl.; Rotary Internatl. Contbr. to: Physical Rev.; Bull. of Am. Physical Soc. Serv. Rec.: U. S. Army Air Forces, 1942-45. Areas of Rsch.: Neutron Scattering; Magnetic Resonance.

VINCENT, Leon Michael (Mr.), Assoc. Prof., Boston Coll., Chestnut Hill 67, Mass. Home Add.: 154 Brayton Rd., Brighton 35, Mass. MAMMALIAN HISTOLOGY, BOTANY, ZOOLOGY. b. Keene, N. H., July 1, 1902. s. Peter Paul and Pauline (Griciunas) V.

Edn.: Ph.B., Boston Coll., 1926; M.S., ibid., 1930. m. Marjorie McCracken, 1934. c.: Marjorie; Peter; Leon, Jr.; Francis. Exp.: Tchr., Aquinas Inst., 1926-27; Assoc. Prof., Boston Coll., 1927—. Mem.: A.A.A.S.; Biol. Photo. Assn. Author: Manual for General Biology, Parts I and II, 1950. Areas of Rsch.: Human Histol.

VINCIGUERRA, Michael Patrick (Mr.), Chmn., Dept. of Math., Holy Cross H. S., 26-20 Francis Lewis Blvd., Flushing, N. Y. Home Add.: 103-16 Van Wyck Expressway, Richmond Hill 19, N. Y. MATHEMATICS. b. Jamaica, N.Y., Nov. 12, 1938. s. Michael and Marthal (Fuerst) V. Edn.: B.S., St. Francis Coll., 1960. Exp.: Math. and Sci. Instr., Holy Cross H. S., Flushing, N. Y., 1960-61; Chmn., Dept. of Math., ibid., 1961—. Mem.: Math. Assn. of Am.; Am. Inst. of Phyiscs; Am. Assn. of Physics Tchrs.; The Am. Museum of Natl. Hist.; Sci. Prog. of Sci. Serv.; The Play of the Month Theatre Guild. Areas of Rsch.: Preparation of Advanced Math. for Tchng. on the Secondary Level.

VINEYARD, Marvin Lodell (Mr.), Rsch. Dir., Bear Hybrids Corn Co., Box 628, Decatur, Ill. Home Add.: 1750 Foster Ave., Decatur, Ill. CORN BREEDING—DEVELOPMENT OF SPECIALTY STARCH TYPES. b. Winchester, Ill., July 8, 1927. s. Arthur A. and Orpah (Knapp) V. Edn.: B.S., Univ. of Ill., 1950; M.S., ibid., 1951. m. Norma Manahan, Mar. 19, 1949. c.: Laura; Martha; David. Exp.: Rsch. Asst., Univ. of Ill., 1949-51; Plant Breeder, Bear Hybrids Corn Co., Decatur, Ill., 1951-58; Dir. of Rsch., ibid., 1958—. Mem.: Am. Soc. of Agron.; Am. Assn. Adv. of Sci.; Sigma Zeta. Contbr. to: The Agron. Jour.; Cereal Chem. Serv. Rec.: U. S. Navy, 1945-46. Gen. Int.: Co-developer of the first commercial high amylose starch hybrids-amylomaize. Areas of Rsch.: Hybrid Corn Breeding; Breeding for Specific Chemical Porperties in Corn; Foundation Seed Production for Waxy Maize and Amylomaize Hybrids.



VINJE, Mary Magdalene (Ph.D.), Prof. of Biology, St. Ambrose Coll., 1608 Elmore Ave., Davenport, Iowa. BIOLOGY. b. Madison, Wis., Sept. 8, 1913. d. Theodore B. and Anna (Matson) Taylor. Edn.: B.A., Univ. of Wis., 1935; M.A., ibid., 1935; Ph.D., ibid., 1938. m. James M. Vinje, June 4, 1938. Exp.: Grad. Asst., Univ. of Wis., 1935-38; Davenport, Iowa, Pub. Schl., 1945-48; Asst. Prof. Biol., St. Ambrose Coll., 1948-52; Assoc. Prof., ibid., 1952-58; Prof., ibid., 1958—. Mem.: N.A.B.T.; A.A.A.S.; Iowa Acad. of Sci.; Phi Beta Kappa; Sigma Xi; Sigma Delta Epsilon; Am. Microbiol. Soc.; Davenport Pub. Museum. Contbr. to: Mycologia; Am. Midland Naturalist; Proc. of Iowa Acad. of Sci. Areas of Rsch.: Aerobiology.

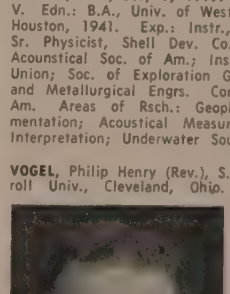
VINOKOOROFF, Leonide Basil (Mr.), Analyst-Designer, 1313 Lewison Ave., N.E., Grand Rapids 5, Mich. APPLIED MATHEMATICS. b. Kamen, Siberia, USSR, July 18, 1911. s. Basil Adrian and Galina (Kocheneff) V. Edn.: B.A., Albion Coll., 1934. Exp.: Asst. Appraiser, Statistician, Self employed, 1935-39; Engrng. Draftsman, Statistician, J. & G. Daverman Co., 1940-41; Statistician, Planner, Airport Engr., ibid., 1946-53; Airport Engr., Analyst (shopping center Econometrics), ibid., 1954-58; Analyst, Designer (Econometrics, Airports, Civil), 1959—. Mem.: A.A.A.S.; Soc. for General Systems Rsch.; Artorga; Mich. Archeological Soc.; Inst. of Gen. Semantics; Lambda Phi Beta; Moose; Am. Legion; Grand Rapids Chess Club; First Cavalry Div. Assn.; Am. Ord. Assn. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Rsch. in Population Dynamics, Socio-Economic Interactions-Gravitational Exchange in Market and Location Analysis, Theory and Methods—Applications of Topography and Morphology to Civil Engr. Design.

VISHER, Halene Hatcher (Mrs. Stephen Sargent Visher) (Ph.D.). Home Add.: 817 E. Second St., Bloomington, Ind. CONSERVATION; GEOGRAPHY. b. Murray, Ky., June 18, 1909. d. William Thomas Hatcher and Lorena (Taylor) H. Edn.: A.B., Murray St. Coll., 1930; M.A., George Peabody Coll., 1932; M.A., Ind. Univ., 1955; Ph.D., ibid., 1960. m. Dr. Stephen S. Visher, Mar. 21, 1951. c.: Peggy Mildred. Exp.: Tchr., Geography and Eng., Paducah City Schls., Ky., 1930-42; Instr., George Peabody Coll., Nashville, Tenn., 1942-44; Cartographer, Office of Strategic Servs., Wash., D. C., 1944-45; Asst. Prof., Geography, Murray St. Coll., 1945-48; Spec., Geography and Conservation, U. S. Office of Edn., Wash., D. C., 1948-51; Dir., Conservation Edn. Workshop, Montana St. Coll., Bozeman, Mont., 1952; Pres., Bloomington Branch of the Am. Assn. of Univ. Women, 1959-61. Hon. Pos.: Secy., Conservation Edn. Comm. of the Internatl. Union for the Prot. of Nature, 1949-51; Lectureship, Purdue Univ., 1951; Mem. of the U. S. Org. Comm. for the Internatl. Conf. on the Prot. of Nature, Lake Success, 1949; U. S. Office of Edn. Delegate to Inter-Am. Conf. on Conservation, Denver, 1948. Mem.: Assn. Am. Geographers; Conservation Edn. Assn.; Natl. Coun. for Geographic Edn.; Am. Assn. Univ. Women; Ind. Coun. for the Social Studies; Pi Gamma Mu, Pres. Tenn. Gamma Chapt., 1942-43; Kappa Delta Pi; Ind. Univ. Faculty Women's; D.A.R. Author: Better Living Through Wise Use of Resources, 1950; A Determination of Conservation Principles and Concepts Desirable for Use in the Secondary Schools, 1960. Contbr. to: Econ. Geography; Jour. of Geography; Edn.; Schl. Sci. and Maths.; Ind. Social Studies Quarterly. Gen. Int.: Recipient of Jour. of Geography Prize by the Natl. Coun. for Geographic Edn. for Outstanding Contributions to the Jour., 1953. Areas of Rsch.: Principles and Concepts of Conservation; Conservation Education—Techniques; Natural Resources of Indiana; Regional Geography; Economic Geography.

VISHER, Stephen Sargent (Ph.D.), Prof. of Geography, Ind. Univ., Bloomington, Ind. REGIONAL GEOGRAPHY, CLIMATIC CONTRASTS AND CLIMATIC INFLUENCES, SOCIAL GEOGRAPHY. b. Chicago, Ill., Dec. 15, 1887. s. John and Julia (Sargent) V. Edn.: S.B., Univ. of Chicago, 1909; S.M., ibid., 1910; Ph.D., ibid., 1914; M.A., Univ. of S. D., 1912. m. Martha Bolks (dec.), 1914. c.: Ruth; John Edwin; Paul S.; Mary. 2nd m. Halene Hatcher, 1951. c.: Peggy Mildred. Exp.: Staff, Univ. of S. D., 1910-13; Staff, St. Normal, Moorhead, Minn., 1915-18; Land Classifier, U. S. Geol. Survey, 1918; U. S. Bur. of Soils and Soil Conservation Serv., summers; Asst. Prof. to Prof. of Geog., Ind. Univ., 1919—; Summers, Cornell Univ. (3), Univ. of Brit. Columbia (2), Univ. of Pa., Univ. of Colo. Hon. Pos.: Pres., Ind. Acad. of Sci., 1950; Vice-Pres., Assn. Am. Geographers, 1933; Received Distinguished Service to Geography Citation of Natl. Council of Geography Tchrs., 1948; Distinguished Alumnus Citation, Univ. of Chicago, 1943; Hon. Life Mem., Natl. Geog. Soc. Mem.: Assn. Am. Geographers; Geol. Soc. of Am.; Am. Meteorological Soc.; Ecological Soc. of Am.; Am. Geographical Soc.; Phi Beta Kappa; Sigma Xi. Author: Geography of S. D., 1918; Climatic Changes, Their Nature and Causes (Co-Author), 1922; Tropical Cyclones of the Pacific, 1925; Climatic Laws, 1924; Geography of American Notables, 1928; Economic Geography of Europe (Co-Author), 1931; Climate of Ind., 1944; Scientists Starred, 1903-43, in America Men of Science, 1947; Ind. Scientists, 1951; Climatic Atlas of the U. S., 1954. Contbr. to: Annals Assn. Am. Geogr.; Bull. and Proc., Geol. Soc. of Am.; Bull. Am. Meteorol. Soc.; Quarterly Jour. Royal Meteorol. Soc.; Scientific Monthly; etc. Special Int.: Climate of the U. S.; Tropical Cyclones; Regional Contrasts in Productivity of Goods and Leaders.

VOGEL, Charles Brunson (Mr.), Sr. Physicist, Shell Development Co., 3737 Bellaire, Houston, Tex. Home Add.: 5612 Wickersham Lane, Houston 27, Tex. ELECTROACOUSTICS, ULTRASONICS. b. Houston, Tex., July 9, 1919. s. Charles and Gertrude (DeAnda) V. Edn.: B.A., Univ. of Western Ontario, 1939; M.A., Univ. of Houston, 1941. Exp.: Instr., Assumption Coll., Can., 1942-43; Sr. Physicist, Shell Dev. Co., Houston, Tex., 1945—. Mem.: Acounstical Soc. of Am.; Inst. of Radio Engrs.; Am. Geophys. Union; Soc. of Exploration Geophysicists; Am. Inst. of Mining and Metallurgical Engrs. Contbr. to: Jour. Acoustical Soc. of Am. Areas of Rsch.: Geophysical and Well Logging Instrumentation; Acoustical Measurements of Rocks; Oil Well Log Interpretation; Underwater Sound.

VOGEL, Philip Henry (Rev.), S. J., Dir., Dept. of Biol., John Carroll Univ., Cleveland, Ohio. ANATOMY (COMPARATIVE AND EMBRYOLOGY). b. Columbus, Ohio, Nov. 11, 1920. s. Frank H., Sr. and Alice (Albright) V. Edn.: B.S., Xavier Univ., Cin., Ohio, 1942; Ph.L., W. Baden Coll., 1948; Ph.D., Loyola Univ., Chicago, 1952; S.T.B., W. Baden Coll., 1956. Exp.: Instr., John Carroll Univ., 1956-58; Asst. Prof., ibid., 1958-62; Assoc. Prof., ibid., 1962—; Dir., Dept. of Biol., 1960—. Hon. Pos.: Corporate Mem., Holden Arboretum; Chmn., N. E. Sect., Ohio Coll. Biol. Tchrs. Assn. Mem.: Sigma Xi; Ohio Acad. of Sci. Contbr. to: Am. Jour. of Anatomy. Serv. Rec.: U. S. Army Med. Corps, 1941-42. Areas of Rsch.: Innervation of Larynx in Man and Dog; Neuro-pathology of Careenet Mouse; Problem of Aging in Mice.



OLBORTH (von), Alexis (Ph.D.), Assoc. Mineralogist, Univ. of ev., Reno, Nev. Home Add.: 3260 Susileen Dr., Reno, Nev. MINERALOGY; GEOLOGY; GEOCHEMISTRY; ANALYTICAL CHEMISTRY OF ROCKS AND MINERALS. b. Viipuri, Finland, July 11, 1924. s. Alexis and Ljubow Ottilie Auguste (Schroeder) von V. Edn.: Lan. of Phil., Univ. of Helsinki, 1950; Licen. of Phil., ibid., 1954; Ph.D., ibid., 1954. m. Nadja Hasso, Feb. 14, 1947. c.: Tanja; Lana; Maria; Gregory; Anna; Nikolaus; Elisabeth. Exp.: Rsch. Asst., Geol. Survey of Finland, 1950; Asst., Inst. of Tech., Helsinki, Finland, 1950-51; Field Asst., Geol. Survey of Finland, 1952; Field Geologist, Suomen Mineraali Co., Finland, 1953; Sr. Asst., Univ. of Helsinki, Finland, 1953-54; Travelling Rsch. Fellow, Outokumpu Found., Finland, 1954-

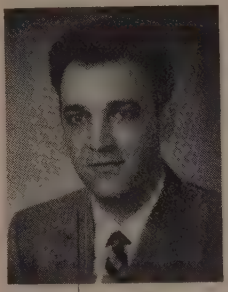
56; Rsch. Fellow in Geol., Calif. Inst. of Tech., Pasadena, 1955-56; Lectr. of Russian, Univ. of Nev., 1960-62; Lectr. of Geochem., ibid., 1962—; Asst. Mineralogist, ibid., 1956-61; Assoc. Mineralogist, ibid., 1961—. Hon. Pos.: Rsch. Assoc. and Consultant, Desert Rsch. Inst., Univ. of Nev.; Nomenclature Comm., Mineral. Soc. of Am. Mem.: Mineral. Soc. of Am., Fellow; Soc. of Econ. Geologists; Geochem. Soc.; Registered Prof. Geol. Engrs., St. of Nev.; Nev. Acad. of Scis.; Mineral. Soc. of Austria; Mineral. Soc. of Italy; Geol. Soc. of Stockholm; Geol. Soc. of Finland; Soc. of Mining Engrs., Finland; Sigma Xi. Contbr. to: Am. Mineralogist; Econ. Geol.; Bull. of Am. Geol. Soc.; Chem. Abs.; Anal. Chem.; Neues Jahrbuch der Mineral.; Bull. Comm. Geol. Finlande; Geologiska Foreningens Forhandlingar; Ann. Acad. Sci. Fennicae; Anorg. u. allgem. Chemie; Anzeiger, Osterreichische Akad. Wiss.; Compt. rend. Internatl. Geol. Cong. Serv. Rec.: Finnish Army, 1943-44. Areas of Rsch.: Mineralogy of Pegmatites; Uranium, Beryllium, Lithium and Lanthanide Bearing Minerals; Geochemistry and Geology of Granites; Mineral Chemistry; Analytical Chemistry of Silicates and Phosphates.

VOLIN, Melden Earl (Mr.), Dir., Inst. of Mineral Rsch., Mich. Coll. of Mining and Tech., Houghton, Mich. Home Add.: Isle Royale Mill Loc., Houghton, Mich. METALLURGY (EXTRACTIVE). b. Boise, Ida., Apr. 6, 1906. s. Clement Louis and Marian Margaret (Morrison) V. Edn.: E.Met., Colo. Schl. of Mines, 1933. m. Evelyn Young, Sept. 4, 1934. c.: Timothy Earl; Theodore Paul. Exp.: Field Engr., U. S. Bur. of Mines, 1939-50; Chf., Mining Div. II, ibid., Spokane, Wash., 1950-53; Regional Dir., V, ibid., Mpls., Minn., 1954; Chf., Br. Base Metals, ibid., Wash., D. C., 1955; Dir., Inst. Mineral Rsch. and Mem., Grad. Faculty, Mich. Coll. Mining and Tech., 1955—. Mem.: Am. Inst. Min., Metal. and Petrol. Engrs.; Alpha Tau Omega; Tau Beta Pi; Theta Tau; Scabbard and Blade; Lions Internatl.; Toastmasters. Serv. Rec.: U. S. Army, 1943-45. Areas of Rsch.: Minerals Beneficiation; Statistical Techniques.

VOLK, Vladimir K. (M.D., Dr.P.H.), Med. Supt., Saginaw Co. Hosp. and Health Commns., Saginaw Co., Saginaw, Mich. Home Add.: 3340 Hospital Rd., Saginaw, Mich. PHYSICIAN, HOSPITAL AND PUBLIC HEALTH ADMINISTRATION, ALSO RESEARCH IN THE FIELD OF IMMUNIZATION AGAINST PREVENTABLE DISEASES. b. Rostov-on-Don, Russia, Feb. 19, 1897. s. Constantine and Eva (Myslevitch) V. Edn.: M.D., Coll. of Physicians and Surgeons, Boston, Mass., 1926; Dr. Pub. Health, N. Y. Univ., Bellvue Med. Schl., 1927. m. Marie Finestein, Jan. 31, 1921. Exp.: Deputy Health Commnr., Oakland Co. Dept. of Health, Pontiac, Mich., 1927-35; Consultant Epidemiologist, Oakland Co. Tuberculosis Sanatorium, ibid., 1927-30; Assoc. Med. Dir., Oakland Co. Contagious Hosp., ibid., 1927-35; Saginaw Co. Health

Commnr. and Med. Supt., Saginaw Co. Tuberculosis and Contagious Hosp., Saginaw, Mich., 1936—. Hon. Pos.: Diplomate, Am. Bd. Preventive Med.; Am. Delegate, Internatl. Cong. Univ. Hygiene, Paris, France, 1947; Pub. Health Advisor, Office of High Commnr. of Germany, summers, 1950, 1951; Delegate and Speaker, Seventh World Cong. of the Internatl. Soc. for the Welfare of Cripples, London, England, 1957. Mem., Advisory Coun. of St. Bd. of Nursing; Regional Chmn., White House Conf. on Aging; Non-Resident Lectr. on Pub. Health Administrative Practices, Schl. of Pub. Health, Univ. of Mich.; Mem., Am. Del. on Immunization to U.S.S.R., 1962. Mem.: Royal Soc. of Health, London, Eng.; Mich. St. Med. Soc.; Mich. Health Officers Assn.; Am. Schl. Health Assn.; Am. Med. Assn.; Am. Med. Writers' Assn.; Am. Trudeau Soc.; Am. Gerontol. Soc.; Am. Pub. Health Assn.; N. Y. Acad. of Sci.; A.A.A.S.; Am. Coll. of Preventive Med.; Am. Assn. of Pub. Health Physicians and many others. Contbr. to: Am. Jour. of Pub. Health; Saginaw Co. Hosp. Pub.; Am. Jour. of Hyg.; Bull., Office of High Commnr. for Germany, Office of Pub. Affairs, Frankfurt, Germany; Natl. Tuberculosis Assn.; Jour., Mich. State Med. Soc. War Record: Russian Imperial Army, World War I. Gen. Int.: U. S. Citizen, 1927; William A. Howe Distinguished Service Award of the Am. Schl. Health Assn., 1950; Special Award, Mich. Schl. Health Assn.; Recd. Distinguished Service Award, Mich. Health Officers Assn., 1960. Listed in: A.M.S.; Who's Who in the Midwest. Areas of Rsch.: Rsch. in the Field of Immunization against Preventable Diseases. Member of the Multiple Antigen Committee of the American Pub. Health Assn.

VOLPE, E. Peter (Ph.D.), Prof. of Zool. and Hd. of Dept. of Zool., Newcomb Coll. of Tulane Univ., New Orleans 18, La. Home Add.: 7704 Sycamore St., New Orleans 18, La. ZOOLOGY. b. N. Y., N. Y., April 7, 1927. s. Rocco and Rose (Ciano) V. Edn.: B.S., City Coll. of N. Y., 1948; M.A., Columbia Univ., 1949; Ph.D., ibid., 1952. m. Carolyn Thorne, Sept. 1, 1955. c.: Laura Elizabeth; Lisa Lawton; John Peter. Exp.: Asst., Zool. Dept., Columbia Univ., 1948-50; Tutor, Biol. Dept., City Coll. of N. Y., 1950-51; Univ. Fellow, Columbia Univ., 1951-52; Asst. Prof. of Zool., Newcomb Coll. of Tulane Univ., 1952-57; Hd., Dept. of Zool., ibid., 1954—; Assoc. Prof. of Zool., 1957-60; Prof., ibid., 1960—. Mem.: Phi Beta Kappa; Sigma Xi; A.A.A.S.; Genetics Soc. of Am.; Soc. for the Study of Evolution; Am. Soc. of Zoolst.; Southwestern Soc. of Naturalists; La. Acad. of Scis.; A.A.U.P.; Assn. of Southeastern Biolst.; Am. Soc. of Ichthyologists and Herpetologists; Ecological Soc. of Amer. Contbr. to: Evolution; Physiol. Zool.; Amer. Naturalist; Systematic Zool.; Tulane Studies in Zool.; Copeia; Jour. of Heredity; Am. Museum Novitates. War Record: U. S. Navy, 1945-46. Areas of Rsch.: Embryology, Genetics, and Systematics of Amphibians.



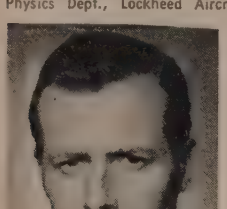
von BRAUN, Wernher Magnus Maximilian (Ph.D.), Dir., George C. Marshall Space Flight Center, NASA, Huntsville, Ala. Home Add.: P. O. Box 682, Huntsville, Ala. BALLISTIC MISSILES. b. Wirsitz, Germany, Mar. 23, 1912. s. Magnus F. and Emmy (von Quistorp) vB. Edn.: B.S., Inst. of Tech., Berlin, Germany, 1932; Ph.D., Univ. of Berlin, 1934. Hon. Deg.: Sc.D., Univ. of Ala.; Sc.D., St. Louis Univ.; LL.D., Univ. of Chattanooga; Sc.D., Univ. of Pittsburgh; Sc.D., Canisius Coll.; LL.D., Penn. Military Coll.; Sc.D., Clark University; LL.D., Adelphi Coll. m. Maria L. von Quistorp, March 1, 1947. c.: Iris Careen; Margrit Cecile; Peter Constantine. Exp.: German Ordnance Dept., Kummersdorf Army Proving Grounds and Peenemuende, 1932-37; 1937-45; Project Director of RD Svc (Sub-Ofc Rocket), Fort Bliss, Texas and Advisor for V-2 Test Firings at WSPG, New Mex., 1945-50; Technical Director and Chief of Guided Missile Devel. Division, Redstone Arsenal, 1950-56; Dir. of Devel. Operations at Army Ballistic Missile Agency, ibid., 1956-60; Dir., Geo. Marshall Space Flight Center, assigned Saturn and other space vehicle projects, Huntsville, Ala., 1960—. Hon. Pos.: Mem., Internatl. Acad. of Astronautics, I.A.F.; Pres., Rocket City Astronomical Assn., Huntsville, Ala. Mem.: British Interplanetary Soc.; Norwegian Interplanetary Soc.; German Rocket Soc.; Am. Interplanetary Soc.; Am. Astronautical Soc., Inc.; Tau Beta Pi. Author: The Mars Project, 1952. Co-author: Physics and Medicine, 1952; Across the Space Frontier, 1952; Conquest of the Moon, 1953; The Exploration of Mars, 1956; Project Satellite, 1958; First Men to the Moon, 1960. Contbr. to: Missiles and Rockets Mag.; Interavia Mag.; Astronautics; ARS Jour.; Astronautica Acta. Areas of Rsch.: Missiles.

von HANDEL, Paul Franz (Ph.D.), Mem. Scientific Staff, Inst. for Defense Analyses, Rsch. and Engrng. Support Group, 1666 Connecticut Avenue, Wash., D. C. Home Add.: 5502 Youngblood St., McLean, Va. ELECTRONICS, EL. MAG. WAVE PROPAGATION. b. Bisenz, Austria, Jan. 30, 1901. s. Carl and Martha (von Puthon) von H. Edn.: M.S., Techn. Univ., Munich, 1923; Ph.D., Techn. Univ., Berlin, Germany, 1931. Hon. Deg.: Litienthal Laureat, 1943. m. Anne, Countess Czernin, Dec. 17, 1948. c.: Maria; Ilga. Exp.: Dr., Electr., Physics Inst., German Aeronautics Rsch. Establishment, Berlin, Germany; Prof., Tech., Univ. of Berlin, 1928-42; Dir., Ferd., Braun Inst., German Fedl. Rsch. Estab., Berlin, Germany, 1942-45; Tech. Dir., Koerting Radio Co., Bavaria, 1945-52; Chf., Rsch. Div., Air Force Missile

Dev. Center, Holloman, N. Mex., 1953-59; Mem., Scientific Staff, Inst. for Defense Analyses, Rsch. and Engrng. Support Div., 1959—.

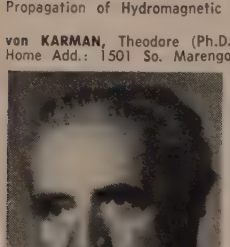
Mem.: German Acad. of Aeronaut. Scis.; Inst. for the Aerospace Scis.; Assoc. Fellow, Physics Soc. of Germany. Author: Electronic Navigation in Aeronautics, 1939; Editor: Electronic Computers, 1960. Contbr. to: Elektro Nachrichten Technik; Zeitschrift fuer Hochfrequenz Technik; Proc. Inst. of Radio Engrng.; I.R.E. Trans. on Mil. Electronics. Gen. Int.: Invention of Electronic Interferometer Guid. System, 1933. Areas of Rsch.: E.M. Wave Propagation; Physics of the Ionosphere; Electronic Guidance; Electr. Warfare.

VON KENSCHITZKI, Carl Heinrich (Dr. rer. nat.), Head, Plasma Physics Dept., Lockheed Aircraft Corp., Calif. Comp., Burbank, Calif. Home Add.: 2388 Roscomare Rd., Los Angeles 24, Calif. SPACE PHYSICS, PLASMA PHYSICS, NUCLEAR PHYSICS. b. Utrecht, Holland, Sept. 4, 1922. s. Walter and Irene Countess (Dankelmann) V. Edn.: Dr. rer. nat., Ludwig, Maximilians Univ., Munich, Germany, 1959; Vordiplom., ibid., 1952. Exp.: Assoc., Institut of Theoretical Physics, Munich Univ., Munich, Germany, 1956-59; Rsch. Scientist, Lockheed Aircraft Co., Burbank, Calif., 1960-61; Hd., Plasma Physics Dept., ibid., 1961—. Mem.: Am. Physical Soc.; Am. Geophysical Union. Contbr. to: zeitschrift fur Naturforschung; Jour. of Geophysical Rsch. Areas of Rsch.: Energy Levels in Heavy Nuclei Waves; Solar-Earth Interactions.



Propagation of Hydromagnetic

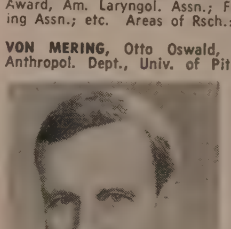
von KARMAN, Theodore (Ph.D.), Chmn., AGARD, of the NATO. Home Add.: 1501 So. Marengo Ave., Pasadena 5, Calif. AERODYNAMICS. b. Budapest, Hungary, May 11, 1881. s. Maurice and Helene (Konn) V. Edn.: M.E., Royal Tech. Univ., Budapest, Hungary, 1902; Ph.D., Univ. of Gottingen, Germany, 1908. Hon. Degrs: Dr. of Engrng.: Technische Hochschule, Berlin, 1929, Univ. of Liege, Belgium, 1940; Princeton Univ., 1947; Columbia Univ., 1948; Technische Hochschule, Aachen, Germany, 1953; Technische Universitat Berlin-Charlottenburg, Germany, 1953; Die Eidgenossische Technische Hochschule, Zurich, Switzerland, 1955; Dr. of Science: Yale Univ., 1951; Univ. of Istanbul Turkey, 1952; Techn. Univ. of Istanbul, Turkey, 1955; Hebrew Instit. of Tech., Haifa, 1954; Northwestern Univ., 1956; Univ. of Southern Calif., 1958; N. Y. Univ., 1960; Brown Univ., 1961; Dr. Honoris Causa Universite Libre de Bruxelles, Belgium, 1937: Universite de Liege, Belgium, 1947; Universite d'Aix-Marseilles, France, 1949; Dr. Honoris Causa Universite de Lille, France, 1953: AAN UW Univ. Technische Hogeschi., Delft, Netherland, 1956; l'Universite de Paris, France, 1957; Univ. of Sevilla, Spain, 1958; Politecnico di Torino, Italy, 1960; Univ. of Athens, Greece, 1961; Dr. of Philos., Univ. of Berne, Switzerland, 1961; Dr. of Law: Univ. of Calif., 1943; Wayne Sta. Univ., 1959. Exp.: Asst. Prof., Royal Tech. Univ., Budapest, Hungary, 1903-06; Private Dozent, Univ. of Goettingen, Germany, 1909-12; Dir., The Aachen Aeronautical Instit., Germany, 1912-29; Advisor and Consultant on Design of Guggenheim Aeronaut. Labs., Calif. Inst. of Tech. and of the 10 foot Wind Tunnel of the Labs., 1926-27; Rsch. Assoc., Calif. Inst. of Tech., 1928-30; Dir., Guggenheim Aeronaut. Labs., Calif. Inst. of Techn., 1930-49; Dir., Jet Propulsion Lab., ibid., 1938-45; Consultant, Army Air Corps and U. S. Air Force, 1939—; Prof., Hon., Columbia Univ., 1948—; Prof., Emer., Calif. Inst. of Tech., 1949—; Chmn., AGARD, of the NATO, Paris, France, 1952—. Hon. Pos.: Founder of the Aerojet Engrng. Corp., 1942; Consultant and Chmn. of the Tech. Adv. Comm., Allison Div. of Gen. Motors, 1958—; Mem. of the Bd. of the Wash. Planetarium and Space Ctr., Wash., D. C., 1961; Pres. of Honor and Mem. of the Internatl. Union of the Theoretical and Applied Mechanics; Hon. Pres. and Mem. of the Internatl. Coun. of the Aeronautical Scis., 1958. Mem.: Royal Aeronaut. Soc., England, Hon. Fellow; Fellow, Am. Rocket Soc.; Am. Astronaut. Soc., Fellow; Fellow, Am. Acad. of Arts and Scis.; Am. Soc. of Civil Engrs., Hon. Mem.; Royal Soc. of London; Natl. Acad. of Scis.; Acad. of Scis. of the Inst. of France, Paris; Academia Nazionale dei Lincei, Rome, Italy; Royal Acad. of Scis.; Royal Acad. of Scis., Madrid, Spain; Am. Soc. of Mech. Engrs.; Natl. Aeronauts. Assn.; Internatl. Astronaut. Fed., Paris, France. Author: Aerodynamics, Selected Topics in Light of Their Historical Development, 1954; Collected Works of Dr. Theodore von Karman, 1956; Co-Author, General Aerodynamic Theory, 1924. Co-Author, Mathematical Methods in Engineering, 1940. Serv. Rec.: Austro-Hungarian Air Corps, 1914-18. Achievements of Gen. Int.: Commander de la Legion d'Honneur, France, 1956; Appointed to the Pontifical Academy of Scis. by Pope Pious XII, 1955—; Sylvanus Albert Reed Award, IAS, 1948; Wright Brothers Memorial Trophy, 1954; Daniel Guggenheim Gold Medal, 1955; Gold Medal, Vincent Bendix Award, 1957; Medal for Merit, USA, 1946; Gold Medal, Robert H. Goddard Memorial Award, American Rocket Soc., 1960;



1956; Univ. of Southern Calif., 1958; N. Y. Univ., 1960; Brown Univ., 1961; Dr. Honoris Causa Universite Libre de Bruxelles, Belgium, 1937: Universite de Liege, Belgium, 1947; Universite d'Aix-Marseilles, France, 1949; Dr. Honoris Causa Universite de Lille, France, 1953: AAN UW Univ. Technische Hogeschi., Delft, Netherland, 1956; l'Universite de Paris, France, 1957; Univ. of Sevilla, Spain, 1958; Politecnico di Torino, Italy, 1960; Univ. of Athens, Greece, 1961; Dr. of Philos., Univ. of Berne, Switzerland, 1961; Dr. of Law: Univ. of Calif., 1943; Wayne Sta. Univ., 1959. Exp.: Asst. Prof., Royal Tech. Univ., Budapest, Hungary, 1903-06; Private Dozent, Univ. of Goettingen, Germany, 1909-12; Dir., The Aachen Aeronautical Instit., Germany, 1912-29; Advisor and Consultant on Design of Guggenheim Aeronaut. Labs., Calif. Inst. of Tech. and of the 10 foot Wind Tunnel of the Labs., 1926-27; Rsch. Assoc., Calif. Inst. of Tech., 1928-30; Dir., Guggenheim Aeronaut. Labs., Calif. Inst. of Techn., 1930-49; Dir., Jet Propulsion Lab., ibid., 1938-45; Consultant, Army Air Corps and U. S. Air Force, 1939—; Prof., Hon., Columbia Univ., 1948—; Prof., Emer., Calif. Inst. of Tech., 1949—; Chmn., AGARD, of the NATO, Paris, France, 1952—. Hon. Pos.: Founder of the Aerojet Engrng. Corp., 1942; Consultant and Chmn. of the Tech. Adv. Comm., Allison Div. of Gen. Motors, 1958—; Mem. of the Bd. of the Wash. Planetarium and Space Ctr., Wash., D. C., 1961; Pres. of Honor and Mem. of the Internatl. Union of the Theoretical and Applied Mechanics; Hon. Pres. and Mem. of the Internatl. Coun. of the Aeronautical Scis., 1958. Mem.: Royal Aeronaut. Soc., England, Hon. Fellow; Fellow, Am. Rocket Soc.; Am. Astronaut. Soc., Fellow; Fellow, Am. Acad. of Arts and Scis.; Am. Soc. of Civil Engrs., Hon. Mem.; Royal Soc. of London; Natl. Acad. of Scis.; Acad. of Scis. of the Inst. of France, Paris; Academia Nazionale dei Lincei, Rome, Italy; Royal Acad. of Scis.; Royal Acad. of Scis., Madrid, Spain; Am. Soc. of Mech. Engrs.; Natl. Aeronauts. Assn.; Internatl. Astronaut. Fed., Paris, France. Author: Aerodynamics, Selected Topics in Light of Their Historical Development, 1954; Collected Works of Dr. Theodore von Karman, 1956; Co-Author, General Aerodynamic Theory, 1924. Co-Author, Mathematical Methods in Engineering, 1940. Serv. Rec.: Austro-Hungarian Air Corps, 1914-18. Achievements of Gen. Int.: Commander de la Legion d'Honneur, France, 1956; Appointed to the Pontifical Academy of Scis. by Pope Pious XII, 1955—; Sylvanus Albert Reed Award, IAS, 1948; Wright Brothers Memorial Trophy, 1954; Daniel Guggenheim Gold Medal, 1955; Gold Medal, Vincent Bendix Award, 1957; Medal for Merit, USA, 1946; Gold Medal, Robert H. Goddard Memorial Award, American Rocket Soc., 1960; James Watt Internatl. Gold Medal, London, England, 1961. Areas of Rsch.: Combustion and Engineering. Specialty—AERODYNAMICS-FLUID FLOW.

von LEDEN, Hans (Victor) (M.D.), Surgeon, Univ. of Calif. Med. Center, Los Angeles 24, Calif.; Assoc. Prof. Surgery, Head and Neck, Univ. of Calif. Home Add.: 259 Tilden Ave., Los Angeles 49, Calif. LARYNGOLOGY. b. Breslau, Germany, Nov. 20, 1918. s. Peter Paul and Elizabeth (Freter) V. Edn.: M.D., Loyola Univ. Med. Schl., 1941. m. Mary Louise Shine, Jan. 10, 1948. c.: Jon Eric; Lisa Maria. Exp.: Clin. Assoc. in Laryngology, Loyola Univ., Schl. of Medicine, 1947-51; Assoc. Prof., Cook Co. Schl. of Med., 1949-58; Asst. and Assoc. Prof. of Otolaryng., Northwestern Univ. Med. Schl., 1951-61; Assoc. Prof. of Surgery—Head and Neck, U.C.L.A., 1961—; Pres., Inst. of Laryn. and Voice Disorders, 1959—. Hon. Pos.: Co-Chmn., Internatl. Voice Conf., 1956; Exec. Vice Pres. and Med. Dir., Wm. and Harriet Gould Fdtn., 1955-61. Mem.: Fellow, Am. Acad. of Ophthal. and Otolaryn.; Fellow, A.A.A.S.; Fellow, Am. Coll. of Surgs.; Fellow, Internatl. Coll. of Surgs.; Fellow, Am. Soc. for Head and Neck Surg.; Sigma Xi; Am. Fed. for Clin. Rsch.; Soc. of Exptl. Biol. and Med., etc. Co-author: Essentials of Ear, Nose and Throat Diseases, 1959. Contorng. Author: Emergency Surgery, 1953; The Prevention of Disease in Everyday Practice, 1955; Traumatic Medicine and Surgery for the Attorney, 1960; Encyclopaedia Britannica. Contbr. to: Arch. of Otolaryn.; Folia Phoniatrica; Jour. A.M.A.; Acta Otolaryn.; Jour.-Lancet; Mod. Med.; The Laryngoscope; Ann. of Otol., Rhinol., and Laryng.; Boletin de la Liga contra el Cancer; Ill. Med. Jour.; Omnia Therapeutica; Jour., Internatl. Coll. of Surg., etc. Serv. Rec.: U.S.N.R., Med. Corps, 1945-46; Consult., U.S.N., 1947—. Gen. Int.: Recd.: Gold Medal, Italian Red Cross; Hektoen Award, Am. Med. Assn. Gold Medal, Ill. State Med. Soc.; Award of Honor, Am. Acad. of Ophthal. and Otolaryn.; Casselberry Award, Am. Laryngol. Assn.; First Award, Am. Speech and Hearing Assn.; etc. Areas of Rsch.: Anat. and Physiol. of the Larynx.

VON MERING, Otto Oswald, Jr. (Ph.D.), Assoc. Prof., Social Anthropol. Dept., Univ. of Pittsburgh Western Psychiatric Inst., 3811 O'Hara St., Pittsburgh 13, Pa. Home Add.: 5264 Beeler St., Pittsburgh 17, Pa. SOCIAL ANTHROPOLOGY. b. Berlin, Germany, Oct. 21, 1922. s. Otto Oswald, Sr. and Henriette (Troeger) V. Edn.: Dip., Belmont Hill Schl., Belmont, Mass., 1940; B.A., Williams Coll., 1944; Ph.D., Harvard Univ., 1956. m. Shirley Ruth Brook, Sept. 11, 1954. c.: Gretchen; Karen; Gregory. Exp.: Rsch. Asst., Lab. of Social Relations, Harvard Univ., Mass. Mental Health Ctr., 1950-53; Social Sci. Fellow, Russell Sage Foundation, N.Y.C., 1953-55; Asst. Prof., Dept. of Psychiatry, Schl. of Med., Univ. of Pittsburgh, 1955-60; Assoc. Prof., ibid., 1960—; Richard-Merton Guest Prof., Univ. of Heidelberg, Germany, 1962-63. Mem.: Am. Anthropological Assn, Fellow; Am. Sociological Assn., Fellow; A.A.A.S.; Am. Ethnological Soc.; Am. Gerontological Soc.; Assn. of Am. Med. Colls.; Assn. Current Anthropol. Author: Remotivating the Mental Patient, 1957; A Grammar of Human Values, 1961. Contbr. to: Social Problems; Jour. of Nervous and Mental Disorders; Nursing Outlook; Psychiatric Communications; Am. Anthropologist; Mental Hygiene; Jour. Health and Human Behavior; A.M.A. Arch. Gen. Psychiatry; Internatl. Jour. Social Psychiatry; Am. Jour. of Sociol.; Hospitals; Current Anthropol. Gen. Int.: Fulbright Travel Grant, 1962-63; Wenner-Gren Fdtn. Grant, 1962-63; American Philosophical Soc. Grant, 1962-63. Areas of Rsch.: Primitive Medicine; Social Medicine and Social Psychiatry; Comparative Study of Human Value Systems.



von SCHRENK, Trifon (Mr.), Consulting Engr., Timber Preservation, Office and Lab., 2315 Tower Grove Ave., St. Louis 10, Mo. Home Add.: 7530 Milan Ave., St. Louis 30, Mo. TIMBER PRESERVATION. b. Hoboken, N. J., Dec. 25, 1887. s. Joseph and Anna (Bandtke) V. Edn.: C.E., Columbia Univ., 1909. m. Dorothy Spottiswoode Werner, Nov. 6, 1915. c.: Mrs. Paul S. Sexauer; Virginia. Exp.: Engr., Oil and Gas Surveys, Ohio and W. Va., 1909; Engr., Railroad Construn., Ark., Okla. and La., 1909-10; Secy., Ark. Bridge Co., Ft. Smith, Ark., and Kans. City, Mo., 1910-13; Contracting Agent, Am. Bridge Co. of N. Y., St. Louis, Mo., 1913-16; Chief Clerk, Carnegie Steel, Ill. Steel and Tenn. Coal, Iron and R.R., 1916-25; Pres., Metals Coating Co., Brooklyn, N. Y., 1925-26; Spec. Invest., Am. Creosoting Co., Louisville, Ky., 1926; Engr., Von Schrenk and Kammerer Test. Lab., St. Louis, Mo., 1926-52; Consulting Engr., Timber Preserv., ibid., 1952—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Soc. for Testing and Materials; Am. Wood Preservers Assn.; Am. Standards Assn.; Am. Railway Engrng. Assn.; Railway Tie Assn.; Assoc. Curator of the Museum, Mo. Botanical Garden; Coun. of

nservs.; Nature Conserv.; Sta. Hist. Soc. of Mo.; Natl. Parks sn.; Mo. Hist. Soc.; Natl. Assn. of Watch and Clock Collectors; tl. Audubon Soc.; St. Louis Audubon Soc.; Am. Forestry Assn.; gma Xi; Tau Beta Pi. Gen. Int.: Registered Professional Engr.,). Areas of Rsch.: Timber Preservation.

n MISES, Ludwig Edler (LL.D.), Prof. of Econs., Grad. Schl. of s. Admin., N. Y. Univ., Grad. Schl. of Bus. Admin., 100 Trinity Pl., N. Y. 6, N. Y. ECONOMICS.

b. Lemberg, Austria, Sept. 29, 1881. s. Arthur Edler and Adele (Edle) von M. Edn.: LL.D., Univ. of Vienna, Austria, 1906. m. Margit Herzfeld. Exp.: Econ. Adviser of the Austrian Chamber of Commerce, 1909-38; Privat-Dozent, to Prof. of Econs., Univ. of Vienna, Austria, 1913-38; Prof. of Internatl. Econ. Rltns., Grad. Inst. of Internatl. Studies, Geneva, Switzerland, 1934-40; Vis. Prof. of Econ., Grad. Schl. of Bus. Admin., N. Y. Univ., 1945—. Hon. Pos.: Exec. Vice-Pres., Austrian Inst. of Bus. Cycle Rsch., 1926-38; Lectr., Univs. in Gr. Britain, Germany, The Netherlands, France, Italy, Mexico; Peru and Argentina. Mem.: Royal Economic Soc.; m. Economic Assn.; German Sociol. Soc.; Manchester Statistical oc. Author: The Theory of Money and Credit, 1912, '24, '53; ocialism, An Economic and Sociological Analysis, 1922, '32, '51; pistemological Problems of Economics, 1933, '60; Omnipotent overnment, The Rise of Total State and Total War, 1944; ureaucracy, 1944; Human Action, a Treatise on Economics, 949; Planning for Freedom and Other Essays and Addresses, 952; The Anticapitalistic Mentality, 1956; Theory and History, n Interpretation of Social and Economic Evolution, 1957; The ltimate Foundation of Economic Science, 1962.

on TUNGELN, George Robert (Mr.), Assoc. Agri. Econ. and Assoc. rof. of Econ., Clemson Coll., Clemson, S. C. Home Add.: 200 olly Ave., Clemson, S. C. AGRICULTURAL ECONOMICS (MARKET-NG). b. Golconda, Ill., July 18, 1931. s. Cecil and Rachel Wright) von T. Edn.: B.S., Sou. Ill. Univ., 1951; M.S., ibid., 956. m. Marilyn Burris, Nov. 5, 1955. c.: Stuart Lee; Cheryl ae; Brenda Sue. Exp.: Asst. Mgr., Exptl. Farms, Sou. Ill. niv., 1951-52; Rsch. Asst., ibid., 1955-56; Grad. Asst. to Rsch. sst., Pa. State Univ., 1956-58; Asst. Agri. Econ. and Asst. Prof. f Econ., Clemson Coll., 1958-59; Assoc. Agri. Econ. and Assoc. rof. of Econ., ibid., 1959—. Mem.: Am. Farm Econ. Assn. ontbr. to: An Egg Marketing Exchange in Southern Illinois; Marketing Methods for Fowl in Four Pa. Counties; Effectiveness f Fiber Pads in Reducing Damage to Basket Packed Peaches; Marketing Methods and Handling Losses, South Carolina Watermelons; Am. Co. Life Assn. Serv. Rec.: U. S. Army, 1952-54. reas of Rsch.: Agricultural Marketing—Poultry and Eggs, Fruits nd Vegetables; Farm Credit.

VOPNI, Sylvia (Ph.D.), Assoc. Prof. of Edn., Univ. of Washington, eattle, Wash. Home Add.: 2107-28 West, Seattle 99, Wash. MATHEMATICS AND SCIENCE EDUCATION AT ELEMENTARY AND ECONDARY SCHOOL LEVELS. b. Seattle, Wash., Jan. 18, 1910. . Arlo and Viola (Woollen) V. Edn.: A.B., Univ. of Wash., 1931; M.A., ibid., 1938; Ph.D., ibid., 1955. Exp.: Tchr., Publ. Schls. f Wash. State, 1931-42; Physicist, U. S. Navy Dept., 1942-46; Tchr., Seattle Publ. Schls., 1946-53; Asst. Prof. of Edn., Univ. of Wash., 1955—; Assoc. Prof. of Edn., ibid., 1961—. Hon. Pos.: Natl. Pres., Pi Lambda Theta, 1957-61. Mem.: (Fellow) A.A.A.S.; Phi Beta Kappa; Sigma Xi; Seattle Hist. Soc.; Sigma Pi Sigma; Pi Mu Epsilon; Natl. Sci. Tchrs.; Natl. Council of Tchrs. of Math.; Assn. for the Edn. of Tchrs. of Sci.; Am. Edn'l. Rsch. Assn.; Natl. Soc. for the Study of Edn. Contbr. to: Coll. of Edn. Record; Edn. Horizons. Areas of Rsch.: Math. and Sci. Edn.; Preparation of Tchrs.

VORTMAN, Luke Jerome (Mr.), Mem. of Rsch. Staff, Sandia Corp., Albuquerque, New Mexico. Home Add.: 3603 Calle del Sol, N.E., Albuquerque, N. Mex. CIVIL ENGINEERING. b. Springfield, Ill., Apr. 18, 1920. s. Luke and Ida (Vogel) V. Edn.: B.S., Univ. of Ill., 1947; M.S., ibid., 1949. m. Betty M. Leslie, Dec. 22, 1946. Exp.: Asst. Instr., Univ. of Ill., Urbana, Ill., 1949; Mem. of Staff, Sandia Corp., 1949—. Hon. Pos.: Mem. of Prot. Structures Subcomm. of Natl. Acad. of Scis. Mem.: Am. Geophys. Union; Am. Soc. of Civil Engrs.; Am. Assn. for the Adv. of Sci.; Alpha Rho Chi. Contbr. to: Jour. of Geophys. Rsch. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Air Blast; Blast Loading of Structures, Protection from Nuclear Weapons, Explosive Cratering.

VOSE, George Parlin (Mr.), Assoc. Prof. of Nutrition Rsch., Tex. Woman's Univ., Denton, Tex. Home Add.: Box 3658 Univ. Hill Sta., Denton, Tex. BIOPHYSICS. b. Machias, Me., May 3, 1922. s. John Pierce and Rebecca (Parlin) V. Edn.: B.A., Pa. State Univ., 1952; M.S., Sou. Methodist Univ., 1956, Tex. A. and M. Exp.: Rsch. Asst., Asst. Prof., Assoc. Prof., Stark Lab., for Human Nutrition Rsch., Tex. Woman's Univ., Denton, Tex., 1951—. Mem.: Am. Nuclear Soc.; A.A.U.P.; Am. Assn. Adv. Sci.; Sigma Xi. Contbr. to: Analytical Chem.; Radiology; Lab. Invest.; Microchem. Jour.; Rev. of Sci. Instruments; Am. Jour. of Roentgenology; Human Biol.; Jour. of the Biol. Photographic Assn.; Jour. of Gerontology; Clinical Orthopaedics; Trans. Am. Microsp. Soc.; Trans. Am. Nuclear Soc.; Anat. Rec. Serv. Rec.: U. S. Army Air Force, 1944-46. Areas of Rsch.: X-Ray Absorptiometry, Effect of Gamma and X-radiation on Osseous Tissue, Bone Morphology, Electron Microscopy.

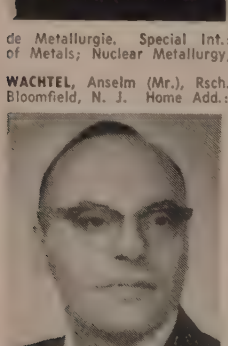
VOSS, Elbert (Ph.D.), Hd. Prof., Pharmacognosy and Pharmacol., Coll. of Pharm., Univ. of Fla., Gainesville, Fla. Home Add.: 821 N.W. 20th Terrace, Gainesville, Fla. PHARMACOLOGY—PHARMACOGNOSY. b. Hector, Ark., Aug. 31, 1900. s. John M. and Agnes (Luna) V. Edn.: B.S., Univ. of Okla., 1928; M.S., ibid., 1930; Ph.D., Univ. of Fla., 1935. m. Elsa Fleming, 1942. Exp.: Prof., Materia-Medica, Duquesne Univ., Pittsburgh, Pa., 1936-43; Prof., Creighton Univ., Omaha, Nebr., 1946-48; Hd. Prof., Univ. of Fla., Coll. of Pharm., 1948—. Mem.: Kappa Psi; Sigma Xi. Contbr. to: Jour. of Pharmacol. and Exptl. Therapeutics; Jour. of the Am. Pharma. Assn.; Jour. of Pharm. Scis. Areas of Rsch.: Pharmacology.

VOTH, Paul D(irks) (Ph.D.), Prof. of Botany, Univ. of Chicago Botany Bldg., Chicago 37, Ill. Home Add.: 5725 Maryland Ave., Chicago 37, Ill. TEACHING OF BOTANY; RESEARCH IN THE PHYSIOLOGY OF LIVERWORTS; ALGAE; LOWER TRACHEOPHYTA; AND POLLEN OF DAYLILIES. b. Gotebo, Okla., June 12, 1905. s. Peter R. and Anna (Dirks) V. Edn.: A.B., Bethel Coll., 1929; S.M., The Univ. of Chicago, 1930; Ph.D., ibid., 1933. m. Selma Graber, June 12, 1930. c.: Felice Ann; Pamela Kathy. Exp.: Fellow in Botany, Univ. of Chicago, 1932-33; Instr., Biol., Texas Tech. Coll., 1930-32; Instr., Botany, Univ. of Chicago, 1933-41; Asst. Prof., ibid., 1941-43; Assoc. Prof., ibid., 1943-48; Prof., ibid., 1948—. Hon. Pos.: Secy. of the Dept. of Botany, Univ. of Chicago, 1948—. Mem.: A.A.A.S.; A.A.U.P.; Amer. Bryological Soc.; Amer. Fern Soc.; Amer. Hort. Soc.; Amer. Soc. of Plant Physiologists; Botanical Soc. of Amer.; Phycological Soc. of Amer.; Sigma Xi, and many others. Contbr. to: Botanical Gazette; Ill. State Acad. of Sci. Gen. Int.: Award for Excellence in Undergraduate Tchng., Univ. of Chicago, 1940; Rsch. in Tropical Ecology, Barro Colorado Island, Canal Zone, 1938; Rsch. in Microclimate, Arctic Rsch. Lab., Point Barrow, Alaska, 1951. Areas of Rsch.: Anatomy of Ferns and Gymnosperms; Mineral Nutrition, Culture, Speciation and Microhabitat of Marchantia and Other Bryophytes; Pollen Viability, Fertility and Seed Germination in Daylilies and Other Cultivated Plants.

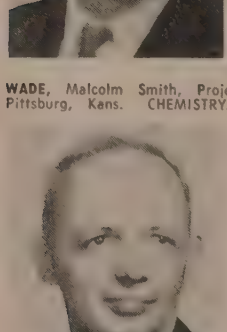
VRATNY, Frederick (Ph.D.), MTS, Bell Tel. Labs., Murray Hill, N. J. Home Add.: 42 Fairfax Dr., Berkeley Heights, N. J. SOLID STATE CHEMISTRY OF OXIDES. b. Detroit, Mich., Mar. 23, 1931. s. Frank and Meta (Weibe) V. Edn.: Ph.D., Ind. Univ., 1958; B.S. in Chem., Univ. of Mich., 1953. m. Jone Willis, July 30, 1954. c.: Melina; Karena. Exp.: Faculty, Purdue Univ., 1957-60; MTS, Bell Tel. Labs., 1960—. Mem.: A.A.A.S.; N. Y. Acad. Sci.; Sigma Xi; Chem. Soc.; Faraday Soc.; Am. Phys. Soc.; Am. Vacuum Soc.; P.T.A. Contbr. to: Anal. Chim. Acta; Appl. Spect.; Rev. Sci. Instr.; Talanta; Jour. Inorg. and Nucl. Chem.; Anal. Chem.; Jour. Chem. Phys.; Trans. Faraday Soc.; Jour. Chem. Edn.; Nature. Areas of Rsch.: Raman Spectroscopy of Solids, Interaction of NO_2 and Metallic Oxides, Thermal Decomposition of Solids, I.R. and Visible Spectra of Solids, Thin Films, Vacuum Technique; Non Linear Devices.

WABER, James Thomas (Ph.D.), Staff Mem., Los Alamos Scientific Lab., Los Alamos, N. Mex. CORROSION OF METALS. b. Chicago, Ill., Apr. 8, 1920. s. James Warren and Anna May (Cline) W. Edn.: B.S., Ill. Inst. of Tech., 1941; M.S., ibid., 1943; Ph.D., ibid., 1946. m. Santon Fotheringham, May 12, 1951. c.: Lauriene; Sue; Gay; John. Exp.: Rsch. Asst. Prof. Chem., Ill. Inst. Tech., Chicago, Ill., 1946-47; Staff Mem., Los Alamos Scientific Lab., Los Alamos, N. M., 1947—. Senior Postdoctoral Fellow, Natl. Sci. Found., at Univ. of Birmingham, Birmingham, England, 1960-61. Mem.: Am. Soc. for Metals; Electrochem. Soc.; Faraday Soc.; Natl. Assn. of Corr. Eng.; Sigma Xi; Tau Beta Pi; Phi Lambda Upsilon. Contbr. to: Jour. Electrochem. Soc.; Metal Prog.; Trans. Amer. Soc. Metals; Revue de Metallurgie. Special Int.: Corrosion Mechanism; Oxidation of Metals; Nuclear Metallurgy; Theory of Alloying.

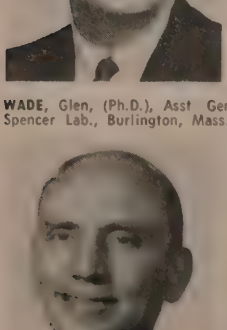
WACHTEL, Anselm (Mr.), Rsch. Engr., Westinghouse Elec. Corp., Bloomfield, N. J. Home Add.: 24 Sunrise Terrace, Parlin, N. J. PHOSPHORS. b. Vienna, Austria, Aug. 20, 1920. s. William and Emma (Froelich) W. Edn.: B.S., Bundeslehr-und Versuchsanstalt fur Chemische Industrie, Vienna, Austria, 1938. m. Ruth Ehrenbacher, Sept. 13, 1944. c.: Robert H.; Helen C. Exp.: Chief Chemist, VCA Lab., Newark, N. J., 1947-54; Res. Engr., Westinghouse Elec. Corp., Bloomfield, N. J., 1954—. Mem.: Electrochem. Soc. Contbr. to: Jour. Electrochem. Soc. Serv. Rec.: U. S. Army, 1943-44. Areas of Rsch.: Inorganic Syntheses, High Temperature and Solid State Reactions, Purification Procedures, Preparation of Phosphors, especially Sulfides. Solid State Electronic Phenomena, Electroluminescence.



WADE, Malcolm Smith, Project Chemist, Spencer Chem. Co., Pittsburg, Kans. CHEMISTRY. b. Owensville, Ind., June 3, 1923. s. Frank E. and Margaret (Smith) W. Edn.: B.A., Indiana Univ., 1949. m. Mary Lou Gurley, May, 1958. c.: Marvin Lee. Exp.: Analyst, Spencer Chemical Co., Henderson, Ky., 1950-54; Senior Chemist, Laboratory Supervisor, ibid., 1954-59; Senior Chemist, Spencer Chem. Co., Pittsburg, Kans., 1959-61; Project Chem., ibid., 1961—. Mem.: A.A.A.S.; Am. Chem. Soc.; Masonic Lodge; Shrine. Serv. Rec.: A.U.S., 1943-45. Areas of Rsch.: Water Treatment and Nitrogen Chemicals.



WADE, Glen, (Ph.D.), Asst Gen. Mgr., Rsch. Div., Raytheon Co., Spencer Lab., Burlington, Mass. Home Add.: 23 Forest Hill Rd., Wayland, Mass. RESEARCH ON DEVICES FOR GENERATING, AMPLIFYING AND PROCESSING RADIATION IN THE MICROWAVE TO OPTICAL SPECTRUM. b. Ogden, Utah, Mar. 19, 1921. s. Lester A. and Nelly (Vanderwerff) W. Edn.: B.S., Univ. of Utah, 1948; M.S., ibid., 1949; Ph.D., Stanford Univ., 1954. m. LaRee Bailey, Mar., 1945. c.: Kathleen Ann; RaLee; Lisa Jean; Mary Sue. Exp.: Rsch.: Assoc., G. E. Co., Palo Alto, Calif., 1955-56; Assoc. Prof., Stanford Univ., Calif., 1958-60; Asst. Gen. Mgr., Rsch., Raytheon Co., Spencer Lab., Burlington, Mass., 1960—. Hon. Pos.: Chmn., Electron Devices Rsch. Conf.; Admin. Comm., IRE Prof. Group on Electron Devices; Editor, IRE Transactions on Electron Devices; Industrial Adv. Coun. of Univ. of R. I. Mem.: Inst. of Radio Engr. and Am. Phys. Soc.; Phi Kappa Phi; Tau Beta Pi; Eta Kappa Nu; Sigma Xi. Contbr. to: IRE Trans. on Circuit Theory, vol. CT-7; Jour. of Applied Physics; Proc. IRE. Serv. Rec.: U.S.N.R., 1944-46. Gen. Int.: Inventor of Quadrupole amplifier; Received Eta Kappa Nu Award in the Outstanding Young Elect. Engr., 1955; N.E.C. Conf. Annual Award in, 1959. Areas of Rsch.: Research on electron devices operating from microwaves to optical frequencies.



WADE, Thomas Leonard, Jr. (Ph.D.), Hd., Dept. of Math., Fla. St. Univ., Tallahassee, Fla. Home Add.: 1003 Washington St., Tallahassee, Fla. ALGEBRA. b. Ridgeway, Va., April 21, 1905. s. Thomas Leonard, Sr. and Betty King (Eggleston) W. Edn.: B.S., Univ. of Va., 1929; M.S., ibid., 1930; Ph.D., ibid., 1933. m. Margaret Millner Clarke, 1931. c.: Margaret Elizabeth McKay; Ida Katherine Adair; Thomas L. III; Mary Susan. Exp.: Asst. Instr. of Math., Univ. of Va., 1929-34; Prof. of Math., Mercer Univ., 1934-39; Asst. Prof. of Math., Univ. of Ala., 1939-43; Prof. of Math. and Hd. of Dept., Fla. St. Univ., 1943—. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Natl. Coun. of Tchrs. of Math.; Pi Mu Epsilon; Sigma Xi. Author: The Algebra of Vectors and Matrices, 1951; Calculus, 1953; Fundamental Mathematics, co-author, 1956, '61; Introductory College Mathematics, 1959; University Calculus, co-author, 1962. Areas of Rsch.: Tensor Algebra.

WADELL, Hakon Adolf (Ph.D.), (dec.), Consult. Rsch. Geologist, 380 Prospect St., New Haven, Conn. PETROLEUM-ENGINEERING GEOLOGY, EPISTEMOLOGICAL GEOLOGY, MATHEMATICAL GEOLOGY. b. Goteborg, Sweden, Dec. 29, 1895; U. S. A. Naturalization, 1947. s. Wiktor and Clara (Larson) W. Edn.: Grad., Latin Col., Goteborg, Sweden, 1915; Commission, Royal Milit. Coll., Karlberg, Sweden, 1917; Univ. of Stockholm, 1918-20; Ph.D., Univ. of Chicago, 1932. m. Eliza Anderson, 1922. Exp.: Swedish Geol. Surv., 1918; Chf., Swedish Exped. to Vatnajokul, Iceland, 1919; Geologist, North Petr. Co., Mex., 1921-22; Consult. Geologist, Mex., 1922-23; Geologist in Charge Exped. to Peten, Guatemala, 1923-25; Asst. Geologist, Ill. Geol. Survey, 1929; Geologist, Iceland, 1936; Geol., Socony-Vacuum Oil Co., So. Am., 1937-40; Geol., Atlantic Ref. Co., Tulsa, Okla., 1945-47; Lectr., Inst. Gas. Tech., Chicago, Ill., 1950; Lectr., Engr. Geol., Ill. Inst. Tech., 1951; Engr. Geologist, U. S. Corps Engr., Alaska, 1951-54; Consult. Rsch. Geologist, New Haven, Conn., 1955—. Mem.: Fellow, Geol. Soc. Am.; Fellow, Am. Assn. Adv. of Sci.; Am. Geophys. Union; Am. Assn. Petrol. Geol. Contbr. to: Physics; Jour. Appl. Phys.; Jour. Frankl. Inst.; Science; Bull. Natl. Rsch. Coun.; Carnegie Inst. Publ.; U. S. Patent; Bol. Petr., Mex.; De Aarde, Amsterdam; Jour. Geol.; Geol. For. Stockholm Forhandl.; Pan-Am. Geologist; Geogr. Rev.; Geogr. Annaler; Lund Univ. Geogr. Inst.; Oil and Fat Indust.; Soil and Engr. Reports, Corps of Engrs., Alaska. Areas of Rsch.: Researchology, Epistemology, Geology, Engineering Geology, Sedimentology, Hydrology, Oceanography, Glaciology, Cryology, Soil Mechanics, Sedimentography, Geography.

WAELDER, Robert (Ph.D.), Training and Supervising Analyst, Inst. of the Philadelphia Assn. for Psychoanalysis, D-101 Presidential Apts., Philadelphia 31, Pa. Home Add.: Marple Rd., Haverford, Pa. PSYCHOANALYSIS: PSYCHOLOGICAL ASPECTS OF HISTORY AND POLITICAL SCIENCE. b. Vienna, Austria, Feb. 20, 1900. s. Joseph and Helene (Mautner) W. Edn.: Ph.D., Univ. of Vienna, Austria, 1922. m. Elsie L. Martens, July, 1946. c.: Dorothea E. Hellman; Marianne von Hippel (Children of 1st m.) c.: David Matthew; Catherine Barbara. Exp.: Lecturer, Vienna Psychoanalytic Inst., Vienna, Austria, 1925-38; Lecturer, Boston Psychoanalytic Inst., Boston, Mass., 1938-41; Lecturer, Bryn Mawr Coll., 1941-42; Training and Supvng. Analyst, Phila. Psychoanal. Inst., Phila., Pa., 1946-54; Training and Supvg. Analyst, Inst. of Phila. Assn. for Psychoanalysis, 1950—. Hon. Pos.: Past Pres., Phila. Assn. for Psychoanalysis; Chmn., Edntl. Comm., Inst. of Phila. Assn. for Psychoanalysis, 1957. Mem.: A.A.A.S.; Am. Psychoanalytic Assn.; Am. Orthopsychiatr. Assn. Author: Psychological Aspects of War and Peace, 1939; Basic Theory of Psychoanalysis, 1960. Editor: The Living Thoughts of Sigmund Freud, 1941. Contbr. to: Internatl. Jour. of Psycho-Analysis; Psychoan. Quart.; Jour. Am. Psychoanalyt. Assn.; World Politics; Univ. of Penn. Law Review; Review Internatl. pour la Theorie de droit. Areas of Rsch.: Psychoanalysis; psychiatry and the law; psychological methodology; psychological approach to history and political sicence.

WAESCHE, Hugh Henry (Mr.), Geologist, U. S. Geol. Survey, Wash., D. C. Home Add.: 3221 45th St., N.W., Wash. 16, D. C. PIEZOELECTRIC MINERALS AND THEIR USES, HAWAIIAN VOLCANOLOGY, GEOLOGY OF RADIOACTIVE WASTE DISPOSAL. b. Wash., D. C., Sept. 23, 1904. s. Henry Theodore and Lucy Peyton (Henry) W. Edn.: B.S., Va. Polytech. Inst., 1929; M.S., ibid., 1934. m. Lynn Landiss Smith, Nov. 7, 1938. c.: William Landiss; Mary Peyton. Exp.: Instr. in Geol., Va. Polytech. Inst., 1929-34; Ranger, Hawaii Natl. Park, Hawaii, 1934-35; Asst. Geologist, Hawaii Volcano Observatory, ibid., 1934-41; Asst. Park Naturalist, Grand Canyon Natl. Park, Ariz., 1941-42; Assoc. Technol., Office Chief Signal Officer, Wash., D. C., 1942-43; Radio Engr., Aircraft Radio Labs., Wright Field, Ohio, 1943-46; Geologist, Signal Corps Eng. Lab., Ft. Monmouth, N. J., 1946-53; Geologist, U. S. Geol. Survey, Wash., D. C., 1953—. Hon. Pos.: Vice-Pres. and Pres., Spring Valley-Wesley Hts. Citizens Assn., Wash., D. C. Mem.: Fellow, Geol. Soc. Am.; Fellow, A.A.A.S.; Am. Inst. Min. Met. and Petrol. Engrs.; Seismol. Soc. Am.; Geol. Soc. of Wash.; Am. Geophys. Union; Geochem. Soc.;

ner. Soc. Am.; Spring Valley-Wesley Hts. Citizens Assn. Con-
ng. Author: Industrial Minerals and Rocks, 1960. Contbr. to:
nd Canyon Nature Notes; Crater Lake Nature Notes; Mining
l Metallurgy; Bull. Mineral. Soc. Am.; The Volcano Letter;
r. of Geol. Gen. Int.: Meritorious Civ. Serv. Award for
W. II Work in Field Engrng. and Quality Control Prod. of
artz Crystal Units for U.S.A.F. Proj. Leader. Areas of Rsch.:
ology of Appalachians, S. W. Virginia; Hawaiian Volcanology
l Seismology; Improved Production Methods Quartz Crystal
its; Artificial Growth of Piezoelectric Minerals, Especially
artz; Sources of Natural Piezoelectric Minerals; Radioactive
ce Elements; Radioactive Waste Disposal.

AGNER, Helmut R. (Ph.D.), Bucknell Univ., Lewisburg, Pa. CIOLOGICAL. b. Dresden, Germany, Aug. 5, 1904. s. Rudolf and Olga (Fischer) W. Edn.: Ph.D., New Schl. for Soc. Rsch., 55. m. Lore Joseph, 1951. c.: Claire Marianne. Exp.: Lectr., w Schl. for Soc. Rsch., Grad. Faculty, 1952-56; Rsch. Project, ligion in Germany, 1953-55; Asst. Prof., Bucknell Univ., 1956-; Assoc. Prof., ibid., 1958—. Mem.: Am. Sociol. Soc.; East-n Sociol. Soc.; Ohio Valley Sociol. Soc.; Soc. for the Scientific udy of Religion. Contbr. to: Soc. Rsch.; Ciencias Sociales; tteilungen der Akademie der Arbeit, Frankfurt; Rev. of Politics; n. Sociological Rev. Areas of Rsch.: Gen. Sociological Theory; ciology of Religion; Study of Totalitarianism.

AGNER, Paul Theodore (Mr.), Chemist, Industrial Lab., Mare and Naval Shipyard, Vallejo, Calif. Home Add.: 437 Henry , Vallejo, Calif. RADIOCHEMISTRY. b. Kulm, N. Dak., Oct. , 1913. s. Emil and Lydia (Bronnenkant) W. Edn.: A.B., estern State Coll., 1936; Univ. of Colo., 1938. m. Elizabeth ood, May 13, 1944. c.: Walter Milo; Elizabeth Karen. Exp.: nior Scientific Aid, Natl. Bureau of Standards, Seattle, Wash., 39-40; Chemist, Natl. Bureau of Standards, Old Mint Build-g, San Francisco, 1940-44; Chemist, Industrial Laboratory, are Island Naval Shipyard, Vallejo, Calif., 1944-52; Radio-em., Industrial Lab., Mare Island Naval Shipyard, 1952—. em.: Am. Assn. for Adv. of Sci.; Am. Chem. Soc. Contbr. to: alytical Chem.; Nucleonics; Industrial and Engrng. Chem. eas of Rsch.: Radiochemistry; Counting Techniques.

AHLSTROM, Ernest Eugene (Ph.D.), Prof. of Geol., Univ. of lo., Boulder, Colo. Home Add.: 2875 Dover Dr., Boulder, Colo. EOLOGY AND MINERALOGY. b. Boulder, Colo., Dec. 30, 1909. Charles S. and Christine (Dahlin) W. Edn.: B.A., Univ. of lo., 1931; M.A., ibid., 1933; M.A., Harvard Univ., 1936; n.D., ibid., 1939. m. Kathryn Kemp, Sept. 23, 1931. c.: aren Jean; David Kemp. Exp.: Instr. to Prof. Geol., Univ. Colo., 1936-47; Prof. Geol., ibid., 1947—. Hon. Pos.: Chmn., ocky Mtn. Sect., Geol. Soc. of Am., 1954. Mem.: Fellow, eol. Soc. of Am.; Fellow, Mineralogical Soc. of Am.; Soc. Economic Geologists; Geochem. Soc.; A.A.A.S.; Sigma Xi; Pi appa Alpha. Author: Optical Crystallography, 1943, 1951; Igne-us Rocks and Minerals, 1947; Theoretical Igneous Petrology, 950; Petrographic Mineralogy, 1955. Contbr. to: Bull., Geol. oc. of Am.; Am. Mineralogist; Trans. Am. Soc. of Civil ngrs.; Economic Geol. Areas of Rsch.: Igneous and Metamorphic etrology; Economic and Engrng. Geology.

AINERDI, Richard Elliott (Ph.D.), Assoc. Dean of Engrng., Prof., ead, Activation Analysis Rsch. Lab., Tex. A. and M. Coll., ollege Station, Tex. Home Add.: 1115 Langford, College Sta., ex. NUCLEAR ACTIVATION ANALYSIS AND ENGINEERING EDU-ATION. b. N.Y.C., Nov. 27, 1931. s. H. R. and M. G. Greenhut) W. Edn.: B.S., Okla. Univ., 1952; M.S., Pa. St. niv., 1955; Ph.D., ibid., 1958. m. Angela Lampone, June 6, 956. c.: Thomas Joseph; James Cooper. Exp.: Fellow, Pa. t. Univ., 1953-55; Coordinator, Nuclear Activities, Dresser In-ustries, Dallas, Tex., 1956-57; Prof., Tex. A. and M. Coll., 957—. Hon. Pos.: Chmn., Internatl. Conf., Modern Trends in ctivation Analysis. Mem.: Am. Nuclear Soc.; Soc. of Nuclear Med.; Sigma Xi; Tau Beta Pi; Phi Kappa Phi; Sigma Tau; Phi ta Sigma; Pi Epsilon Tau. Contbr. to: Producer's Mo.; Trans., m. Nuclear Soc. Serv. Rec.: U.S.A.F., 1953. Areas of Rsch.: nstrumental and Computer Coupled Nuclear Activation Analysis.

AKAE, Masami (Mr.), Asst., Univ. of Ill., Urbana, Ill. Home dd.: 813 W. Main, Urbana, Ill. MATHEMATICS (ALGEBRAIC TOPOLOGY). b. Tokyo, Japan, June 27, 1934. s. Ryutaro and Mume (Ohta) W. Edn.: B.S., Tokyo Univ. of Edn., 1958; M.S., Univ. of Ill., 1961. Exp.: Instr., Komagome H. S., Tokyo, Japan, 1958-59; Instr., Takehaya Upper Sec. Schl., ibid., 1959; Asst., Univ. of Ill., 1959—. Mem.: Am. Math. Soc.; Pi Mu Epsilon. Areas of Rsch.: Algebraic Topology, especially in Homology Theory.

WAITZMAN, Morton Benjamin (Ph.D.), Assoc. Prof. and Dir., Emory Univ., Atlanta, Ga. Home Add.: 1137 Mason Woods Dr., N.E., Atlanta 6, Ga. OPTHALMIC RESEARCH AND PHYSIOLOGY. b. Chicago, Ill., Nov. 8, 1923. s. Joseph and Anna (Glickman) W. Edn.: B.S., Univ. of Miami, 1948; M.S., Univ. of Ill., 1950; Ph.D., ibid., 1953. m. Aviva Shedroff, June 9, 1949. c.: Sherri; Bradley; Rhonda. Exp.: Rsch. and Tchng. Asst., Dept. of Physiol., Univ. of Ill., 1951-53; Sr. Rsch. Pharmacologist, Wm. S. Merrell Co., Cincinnati, Ohio, 1953-54; Asst. Prof., Western Res. Univ., 1954-62; Asst. Prof., Depts. of Pharmacol. and Surgery and Dir. of Ophthalmic Res., Emory Univ., 1962—. Hon. Pos.: Editorial Staff, Excerpta Medica. Mem.: Sigma Xi; Phi Sigma; A.A.A.S.; Ill. St. Acad. of Sci.; N. Y. St. Acad. of Sci.; Fellow, Ohio St. Acad. of Sci.; Assn. for Rsch. in Ophthalmol.; Am. Physiol. Soc.; Am. Assn. Univ. Profs. Contbr. to: Am. Med. Assn. Arch. Ophthal.; Fed. Proc.; Am. Jour. Ophthal.; Nature; Am. Jour. Physiol. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: General Physiology; Biological Chemistry; Ophthalmic Physiology; Biochemistry.

WAKELEY, Philip Carman (Mr.), Rsch. Forester, Southern Forest Exp. Station, Room T-10210 Federal Office Building, 701 Loyola Ave., New Orleans 12, La. Home Add.: 6478 Colbert St., New Orleans 24, La. FORESTRY (SILVICULTURE). b. Orange, N. J., Mar. 18, 1902. s. George Washington and Marion Louise (Hamman) W. Edn.: B.S., Cornell Univ., 1923; M.F., ibid., 1925. m. Christine Carlson, July, 1924. c.: Tendon; Patricia; James Carlson; Jane Marion; Mary Fairfield. Exp.: Jr. Forester, Sou. Forest Exp., New Orleans, La., 1924-28; Asst. Silviculturist, ibid., 1928-30; Assoc. Silviculturist, U. S. Dept. of Agric., New Orleans, La., 1930-36; Silviculturist, ibid., 1936-49; Forester, ibid., 1949-58; Rsch. Forester, Sou. Forest Exp. Sta., Federal Office Bldg., ibid., 1958—. Hon. Pos.: Past Pres., New Orleans Acad. of Scis.; Past Chmn., Div. of Silviculture, Soc. of Am. Foresters; Past Assoc. Editor, Jour. of Forestry; Present Chmn., Subcomm. on Geographic Source of Seed, Comm. on Southern Forest Tree Improvement. Mem.: Soc. of Am. Foresters; Ecological Soc. of Am.; Biometrics Soc.; Am. Genetic Assn.; Technical Assn. of Pulp and Paper Industry; New Orleans Acad. of Sci.; Am. Assn. for Adv. of Sci.; Phi Kappa Phi; Rsch. Soc. of Am. Author: Planting the Southern Pines, 1954. Contbr. to: Jour. of Forestry; Forest Sci.; Science. Gen. Int.: Superior Service Award, U. S. Dept. of Agric., 1955; Soc. of Am. Foresters Biological Rsch. Award, 1956. Areas of Rsch.: Artificial regeneration of southern pines; racial variation in southern pines; hybridization of southern pines.

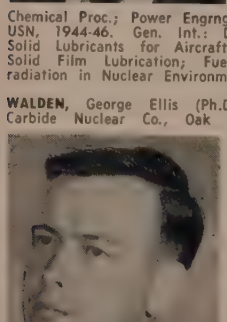
WAKSMAN, Selman Abraham (Ph.D.), Prof. Emer., Inst. of Microbiol., Rutgers Univ., New Brunswick, N. J. Home Add.: Logan Lane and River Rd., New Brunswick, N. J. MICROBIOLOGY. b. Priluka, Russia, July 22, 1888. s. Jacob and Fradia (London) W. Edn.: B.S., Rutgers Coll., 1915; M.S., ibid., 1916; Ph.D., Univ. of Calif., 1918. Hon. Degs.: M.D., Univ. of Liege, 1946; Doc. honoris causa, Univ. of Madrid, 1950, Strasbourg Univ., 1958, Hebrew Univ., Jerusalem, 1958; Doc. honoris causis in Med., Univ. of Athens, 1952, Univ. of Pavia, 1961; D.Sc., Rutgers, 1943, Princeton Univ., 1947, Rhode Island St. Coll., 1950, Penn. Mil. Coll., Phila. Coll. of Pharm. and Sci., 1953, Brandeis Univ., 1954, Jacksonville Univ., 1959, Hahnemann Med. Coll., 1962; LL.D., Yeshiva Univ., 1949, Keio Univ., Japan, 1953; D.H.L., Hebrew Union Coll., 1951; Doc. of Agric., Gottingen Univ., Germany, 1961, Perugia Univ., 1961. m. Deborah B. Mitnik, 1916. c.: Byron H., M.D. Exp.: Microbiologist, Expt. Sta., Lectr., Soil Microbiol., Rutgers Univ., 1918-25; Assoc. Prof., 1925-30; Prof., ibid., 1930-40; Prof. of Microbiol. and Hd. of Dept., ibid., 1940-58; Dir., Inst. of Microbiol., ibid., 1949-58; Prof. Emer., ibid., 1958—. Hon. Pos.: Pres., Comm. Ill. on Soil Microbiol., Internatl. Soc. of Soil Sci., 1927-35; Vice-Pres., Am. Soc. of Agron.; Corres. Mem., French Acad. of Scis., 1937; For. Assoc., ibid., 1955. Mem.: Am. Soc. for Microbiol.; Nat. Acad. of Scis.; Am. Acad. of Arts and Scis. Author: Enzymes, 1926; Principles of Soil Microbiology, 1927, '32; The Soil and the Microbe, 1932; Humus, 1936, '38; Microbial Antagonisms and Antibiotic Substances, 1945, '47; The Actinomycetes, 1950; Soil Microbiology, 1952; Guide to the Actinomycetes and Their Antibiotics, 1953; My Life with the Microbes, 1954; The Actinomycetes, Vol. 1, 1959, Vol. 2, 1961, Vol. 3, 1962. Gen. Int.: Founded Foundation for Microbiol.; Charles Mickle Fellowship, Univ. of Toronto, 1950; Nobel Prize in Physiol. and Med., 1952; Order of Merit of the Rising Sun, Emperor of Japan, 1952; Brith Sholom Humanitarian Award, 1952; St. Vincent Award for Med. Sci., Acad. of Med., Turin, Italy, 1954; Great Cross of Pub. Health, Spain, 1954; City of Hope Salute to Med. Rsch. Citation and Award, 1959; Internatl. Union Against Tuberculosis Medal and Citation, Istanbul, 1959; Am. Trudeau Medal, 1961; Voted One of 100 Most Outstanding People in the World, 1952. Areas of Rsch.: Microbiological Population of the Soil; Sulfur Oxidation by Bacteria; Microorganisms and Soil Fertility; Decomposition of Plant and Animal Residues; Nature and Formation of Humus; Occurrence of Bacteria in the Sea and Their Role in Marine Processes; Production and Nature of Antibiotic Substances; Taxonomy, Physiology, Biochemistry of the Actinomycetes. Isolated, with Students, New Antibiotics Including Streptomycin and Neomycin.

WALD, George (Ph.D.), Prof. of Biol., Biol. Lbs., Harvard Univ., Cambridge, Mass. Home Add.: 21 Lakeview Ave., Cambridge, Mass. PHYSIOLOGY AND BIOCHEMISTRY OF VISION. b. New York, N. Y., Nov. 18, 1906. s. Isaac and Ernestine (Rosenmann) W. Edn.: B.S., Wash. Sq. Coll., N. Y. Univ., 1927; Ph.D., Columbia Univ., 1932. Hon. Degs.: M.D., Univ. of Berne, Switzerland, 1957; D.Sc., Yale Univ., 1958; Sc.D., Wesleyan Univ., 1962. m. Ruth Hubbard, 1958. c.: Michael; David (by previous marriage); Elijah; Deborah. Exp.: Tutor in Biochem. Sci., Harvard Univ., 1934-35; Instr. and Tutor in Biol., ibid., 1935-39; Faculty Instr., ibid., 1939-44; Assoc. Prof., ibid., 1944-48; Prof., ibid., 1948—. Mem.: Am. Soc. Biol. Chemists; Optical Soc. Am.; Soc. Gen. Physiologists; Sigma Xi; Assn. Rsch. in Ophthalmol.; Nat. Acad. Scis.; Am. Acad. Arts and Scis.; Am. Philos. Soc. Contbr. to: Proc. Nat. Acad. Sci.; Jour. Gen. Physiol.; Jour. Optical Soc. Am. Areas of Rsch.: Vision; Vitamins; Biochemical Evolution.

WALD, Louis (Mr.), Instr. in Sci., Mark Twain Jr. High Schl., 2401 Neptune Ave., Brooklyn 24, N. Y. Home Add.: 8301 Bay Parkway, Brooklyn 14, N. Y. THE TEACHING OF SCIENCE. b. Hust, Hungary, July 25, 1899. s. Morris and Esther (Grunstein) W. Edn.: B.S., Coll. of the City of N. Y., 1925; M.A., N. Y. Univ., 1933. m. Shulamith Warshawsky, 1928. Exp.: Sub. Tchr. of Physics, H. S., N. Y. C., 1925-27; Tchr., Elem. and Jr. H. S., N. Y. C., 1927—; Tchr. and Prin., Parochial Schls., N. Y. C., 1928-41; First Aid Instr., Am. Red Cross, 1942-55; Sponsor, Jr. Sci. Clubs (S.C.A.) and Schl. Sci. Publications, 1954—. Hon. Pos.: Pres., Joseph Eckert Soc.; Chmn., Community Lecture Series; Chmn., Mizrachi Youth Comm. Mem.: A.A.A.S.; N.E.A.; N.S.T.A.; Gen. Sci. Assn.; N. Y. Soc. for Exptl. Study of Edn.; N. Y. C.-N.E.A. Coun.; Brooklyn Tchrs. Assn. Serv. Rec.: U. S. Army, 1917-18. Gen. Int.: Delegate to Sec. Schl. Tchrs. Assn. Areas of Rsch.: Science on Postage Stamps.

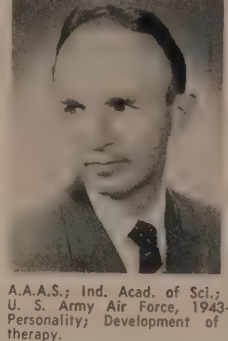
WALDEN, Everette Orville (Mr.), Vice Pres., The Almasol Corp., Div. Lubrication Engrs., Inc., 316 N. Sylvania Ave., Fort Worth 11, Tex. Home Add.: 3108 Spanish Oak Dr., Ft. Worth, Tex. LUBRICATION ENGINEERING. b. Vona, Colo., July 20, 1920. s. Emory O. and Fern E. (Davis) W. Edn.: B.A., Bethany-Peniel Coll., 1947; M.S., Univ. of Tulsa, 1951. m. Virginia Kirby, Sept., 1942. c.: Stephen E. Exp.: Dir. Chem. Lab., Douglas Aircraft Corp., Tulsa, Okla., 1952-57; Engr. Chem., Convair Division, General Dynamics Corp., Ft. Worth, Tex., 1957-59; Vice Pres., Almasol Corp., Div. Lubrication Engineers, Inc., Ft. Worth, Tex., 1959—. Mem.: Soc. of Aerospace Materials Process Engrs.; Am. Soc. of Lubrication Engrs.; Natl. Management Assn.; Am. Rocket Soc.; Am. Ordinance Assn. Contbr. to: Chemical Proc.; Power Engrng.; Oil and Gas Jour. Serv. Rec.: USN, 1944-46. Gen. Int.: Development of High Temperature Solid Lubricants for Aircraft and Missiles. Areas of Rsch.: Solid Film Lubrication; Fuel and Lubricants; Materials Irradiation in Nuclear Environment.

WALDEN, George Ellis (Ph.D.), Chemist, Y-12 Plant, Union Carbide Nuclear Co., Oak Ridge, Tenn. Home Add.: 100 Melbourne Rd., Oak Ridge, Tenn. PHYSICAL CHEMISTRY. b. Tuscumbia, Ala., May 30, 1930. s. George A. and Julia (Gibson) W. Edn.: B.S., Florence State Coll., 1956; M.S., Univ. of Ala., 1958; Ph.D., ibid., 1959. m. Elizabeth Spurgeon, Feb. 5, 1950. c.: Rhonda Kaye; Susan Lynn; Lisa Ann. Exp.: Chemist, U. S. Bureau of Mines, Southern Expt. Station, Tuscaloosa, Ala., 1957-59; Rsch. Chemist, The Chemstrand Corp., Decatur, Ala., 1959-60; Chemist, Y-12 Plant, Union Carbide Nuclear Co., Oak Ridge, Tenn., 1960—. Mem.: Sigma Xi; Kappa Mu Epsilon; Kiwanis Club. Contbr. to: Jour. Am. Chem. Soc.; Jour. of Phys. Chem. Serv. Rec.: U. S. Army, 1952-53. Areas of Rsch.: X-Ray Emission Spectroscopy, Gas Chromatography, Heat Capacity, Heat Content Studies.

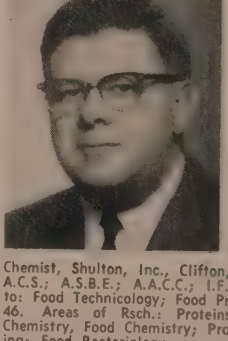


WALDO, George VanPelt, Eletcronic Engr., Fed. Communications Comm., Office of Chief Engr., Washington 25, D. C. Home Add.: 5903 Forest Rd., Cheverly, Md. RADIO ENGINEERING, RADIO WAVE PROPAGATION. b. Montgomery, Ala., Aug. 22, 1905. s. Otis B. and Mary (VanPelt) W. Edn.: B.S., Auburn Univ., 193 M.S., ibid., 1933. m. Martha Vickery, Jan. 30, 1933. c.: Geor VanPelt, Jr. Exp.: Instr., Ala. Polytech. Inst., 1935-41; Rad Engr., Fed. Communications Comm., Washington, D. C., 19 53; Asst. Chief, Appl. Propagation Br., ibid., 1953-60; Engr UHF-TV Proj., Office of Chief Engr., ibid., 1960—. Mem A.A.A.S.; Inst. of Radio Engrs.; Philos. Soc. of Wash Are of Rsch.: Radio Wave Propagation as Applied to Television an Radio Service and Allocations.

WALDSCHMIDT, Rudolph Charles (Ph.D.), Assoc. Prof. of Psychol Valparaiso Univ., Valparaiso, Ind. Home Add.: 701 Chicago Ave Valparaiso, Ind. CLINICAL PSYCHOLOGY. b. West Ely, Mo., Oc 26, 1910. s. Henry M. and Ann (Wolter) W. Edn.: A.B., Valparais Univ., 1936; Ph.D., Univ. of Ch cago, 1957. m. Eleanor Schmi Aug. 9, 1941. c.: Carol; Betty Susan; Mary Beth. Exp.: Tchr Lutheran Elem. Schls., Chicago Ill., Scheboygan, Wis., Racine Wis., 1931-35; Tchr., Luther Inst Chicago, Ill., 1940-43, 1946-47 Lecturer, Ind. Univ., Gary Center Gary, Ind., 1949—; Instr. an then Asst. Prof. of Psychol., Val paraiso Univ., 1947-58; Assoc Prof. of Psychol., ibid., 1958— Hon. Pos.: Chmn., Dept. of Psy chol., Valparaiso Univ., 1959— Mem.: Am. Psychological Assn. Midwestern Psychological Assn. A.A.A.S.; Ind. Acad. of Sci.; Sigma Xi; Theta Chi. Serv. Rec. U. S. Army Air Force, 1943-46. Areas of Rsch.: Research i Personality; Development of Positive Regard Theory; Psycho therapy.



WALDT, Leonard M. (Mr.), Sr. Food Chemist, Shulton, Inc., 69 Route 46, Clifton, N. J. Home Add.: 1767 Walker Ave., Union N. J. BIOCHEMISTRY, FOOD CHEMISTRY, FOOD DEVELOPMENT, STARCH AND PROTEIN CHEMISTRY. b. New York City, N. Y. Apr. 25, 1918. s. Morris and Clara (Farber) W. Edn.: B.S City Coll., N. Y., 1938; M.S. Poly. Inst. Brooklyn, 1954. m. Natalie Rappaport, Aug. 22, 1943 c.: Judith; Deborah. Exp.: Chief of Qual. Cont., Geffen Ind. Inc Long Island City, N. Y., 1937-42 Asst. Food Chemist, Max AMS Inc., N. Y. C., 1946-47; Consult Chem., Ind. Test Labs., N. Y. C 1947-53; Chf. Food Chem., Burr Biscuit Corp., Elizabeth, N. J 1953-54; Assoc. Food Chem., Gen Foods Corp., N. Y., 1954-57; Chf Food Chem., Morningstar-Paisley Inc., N. Y., 1957-61; Sr. Food Chemist, Shulton, Inc., Clifton, N. J., 1961—. Mem.: A.A.A.S A.C.S.; A.S.B.E.; A.A.C.C.; I.F.T.; Phi Lambda Upsilon. Contbr. to: Food Technicology; Food Process. Serv. Rec.: U.S.A.F., 1942-46. Areas of Rsch.: Proteins, Enzymes, Fermentation, Starch Chemistry, Food Chemistry; Product Development in Foods, Brewing; Food Bacteriology.



WALKER, Claudius Roland, Jr. (Ph.D.), Dir. of Univ. Counseling Servs., Wilberforce Univ., Clin. Psychologist, Univ. Health Ctr., Wilberforce, Ohio. Home Add.: Apt. 206, 220 Hamilton St., N.W., Wash. 11, D. C. PSYCHOLOGY; SOCIOLOGY; PHYSIOLOGY. b. Nashville, Tenn., June 25, 1929. s. Dr. C. R., Sr. and Mabel Cordelia (Holloway) W. Edn.: B.Sc., Fla A. and M. Univ., 1949; Grad Study, The Am. Univ., 1952-57; Dipl., Heidelberg Univ., 1958, Cert., 1959; Ph.D., D.Sc., St Andrew's Intercollegiate Univ United Kingdom, 1961. m. Lillian Marie Hughes, 1956. c.: C. R., III. Exp.: Private Tutor, English, Wash., D. C., 1952-53; Counselor, Cedar Knoll Schl., Laurel, Md 1956-57; Private Tutor, German, Heidelberg, Germany, 1958-59; Tchr., Questioned Documents Analysis, U. S. Army, Europe, Summer, 1960; Monthly Columnist, European Life, 1959—; Lectr., Univs., Hospitals, etc., 1956—; Priv. Practice, U. S. and Europe, 1957—; Dir. of Counseling Servs., Wilberforce Univ., 1961—. Mem.: Internatl. Fed. of Hypnotherapists and Psychologists; Internatl. Psychological Assn.; Am. Hypnotic Assn.; A.A.A.S.; Spiritual Frontiers Fellowship; The Reserve Officers Assn. of the U. S.; N.A.A.C.P.; Internatl. Fed. of Naturopaths; Internatl. Relations Club of Wilberforce Univ.; The Heidelberg AM; Internatl. Students Club. Contbr. to: The Voice; European Life. Serv. Rec.: U. S. Army, 1954-60. Gen. Int.: Silver Honours Medal by St. Andrew's Univ., 1961. Areas of Rsch.: Personality Theory and Diagnosis; Psychological Therapeutics; Questioned Documents; Hypnosis; Parapsychol. and Psychical Rsch.; Physiol

KER, Donald Ezzell (Ph.D.), Pres., Idaho State Coll., Pocatello, o. Home Add.: 341 South 7th, Pocatello, Idaho. SOCIOLOGY. Springfield, Mo., July 13, 1921. s. Edward Everett and lia (Ezzell) W. Edn.: A.B., Univ. of So. Calif., 1943; ., ibid., 1947; Ph.D., Stanford Univ., 1954. m. Ann F. rop, Dec. 18, 1943. c.: Craig Lathrop. Exp.: Instr., ol., San Diego State Coll., 1949-51; Asst. Prof., Sociol., , 1951-54; Assoc. Dean of Students, Counseling, ibid., 1954- Dean of Counseling and Testing, ibid., 1956-58; Dean of ents, San Ferando Valley State Coll., 1958-60; Pres., Idaho e Coll., 1960—. Mem.: Am. Sociological Soc.; Alpha Kappa a; Phi Eta Sigma; Theta Phi; Psi Chi. Contbr. to: Jour. of nseling-Psychology; Jour. of Personnel and Guid. Areas of .: Counseling Theory; Admin. Organization; Psychosomatic .

LKER, Donald Gregory (Ph.D.), Assoc. Prof., Dept. of Anatomy, ns Hopkins Med. Schl., Baltimore 5, Md. Home Add.: 6835 Queens Ferry Rd., Baltimore, Md. ANATOMY. b. Rochester, N. Y., Feb. 17, 1925. s. Raymond Charles and Eleanor Loretta (Fenton) W. Edn.: A.B., Univ. of Calif., 1945; M.A., ibid., 1949; Ph.D., ibid., 1951. m. Shirley Loretta Rocha, Dec. 31, 1949. c.: Victoria; Gregory; Christopher; Donna; Brenda; Ben. Exp.: Asst. Prof., Univ. of Ore. Med. Schl., 1951-55; Asst. Prof., Johns Hopkins Med. Schl., 1955-60; Assoc. Prof., ibid., 1960—. Mem.: A.A.-A.S.; Hist. Chem. Soc.; Sigma Xi. Author: Genesis of Rat Skeleton, 1957. Contbr. to: Anatomical Record; Arch. Pathol.; Bull. Johns Hopkins Hosp.; Jour. of Biophys. and Biochem. Cytology; Jour. of Nutrition; McGraw

l Encyc. of Sci. and Tech. Serv. Rec.: U.S.N.R., 1943-46. eas of Rsch.: Cell Biol. of Skeletal Elements; Role of Pituitary d Thyroid Glands in Growth and Maturation of Skeletal System; iochem. Ditetrazole Methods. Experimental disorders of Con- ctive Tissues.

ALKER, Ethan Allen, Jr. (M.D.), Otolaryngologist, 301 North- st Twelfth, Oklahoma City 3, Okla. Home Add.: 200 Northwest 19th St., Oklahoma City 3, Okla. OTOLARYNGOLOGY. b. Oklahoma City, Okla., Nov. 22, 1919. s. Ethan Allen and Esther Belle (Dean) W. Edn.: B.A., Okla. City Univ., 1941; M.D., Univ. of Okla., 1943. m. Ruth Manning, July, 1956. c.: Ethan Allen, III; Teresa Louise; James Lawrence; Judith. Exp.: Otolaryngologist, Okla. City Clinic, Okla. City, Okla., 1955—; Instr., Univ. of Okla. Schl. of Med., Okla. City, Okla., 1953-58; Asst. Prof., ibid., 1958—. Mem.: Okla. Co. Med. Soc.; Okla. State Med. Assn.; Am. Med. Assn.; Am. Acad. of Ophthalmology and Otolaryngology; Okla. City Acad. of Ophthal. and Otolaryngology; Phi Beta Pi; Rotary. Contbr. to: Arch. of Otolaryngol-

gy. Serv. Rec.: USN, 1943-46, 1950-51. Gen. Int.: Diplomate, m. Bd. of Otolaryngology.

WALKER, James Frederick (Ph.D.), Chmn., Dept. of Biol., Univ. f Southern Miss., Sta. A, Hattiesburg, Miss. Home Add.: 200 S. 28th Ave., Hattiesburg, Miss. GENERAL PHYSIOLOGY, HISTOLOGY AND CYTOLOGY, AND MARINE BIOLOG. b. Riverton, Ala., July 30, 1904. s. James Fred and Elizabeth Dorcas (Ellis) W. Edn.: B.A., Univ. of Miss., 1927; M.S., ibid., 1931; Ph.D., Univ. of Iowa, 1935. m. Mildred Lewis, 1927. c.: James Frederick, Jr. Exp.: Instr. in Sci. Dept., Miss. Sou. Coll., 1926-29; Acting Hd. of Sci. Dept., ibid., 1920-30; Grad. Asst. in Zool., Univ. of Iowa, 1931-32; Assoc. Prof. of Sci., Miss. Sou. Coll., 1932-42; Assoc. Prof. of Anat., Calif. Coll. of Med., Los Angeles, Calif., 1944-45; Prof. of Biol., Univ. of Sou. Miss., 1945-46; Organized Div. of Biol. Sciences, and Hd.

of Division, ibid., 1946-57; Chmn., Dept. of Biol., ibid., 1957—; Directed Course in Marine Biol. at Gulf Coast Research Lab., Ocean Springs, Miss., summers, 1948, 1949; Directed Course in Marine Invertebrate Zool., ibid., 1950; Post-doctorate Studies, Zool. Dept., Univ. of Sou. Calif., 1962-63, (on leave from Univ. of Southern Miss.). Hon. Pos.: Pres., Miss. Academy of Science, 1940-41; Mem. of Gulf Coast Research Lab. Com., Miss. Academy of Scis.; Mem. of Sci. Adv. Comm. to the State Dept. of Edn. Mem.: Fellow, A.A.A.S.; Miss. Acad. of Sci.; Alpha Epsilon Delta, Honor Premedical Soc.; Assoc. Mem., The Am. Physiological Soc.; Beta Beta Beta; Sigma Xi; Omicron Delta Kappa; Phi Eta Sigma; Phi Kappa Psi; Phi Tau Chi. Contbr. to: Jour. of Cellular and Comparative Physiol.; Jour. of Miss. Acad. of Sci.; Miss. Edn'l. Advance. War. Rec.: Instr. in Ground Schl. of U. S. Naval Aviation, Boston Naval Reserve Aviation Base, 1942-43; Pre-Flight Schl., Univ. of Iowa, 1943-44. Listed in: A.M.S.; Who's Who in Am. Gen. Int.: Active in Establishment of Gulf Coast Rsch. Lab. Areas of Rsch.: Thyroid Gland of Reptiles; Physiology of Arthropods; Marine Biology.

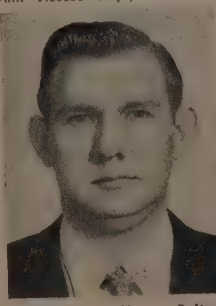
WALKER, Ralph R., Tchr., Sci. Dept., 20 North St., Logan City Schls., Logan, Ohio. Home Add.: 468 N. Spring St., Logan, Ohio. BIOLOGY AND GENERAL SCIENCE. b. Hocking Co., Ohio, May 16, 1910. s. Joe Walker (dec.) and Mary (Tena) W. Edn.: B.S., Ohio Univ., 1932; M.A., ibid., 1943. m. Jennie Mae Dixon, June, 1935. c.: Donald; William. Exp.: Tchr., Karnes One Room Schl., Hocking Co., Ohio, 1933-34; Teacher Prin., Starr-Washington Schl., Union Furnace, Ohio, 1934-50; Prin., Berne Union Schl., Sugar Grove, Ohio, 1950-55; Tchng. Fac. Mgr., Logan City Schls., Logan, Ohio, 1955—. Hon. Pos.: Chmn., Southeastern Ohio Dist. Sci. Day.; Past Master Masonic Lodge. Mem.: A.A.A.S.; Ohio Acad. of Sci.; Southeastern Ohio Sci. Coun.; Batelle Mem. Sci. Inst.; N.E.A.; Ohio Edn'l.

Assn.; Kappa Alpha Beta; Chi Sigma Chi. Gen. Int.: Selected by Ohio Acad. of Sci. as Outstanding Sci. Tchr. of Ohio Univ. Dist., 1961. Areas of Rsch.: Science.

WALLACE, Alexander Doniphan (Ph.D.), Prof. and Chmn., Dept. of Math., Tulane Univ. New Orleans, La. Home Add.: 1332 Audubon St., New Orleans, La. SET-THEORETIC TOPOLOGY, ALGEBRAIC TOPOLOGY, TOPOLOGICAL ALGEBRA, THEORY OF RELATIONS. b. Hampton, Va., Aug. 21, 1905. s. Alexander Doniphan and Mary Elizabeth (Sheppe) W. Edn.: B.S., Univ. of Va., 1935; M.S., ibid., 1936; Ph.D., ibid., 1940. m. Willie-Catherine Durrer, July 13, 1930. c.: Catherine Alexandra. Exp.: Instr., Univ. of Va., 1937-40; Instr., Princeton Univ., 1940-41; Instr., Univ. of Pa., 1941-44; Prof., Tulane Univ., 1947—; Assoc. Editor, Summa Brasiliensis Math.; Council., Am. Math. Soc., 1956-59; Assoc. Ed., Duke Math. Jour. Mem.: Am. Math. Soc.; Math. Assn. of Am.; Edinburgh Math. Soc.; A.A.U.P.; Raven Soc.; Contbr. to: Bull. Am. Math. Soc.; Am. Jour. Math.; Proc. Natl. Acad. Sci.; Duke Math. Jour.; Ann. of Math.; Ann. da Acad. Bras.; Fund. Math.; Summa Bras. Math.; Math. Jour. Okayama Univ.; Indag. Math.; Pacific Jour. of Math. Areas of Rsch.: Set-Theoretic Topology; Algebraic Topology; Topological Algebra; Theory of Relations.

WALLDROFF, Bessie Elss (Mrs.), Asst. Prof., Roberts Wesleyan Coll., North Chili, N. Y. Home Add.: LaFargeville, N. Y. BIOLOGY. b. LaFargeville, N. Y., May 30, 1898. d. Albert G. and Frances (Bort) Eiss. Edn.: A.B., Syracuse Univ., 1926; M.A., St. Lawrence Univ., 1944; Grad. Study, N. Y. St. Univ.; N. Y. Univ.; Syracuse Univ. m. Barney Walldroff, 1929. c.: William Albert. Exp.: Prof., Elon Coll., 1946-48; Prof., Pfeiffer Coll., 1949-55; Prof., Asbury Coll., 1955-58; Sci. Instr., House of Good Samaritan, Watertown, N. Y., 1958-60; Asst. Prof., Roberts Wesleyan Coll., 1960—. Mem.: A.A.A.S.; Nat. Assn. of Biol. Tchrs.; Rochester Acad. of Sci. Areas of Rsch.: General Biology in Higher Education.

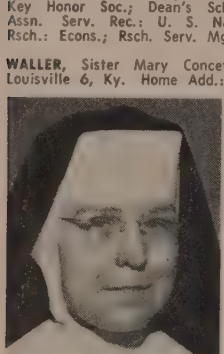
WALLACE, Jesse Wyatt (Mr.), Asst. to Sales Mgr., Avicel Sales Am. Viscose Corp., Marcus Hook, Pa. Home Add.: 1106 Grinel Rd., Green Acres, Wilmington 3, Del. INDUSTRIAL MANAGEMENT. b. Canton, Ga., Jan. 24, 1925. s. Jesse W. and Lula (Wyatt) W. Edn.: B.B.A., Univ. of Ga., 1954; M.S., Ga. Inst. of Technol., 1960. m. Myra Brown, Jan. 2, 1949. c.: Steven Wyatt; Karen Elise; Kimberly Elizabeth. Exp.: Supvr., V. A., Atlanta, Ga., 1946-50; Chmn., Serv. Groups, Ga. Inst. of Technol., Engrng. Exptl. Station, Atlanta, Ga., 1953-57; Administrative Mgr., Rsch. and Devel. Div., Am. Viscose Corp., Marcus Hook, Pa., 1957-61; Asst. to Sales Mgr., ibid., 1961—. Hon. Pos.: Chmn., Atlanta Personnel Conf.; Chmn., Sub-committee of Edn. Committee, Philadelphia Sect., Am. Chemical Soc.; Conf. Leader, Am.



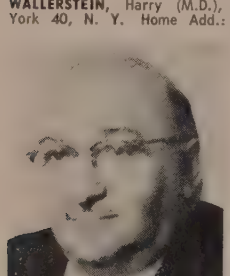
Mgmt. Assn. Mem.: Delta Sigma Pi; A.A.A.S.; Am. Mgmt.

Assn.; Natl. Office Mgmt. Assn.; Delta Mu Delta; Intramural Key Honor Soc.; Dean's Scholarship Key; Green Acres Civic Assn. Serv. Rec.: U. S. Navy, 1943-46, 1950-53. Areas of Rsch.: Econs.; Rsch. Serv. Mgmt.; Gen. Mgmt.; Technical Sales.

WALLER, Sister Mary Concetta (Ph.D.), Pres., Ursuline Coll., Louisville 6, Ky. Home Add.: 3105 Lexington Rd., Louisville 6, Ky. INORGANIC CHEMISTRY. b. Louisville, Ky., 1914. d. Andrew and Emma (Jacob) W. Edn.: B.S., Creighton Univ., 1944; M.S., Marquette Univ., 1950; Ph.D., St. Louis Univ., 1961. Exp.: Tchr., St. Martin Schl., Louisville, Ky., 1935-37; Tchr., Blessed Sacrament Schl., Omaha, Neb., 1937-44; Instr. in Chem., Ursuline Coll., 1944-57, 1961-62; Pres., ibid., 1962—. Hon. Pos.: Pres., Ky. Chemistry Tchrs. Assn.; Mem. Advisory Bd.; Pres., Ky. Acad. of Sci.; Chmn. of Chem. Dept. at Ursuline, 1961. Mem.: Am. Chem. Soc.; Ky. Chem. Tchrs. Assn.; Ky. Acad. of Sci.; Sigma Xi. Author: Aqueous Sodium Borohydride Chemistry, 1961; Inorganic Chem. of Borohydrides, 1962. Contbr. to: Jour. Anal. Chem.; Jour. Chem. Edn.; Trans. Ky. Acad. of Sci.; Jour. of Am. Oil Chemists Soc. Areas of Rsch.: Aqueous Sodium Borohydride Chem. and Effect of Composition on Physical Constants of Binary Mixtures of Natural Waxes.



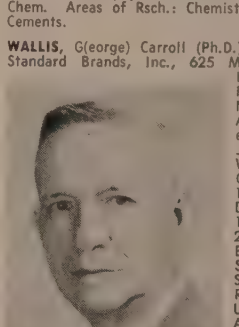
WALLERSTEIN, Harry (M.D.), Physician, 4580 Broadway, New York 40, N. Y. Home Add.: 720 Gramatan Ave., Mt. Vernon, N. Y. HEMATOLOGY; HEMATOLOGY RESEARCH; HEMOLYTIC DISEASE OF THE NEWBORN; LEUKEMIA. b. New York City, N. Y., Dec. 11, 1906. s. Jacob Mordecai and Lena (Goldberg) W. Edn.: A.B., George Wash. Univ., 1927; M.D., ibid., Med. Schl., 1930. m. Gussie Arnold, June 29, 1926. c.: Sally Rose W. Sedler; Caryl Ann W. Rotfeld. Exp.: Intern, Sydenham Hosp., New York, N. Y., 1930-31; Assoc. Pathologist, ibid., 1931-33; Assoc. Visiting Pathol., Sea View Hosp., ibid., 1933; Pathologist, Jewish Memorial Hosp., ibid., 1934-37; Dir., Blood Bank, ibid., 1938—; Assoc. Visiting Pathologist, Queens Gen. Hosp., ibid., 1944-54; Consult., Hematologist, Morrisania City Hosp., ibid., 1948—; Attending Hematologist, Jewish Mem. Hosp., ibid., 1950—; Consult. Hematologist, Fordham City Hosp., ibid., 1951—; Consult. Hematologist, St. Elizabeth's Hosp., ibid., 1951—; Assoc. Visiting Pathologist, Bronx Municipal Hosp. Center, 1955-60; Vis. Pathol., ibid., 1960—; Dir. Blood Bank, ibid., 1955—; Lectr. in Pathol., Albert Einstein Coll. of Med., N. Y., N. Y., 1955-59; Asst. Visiting Prof. Pathol., ibid., 1959—. Mem.: Fellow, N. Y. Acad. Scis.; Fellow and Founder, Internatl. Soc. of Hematologists; Fellow, A.M.A.; A.A.A.S.; Am. Soc. Clin. Pathologists; Fellow, N. Y. Acad. Med.; Am. Assn. Blood Banks; N. Y. State Blood Bank Assn.; Soc. Study of Blood; N. Y. Pathol. Soc.; Internatl. Transfusion Soc.; Am. Soc. Genetics; Am. Eugenics Soc.; Mason. Contbr. to: Arch. Pathol.; Jour. Lab. and Clin. Med.; Blood; Acta Hematologica; Am. Jour. Dis. of Children; Yearbook of Ped.; Bull. Jew. Memorial Hosp.; Am. Jour. Clin. Pathol.; Sci.; Lancet. Gen. Int.: Introduced Blood Substitution Principle for Treatment of Erythroblastosis Fetalis; Awards—New York and New Jersey State Med. Socs. Areas of Rsch.: Erythroblastosis Fetalis; Leukemia; Blood Banking.



WALLERSTEIN, Robert Solomon (M.D.), Assoc. Dir., Dept. of Rsch., The Menninger Found., Box 829, Topeka, Kans. Home Add.: 3006 Harland Court, Topeka, Kan. PSYCHIATRY; PSYCHOANALYSIS. b. Berlin, Germany, Jan. 28, 1921. s. Lazar and Sarah (Guensberg) W. Edn.: B.A., Columbia Coll., 1941; M.D., Columbia Univ. Coll. of Physicians and Surgeons, 1944. m. Judith Saretsky, Jan. 26, 1947. c.: Michael; Nina; Amy. Exp.: Internship, Mt. Sinai Hosp., N. Y., N. Y., 1944-45; Asst. Res. Med., ibid., 1945-46; Res. Med. and Psy., ibid., 1948-49; Res. Psychiatry, Winter VA Hosp., Topeka, Kans., 1949-51; Chief, Psychosomatic Sect., ibid., 1951-53; Assoc. Dir. Dept. of Rsch., Menninger Found., Topeka, Kan., 1954—; Lecturer, Top. Inst. for Psychoanalysis, ibid., 1959—. Mem.: Chrmnship. Group for Advancement of Psychiatry Comm. on Rsch.; Am. Psychoanals. Assn.; Internatl. Psychoanal Assn.; Topeka Psychoanal. Soc.; Am. Psychiatric Assn.; Am. Coll. of Physicians; Am. Orthopsychiatric Assn.; Kans. Med. Soc.; Am. Med. Assn.; Am. Assn. for Adv. of Sci.; Certified in Psychiatry; Am. Bd. of Psychiatry and Neurology; Phi Beta Kappa; Alpha Omega Alpha. Author.: Hospital Treatment of Alcoholism: A Comparative, Experimental Study, co-author, 1957; The Teaching and Learning of Psychotherapy, co-author, 1958; Contbr. to: Psychoanalytic Quart.; Psychoanal. Study of the Child; Bull. Menninger Clinic; Psychiatry; Am. Jour. Psychiatry; Psychosomatic Med.; Jour. Nerv. and Mental Diseases; Annals of Internal Med.; Jour. of the Mt. Sinai Hosp.; Am. Jour. of Med.; Am. Practitioner; Jour. of Inf. Dis.; Am. Jour. of Tropical Med. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Psychotherapy Rsch.; Psychotherapy Supervision; Psychosomatic Problems; Alcoholism.

WALLING, Ishmael Worth (Mr.), Chf. Chemist, Calif. State Dept. of Water Resources, Sacramento, Calif. Home Add.: 1208 El Toro Way, Sacramento 25, Calif. CHEMISTRY (CHEMICAL ANALYSES OF WATERS, WASTEWATERS, SOILS, CEMENTS, PROTECTIVE COATINGS AND OTHER MATERIALS OF CONSTRUCTION). b. Munday, Tex., Oct. 23, 1910. s. Wade H. and Ida (Partridge) W. (both dec.). Edn.: B.A., E. Tex. State, 1936. m. Billie Marie Green, Dec. 22, 1935. c.: Marlin Worth; Ruth Carolyn. Exp.: Analytical Chemist, Internatl. Mineral and Chemical Corp., Carlsbad, N. M., and Austin, Tex., 1942-44; Asst. Geologist, Bureau of Economic Geol., Univ. of Tex., 1944-45; Dist. Chemist, U. S. Geological Survey, Ark., Okla. and Calif., 1945-56; Chief Chemist, Calif. St. Dept. of Water Resources, 1956—. Hon. Pos.: Chmn., Sacramento Sect. Am. Chem. Soc., 1958. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; A.G.U.; Calif. Water Pollution Control Assn.; A.W.W.A.; Mason; F. and AM Scottish Rite Bodies. Author-Co-Author: Public Water Supplies of Arkansas, 1947; Chemical Character of Surface Waters in the Washita River Basin of Oklahoma, 1946-47, printed 1949; Chemical Character of Surface Waters in Oklahoma, 1946-49, printed 1951; Chemical Character of Surface Waters in Oklahoma, 1949-50, printed 1952. Contbr. to: Indust. and Engrng. Chem. Areas of Rsch.: Chemistry of Waters, Wastewaters, Soils, Cements.

WALLIS, G(eorge) Carroll (Ph.D.), Dir. of Nutrition, Agril. Dept., Standard Brands, Inc., 625 Madison Ave., N. Y. 22, N. Y. Home Add.: Eton Lodge, Garth Rd., Scarsdale, N. Y. ANIMAL NUTRITION-VITAMIN D, CALCIUM AND PHOSPHORUS. b. Independence, Iowa, Dec. 21, 1900. s. John Franklin and Maude (Bantz) W. Edn.: B.S., S. Dak. State Coll., 1923; M.S., Univ. of Minn., 1931; Ph.D., ibid., 1934. Hon. Deg.: D.Sc., S. Dak. State Coll., 1960. m. Myrtle Hinkle, June 25, 1924. c.: Edward Franklin. Exp.: Instr., Voc. Agri., Chester, S. Dak. H. S., 1923-27; Supt. of Schls., Hetland, S. D., 1927-30; Rsch. Asst., Dept. of Dairy Husb., Univ. of Minn., 1931-34; Instr., Asst. Prof., Assoc. Prof., Dairy Dept., S. D. State Coll., 1934-43. Animal Nutritionist, Dir. of Nutrition, Agril. Dept. Standard Brands, Inc., 1943—. Mem.: Fellow, Am. Assn. Adv. Sci.; Am. Dairy Sci. Assn.; Am. Soc. Animal Sci.; Am. Chem. Soc.; N. Y. Acad. Sci.; Sigma Xi; Gamma Sigma Delta; Animal Nutrition Rsch. Council; Alpha Zeta. Contbr. to: Jour. Dairy Sci.; Jour. Animal Sci.; Jour. Am. Vet. Med. Assn.; Agril. Exptl. Station Bull.; Jour. of Agril. Rsch. Areas of Rsch.: Vitamin D, Calcium and Phosphorus in Animal Nutrition; Vitamin D Content of Feeds; Vitamin D Stability.



WALLIS, Marianne (M.D.), Radiologist, St. Joseph's Hosp., Minot, N. D. Home Add.: 906 3rd Ave. N.W., Minot, N. D. RADIOLOGY. b. Vienna, Austria, Oct. 5, 1899. d. Gustav and Katherine (Boehm) W. Edn.: M.D., Univ. of Vienna, Austria, 1925. Exp.: Radiologist, Vienna Allgemeine Krankenkasse, Vienna, Austria, 1925-38; Radiologist, Wilson Memorial Hosp., Johnson City, N. Y., 1941-44; Radiologist, McKennan and Sioux Valley Hosp., Sioux Falls, S. D., 1945-51; Radiologist, St. Joseph's Hosp., Minot, N. D., 1951—. Hon. Pos.: Pres., Radiolog. Soc. of N. D. Mem.: R.S.N.A.; Acad. of Sci.; Colegio Interamericano de Radiologia, Rocky Mt. Radiologic Soc. Areas of Rsch.: Radiology.

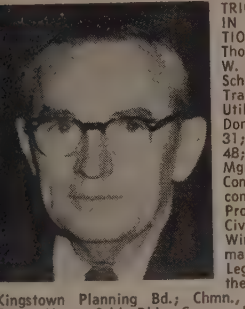
WALSH, Joseph Leonard (Ph.D.), Perkins Prof. of Math., Harvard Univ. Home Add.: 43 Larch Rd., Cambridge 38, Mass. MATHEMATICS, ANALYSIS. b. Washington, D. C., Sept. 21, 1895. s. John Leonard and Sallie Ellicott (Jones) W. Edn.: B.S., Harvard, 1916; M.S., Univ. of Wis., 1917; Ph.D., Harvard Univ., 1920. m. Elizabeth Strayhorn, Apr. 2, 1946. c.: Sallie Elizabeth; Elizabeth Hildegard. Exp.: Asst. in Math., Harvard Univ., 1915-16; Instr. to Prof., ibid., 1916-36; Prof., ibid., 1936—. Hon. Pos.: Pres., Am. Math. Soc., 1948-50; Vice Pres., Am. Assn. Adv. Sci., 1944, 1961. Mem.: Nat. Acad. of Sci.; Am. Acad. of Arts and Sci.; Phi Beta Kappa; Sigma Xi; Gamma Alpha. Author: Approximation by Rational Functions, 1935; Location of Critical Points, 1950; Approximation by Bounded Analytic

ıctions, 1960. Contbr. to: Trans. Am. Math. Soc.; Proc. Am. th. Soc.; Duke Math. Jour.; Jour. de Math. pures et app. . Serv. Rec.: W. W. I and W. W. II. Areas of Rsch.: ıctions of a Complex Variable; Real Variables; Interpolation d Approximation.

ALSH, Rev. George Andrew, O.S.F.S., Instr. in Biol. and ysical Scis., Hd., Biol. Dept., Cathedral Preparatory, 225 West Ninth St., Asst. Supvr., Oblate Fathers, Erie, Pa. Home Add.: 246 West Tenth St., Erie, Pa. ZOOLOGY; COMPARATIVE MORPHOLOGY OF THYROID IN LACERTILIA. b. Phila., Pa., Aug. 24, 1927. s. George Andrew and Elizabeth (Brennan) W. Edn.: B.A., Cath. Univ. of Am., 1952; M.S., ibid., 1957. Exp.: Instr. in Biol., Northeast Catholic H. S., Phila., Pa., 1948-50; Instr. in Biol., Cathedral Prep., 1956—; Instr. in Physical Sci., ibid., 1960—; Hd., Biol. Dept., ibid., 1961—; Asst. Supvr., Oblate Fathers, Erie, Pa., 1961—. Hon. Pos.: Local Treas., Oblates of St. Francis de Sales; B.S.C.S. Consult. Mem.: Am. Assn. Adv. Sci.; N.S.T.A.; N.A.B.T.; A.I.B.S.; N.C.E.A.; C.E.-

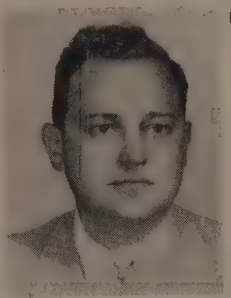
P.; Herpetologists' League; Erie Engrng. Societies Coun.; Sigma . Contbr. to: Herpetologica; C.E.A.P. Bull.; O.S.F.S. Ednl. ull.; The Duquesne Sci. Counselor. Gen. Int.: Pilot Tchrs. B.S.C.S. Biol. Course Sponsored by A.I.B.S.; Mem. of 5-man omm. Representing the Natl. Catholic Ednl. Assn. to work along ith B.S.C.S. in Develop. of B.S.C.S. High School Biol. Areas f Rsch.: Comparative Morphology of the Thyroid in Lacertilia.

ALSH, Howard Albert (Mr.), Mgr. of Engrng. Conferences, P. O. ox 252, Wakefield, R. I. RESEARCH AND DEVELOPMENT COVERING MEASUREMENT OF DIELECTRIC LOSS AND POWER FACTOR IN SOLID AND LIQUID INSULATIONS. b. July 27, 1901. s. Thomas Walter and Elese (Koch) W. Edn.: Schl. of Design; Vet. Schl. on Mgmt.; N. E. Univ.; Training Course with Large Public Utility. m. Lilliam May MacDonald. Exp.: Field Engr., 1925-31; Supvr. Field Engrng., 1931-48; Mgr. Client Serv., 1948-53; Mgr. Engrng. Conferences and Comm. Activities, 1953-62 for consulting engrng firm. Registered Profl. Engr. Hon. Pos.: Asst. Dir., Civilian Defense World War II, Winchester, Mass.; Past Vice Commander, Winchester Post Am. Legion; Mem. Advisory Comm. of the Selective Service Bd.; South Kingstown Planning Bd.; Chmn., S. Kingston Water Extension Com.; Mem., Schl. Bldg. Comm.; Pres. and Dir., R. I. Soc. Planning Agencies. Mem.: Am. Soc. for the Adv. of Sci.; Am. Inst. of Electrical Engrs.; Masons; Elks; Am. Legion; Dunes Club; R. I. Soc. Planning Agencies. Serv. Rec.: U.S.A., A.E.F., W.W. I. Gen. Int.: Pioneer Work in Rsch. and Development of Dielectric Loss, Power Factor and Voltage Distribution Measurements on Electrical Apparatus Insulation; Rsch. and Development Covering Method for Making Photomicrographs in Color; Studies Covering the Reconditioning of Water, methods of detection and measurement of nuclear radiation, and Bomb and Radiation Shelters. Areas of Research: Research and Development of Voltage Distribution and Dielectric Loss Measurements and Various Types of Test Apparatus; Preparation and Operation of Large Engineering Conferences and Coordination of Engineering Committees Activities; Includes Electrical Planning in the Operation of High Voltage Systems and Knowledge and the Ability to Apply that Knowledge in the Field of Electrical Insulation.



WALTER, Carl Waldemar (M.D.), Surgeon, Peter Bent Brigham Hosp., Boston, Mass.; Clinical Prof. Surg., Harvard Med. Schl. Boston, Mass. Home Add.: 91 Highland St., Holliston, Mass. SURGERY. b. Cleveland, Ohio, Nov. 30, 1905. s. Carl F. and Leda (Scheidemantel) W. Edn.: Harvard Univ., A.B., 1928; M.D., Harvard Med. Schl., 1932. m. Margaret H. Davis, 1929. c.: Carl Elliott; Martha Ann; David Alan; Alice Virginia; Linda Elaine; Margaret Jane. Exp.: Surgical House Officer, Peter Bent Brigham Hosp., 1933-34; Harvey Cushing Fellow, ibid., 1934-35; Jr. Asst. Surg., ibid., 1935-36; Arthur Tracy Cabot Fellow, Harvard Med. Schl., 1935-36; Asst. Resident, Surg., Peter Bent Brigham Hosp., 1936-37; Asst. Surg., ibid., 1937; Asst. Surg., Harvard Med. Schl., 1937; Dir., Blood Bank, Peter Bent Brigham Hosp., 1937-62; Instr. Surg., Harvard Med. Schl., 1937-38; Jr. Assoc., Surg., Peter Bent Brigham Hosp., 1937-40; Dir., Lab. Surgical Rsch., Harvard Med. Schl., 1937-49; Assoc., Surg., ibid., 1938-43; Assoc. Surg., Peter Bent Brigham Hosp., 1940-44; Asst. Prof., Surg., Harvard Med. Schl., 1942-51; Sr. Assoc., Surg., Peter Bent Brigham Hosp., 1944-50; Consultant, Surg., Children's Med. Center, Boston, 1948; Surgeon, Peter Bent Brigham Hosp., 1951—; Asst. Clin. Prof. Surg., Harvard Med. Schl., 1951-56; Assoc. Clin. Prof., Surg., ibid., 1956-62; Clin. Prof. of Surg., ibid., 1962—; Founder and President, Fenwal Incorporated; Dir., Lombard Gov. Corp.; Trustee, Warren Benevolent Fund; Trustee, Hospitals Laundry Assn. Mem.: Mass. Med.; Am. Coll. Surgeons; Boston Med. Library; Boston Surgical Soc., Inc.; Boston Orthopedic Club; Diplomate, Am. Board Surg.; Am. Soc. of Experimental Biol. and Chem.; New England Surg. Soc.; Mass. Soc. Med. Rsch.; Am. Assn. Blood Banks; Am. Assn. of Hospital Consultants; Internatl. Soc. Blood Transfusions; U. S. Commission, World Health Organization; Sigma Xi. Author: Aseptic Treatment of Wounds, 1948. Contbr. to: Surg.; Surg., Gynecology and Obstetrics; Jour. Am. Med. Assn.; Surgical Clinics North Am.; Annals Surg.; Surgical Forum Am. Coll. Surgeons; Proc. Internatl. Soc. Blood Transfusions; Archives Surg.; New England Jour. Med.; Jour. Lab. and Clin. Med.; Anesthesia and Analgesia. Gen. Int.: Improved Aseptic Technic; Developed Plastic Blood Transfusion Equipment; Author, Popular Films, Hospital Sepsis: A Communicable Disease, Disinfection of the Skin, and I Dress the Wound. Areas of Rsch.: Sterilization and Aseptic Technic; Collection and Preservation of Blood; Hospital Hygiene; Acute Renal Tubular Degeneration.

WALTER, Fred R. (Mr.), Res. Phys., Sr. Engr., Westinghouse Astro-electronics Dept., Newbury Park, Calif. Home Add.: 10 Willder Drive, Camarillo, Calif. GASEOUS ELECTRONICS; VACUUM ULTRAVIOLET PHYSICS. b. Berlin Germany, Feb. 20, 1929. s. Karl Rudolf and Lucie (L. Sturm) W. Edn.: Staats-Examen, Freie Univ., Berlin, Germany, 1955. m. Tanja Hupf, Oct. 15, 1951. Exp.: Res. Scientist, Heiland Div., Minn Honeywell, Denver, Colo., 1957-60; Physicist, Ball Broth. Res. Corp., Boulder, Colo., 1960-61; Rsch., BDM, El Paso, Tex., 1961-62; Sr. Engr., Westinghouse Astro-electronics Dept., 1962—. Mem.: Soc. Applied Spectroscopy; Am. Assn. Adv. Sci.; Am. Physical Soc.; Rsch. Soc. Am.; Soc. for Illumination Engrng. Contbr. to: Sci. Abstracts; Med. and Biol. Illustration; Jour. Optical Soc. Am. Areas of Rsch.: Breakdown and Emission of Gaseous Discharges, Esp. High Density Plasmas; Flash Photometry and Spectroscopy. Vacuum UV Radiation Source Rsch.; Material Properties, Windows, Photo Effect in the 2000-300 A Region.



WALTER, Karl J. (Mr.), Product Mgr., Engelhard Industries, Inc., Pine and Dunham Sts., Attleboro, Mass. Home Add.: 340 Prospect St., Seekonk, Mass. ELECTRONIC AND ELECTRICAL-MECHANICAL CONTROL. b. Lakeville, Ohio, June 9, 1903. s. Christian J. and Ruth (Shearer) W. m. Edith Smily, 1922. c.: Doris K. Ogden; Shirley F. Bresney. Exp.: Installation Design, Kelvinator Corp., 1932-36; Pres., Lincoln Heat Conditioning Corp., 1936-41; Dev. Small Mfg. Organizations, Glenn L. Martin Co., 1941-43; Vice Pres., P. M. Industries, Inc., 1943-56; Mgr., Engelhard Industries, Inc., 1956—. Mem.: Am. Assn. Adv. of Sci.; Instrument Soc. of Am.; Sales Exec. Club of N. Y. Areas of Rsch.: Electrical Contacts, Rotating Devices, Plastic Applications and Usage in Industry.

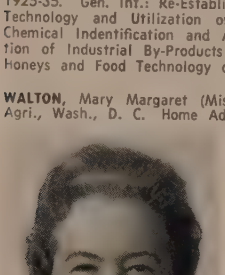
WALTERS, Etta (Miss), Asst. Prof., Women's Physical Edn., Westmar Coll., Le Mars, Ia. Home Add.: Lake City, Minn. PHYSICAL EDUCATION. b. Mazeppa, Minn., July 2, 1902. d. Thomas Joseph and Ervie (O'Hara) W. Edn.: B.A., Carleton Coll., 1923; M.Ed., Univ. of Minn., 1954. Exp.: Tchr., Clear Lake H. S., Clear Lake, Ia., 1953-56; Asst. Prof., W. Va. Wesleyan Coll., 1956-58; Asst. Prof., Doane Coll., 1958-59; Asst. Prof., Westmar Coll., 1961—. Mem.: Am. Assn. Univ. Women; Am. Assn. of Health, Physical Edn. and Rec.; Am. Assn. Univ. Prof.; Westmar Faculty Women's Club. Gen. Int.: Highest Athletic Award Given to Women at Carleton Coll. Areas of Rsch.: Physical Education; Physicial Fitness; Team Sports; Testing.

WALTERS, Winston Danae (Ph.D.), Prof. of Chemistry, Dept. of Chem., Univ. of Rochester, Rochester, N. Y. CHEMISTRY. b. June 9, 1914, Houston, Tex. s. John H. and Ethel Oma (Pyle) W. Edn.: B.S., Washington Univ. (St. Louis), 1934; Ph.D. in Chemistry, Johns Hopkins Univ., 1937; Wm. R. Warner Fellowship from Johns Hopkins Univ., 1934-38; Same Fellowship for Rsch. Work and Study at Univ. of Leipzig, 1937-38. m. Elizabeth Ballard of Baltimore on Aug. 31, 1945. Exp.: Instr. in Chem., Univ. of Rochester, Sept., 1938-Dec., 1941; Tech. Aide, NDRC-OSRD Dec. 1941-Nov. 1944. (On leave from Univ. of Rochester); Apptd. Asst. Prof. of Chem. of Univ. of Rochester Sept., 1942;

Asst. Prof. of Chem., Nov. 1944-Sept. 1946; Assoc. Prof. Sept., 1946-51; Prof., ibid., 1951—. Mem.: Sigma Xi; Phi Beta Kappa; A.C.S.; Faraday Soc.; Tau Beta Pi; Gamma Alpha (Sci.); Phi Lambda Upsilon Chem.). Contbr. to: Jour. of Am. Chem. Soc. Ph.D. Dissertation: Thermal Decomposition of Organic Compounds. Travel: Europe. Listed in: A.M.S. Special Int.: Reaction Kinetics; Vaporphase Thermal Decompositions; Isotope Exchange Reactions.

WALTON, George Pelham (Mr.), Formerly, Chemist in Chg., Honey Sec., East, Regional Rsch. Lab., U.S.D.A., Phila., Pa. Home Add.: No. 6318 33rd St., N.W., Wash. 15, D. C. AGRICULTURAL CHEMISTRY AND SEVERAL RELATED SUBDIVISIONS OF FOOD TECHNOLOGY. b. Richmond, Va., May 26, 1888. s. Robert Cherry and Annie C. P. (McKelden) W. Edn.: B.S., Geo. Wash. Univ., 1912; M.S., ibid., 1925. m. Ruth Alden, Sept., 1912. c.: Pelham Alden; Robert Lucius; Hugh McKelden; Ruth Serena. Exp.: Asst. Chem., Bur. Chem., U.S.D.A., Wash., D. C., 1912-22; Sci. in Chg. Proj., Soils, ibid., 1922-28; Assoc. Biochem., Bur. Chem. and Soils, B. Plant Ind., Wash., D. C., 1928-39; Assoc. Chem., Bur. Ind. and Engr. Chem., U.S.D.A., Wash., D. C., 1939-43; From Market Spec. to Sr. Market. Spec., and Altern. Admin., War Food Admin. and U.S.D.A., Wash., 1943-48; Sr. Chem. in Chg., Honey Sect., U.S.D.A. Lab., Phila., Pa., 1948-49. Hon. Pos.: Chmn., Linseed Prod. Comm., U.S.D.A. and Assn. Feed Control Officials; Chmn., Honey Util'n. Comm., Am. Honey Inst.; Genl. Chmn., Comm. on Awards, Wash. Acad. of Scis., 1951; Chmn., Awards in Phys. Sci., 1952. Mem.: Wash. Acad. of Sci.; A.A.A.S. Contbr. to: U.S.D.A. Yearbook (1926); Botan. Gazette; J. Agricl. Res.; Natl. Carbr. and Bottler; Natl. Bottlers' Gazette; Food Technol. Author: Apple By-Products as Stock Feeds, 1923; Chemical and Structural Study of Mesquite, Carob and Locust Beans, 1923; Cocoa By-Products and Their Utilization as Fertilizer Materials, 1926; Conservation of Wastes from Slaughter Meat Animals, 1929; Rev., 1934. Serv. Rec.: A.U.S., 1925-35. Gen. Int.: Re-Establishment of U.S.D.A. Rsch. on Chem. Technology and Utilization of Am. Honeys. Areas of Rsch.: Chemical Indentification and Analysis of Carbohydrates; Utilization of Industrial By-Products and Wastes in Agric.; Chem. of Honeys and Food Technology of Honey Utilization.

WALTON, Mary Margaret (Miss), Entomologist, U. S. Dept. of Agri., Wash., D. C. Home Add.: 4323 Madison St., Hyattsville, Md. ENTOMOLOGIST. b. Harrisburg, Pa., Aug. 29. d. William R. and Mary Agnes (Becher) W. Edn.: B.S., Univ. of Md., 1932. Exp.: Scientific Aid, U. S. Dept. of Agri., Wash. D. C., 1937-42; Jr. Entomologist, U. S. Dept. of Agri. Office, ibid., 1942-44; Entomologist, U. S. Dept. of Agri., Production and Mktng. Admin., Livestock Br., ibid., 1944-51; Industrial Analyst, U. S. Dept. of Agri., Office of Materials and Facilities, 1951-53; Entomologist, U.S.D.A., Agric. Rsch. Serv., Plant Pest Control Div., ibid., 1953-61; Entomologist, Pesticides Regulation Div., ibid., 1962—. Mem.: Am. Assn. Adv. Sci.; Entomol. Soc. of Wash.; Insecticide Soc.; Entomol. Soc. of Am.; Kappa Delta; O.P.E.D.A.; N.F.F.E. Co-Author: Methods of Testing Chemicals on Insects, 1960. Contbr. to: The Insect Pest Survey Bull.

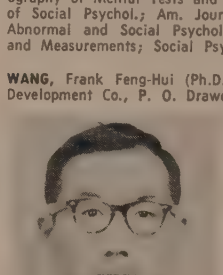


WALTS, Charles C. (Ph.D.), Food Technologist, Armed Forces Food and Container Inst., Food Division, Dairy, Oil and Fat Products Branch, 1819 West Pershing Road, Chicago 9, Ill. Home Add.: 5528 S. Hyde Park Blvd., Chicago 37, Ill. DAIRY MANUFACTURING. b. New Albany, Ind., Oct. 24, 1900. s. H. Elmo and Tisha L. (Oaks) W. Edn.: B.S.A., Purdue Univ., 1924; Fellow and M.S., Univ. of Conn., 1925; Fellow, Univ. of Wis., 1927-28; Am. Dry Milk Inst. Fellow and Ph.D., Pa. St. Univ., 1932. m. Irene M. Feiock, Oct., 1920. c.: Dorothy Elaine. Exp.: Instr., Dairy Mfgr., Mgr. Coll. Creamery and Supt. Adv. Registry Testing, Univ. of Ark., 1925-30; Dir., Rsch. and Chf. Chemist in Chg. Prod., N. Y. Eskimo Pie Corp. and Suncrest Farms, Brooklyn, N. Y., 1932-34, 1936-37; Gen. Mgr., Wood County Milk Prods. Assn. and Ohio Valley Coop. Assn., W. Va., 1934-35; Rsch. Assoc., Creamery Package Mfgr. Co., Chicago, Ill., 1938-45; Dir. Rsch. and Quality Control, Hershey Creamery Co., Harrisburg, Pa., 1945-47; Mgr. Rsch., H. P. Hood and Sons, Boston, Mass., 1947-59; Tech. Dir., Britex Corp., Boston, Mass., 1959-60; Food Tech., Armed Forces Food and Container Inst., Food Division, Dairy, Oil and Fat Products Branch, Chicago, Ill., 1960—. Hon. Pos.: Chmn., Plant Section, Milk Ind. Foundation; Chmn., Ednl. Comm., Chicago Dairy Tech. Soc. Mem.: Am. Dairy Sci. Assn.; Internatl. Assn. of Milk and Food Sanitarians; Am. Oil Chem. Soc.; Chicago Dairy Tech. Soc.; Gamma Sigma Delta; Sigma Xi. Contbr. to: Am. Dairy Sci. Assn.; Jour. of Dairy Sci. Serv. Rec.: U.S.M.C., 1917-18. Areas of Rsch.: Dairy and Food Products; Animal Feeds; Cleaners and Cleansers.

WANDERSTOCK, Jeremiah James (Ph.D.), Prof. in Hotel Admin., Cornell Univ., Ithaca, N. Y. Home Add.: 101 Klinewood Rd., Ithaca, N. Y. FOODS—MEATS, POULTRY, FISH, AND MENU PLANNING. b. N.Y.C., Apr. 28, 1920. s. James H. (dec.) and Ver (Reinlieb) W. Edn.: B.S., Cornell Univ., 1941; M.S., ibid., 1942; Ph.D., ibid., 1945. m. Edith Poummit, May 19, 1946. c.: James David; Helen Beth; Janet Laura; Joan Chira; Jonathan Brian. Exp.: Instr., Dept. of Animal Husbandry, Cornell Univ., 1945; Asst. Prof. of Animal Husbandry, ibid., 1946-52; Asst. Prof. in Hotel Admin., ibid., 1952-53; Assoc. Prof. in Hotel Admin., ibid., 1953-61; Prof. in Hotel Admin., ibid., 1961—. Mem.: Fellow A.A.A.S.; Am. Assn. Univ. Profs.; Am. Soc. Animal Production; Cornell Soc. Hotelmen; Sigma Xi; Phi Kappa Phi; Quill and Dagger; Ye Hosts; Aquarius; Citizens for Good Edn.; Inst. Food Technol. Author: Meat for the Family, 1947; Let's Cut Meat, 1961; Catering, 1962. Contbr. to: Food Rsch.; Food Engrng. Areas of Rsch.: Food (Meats).

WANG, Charles K. A. (Ph.D.), Assoc. Prof., Los Angeles St. Coll., Los Angeles, Calif. Home Add.: 1201 Punta Way, Monterey Park, Calif. PSYCHOLOGY. b. Honan, China, Apr. 14, 1902; s. Yung-chin and Ping-Chuan (Shen) W. Edn.: B.A., Furman Univ., 1924; M.A., Univ. of Chicago, 1926; Ph.D., ibid., 1931; m. Pearl Chen, June, 1951. c.: Hanson; Fleur; Fiore. Exp.: Rsch. Dir., Ministry of Soc. Affairs, Natl. Govt. of China, 1943-46; Prof., Various Colls. and Univ. of China, 1932-50; Lectr., N. Y. Univ., 1950-52; Assoc. Prof., Los. Angeles St. Coll., Calif., 1953—. Mem.: Am. Psychol. Assn.; Am. Assn. Univ. Profs.; Am. Assn. for Adv. of Sci.; Western Psychol. Assn.; Sigma Xi. Author: Measurement of Social Attitudes, 1934; Annotated Bibliography of Mental Tests and Scales, 1940-41. Contbr. to: Jour. of Social Psychol.; Am. Jour. of Psychol.; Education; Jour. of Abnormal and Social Psychol. Areas of Rsch.: Psychol. Tests and Measurements; Social Psychol.; Psychol. Problems of Aging.

WANG, Frank Feng-Hui (Ph.D.), Rsch. Geologist, Gulf Rsch. and Development Co., P. O. Drawer 2038, Pittsburgh 30, Pa. Home Add.: 1306 Sherman St., Ches wick, Pa. PETROLEUM GEOLOGY. b. Hopeh, China, March 21, 1924. s. Wen-Chuan and Shu-Lan (Liu) W. Edn.: B.S., Natl. Southwest Associated Univ., Kunming, China, 1945; Ph.D., Univ. of Wash., 1955. m. Hsiao-Hua Tien, Sept. 28, 1958. c.: Larry; Audrey. Exp.: Sr. Photogeologist, Geophoto Services, Inc., Denver, Colo., 1953; Stratigrapher, Western Gulf Oil Co., Ventura, Calif., 1954-57; Rsch. Geologist, Gulf Research & Dev. Co., Pittsburgh, Pa., 1957—. Hon. Pos.: Advisor on Petroleum Exploration to the Chinese Petroleum Corp., Taiwan, China, 1958. Mem.: Am. Assn. of Petroleum Geologists; Am. Geophys. Union; Geochemical Soc. Areas of Rsch.: Geological and Geochemical Methods for Petroleum Exploration; Sedimentology; Micropaleontology; Paleoecology; Marine Geology.



WANG, Jen-Yu (Ph.D.), Prof. of Meterol. and Soils, Univ. of Wis., Madison, Wis. Home Add.: 1221 Rutledge St., Madison, Wis. AGRICULTURAL METEOROLOGY. b. Foochow, China, Mar. 3, 1918. s. Tze-Chuan and Yu Chi (Wu) W. Edn.: B.S., Fukien Christian Univ., 1938; M.S., Univ. of Wis., 1955; Ph.D., ibid., 1957. m. Nobuko Ishigaki, May 19, 1962. Exp.: Chief Meteorologist, Fukien Weather Bur., Ting An, China, 1940-45; Prof. Meteorol., Fukien Christian Univ., Foochow, China, 1945-49; Prof., Univ. of Wis., 1957—. Hon. Pos.: Vice Pres., Wis. Phenol. Soc. Mem.: Am. Met. Soc.; Am. Soc. Agron.; Am. Soc. Hort.; Natl. Acad. Sci.; Wis. Acad. Sci.; Internat. Soc. Biometeorol.; Am. Geophys. Union; Wis. Phen. Soc.; Am. Ecol. Soc.; Sigma Xi. Author: General Meteorology, 1947; Agricultural Meteorology, 1962; Bibliography of Agricultural Meteorology, 1962. Contbr. to: Jour. of App. Meteorol.; Proc. Am. Soc. for Hor. Sci.; Agron. Jour.; Ecol.; Food Packer; Jour. of Internat.

ometeorol. Areas of Rsch.: Application of Physical Laws and ysiological Principles in Environmental Studies; Projects on op Forecasting; Microenvironmental Studies and Analyses; op Response Studies; Farming Area Appraisal.

ANG, Shu-Yung (M.D.), Rsch. Assoc., Univ. of Ill.; Pvt. Pract., 25 E. 53rd St., Chicago, Ill. Home Add.: 4752 S. Kimbark Ave., Chicago, Ill. MAXILLO-FACIAL AND PLASTIC SURGERY; ORAL PATHOLOGY. b. China, July 15, 1915. s. C. S. and W. C. (Liu) W. Edn.: L.D.S., Natl. Central Univ. of China, 1939; M.B., ibid., 1942; M.S., Univ. of Mich., 1948; M.D., Univ. of Chicago, 1953. m. Lonny Myers, Oct. 23, 1949. c.: Sharon; Susan; Shiela; Sherwood; Sandra. Exp.: Clin. Asst., Natl. Central Univ. of China, 1942-44; Part-time Instr. and Resident, Univ. of Mich., 1945-48; Tchng. Fellow, Univ. of Chicago, 1948-55; Asst. Prof., ibid., 1955-1957, Rsch. Assoc., Univ. of Ill., 1957—, Mem.: Am. Med. Assn.; Am. Soc. of Maxillo-Facial Surgs. Areas of Rsch.: Maxillo-facial and Plastic Surgery; Oral Pathology.

ANIEK, Ralph Walter (Ph.D.), Dir. of Rsch. and Pres., Advanced netics, Inc., 1231 Victoria St., Costa Mesa, Calif. Home Add.: 3719 Ocean Blvd., Corona del Mar, Calif. PLASMA PHYSICS AND NUCLEAR PHYSICS. b. Milan, Italy, June 1, 1925. s. Victor and Josephine (Porzio) W. Edn.: Ph.D., Univ. of Vienna, Austria, 1950. m. Doris Kipper, 1953. c.: Alexander L. Exp.: Res. Fellow, Harvard Univ., 1950-55; Asst. Prof., Newton Coll., 1950-55; Sr. Physicist, Cambridge Electron Accelerator, Harvard-M.-I.T., 1955-58; Lectr., Boston Coll., 1955-58; Dir. of Res., Plasmadyne Corp., Santa Ana, Calif., 1958-60; Dir. of Res., Advanced Kinetics, Inc., Costa Mesa, Calif., 1960—. Mem.: Am. Inst. of Phys.; Am. Physical Soc.; Am. Geophysical Union; Sr. Mem. of Inst. of Radio Engrs.; Sr. Mem. of Am. Rocket

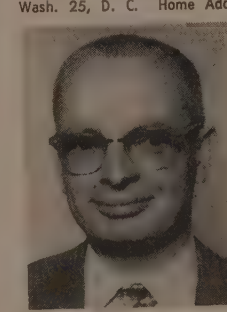
oc. Contbrng. Author: Conference on Extremely High Temperaures, 1958; Proceedings of the Congress of the International stronautical Federation, 1960. Contbr. to: Phys. Rev.; Phys. f Fluids; Rev. of Sci. Instruments; Nucleonics; Bull. of Am. hys. Soc.; Nuovo Cimento; Bull. Austrian Acad. of Scis.; Sci. m. Areas of Rsch.: Space Propulsion, High-Field Magnetism, hermonuclear Rsch., Solid State.

WANLESS, Harold Rollin (Ph.D.), Prof. of Geol., Univ. of Ill., Urbana, Ill. Home Add.: 704 S. McCullough St., Urbana, Ill. GEOLOGY SPECIALLY CONCERNED WITH INTERPRETATION OF LATE PALEOZOIC SEDIMENTARY ROCKS; GEOGRAPHIC EVOLUTION OF NORTH AMERICA DURING THAT TIME. b. Chicago, Ill., Dec. 5, 1898. s. William Frank and Rhoda Ellen (Tanner) W. Edn.: B.Sc., Princeton Univ., 1920; M.A., ibid., 1921; Ph.D., ibid., 1923. m. Grace Rogers, Aug. 7, 1926. c.: Harold Rogers. Exp.: Instr.; Assoc.; Asst. Prof.; Assoc. Prof.; Prof., Univ. of Ill., 1923—; Geol., Ill. State Geol. Survey, summers, 1925—; Prof., Univ. of Mich., summers, 1945, '47; Geol., WAE, U. S. Geol. Survey, 1954—; Sr. Fulbright Fellow, Sydney, Australia, 1958-59. Hon. Pos.: Pres., Ill. St. Acad. of Sci., 1937-38; Chmn., Geol. Dept., Univ. of Ill., 1946-47. Mem.: Geol. Soc. of Am.; Paleontol. Soc.; Am. Geophys. Union; Am. Soc. of Photogrammetry; Am. Assn. of Petroleum Geols.; Assn. of Geol. Teachers; A.A.A.S.; Soc. of Econ. Paleontol. and Mineral; Soc. of Vertebrate Paleontols.; Sigma Xi; Urbana Exchange Club. Author: Pennsylvania Geology of Part of Southern Appalachian Coal Field, 1946; Three Paleozoic and Mesozoic Rocks of Gros Ventre, Teton, Hoback, and Snake River Ranges, Wyoming, 1955; Geology and Mineral Resources of the Beardstown, Glassford, Havanna, and Vermont Quadrangles, Ill., 1957. Contbr. to: Bull. of Geol. Soc. of Am.; Bull. Am. Assn. of Petrol. Geols.; Jour. of Geol.; Jour. of Sedimentary Petrol.; Publication of Ill. St. Geol. Survey; Photogrammetric Acad. of Sci. Gen. Int.: Interpretation of Cyclical Sedimentation in the Coal Measures of the U. S. Areas of Rsch.: Geol. of Pa. Upper Carboniferous Rocks of U. S., Europe and Australia; Reconstruction of Distribution of Sedimentary Environments at Instance of Geol. Past; Interpretation of Ancient Sediments.

WANK, Gerald Sidney (D.D.S.), Dentist, One Hanson Pl., Brooklyn 17, N. Y. and 40 Bayview Ave., Great Neck, N. Y. Home Add.: 40 Bayview Ave., Great Neck, N. Y. DENTISTRY-PERIODONTIST, ORTHODONTIST; SPECIALIZING IN ORAL REHABILITATION. b. Brooklyn, N. Y., Jan. 20, 1925. s. Joseph and Sadie (Ikowitz) W. Edn.: B.A., N. Y. Univ., 1945; D.D.S., N. Y. Univ. Schl. of Dentistry, 1949; Cert. of Orthodontia, Columbia Univ. Schl. of Dental and Oral Surgery, 1951; Cert. of Periodontia, ibid., 1956. m. Gloria Baum, June, 1949. c.: David; Stephen; Daniel. Exp.: Interne, Bellevue Hosp., N.Y.C., 1949-50; Chf. of Oral Surgery, Craig A.F.B., Selma, Ala., 1953-55; Consultant, Mem. Orthodontic Panel, Dept. of Health, City of N. Y., 1951—; Consultant, Mem. Orthodontic Panel, Dept. of Health, State of N. Y., 1951—; Clinical Asst., N. Y. Univ. Dental Schl., 1956-57; Instr., Dept. of Periodontia and Oral Med., ibid., 1957—. Hon. Pos.: Patron, N. Y. Univ. Coll. of Dentistry. Mem.: Am. Acad. of Periodontol.; Scientific Rsch. Soc. of Am.; Northeastern Soc. of Periodontia; Am. Acad. of Dental Med.; Internatl. Acad. of Orthodontia; Am. Assn. of Endodontists; Am. Soc. of Anesthesiology; Pan-American Med. Assn.; Am. Dental Assn.; Alpha Omega; Mason; Century Club, N.Y.U. Dental Schl. Contbrng. Author: Practice of Periodontia, 1960. Contbr. to: Scientific Programs for First, Second, Tenth Dist., Dental Societies. Serv. Rec.: U.S.A.F., 1953-55. Gen. Int.: Post-Grad. Lectr., N.Y.U. Dental Schl., Dept. of Periodontia and Oral Med. Areas of Rsch.: Ortho-Periodontics; Periodontia and Endodontia.

WANTLAND, Wayne Warde (Ph.D.), Chmn., Div. of Sci., Ill. Wesleyan Univ., Bloomington, Ill. Home Add.: 110 E. Beecher, Bloomington, Ill. PARASITOLOGY. b. Sheridan, Ill., Sept. 5, 1905. s. Hosmer Vorhees and Elma Maude (Burgess) W. Edn.: B.S., Northwestern Univ., 1930; A.M., ibid., 1932; Ph.D., ibid., 1935. m. Edna Marie Lohmeyer, Aug. 19, 1928. c.: William Stanley. Exp.: Instr. Zoology, Northwestern Univ., 1935-38; Instr. Zoology, E. Ill. Univ., 1938-39; Co-Dir., Biol. Prog., Stephens Coll., 1939-42; Chmn., Div. Sci. and Prof. Biol., Ill. Wesleyan Univ., 1944—. Hon. Pos.: Fellow, Am. Coun. on Edn., Univ. of Chicago, 1940-41; Pres., Ill. St. Acad. of Sci., 1958-59. Mem.: Ill. St. Acad. of Sci.; Am. Soc. of Zoologists; Am. Soc. of Parasitologists; Soc. of Protozoologists; Internatl. Assn. Dental Rsch.; Natl. Soc. Med. Rsch.; Sigma Xi; Phi Kappa Phi; A. F. & A. M. Contbr. to: Jour. of Parasitology; Jour. of Dental Rsch.; Proc. of Soc. for Exptl. Biol. and Med.; Trans. Ill. Acad. of Sci.; Jour. of Lab. and Clin. Med.; Assn. of Am. Coll. Bull. Serv. Rec.: Lieut., U.S.N.R., 1942-44. Areas of Rsch.: Parasitology; Protozoology; Trichinosis; Cysticercosis Sarcoma of Liver; Parasitic Fauna of Hamster; Human Oral Protozoa.

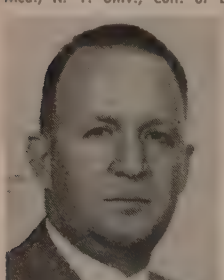
WARD, Alford Leroy (Ph.D.), Physicist, Diamond Ord. Fuze Labs., Wash. 25, D. C. Home Add.: 13611 Piney Meeting House Rd., Rockville, Md. GASEOUS ELECTRONICS. b. Rockville, Md., Aug. 14, 1919. s. Jesse Garnett and Orida Jane (King) W. Edn., B.S., Univ. of Md., 1949; Ph.D., ibid., 1954. Exp.: Rsch. Asst., Univ. of Md., College Park, Md., 1950-54; Physicist, Diamond Ordnance Fuze Lab., Wash., D. C., 1954—. Mem.: Am. Physical Soc.; A.A.A.S.; Natl. Geographic; Sigma Xi; Phi Kappa Phi; Sigma Pi Sigma. Contbr. to: Physical Review; Review of Sci. Instruments; Jour. of Optical Soc.; Bull. of Am. Physical Soc.; Proc. of 4th Internatl. Conf. on Ionization Phenomena in Gases. Serv. Rec.: A.U.S., 1941-46. Areas of Rsch.: Ionization Phenomena in Gases; Breakdown in Cold Cathode Gas Tubes; Cathode Fall Region of Glow Discharges.



WAPNER, Seymour (Ph.D.), Prof. and Chmn., Dept. Psychol., Clark Univ., 950 Main St., Worcester, Mass. Home Add.: 33 Scenic Dr., Worcester, Mass. PSYCHOLOGY. b. Brooklyn, N. Y., Nov. 20, 1917. s. Hyman and Rose (Liese) W. Edn.: A.B., Univ. Coll. of N. Y. Univ., 1939; M.A., Univ. of Mich. ,1940; Ph.D., ibid., 1943. m. Lorraine E. Gallant, June 4, 1946. c.: Jeffrey G.; Amy Beth. Exp.: Instr., Univ. of Rochester, 1943-46; Asst. Prof., Dept. Psychol., Brooklyn Coll., 1946-48; Assoc. Prof., Dept. Psychol., Clark Univ., 1948-55; Prof., ibid., 1955—; Chmn., Dept. Psychol., ibid., 1960—. Mem.: Am. Psycho. Assn.; Eastern Psychol. Assn.; Mass. Psychol. Assn.; Am. Assn. Adv. Sci.; Am.

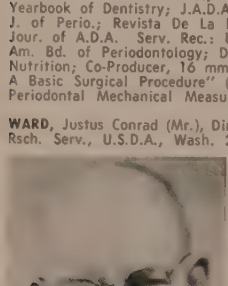
Statistical Soc.; Soc. for Psychol. Study of Soc. Issues; Am. Assn. of Univ. Profs.; Sigma Xi. Co-Author: Personality Through Perception, 1954; Perceptual Development, 1957. Co-Editor: Perspectives in Psychological Theory, 1960. Contbr. to: Psychol. Rev.; Jour. Exptl. Psychol.; Am. Jour. Psychol.; Psychol. Monographs; Jour. of Genetic Psychol.; Jour. of Gerontol.; Jour. of Personality; Jour. of Abnormal and Soc. Psychol. Areas of Rsch.: Perception; Development and Aging; Effects of Drugs on Behavior.

WARD, Howard Leon (D.D.S.), Asst. Prof. Periodontia and Oral Med., N. Y. Univ., Coll. of Dentistry and Pvt. Pract., 15 Bond St., Great Neck, L. I., N. Y. Home Add.: 35 Wensley Dr., Great Neck, N. Y. PERIODONTIA AND ORAL MEDICINE. b. July 24, 1921, N.Y.C. s. Edward M. and Min (Brenner) W. Edn.: B.A., Wash. Square Coll., 1946; D.D.S., N. Y. Univ., Coll. of Dentistry, 1949; Postgraduate, Tufts Univ., 1950; Postgraduate, Columbia Univ., 1951. m. Leona Auster, Aug. 8, 1946. c.: Richard Lee; Kenneth Andrew. Exp.: Asst. in Periodontia and Oral Med., N. Y. Univ., Coll. of Dentistry, 1949-52; Instr. in Periodontia and Oral Med., ibid., 1952-57; Asst. Clinical Prof., ibid., 1957-58; Asst. Prof., ibid., 1958—. Mem.: Am. Acad. of Periodontology; Am. Acad. of Dental Med.; Scientific



Rsch. Soc.; Northeastern Soc. of Periodontists; Am. Assn. of Univ. Prof.; Am. Soc. of Periodontists; Berkshire Assoc. in Periodontia and Oral Med.; Omicron Kappa Upsilon; Fellow, N. Y. Acad. of Dentistry; Fellow, Am. Coll. of Dentists; Fellow, Am. Assn. for the Adv. of Sci. Contbrng. Author: Textbook of Periodentia, 1943; The Practice of Periodontia, 1960. Contbr. to: Jour. of Dent. Med.; Dento-Med. Tapes; Dental World; Yearbook of Dentistry; J.A.D.A. Annals of Odontologia Jaliscience J. of Perio.; Revista De La Federacion Odontologia Colombiana; Jour. of A.D.A. Serv. Rec.: U. S. Army. Gen. Int.: Diplomate, Am. Bd. of Periodontology; Diplomate, Internatl. Bd. of Applied Nutrition; Co-Producer, 16 mm. color, sound film "Gingivectomy—A Basic Surgical Procedure" (in English and Spanish); Inventor, Periodontal Mechanical Measuring Probe; Clinician-Lectr.

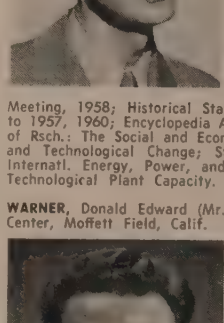
WARD, Justus Conrad (Mr.), Dir., Pesticides Regulation Div., Agric. Rsch. Serv., U.S.D.A., Wash. 25, D. C. Home Add.: 509 Faber Dr., Falls Church, Va. PHARMACOLOGY - PEST MAMMAL CONTROL. b. Pueblo, Colo., Oct. 27, 1898. s. Daniel and Sarah Elizabeth (Hume) W. Edn.: B.S., Univ. of Ill., 1920; M.S., Univ. of Colo., 1933. m. Myrtus Verne Edds, Oct. 2, 1921. c.: Nancy Joan Westland. Exp.: Chemist, Colo. St. Expt. Sta., Rocky Ford, Colo., 1922-28; Pharmacol., U. S. Biol. Survey, Fish and Wildlife Serv., Denver, Colo., 1928-48; Pharmacol., Pesticides Reg. Sect., Wash., D. C., 1948-55; Asst. Chief, ibid., 1955-57; Chief, Branch, ibid., 1957-62; Dir., Div., ibid., 1962—. Hon. Pos.: Interdeptl. Comm. on Pest Control; Sub-Comm. on Rodent Control OSRD-NRC; Panel on Pesticides, W.H.O.; Liaison Mem., Food Protection Com. NRC. Mem.: Soc. Exptl. Biol. and Med.; A.C.S.; A.P.H.A.; Am. Assn. for the Adv. of Sci.; Phi Lambda Upsilon; Rsch. Soc. of Am. Contbr. to: Jour. Am. Pub. Health Assn.; Jour. Am. Pharm. Assn.; Archives of Indust. Hygiene and Occupational Med. Serv. Rec.: U. S. Army, 1918. Areas of Rsch.: Pharmacology of Economic Poisons Used in Pest Mammal Control; Application Tests in Field and Formulation Development.



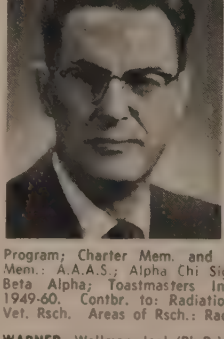
WARE, Lamar Mims (Mr.), Hd., Dept. of Hort., Auburn Univ., Auburn, Ala. HORTICULTURAL CROPS. b. Marshallville, Ga., Aug. 10, 1895. s. George Alva and Nettie (Moncrief) W. Edn.: B.S., Ala. Poly. Inst., 1917; M.S., ibid., 1926; Grad. Study, Mich. St. Coll. m. Mary Hall of Toomsboro, Ga., Sept. 20, 1922. d. W. A. Hall. c.: Lamar Moncrief; Mary Elizabeth; Frances Jenetta. Exp.: Instr., Auburn Univ., 1923-27; Prof. of Hort., Miss. St. Coll., 1928-30; Prof. of Hort., Ala. Poly. Inst., 1930-31; Auburn Univ., 1930-31; Hd., Dept. of Horticulture and Forestry, Auburn Univ., 1932-47; Hd., Dept. of Horticulture, ibid., 1947—. Hon. Pos.: Chmn., Southern Sect., Am. Soc. Hort. Sci.; Exec. Com., Am. Potato Assn.; Exp. Sta. Rep. on State Land Use Planning Com.; Hon. Life Mem. Ala. Forestry Coun.; Hon. Life Mem., Garden Club of Ala.; Recognition Plaque, Ala. Chapt., Soc. Am. Foresters; Bd. of Trustees, Helen Keller Fragrance Garden for Blind; Led in establishment of Forestry Dept., Ala. Poly. Inst.; Est. forestry rsch. units in Ala.; Subcom. Natl. Fertilizer Assn. Mem.: Am. Soc. Hort. Sci.; Am. Potato Assn.; Am. Pomological Soc.; Assoc. Mem., Soc. Am. Foresters; Ala. Acad. of Sci.; Forestry Comm.; State C. of C., Ala. Forestry Coun.; Phi Kappa Phi; Gamma Sigma Delta; Sigma Phi; Sigma Xi; Xi Sigma Pi; Kiwanis. Contbr. to: Prog. Farmer, Am. Potato Jour.; Am. Veg. Grower Jour. War Rec.: Lt., 167th Inf., 42nd Div., Chateau Thierry, St. Mihiel, Argonne, Sedan Gen. Int.: Organizing the Ala. State-Wide Forestry Rsch. System, Established Distinguished Tchng. Award in Sou. Sect. Am. Soc. Hort. Sci.; Est. Award Best Tchng. Paper Am. Soc. Hort. Sci.; Helped est. Degree Course in Forestry, Auburn Univ.; Named Man of Year in Serv. to Ala. Agri. by Prog. Farmer, 1959; Est. Award to Am. Soc. Hort. Sci. for Best Paper in Coll. Br.; Method of Bleaching Pecans; Method of Dehydration of Sweet Potatoes; Rsch. with Vegetables, including Fertilizers, Irrigation, Organic Materials, Nematode Control, and Culture. Special Work with Sweet Potatoes and Irish Potatoes; Developed Alayam Products.

WARD, Vernon Underhill, RFD, Durham, N. H. MARINE BIOLOGY, ECOLOGY. b. New York, N. Y., June 22, 1936. s. Thomas Paul and Winifred Vernon (Underhill) W. Edn.: B.A., Dartmouth Coll., 1957; Ph.D., Can. Univ., of N. H. m. Nancy Ann Newell, Aug 19, 1961. c.: Dean Underhill. Exp.: Sales and Engrng. Rep., Dir. of Mkt. Rsch., Special Electric Co., Milwaukee, Wis., 1958; Gen. Sci. Tchr., Locust Valley H. S., Locust Valley, N. Y., 1959; Hd., Lower Schl. Sci. Dept., McBurney Schl., New York, N. Y., 1959-60; Instr. of Biol., Hill Schl., Pottstown, Pa., 1960-62. Mem.: A.A.A.S.; Sigma Phi Epsilon. Areas of Rsch.: Viability of Chlorella after Freezing in Various Media.

WARING, John A(lfred) (Mr.), Rsch. Consultant, 4120-14th St., N.W., Wash. 5, D. C. GEO-TECHNOGRAPHY. b. San Francisco, Calif., Dec. 30, 1913. s. John A., Sr. (dec.) and Mary (Wheeler) W. Exp.: Rsch. Consultant, Industrial Coll. of the Armed Forces, Ft. Lesley J. McNair, Wash., D. C., 1958—; Lectr. on Energy, Technol., and Hist., Energy Inst. of the Am. Univ., Wash., D. C., 1960; Rsch. Cons., Natl. Planning Assn. PARM Project on Natl. Technological Capacity, 1961. Mem.: Soc. for the Hist. of Technol.; Am. Assn. Adv. of Sci.; Soc. for Am. Archaeol.; Wash. Hist. of Sci. Club. Contbrng. Author: Proc., Centennial of Engrng., 1952; Mid-Century Conf. on Resources for the Future, 1953; America's Needs and Resources—a New Survey, 1955; Trans. of World Power Conference, Canadian Sectional Meeting, 1958; Historical Statistics of the U. S. Colonial Times to 1957, 1960; Encyclopedia Americana, Vol. 22, 1961 ed. Areas of Rsch.: The Social and Economic Effects of Scientific Discovery and Technological Change; Statistical Surveys and Analyses of Internatl. Energy, Power, and Mineral Resources, and of World Technological Plant Capacity.



WARNER, Donald Edward (Mr.), Tech. Asst. to Dir., Ames Rsch. Center, Moffett Field, Calif. Home Add.: 13920 Ravenwood Dr., Saratoga, Calif. ZOOLOGY, MEDICINE, RADIOBIOLOGY. b. Plevna, Mont., May 24, 1915. s. George M. and Ruth Clarke (Wheeler) W. Edn.: B.S., Mont. St. Coll., 1935; Attended, Jefferson Med. Coll., Pa., 1936; San Francisco Theol. Sem., Calif., 1942. m. Jean C. Husband, Feb. 11, 1940. c.: Gail; David; Kim; Lucinda. Exp.: Dir., St. Bd. of Health, Helena, Mont., 1937-40; Hd., Dept. of Chem., Multnomah Coll., Ore., 1946-48; Mgr., Biol. Anal., Gen. Electric, Richland, Wash., 1948-60; Acting Dir., Div. Compl., A.E.C., Wash., D. C., 1960-61; Tech. Asst., Ames Rsch., N.A.S.A., Moffett Field, Calif., 1961—. Hon. Pos.: Pres., Kadlec Meth. Hosp. Bd.; Chmn., Columbia River Regional Blood



Program; Charter Mem. and Chmn., Session Westside U.P. Ch. Mem.: A.A.A.S.; Alpha Chi Sigma; A.C.S.; A.A.U.P.; Mason; Chi Beta Alpha; Toastmasters Internatl. Author: Classified AEC, 1949-60. Contbr. to: Radiation Rsch.; Endocrinology; Am. Jour. Vet. Rsch. Areas of Rsch.: Radiobiology, Rsch. Administration.

WARNER, Wellman Joel (Ph.D.), Prof. of Sociology and Anthropology, N. Y. Univ., 812 Stuart Ave., Mamaroneck, N. Y. SOCIOLOGY; ANTHROPOLOGY. b. Lyndonville, Vt., Jan. 13, 1897. s. George Andrew and Rose Mary (Monahon) W. Edn.: B.A., Geo. Wash. Univ., 1921; B.D., magna cum laude, Yale Univ., 1924; Certificate, Universite de Grenoble, France, 1919; Ph.D., London Schl. of Econ. and Polit. Sci., Univ. of London, 1929. m. Miriam Saint of N.Y.C., Nov. 26, 1930. d. Otto and Gertrude Smith Saint. c.: Wellman Joel, Jr.; Linda. Exp.: Staff, U. S. Civil Serv. Comm., Wash., D. C., 1915-16; Staff, U. S. Treasury Dept., Wash., D. C., 1919-21; Dir. of Field Work, Yale Divinity Schl., 1922-24; Prof. of Soc. Ethics, Ohio Wesleyan Univ., 1930-38; Prof. of Sociol., Chmn., Dept. of Soc. Sci., Dickinson Coll., 1938-46. Visiting Prof. of Sociology, Univ. of Sou. Calif., 1955; Prof.

ociol. and Hd. Dept., Grad. Schl. of Arts and Sci., N. Y. , 1946-59; Prof. of Sociol., Grad. Schl. of Arts and Sci., Y. Univ., 1959—. Hon. Pos.: Mem., Gen. Coun., Omicron Kappa, 1935-37; Sec. Am. Sociol. Soc., 1954-58; Chmn., rnatl. Com. on Grp. Psychotherapy, 1954-57; Consulting Ed., JP PSYCHOTHERAPY; Chmn., Internatl. Cong. on Grp. Psychoapy, 1954; Consulting Ed., SOCIAL PSYCHIATRY (London); Pres., Casa Materna Aid Soc.; Pres., Int. Cong. of Group hotherapy, Zurich, 1957; Chmn., Int. Coun. of Grp. Psychopy, 1957-62; Trustee, Fund for Rsch. and Edn., 1957-61; , Bd. of Trus., Moreno Inst., 1950—; Chmn. of Bd., Public Af- , Comm., Inc., 1957—; Editorial Bd., SOCIOMETRY, 1951-55; sory Ed., SOCIAL PROBLEMS, 1958—; Collaboratore, ACTA CHOTHERAPEUTICA (Suisse), 1957—; Mem., Academic Freedom m., Am. Civil Liberties Union, 1954—; Fellow, Am. Anthropol. .; Fellow, A.A.A.S.; Fellow, Am. Soc. Grp. Psychotherapy; ern Sociol. Soc.; Soc. for the Psychol. Study of Social Issues; ow, Am. Sociological. Author: The Wesleyan Movement in Industrial Revolution, 1930. Contbr. to: Various books and nals. War Record: Am. Exp. Forces, France, 1917-19. Gen. 1961 Merit Award, Eastern Sociological Soc. Areas of .: Social Psychology; Religion.

RNER, Francis J. (M.D.), Instr., Clin. Neurol., Temple Univ., . Schl., Philadelphia, Pa. and Consult., Neuro-Anat., Psychophysiol. Rsch. Lab., Vets. Admin. Hosp., Perry Point, Md. Home Add.: P. O. Box, 523, Philadelphia 5, Pa. NEUROPATHOLOGY; COMPARATIVE NEUROLOGY. b. Chicago, Ill., Oct. 3, 1897. s. Sam and Molly (Smith) W. Edn.: B.A., Sta. Univ. of Ia., 1922; M.A., Univ. of Mich., 1925; M.D., Loyola Univ. Med. Schl., 1919. Exp.: Lectr., Neuro-Anat., Univ. of Utah Med. Schl., 1946-48; Guest Investigator in Neuro-Anat., Univ. Coll., London, England, 1949-50 and 1954-55; Instr., Clin. Neurol., Temple Univ. Med. Schl., Pa., 1957-60; Instr., Clin. Neurol., Wayne Sta. Univ., 1960-61; Instr., Clin. Neurol., Temple Univ. and Consult., Neuro-Anat., Vets. Admin. Hosp., Md., 1—. Hon. Pos.: Dipl. in Neuro-pathol., Am. Bd. of Pathol., 2. Mem.: Sigma Xi; Am. Soc. of Zoolts.; Am. Assn. of ts.; Fellow, Am. Assn. for the Adv. of Sci.; Fellow, Zool. . of London; Am. Soc. of Ichthyolts and Herpetolts.; Anat. . of Great Brit. and Ireland; Fellow, Royal Soc. of Med., Lon- , Eng.; Am. Assn. of Neuropatholts.; Assn. for Rsch. in rvous and Ment. Dis.; Am. Psychiat. Assn.; Assoc. Mem., Am. d. of Neurol.; Ill. Sta. Acad. of Sci.; Camden Co., N. J. Med. .; Am. Med. Assn.; Phila. Neurol. Soc. Contbr. to: Jour. of rvous and Ment. Dis.; Procs. of Royal Soc. of Canada; Jour. Comp. Neurol. Areas of Rsch.: Neuropathology and Compara- e Neurology; Neuro-Embryology.

RREN, Leon Hugh (M.D.), Assoc., Clin. Invest. Dept., Rsch. s., Parke-Davis Co., Ann Arbor, Mich. Home Add.: 1220 W. Stadium, Ann Arbor, Mich. DIPLOMATE AMERICAN BOARD OF DERMATOLOGY: NEW DRUG INVESTIGATIONS. b. Augusta, Me., Apr. 16, 1903. s. Harry L. and Florence (Chaffin) W. Edn.: B.A., Colby Coll., 1926; M.D., Univ. of Pa., 1931; M.Sc., ibid., 1939; LL.B., Geo. Wash. Univ., 1954. m. Myrtle Lee, Dec., 1927. c.: Howard Lee; Constance Anne. Exp.: Acting Asst. Surg., Natl. Inst. Health, Bethesda, Md., 1938-41; Dermatologist, Pvt. Pract., Phila., Pa., 1945-51; Assoc., Div. Med. Sci., NAS-NRC, Wash., D. C., 1951-55; Exec., Parke-Davis Co., Ann Arbor, Mich., 1955—; Hon. Pos.: Mem., St. Bar of Mich., 1962—; Mem. Div. of Med. Scis., Natl. Acad. of Scis., Natl. Rsch.

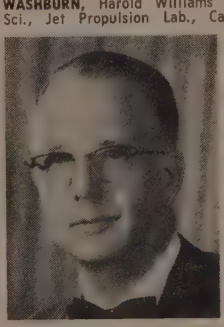
uncil, W. W. II. Mem.: Am. Coll. Physicians; Am. Med. Assn.; n. Assn. for the Adv. Sci.; Am. Acad. Dermatology; Soc. Inst. Dermatology; Am. Med. Writers Assn.; Chicago, Detroit and ila. Dermatol. Soc.; Phi Delta Theta; Alpha Kappa Kappa; ppa Phi Kappa. Author: Handbook of Skin Diseases, 1940. ntbr. to: Jour. Am. Med. Assn.; Arch. Dermatol.; Jour. Alrgy; Science; Pub. Health Rep.; Southern Med. Jour.; Ann. t. Med.; Jour. Appl. Phys. Serv. Rec.: U. S. Navy, 1931-36; U.S., Office of Army Surgeon General, 1941-45. Areas of ch.: Toxicology of Skin Irritants and Clinical Investigations Topical Medicaments.

ARREN, Percy Holmes (Ed.D.), Dean of the Coll., Prof. of Biol- y, Madison Coll., Harrisonburg, Va. BIOLOGY. b. Portsmouth, , Apr. 6, 1906. s. John Lloyd and Etta Lena (Minton) W. n.: B.S., Wm. and Mary, 1930; M.A., Columbia, 1940; Ed.D., id., 1952. m. Alberta Marie Parker of Portsmouth, Va., Mar. , 1927. d. Mary Ann and Millard Parker. c.: Nancy Jane; ary Virginia; Alberta Moran. Exp.: Instr. in Sci., Cape Charles, ., H. S., 1930-32; Prin., Independence, Va., H. S., 1933-34; str. in Sci., Portsmouth, Va., H. S., 1934-37; Prin., Cape harles, Va., H. S., 1937-42; Regional Supvr. of H. S., Va. State Dept. of Edn., 1942-44; Hd., Dept. of Biology, Dean of the Summer Session, Madison Coll., 1944; Dean of Coll., ibid., 1954 —. Mem.: A.A.U.P.; Va. Acad. of Sci.; Natl. Assn. for Rsch. in Sci. Tchng.; Natl. Sci. Tchrs. Assn.; N.E.A.; Va. Edn. Assn.; Am. Assn. of Biol. Tchrs.; Sigma Nu; Rotary; Mason; Shriner; Kappa Delta Pi; Phi Delta Kappa. Ed.D. Dissertation: The Preparation of Sci. Tchrs. at Madison Coll.

WARWICK, Constance Sawyer (Ph.D.), Astronomer, Natl. Bur. of Standards, Boulder, Colo. Home Add.: 3110 14th St., Boulder, Colo. SUN-EARTH RELATIONS. b. Lewiston, Me., June 3, 1926. d. William H. and Beatrice G. (Burr) Sawyer. Edn.: A.B., Smith Coll., 1947; A.M., Radcliffe, 1948; Ph.D., ibid., 1952. m. James W., 1947. c.: Sarah; David; Rachel. Exp.: Rsch. Asst., Harvard Coll. Observatory, 1954-55; Staff Mem., High Altitude Observatory, Boulder, Colo., 1955-58; Astronomer, Natl. Bur. of Standards, ibid., 1958—. Mem.: Am. Astronomical Soc.; Am. Geophysical Union; Phi Beta Kappa; Sigma Xi. Contbr. to: Astrophys. Jour.; Jour. Geophys. Rsch.; Astronomical Jour.; Jour. Atmospheric and Terrestrial Phys. Areas of Rsch.: Solar Flares, Solar-Terrestrial Relations; Solar Particle Emission.

WASE, Arthur William (Ph.D.), Hahnemann Med. Coll., Assoc. Prof., Phila., Pa.; Hd., Bionucleonics, Colgate Biol. Rsch., New Brunswick, N. J. Home Add.: 213 Valentine St., Highland Park, N. J. BIONUCLEONICS. b. Jersey City, N. J., Nov. 16, 1919. s. Charles L. and Martha (Francois) W. Edn.: B.A., Columbia Coll., 1947; Ph.D., Rutgers Univ., 1951. m. Jane Francy, Sept., 1940. c.: Peter Ives; Cheryl Louise. Exp.: Assoc. Prof., Hahnemann Med. Coll., Phila., Pa., 1951—; Hd. Nucleonics, Abbott Lab., N. Chicago, Ill., 1959-60; Hd., Bionucleonics, Colgate Biol. Rsch. Labs., New Brunswick, N. J., 1961—. Mem.: Am. Chem. Soc.; Am. Cancer Soc.; A.A.A.S.; Sigma Xi. Contbr. to: Arch. Biochem. and Biophysics; Jour. Biological Chem.; Nature; Acta Pharmac. et Toxicol.; Cancer Rsch.; Science. Serv. Rec.: A.U.S., 1940-45; Reserve, 1945-46. Areas of Rsch.: Nucleonics Applied to Biomedical Research.

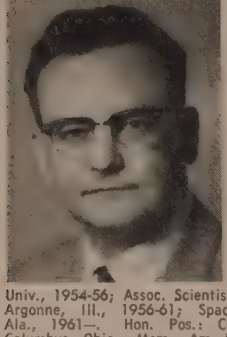
WASHBURN, Harold Williams (Ph.D.), Chief Experimental Space Sci., Jet Propulsion Lab., Calif. Inst. of Technol., 4800 Oak Grove Dr., Pasadena, Calif. MASS SPECTROSCOPY. b. Jacksonville, Ore., June 23, 1902. s. Elmer Edson and Bertha Abigail (Williams) W. Edn.: B.S., Univ. of Calif., Berkeley, 1924; S.M., Mass. Inst. of Tech., 1927; Ph.D., Univ. of Calif., Berkeley, 1932. m. Sigrid Paul, March 10, 1956. c.: Stephen Paul; David Williams. Exp.: Instr., Mass. Inst. of Technol., 1932-33; Chief Physicist, Western Geophys. Co., Los Angeles, Calif., 1934-37; Vice Pres. of Rsch., Consolidated Electrodynamics Corp., Pasadena, Calif., 1937-60; Chief, Expmtl. Space Sci. Jet Propulsion Lab., ibid., 1960—. Hon. Pos.: Chmn., Gordon Rsch. Conf. on Instrumentation, 1951. Mem.: Am. Phys. Soc.; Am. Soc. for Testing Materials; Am. Geophys. Union; Sigma Xi; Tau Beta Pi. Contributing Author: Physical Methods and Chemical Analysis, 1939. Contbr. to: Physical Rev.; Geophysics; Jour. of Applied Phys.; Analysical Chem.; Indus. and Engrng. Chem. Gen. Int.: Beckman Award in Chemical Instrumentation presented by the Am. Chem. Sos., 1956. Areas of Rsch.: Mass Spectroscopy and other physical methods and Chemical methods for analysis.



WASHINGTON, Warren Morton, (Mr.), Rsch. Asst., Dept. of Meteorol., Penn. St. Univ., University Park, Pa. Home Add.: Apt. 5-R, Grad. Circle, University Park, Pa. DYNAMIC METEOROLOGY, NUMERICAL WEATHER PREDICTION. b. Portland, Ore., Aug. 28, 1936. s. Edwin, Sr. and Dorothy Grace (Morton) W. Edn.: B.S. in Physics, Ore. St. Univ., 1958; M.S., Gen. Sci., ibid., 1960. m. La Rae Herring, July 30, 1959. c.: Teri Lyn. Exp.: Rsch. Mathematician, Stanford Rsch. Inst., 1959; Rsch. Asst., Atmospheric Sci. Br., Ore. St. Rsch. Inst., 1959-60; Grad. Asst., Dept. of Meteor., Penn. St. Univ., 1960-62; Rsch. Asst., ibid., 1962—. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; Alpha Phi Alpha; Sigma Xi. Areas of Rsch.: Dynamic Meteorology; Stratospheric Analysis; Numerical

Weather Analysis.

WASKO, Peter Edmund (Mr.), Space Scientist, N.A.S.A., Marshall Space Flight Ctr., Huntsville, Ala. Home Add.: 1030 Bayfield Dr., S.E., Huntsville, Ala. METEOROLOGY, PHYSICS, CHEMISTRY, PSYCHOLOGY. b. Ambridge, Pa., July 1, 1916. s. Justin and Agnes W. Edn.: B.S., Carnegie Inst. of Tech., 1934-38; M.A., Columbia Univ., 1939; M.S., N. Y. Univ., 1943; Grad. Study, Univ. of Chicago, 1953. m. Margaret Kubek, Jan. 22, 1941. c.: Sandra Jean; Linda Joan. Exp.: Meteorologist and Asst. Chf. of Weather, Pan-Am. World Airways, Inc., La Guardia Field, Flushing, N. Y., 1943-49; Asst. Chf., High Level Forecasting Br., Milit. Air Transportation Servs., Camps Springs, Md., 1950-52; Rsch. Asst. in Meteorology, Dept. of Meteorol., Univ. of Chicago, 1952-54; Rsch. Assoc. in Meteorology, Ohio St. Univ., 1954-56; Assoc. Scientist of Meteorol., Argonne Natl. Lab., Argonne, Ill., 1956-61; Space Scientist, N.A.S.A., Huntsville, Ala., 1961—. Hon. Pos.: Chmn. of Meteorol. Br. Meetings, Columbus, Ohio. Mem.: Am. Meteor. Soc.; Am. Geophys. Union; Rsch. Engrs. and Scientists Assn.; A.A.A.S.; Sigma Xi. Contbr. to: Bull. of Am. Meteor. Soc.; Photogrammetric Engrng.; Argonne Lab. Semi-Annual Reports; Air Weather Serv. Reports; Ohio St. Rsch. Found. Publ. Areas of Rsch.: Synoptic Meteorology, Micro-Meteorology, Aerophysics and Astrophys.



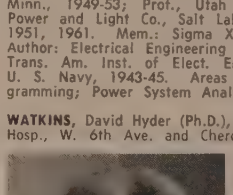
WASSERMAN, Fred (M.D.), Chief, Med. Serv., V.A. Hosp., Coral Gables, Fla. Home Add.: 8431 S.W. 29th St., Miami, Fla. INTERNAL MEDICINE. b. Norfolk, Va., Oct. 18, 1924. s. Fred and Frances (Sommers) W. Edn.: B.A., Univ. of Va., 1948; M.D., ibid., 1952. m. Lillian Mehalic, Nov. 19, 1953. c.: Fred; Frances; John; Janet. Exp.: Rsch. Fellow, Am. Heart Assn., Univ. of Pa., 1956-57; Instr. in Med., Univ. of Pa., 1956-57; Instr. in Card., Grad. Schl. of Med., ibid., 1956-57; Asst. Prof. of Med., Univ. of Miami Schl. of Med., 1957-59; Chief, Med. Serv., V.A. Hosp., Coral Gables, Fla., 1959—; Assoc. Prof. of Med., Univ. of Miami, 1959—. Mem.: Am. Fed. Clin. Res.; A.A.A.S.; Fellow, Am. Coll. Chest Phys.; Am. Med. Writers' Assn.; Fellow, Am. Coll. Card.; Am. Heart Assn.; Dipl., Am. Bd. Int. Med.; A.M.A.; Am. Coll. Phys.; Fla. Med. Assn.; Phi Beta Kappa; Sigma Xi; Physiological Soc. of Phila. Contbr. to: Arch. Int. Med.; Annals of Internal Med.; Circ.; N. England Jour. Med.; V. A. Rsch. Proc. Am. Jour. Surg. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Cardiovascular Diseases.

WATERMAN, Willoughby C. (Ph.D.), Prof., Brooklyn Coll., Brooklyn 10, N. Y. Home Add.: Port Byron, N. Y. SOCIOLOGY. b. Conquest, N. Y., Nov. 17, 1888. s. Cyrus and Mary R. (Swift) W. Edn.: A.B., Syracuse Univ., 1915; M.A., Columbia Univ., 1918; Ph.D., ibid., 1932. m. Nellie B. King, June 12, 1920. Exp.: Exec. Secy. Comm. of 20 (Social Hygiene), Utica, N. Y., 1920-22; Res. Dir., Babcock Center, Buffalo, N. Y., 1922-23; Asst. Prof., Syracuse Univ., 1923-28; Instr., Hunter Coll., 1928-30; Instr., Brooklyn Coll., 1930-36; Asst. Prof., ibid., 1936-42; Assoc. Prof., ibid., 1942-50; Prof., ibid., 1950—; Emer., 1958—; Chmn., Dept. of Sociol., ibid., 1943-50; Fulbright Lectr., Univ. of Philippines, 1951-52. Mem.: Am. Sociol. Soc.; Eastern Sociol. Soc.; Alpha Kappa Delta; Pi Gamma Mu; Rural Sociological Soc.; Am. Acad. of Polit. and Soc. Sci.; Rotary. Author: Prostitution and Its Repression in New York City, 1932. Co-Author: Principles of Social Legislation, 1932. Contbr. to: Social Forces; Philippine Sociological Rev.; Am. Sociological Rev. War Record: U. S. Navy, 1918-19. Areas of Rsch.: Rural Social Problems; Criminology; Prison Administration; Rural Town Planning.

WATKINS, Dale Baxter (M.D.), Chf. of Dermatol., U. S. Naval Hosp., Key West, Fla.; Consultant in Dermatol. and Allergy, Monroe Co. Hosp., Key West, Fla. Home Add.: 3435 Riviera Dr., Key West, Fla. DERMATOLOGIST, ALLERGIST, INTERNIST. b. Chinook, Mont., June 9, 1914. s. Dale Baxter and Elsie Morrow (Laughton) W. Edn.: B.S., Univ. of Minn., 1940; M.D., ibid., 1943. m. Celia Justina Cross., Oct. 15, 1944. c.: Wendy Ann; Diane Grace; Dale Baxter, III. Exp.: Interne, St. Luke's Hosp., Duluth, Minn., 1942-43; Interne, Minn. Gen. Hosp., Mpls., Minn., 1943-44; Staff, U. S. Naval Hosp., 1944; Anesthesiologist, U. S. Fleet Hosp. No. 103, Guam, 1945; Post-Grad. Trng., U. S. Naval Hosp., Bethesda, Md., 1946; Staff, ibid., Corona, Calif., 1946-47; Staff, ibid., San Diego, Calif., 1947-49; Sr. Med. Officer, U.S.S.J.C. Breckenridge, San Francisco, Calif., 1949-50; Staff, U. S. Naval Hosp., Oakland, Calif., 1950-51; Rsch., Walter Reed Army Hosp., Wash., D. C., 1951-52; Hd., Dept. of Med., U. S. Naval Hosp., Pensacola, Fla., 1952-53; Chf. of OPC and Cons. in Med. and Allergy, Tripler Army Hosp., Honolulu, Hawaii, 1953-55; Staff, U. S. Naval Hosp., Phila., Pa., 1955-58; Tchng. Fellow, Hahnemann Med. Coll., 1956-57; Grad. Trng., Grad. Schl., Univ. of Pa., 1957-58; Chf. of Dermatol., U. S. Naval Hosp., Key West, Fla., 1958—. Hon. Pos.: Chmn., Libr. Comm. and Trng. Comm., U. S. Naval Hosp., Key West Fla. Mem.: Am. Coll. of Physicians; Am. Acad. of Dermatol; Soc. of Investigative Dermatologists; A.A.A.S.; Am. Geriatr. Soc.; Internatl. Soc. of Tropical Dermatol.; Am. Genetic Assn.; Am. Inst. of Biological Sci.; Am. Federation of Clin. Rsch.; Am. Soc. of Tropical Med. and Hyg.; Internatl. Leprosy Assn.; A.M.A. Assn. of Milit. Dermatologists; Assn. of Milit. Surgeons; U. S. Naval Inst.; Soc. for the Study of Evolution; Phi Beta Pi; Chi Psi; Key West Players; Community Concert Assn. Contbr. to Jour. A.M.A.; Circulation; A.M.A. Arch. of Dermatol.; Jour. Chronic Disease; Armed Forces Med. Jour.; Naval Med. Bull.; Indian Jour. Dermatol. and Venereol.; Bull., Assn., Milit. Dermatologist. Serv. Rec.: See Positions. Areas of Rsch.: Histochem. and Biochem. of Melanogenesis Nevocarcinoma, and Pigmented Dermatoses; Pityriasis Alba as a Manifestation of Atopic Dermatitis; Transmission of Viral Disease in Tattoos; Selenium Sulfide in the Mgmt. of Tinea Versicolor; Trafuril in Creeping Eruption; Evolution, Embryol., Natural Selection and Congenital Malformation.

WATKINS, Bruce O. (Ph.D.), Prof., Utah St. Univ., Logan, Utah. Home Add.: 1019 N. 5 E., Logan, Utah. ELECTRICAL ENGINEERING. b. La Clede, Mo., Sept. 25, 1912. s. Earl O. and Helen E. (Cope) W. Edn.: B.S.E.E., Arizona Univ., 1934; E.E., ibid., 1947; M.S.E.E., Univ. of Mo., 1949; Ph.D., Univ. of Minn., 1954. m. Vera K. Jeppesen, August 25, 1952. c.: Bruce O., Jr.; James; Patricia; Sharon. Exp.: Engr., Rural Elect. Adm., Washington, D. C., 1936-37, 1938-43, 1945-46; Instr., Univ. of Minn., 1949-53; Prof., Utah St. Univ., 1953—; Engr., Utah Power and Light Co., Salt Lake City, Utah, summers, 1955-57, 1951, 1961. Mem.: Sigma Xi; Tau Beta Pi; Phi Kappa Phi. Author: Electrical Engineering Fundamentals, 1958. Contbr. to Trans. Am. Inst. of Elect. Engrs.; Elect. World. Serv. Rec.: U. S. Navy, 1943-45. Areas of Rsch.: Digital Computer Programming; Power System Analysis; Feedback Control Systems.

WATKINS, David Hyder (Ph.D.), Dir., Surgical Servs., Denver Gen. Hosp., W. 6th Ave. and Cherokee St., Denver 4, Colo. Home Add.: 650 Madison St., Denver 6, Colo. THORACIC AND CARDIOVASCULAR SURGERY. b. Denver, Colo., Nov. 26, 1917. s. David Milroy and Mary (Hyder) W. Edn.: A.B., Univ. of Colo., 1937; M.D., ibid., 1940; Ph.D., Univ. of Minn., 1949. m. Lucile Maxine Pingel, 1941. c.: John David Hyder; Bryan David Pingel. Exp.: Prof. of Surg., Univ. of Colo., 1955—; Chief, Surg. Servs., Denver Gen. Hosp., Cherokee, Denver, Colo., 1951-61; Dir., Surg. Servs., ibid., 1961—. Mem.: Am. Assn. for Thoracic Surgery; Soc. of Univ. Surg.; Central Surg. Assn.; Western Surg. Assn.; Southwestern Surg. Assn.; Am. Coll. of Cardiology; Am. Coll. of Chest Physicians; Societe Internationale de Chirurgie; Am. Geriatric Soc.; Am. Heart Assn.; Alpha Omega Alpha; Phi Beta Kappa; Sigma Xi; Univ. Club. Contbr. to Jour. of Thoracic and Cardiovascular Surg.; Surgery; Archives of Surg.; Surg., Gynecology and Obstetrics; Am. Surgeon; Jour. de la Societe Internationale de Chirurgie; Langenbecks Archiv fur Klinische Chirurgie; Jour. of Applied Phys. Areas of Rsch.: Studies of Ischemia, Shock, and Their Management; Myocardial Function; Physiology and Treatment of the Failing Heart; Thoracic and Cardiovascular Surgery.



WATKINS, Leslie Virginia (Miss.), Exec. Secy., Science Clubs of Am., 1719 N Street, N.W., Washington 6, D. C. Home Add.: 1616 16th St., N.W., Apt. 807, Washington 9, D. C. BIOLOGY AND PHYSICS. b. Botetourt Co., Va., Apr. 25, 1921. d. William A., Sr. and Lillian (Wilkinson) W. Edn.: A.B., Roanoke Coll., 1942. Exp.: Tchr., Andrew Lewis H. S., Salem, Va., 1946-57; Tchr., Wm. Fleming H. S., Roanoke, Va., 1958-60; Exec. Secy., Science Club of Am., Washington, D. C., 1960—. Mem.: A.A.A.S.; Va. Acad. of Sci.; Chesapeake Sect., Am. Assn. Physics Tchrs.; Nat. Sci. Tchrs. Assn. Areas of Rsch.: Secondary Science Education; Science Youth Activities.

WATSON, Alfred Nelson (Ph.D.), Vice Pres., U. S. Rubber, Rockefeller Center, New York, N. Y. Home Add.: 54 Hereford Rd., Bronxville, New York. STATISTICS. b. Columbus, Ohio, Nov. 22, 1910. s. Alexander Livingston and Adaline (Kershner) W. Edn.: B.S., Ohio St. Univ., 1931; M.A., ibid., 1932; Ph.D., ibid., 1934; LL.B., Franklin Univ. Schl. of Law, 1955. m. Elizabeth Dixon, Sept. 15, 1934. c.: Keith Stuart; Andrew Graham. Exp.: Statistician, U. S. Govt., 1934-37; Soc. Sci. Rsch. Counc. Fellow in Statistics, Univ. of London, Eng., 1937-38; Statistician, U. S. Govt., 1938-39; Asst. Treasurer, Budget Director, Curtis Pub. Co., Philadelphia, Pa., 1940-52; Bus. Consultant, Attorney-at-Law, 1953-58; Vice Pres., Alfred Politz Research, Inc., New York City, 1958-61; V.Pres., U. S. Rubber Co., ibid., 1961—. Fellow, Amer. Statistical Assn.; Am. Assn. Adv. Sci. Mem.: Am. Marketing Assoc. (Dir., 1962—) Amer. Bar Assn.; Sigma Xi. Serv. Rec.: U.S.A.F. Major, Rsch. and Statistics, Hdqrs. Air Transport Command, Wash., D. C., 1943-45.

WATSON, Bruce Frederick (Mr.), Meteorologist, Gen. Elect. Co., Missile and Space Division, Box 8555, Philadelphia, Pa. Home Add.: 123 Concord Circle, King of Prussia, Pa. METEOROLOGY. b. Eau Claire, Wis., Dec. 1, 1932. s. Bruce Emerson and Agatt (Korger) W. Edn.: B.S., Univ. of Wis., 1954. m. Louis

iciello, Aug. 16, 1958. c.: Bruce Robert; Frank Joseph. : Meteorologist, USASRDL, Evans Areas, Belmar, N. J., 1956- Meteor., Tele-Dynamics Div., Am. Bosch Arma Corp., Philaia, Pa., 1959-61; Meteor., Gen. Electric Co., Missile and e Division, King of Prussia, Pa., 1961—. Mem.: Am. eorol. Soc.; Am. Geophys. Union; Am. Assn. Adv. Sci.; Upper on Jr. C. of C.; Upper Merion Civic Coun. Contbr. to: itherwise; Proc. Weather Radar Conf. Serv. Rec.: U. S. Army, 4-56. Areas of Rsch.: Mesometeorology.

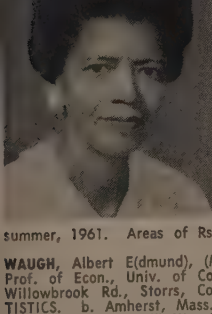
TSON, George Howard (Ph.D.), Pres. and Scient. Dir., Lan- er Fdtn. for Scient. Rsch., 90 No. Oakland, Pasadena, Calif. ie Add.: 1111 Heatherside Rd., Pasadena, Calif. PHYSIOLOGI- PSYCHOLOGY, BIOCHEMISTRY, NUTRITION. b. Denver, Colo., 5, 1912. s. Charles S. and Mary Louise (Parks) W. Edn.: , Univ. of Calif., Berkeley, 1941; Ph.D., Univ. of So. Calif., 8. m. Marilyn Mattox, 1948. Exp.: Mudd Fellow in Philos., v. of So. Calif., Los Angeles, Calif., 1946-47; Mudd Postdoc. ow in Philos. of Sci. and Psychol., ibid., 1947-48; Asst. f. of Philos., ibid., 1948-53; Assoc. Prof., ibid., 1953-56; h. Dir., Kalash Labs., 1956-61; Pres. and Scient. Dir., The icaster Fdtn. for Scient. Rsch., 1961—. Mem.: Am. Assn. for Adv. of Sci.; Am. Philos. Soc.; Am. Soc. of Nutrn.; Phi Beta ppa; Phi Kappa Phi. Contbr. to: Jour. of Gen. Psychol.; ir. of Psychol.; Brit. Jour. for the Philos. of Sci.; The Per- alist; Psychol. Reports. Serv. Rec.: U. S. Naval Reserve, 42-45. Areas of Rsch.: Nutritional Biochemistry, Mental ness, Psychological Theory.

TSON, James D. (Dr.), Biologist, Harvard Univ., Cambridge, ss.

TSON, William Harold, Jr. (Ph.D.), Assoc. Prof., Dept. of em., Tex. Christian Univ., Fort Worth, Tex. Home Add.: 5716 Wedgworth, Ft. Worth, Tex. PHYSICAL CHEMIST; CRYSTAL STRUCTURE AND SURFACE CHEMISTRY. b. Houston, Tex., Sept. 2, 1931. s. William H. and Olga Elizabeth (Brinkman) W. Edn.: B.A., Rice Univ., 1953; Ph.D., ibid., 1958. m. Marjorie Montague, Aug. 18, 1956. c.: Cheryl Beth; Craig Montague. Exp.: Asst. Prof., Tex. Christian Univ., 1957-60; Assoc. Prof., ibid., 1960—. Mem.: Am. Chem. Soc.; Am. Phys. Soc.; Am. Crystallographic Assn.; Sigma Xi. Contbr. to: Acta Crystallographica; Jour. of Applied Physics; Jour. of Polymer Sci.; Jour. Am. Chem. Soc. Areas of Rsch.: X-Ray Crystal Structure Analysis; Surface Chemistry, Organic Semiconductors.

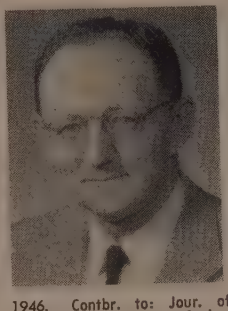
WATTON, George (Mr.), Asst. Chief, Seattle Lab., Nat. Bur. of tds., Seattle, Wash. Home Add.: 3823 S. W. Willow St., eattle 6, Wash. QUALITY CONTROL, CHEMISTRY. b. Seattle, Wash., Apr. 13, 1918. Edn.: Chem. Engr., Univ. of Wash., 1944. Exp.: Asst. Chief, Seattle Lab., Natl. Bur. of Stds., Seattle, Wash., 1948—. Hon. Pos.: Staff Adv. Group, Reg. Emer. Coord., Region 8, Dept. of Commerce. Mem.: A.A.A.S.; I.S.A.; Am. Chem. Soc.; ASTM. Serv. Rec.: U. S. Army Med. Dept., 1944-46. Areas of Rsch.: Analysis Mineral Products; Quality Control.

WATTS, Johnnie H. (Ph.D.), Rsch. Assoc., Carver Fdn., Tuskegee nstitute, Ala. Home Add.: 211 Gregory Pl., Apt. 6, Tuskegee Inst., Ala. NUTRITION. b. Atlanta, Ga., Feb. 26, 1922. d. John D. and Theresa Louise (Young) Hines. Edn.: B.S., Spelman Coll., 1941; M.S., Columbia Univ., 1946; Ph.D., Univ. of Chicago, 1952. c.: Darielle Louise. Exp.: Instr., Washington H. S., Atlanta, Ga., 1941-45; Instr., Sou. Univ., La., 1947-48; Prof., Tuskegee Inst., 1952—. Mem.: Sigma Xi; Beta Kappa Chi; Am. Assn. Adv. Sci.; Inst. of Food Technol.; Am. Dietetics Assn.; Am. Inst. of Nutrition. Contbr. to: Jour. Nutrition; Food Rsch.: Jour. Am. Dietetic Assn.; Jour. Agric. and Food Chem. Gen. Int.: Special Fellow, Natl. Inst. Health, 1958-59; Fellow, Organization for European Economic Cooperation, summer, 1961. Areas of Rsch.: Amino Acid Nutrition.

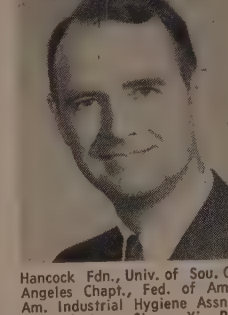


WAUGH, Albert E(dmund), (Mr.), Acad. Vice Pres. and Provost, Prof. of Econ., Univ. of Conn., Storrs, Conn. Home Add.: 12 Willowbrook Rd., Storrs, Conn. ECONOMIC THEORY AND STATISTICS. b. Amherst, Mass., Sept. 28, 1902. s. Frank Albert and Mary Alice (Vail) W. Edn.: B.S., Mass. Agric. Coll., 1924; M.S., Conn. Agric. Coll., 1926; Adv. Study, Univ. of Chicago, 1931-32; 1941-42. m. Edith H. Stewart, June 26, 1926. c.: John S.; Robert E.; Dan H. Exp.: Faculty, Univ. of Conn., 1924—; Dean, Coll. of Arts and Scis., ibid., 1945-50; Acad. Vice Pres. and Provost, ibid., 1950—. Hon. Pos.: Trustee, Windham Comm. Hosp.; Dir., Willimantic Trust Co.; Mem. Conn. Hist. Soc.; Dir., Conn. Soc. for Medical Rsch.; Dir., Conn. Higher Edn. Asst. Corp. Mem.: Am. Econ. Assn.; Am. Statistical Assn.; Econ. Soc.; Kappa Sigma; Phi Kappa Phi. Author: Elements of Statistical Method, 1938; Statistics Laboratory Manual and Tables, 1938; Principles of Economics, 1947. Areas of Rsch.: Distribution of Wealth and Income; Sun Dials.

WAWZONEK, Stanley (Ph.D.), Prof., Dept. of Chemistry, Univ. of Iowa. Home Add.: 1301 Spruce St., Iowa City, Iowa. ORGANIC CHEMISTRY. b. Valley Falls, R. I., June 23, 1914. s. John and Sophie (Krol) W. Edn.: B.S., Brown Univ., 1935; Ph.D., Univ. of Minn., 1939. m. Marian L. Matlock, Sept. 2, 1943. c.: Ann Elizabeth; Lucile Kay; Mary Louise. Exp.: Chemist, Univ. of Minn., 1939-40; Natl. Rsch. Council, Fellow, Univ. of Ill., 1940-41; Instr., ibid., 1941-43; Instr., Univ. of Tenn., 1943-44; Asst. Prof., Univ. of Iowa, 1944-47; Assoc. Prof., ibid., 1949-52; Prof., ibid., 1952—. Hon. Pos.: Chmn., Electro-Organic Div., Electro-Chem. Soc. Mem.: Am. Chem. Soc.; Electro-Chem. Soc.; A.A.A.S.; Alpha Chi Sigma; Sigma Xi; Phi Lambda Upsilon. Author: Laboratory Manual of Organic Chemistry, 1946. Contbr. to: Jour. of the Am. Chem. Soc.; Jour. of Organic Chem.; Jour. of the Electro-Chem. Soc. Gen. Int.: Recipient of Iowa Award. Areas of Rsch.: Organic Polarography; Organic Synthesis and Medicinal Chemistry.



WAYNE, Lowell Grant (Ph.D.), Rsch. Coordinator, Allan Hancock, Fdn., Univ. of Sou. Calif., Los Angeles 7, Calif. Home Add.: 3292 Grand View Blvd., Los Angeles 66, Calif. PHOTOCHEMISTRY, CHEMICAL KINETICS; INDUSTRIAL HYGIENE. b. Washington, D. C., Nov. 27, 1918. s. Glenn L. and Bonnie Jean (Leming) W. Edn.: B.S., Univ. of Calif., 1937; Ph.D., Calif. Inst. Tech., 1949. m. Martha Lee Dolson, June, 1942. c.: Garth Lee; Randall Rush. Exp.: Fellow, Mellon Inst. for Industrial Rsch., Pittsburgh, Pa., 1948-52; Sr. Physical Chem., Stanford Rsch. Inst., Stanford, Calif., 1953-54; Assoc. Indust. Hygiene Engr., Univ. of Calif., Los Angeles, Calif., 1954-56; Photochemist, Air Pollution Control Dist., Los Angeles, Calif., 1956-61; Sr. Analyst, ibid., 1961-62; Rsch. Coordinator, Allan Hancock Fdn., Univ. of Sou. Calif., 1962—. Hon. Pos.: Chmn., Los Angeles Chapt., Fed. of Am. Scientists, 1956. Mem.: A.A.A.S.; Am. Industrial Hygiene Assn.; Air Pollution Control Assn.; Rsch. Soc. of Am.; Sigma Xi; Pi Mu Epsilon. Co-Author: Gasoline Composition and the Control of Smog, 1961. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Chem. Physics; Jour. of Phys. Chem.; Jour. of Occupational Med.; Proc., Internatl. Symposium on Chem. Reactions in the Lower and Upper Atmospheres. Serv. Rec.: U.S.N.R., 1942-46. Areas of Rsch.: Photochemistry of Urban Atmospheres; Kinetics of Gas Reactions, Homogeneous and Heterogeneous; Environmental Health.



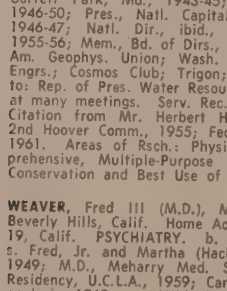
WEATHERFORD, Allen Ericson, II (Ph.D.), Chmn., Dept. of Physical Edn. and Recreation, N. C. Coll., Durham, N. C. Home Add.: Breezy Heights, Box 212, Raleigh, N. C. ANTHROPOLOGY; ANATOMY; PHYSIOLOGY. b. Charlottesville, Va., Mar. 25, 1907. s. Thomas Garfield II and Cornelia (Tonsler) W. Edn.: Hampton Inst., 1934; M.Ed., Springfield Coll., 1936; M. Phys. Edn., ibid., 1943; Ph.D., Pa. St. Univ., 1948; Postdoctoral Study at Harvard Univ., and at the Univ. of Conn. m. Rebecca Christmas, 1941. c.: Allen Ericson, III; Cornelia Tonsler, II; Thomas Garfield, III; Peter Michael Karpovich; Rebecca Christmas, II; Sequoyah Rhinehardt. Exp.: Principal, Bladenboro Jr. H. S., Bladenboro, N. C., 1934-36; Dir., Health and Physical Edn., Bishop Coll., Marshall, Tex., 1936-37; Dir., Health and Phys. Edn., St. Augustine's Coll., Raleigh, N. C., 1937-45; Dir. of Recreation, Raleigh, N. C., 1946-47; Rsch. Asst., Grad., Pa. St. Univ., 1947-48; Dir. of Physical Edn. and Recreation, N. C. Coll., 1948—. Hon. Pos.: Mem. of N. C. Recreation Comm. and Rsch. Asst. in Inst. for Social Rsch. on Special Projects, Univ. of N. C. Mem.: Phi Delta Kappa; A.A.A.S.; Am. Coll. of Sports Med.; Natl. Rsch. Coun.; Am. Assn. of Health Physical Edn. and Rec.; Natl. Rec. Assn.; Alpha Kappa Delta; Delta Alpha Delta; Sigma Delta Psi; Alpha Phi Alpha; Raleigh YMCA; City Civic League, Raleigh; Laymen's League, Raleigh. Contbr. to: Fact Finding Report; A Digest of Children and Youth. Gen. Int.: AAPER Fellow; FACSM Fellow; Gerontology Fellow. Areas of Rsch.: Social Gerontology; Cultural Anthropology.

WEAVER, Carl Harold (Ph.D.), Assoc. Prof., Univ. of Md., College Park, Md. Home Add.: 3216 Toledo Pl., Hyattsville, Md. COMMUNICATION, PSYCHOLOGY. b. Allen County, Ohio, Oct. 15, 1910. s. William and Della (Simmons) W. Edn.: B.A., Bluffton Coll., 1936; M.A., Ohio St. Univ., 1950; Ph.D., ibid., 1957. m. Vera Anderson, 1934. c.: Garry L.; Kennard R.; Douglas A. Exp.: Lectr., Wright-Patterson A.F.B., Ohio, 1949-55; Rsch. Asst., Ohio State Univ., 1957; Asst. Prof., Central Mich. Univ., 1957-61; Assoc. Prof., Univ. of Md., 1961—. Hon. Pos.: Exec. Secy., Natl. Soc. for the Study of Communication, 1959-61. Mem.: Am. Psychol. Assn.; Natl. Soc. for the Study of Communication; Speech Assn. of Am.; Pi Delta. Contbr. to: Jour. of Appl. Psychol.; Jour. of Edn. Psychol.; Jour. of Communication; Speech Tchr.; Speech Monographs; Jour. of Developmental Reading; Jour. of Speech and Hearing Therapy; Jour. of Speech and Hearing Rsch.; Clearing House. Areas of Rsch.: Social Psychology, Interpersonal Communication, Human Speech.

WEAVER, Frank Lloyd (Mr.), Consulting Engr., Garrett Park, Md. Home Add.: 10800 Keswick St., Garrett Park, Md. MULTIPLE PURPOSE DEVELOPMENT OF RIVER BASINS IN CONNECTION WITH HYDROELECTRIC POWER. b. Washington, D. C., July 21, 1891. s. Lloyd Everett and Mary Ellen (Ragan) W. Edn.: B.C.E., Univ. of Mich., 1913. m. 1st Lois Campbell Douglas (dec.), Sept. 18, 1915. m. 2nd Elizabeth Petrie Defandorf, Nov. 7, 1931. c.: Lois W. Spinks; Frank L., Jr., M.D.; Charles R. Exp.: Instr. in Civ. Engrng., Univ. of Okla., 1913-14; Instr. in Civ. Engrng., Johns Hopkins Univ., 1915-17; Consulting Engr., Clarence W. Hubbell, Detroit, Mich., 1920-34; Chief, Div. of River Basins, Fedl. Power Comm., Washington, D. C., 1934-61; Consulting Engr., Garrett Park, Md., 1961—; Power Consultant, Brazil, 1962, US-AID. Hon. Pos.: Mem., Vestryman and sometime Sr. Warden, Christ Episcopal Ch., Kensington, Md., 1945—; Mem., Grosse Ile, Mich. Planning and Dev. Comm., 1920-25; Mayor, Garrett Park, Md., 1943-45; Pres., Kensington Md. Fire Bd., 1946-50; Pres., Natl. Capital Sect., Am. Soc. of Civ. Engrs., 1946-47; Natl. Dir., ibid., 1950-52; Natl. Vice Pres., ibid., 1955-56; Mem., Bd. of Dirs., Engrs. Joint Coun., 1959-64. Mem.: Am. Geophys. Union; Wash. Soc. of Engrs.; Am. Soc. of Civ. Engrs.; Cosmos Club; Trigon; Sigma Xi; Tau Beta Pi. Contbr. to: Rep. of Pres. Water Resources Polcy Comm.; Papers presented at many meetings. Serv. Rec.: U. S. Army, W. W. I. Gen. Int.: Citation from Mr. Herbert Hoover for Notable Contribution to 2nd Hoover Comm., 1955; Fed. Power Comm. Dist. Serv. Award, 1961. Areas of Rsch.: Physical and Economic Aspects of Comprehensive, Multiple-Purpose Development of River Basins, for Conservation and Best Use of Water Resources.

WEAVER, Fred III (M.D.), Med. Doctor, Specialty, Psychiatry, Beverly Hills, Calif. Home Add.: 1826 Virginia Rd., Los Angeles 19, Calif. PSYCHIATRY. b. Wheeling, W. Va., July 19, 1927. s. Fred, Jr. and Martha (Hackney) W. Edn.: B.S., N. C. Coll., 1949; M.D., Meharry Med. Schl., 1955; Completed Psychiatric Residency, U.C.L.A., 1959; Cand. in: The L. A. Inst. for Psychoanalysis, 1962. m. Mildred Waters, Jan. 31, 1952. c.: Wanda; Fred IV; Haywood; Milton. Exp.: Clin. Instr., Univ. of Calif. at Los Angeles Med. Coll., 1959—; Consultant, Los Angeles Dept. of Mental Hyg., Calif. Bd. of Edn., 1959—; Private Practice, Beverly Hills, Calif., 1961—. Mem.: A.P.A.; Natl. Med. Assn.; Am. Acad. of Sci.; Am. Acad. of Psychotherapy; So. Calif. Psych. Soc.; So. Calif. Med. Assn.; L. A. Soc. for Child Psychiatry; Omega Psi Phi. Author: One Universal Existence, 1961. Contbr. to: Jour. Experimental and Clinical Psychopathology; Psychosocial Aspects of Racial Prejudice. Serv. Rec.: Capt., U.S.A.R., 1959. Areas of Rsch.: Child Psychiatry; Integration of Evolutionary Factors, in Disciplines Dealing with Human Existence and Development.

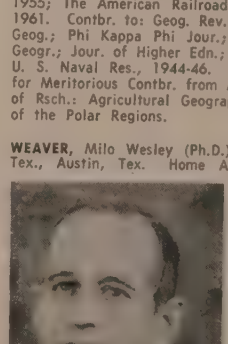
WEAVER, Harry M. (Ph.D.), Vice-Pres. for Rsch. and Devel., Schering Corp., Bloomfield, N. J. Home Add.: 158 Fells Rd., Essex Fells, N. J. ANATOMY; RESEARCH ADMINISTRATION. b. Lancaster, Ohio, Mar. 20, 1909. s. Harry and Lulu Alice (Fiske) W. Edn.: B.A., Ohio State Univ., 1935; M.Sc., ibid., 1936; Ph.D., ibid., 1938. m. Jane Warner Schofield, 1956. c.: Carl Phillip; (Step-Children), Edward W. Schofield; Patricia J. Ascheries. Exp.: Grad. Tchg. Asst., Dept. of Anatomy, Ohio State Univ., Coll. of Med., 1935-38; Instr., Dept. of Anatomy, Wayne Univ. Coll. of Med., Detroit, Mich., 1938-42; Asst. Prof. Dept. of Anatomy, ibid., 1942-44; Sr. Admin. Asst. and Asst. Prof. of Anatomy, ibid., 1944-46; Dir. of Rsch., Natl. Foundation for Infantile Paralysis, New York, N. Y., 1946-53; Special Consultant on Rsch., Am. Cancer Soc., Inc., New York, N. Y., 1954-55; Admin. for Rsch., ibid., 1955-57; Vice-Pres., for Rsch., ibid., 1957-61 Vice Pres. for Rsch. and Devel., Schering Corp., Bloomfield, N. J., 1961—. Mem.: Am. Med. Writers Assn; Sigma Xi; A.A.A.S.; Am. Assn. of Anatomists; Am. Pub. Health Assn.; N. Y. Acad. of Sci.; N. Y. State Public Health Assn; Royal Soc. of Health, England. Contbr. to: Am. Jour. Obst. and Gynec.; Jour. A. Am. Med. Coll.; Jour. of Med. Edn.; Public Health Reports; Acta, Unio Internationalis Conra Cancrum.



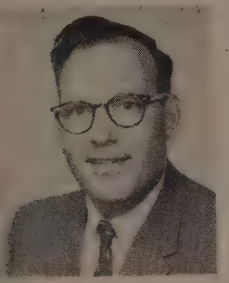
WEAVER, Jeremiah William (Ph.D.), Mgr. of R&D Lab., Cone Mills Corp., 1112 Maple St., Greensboro, N. C. Home Add.: 1816 St. Andrew's Rd., Greensboro, N. C. ORGANIC CHEMISTRY. b. New Orleans, La., Sept. 29, 1916. s. Colonel and Mary E. (Reel) W. Edn.: B.S., Loyola Univ., 1938; M.S., Univ. of Detroit, 1940; Ph.D., Tulane Univ., 1953. m. Bernadette Doscher, 1944. c.: William C.; Margaret M.; John F.; Barbara A. Exp.: Chemist, U.S.D.A., New Orleans, La., 1945-55; Supervisory Chemist, ibid., 1955-56; Rsch. Chem., Koppers Co., Verona, Pa., 1956-60; Mgr. R.&D. Lab., Cone Mills Corp., Greensboro, N. C., 1960—. Hon. Pos.: Cotton Collaborator, U. S. Dept. Agric. SRRL, New Orleans; Rsch. Adv., Textile Rsch. Inst., Princeton, N. J. Mem.: A.C.S.; A.A.A.S.; Am. Assn. Textile Chem. and Colorists; Textile Rsch. Inst. Contbr. to: Jour. Am. Chem. Soc.; Textile Rsch. Jour.; Am. Dyestuff Reporter; Jour. Organic Chem.; Industrial and Engrng. Chem.; Jour. Polymer Sci.; Applied Microbiology; Forest Products Jour. Serv. Rec.: U.S.N.R., 1942-45. Areas of Rsch.: Chemical and microbiological properties of cellulose. Metabolism of wood-destroying fungi. Chemical processing of wood. Chemical Fininshing of Cotton Textiles. Textile Research.

WEAVER, John C. (Ph.D.), Vice Pres. for Rsch. and Dean of Grad. Coll., St. Univ. of Ia., Iowa City, Ia. Home Add.: 127 Grove St., Ia. City, Ia. GEOGRAPHY. b. Evanston, Ill., May 21, 1915. s. Andrew Thomas and Cornelia (Carrier) W. Edn.: B.A., Univ. of Wis., 1936; M.A., ibid., 1937; Ph.D., ibid., 1942. m. Ruberta Louise Harwell, Aug. 8, 1940. c.: Andrew Bennett; Thomas Harwell. Exp.: Lectr., Wis. St. Coll., summers, 1939-40; Rsch. and Ed. Staff, Am. Geographical Soc. of N. Y., 1940-42; Staff, Div. of Geog. and Cartog., U. S. Dept. of St., 1942-44; Asst. Prof., Univ. of Minn., 1946-47; Assoc. Prof., ibid., 1947-48; Prof., ibid., 1948-55; Chmn., Dept. of Geog., ibid., 1954-55; Dean, Coll. of Arts and Scis., Kans. St. Univ., 1955-57; Dean of Grad. Coll., Univ. Rsch. Adminr. Prof., of Geog., Univ. of Nebr., 1957-61; Vice-Pres. for Rsch., Dean of Grad. Coll., Prof. of Geog., St. Univ. of Ia., 1961—. Hon. Pos.: Expert Cons., Comm. on Geog. and Geophys., Rsch. and Dev. Bd., Natl. Mil. Est., Wash., D. C.; Rsch. Cons., Midwest Barley Improve. Assn.; Chmn., Natl. Rsch. Coun. Com. on Geog.; Adv. to Office of Naval Rsch.; Exec. Comm., Coun. of Assn. of Am. Geographers; Chmn., Pub. Comm., ibid.; Ed. Bd., Annals, ibid., Comm. on Coll. Tchng., Am. Coun. on Edn.; Chmn., Coun. of Grad. Schls. in the U. S., 1961-62; Exec. Comm., Assn. of Grad. Schls., Assn. of Am. Univs.; Exec. Comm., Div. of Grad. Study, Govn. Senate, Assn. of Land Grant Colls. and St. Univs.; Chmn., Exec. Comm., Mid. Am. St. Univ. Assn., Comm. Adv. to Secy. of Health, Edn. and Welfare. Mem.: Assn. of Am. Geogrs.; Am. Geog. Soc. of N. Y.; Am. Polar Soc.; A.A.A.S.; Arctic Inst. of N. Am. (Char. Mem.); Phi Beta Kappa; Sigma Xi; Phi Kappa Phi; Delta Sigma Rho; Phi Eta Sigma; Chi Phi; Rotary. Author: American Barley Production: A Study in Agricultural Geography, 1950; A Statistical World Survey of Commercial Production: A Geographic Sourcebook, 1950; World Resource Statistics: A Geographic Sourcebook, 1953, 1955; The American Railroads, 1958; Minnesota and Wisconsin, 1961. Contbr. to: Geog. Rev.; Ann. Assn. of Am. Geogrs.; Econ. Geog.; Phi Kappa Phi Jour.; Jour. of Am. Dietic Assn.; Profl. Geogr.; Jour. of Higher Edn.; Grad. Jour.; Edn. Rec. Serv. Rec.: U. S. Naval Res., 1944-46. Gen. Int.: Rec. Natl. Rsch. Award for Meritorious Contbr. from Assn. of Am. Geogrs., 1955. Areas of Rsch.: Agricultural Geography and Geography and Geography of the Polar Regions.

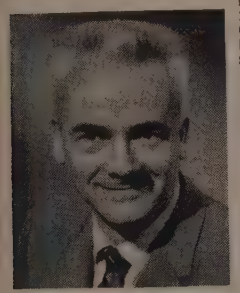
WEAVER, Milo Wesley (Ph.D.), Assoc. Prof. of Math., Univ. of Tex., Austin, Tex. Home Add.: 1600 W. 38th, Austin, Tex. MATHEMATICS. b. Lufkin, Tex., Feb. 16, 1913. s. H. M. and Eva (Huffman) W. Edn.: B.A., Univ. of Tex., 1935; M.A., ibid., 1952; Ph.D., ibid., 1956. m. Jessie Athene McGirk, 1934. c.: Shirley; Billy; Gary; Sharon; Mike. Exp.: Tchr., Jasper Pub. Schls., Jasper, Tex., 1933-34; Tchr., Austin Pub. Schls., Austin, Tex., 1935-45; Instr. to Assoc. Prof. of Math., Univ. of Tex., 1945—. Hon. Pos.: Tex. Chmn. M.A.A. Math. Contest, 1962; Asst. Dir., Saudi Arabian Trng. Project, Univ. of Tex. Mem.: M.A.A., Tex. Acad. Sci.; Phi Beta Kappa; Sigma Xi. Co-author: Introduction to Arithmetic Factorization and Congruences from the Standpoint of Abstract Algebra, 1958. Contbr. to: Math. Mag.; Pacific Jour. of Math.; The Am. Math. Monthly. Serv. Rec.: U. S. Army, 1945. Gen. Int.: Education of Saudi Arabian Foreign Students in America. Areas of Rsch.: Semigroups, Semirings, Number Theory.



WEAVER, Robert John (Ph.D.), Prof. of Viticulture and Viticulturist, Dept. of Viticulture and Enology, Univ. of Calif., Davis, Calif. Home Add.: 662 Elmwood Drive, Davis, Calif. PLANT PHYSIOLOGY. b. Lincoln, Nebr., Sept. 23, 1917. s. John Ernst and Martha (Hasse) W. Edn.: A.B., Univ. of Nebr., 1939; M.S., ibid., 1940; Ph.D., Univ. of Chicago, 1946. m. Lucinda Jean Fraser, Oct. 7, 1951. c.: Jeanne Ellyn; Martha Helen. Exp.: Plant Physiologist, Fort Detrick, Md., 1944-46; Asst. Prof., Bot., Univ. of Chicago, 1946-48; Asst. Viticulturist, Dept. of Viticulture and Enology, Univ. of Calif., Davis, Calif., 1948-52; Assoc. Viticulturist, ibid., 1952-58; Prof. of Viticulture, Viticulturist, ibid., 1958—. Hon. Pos.: Editorial Associate, Journal of Enology and Viticulture; Senior Fulbright Rsch. Scholar to Superior Coll. of Agriculture, Dept. of Viticulture, Athens, Greece, 1956. Mem.: Am. Soc. Hort. Sci.; Am. Soc. Plant Physiologists; Botany Soc. Am.; Am. Soc. Enology; A.A.A.S.; Sigma Xi; Phi Beta Kappa; Gamma Alpha; Delta Upsilon. Contbr. to: Proc. Am. Soc. Hort. Sci.; Botanical Gazette; Plant Physiology; Hilgardia; Nature; Sci.; Jour. of Enology and Viticulture; Econ. Botany. Serv. Rec.: U. S. Army Reserve Officer on Active Duty, 1942-46, Lt. Col., Reserve. Areas of Rsch.: Plant Growth Regulators; Physiology of Berry Growth, Effects of Auxins and Gibberellins on Vine and Fruit Development, Carbohydrate Nutrition of the Grape Vine.



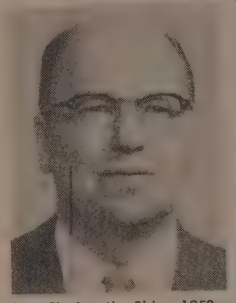
WEBB, Wells Alan (Mr.), Sr. Chem., Rsch. and Devel., Program Manager, ARPA Contract, Hexcel Products, Inc., 2332 4th St., Berkeley 10, Calif. Home Add.: 2733 Derby St., Berkeley 5, Calif. CHEMISTRY; ENGINEERING. b. Brooklyn, N. Y., Dec. 25, 1906. s. Oliver and Eliza (Horton) W. Edn.: B.S., Univ. of Calif., 1933; M.S., ibid., 1936. m. 1st: Catherine Janes, 1930. 2nd: Phoebe Ann Erickson, 1945. c.: Robert; Nancy; Louis; John; William; Louise. Exp.: Inventor, Marchant Calculating Machine Co., Emeryville, Calif., 1928-30; Chem. Engr., Vacu-Dry Co., Oakland, Calif., 1932-34; Rsch. Chem., Union Oil Co., Oleum, Calif., 1935-36; Sr. Rsch. Chem., Shell Devel. Co., Emeryville, Calif., 1936-44; Consultant, Self Employed, San Francisco, Calif., 1945-50; Chem. Engr., Vacuum Cooling Co., San Francisco, Calif., 1950-56; Sr. Chem., Hexcel Products, Inc., Berkeley, Calif., 1957—. Mem.: Am. Chem. Soc.; Am. Rocket Soc.; A.A.A.S.; Am. Astronautical Soc.; Astronomical Soc. Pac.; Am. Ceramic Soc.; Am. Ordnance Assn. Author of: Mars, The New Frontier, 1956. Contbr. to: Chem. and Engr. News; Ind. Engr. Chem.; Anal. Ed.; Sci.; Ind. Refrigeration; Fruit and Vegetable Rev.; Food Ind.; Pub. Astronomical Soc. Pac.; Scientific Monthly; Proc. Am. Astronautical Soc. Gen. Int.: Am. Astronautical Soc. Meeting "Considerations Affecting Design of Mars Probe," 1960, Seattle, Wash.; Paper read: "Mars as an Object of Exploration and Settlement," 1961, Wash., D. C., First Bioastronautics Session, Internatl. Fed. Cong.; Topol. Anal. of Martian Canal Network Pattern; Hist. of Mars Canal Rsch. Areas of Rsch.: Petroleum Products; Vacuum Cooling, and Dehydration; Propellant Rsch.: Astronautics; Honeycomb Structures for Use in Space.



WEBER, George (M.D.), Prof. of Pharmacology, Ind. Univ. Schl. of Med., Indianapolis, Ind. Home Add.: 7307 Lakeside Dr., Indianapolis 78, Ind. ENZYMOLOGY; NEOPLASIA; BIOCHEMICAL PHARMACOLOGY; HORMONES. b. Budapest, Hungary, Mar. 29, 1922. s. Salamon and Hajnalka (Arvai) W. Edn.: B.A., Queen's Univ., Can., 1950; M.D., C.M., ibid., 1952. m. Catherine Forrest, June 30, 1958. c.: Elizabeth Dolly Arvai. Exp.: Fellow, National Cancer Inst. of Can., Univ. of Br. Columbia, 1952-53; Sr. Fellow, Cancer Rsch. Soc., Montreal Cancer Inst., 1952-58; Hd., Dept. of Path. Chem., ibid., 1956-59; Assoc. Prof. of Biochem. and Microbiol., Ind. Univ. Schl. of Med., 1959-60; Assoc. Prof. of Pharmacol., ibid., 1960-61; Prof., ibid., 1961—; Cancer Coordinator of Basic Rsch., 1962—. Mem.: Fellow, Royal Soc. of Med.; Am. Cancer Assn.; N. Y. Acad. Scis.; Can. Biochem. Soc.; Can Physiol. Soc.; Can. Soc. Clin. Investigation; Soc. Exptl. Biol. and Med.; Am. Physiol. Soc.; Sigma Xi. Contbr. to: Jour. Biol. Chem.; Advances in Cancer Rsch.; Biochem. and Biophysics Rsch. Communications; Jour. Natl. Cancer Inst.; Cancer Rsch.; Am. Jour. Physiol.; Endocrinology, Biochim. Biophys. Acta; Vitamins and Hormones; Exptl. Cell Rsch.; Metabolism; Jour. Nutrition; Science; Acta Unio Contra Cancrum. Areas of Rsch.: Metabolism; Enzymology; Neoplasia; Radiation Biology; Hormones; Biochemical Pharmacology.

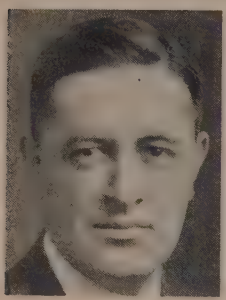
WEBBER, Laurance Edmund (Mr.), Rsch. Prof., Assoc. Dir., Univ. of N. Hamp. Engrng. Expt. Station, Durham, N. H. Home Add.: 53 Rochester St., Berwick, Me. MECHANICAL ENGINEERING. b. Berwick, Me., Mar. 21, 1913. s. Ernest E. and Ethel (Wallingford) W. Edn.: B.S., Univ. of N. H., 1934; M.E., ibid., 1940; M.S., ibid., 1946. Exp.: Mech. Inspector, Kidder Press Co., Dover, N. H., 1934-37; Instr. to Rsch. Prof., Assoc. Dir., Univ. of N. Hamp. Engrng. Expt. Station, 1937—. Mem.: Am. Soc. of Mech. Engrs.; Am. Assn. of Univ. Profs.; Nat. Soc. of Prof. Engrs.; N. H. Soc. of Prof. Engrs.; Am. Assn. of Cost Engrs.; Taxpayers Assn.; League of N. H. Arts and Crafts; A.A.A.S. Contbr. to: Power; Can. Mun. Jour.; Am. City. Areas of Rsch.: Electric Kilns and Furnaces.

WEBER, George Russell (Ph.D.), Rsch. Microbiologist, Rsch. Div., U. S. Industrial Chemicals Co., 1275 Section Rd., Cincinnati 37, Ohio. Home Add.: 1525 Burney Lane, Cincinnati 30, Ohio. MICROBIOLOGY. b. Novinger, Mo., Dec. 29, 1911. s. William and Celia Iciphene (Helton) W. Edn.: B.S., Univ. of Mo., 1935; Ph.D., Ia. State Univ., 1940. m. Margaret Cable, April, 1947. c.: Jeanine Marie; Michael Elwin. Exp.: Asst. Chemist, Exp. Sta., Missouri, 1935-36; Fellow, Iowa State Univ., 1936-38; Asst. Bacteriolst., Ia. State Univ., Ia., 1938-40; Instr., ibid., 1940-42; Bacteriologist, U. S. Pub. Health Serv., Cincinnati, Ohio, 1946; Sr. Asst. Scientist, ibid., 1947-49; Scientist, ibid., 1949-53; Chf., Sanitizing Agents Unit, ibid., 1951-53; Rsch. Microbiologist, Rsch. Div., U. S. Industrial Chem. Co., Cincinnati, Ohio, 1953—. Hon. Pos.: Rsch. Chmn., Natl. Chinchilla Breeders of Am.; Ky. Branch; Pres., Greater Cincinnati Chinchilla Breeders; Vice Pres., Am. Soc. of Profl. Biologists, 1958-59. Mem.: Fellow, Am. Pub. Health Assn.; Am. Soc. for Microbiology; N. Y. Acad. of Sci.; Royal Soc. of Health, London; Inst. of Food Tech.; Rsch. Soc. of Am.; Am. Soc. of Profl. Biologists; Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Alpha Zeta. Contbr. to: Am. Jour. of Pub. Health; Jour. of Bacteriology; Pub. Health Reports; Industrial Research Reports. Serv. Rec.: A.U.S., 1942-46; Res., 1957—, Lt. Col. Gen. Int.: Received Army Citataion for Food Poisoning Control, 1946. Areas of Rsch.: Sanitary and Food Bacteriology; Germicidal Efficiency of Hypochlorites; Chloramines and Quaternary Ammonium Compounds; Antibiotics; Fermentations; Yeast Hybridization; Ruminant and Chinchilla Nutrition.



WEBSTER, Burnice Hoyle (M.D.), Diseases of the Chest, 420 Mid-St. Med. Ctr., Nashville 3, Tenn. Home Add.: Valley Brook Rd., Nashville 12, Tenn. THORACOLOGY. b. Leeville, Tenn., Mar. 3, 1910. s. Thomas Jefferson and Martha Anna (Melton) W. Edn.: B.A., Vanderbilt Univ., 1936; M.D., ibid., Schl. of Med., 1940. m. Georgia Kathryn Fogleman, May 6, 1939. c.: Brenda Kathryn; Phillip Hoyle; Adrienne Elise. Exp.: Assoc. in Med., Vanderbilt Med. Schl., 1943—; Attending Staff, St. Thomas, Baptist, Nashville Gen. Hosps., 1943—; State Ednl. Dir., Tenn. Muscular Dystrophy, 1955-57; Med. Consultant, Tenn. Muscular Dystrophy, 1957—; Pres., Baptist, 1948; Pres., Protestant Hosp., 1947; Prof. of Anat., Gupton-Jones School of Mortuary Sci., 1941-43; Consultant, John A. Gupton Schl. of Mortuary Sci., 1947—; Episcopal Lay Reader, 1957-61; Vestry, Church of Advent, 1959-60; Dir. of Brotherhood of St. Andrew, 1958-60; Warden, Church of Transfiguration, 1959-61. Hon. Pos.: Bd. of Dirs., Am. Cancer Soc.; Bd. of Dirs., Tenn. Cancer Soc.; Consultant, Veterans Admin.; Co-Chmn., Every-Member Canvas, Church of Advent, 1958; Church Repr. for Scout Troop 245, 1958. Mem.: Nashville Acad. of Med.; Davidson County Med. Soc.; Tenn. Med. Assn.; Am. Med. Assn.; Sou Med. Assn.; Tenn. Thoracic Soc.; Am. Trudeau Soc.; Am. Thoracic Soc.; Am. Coll. of Chest Physicians; Sou. Chapter, Am. Coll. of Chest Physicians; Tenn. Heart Assn.; Am. Heart Assn.; N. Y. Acad. of Sci.; Phi Beta Kappa; Reserve, U. S. Pub. Health Serv.; A.A.A.S. Contbr. to: Am. Rev. Tbs. et Pulm.; Modern Med.; Dis. of Chest; Am. Jour. Trop. Med.; Jour. Am. Geriatrics Soc.; Yearbook of Radiology; Am. Jour. Diabetes; Tuberculology. Serv. Rec.: U. S. Pub. Health Serv., Reserve Officer. Areas of Rsch.: Rsch. Dealing with Parasitic and Fungus Diseases of the Lung; Changes in Fungi Following Multiple Animal Passages; and Pathogenic Mutation.

WEBER, Harold Christian (D.Sc.), Prof. of Chem. Engr., Mass. Inst. Tech., Cambridge, Mass. Home Add.: 67 Vose Hill Rd., Milton, Mass. CHEMICAL ENGINEERING; THERMODYNAMICS. b. Boston, Mass., Mar. 20, 1895. s. Christian and Ellen (Arnold) W. Edn.: B.Sc., Mass. Inst. of Tech., 1918; D.Sci., Swiss Federal Inst., 1935. Exp.: Prof. Chem. Engr., Mass Inst. of Tech., Cambridge, Mass., 1921—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engr.; Elect. Soc.; A.A.A.S.; Am. Acad. of Arts and Sci.; Sigma Xi; Tau Beta Pi. Co-Author: Thermodynamics for Chemical Engineering, 1951. Serv. Rec.: A.U.S., 1918-19. Gen. Int.: Received Presidential Certificat of Merit, 1947; Cert. of Achievement, U. S. Army, 1957. Areas of Rsch.: Thermodynamic - Industrial Processes Electronics.



WEBSTER, Harold Frank (Ph.D.), Physicist, General Electric Rsch. Lab., Schenectady, N. Y. Home Add.: 77 St. Stephens Lane W., Scotia 2, N. Y. ELECTRON PHYSICS. b. Buffalo, N. Y., June 25, 1919. s. Stephen and Florence K. (Frank) W. Edn.: B.A., Univ. of Buffalo, 1941; M.A., ibid., 1944; Ph.D., Cornell Univ., 1953. m. Helen Voorhis, Sept., 1951. c.: Sue Helen; Kenneth Harold. Exp.: Staff Mem., Mass. Inst. Tech. Radiation Lab., Cambridge, Mass., 1943-45; Tchng. and Rsch. Asst., Cornell Univ., Ithaca, N. Y., 1945-51; Physicist, G. E. Rsch. Lab., Schenectady, N. Y., 1951—. Hon. Pos.: U. S. Delegate, 13th General Assembly, URSI, London, 1960. Mem.: Am. Physical Soc.; Inst. of Radio Engrs.; A.A.A.S.; Phi Beta Kappa; Sigma Xi; Gamma Alpha. Contbrng. Author: Advances in Electronics and Electron Physics, 1962. Contbr. to: Jour. of Applied Physics; Trans. of Profl. Group on Electron Devices. Gen. Int.: Winner of W.R.G. Baker Award, of the I.R.E., 1958. Areas of Rsch.: Microwave Waveguides and Mixers, Microwave amplifiers, Thermionic Emission, Electron Beam Dynamics, Thermionic Energy Conversion.

WEBSTER, John C(ross) (Ph.D.), Supervisory Rsch. Psychologist, USN Electronics Lab., San Diego 52, Calif. Home Add.: 1804 Diamond St., San Diego 9, Calif. AUDIOLOGY (SPEECH & HEARING). b. Runnells, Ia., Feb. 23, 1920. s. Harry Newton and Merle (Winegar) W. Edn.: B.A., State Univ. of Iowa, 1941; M.A., ibid., 1943; Ph.D., ibid., 1953. m. Mary Bryant, May 26, 1945. c.: John Bryant; Thomas Harry; William James; Charles Robert; Daniel Harold. Exp.: Radio Engr. Inst., A.A.F. Communications Schl., Yale Univ., 1942-44; Acoustic Rsch. Engr., CG Conn Ltd., Elkhart, Ind., 1944-46; Rsch. Psychol., USN Electronics Lab., San Diego, Calif., 1947—. Hon. Pos.: Natl. Sci. Found., Sr. Post Doctoral Fellow, Cambridge Univ., 1959-60. Fellow: Acoustical Soc. of Am.; Fellow: Amer. Speech & Hearing Assn. Mem.: Amer. Psychol. Assn.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Acoustical Soc. of Amer.; Jour., Speech and Hearing Rsch.; Jour. of Speech and Hearing Disorders; Jour., Audio Engrng. Soc.; Proc., Music Tchrs. Natl. Assn. Areas of Rsch.: Acoustical Properties of Musical Wind Instruments, Group Hearing Tests and Hearing Surveys, Voice Message Reception in Competing Message Situations, Voice Communications in High Level Noise.

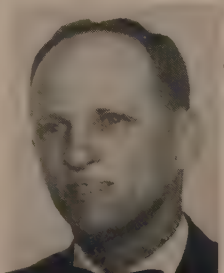
WEBSTER, Paul Vincent (Mr.), Tchr., Biol. Dept., Bryan H. Schl., Bryan, Ohio. Home Add.: 107 Newdale Dr., Bryan, Ohio. SCIENCE EDUCATION. b. Mechanicsburg, Ohio, Jan. 4, 1924. s. Rush Earle and Grace (Starkey) W. Edn.: B.A., Ohio Sta. Univ., 1949; B.S., ibid., 1950; M.A., ibid., 1953. Exp.: Tchr., Biol. Dept., Bryan H. Schl., 1951—. Hon. Pos.: Pres., Natl. Assn. of Biol. Tchrs.; Bd. of Dirs., Am. Nature Study Soc. Mem.: N.A.-B.T.; N.S.T.A.; A.N.S.S.; Ohio Acad. of Sci.; N.E.A.; O.E.A.; Phi Kappa Sigma; Kappa Phi Kappa Contbr. to: Am. Biol. Tchr. Serv. Rec.: U. S. Army, 1943-46.

WEDEL, Waldo R(udolph), (Ph.D.), Curator of Archeology, U. S. National Museum, Washington 25, D. C. Home Add.: 5432 30th Place, N.W., Washington 15, D. C. NORTH AMERICAN ARCHEOLOGY. b. Newton, Kans., Sept. 10, 1908. s. Peter J. and Lena A. (Krehbeil) W. Edn.: B.A., Univ. of Ariz., 1930; M.A., Univ. of Nebr., 1931; Ph.D., Univ. of Calif., 1936. m. Mildred Ingram Mott, Aug., 1939. c.: Waldo Mott; Frank Peter; Linda Margaret. Exp.: Archeologist, Nebr. State Hist. Soc., Lincoln, Nebr., 1936. Asst. Curator of Arch., U. S. Natl. Museum, Smithsonian Inst. Washington, D. C., 1936-40; Assoc. Curator, ibid., 1940-49 Curator, ibid., 1950—. Mem.: Soc. for Am. Arch.; A.A.A.S.; Am Anthropological Assn.; Anthropol. Soc. of Wash.; Mo. Arch Soc.; Kans. Anthropological Assn.; Kans. Acad. of Sci. Author Prehistoric Man on the Great Plains, 1961; An Introduction to Kansas Archeology, 1959; Archeological Investigations in Platte and Clay Counties, Missouri, 1943; Archeological Investigations at Buena Vista Lake, Kern County, Calif., 1941. Contbr. to Am. Antiquity; Am. Anthropol.; Kans. Acad. of Sci. Trans. Nebr. Hist. Mag.; Jour. Wash. Acad. of Sci. Gen. Int.: Recipient of 1947 Award in biological sciences for distinguished service in investigations of aboriginal human ecology in Great Plains, Wash. Acad. of Sci. Areas of Rsch.: Prehistory and aboriginal human ecology of the North American Great Plains. Numerous Field Trips to Study Great Plains Archeology since 1930, including investigations of sites ranging in time from 7,000 years ago to the early 1800s.

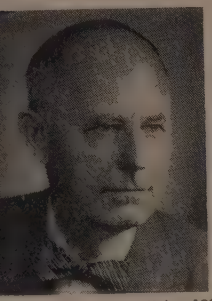
WEDBERG, Stanley Edward (Ph.D.), Hd. and Prof. of Bacteriology, Univ. of Connecticut, Storrs, Conn. Home Add.: 8 Willowbrook Rd., Storrs, Conn. MICRO BIOLOGY-MEDICAL AND PUBLIC HEALTH. b. Bridgeport, Conn., Aug. 28, 1913. s. Frank Enoch (dec.) and Anna Matilda (Osterlund) W. (dec.). Edn.: B.S., Univ. of Conn., 1937; Ph.D., Yale Univ., 1940. m. Mary Elizabeth Stewart, June, 1941. c.: Karen Elizabeth; Robin Carol. Exp.: Instr., Yale Med. Schl., New Haven, Conn., 1940-41; Instr., Univ. of Conn., Storrs, Conn., 1941-43; Asst. Prof. to Prof. and Hd. Dept. of Bacteriology, ibid., 1943—. Hon. Pos.: Past Pres., Leo F. Rettger Br., Soc. of Am. Bacteriologists; Past Pres., Conn. Public Health Assn.; Past Pres., Conn. Advisory Comm. on Foods and Drugs; Treas., Univ. of Conn. Alumni Assn., 1955-59. Mem.: Am. Soc. for Microbiology; Am. Public Health Assn.; Am. Academy of Microbiology; Conn. Acad. of Arts and Scis.; Phi Kappa Phi; Alpha Gamma Rho. Author: Microbes and You, 1954; Paramedical Microbiology, 1963. Contbr. to: Jour. of Bacteriology; Yale Jour. of Biology and Med.; Am. Jour. of Tropical Med.; Antibiotics and Chemotherapy. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Microbial Thermogenesis, Insect Microbiology, Capsule Staining, Hemagglutination of castor beans, effect of antihistamines on antibody production.

WEDDING, Randolph Townsend (Ph.D.), Assoc. Prof. of Biochem., Dept. of Biochem., Univ. of Calif., Riverside, Calif. Home Add.: 6874 De Anza Ave., Riverside, Calif. PLANT BIOCHEMISTRY. b. St. Petersburg, Fla., Nov. 6, 1921. s. Randolph Townsend and Rowena (Reid) W. Edn.: B.S., Univ. of Fla., 1943; M.S., ibid., 1947; Ph.D., Cornell Univ., 1950. m. Mary Elizabeth Kennedy, Apr. 17, 1943. c.: Sheila Tracy; Randolph Edward. Exp.: Instr., Cornell Univ., 1949-50; Jr. Plant Physiologist, Univ. of Calif., 1950-52; Asst. Plant Physiol., ibid., 1952-58; Assoc. Plant Physiol. and Lectr. in Biochem., ibid., 1958-61; Assoc. Prof. of Biochem., ibid., 1961—. Mem.: Am. Soc. of Plant Physiol.; Soc. for Exptl. Biol.; Scandinavian Soc. for Plant Physiol.; Japanese Soc. of Plant Physiol.; AIBS; Sigma Xi; Phi Kappa Phi. Contbr. to: Plant Physiol.; Jour. of Exptl. Botany; Plant and Soil; Am. Jour. of Botany; Phytopath.; Jour. of Econ. Entomol.; Proc. Am. Soc. of Hort. Sci.; Botanical Gaz.; Nature. Serv. Rec.: U.S.N.R., 1943-46. Areas of Rsch.: Auxin Effects on Plant Metabolism; Metabolism of Algae; Permeability.

WEEMS, Howard Vincent, Jr. (Ph.D.), Entomologist, Fla. Dept. of Agric., Div. of Plant Industry; and Assoc. in Arthropods, Fla. State Museum, Seagle Bldg Gainesville, Fla. Home Add.: 2100 N.E. 6th Terr., Gainesville, Fla. ENTOMOLOGY. b. Rome, Ga., April 11, 1922. s. Howard V., Sr. and Vail (Jones) W. Edn.: B.A., Emory Univ., 1945; M.S., Univ. of Fla., 1948; Ph.D., Ohio State Univ., 1953. m. Camilla Beth Bartley, June 23, 1950. c.: Pamela; Howard V., III; Debra; Brenda Murrell; Camilla Vail. Exp.: Grad. Asst., Dept. of Entomol., Univ. of Fla., 1946-47; Grad. Rsch. Asst., ibid., 1947-48; Instr., Dept. of Biol., Univ. of Miss., 1948-49; Rsch. Asst., Ohio Biol. Survey, 1949-53; Entomologist, State Plant Bd. of Fla., 1953; Assoc. in Arthropods, Fla. State Museum, 1959—. Mem.: Sigma Xi; Phi Sigma; Gamma Sigma Delta; Beta Beta Beta; Am. Assn. Adv. Sci.; Entomol. Soc. Am.; Am. Forestry Assn.; Fla. Entomol. Soc.; Entomol. Soc. Wash.; Ohio Acad. Sci.; Soc. Systematic Zool.; Soc. Brasileira de Entomol.; Lepidopterists' Soc.; Ecol. Soc. Am.; Chi Phi; Exchange. Serv. Rec.: U. S. Army, 1944-45. Areas of Rsch.: Taxonomy, notably of the Family Syrphidae.



EEKS, Lewis George (Mr.), Geological Consultant (Worldwide), 7 uewater Hill, Westport, Conn. PETROLEUM GEOLOGY AND OIL OCCURRENCE WORLDWIDE. b. Chilton, Wis., May 22, 1893. s. George Thomas and Katherine (Schneider) W. Edn.: B.A., Univ. of Wis., 1917; Grad. Studies, Cornell Univ., 1920. m. (1st w.) Una Austin, (dec.), 1921; (2nd w.) Anne Newman Sutton, 1957. c.: Lewis Austin. Exp.: Geologist, Calumet and Ariz. Copper Mining Co., Bisbee, Ariz., 1917; Engr. and Geol., Sou. Mines Div., Greene Canaea Copper Mining Co., Mex., 1919; Exploration Geologist, Whitehall Petroleum Corp., London, 1920-24; Exploration Geologist, Standard Oil Co., N. J. to Venezuela, Argentina, Bolivia, Chile, and Brazil, 1924-33; Chief Geologist, Standard Oil Co., Argentina, 1933-38; Pres., tandard Oil Co., Bolivia, 1934-38; Staff and Chief Rsch. Geol. gist, Standard Oil Co. of N. J., N. Y., 1938-53; Chief Geologist, bid., 1953-58; Geological Consultant, Worldwide, 1958—; Founder nd Pres., Oil Basins Incorp., Delaware, 1960—; Faculty, Grad. Schl. on Petroleum Industry, Columbia Univ., 1961—. Hon. Pos.: Mem., Advisory Bd. of Internatl. Oil and Gas Edntl. Center, Southwestern Legal Fdtn., Dallas, Tex.; Mem., Vestry, Christ nd Holy Trinity Episcopal Ch., Westport, Conn.; Chmn., Bus. Com., Am. Assn. of Petroleum Geol., 1954; Chmn., Tech. Program Com., Am. Assn. Petroleum Geologists, 1955; Annual Convention nd World Symposium on Habitat of Oil in N. Y. City, 1954-55; Pres., Am. Assn. of Petroleum Geologists, 1959-60. Mem.: Am. Assn. Adv. of Sci.; Am. Assn. Petroleum Geologists; Am. Geophys. Union; Am. Inst. of Mining, Metallurgical and Petroleum Engrs.; Geol. Soc. of Am.; Geol. Soc. of Australia; Explorer's Club, N. Y. Co-author: History of Oil Exploration, 1939. Contbr. to: Am. Assn. Petroleum Geologists; Bull. Am. Assn. Petroleum Geologists; World Oil; Oil and Gas Jour.; Jour. of Alberta Soc. of Petroleum Geologists. Serv. Rec.: U. S. Navy, 1917-18. Gen. Int.: Received the Powers Medal of Am. Assn. of Petroleum Geologists, 1962. Areas of Rsch.: Factors that control oil occurrence worldwide; World Crude Oil reserves and potential resources, as a basis for guiding exploration, financial and economic analyses and governmental policies.



WEEMS, Philip Van Horn (Capt.), Randall House, Annapolis, Md. MARINE, AIR AND SPACE NAVIGATION. b. Montgomery Co., Tenn., Mar. 29, 1889. s. Joseph Burch and May Elizabeth (Rye) W. Edn.: B.S., U. S. Naval Acad., 1912. m. Margaret Thackray, 1915. c.: Philip Van Horn; George; Margaret T. Dodds. Exp.: Founder, Pres. and Chmn., Weems System of Navigation, 1933-61. Mem.: Am. Philisophical Soc. Author: Air Navigation, 1931; Marine Navigation, 1940; Star Altitude Curves, 1928. Co-Author: Instrument Flying, 1940; Simplified Celestial Navigation, 1940; Learning to Navigate, 1939; Manual of the Celestial Coordinator, 1943; A Short History of Navigation, 1942. Serv. Rec.: U. S. Navy, 1908-33; 1942-46; Recalled to active duty to teach Space Navigation Class, U. S. Naval Acad., 1961—. Gen. Int.: Received many awards, including the Gold Medal, Aero Club of France; Cash Award and Cert., Royal Soc. of Arts; Magellanic Premium from Am. Phil. Soc., 1954; Gold Medal from British Inst. of Navigation, 1955; Thurlow Award, Am. Inst. of Navigation, 1956; Bronze Star. Areas of Rsch.: Space Navigation.

WEHE, Theodore John (Mr.), Program Mgr., Oceanography, The Martin Co., Baltimore 3, Md. Home Add.: 2008 Owens Rd., Oxon Hill 21, Md. OCEANOGRAPHY. b. Berwyn, Ill., Dec. 3, 1927. s. Herman Gregg and Genevieve Ethelind (Stach) W. Edn.: B.A., Brown Univ., 1955. m. Helen A. Hatzis, Jan. 21, 1951. c.: Glenn John; Diana Kay. Exp.: Oceanographic Techn., Woods Hole Oceanographic Inst., Woods Hole, Mass., 1946; Icing Observer, Mt. Washington Obs., Gorham, N. H., 1947-48; Oceanographer, Woods Hole Oceanographic Inst., Woods Hole, Mass., 1948-49; Asst. Oceanographer, Narragansett Marine Lab., Univ. of R. I., 1951-53; Producer-Dir., WNET, Channel 16, Providence, R. I., 1954-55; Oceanographer: Tide and Current Analyst, Project Coordinator for Spec. Projects, Spec. Asst. to the Spec. Projects Officer, U. S. Naval Oceanographic Office, Suitland, Md., 1955-61; Program Mgr., Oceanography, The Martin Co., Baltimore, Md., 1961—. Mem.: Am. Geophys. Union; Am. Meteorol. Soc.; Natl. Security Indusl. Assn.; Internatl. Oceanographic Fdtn.; Natl. Geographic Soc.; Assoc. Mem., Operations Rsch. Soc. of Am. MIT Club of Wash., D. C.; Brown Club of D. C.; Owens Rd. Citizens Assn. Co-Author: Woods Hole Oceanographic Institution Reference No. 49-6, 1949; U. S. Naval Oceanographic Office Technical Report, TR-55, 1959. Editor: U. S. Naval Oceanographic Office Special Publication SP-41, 1960. Contbng. Author.: Mathematical Applications of Operations Research, 1959; Proposed U. S. National Ocean-Wide Survey Program, 1961; Narragansett Marine Lab. Ref. No. 52-5 and 52-13. Areas of Rsch.: Tides and Currents; Oceanographic Instrumentation.

WEGRIA, Rene (M.D.), Prof. and Dir., Dept. of Internal Med., St. Louis Univ. Schl. of Med., St. Louis 4, Mo. Home Add.: 1325 South Grand Blvd., St. Louis 4, Mo. INTERNAL MEDICINE. b. Fumal, Belgium, June 9, 1911. s. Edouard and Odile (Vandensteen) W. Edn.: M.D., Univ. of Liege, Belgium, 1936; Med. Sci. D., Columbia Univ. Coll. of Physicians and Surgeons, 1945. Exp.: Asst. Prof. of Med., Columbia Univ. Coll. of Phys. and Surgeons, N. Y. City, N. Y., 1946-58; Assoc. Prof. of Med., Columbia Univ., New York City, N. Y., 1958—; Arthur E. Strauss Visiting Physician, Jewish Hosp., 1960; Visiting Prof., Lovanium Univ., Belgian Congo, 1958; Prof. and Dir. Dept. Int. Med., St. Louis Univ. Schl. of Med., St. Louis, Mo., 1958— . Mem.: A.A.A.S.; N. Y. Acad. Sci.; Am. Physiol. Soc.; Am. Heart Assn.; Sigma Xi; Soc. for Exptl. Biol. and Med.; Am. Soc. for Clin. Invest.; Harvey Soc.; Am. Pharmacol. Soc.; St. Louis Heart Assn.; N. Y. Acad. of Sci.; Am. Med. Assn. Areas of Rsch.: Internal Medicine and Physiology and Pathological Physiology of the Circulation.

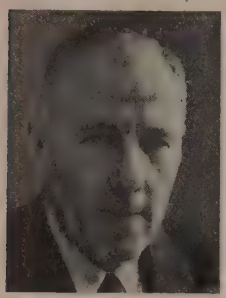
WEHRWEIN, Carl Frederick (Ph.D.), Agril. Economist, Foreign Agril. Serv., U.S.D.A., South Bldg., Wash., D. C. Home Add.: 4250 N. 25th St., Arlington 7, Va. AGRICULTURAL ECONOMICS. b. Manitowoc, Wis., Feb. 10, 1893. s. Adam and Dorathea (Stoltenberg) W. Edn.: B.S.A., Univ. of Wis., 1915; M.S.A., ibid., 1928; Ph.D., ibid., 1930. m. Jennie Leona Wensink, Oct. 16, 1926. c.: Carol Jean. Exp.: Mem., Dept. of Agril. Econ., Univ. of Wis., 1930-40; Agri. Economist, Bur. Agril. Econ., U.S.D.A., 1940-41; Sr. Indust. Analyst, W.P.B., 1941-44; Commodity Specialist, F.E.A., 1944-45; Div. Asst. and Country Desk Off., U. S. Dept. of State, 1945-50; Asst. Econ. Comnr., E.C.A., Vienna, Austria, 1950-51; Prin. Price Economist, O.P.S., 1951-53; Agril. Economist, Agril. Rsch. Serv. and 1953—. Mem.: Am. Econ. Assn.; Am. Farm Econ. Assn.; Am. Acad. of Polit and Social Sci.; Royal Econ. Soc.; Natl. Tax Assn.; Am. Philosophical Assn.; Sigma Delta Chi. Contbr. to: Jour. of Land Econs.; Am. Econ. Rev.; Jour. of Polit. Econ.; Scientific Monthly; Bull. No. 20 of the Social Sci. Rsch. Counc.; Univ. of Va. News Letter, and others. War Record: U. S. Army, 1917-19. Areas of Rsch.: Foreign Govt. Agril. Programs; Water Economics.

WEI, Tsuan-Hsien (Ph.D.), Prof., Elizabeth City State Tchrs. Coll., Elizabeth City, N. C. Home Add.: Ha-fu, Wu-fa, Kwangtung, China. CHEMISTRY. b. Ha-fu, Wu-fa, Kwangtung, China, Jan. 10, 1912. s. Tzu-Pin and Feng-Jen (Lee) W. Edn.: B.S., Hangchow Christian Coll., China, 1934; M.S., Univ. of Okla., 1956; Ph.D., ibid., 1961. m. Tzu-Siu Hu, Dec. 2, 1944. c.: Yi-Chuan; Yi-Hsien; Yi-Hao; Yi-Chieh; Yi-Feng. Exp.: Tchr., Kwang Yit Middle Schl., Meihsien, China, 1934-39; Chemist, Natl. Military Coun., Chungking, China, 1939-46; Chemist, Taiwan Sugar Corp., Taiwan, China, 1946-54; Rsch. Asst., Okla. Univ. Rsch. Inst., Norman, Okla., 1955-60; Prof., Tex. Coll., Tyler, Tex., 1960-61; Prof., Elizabeth City State Tchrs. Coll., Elizabeth City, N. C., 1961—. Mem.: A.A.A.S.; Am. Chemical Soc.; Am. Assn. Univ. Prof.; Phi Lambda Upsilon; Sigma Xi; Phi Sigma. Author: Studies on Polyphenols in Cottonseed Extract, 1961. Areas of Rsch.: Plant Polyphenolics.

WEIL, Arthur (M.D.), Assoc. Prof., Neurol., Northwestern Univ. (ret.). Home Add.: 104-40 Queens Blvd., Forest Hills, N. Y. NEUROPATHOLOGY, PHYSIOLOGY, ENDOCRINOLOGY. b. Braunschweig, Germany, Oct. 3, 1887. s. Abraham and Helene (Coblenzer) W. Edn.: Dr. Med. Vet., Hochschule, Berlin, 1910; M.D., Univ. of Berlin, 1914; Doc. of Med., Univ. of Halle, 1918. Exp.: Privatdozent of Physiol., Univ. of Halle, 1919-21; Neuropath., Montefiore Hosp., New York, N. Y., 1924-28; Asst. Prof., Northwestern Univ., 1928-30; Assoc. Prof., ibid., 1930-44. Hon. Pos.: Pres., Am. Assn. Neuropathol.; Hon. Pres., IV Intern. Cong. Neuropathol.; Editor, Jour. Neuropathol. and Exptl. Neurol. Mem.: Am. Neurol. Assn.; Am. Assn. Neuropathol.; Soc. Exptl. Pathol.; N. Y. Acad. Med.; N. Y. Acad. Sci.; Lima (Peru) Acad. of Sci. (Hon.); Sigma Xi.

Author: Innere Sekretion (Eng., Russian, Span.), 1922-24; Textbook of Neuropathology, 1933, 2nd. Ed., 1945. Contbr. to: Zeitschr. fuer Physiol. Chem.; Pflueger's Archiv.; Arch. Neurol. and Psychiat.; Endocrinol.; Jour. of Neuropathol. and Exptl. Neurol.; Brain; Zeitschr. f. die Ges. Neurol. u. Psychiatrie; Growth; L'encephale Rev. Neurol. Serv. Rec.: Consult., Surg. Gen. Army Inst. of Pathol.; Consult., Med. Induct. Bd., Army and Navy; Consult, Vet. Admin. Areas of Rsch.: Pathology and Chemistry of Nervous System; Endocrinology.

WEIL, Kurt Hermann (Mr.), Prof. and Hd., Mech. Engrng. Dept., Stevens Inst. of Tech., Hoboken, N. J. Home Add.: Pond House, Castle Point, Hoboken, N. J. AERONAUTICS AND ASTRONAUTICS, LIGHT WEIGHT DESIGN. b. Leutershausen, Germany, Nov. 26, 1895. Edn.: Dipl. Ing., Techn. Univ., Aachen, Germany, 1922. Hon. Deg.: M. Eng., Stevens Inst. of Techn., Hoboken, N. J. m. Charlotte Garris, Mar. 1, 1932. c.: Kathleen Weil Garris. Exp.: Engr., Chf. Engr., Div. Head, Junkers Corp., Dessau, Germany, 1923-33; Cons. Engr., Indep., Germany, 1933-34; Cons. Engr., Indep., England, Germany, 1934-38; Cons. Engr., Indep., U. S. Am., 1938-41; Cons. Engrn., Indep., ibid., 1945-56; Engr., Eastern Aircraft Div., Gen. Motors Corp., Linden, N. J., 1942-45; Prof. and Hd. Mech. Engrng. Dept., Stevens Inst. of Techn., 1957—. Hon. Pos.: Trustee of Asia Inst., N. Y. City. Mem.: Am. Soc. of Mech. Engrs.; Soc. of Autom. Engrs.; Inst. of the Aerospace Scis.; Am. Soc. of Engrng. Edn.; Royal Aernautic. Soc., England; Soc. of German Engrs.; Scient. Soc. f. Aeronaut., Germany; Sigma Xi; Royal Aero Club of Great Britain. Serv. Rec.: German Air Force, 1916-18. Gen. Int.: Responsible for Design of 3-Engined All Metal Cargo Plane (Junkers G31) in 1926 and Junkers Ju 52 in 1929; Founder and Mgr. Dir. of First Entirely Unsubsidized Airline System, Junkers Airlines Persia, in Iran to Iraq, Afghanistan, Turkey, USSR, 1927-33. Areas of Rsch.: Light Weight Design in Structures and Pro-pulsion Units; Research and Development Work on Hydrogen Engine; Highly Supercharged Diesel Engine; Engine Controls for Train of Trucks.

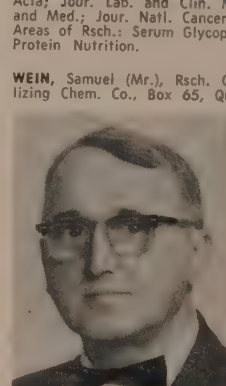


WEIMER, Bernal Robinson (Ph.D.), Dean of the Faculty and Hd. of the Biol. Dept., Bethany Coll., Bethany, W. Va. ZOOLOGY. b. Port Royal, Pa., Dec. 4, 1895. s. George M. and Ada W. Edn.: A.B., W. Va. Univ., 1916; A.M., ibid., 1918; Ph.D., Univ. of Chicago, 1927. m. Margaret G. Robinson, Aug. 31, 1918. c.: John R.; G. Alexander; Margaret B. Exp.: Prin., Mifflintown, Pa., 1918-21; Prof. of Biol., Bethany Coll., 1921-37; Prof. of Biol. and Dean of Faculty, ibid., 1937-62; Acting Pres., ibid., 1952-53. Hon. Pos.: Past Pres. and Vice Pres. of W. Va. Acad. of Sci.; Past Pres. of W. Va. Assn. of Higher Edn.; Past Natl. Pres., Beta Beta Beta. Mem.: Phi Beta Kappa; Sigma Xi; Am. Soc. of Zoologists; Fellow, A.A.A.S. Author: Man and the Animal World, 1951; Nature Smiles in Verse, 1941. Co-author: Elements of Biol., 1944; Gen. Biol., 1952; Of Things Bi-itlogical, 1957. Contbr. to: Jour. of Exptl. Zool.; Biological Bull.; Physiol. Zool.; Schl. and Soc.; Schl. Sci. and Math. War Record: W. W. I, Med. Div. Special Int.: Gen. Physiol.

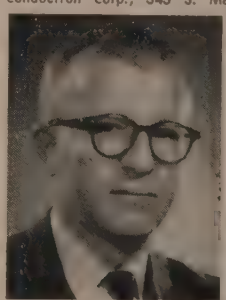
WEIMER, Robert Jay (Ph.D.), Assoc. Prof., Colo. Schl. of Mines, Golden, Colo. Home Add.: RR #3, Box 502, Golden, Colo. GEOLOGY WITH SPECIAL EMPHASIS ON STRATIGRAPHY. b. Glendo, Wyo., Sept. 4, 1926. s. John L. and Helen (Mowrey) W. Edn.: B.S., Univ. of Wyo., 1948; M.A., ibid., 1949; Ph.D., Stanford Univ., 1953. m. Ruth Adams, Sept. 12, 1948. c.: Robert T.; Loren E.; Paul C.; Carl S. Exp.: Surface and Subsurface Geol., Union Oil Co. of Calif., Rocky Mountain Area and West Tex., 1949-51; Dist. Geologist, Montana, Union Oil Co., 1953-54; Consulting Geologist, Regional Stratigraphic Studies, 1954-57; Asst. Prof., Colo. Schl. of Mines, 1957-60; Assoc. Prof., ibid., 1960—. Hon. Pos.: Vice-Pres., Bd. of Dirs., Mt. Vernon Country Club; Dist. Representative, Am. Assn. Petrol. Geol., 1959-60; Councilor, Rocky Mountain Assn. of Geol., 1959-60. Mem.: Sigma Xi; Geological Soc. of Am.; A.A.A.S.; Am. Assoc. Petrol. Geol.; Theta Xi. Co-Editor: Symposium on Cretaceous Rocks of Colorado and Adjacent Areas; Guide to the Geology of Colorado. Contbr. to: A.A.P.G. Bulletin; Annual Geological Soc., Field Conference Guidebooks. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Stratigraphy and Sedimentation of Cretaceous Rocks in the Rocky Mountain Region, Jurassic Stratigraphy of N.W. Montana.

WEIMER, Henry Eben (Ph.D.), Assoc. Prof. of Infectious Diseases, Dept. of Inf. Dis., Schl. of Med., Univ. of Calif., Los Angeles, Calif. Home Add.: 14209 Riverside Dr., Sherman Oaks, Calif. IMMUNOCHEMISTRY. b. Continental, Ohio, May 13, 1914. s. Guy Earl and Lola (Casteel) W. Edn.: B.A., Wittenberg Coll., 1935; M.S., Univ. of So. Calif., 1948; Ph.D., ibid., 1950. m. Margaret Lenhart, Dec., 1941. Exp.: Rsch. Assoc., Univ. of Calif., Los Angeles, Calif., 1950-51; Instr. to Assoc. Prof., ibid., 1951—. Mem.: Am. Soc. for Microbiology, A.A.A.S.; Am. Soc. for Exptl Pathology; Am. Assn. Immunologists; A.A.U.P.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Biological Chem.; Jour. Immunology; Am. Jour. Physiology; Jour Nutrition; Am. Review; TB, Diseases of the Chest; Clinic Chimica Acta; Jour. Lab. and Clin. Med.; Proc. Soc. for Exptl. Biology and Med.; Jour. Natl. Cancer Inst. Serv. Rec.: A.U.S., 1941-46. Areas of Rsch.: Serum Glycoproteins, Immunochemistry, Oncology, Protein Nutrition.

WEIN, Samuel (Mr.), Rsch. Chemist and Owner, Bigelow Metallizing Chem. Co., Box 65, Quincy, Mass. Home Add.: 98 Bigelow St., Quincy, Mass. CHEMISTRY. b. Lemberg, Galicia, Austria, May 1, 1891. s. Moses and Sophie (Boritz) W. Edn.: B.S., Columbia Univ., 1917. m. Esther Burger, July 30, 1917, (dec.); Sadye Berman, June 8, 1953. c.: Mrs. Harold Wishin. Exp.: Rsch., Elias Elkin Ries Inventor, New York, N. Y., 1915-17; Instr., Columbia Univ., 1915-17; Rsch. Chem., Leonard Day, Patent Attorney, N. Y., N. Y., 1941-43; Rsch. Chem., Thomas Alvin Edison Inventor, Menlo Park, N. J., 1916-18; Rsch. Chem., Lee deForest, ibid., 1917-35; Sylvania Electronic Consultant, Bayside, L. I., N. Y., 1948-52; Consultant, Mac Dermid, Inc., Conn. Metals, ibid., 1960-62; Chemist and Owner, Bigelow Metallizing Chem. Co., Quincy, Mass., 1962—. Mem.: Am. Electroplaters Soc.; Pioneer Radio Club of Am. Author: Metallizing Non-Conductors, 1924; Metallic Coatings on Non-Metallic Surfaces, 1953. Contbr. to: Glass Industry; Metal Industry; Metal Finishing; Perfumery Art; Electronics; Photo-Miniature; Internatl. Projectionist; Abstractor Chem. Abstracts. Areas of Rsch.: Inventor of Electroless Processes for the Chemical deposition of thin metal films on miscellaneuos surfaces for use in electrotyping, printed circuitry and mirrors. Invented New Method of Making Red Glass Using Selenium Compounds. Speeded up cable dispatch between U. S. and Brest, France; Pioneered development of photo-cells the basis for TV, 1912, Sound on film, 1915. Light aluminum alloys, 1918.



WEINBERG, Louis (Sc.D.), Vice Pres., Information Processing, Conductron Corp., 343 S. Main St., Ann Arbor, Mich. Home Add.: 1351 Glendaloch Circle, Ann Arbor, Mich. ELECTRICAL ENGINEERING AND APPLIED MATHEMATICS. b. N. Y., N. Y., July 15, 1919. s. Harry (dec.), and Bessie (Fisher) W. Edn.: B.A., Brooklyn Coll., 1941; M.S., Harvard Univ., 1947; Sc.D., Mass. Inst. of Tech., 1951. m. Isabella Goldin, Aug., 1951. c.: Amy; Mark; Paul. Exp.: Radio Engr., Office of Chf. Signal Officer, Wash., D. C. and Phila., Pa., 1942-43; Instr., Electrical Engrng. Dept., Mass. Inst. of Tech., Cambridge, Mass., 1947-51; Rsch. Physicist, Hughes Aircraft Co., Culver City, Calif., 1951-56; Lecturer in Engrg., Univ. of Calif., Los Angeles, Calif., 1952-54; Visiting Assoc. Prof. of Elect. Engrng., Univ. of Southern Calif., Los Angeles, Calif., 1955-56; Hd., Communications and Network Rsch Sec., Hughes Rsch. Labs., Hughes Aircraft Co., 1956-61; Visiting Prof. of Electrical Engrng., Calif. Inst. of Tech., Pasadena, Calif., 1958-59; Vice Pres., Information Processing, Conductron Corp., Ann Arbor, Mich., 1961—. Hon. Pos.: Mem. of URSI Comm. VI; Internatl. Vice Chmn., URSI Comm. VI, 1960—; Past Vice Pres. and Pres., RESA, Hughes Aircraft Co.; Chmn., IRE Linear Lumped-Constant Passive Circuits Subc.; Mbr. Admin. Comm., IRE PGCT and PGE; Mem. IRE Circuits Comm. Mem.: Sigma Xi; Propylaea; N. Y. Acad. of Sci.; Fellow, I.R.E.; Fellow, A.A.A.S. Author: Network Analysis and Synthesis, 1962. Contbr. to: Jour. Franklin Inst.; Jour. of Applied Physics; Proc. I.R.E.; I.R.E. Trans.



C.T.; Control Engrs Handbook; Jour. Math. and Mech.; Jour. ., Natl. Bureal of Standards; Alta Frequenza; Bull. Am. Math. Serv. Rec.: U.S.A.F., 1943-46. Gen. Int.: Won N. Y. State olarship, 1937-41; Dean Bildersee Scholarship, 1941. Areas Rsch.: Network Theory; Linear Graphs; Matrix Theory; Noise Statistical Communications; Radar; Transistors; Digital Com- ers.

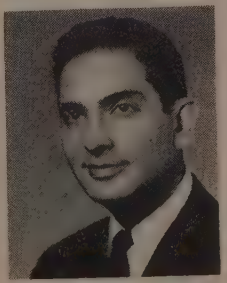
INBERG, Max H. (M.D.), Chf. Emer., Dept. of Neurology, tern Pa. Hosp. and Emer. Psychiatry and Neurology, St. Francis Hosp. and Rehabilitation Clin. Home Add.: 5717 Pocusset St., Pittsburgh 17, Pa. NEURO-PSYCHIATRY. b. Soroca, Bessarabia, Russia, Mar. 16, 1883. s. Samuel and Rachel (Bernstein) W. Edn.: M.D., Univ. of Pittsburgh, 1912. m. Bessie Evelyn Sakon, Nov. 6, 1913. Exp.: Chf., Dept. of Neurology, Montefiore Hosp., Pittsburgh, 1923-34; Asst. Dept. of Neurology, Western Pa. Hosp., 1919-40; Assoc., ibid., 1940-43; Chf., Dept. of Neurology, ibid., 1943-58; Emer., ibid., 1959—. Mem.: Life Mem., Pittsburgh Neuropsychiatric Assn.; Life Fellow, Am. Coll. of Physicians; Am. Med. Assn.; Fellow, Am. Psychiatric; Fellow, Am. Acad. of Neurology; Central Neuropsychiatric. Contbr. to: Confinia Neurologica; Jour. Nervous and ental Disease; and others. Serv. Rec.: U. S. Army, 1918. eas of Rsch.: Clinical Neurology and Psychiatry.

EINER, Norman (M.D.), Asst. Prof. of Pharmacol., Harvard ed. Schl., Boston 15, Mass. Home Add.: 86 Nicholas Rd., Framingham, Mass. PHARMACOLOGY. b. Rochester, N. Y., July 13, 1928. s. Samuel and Lillian (Guttenberg) W. Edn.: B.S., Univ. of Mich., 1949; M.D., Harvard Med. Schl., 1953. m. Diana Elaine Marderosian, 1955. c.: Steven Mark; David Howard; Jeffrey Alan. Exp.: Intern, 2nd and 4th (Harvard) Med. Serv., Boston City Hosp., Boston, Mass., 1953-54; Instr., Harvard Med. Schl., 1956-58; Assoc., ibid., 1958-61; Asst. Prof., ibid., 1961 —. Mem.: Soc. for Pharmacol. and Exptl. Ther.; Biochem. Soc.; A.A.A.S.; Sigma Xi; Phi Beta Kappa; Phi Eta Sigma; Phi Lambda Upsilon; Phi Kappa Phi; Boylston Med. Soc. Contbr. to: Jour. Pharmacol. and Exptl. Ther.; our. Neurochem.; Nature; Arch. Biochem. and Biophys.; A.M.A. rch. of Pathol.; Jour. Phys. Chem.; Am. Jour. Med. Sci.; irculation; Proc. Soc. Exptl. Biol. and Med., N. Y.; Jour. ppl. Physiol. Serv. Rec.: U.S.A.F. (M.C.), 1954-56. Areas f Rsch.: Catecholamine Metabolism; Action of Sympathomimetic gents; Mechanism of Action of Organic Acids in Bacteriostasis; ction of CNS Depressants and Stimulants.

WEINBERG, Samuel Joseph (M.D.), Assoc. Clinical Prof. of Med., Univ. of Calif., 1015 Gayley Ave., Los Angeles 24, Calif. Home Add.: 8874 Evanview Dr., Los Angeles 46, Calif. CARDIOLOGY. b. Chicago, Ill., May 6, 1905. Edn.: B.A., Univ. of Calif., 1927; M.D., Johns Hopkins Univ. Schl. of Med., 1931. m. Christine Harley Crump, 1946. Exp.: Asst. in Exptl. Therapeutics, Johns Hopkins Univ. Schl. of Med. and Asst. Dispensary Physician, Johns Hopkins Hosp., Baltimore, Md., 1931-32; Intern in Med., Univ. of Calif. Hosp., Diplomat, St. Bd. of Med. Examiners, Calif., 1932; Diplomate Natl. Bd. Med. Examiners, 1932; Sigmund Martin Heller Traveling Fellow in Med., Univ. of Calif., spent as Asst., Medizinische Universitats Klinik, Univ. of Heidelberg, Ger., 1933-34; Physician in Charge, U. S. Dept. of Interior Hosp., Dillingham, Ala., 1934-35; Traveling Fellow in Medicine in Univ. of Calif., Spent as Assistant in Medicine, Erste Medizinische Universitats Klinik, Charite, Univ. of Berlin, Germany, 1936; Asst. in Medicine, Dept. of Med., Univ. of Calif., San Francisco, Calif., 1937; Practice of Internal Med., Westwood Village, Los Angeles, Calif., 1937-41; Staff Mem., Good Hope Hosp. Foundation, Los Angeles, Calif., 1937-55; Asst. Chf. and Chf. of Med. Services, U. S. Army, U. S. and Europeah Treatres, Major, M.C., 1941-46; Lt. Col., U. S. Army Med. Reserve Corps, 1950-56; Hd. of Postgraduate Med., Ext. Div., Univ. of Calif., Los Angeles, Calif., 1946-51; Assoc. Clinical Prof. of Med., Chmn. Comm. on External Affairs, Univ. of Calif. Schl. of Med., Los Angeles, Calif., 1948—; Attending Consulting Physcian in Internal Med., Wadsworth Gen. Hosp., U. S. Veterans Admin., Los Angeles, Calif. and U. S. Atomic Energy Porject, Univ. of Calif., Los Angeles, Calif., 1946—. Hon. Pos.: Chevalier, Ordre de Sante Publique, Republic of France; Diplomate, Am. Bd. of Internal Med. Mem.: Royal Soc. of Med., London, England; World Congress of Cardiology; Soc. of Exptl. Biol. and Med.; Sigma Xi; Am. Coll. of Physicians; Am. Bd. of Internal Med.; Am. Med. Assn.; A.A.A.S.; Los Angeles Co. Med. Assn.; Internatl. Soc. of Internal Med.; N. Y. Acad. of Sci.; Johns Hopkins Med. and Surgical Soc.; Am. Coll. of Chest Physicians. Contbr. to: Annals of Internal Med.; Exptl. Neurology; Les Arch. Internatls. de Physiolgie et de Biochimie; Am. Jour. of Diseases of Chest; Arch. Int. Pharmacodyn; Proc. Soc. Exper. Biol. and Med.; Circulation Rsch.; Jour. of Gerontology; Calif. Med.; Arch. Int. Med.; Ann. Western Med. and Surg.; Arch. of Exper. Path.; Jour. Pharmacol. and Exper. Therap.; Annals of Med. Hist.; Bull. Johns Hopkins Hosp. Serv. Rec.: A.U.S., 1941-46; MC, 1950-56. Areas of Rsch.: Neurocardiology.

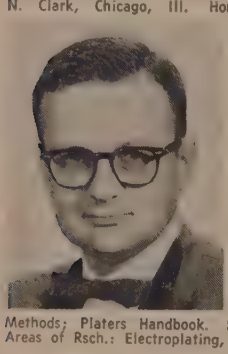
WEINSTEIN, Benjamin Bernard, Physician, 1421 Delachaise St., New Orleans 15, La. Home Add.: 5346 Chestnut St., New Orleans 15, La. b. New Orleans, La., Aug. 25, 1913. s. Jacob and Nellie (Solomon) W. Edn.: B.S., Tulane Univ., 1933; M.D., ibid., 1937; M.S. in Gynecol., ibid., 1940. m. Clarice Roslyn Groner, Dec. 19, 1943. c.: Miriam Lynn; Jon Leonard; Frederick Gordon; Ruth Elise. Exp.: Intern, Touro Infirmary, New Orleans, La., 1937-38; Clin. Asst. to Sr. Assoc., ibid., 1938-47; Sr. Gynecologist, ibid., 1947—; Postgrad. Trng., Tulane Univ., 1938-41; Sr. Visiting Surgeon, Charity Hosp., New Orleans, La., 1938-53; Visiting Gynecologist, Sara Mayo Hosp., ibid., 1943—; Cons. Gynecol., Flint Goodridge Hosp., ibid., 1940—; Staff Mem., Tulane Univ., 1938-53; Successively Clin. Asst., Instr., Asst. Prof., Assoc. Prof., ibid., 1947-53; Hon. Prof., Gynecol., Univ. of Guadalajara, 1953—. Hon. Pos.: Mem. of Coun., Am. Assn. Hist. Med., 1938-53; Dir., Am. Soc. Study Sterility, 1950-53; Pres., ibid., 1953-54; Pres., Internatl. Fertility Assn., 1951-53; Chf. Exec. Com., World Council., 1959 —; Dir., Am. Physician Fellowship Com., 1950—. Mem.: Fellow, A.A.A.S.; S.E. Surg. Congress; A.M.A., La.; Orleans Parish Med. Soc.; Am. Anat. Assn.; Am. Therapeutic Soc.; Am. Endocrine Soc.; Hist. of Med. Soc.; Am. Com. for Maternal Welfare; Phi Lambda Kappa; Sigma Xi; Mex. Soc. Obst. and Gynecol.; Mex. Soc. Study Sterility; Cuba Obst. and Gynecol. Soc.; Brazil Obst. and Gynecol. Soc.; and many others. Editor: Internatl. Jour. Fertility; Phi Lambda Kappa Quart. "Fertility and Sterility". Contbr. to: Numerous Med. Jours. on Gynecol., Fertility, Anat. and Hist. of Med. Gen. Int.: Recipient Distinguished Visitors Medal, Mex., 1949; Distinguished Guest Citation, Guatemala, 1955; Distinguished Contbn. Citation, 2nd World Congress of Fertility and Sterility, Naples, 1956; Hon. Col. Staff, Gov. Jimmy Davis Off. Staff.

WEINSTEIN, Irwin Marshall (M.D.), 9400 Brighton Way, Beverly Hills, Calif. Home Add.: 11382 Thurston Circle, Los Angeles 49, Calif. HEMATOLOGY. b. Denver, Colo., March 5, 1926. s. Max and Esther (Bershof) W. Edn.: M.D., 1949. m. Judith Braun, Jan. 20, 1950. c.: James; David. Exp.: Instr. in Med., Univ. of Chicago, 1953-54; Asst. Prof. of Med., Univ. of Chicago, 1954-55; Full-Time Visiting Assoc. Prof. of Med., Univ. Calif., Los Angeles, 1955-56; Sect. Chief in Med., Wadsworth Gen. Hosp., VAC, Los Angeles, 1956-59; Assoc. Clin. Prof. of Med., Univ. of Calif., Los Angeles, 1956—; Attending Specialist in Med., VAC, Los Angeles, 1959—; Chief, Hematology, Cedars Mt. Sinai Medical Center, 1960—. Mem.: N. Y. Acad. of Sci.; Fellow, Am. Coll. of Physicians; Am. Soc. of Hematology; Am. Fed. for Clin. Rsch.; Am. Assn. Adv. of Sci.; Reticulo-Endothelial Soc.; Am. Med. Assn.; Western Soc. for Clinical Rsch.; L. A. Soc. of Internal Med.; L. A. Soc. of Nuclear Med.; L. A. Co. Med. Assn.; Assn. of Am. Med. Coll.; Alpha Omega Alpha. Contbr. to: Jour. Lab. and Clin. Med.; Annals of Internal Med.; The Jour. of Hematology; Archives of Int. Med.; Proc. Soc. Exp. Biol. and Med.; Clinical Rsch.; Jour. Clin. Invest. Service Rec.: U. S. Navy, 1944-45. Areas of Rsch.: Hematologic Research; Radioisotope Diagnostic Procedures in Hematology; Mechanisms of Anemia in Arthritis, Uremia, etc. Investigation of Erythrocyte Biochemical Abnormalities in Anemia.



WEINTRAUB, Salomon (M.D.), Dir. of Laboratories, St. Francis Hosp., Trenton 9, N. J. Home Add.: 55 Central Park W., N. Y. 23, N. Y. PATHOLOGY AND FORENSIC PATHOLOGY. b. Roumania, Apr. 26, 1899. s. Jacob Aaron and Mary (Abramovitz) W. Edn.: A.B., Columbia Coll., 1921; M.D., Coll. of Physicians and Surgeons, Columbia Univ., 1925. m. D. Ruth Goldstein, 1930. c.: Jonathan. Exp.: Asst. Pathologist, Harlem Hosp., N. Y., 1930-32; Pathologist, ibid., 1932-53; Chief, Lab. Serv., Tilton Gen. Hosp., Ft. Dix, N. J., 1942-46; Pathologist, Kew Gardens General Hosp., Kew Gardens, N. Y., 1940-43; Civ. Consultant, Surgeon Gen. Office, 1949-50; Dir. of Labs., St. Francis Hosp., Trenton, N. J., 1953—. Hon. Pos.: Assoc. Dir., Harlem Hosp. Rsch. Fdtn., 1949-53; Consultant Pathol., Deborath Hosp. and Donnelly Mem. Hosp. Mem.: Am. Soc. of Clin. Pathologists; Fellow, N. Y. Acad. of Med.; Coll. of Am. Pathologists; Diplomate, Am. Board of Pathol.; Am. Acad. of Forensic Scis.; A.A.A.S.; Royal Soc. of Med., London; Phi Delta Epsilon. Contbr. to: Am. Jour. of Clin. Soc.; A.M.A. Jour.; N. J. State Med. Jour.; Post Grad. Med.; N. Y. State Med. Jour. Serv. Rec.: U. S. Army Med. Corps, 1942-46; Ret. Col., A.U.S.. Gen. Int.: Former Mayor of Village of Ocean Beach, N. Y.; Commissioner of Health, ibid. Areas of Rsch.: Pathology and Forensic Pathology.

WEISBERG, Alfred M. (Mr.), Vice Pres., Technic. Inst., 7001 N. Clark, Chicago, Ill. Home Add.: 1773 Northland Ave., Highland Park, Ill. ELECTRODEPOSITION, ELECTROCHEMISTRY. b. Providence, R. I., July 13, 1926. s. Mark and Rose (Brie) W. Edn.: A.B., Harvard Univ., 1947. m. Naida Deitch, Feb. 18, 1950. c.: Martha Anne; David D.; Abby Ruth. Exp.: Chemist, Alrose Chemical Co., Providence, R. I., 1948-50; Vice Pres., Technic. Inst., Providence, R. I., 1950—. Hon. Pos.: Dir., Chicago Sect., Am. Technion Soc. Mem.: A.C.S.; Inst. of Radio Engrs.; Electrochemical Soc.; Am. Electroplaters Soc.; Inst. of Metal Finishing, London; A.A.A.S.; A.S.T.M.; Faraday Soc., London. Contbr. to: Electronic Equipment News, London; Products Finishing; Electroplating and Metal Finishing, London; Materials and Methods; Platers Handbook. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Electroplating, Precious and Rare Metals.



WEIR, Alexander, Jr. (Ph.D.), Asst. to the Sr. Vice Prs., Tech. Northrop Corp., 9744 Wilshire Blvd., P.O. Box 1525, Beverly Hills, Calif. Home Add.: 8229 Billowvista Dr., Playa Del Rey, Calif. CHEMICAL ENGINEERING. b. Crossett, Ark., Dec. 19, 1922. s. Alexander and Mary Eloise (Feild) W. Edn.: B.S.Ch.E., Univ. of Ark., 1943; M.Ch.E., Polytech. Inst. of Brooklyn, 1946; Ph.D., Univ. of Mich., 1954. m. Florence Forschner, Dec. 28, 1946. c.: Alexander III; Carol Jean; Bruce Richard. Exp.: Analyst, Am. Cyanamid and Chem. Corp., Bauxite, Ark., summer, 1941; Chemist, Am. Cyanamid and Chem. Corp., Little Rock, Ark., summer, 1942; Chem. Engr., Am. Cyanamid Co., Stanford Rsch. Labs., Stanford, Conn., 1943-47; Rsch. Asst., Rsch. Assoc., Assoc. Rsch. Engr., Proj. Supvr., Univ. of Mich., Aircraft Propulsion Lab., Ann Arbor, Mich., 1948-57; Lecturer, Univ. of Mich., 1954-56; Asst. Prof., ibid., 1956-58; Consultant, Mem. of the Tech. Staff, Sect. Hd., Asst. Mgr., Ramo-Wooldrige Corp., Space Tech. Lab., Atlas Prog. Office, Los Angeles, Calif., 1956-60; Asst. to the Sr. Vice Pres., Tech. Northrop Corp., Beverly Hills, Calif., 1960—. Hon. Pos.: Am. Rocket Soc. Repr. to Detroit Nuclear Coun., 1954-57; Chmn., Session on Chem. Reactions, Nuclear Sci. and Engrng. Cong., Cleveland, 1955; U. S. Deleg., AGARD (NATO) Combustion Colloquium, Liege, Belgium, 1955; Chmn., Reliability Session, Air Force Aerospace Ballistic Missile Sympos., 1961; Tech. Prog. Coord., Am. Inst. of Chem. Engrs. Systems Engrng. Sympos., 1962; Vice Pres., Palos Verdes Peninsula Coun. Navy League of the U. S.; Pres., Civic Union of Playa Del Rey, Inc. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Rocket Soc.; Inst. of Aerospace Scis.; The Scientific Rsch. Soc. of Am.; Sigma Xi; Combustion Inst.; Am. Geophysical Union; A.A.A.S.; Lambda Chi Alpha; Alpha Chi Sigma; Phi Lambda Upsilon; Phi Kappa Phi; Dads Chmn., Westchester Br., Y.M.C.A.. Author: Notes on Combustion, 1955; Literature of the Combustion of Petroleum-Detonative and Deflagrative Combustion, 1958. Contbr. to: Tran of the Am. Soc. of Mech. Engrs.; Jet Propulsion; Jour. of the Am Rocket Soc.; Inst. of Aerospace Sci. Jour.; Industrial an Engrng. Chem.; Chem. Engrng. Progress; Chem. Engrng. Ann of Rsch.: Combustion, Nuclear Studies, Aerodynamics, Systen Engineering.

WEISENGREEN, H. Henry (D.D.S.), Asst. Prof. Anat., Univ. Calif., San Francisco, Calif. Home Add.: 1887 29th Ave., Sa Francisco, Calif. ANATOMY. New York, Sept. 12, 1898. Henry and Gussie (Kramer) W Edn.: Cert. Jour., Mt. Vernc Coll., 1921; D.D.S., Univ of Mi 1925. m. Ruth Putnam Chase 1944. c.: Ethel; David C. Exp Asst. Prof., Univ. of Calif. Sch of Med., 1957. Hon. Pos.: Cor sult. Anat., Natl. Bd. Dent. Ex aminers. Mem.: A.A.A.S.; A.A.A Royal Soc. of Health. Contbr. to Ann. Surg.; Surg. Gyn. Obst Surg.; Jour. Am. Dent. Assn Jour. Orthoped. Surg.; Oral Surg Oral Med. Oral Pathol. Serv. Rec Oral Surgery (Dental Corps), 1942 46. Areas of Rsch:: Head an Neck.

WEISS, A(dolph) Kurt (Ph.D.), Prof. and Head, Dept. of Biology Okla. City Univ., Okla. City, Okla., and Assoc. Prof. of Rsch Physiology, Dept. of Physiology Univ. of Oklahoma Schl. of Med Oklahoma City, Okla. Home Add 2224 N.W. 43 St., Oklahoma City 12, Okla. PHYSIOLOGY. b. Graz Austria, Mar. 22, 1923. s. Dr Alfred and Anna (Giesskann) W Edn.: B.S., Okla. Baptist Univ 1948; M.S., Univ. of Tenn., 1950 Ph.D., Univ. of Rochester, 1953 m. Mary Davis, June, 1948. c. Thomas Alfred. Exp.: Investigator Howard Hughes Med. Inst., Miami Fla., 1955-58; Instr., Univ. of Miami Schl. of Med., 1952-55; Asst. Prof., ibid., 1955-60; Assoc. Prof., ibid., 1960-61; Prof. and Head, Dept. of Biology, Okla City Univ., 1961—; Assoc. Prof of Rsch. Physiol., Dept. of Physiology, Univ. of Okla. Schl. of Med., 1961—. Hon. Pos.: Pres., Univ. of Miami Chapt. of Phi Kappa Phi, 1958-59. Mem.: Am. Physiol. Soc.; Endocrine Soc.; Gerontol. Soc., Fellow; Internatl. Soc. of Bioclimatology; A.A.A.S., Fellow; Okla. Acad. of Sci.; Phi Kappa Phi; Sigma Xi; Am. Scient. Affiliation; Christian Med. Soc. Contbr. to: Am. Jour of Physiol.; Jour. of Applied Physiol.; Fed. Proc. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Environmental Physiology; Metabolism; Aging; Thyroid Function; Skin Respiration.

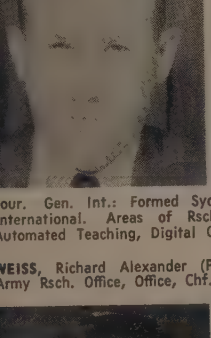
WEISS, Fred T. (Ph.D.), Rsch. Supvr., Shell Development Co., 4560 Horton St., Emeryville, Calif. Home Add.: 17 Monticello Ave., Piedmont, Calif. ORGANIC ANALYTICAL CHEMISTRY. b. Oakland, Calif., July 24, 1916. s. Milton and Sadie (Ringole) W. Edn.: U.C.L.A., B.S., 1938; M.S., Harvard, 1939; Ph.D. ibid., 1941. m. Dorothy Skroopka, Sept. 15, 1940. c.: Ronald Toby; John. Exp.: Chmn., Shell Oil Co., Wood River, Ill. 1941-46; Chem., Shell Develop. Co., Emeryville, Calif., 1946-52; Rsch. Supervisor, ibid., 1952—. Mem.: A.A.A.S.; Am. Chem. Soc.; Sigma Xi; Petroleum Div.; A.C.S.; Phi Lambda Upsilon; Phi Beta Kappa; Sierra Club; Mem., Exec. Comm., Piedmont Coun. Boy Scouts of Am. Contbr. to: Anal. Chem.; Jour. Agric. and Food Chem.; Jour. Am. Chem. Soc.; Jour Chem. Soc.; Jour. Polymers Sci. Areas of Rsch.: Characterization of Organic Systems; Development of Organic Analytical Methods for Petroleum Products.

WEISS, Herbert Klemm, Dir., Systems Analysis, Systems Rsch. and Planning Div., Aerospace Corp., P.O. Box 95085, Los Angeles, Calif. Home Add.: 3329 Via La Selva, Palos Verdes Estates, Calif. AEROSPACE ENGINEERING: OPERATIONS RESEARCH, SYSTEMS ANALYSIS. b. Lawrence, Mass., June 22, 1917. s. Herbert Julius and Louise Bertha (Klemm) W. Edn.: B.S., Mass. Inst. of Tech. 1937; M.S., ibid., 1938. m. Ethel Celesta Giltner, 1945. c.: Janet Jack. Exp.: Engr., U. S. Army Antiaircraft and Coast Artillery Bds., Ft. Monroe, Va., Camp Davis, N. C., Ft. Bliss, Tex., 1938-46; Chf. WPN Systems Lab., Army Ballistic Rsch. Labs., Aberdeen Proving Ground, Md., 1946-53; Chf., WPN and Systems Analysis Dept., Northrop Aircraft, Hawthorne, Calif., 1953-58; Mgr. Adv. Systems Devel., Aeronutronic Div., Ford Motor Co., Newport Beach, Calif., 1958-62; Dir., Systems

lysis, Aerospace Corp., El Segundo, Calif., 1962—. Hon. Pos.: n. Sci. Adv. Bd., U. S. Air Force; Consultant, Office of Dir. Defense Rsch. and Engrng.; Consultant, Navy Operations luation Group. Mem.: A.A.A.S.; Inst. of Aero. Sci.; Opera- ns Rsch. Soc. of Am.; Inst. of Radio Engrs.; A.I.E.E.; A.S.M.E.; . of Mgt. Scis. Contbr. to: Jour. of Aeronautical Sci.; erations Rsch.; IRE Trans. on Engrng. Mgt.; Human Factors; iew Sci. Inst.; Proc. 1st Internatl. Conf. on Operations h.; Proc. of Case Inst. Conf. on R. and D. Mgt. Gen. .: Hold 10 Patents for Gunsights and other Fire Control vices. Areas of Rsch.: Operations Rsch.; Systems Analysis; listics, Management Sciences; Automatic Control.

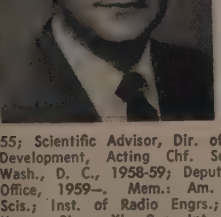
ISS, James M. A. (M.D.), Prof. and Chmn., Dept. of chiat., Univ. of Mo., Schl. of Med., Columbia, Mo. Home d.: 101 S. Glenwood Ave., Columbia, Mo. PSYCHIATRY. b. Paul, Minn., Oct. 22, 1921. s. Louis R. and Gertrude mon) W. Edn.: A.B., Univ. of Minn., 1941; B.S., ibid., 47; M.B., ibid., 1949; M.D., ibid., 1950; M.P.H., Yale Univ., 51. m. Bette Shapera, 1946. c.: Jenny Anne; Jonathan nes. Exp.: Tchng. Asst., Psychol., St. Thomas Coll., St. ul, Minn., 1941-42; Med. Intern, U. S. Pub. Hlth. Serv. sp., Seattle, Wash., 1949-50; Fellow and Res. in Psychiat., le Univ., New Haven, Conn., 1950-53; Chf., Mental Hyg. nsult. Serv., Ft. Bliss, Tex., 1953-54; Instr., Psychiat., Wash. iv., St. Louis, Mo., 1954-56; Asst. Prof., ibid., 1956-60; soc. Prof., Psychiat. and Acting Chmn., Dept. of Psychiat., iv. of Mo., Columbia Mo., 1960-61; Prof. of Psychiat. and mn., Dept. of Psychiat., ibid., 1961—. Mem.: Fellow, Am. ychiat. Assn.; Am. Pub. Hlth. Assn.; Am. Assn. for the v. of Sci.; Am. Geriats. Soc.; Assn. of Milit. Surgns. of e U. S.; Internatl. Assn. of Gerontol.; Am. Med. Assn.; Am. thopsychiat. Assn.; Natl. Assn. on Stand. Med. Vocabulary; rontol. Soc.; Psi Chi; Gamma Alpha; Sigma Xi. Contbr. to: ychiat. Quart.; Psychiat.; Am. Jour. of Psychiat.; Jour. of ychiat. Rsch.; Comprehensive Psychiat.; Mental Hyg.; Dis. the Nervous Syst.; Archs. of Gen. Psychiat.; Jour. of Clin. ychol.; Contemp. Psychol.; Jour. of Gerontol.; Milit. Med.; n. Jour. of Pub. Hlth. Serv. Rec.: U. S. Army, 1942-46, 953-54. Areas of Rsch.: Social Psychiatry, Psychiatric Gerontol- y, Suicide, Homicide.

EISS, Lawrence Robert (Mr.), Pres., L. R. Weiss and Associates, 525 Wilshire Blvd., Los Angeles 36, Calif. GUIDANCE AND CONTROL OF AEROSPACE VEHICLES. b. Pasadena, Calif., Mar. 8, 1937. s. Joseph Bernard Weiss and Elsie (Shaw) Weiss Kornhauser. Edn.: B.S., Univ. of Calif., 1959. Exp.: Asst. Project Engr., W. O. Wagner and Assocs., Consul. Engrs., Pasadena, Calif., 1958-60; Rsch. Engr., North Am. Aviation, Inc., Los Angeles Div., Los Angeles, Calif., 1960-61; Sr. Engr., Litton Systems, Inc., Guid. and Control Systems Div., Canoga Park, Calif., 1961—; Pres., L. R. Weiss and Associates, Los Angeles, Calif., 1960—. Mem.: Am. Phys. Soc.; Am. Geophys. Union; Astronautical Soc. of the Pacific; Am. Rocket Soc.; Inst. of Radio Engrs. Contbr. to: Astronautical Soc. of the Pacific; Astrophys.



our. Gen. Int.: Formed Sycon, Inc. and Automated Teaching nternational. Areas of Rsch.: Astronomy, Inertial Guidance, utomated Teaching, Digital Computer Applications.

VEISS, Richard Alexander (Ph.D.), Deputy and Scientific Dir., Army Rsch. Office, Office, Chf. of R. and D., Dept. of the Army, Wash. 25, D. C. Home Add.: 3609 N. Delaware, Arlington, Va. PHYSICS-HEAT AND THERMODYNAMICS. b. Port Washington, N. Y., Jan. 23, 1910. s. Robert O. and Bertha (Schwabe) W. Edn.: B.S., Randolph-Macon Coll., 1934; M.A., Univ. of Va., 1938; Ph.D., ibid., 1940. m. Marie Elizabeth Jehne, 1937. c.: Katherine; Carolyn; Stephen. Exp.: Technician, Foundry Processes, Magnolia Metal Co., Bayway, N. J., 1940-41; Physicist, Eatontown Signal Lab., Eatontown, N. J., 1941-45; Chief, Physical Optics Sect. and Chief, Nucleonics Br., Evans Signal Lab., Ft. Manmouth, N. J., 1945-52; Chief, Applied Phys. Br., Dir., Physical Scis. Div., Signal Corps Engrng. Lab., Belmar, N. J., 1952-

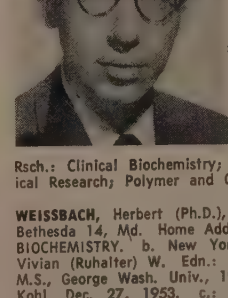


55; Scientific Advisor, Dir. of Rsch., Office, Chf. of Rsch. and Development, Acting Chf. Scientist, U. S. Army, Pentagon, Wash., D. C., 1958-59; Deputy and Scientific Dir., Army Rsch. Office, 1959—. Mem.: Am. Physical Soc.; Wash. Acad. of Scis.; Inst. of Radio Engrs.; Phi Beta Kappa; Omicron Delta Kappa; Sigma Xi. Gen. Int.: Rec'd. Natl. Civil Service League Career Service Award, Dept. of Army, 1959. Areas of Rsch.: Far Infrared Detection and Location; Physical Optics; Nuclear Instrumentation.

WEISS, Samuel Abraham (Ph.D.), Assoc. Proj. Coord., Amputee Psychol. Proj., N. Y. Univ., Post-Grad. Med. Schl., 252 Seventh Ave., N. Y. 1, N. Y. Home Add.: 83-30 118th St., Kew Gardens, L. I. 15, N. Y. CLINICAL PSYCHOLOGY; REHABILITATION; PSYCHONALYSIS AND PSYCHOTHERAPY. b. N. Y., N. Y., May 13, 1923. s. Kasiel and Sophie (Schachter) W. Edn.: B.A., Yeshiva Univ., 1944; Ord. Rabbi, ibid., 1946; M.A., N. Y. Univ. Grad. Schl. of Arts & Scis., 1948; Ph.D., ibid., 1957. m. Alice R. Langer, May 20, 1958. c.: Benjamin Zev; Naomi Esther. Exp.: Rabbi, Community Ctr. of Israel, Bronx, N. Y., 1948-55; Psychol. Interne, Bellevue Psychiatric Hosp., N. Y., 1955-56; Assoc. Psychol. Scientist, N. Y. Univ., 1956-60; Lectr., L. I. Univ., Rsch. Scientist, N. Y. Univ., 1956-60; Consult., 1957; Referral Psychol., Yeshiva Univ., 1957-60; Consult., N. Y. St. Div. of Vocl. Rehabilitation, 1958—; Consult., Stern Coll. for Women, Yeshiva Univ., 1960—; Assoc. Prof., ibid., 1961—; Rsch. Scientist, N. Y. Univ., 1960—; Assoc. Proj. Coord., Amputee Psychol. Proj., N. Y. Univ., 1960—. Mem.: Am. Assn. for the Adv. of Sci., Fellow; Am. Psychol. Assn.; N. Y. St. Psychol. Assn.; Eastern Psychol. Assn.; N. Y. Soc. of Clin. Psycholts.; Acad. of Psycholts. in Marital Counseling, Charter Mem.; Assn. for Appl. Psychoanalysis,; Natl. Rehabilit. Assn. Contbr. to: Anns. of N. Y. Acad. of Scis.; The Am. Imago; Orthopedic and Prosthetics Appliance Jour. Areas of Rsch.: Personality Aspects of Amputees; Phantom Limb Phenomena; Values and Psychotherapy; Personality Theory.

WEISS, William (M.D.), Clinical Dir., Pulmonary Disease Serv., Philadelphia Gen. Hosp., Philadelphia 4, Pa. Home Add.: 1223 E. Durham St., Philadelphia 50, Pa. DIRECTOR OF PHILADELPHIA PULMONARY NEOPLSM RESEARCH PROJECT. b. Philadelphia, Pa., July 29, 1919. s. William and Anna (Weissman) W. Edn.: B.A., Univ. of Penna., 1940; M.D., ibid., 1944. m. Esther Sabul, June, 1941. c.: Winifred Ann; Seth; Deborah. Exp.: Assoc. in Med., Women's Med. Coll., Phila., Pa., 1951-56; Asst. Instr., Med. Grad. Schl., Univ. of Pa., Phila., Pa., 1951-56; Clin. Asst. Prof., Medicine, Woman's Med. Coll., Phila. Pa., 1957-62; Clin. Assoc. Prof. of Med., ibid., 1962—; Clin. Asst. Prof. of Prev. Med., ibid., 1961-62; Assoc. in Med., Grad. Schl., Univ. of Pa., Phila., Pa., 1957—. Mem.: Phila. Co. and Penna. St. Medical Society; American Medical Association; American Fed. for Clinical Rsch.; Fellow, Am. Coll. of Chest Physicians; Am. Thoracic Soc.; Laennec Soc. of Phila.; A.A.A.S.; Phi Lambda Kappa. Contbr. to: Am. Rev. of Respiratory Diseases; Diseases of Chest; Jour. of Am. Med. Assn.; Annals of Internal Med.; Arch. of Internal Med.; Am. Jour. of Med. Sci.; Bull. of Internatl. Assn. of Med. Museums; Jour. of Phila. Gen. Hosp.; Am. Jour. of Clin. Pathology; Am. Jour. of Med.; Antibiotic Med. and Clinical Therapy; Jour. of Lab. and Clin. Med. Serv. Rec.: U.S.A.F., 1953-55. Gen. Int.: Received John G. Clark Founders Prize for Research, Med. Schl. of Univ. of Penna., 1944. Areas of Rsch.: Pulmonary Disease in General, Antimicrobial Therapy and Bronchogenic carcinoma in particular.

WEISSBECKER, Ludwig (Mr.), Assoc. Rsch. Chem., Philip Morris, Inc., P.O. Box 30, Richmond, Va. Home Add.: 812 Hepler Rd., Richmond, Va. APPLIED CHEMICAL RESEARCH. b. Spachbruecken, Germany, May 24, 1930. s. Albert and Toni (Wolf) W. Edn.: B.S., Coll. of City of N. Y., 1952. m. Betty Spitzer, Dec. 27, 1953. c.: Janet Sue; Karen Ann. Exp.: Biochem., Brooklyn Jewish Hosp., Brooklyn, N. Y., 1952-53; Biochem., Tropical Rsch. Med. Lab., San Juan, Puerto Rico, 1953-55; Anal. Rsch. Chem., Am. Cyanamid Co., Boundbrook and Princeton, N. J., 1955-60; Assoc. Rsch. Chem., Philip Morris, Inc., Richmond, Va., 1960—. Mem.: A.A.A.S.; Am. Inst. of Chem.; Am. Chem. Soc. Contbr. to: Fed. Reg. Serv. Rec.: U. S. Army, 1953-55. Gen. Int.: Guest H. S. Sci. Lectr. Areas of Rsch.: Clinical Biochemistry; Industrial and Agricultural Analytical Research; Polymer and Coating Research.

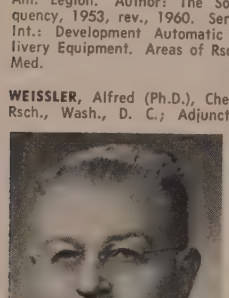


WEISSBACH, Herbert (Ph.D.), Biochem., Natl. Insts. of Health, Bethesda 14, Md. Home Add.: 511 Marcia Lane, Rockville, Md. BIOCHEMISTRY. b. New York, Mar. 16, 1932. s. Louis and Vivian (Ruhalter) W. Edn.: B.S., Coll. of City of N. Y., 1953; M.S., George Wash. Univ., 1955; Ph.D., ibid., 1957. m. Renee Kohl, Dec. 27, 1953. c.: Lawrence; Nancy; Marjorie. Exp.: Biochem., Natl. Insts. of Health, Bethesda, Md., 1953—. Hon. Pos.: Natl. Heart Inst. Traineeship with Dr. H. A. Barker, Dept. of Biochem., Univ. of Calif., 1958. Mem.: Soc. of

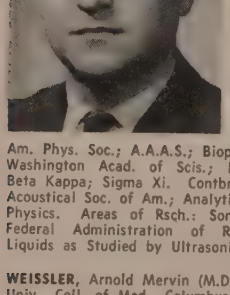
Biol. Chem.; Sigma Xi. Contbr. to: Jour. of Biol. Chem.; Biochem. et Biophys. Acta; Arch. Biochem. and Biophys. Areas of Rsch.: Amino Acid Metabolism and Vitamin B_{12}.

WEISSINGER, Robert Frank (D.O.), 3506 S.E. 27th St., Amarillo, Tex. Home Add.: 2714-B Westhaven Circle, Amarillo, Texas. MEDICINE AND SURGERY. b. Des Moines, Iowa, May 7, 1929. s. Frank H. and Laura E. (Smith) W. Edn.: B.S., Iowa State Univ., 1953; D.O., Coll. of Osteopathic, Med. and Surg., 1957. m. Patricia J. Brobst, Dec. 8, 1951. c.: Robt.; Linda. Exp.: Med. Engr., Univ. of Minn., 1950-51; Med. Engr., Brooke Army Med. Rsch. Ctr., San Antonio, Tex., 1951-52; Med. Engr., Solar Aircraft Corp., Des Moines, Ia., 1952-57; Med. Surg., Des Moines Gen. Hosp., 1957-62. Hon. Pos.: Chmn., Aviation Med. Clin., Des Moines, Ia., 1960. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Ia. Acad. of Sci.; Walter Reed Soc.; Am. Osteopathic Assn.; Am. Coll. of Osteopathic Surgeons; Lambda Chi Alpha; Lambda Omicron Gamma; Theta Sigma Phi; Knights Templar; Am. Legion. Author: The Social Psychology of Juvenile Delinquency, 1953, rev., 1960. Serv. Rec.: U. S. Army, 1951-52. Gen. Int.: Development Automatic Humidifying Devices for Gas Delivery Equipment. Areas of Rsch.: Rsch. in Med. Engrng.; Aviation Med.

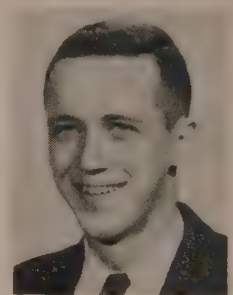
WEISSLER, Alfred (Ph.D.), Chemist, Air Force Office of Scientific Rsch., Wash., D. C.; Adjunct Prof., Am. Univ., Wash., D. C. Home Add.: 5510 Uppingham St., Chevy Chase 15, Md. CHEMISTRY, ULTRASONICS. b. N.Y.C., Mar. 13, 1917. s. Joseph and Gladys (Sobel) W. Edn.: B.S., Coll. of the City of N. Y., 1936; M.S., Univ. of Wis., 1938; Ph.D., Univ. of Md., 1946. m. Pearl Goldman, May 30, 1941. c.: Lenore Eve; Frederic Bennett; Robert Charles. Exp.: Chemist, Naval Rsch. Lab., Wash., D. C., 1942-51; Asst. Prof., Chem. Dept., Univ. of Md., 1946-52; Chemist, Army Ord. Corps, Wash., D. C., 1951-54; Chemist, Natl. Institutes of Health, Bethesda, Md., 1954-62; Chemist, Air Force Office of Scientific Rsch., 1962, and Adjunct Prof., The Am. Univ., Wash., D.C., 1961—. Mem.: A.C.S.; Am. Phys. Soc.; A.A.A.S.; Biophys. Soc.; Acoustical Soc. of Am.; Washington Acad. of Scis.; Philosophical Soc. of Wash.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Acoustical Soc. of Am.; Analytical Chem.; Nature; Jour. of Chem. Physics. Areas of Rsch.: Sonochemistry, Fluorescence Analysis, Federal Administration of Research, Molecular Structure of Liquids as Studied by Ultrasonics.



WEISSLER, Arnold Mervin (M.D.), Asst. Prof. of Med., Ohio State Univ., Coll. of Med., Columbus, Ohio. Home Add.: 905 Woodhill Dr., Columbus, Ohio. INTERNAL MEDICINE; CARDIOVASCULAR DISEASE; CARDIOVASCULAR PHYSIOLOGY. b. Brooklyn, N. Y., May 13, 1927. s. Solomon F. and Dora (Hocheiser) W. Edn.: B.A., N. Y. Univ., 1948; M.D., N. Y. State Univ. Schl. of Med., 1953. m. Gloria Diane Lazarus, June 22, 1952. c.: Suzanne Robin; Mark Douglas; Leslie Ann. Exp.: Intern, Maimonides Hosp., Brooklyn, 1953-54; Jr. Asst. Res., Duke Hosp., Durham, N. C., 1954-55; Rsch. Fellow, ibid., 1955-57; Chf. Res. and Sr. Asst. Res., ibid., 1957-59; Chf. Cardiovascular Renal Sect., Vets. Admin. Hosp., Durham, 1959-60; Instr. in Internal Med., Duke Univ. Med. Schl., 1955-59; Assoc. in Internal Med., ibid., 1959-60; Asst. Prof., Dept. of Internal Med., Univ. of Tex. Med. Schl., 1960-61; Asst. Prof., Dept. of Med., Ohio State Univ., 1961—. Mem.: A.A.A.S.; Am. Fed. for Clin. Rsch.; N. Y. Acad. of Sci.; Cent. Soc. for Clin. Rsch.; So. Soc. for Clin. Rsch.; Diplomate, Am. Bd. of Internal Med.; Sigma Xi; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: Circulation; Jour. of Clin. Invest.; Jour. of Lab. and Clin. Med.; Annals of Internal Med.; Br. Heart Jour.; Postgrad. Med.; Jour. Applied Physiol.; Am. Heart Jour.; Sou. Med. Jour. Serv. Rec.: U.S.N., 1945-46. Areas of Rsch.: Cardiovascular Physiology; Cardiac Output Regulation; Syncope; Heart Sounds; Fat Metabolism; Blood Volume· Congestive Heart Failure.



WEISSMAN, Norman William (Dr.), Rsch. Scientist, Life Sci Faculty, N.A.S.A., Ames Rsch. Ctr., Moffett Field, Calif. Hon Add.: 439 Del Medio Ave., Mou tain View, Calif. EXPERIMENT PSYCHOLOGY. b. Jersey City, Ne Jersey, May 14, 1937. s. Barne and Lillian (Stern) W. Edn.: B.A Univ. of Pa., 1958; M.S., Y shiva Univ., 1959; Ph.D., Uni of Md., 1962. m. Nancijoy Col Feb., 1962. Exp.: Rsch. Ass Lab. of Comp. Psychopharmacol Univ. of Md., Coll. Park, Md 1959-61; Rsch. Scientist, Huma Sci. Rsch., Inc., Arlington, Va 1961-62; Instr., Univ. of Md Coll. Park, Md., 1961-62; Rsc Scientist, Life Scis. Fac., NAS Ames Rsch. Ctr., Moffett Fiel Calif., 1962—. Mem.: Am. Ps chological Assn.; A.A.A.S.; Kapp Nu. Areas of Rsch.: Operant B havior, Learning Theory.



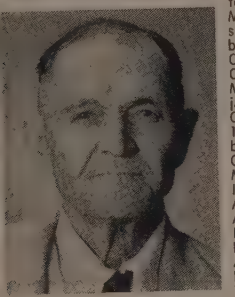
WELCH, Chester Martin (Mr.), Chief Engr., R.S.S., Whi Sands Missile Range, New Mex. Home Add.: 1001 Orga View Dr., Las Cruces, N. Me COMMUNICATIONS; DATA TRAN MISSION; RADAR. b. Wakefield Mass., June 1, 1912. s. Mart and Laura A (Rasmussen) W. Helen M. Yeomans, Sept. 5, 193 c.: Chester M., Jr.; Charles G Regina J. Exp.: Elec. Engr., Sig Sect., Hq. E.U.C.O.M., Heidelberg Germany, 1948-51; Supvr. Elec Engr., Hq. 2nd Army, Ft. Meade Md., 1951-53; Chf. Engr., U. S Army Signal Missile Support Agcy White Sands Missile Range, N. M 1953—. Hon. Pos.: Past Vice Chmn., I.R.I.G., D.O.D.; Chmn A.R.P.A.T. Comm.; Chmn., I.C.P.C D.O.D.; Membership Comm., I.T P.A. Mem.: I.R.E.; A.I.E.E A.R.S.; A.A.A.S.; Toastmasters In ternatl.; B.P.O.E.; Mesilla Valle Chamber of Commerce; Civic Betterment League. Areas of Rsch Data Communication and Instrumentation; Radar; Command Des truct; Natl. Range Timing; World-Wide Communications System and Satellite Programs

WELCH, Rodney Channing (Ph.D.), Vice Pres., Wilbur Chocolat Co., Lititz, Pa. Home Add.: 415 Cedar St., Lititz, Pa. CHOCOLATE AND DAIRY MANUFACTURING. b Ayrshire, Ia., Dec. 16, 1904. s Channing and Bernice (Hough) W Edn.: B.S., Wash. State Univ. 1928; M.S., ibid., 1931; Ph.D. Penn State Univ., 1935. m. Evelyn Hebron, July 14, 1937. c.: Joan Bernice; Rodney Channing; Mary Lynne. Exp.: Extension Serv. Wash. State Coll., 1928-29; As sistantship, ibid., 1930-31; Assist antship, Penn State Univ., 1931 34; Dir. of Sanitation, Sylvan Seal Milk Co., Inc., Phila., Pa., 1934-43; Vice Pres., Charge-Pro duction, Wilbur Chocolate Co. Lititz, Pa., 1943—. Hon. Pos. Community Chest Exec. Bd., Ch Coun.; Secy., Tech. Com., Choco late Mfgrs. Assn. Mem.: N. Y Academy of Sci.; Am. Dairy Sci Assn.; Am. Assn. Cereal Chemists; Am. Assn. Candy Tech.; Am. Oil Chemists Soc.; Sigma Xi; Phi Kappa Phi; Alpha Zeta Rotary Club. Contbr. to: Jour. Dairy Sci.; Mfgr. Confectioner, Candy Industry. Areas of Rsch.: Chocolate Mfg.; Dairy Mfg.

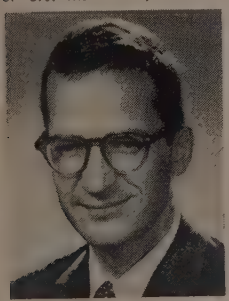
WELCH, John Mershon (Ph.D.), Ext. Prof. of Agric. Economics Univ. of Missouri, Columbia, Mo. Home Add.: 302 Bourn Ave. Columbia, Mo. ADULT EDUCATION HOTEL AND RESTAURANT ADMIN ISTRATION. b. Mechanicsville, Ia. May 16, 1904. s. John W. and Gertrude (Mershon) W. Edn.: B.S. Cornell Univ., 1926; M.S., Fla State Univ., 1958; Ad. M. o Edn., Ibid., 1960; Ph.D., Ibid. 1961. m. Alice Keller, Dec., 1932 c.: William Warford. Exp.: Dir Sales Promotion, Hotpoint, Inc. Chicago, Ill., 1930-40; Div. Dir. The DuBois Co., Cincinnati, Ohio 1946-57; Instr., Fla. State Univ. Tallahassee, Fla., 1957-59; Ext Prof., Univ. of Mo., Columbia Mo., 1960—. Mem.: Internatl Soc. of Food Serv. Consultants Am. Dietetic Assn.; A.A.A.S. Food Facilities Engrng. Soc.; Am Pub. Health Assn.; Natl. Assn of Sanitarians; Adult Edn. Assn. of U.S.A.; Phi Delta Kappa

Alpha Kappa Psi; Scabbard and Blade; Ye Hosts; Sigma Phi Epsilon. Author: Instructor's Guide, Accelerated Adult Training Courses for the Hospitality Industries Field, 1959; A Basic Course in Quantity Food Production, 1960. Contbr. to: Cornell Hotel and Restaurant Quart.; The Mo. Restaurant Mag.; Institutions Mag.; Adult Edn. Serv. Rec.: A.U.S., 1940-46. Areas of Rsch.: Hotel and Restaurant Admin.; Vocl. Higher Edn.; Adult Vocl. Training; Adult Edn.

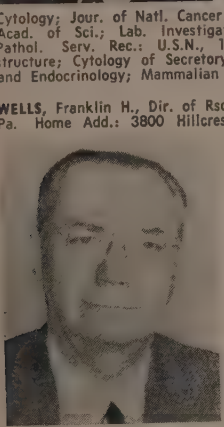
WELCH, Philip (Ph.D.), Retired, Pastor, Christian Church, Fredinichtown, Me.; Author and Translator. Home Add.: Christopher, Ill. ANTHROPOLOGY. b. Mulkeytown, Ill., Dec. 5, 1875. s. Benjamin and Emma (Sickenberger) W. Edn.: B.S., Iowa Christian Coll., 1909; Ph.D., Oscaloosa Coll., 1910. m. Alyce Marsh, 1909. c.: Emma; Benjamin; Philip, Jr. Exp.: Pastor, Christian Church, Cheney, Kans., 1909-12; Pastor, ibid., Pittsburgh, Pa., 1912-14; Pastor, Christian Church, Fredinichtown, Me., 1914-18; Rsch. Editor, Sou. Ill. Univ., 1939-40, '41. Mem.: A.A.A.S.; Am. Anthropological Assn.; Natl. Coun. of Geographic Edn.; Ill. St. Acad. of Sci.; Phi Beta Tau. Author: Peoples of Africa; Peoples of the World, Kings and Priests, Author of Translations: New Testament from the Original Greek; An Introduction to Geology, from German; An Introduction to Palaontology, from German; The Seas of Ancient Times, from German; The Duration of the Firulence of Snake Poison, from French; Reproduction of the Cheiroptera, from French; Natural History of the Protozoa, from Greek; Natural History of the Hexapoda, from Greek; Natural History of the Coelenterata, from Greek; etc. Areas of Rsch.: Anthropology, Astronomy.



WELLINGS, Selfton Robert (Ph.D.), Assoc. Prof. of Pathol., Univ. of Ore. Med. Schl., Portland 1, Ore. Home Add.: 5033 S.W. Humphrey Blvd., Portland 1, Ore. PATHOLOGY; ZOOLOGY. b. Tacoma, Wash., Oct. 2, 1927. s. Donald and Norah (Atkins) W. Edn.: B.S., Univ. of Wash., 1951; M.D., ibid., 1953; Ph.D., Univ. of Calif., 1961. m. Marjorie Plumb, June, 1951. c.: Anne Katherine; Elizabeth Norah; Julie Virginia; Mary Martha. Exp.: Instr., Univ. of Calif. Med. Center, San Francisco, Calif., 1957-60; Asst. Prof., ibid., 1960-61; Asst. Prof., Univ. of Ore. Med. Schl., Portland, Ore., 1961-62; Assoc. Prof., ibid., 1962—. Mem.: Am. Ornithologists Un.; A.A.A.S.; Tissue Culture Soc.; Cooper Ornithological Soc.; Sigma Xi; N. Y. Acad. of Sci. Contbr. to: Jour. of Ultrastructure Rsch.; Jour. of Biochem. and Biophys. Acad. of Sci.; Lab. Investigation; Fed. Proc.; Am. Jour. of Pathol. Serv. Rec.: U.S.N., 1946-47. Areas of Rsch.: Ultrastructure; Cytology of Secretory Cells; Mammary Gland Cytology and Endocrinology; Mammalian Melanomas.



WELLS, Franklin H., Dir. of Rsch., AMP Incorporated, Harrisburg, Pa. Home Add.: 3800 Hillcrest Rd., Harrisburg, Pa. PHYSICS. b. Chicago, Ill., Jan. 25, 1898. s. Fred K. and Margaret (Lugg) W. Edn.: B.S., Mass. Inst. of Tech., 1918; M.S., ibid., 1922. Hon. Deg.: LL.D., Tri-State Coll., 1952. m. Ruth Lugg, 1926. c.: Ellen R. Exp.: Exec. Engr., Bendix Products, South Bend, Ind., 1929-39; Rsch. Engr., Am. Mach. and Foundry, Brooklyn, N. Y., 1939-43; Dir. Rsch., AMP Incorp., Harrisburg, Pa., 1943—. Mem.: Aircraft Electl. Soc.; A.A.A.S.; Am. Chem. Soc.; Am. Electroplaters Soc.; Am. Soc. for Metals; Chemists Club; Electrochemical Soc.; Inst. of Management Scis.; Natl. Rsch. Coun.; N. Y. Acad. of Scis.; Operations Rsch. Soc.; Optical Soc. of Am.; Soc. for Exptl. Stress Analysis. Serv. Rec.: AUS, 1918-19. Areas of Rsch.: Electric Contacts; dielectrics.



WELLS, Ouida Carolyn (Ph.D.), Asst. Prof. Biol., Longwood Coll., Farmville, Va. Home Add.: 722 Yale Pl., Atlanta 15, Ga. BIOLOGY (GENETICS, CYTOLOGY, PHYSIOLOGY). b. Atlanta, Ga., July 23, 1933. d. Jere A. and Ouida (Cox) W. Edn.: B.A., Agnes Scott Coll., 1955; M.S., Emory Univ., 1956; Ph.D., ibid., 1958. Exp.: Rsch. Assoc., Biol. Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1958-60; Asst. Prof., Longwood Coll., 1960—. Mem.: Sigma Xi; Am. Soc. of Zool.; A.A.A.S.; Am. Inst. Biol. Sci.; Am. Soc. Protozoologists; Gen. Soc. of Am.; Am. Soc. for Cell Biol. Contbr. to: Jour. Protozool.; Bull. Assn. of S. E. Biol.; Jour. of Cellular and Comp. Physiol. Areas of Rsch.: Protozoa: X-Ray Damage to; Biochemistry and Physiology of; Cytology of.

WELLS, William Tunstall (Ph.D.), Staff, Guided Missiles Range Div., Pan Am. World Airways, Air Force Missile Test Ctr., Patrick A.F.B., Fla. Home Add.: 210 Warren Ave., Cary, N. C. EXPERIMENTAL STATISTICS. b. Wytheville, Va., Aug. 9, 1933. s. Roy Leon and Eula (Simpson) W. Edn.: B.S., Coll. of William and Mary, 1954; M.S., N. C. State Coll., 1956; Ph.D., ibid., 1959. m. Jean Sullender, Aug., 1955. c.: Stuart Sullender; Ramsey Carleton. Exp.: Rsch. Asst., N. C. St. Coll., Raleigh, N. C., 1954-59; Statistician, Rsch. Triangle Inst., Durham, N. C., 1959-62; Staff, Guided Missiles Range Div., Pan Am. World Airways, Air Force Missile Test Ctr., Patrick A.F.B., 1962—. Mem.: Am. Stat. Assn.; Inst. of Mathl. Statistics; Soc. for Indusl. and Applied Maths; Affiliate of I.R.E. Profl. Group on Reliability and Quality Control; Sigma Xi; Phi Kappa Phi. Contbr. to: Technometrics; Proc. of Natl. Symposiums of Reliability; Quality Control. Areas of Rsch.: Experimental Statistics with special emphasis on reliability of complex systems and distribution theory.

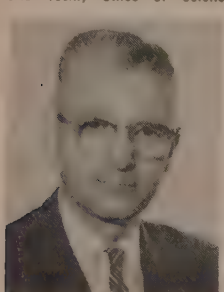
WELT, Isaac Davidson (Ph.D.), Assoc. Dir. and Chief of Wash. Office, Inst. Adv. Med. Comm., Washington, D. C. Home Add.: 117 N. Edgewood St., Arlington, Va. BIOCHEMISTRY; ENDOCRINOLOGY. b. Montreal, Can., May 13, 1922. s. David and Norma (Younger) W. Edn.: B.S., McGill Univ., 1944; M.S., ibid., 1945; Ph.D., Yale Univ., 1949. m. Rhoda Litwin, Dec. 30, 1945. c.: Selman Irvin; Murray Ben; Bernard Arnold. Exp.: Instr. in Chem., Sir George Williams Coll., Montreal, Can., 1945-46; Rsch. Staff, Div. of Nutrition and Physiology, The Pub. Health Rsch. Inst. of the City of N. Y., Inc., 1949-51; Asst. Prof. of Biochem., Baylor Univ. Med. Schl. and Asst. Dir., Radioisotope Unit, V. A. Hosp., Houston, Texas, 1951-53; Rsch. Assoc., Chem.-Biol. Coordination Center, NAS-NRC, 1953-55; Dir., Cardiovascular Lit. Project, NAS-NRC, 1955-61; Assoc. Dir. and Chief of the Washington Office, Inst. of Adv. Med. Comm., 1961—; Professional Lectr. in Chem. and Physics, The Am. Univ., 1955—. Hon. Pos.: Chmn., Potomac Valley Chapt., Am. Documentation Inst., 1960-61; Assoc. Ed., Am. Documentation; Medical Documentation. Mem.: Am. Chem. Soc.; Sigma Xi; A.A.A.S.; Am. Documentation Inst.; Med. Libr. Assn.; Special Librs. Assn.; Yale Club. Author: Index-Handbook of Cardiovascular Agents, 1960. Contbr. to: Jour. of Biol. Chem.; Fed. Proc.; Yale Jour. of Biol. and Med.; Am. Documentation; Science; Bull. of Med. Libr. Assn. Areas of Rsch.: Effects of Hormones Upon Intermediary Metabolism; Science Information and Documentation; Mechanization of Technical Information Input and Retrieval; Indexing Techniques.

WENDLANDT, Wesley William (Ph.D.), Prof. of Inorganic Chem., Dept. of Chem., Tex. Tech. Coll., Lubbock, Tex. Home Add.: 2813 57th St., Lubbock, Tex. INORGANIC CHEMISTRY. b. Galesville, Wis., Nov. 20, 1927. s. William W. and Bernice B. (Polzin) W. Edn.: B.S., Wis. State Coll., 1950; M.S., State Univ. of Iowa, 1952; Ph.D., ibid., 1954. Exp.: Asst. Prof., Tex. Tech. Coll., 1954-57; Assoc. Prof., ibid., 1957-60; Prof., ibid., 1960—; Rsch. Assoc., Argonne Natl. Lab., 1954—. Mem.: Am. Chem. Soc.; A.A.A.S.; Central Assn. Sci. and Math. Tchrs.; Iowa Acad. Sci.; Tex. Acad. of Sci.; Phi Lambda Upsilon; Sigma Xi; Alpha Chi Sigma. Author: General Chemistry Experiments, Vol. I and II, 1959. Contbr. to: Jour. Am. Chem. Soc.; Jour. Phys. Chem.; Anal. Chem.; Anal. Chim. Acta.; Jour. Inorganic Nucl. Chem.; Science. Serv. Rec.: U.S.N., 1945-46. Areas of Rsch.: Coordination Compounds; Rare-Earth Chemistry; Metal Chelates; Thermogravimetric Analysis; Differential Thermal Anal.

WENDT, Arthur Stanley (Ph.D.), Vice Pres. and Tech. Dir., Fred Fear and Co., 360 Furman St., Brooklyn 1, N. Y. Home Add.: 1160 West Laurelton Parkway, West Englewood, N. J. ORGANIC CHEMISTRY. b. New York, N. Y., Nov. 2, 1907. s. Samson and Ida (Stanger) W. Edn.: B.S., City Coll. of N. Y., 1926; M.A., Columbia Univ., 1927; Ph.D., Brooklyn Polytech. Inst., 1941. m. Henrietta Posnak, Oct. 26, 1936. c.: Peter Michael. Exp.: Asst. Chemist, Rockwood and Co., Brooklyn, N. Y., 1926-33; Chief Chem., My-T-Fine Corp., ibid., 1933-37; Chief Chem., Seeley and Co., New York, N. Y., 1937-43; Chemist, N. Y. Univ., 1943-44; Vice Pres. and Tech. Dir., Fred Fear and Co., Brooklyn, N. Y., 1944—. Hon. Pos.: Chmn. of Standards, Scientific Rsch., Sci. Proj. Comm.; Vice Pres., Flavoring Extract Mfg Assn.; Natl. Councillor of Inst. of Food Tech. Mem.: A.C.S.;

A.A.A.S.; Inst. of Food Technologists; Soc. of Flavor Chemists; Flavoring Extract Mfrs. Assn.; I.C.U.M.S.A.; Phi Lambda Upsilon. Contbr. to: Proceedings of F.E.M.A.; Spice Mill; Coffee and Tea Jour. Areas of Rsch.: Chem. and Analytical Procedures for Vanilla and Maple. Syntheses of Glycidic Esters, Mercaptans, Organic Sulfur Compounds, and Thioglycollates. Food Technology and Canning of Clam Products.

WENK, Edward, Jr. (Dr. Eng.), Exec. Secy., Fed. Coun. for Sci. and Tech., Office of Science and Technology, Wash., D. C. Home. Add.: 4600 Oxford St., Garrett Pk., Md. b. Baltimore, Md., Jan. 24, 1920. s. Edward and Lillie (Heller) W. Edn.: B.E., Johns Hopkins Univ., 1940; M.Sc., Harvard Univ., 1947; Dr. Eng., Johns Hopkins Univ., 1950. m. Carolyn Lyford, Dec. 27, 1941. c.: Lawrence Shelley; Robin Edward Alexander; Terry Allen. Exp.: Naval Architect, Boston Naval Shipyard, Charlestown, Mass., 1941-42; Naval Research Scientist, David Taylor Model Basin, Wash. 7, D. C., 1942-50; Chief, Structures Div., ibid., 1950-56; Chmn., Dept. of Engrng. Mechanics, Southwest Rsch. Inst., San Antonio, Tex., 1956-59; Sr. Specialist, Sci. and Technol., Legislative Ref. Serv., Libr. of Cong., Wash., D. C., 1959-61; Exec. Secy., Fed. Coun. for Sci. and Tech., Office of the Sp. Asst. to the Pres. for Sci. and Technol., the White House, Wash., D. C., 1961-62; Exec. Secy., Fed. Coun. for Sci. and Tech., and Tech. Asst. to Dir., Office of Sci. and Technol., Wash., D. C., 1962—. Registered Professional Engr. Hon. Pos.: Chmn., Ed. Bd., Jour. of Exptl. Mechanics, 1959-62; Chmn., Design Div., Pressure Vessel Rsch. Commn., 1954-59; Natl. Pres., Soc. for Exptl. Stress Anal., 1957-58; Exec. Comm., ibid., 1955-57, 1959-61; Sec., Engrng. Mechanics Div., Am. Soc. for Civil Engrs., 1958-61; Panel Chmn., Comm. on Undersea Warfare, Natl. Acad. of Scis.; Am. Soc. of Civil Engr.; Am. Soc. of Mech. Engrs.; Soc. for Exptl. Stress Anal.; Pressure Vessel Rsch. Commn.; Welding Rsch. Coun.; A.A.A.S.; Sigma Xi; Tau Beta Pi; Harvard Club. Author of: "Radio Frequency Control in Space Tele-Communications," 1960; "Ocean Sciences and National Security," 1960, "Coordination of Information on Current Scientific Research," "Policy Planning for Space Telecommunications", 1961 (Major Congressional Reports); "Feasibility of Pressure Hulls for Deep Diving Submarines, 1958, Natl. Acad. of Scis."; "Pressure Vessel Analysis of Submarine Hulls", Weld. Jour., 1961; "Feasibility of Pressure Hulls for Ultra Deep Running Submarines", Trans ASME, 1962. Contbr. to: Jour. of Applied Mechanics; Transactions and Proceedings; Am. Soc. of Civil Engrs.; Proc. of the Royal Inst. of Naval Architects; Proc. of the Soc. for Exptl. Stress Anal.; Welding Jour. Serv. Rec.: U. S. Naval Reserve, 1944-45. Gen. Int.: Developed Procedures for the Structural Design of Contemporary Sunnyvale, Calif. CHEMISTRY (ANALYTICAL). b. Pasadena, Calif., Exceedingly Deep Operation; Inventor of Aluminaut, First Deep Diving True Submarine; Contribute to formulation of Public Policy Concerned with Natl. Programs of Rsch. and Devel. Areas of Rsch.: Applied Mechanics; Ship and Submarine Design; Pressure Vessel Design; Rsch. Lab. Mgmt.; Rsch. Admin.



WENNER, Charles Earl (Ph.D.), Sr. Cancer Rsch. Scientist, Roswell Park Mem. Inst., Buffalo 3, N. Y. Home Add.: 69 Bernhardt Dr., Buffalo 26, N. Y. BIOCHEMISTRY. b. Lattimer, Pa., May 2, 1924. s. Charles Geo. and Estella (Berger) W. Edn.: B.A., Temple Univ., 1948; Ph.D., ibid., 1953. m. Marion Shaw, 1948. c.: Paul; Curt. Exp.: Rsch. Assoc., Inst. for Cancer Rsch., Phila., Pa., 1953-56; Rsch. Scientist, Roswell Pk. Mem. Inst., Buffalo, N. Y., 1956—; Asst. Rsch. Prof., Univ. of Buffalo, N. Y., 1958—. Mem.: Federation of Am. Socs. for Exptl. Biol.; Am. Assn. for Cancer Rsch.; Biochemistry and Biophys. Soc. Contbr. to: Jour. of Biol. Chem.; Arch. of Biochem. and Biophys.; Cancer Rsch.; Science; Proc. of Soc. for Exptl. Biol. and Med. Areas of Rsch.: Oxidative Metabolism of Neoplastic Tissue.

WERNIMONT, Kenneth (Mr.), Asst. Treas., The Rockefeller Found., New York, N. Y. Home Add.: 1 Woods Lane, Scarsdale, N. Y. AGRICULTURAL ECONOMICS AND PUBLIC ADMINISTRATION. b. Ohiowa, Nebr., Aug. 30, 1909. s. Henry and Mabel (Bailor) W. Edn.: B.A., Nebr. Wesleyan Univ., 1930; M.A., Am. Univ. Grad. Schl., 1937; Am.-Italian Fellowship, Inst. of Internatl. Edn., 1937-38. m. Carolyn D. Crawford, June 28, 1958. c.: Martha Ann. Exp.: Asst. and Assoc. Econ., Bur. of Agric. Econ., U. S. Dept. of Agric., Wash., D. C., 1938-42; Agric Attache, U. S. Dept. of St., Embassies, Rio de Janiero, Bogota and Mexico City, 1943-52; Asst. Dir. for Agric. Sci., The Rockefeller Found., New York, N. Y., 1952-61; Asst. Treas., ibid., 1961—. Mem.: Am. Assn. Adv. Sci.; Coun. on Foreign Rels.; Natl. Assn. Foreign Stud. Advrs.; Nebr. St. Bar Assn. Contbr. to: Jour. of Farm Econs. Gen. Int.: Admitted, Nebr. St. Bar, 1933; Fellow, A.A.A.S.; Dist. Alumnus Award, Nebr. Wesleyan Univ., 1961. Areas of Rsch.: Foreign Agriculture Administration of Foreign Fellowship Program in Agricultural Sciences.

WENTZEL, Donat Gotthard (Ph.D.), Asst. Prof., Univ. of Mich., Ann Arbor, Mich. Home Add.: 1540 Westfield, Ann Arbor, Mich. ASTROPHYSICS; HYDROMAGNETICS. b. Zurich, Switzerland, June 25, 1934. s. Gregor and Anna L. (Wielich) W. Edn.: B.A., Univ. of Chicago, 1954; B.S., ibid., 1955; M.S., ibid., 1956; Ph.D., ibid., 1960. m. Maria Mayer Mar. 21, 1959. Exp.: Instr., Univ. of Mich., 1960-61; Physicist, N.A.S.A., Wash., D. Summer, 1960; Asst. Prof., Univ. of Mich., 1961—. Hon. Pos.: Alfred P. Sloan Rsch. Fellow 1962-64. Mem.: Am. Astron. Soc.; Internatl. Astronom. Union; Am. Geophys. Union. Sigma Xi; Phi Beta Kappa; Beta Theta Pi. Contbr. to: Astrophys. Jour.; Jour. of Geophys. Rsch.; Nature; Bull. of the Astrono. Insts. of the Netherlands. Areas of Rsch.: Galactic Structure; Hydromagnetic equilibrium; Geophysical and Solar Hydromagnetics.

WERDOUSCHEGG, Fritz MK. (Mr.), Project Leader, Hudson Pulp and Paper Corp., Palatka, Fla. Home Add.: 112 Ashley Dr., Palatka, Fla. PULP AND PAPER TECHNOLOGY AND ENGINEERING. b. Cilli, Yugoslavia, June 16, 1927. s. Fritz, Franz and Josephine Victoria (Oseniak) W. Edn.: Ph.U.C., Universitas Carola Francisca Graecensis, Graz, Austria, 1950. m. Josephine Santner, Oct., 1955. c.: Linda Diane. Exp.: Chf., Chem., 2nd Clinic for Internal Med., Univ. of Graz, Graz, Austria, 1949-50; Asst. Lab. Mgr., Brigl and Bergmeister Zellulose and Papierfabriken Niklasdorf/MUR, Austria, 1950-51; Industrial Apprentice, Muerzthaler Holzstoff and Papierfabriken, AG., Bruck/MUR, Austria, 1951-52; Pulp and Paper Chemist, Case Brothers, Inc., Manchester, Conn., 1952-59; Project Leader, Products Development Dept., Hudson Pulp and Paper Corp., Palatka, Fla., 1959-60; Project Leader, Technical Department, ibid., 1960—. Hon. Pos.: Charter Pres., Chemists Club, Austria. Mem.: Tech. Assn. of the Pulp and Paper Ind.; Am. Soc. for Testing and Materials; Instrument Soc. of Am.; A.A.A.S.; Phi Beta Gamma (Graz, Austria). Serv. Rec.: German Army, W.W. II, 1943-45. Areas of Rsch.: Pulp and Paper Technology; Pulp and Paper Mill Automation and Instrumentation; Stock Preparation for Specialty Papers. Three Languages; English, German, Yugoslavian. Travel: Central Europe, Balkans, U.S.A., Canada.

WERTH, Richard George (Ph.D.), Prof. of Chem. and Chmn. of Chem. Dept., Concordia Coll., Moorhead, Minn. Home Add.: 1207 S. 7th St., Moorhead, Minn. ORGANIC CHEMISTRY. b. Markesan, Wis., Feb. 5, 1920. s. George W. and Lillie M. (Luethe) W. Edn.: B.A., Wartburg Coll., 1942; M.S., Univ. of Wis., 1948; Ph.D., ibid., 1950. m. Wilma L. Lauer, June 2, 1943. c.: Gerald Richard. Exp.: Jr. Chemist., E. I. duPont de Nemours and Co., Niagara Falls, N. Y., 1942-44; Jr. Chem. Exp., ibid., 1946; Prof., Concordia Coll., 1950—. Hon. Pos.: Secy., Red River Valley Sect., Am. Chem. Soc., 1953-54; Chmn.-Elect, ibid., 1959; Chmn., ibid., 1960. Mem.: Am. Chem. Soc., Div. of Chem. Edn., Div. of Org. Chem.; A.A.A.S.; Sigma Xi; Phi Lambda Upsilon; Midwest Assn. of Chem. Tchrs. in Lib. Arts Colls. Contbr. to: Jour. Org. Chem. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Synthesis of Polycyclic Aromatic Compounds; Formaldehyde Products; Glycosides Present in Bark of Populus Tacamahaca.

WERST, Mervin Claude (Mr.), Sr. Engr., Sperry Gyroscope Co., Great Neck, L. I., N. Y. Home Add.: 129 Colony Lane, Syosset, L. I., N. Y. AUTOMATION BY DIGITAL TECHNIQUES, ELECTRONIC INSTRUMENTATION, NUCLEAR RADIATION AND SHIELDING. b. Perkasie, Pa., Feb. 20, 1927. s. Lyman Wilson and Mamie Godshall (Bergey) W. Edn.: B.S., Lehigh Univ., 1951. m. Mabel Anna Cook, Oct. 21, 1950. c.: Jeffrey Alan; Lance Elliott; Andrew Nathan. Exp.: Intermediate Rsch. Engr., Westinghouse Rsch. Labs., 1951-55; Assoc. Engr., Westinghouse Atomic Power Div., 1955; Scientist, Westinghouse Bettis Atomic Power Div., 1955-57; Sr. Engr., Sperry Gyroscope Co. Countermeasures

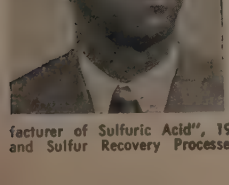
v., 1957—. Hon. Pos.: Chmn., Prog. Arrangements Third Annual eeting A.N.S.; Chmn., Membership Comm., Pittsburgh Sect., .E.; Chmn., Invitations Fellow Awards Presentation Long Is- nd Sect., I.R.E. Mem.: Am. Physical Soc.; Am. Physical Soc.; n. Assn. Adv. Sci.; Am. Nuclear Soc.; Inst. Radio Engrs.; Alpha i Omega; Boy Scouts of Am. Contbr. to: Third Annual Meet- g A.N.S., 1957. Serv. Rec.: U.S.M.M.R., U.S.N.R., U.S.A.A.F., 44-47. Areas of Rsch: Nuclear Radiation Analysis; Control ethods (digital and closed loop); Electronic Instrumentation ideo and r-f).

ERWATH, Karl O. (Mr.), Pres., Milwaukee Schl. of Engrng., s. Add.: 1025 N. Milwaukee St., Milwaukee 2, Wis. Home Add.: 2209 Newton Ave., Milwaukee, Wis. b. Mar. 1, 1909, Milwaukee, Wis. s. Oscar and Johanna (Seelhorst) W. Edn.: Milwaukee Schl. of Engrng., Coll. of Elect. Engr., 1927-28; Cooperative Program, 1928-36, B.S. in E.E., 1936; Northwestrn Univ. Schl. of Edn., Ext. Div., 1936-38; Univ. of Wis., Fall, 1938. m. Charlotte Dorothea Becker of Milwaukee, Wis., Sept., 1938. d. Mr. and Mrs. Paul G. Becker. c.: Karlene Dorothea. Exp.: Asst. Registrar, Milwaukee Schl. of Engrng., 1936-38; Instr., Pub. Utilities, 1937-45; Commerce, 1939-45; Registrar, 1937-47; Vice Pres., 1947-48; Pres., 1948—; Registered Professional Engr. #E-5476, Wis Registration Bd. of Architects and

rofessional Engrs. Hon. Pos.: Natl. Coun. of Tech. Schls., 950-51; Vice-Chmn., Legis. Comm., 1959—; Chmn., Tech. Inst. iv., A.S.E.E., Gen. Coun., 1955-59; Secy., ibid., 1951-55; Life lem., Milwaukee Jr. C. of C.; Chmn., Working Grp. on Supporting ech. Pers. of the Natl. Com. for the Dev. of Scientists and ngrs., 1956-58; Mem., U. S. Tech. Edn. Delegation to the .S.S.R., 1961; Natl. Soc. of Prof. Engrs., Comm. on Engrng. echnicians, 1958—; Pres., Wis. Soc. of Prof. Engrs., 1961; hmn., Comm. on Engrng. Technicians, 1958—; Program Chmn. nd 2nd Vice Pres., ibid., 1959-60, Pres.-Elect, 1960-61; Pres., ilwaukee Sect., 1956-57, Wis. Acad. of Scis., Arts and Letters; m. Assn. for the Adv. of Sci.; Indusl. Relations Assn. of Vis., Lad Lake, Inc., Bd. of Dirs., 1957-60; Engrs. Coun. for rof. Devel., Chmn., Reg. V, Subcom. on Technical Insts., 1958 —; Consult. to U. S. Army Ordnance Training Command Board f Visitors, 1958—; Illuminating Engrng. Soc.; Inst. of Radio Engrs. Prof. Grp. on Edn.; Instrumentation Soc. of Am. Advisory Comm. Task Force on Instrumentation Technicians. Mem.: Engrng. Soc. of Milwaukee; N.C.T.S.; A.A.S.A.; Am. Soc. of Heating, Refrigerating and Air Conditioning Engrs.; Am. Welding Soc. Elec. League of Milwaukee; N.E.A.; Schoolmasters Club; Alpha Delta Sigma; Kappa Gamma Phi; Sigma Pi Rho; Wis. Jr. C. of C. (Life Mem.); Milwaukee Assn. of Commerce; Vice-Pres., U. S. Jr. C. of C., 1943-45; Lake Park Lutheran Ch.; Milwaukee Rotary Club; Delta Alpha Epsilon; Delta Phi Zeta; Epsilon Rho Epsilon; Past Pres., Milwaukee Exec. Club. Contbr. to: Am. Engr.; Coll. and Univ. Bus.; Indusl. Engrng.; Popular Mechanics; Jour. of Engrng. Edn.; Natl. Engr. War Rec.: Dir., C.A.A. Civilian Pilot Trng. Program, Milwaukee Schl. of Engrng., 1939-40; Coord., 1940-41; Job Inst., Trng., W.M.C., 1942-44. Gen. Int.: Recipient of James H. McGraw Award in Tech. Inst. Edn., 1958; Key Man Award in Milwaukee, 1943.

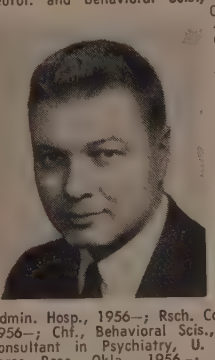
WEST, Donald Markham (Ph.D.), Assoc. Prof. of Chem., San Jose State Coll., San Jose, Calif. Home Add.: 1477 Firebird, Sunnyvale, Calif. CHEMISTRY (ANALYTIAL). b. Pasadena, Calif., Apr. 22, 1925. s. Donald and Hildreth (Markham) W. Edn.: B.S., Stanford Univ., 1949; Ph.D., ibid., 1958. m. Marjorie Morris, 1948. Exp.: Instr., Stanford Univ., 1954-55; Asst. Prof., San Jose State Coll., 1956-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Anal. Chem.; Anal. Chim. Acta; Jour. Am. Chem. Soc. Serv. Rec.: U. S. Navy, W.W. II.

WEST, James Robert (Ph.D.), Asst. Mgr. of Rsch., Tex. Gulf Sulphur Co., 75 East 45th St., N.Y., N.Y. THERMODYNAMICS. b. McKeesport, Pa., Dec. 5, 1914. s. Frank and Margaret Susanna (Schlagle) W. Edn.: B.S., Univ. of Pittsburgh, 1937; M.S., ibid., 1941; Ph.D., ibid., 1944. m. Feb. 23, 1941, Louise Kish. Exp.: Rsch. Asst., Mellon Inst., Pittsburgh, Pa., 1937-39; Fellow, ibid., 1939-46; Sr. Fellow, ibid., 1946-59; Tex. Gulf Sulphur Co., 1960—. Lectr., Univ. of Pittsburgh, Pittsburgh, Pa., 1942-48. Mem.: Sigma Xi; Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; A.A.A.S.; Soc. of Chem. Indus.; Phi Lambda Upsilon. Contbr. to: Indus. and Engrng. Chem.; Chem. Engrng. Prog.; Chem. Engrng.; Jour. of Am. Chem. Soc.; Jour. of Phys. and Colloid Chem.; Jour. of Chem. Edn.: A.C.S. Monograph, "Manu-

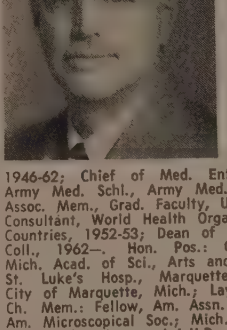


facturer of Sulfuric Acid", 1959. Special Int.: Tech. of Sulfur and Sulfur Recovery Processes; Thermodynamics.

WEST, Louis Jolyon (M.D.), Prof. and Hd., Dept. of Psychiatry, Neurol. and Behavioral Scis., Univ. of Okla., Schl. of Med., Okla. City, Okla. Home Add.: 4900 Willard Ave., Okla. City, Okla. PSYCHIATRY. b. Brooklyn, N. Y., Oct. 6, 1924. s. Albert Jerome and Anna (Rosenberg) W. Edn.: B.S., Univ. of Minn. Med. Schl., 1946; M.B., ibid., 1948; M.D., ibid., 1949. m. Kathryn Louise Hopkirk, Apr. 29, 1944. c.: Anne Kathryn; Mary Elizabeth; John Stuart. Exp.: Med. Internship, Univ. of Minn. Hosp., 1948-49; Psychiatric Residency, Payne Whitney Clinic of the N. Y. Hosp., Cornell Md. Center, 1949-52; Asst. in Psychiatry, Cornell Univ. Med. Coll., 1950-52; Prof. and Head, Dept. of Psychiatry, Neurol., and Behavioral Scis., Univ. of Okla. Schl. of Med., 1954—; Consultant in Psychiatry, Okla City Vets. Admin. Hosp., 1956—; Rsch. Coordinator, Okla. Alcoholism Assn., 1956—; Chf., Behavioral Scis., Okla. Med. Rsch. Fdtn., 1956—; Consultant in Psychiatry, U. S. Air Force Hosp., Tinker Air Force Base, Okla., 1956—; Advisory Coun., Behavioral Scis. Div., Air Force Office of Scientific Rsch., 1957—; Comm. on Rsch., Am. Psychiatric Assn., 1957—; Natl. Consultant in Psychiatry to the Surgeon Gen., U. S. Air Force, 1957—; Advisory Editor, the Internatl. Jour. of Clinical and Exptl. Hypnosis, 1958—; Comm. on Hypnosis, Coun. on Mental Health of the Am. Med. Assn., 1959—; Profl. Advisory Comm., Natl. Assn. for Mental Health, 1959—; Comm. on Edn. and Rsch., Acad. of Psychoanalysis, 1960—; Consultant, U. S. Information Agency, 1960—; Advisory Editorial Bd., Jour. of Nervous and Mental Disease, 1961—; Exec. Coun., Comm. on Behavioral Rsch., Natl. Acad. of Sci., Natl. Rsch. Coun., 1961—; Consultant, Peace Corps, 1962—. Hon. Pos.: Councilor, Mid-Continent Psychiatric Assn. Mem.: Central Neuropsychiatric Assn.; Acad. of Psychoanalysis; Aerospace Med. Assn.; Alpha Omega Alpha; A.A.A.S. Fellow; Am. Fed. for Clin. Rsch.; A.M.A.; Am. Psychiatric Assn., Fellow; Am. Psychopathological Assn.; Am. Psychosomatic Soc.; Assn. of Am. Med. Coll.; Assn. for Rsch. Nervous and Mental Dis.; Natl. Acad. of Relig. and Ment. Health; Natl. Comm. Against Ment. Illness; Natl. Coun. on Alcoholism; N. Y. Acad. of Sci.; Soc. of Biological Psychiatry; Soc. for Clin. and Exptl. Hypnosis; World Med. Assn., U. S. Comm. Law-Science Acad. of Am. Author: Hallucinations, 1962. Co-Author: Explorations in the Physiology of Emotions, 1960. Contbr. to: Am. Jour. of Psychiatry; A.M.A. Arch. of Psychiatry and Neurol.; Jour. of the Am. Med. Assn.; Jour. of Med. Edn.; Psychosomatic Med.; Sociometry; Am. Psychiatric Assn. Rsch. Reports; Group for the Advancement of Psychiatry Reports. Serv. Rec.: U. S. Army, 1942-46; U. S. Air Force, 1948-56. Areas of Rsch.: Clin. Psychiatry; Psychophysiology; Exptl. Psychopathology; Psychopharmacology; Psychodynamics; Hypnosis; Pain; Sensory Isolation; Dreams; Hallucinations; Sleep Deprivation; Problems of Consciousness.



WEST, Luther Shirley (Ph.D.), Dean of Arts and Sci., Northern Mich. Coll., Marquette, Mich. Home Add.: 137 W. Ridge St., Marquette, Mich. PARASITOLOGY, SANITARY ENTOMOLOGY AND PUBLIC HEALTH. b. Utica, N. Y., Sept. 6, 1899. s. Norman Luther and Rena Lane (Shirley) W. Edn.: B.S., Cornell Univ., 1921; Ph.D., Cornell Univ., 1925; Post-Doc. Study, Univ. of Mich. m. Beatrice Ryan. c.: Ruth W. McVean; Richard; William; Alice W. Ednred; Wetsy W. Dahlgren; David. Exp.: Instr. in Parasitol. and Med. Entomol., Cornell Univ.; Staff, N. Y. St. Agri. Expt. Sta., Ithaca, N. Y., 1921-25; Lectr. in Gen. Biol., Cornell Univ., S. S., 1925; Prof. of Biol. and Eugenics, Battle Creek Coll., Mich., 1926-38; Dean of Arts and Sci., ibid., 1933-38; Prof. and Head, Dept. of Biol., Northern Mich. Coll., 1938-43;



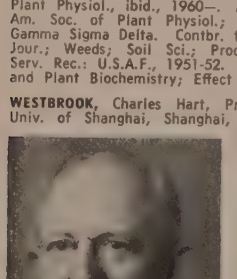
1946-62; Chief of Med. Entomol. Sect., Div. of Parasitol., Army Med. Schl., Army Med. Center, Wash., D. C., 1943-45; Assoc. Mem., Grad. Faculty, Univ. of Mich., 1952-60; Scientist-Consultant, World Health Organ., United Nations, Mediterranean Countries, 1952-53; Dean of Arts and Science, Northern Mich. Coll., 1962—. Hon. Pos.: Chmn., Com. on Acad. Citation, Mich. Acad. of Sci., Arts and Letters; Mem., Bd. of Trustees, St. Luke's Hosp., Marquette, Mich.; Chmn., Health Coun., City of Marquette, Mich.; Lay Speaker and Lay Leader, Meth. Ch. Mem.: Fellow, Am. Assn. Adv. Sci.; Entomol. Soc. of Am.; Am. Microscopical Soc.; Mich. Acad. of Sci., Arts and Letters; Mich. Edn. Assn.; A.A.U.P.; Soc. of Systematic Zool.; Am. Soc. of Parasitologists; Natl. Assn. of Biol. Tchrs.; Sigma Xi; Phi Kappa Phi; Sigma Pi; Internatl. Mark Twain Soc. Author: The House Fly, Its Natural History, Medical Importance and Control, 1951; History of Malaria Control in the South Atlantic and Caribbean during World War II, (In press). Co-Author: Practical Malariology, 1946. Contbr. to: War Dept. Tech. Manual 8-227; Manual of Tropical Medicine, 1945, 1953, 1960. Serv. Rec.: U. S. Army (Infantry), 1918-19; Infantry Reserve, 1919-24; Sanitary Corps, 1943-45; Medical Service Corps Reserve, 1946-60; Retired (as Lt. Col.), 1961. Gen. Int.: Recipient of

Army Commendation Ribbon. Areas of Rsch.: Parasitology; Entomology; Protozoology; Teaching Methods.

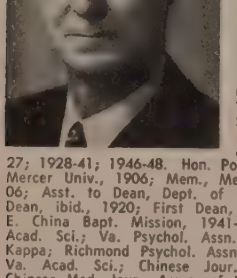
WEST, Robert C. (Ph.D.), Assoc. Prof., Univ. of Wis., Madison, Wis. Home Add.: 5117 Minocqua Crescent, Madison, Wis. CHEMISTRY. b. Glen Ridge, N. J., Mar. 18, 1928. s. Robert C. and Constance M. (Mackinnon) W. Edn.: B.A., Cornell Univ., 1950; M.A., Harvard Univ., 1952; Ph.D., ibid., 1954. m. Margaret F. Taylor, Nov., 1950. c.: David Russell; Arthur Scott. Exp.: Asst. Prof., Lehigh Univ., Bethlehem, Pa., 1954-56; Asst. Prof., Univ. of Wis., Madison., Wis., 1957-61; Assoc. Prof., ibid., 1961—. Mem.: Am. Chem. Soc.; Chem. Soc., London; A.A.A.S.; Wis. Acad. of Sci., Arts and Letters; Phi Beta Kappa; Phi Kappa Phi; Phi Lambda Upsilon; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Jour. Organic Chem.; Jour. Phys. Chem.; Jour. Inorganic Nuclear Chem.; Jour. Chem. Physics; Jour. Chem. Soc.; Chem. and Industry; Naturwissenschaften; Science; Inorg. Syntheses; Spectrochim. Acta. Areas of Rsch.: Organometallic Compounds; Hydrogen Bonding; Infrared Spectroscopy; New Aromatic Systems; Glaciology.

WEST, Sherlie Hill (Ph.D.), Plant Physiol., Newell Hall, Univ. of Fla., Gainesville, Fla. Home Add.: 804 S. W. 7th Ave., Gainesville, Fla. PLANT PHYSIOLOGY. b. Forbus, Tenn., Feb. 18, 1927. s. Stokley R. and A. P. (Hill) W. Edn.: B.S., Tenn. Polytech. Inst., 1949; M.S., Univ. of Ky., 1954; Ph.D., Univ. of Ill., 1958. m. Leeta Crouch, 1949. Exp.: Asst. Agron., Univ. of Ky., 1954-55; Rsch. Agron., U.S.D.A., Univ. of Fla., 1958-60; Plant Physiol., ibid., 1960—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Soc. of Plant Physiol.; Am. Soc. of Agron.; Sigma Xi; Gamma Sigma Delta. Contbr. to: Pl. Physiol.; Crop Sci.; Agron. Jour.; Weeds; Soil Sci.; Proc. Fla. Soil and Crop Sci. Soc. Serv. Rec.: U.S.A.F., 1951-52. Areas of Rsch.: Plant Physiology and Plant Biochemistry; Effect of Stress on Metabolism.

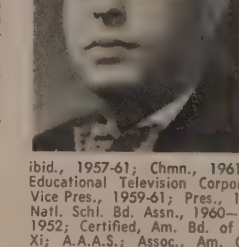
WESTBROOK, Charles Hart, Prof. (Emer.), Psychol. and Edn., Univ. of Shanghai, Shanghai, China. Home Add.: 17 Towana Rd., Richmond 26, Va. PSYCHOLOGY OF READING. b. Nov. 18, 1886, Griffin, Ga. s. Chas. H. and Blanche (Drewry) W. Edn.: A.B., Mercer Univ., 1906; A.M., Harvard Univ., 1908; Ph.D., ibid., 1920. 1st m. Annie May Arnold (dec.), July 24, 1912. 2nd m. Louise Cosby Ellyson, July 21, 1924. c.: Carol E. W. Rose; Mary Louise W. Smith. Exp.: Prin., Mercer Univ. Sum. Schl., 1906; Prof. Hist., ibid., 1908-09; H. S. English Tchr., Savannah, Ga., 1909-10; Tchr., Atlanta, Ga., 1910-11; Tchr., Shanghai Bapt. Coll., Shanghai, China, 1913-14; Tchr., La. Bapt. Coll., 1915-16; St. Supvr. Agt., Rural Schls., Hartford, Conn., 1917-19; Prof. and Dean, Shanghai Coll., 1920-27; 1928-41; 1946-48. Hon. Pos.: Editor-In-Chief, The Mercerian, Mercer Univ., 1906; Mem., Mercer Univ. Athletic Coun., 1905-06; Asst. to Dean, Dept. of Edn., Harvard Univ., 1917; Act. Dean, ibid., 1920; First Dean, Univ. Shanghai, 1921-27; Pres., E. China Bapt. Mission, 1941-42. Mem.: A.P.A., Fellow; Va. Acad. Sci.; Va. Psychol. Assn.; Soc. Rsch., Fellow; Phi Delta Kappa; Richmond Psychol. Assn. Contbr. to: Am. Jour. Psych.; Va. Acad. Sci.; Chinese Jour. Psychiatry; Jr. Soc. Psychol.; Chinese Med. Jour. Areas. of Rsch.: Different Reading Problems in Reading English by a Foreigner; Accuracy, Speed, Understanding, Speaking and Writing; Special Problems of Chinese Students in the U. S. A.



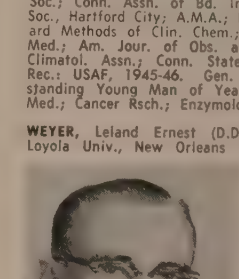
WESTERMAN, Richard Grandon (Mr.), Materials Engr., Army Tank Automotive Command, 1501 Beard St., Detroit 9, Michigan. Home Add.: 5672 Sutters Lane, Birmingham, Mich. CHEMICAL ENGINEER. b. Milwaukee, Wis., Jan. 26, 1918. s. Clifford Walter and Delphia (Grandon) W. Edn.: B.S.E., Univ. of Mich., 1942; M.S., Wayne St. Univ., 1962. m. Billie Betty Darkwood, June 26, 1948. Exp.: Firestone Student Fellowship, Univ. of Mich., 1940-42; Chf. Chemist, Plt. #3, Goodyear Tire & Rubber, Akron, 1942-45; Develop. Mgr., U. S. Stoneware, Tallmadge, Ohio, 1945-46; Engr., Ford Motor Co., Dearborn, Mich., 1947-58; Materials Engr., Army Tank Automotive Command, 1958—. Hon. Pos.: Chmn., Flexing Sub. Section, SAE-ASTM Tech. Comm. on Automotive Rubber, 1960—. Mem.: Fellow, Am. Assn. Adv. Sci.; Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Soc. for Testing Materials; Engrng. Soc. of Detroit; Beta Theta Pi; Crescent Sail Yacht Club; Bayview Yacht Club; Ford Yacht Club. Areas of Rsch.: High Polymers; Mechanism of Polymer Degradation; Material Improvement; Processing Effects on Products; Correlation of Truck and Tank Vehicle Durability with Specimen Static and Dynamic Tests at Weathering Sits.



WETSTONE, Howard Jerome (M.D.), Dir., Biochemical Rsch. Lab., Hartford Hosp., Hartford, Conn. Home Add.: 77 Kenwood Circle, Bloomfield, Conn. INTERNIST, CLINICAL AND RESEARCH. b. Hartford, Conn., April 27, 1926. s. Murray and Natalie (Tonkonow) W. Edn.: B.A., Wesleyan Univ., 1946; M.D., Tufts Coll. Med. Schl., 1951. m. Roan Horowitz, May, 1947. c.: Robin; Mark; Jeffrey; Scott. Exp.: Intern and Asst. Resident in Med., New Eng. Ctr. Hosp., Boston, 1951-53; Asst. Resident and Resident, in Med., Hartford Hosp., 1953-55; Priv. Practice, Internal Med., Hartford, Conn., 1955-58; Part-time Investigator, 1955-58 to Full-time Investigator and Dir., Biochemical Rsch. Lab., Hartford Hosp., Hartford, Conn., 1958—. Hon. Pos.: Bd. of Edn., Town of Bloomfield, 1955—; Vice Chmn., ibid., 1957-61; Chmn., 1961—; Board of Trustees, Connecticut Educational Television Corporation; Conn. Assn. Board of Edn., Vice Pres., 1959-61; Pres., 1961—; Constitution By-Laws Comm., Natl. Schl. Bd. Assn., 1960—; Diplomate, Bd. of Med. Examiners, 1952; Certified, Am. Bd. of Internal Med., 1958. Mem.: Sigma Xi; A.A.A.S.; Assoc., Am. Coll. of Physicians; N. Y. Acad. of Sci.; Am. Fed. of Clin. Rsch.; Med. Adv. Comm., Conn. Cancer Soc.; Conn. Assn. of Bd. Internists; Conn. State Gastroenterol. Soc., Hartford City; A.M.A.; Phi Delta Epsilon. Contbr. to Standard Methods of Clin. Chem.; Gastroenterology; Ann. of Internal Med.; Am. Jour. of Obs. and Gyn.; Trans. of Am. Clin. and Climatol. Assn.; Conn. State Med. Jour.; Cancer Rsch. Serv. Rec.: USAF, 1945-46. Gen. Int.: Bloomfield Jr. C. of C. Outstanding Young Man of Year, 1960. Areas of Rsch.: Internal Med.; Cancer Rsch.; Enzymology.

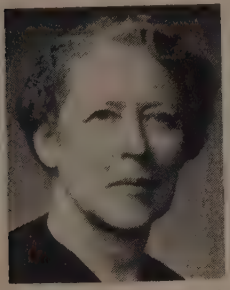


WEYER, Leland Ernest (D.D.S.), Assc. Prof., Schl. of Dent., Loyola Univ., New Orleans 18, La. Home Add.: Rt. 1, Front Royal, Va. DENTISTRY. b. Iowa, July 24, 1904. s. Frank E. and Grace (Hancock) W. Edn.: D.D.S., Coll. of Dent., St. Univ. of Ia., 1927. m. Fleeda M. Carl, Dec. 24, 1927. Exp.: Instr., Coll. of Dent., Univ. of Ia., 1929-31; Dent. Officer, U. S. Pub. Health Serv., Wash., D. C., 1931-61; Assoc. Prof., Schl. of Dent., Loyola Univ., 1961—. Mem.: Am. Coll. of Dents.; Am. Prosthodontic Soc.; Am. Dental Assn.; A.A.A.S.; Fed. Dent. Internatl.; Assn. Mil. Surgs. of U. S.; Psi Omega; Omicron Kappa Upsilon; Victor G. Vignes Odontol. Soc. (hon.). Contbr. to: Jour. of Am. Dent. Assn. Serv. Rec.: U. S. Coast Guard, 1938-48. Areas of Rsch.: Prosthetic Dentistry.



WHATMORE, George Bernard (Ph.D., M.D.), Private Practice of Med., 509 Med.-Dental Bldg., Seattle 1, Wash. Home Add.: 10524 S. E. 27th St., Bellevue, Wash. MEDICINE, NEUROPHYSIOLOGY; NEUROPHYSIOLOGY AND TREATMENT OF FUNCTIONAL DISORDERS. b. Seattle, Wash., Aug. 31, 1917. s. Harry Joseph and Delia (Frolich) W. Edn.: B.S., Univ. of Wash., 1940; M.S., ibid., 1941; Ph.D., Univ. of Chicago, 1946; M.D., Ibid., 1948. m. Frances Beatty, 1942. c.: Pamela Frances; David Blake; Nancy Janice. Exp.: Univ. Fellow, Rawson Fellow, Sheldon Fellow, Univ. of Chgo., 1942-45; Tchng. Asst., Dept. of Physiol., ibid., 1942-45; Intern, Res., King Co. Hosp., Seattle, 1948-50; Res., Lab. for Clinical Physiology, Chicago, 1950-51; Staff Psychiatrist, Eastern State Hosp., Medical Lake, Wash., 1955-58; Private Practice, Internal and Psychosomatic Med., Seattle, 1951—. Mem.: Fellow, Acad. of Psychosomatic Med.; N. Y. Acad. of Scis.; Am. Assn. Adv. Sci.; Am. Physicians' Soc. for Physiologic Tension Control; Am. Med. Assn.; Wash. State Med. Assn.; King Co. Med. Soc.; Sigma Xi; Western Acad. of Beaux Arts. Contbr. to: Am. Jour. Physiol.; Jour. Pharmacol. and Exptl. Ther.; Am. Jour. Psychiatry; A.M.A. Archives of Gen. Psychiatry. Areas of Rsch.: Neurophysiology; Neurophysiology of Functional Disorders; Neurophysiology of Learning; Treatment of Functional Disorders; Psychosomatic Medicine; Pharmacology; Absorption of Drugs.

WEYMOUTH, Ethel Marion, Hd. of Dept. of Math. and Sci., Wells H. S., Wells, Me. Home Add.: South St., Wells, Me. MATHEMATICS, GENERAL SCIENCE. b. N. Berwick, Me., May 18, 1894. d. Woodbury E. and Winnette E. (Hussey) W. Edn.: A.B., Bates, 1920; M.S., Cornell, 1930. Exp.: Tchr. of Rural Schls., North Berwick, Me., 1912-13; Tchr., Rural Schl., Acton, Me., 1914-15; Tchr., Rural Schl., North Berwick, Me., 1915-17; Tchr. of Math. and Sci., Wells, H. S., 1920. Hon. Pos.: Repr. Assembly, M.T.A. Mem.: Am. Assn. Adv. Sci.; A.T.M.N.E.; N.C.T.M.; N.E.A.C.T.; N.S.T.A.; C.A.S.M.T.; Phi Beta Kappa. Contbr. to: The Sci. Leaflet. Areas of Rsch.: Providing Opportunity in the Small High School.



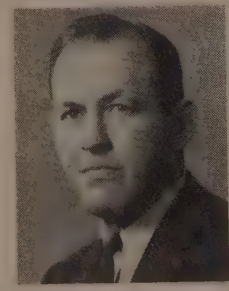
WHARTON, Marion Agnes (Ph.D.), Prof. of Food and Nutrition, Univ. of Rhode Island. Home Add.: 2 Dendron Rd., Peacedale, R. I. NUTRITION. b. Ont., Can., Nov. 17, 1910. d. George and Marion (Verth) W. Edn.: B.A., Univ. Toronto, 1933; M.S., Univ. of West. Ont., 1934; Ph.D., Mich. St. Univ., 1947. Exp.: Instr., Univ. of Toronto, 1936-37; Dietitian, Ont. Dept. of Health, 1937-39; Grad. Fellow, Mich. St. Univ., 1939-40; Grad. Asst., ibid., 1940-41; Rsch. Asst., ibid., 1941-46; Rsch. Nutritionist, W. Va. Univ., 1946-48; Rsch. Assoc. and Asst. Prof., Ohio St. Univ., 1948-52; Assoc. Prof., N. Dak. Agri. Coll., 1952-55; Prof., So. Ill. Univ., 1955-61; Prof. of Food and Nutrition, Univ. of R. I., 1961—. Mem.: Am. Home Econs. Assn.; Am. Dietetic Assn.; Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Maternal and Infant Health Assn.; A.A.U.P.; R. I. Nutrn. Comm.; Sigma Xi; Am. Bd. of Nutrition; Sigma Delta Epsilon; Omicron Nu. Contbr. to: Quar. Jour. of Med.; Food Rsch.; Jour. Am. Dietetic Assn.; Mich. Agri. Exptl. Sta. Quar. Bull.; Excerpta Medica. Areas of Rsch.: Amino Acids; Nutritional Status and Vitamin Assay of Foods.

WHEAT, Myron William, Jr. (M.D.), Assoc. Prof., Univ. of Fla. Schl. of Med., Gainesville, Fla. Home Add.: 2844 N.W. 4th Lane, Gainesville, Fla. THORACIC AND CARDIOVASCULAR SURGERY. b. Sapulpa, Okla., Mar. 24, 1924. s. Myron William and Mary Lee (Hudiburg) W. Edn.: B.A., Washington Univ., 1949; M.D., ibid., Schl. of Med., 1951. m. Erlene Adele Plank, June 12, 1949. c.: Penelope Louise; Myron William III; Pamela Lynn. Exp.: Instr. in Surgery, Washington Univ., St. Louis, Mo., 1956-58; Clinical Fellow, ibid., 1956-58; Asst. Prof., Univ. of Fla., Gainesville, Fla., 1958-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Chf., Div. of Thoracic and Cardiovascular Surg. Mem.: Am. Assn. for Thoracic Surgery; Am. Coll. of Surgeons; Southern Thoracic Soc.; Sigma Nu; Tau Pi Epsilon Pi; Nu Sigma Nu; Alpha Omega Alpha. Serv. Rec.: U.S.A.F., 1943-46. Gen. Int.: Established open heart surgery at Univ. of Fla., May, 1959. Areas of Rsch.: Thoracic and Cardiovascular Disease; Ultrastructure of Heart Muscle.

WHEATON, Elmer Paul (Mr.), Vice. Pres., Lockheed Aircraft Corp., Sunnyvale, Calif. Home Add.: 27210 W. Fremont Ave., Los Altos Hills, Calif. MISSILE AND SPACE SYSTEMS ENGINEERING. b. Elyria, Ohio, Aug. 15, 1909. s. Harry Paul and Lizzie (Nichol) W. Edn.: B.A., Phys., Pomona Coll., 1933. m. Martha Elizabeth Davis, Oct. 19, 1933. c.: Markeley Paul; Sara Elizabeth. Exp.: Vice Pres., Douglas Aircraft Co., Inc., Santa Monica, Calif., 1934-61; Dir., Astropower, Inc., (Subsid. of Douglas Aircraft Co.), ibid., 1961; Vice Pres., Space Programs, Lockheed Missiles and Space Co., Sunnyvale, Calif., 1962—; Vice Pres., Lockheed Aircraft Corp., ibid., 1962—. Hon. Pos.: Mem., Aerospace Industries Assn. Guided Missile Com. Chmn., 1953-54; Guided Missile Coun. Chmn., 1959-60; Consultant, Advisory Panel for Aeronautics, Office of the Dir. of Defense for Rsch. and Engrng., 1957-59; Mem., Spec. Industry Comm. on Missiles, Office of the Secy. of Air Force for Rsch. and Dev., 1954; Deputy Chmn., Aerospace Com., Los Angeles C. of C. Mem.: Inst. of Aerospace Sci., Fellow; Am. Rocket Soc., Fellow; Am. Ord. Assn.; Deputy Chmn., West Coast Missiles and Astronautics Div. Author: Handbook of Astronautical Engineering, 1960. Contbr. to: Proc. of the 18th Shock and Vibration Symposium; Space Technol.; Am. Mgmt. Assn. Conf. on Space Age Technol. Gen. Int.: Certificate of Merit for Outstanding contribution from War and Navy Depts., 1947; Certificate of Merit for Outstanding contribution from the Office of Scientific Rsch. and Dev., 1947; Registered Prof. Engr., State of Calif.

WHEELER, Alice Freels (Mrs. C. J., Jr.), Rsch. Asst. Biochem., M. D. Anderson Hosp., Houston 35, Tex. Home Add.: 4306 Cheena Dr., Houston 35, Texas. BIOCHEMISTRY. b. Denison, Tex., July 27, 1922. d. Dr. Arthur McDonald and Edna (Saunders) Freels (both dec.). Edn.: B.S., Wash. Univ., 1954. m. Clarence Joseph Wheeler, Jr., M.D., Dec. 6, 1942. c.: Stephen; Clarence Joseph, III; Robert McKinney; Thomas Michael; David Ritchey. Exp.: Clin. Chem. Asst., Johns Hopkins Hosp., Baltimore, Md., 1947-51; Chief Technician Chem., Barnes Hosp., St. Louis, 1951-54; Jr. Chemist, Biorksten Rsch. Labs. for Indus., Madison, Wis., 1954-56; Rsch. Asst. Biochem., M. D. Anderson Hosp., 1957—. Mem.: A.A.A.S.; A.C.S.; Biol. Chem. Division, A.C.S.; Harris Co. Med. Soc., Woman's Aux.; Tex. Med. Assn., Woman's Aux.; Kappa Alpha Theta Alumnae Assn., Houston, Tex. Chapter; Willow Meadows Civic Club; P.T.A.'s Johnson Jr. High, S. C. Red School. Areas of Rsch.: Nucleic Acids.

WHEELER, Clarence Joseph, Jr. (M.D.), Priv. Practice, Hermann Profl. Bldg., 6410 Fannin St., Houston 25, Tex. Home Add.: 4306 Cheena Dr., Houston 35, Texas. GENERAL AND THORACIC SURGERY. b. Dallas, Tex., Sept. 25, 1917. s. Clarence Joseph, Sr. (dec). and Sadie Alice (McKinney) W. Edn.: B.S., Sou. Meth. Univ., 1941; B.A., ibid., 1946; M.D., The Johns Hopkins Univ. Schl. of Med., 1950. m. Alice Mary Freels, Dec. 6, 1942. c.: Stephen Freels; C. J., III; Robert McKinney; Thomas Michael; David Ritchey. Exp.: Instr., Surg., Univ. of Wis. Schl. of Med., 1955-56; Clinical Instr., Surgery, Baylor Coll. of Med., 1957—; Lectr., Surgery, The Univ. of Tex. Postgrad. Med. Schl., 1957—; Active Staff: Hermann Hosp.; Meth. Hosp.; St. Luke's Hosp.; Tex. Children's Hosp.; St. Joseph's Hosp.; Mem. Hosp. Mem.: A.M.A.; Tex. Med. Assn.; Harris Co. Med. Soc.; St. Louis Med. Soc., Corresponding Memo; Am. Coll. of Surgeons; Fellow, Am. Coll. of Chest Physicians; Fellow, Johns Hopkins Med. and Surgical Soc.; Tex. Trudeau Soc.; Natl. Tuberculosis Assn.; Am. Heart Assn.; Tex. Heart Assn.; Southwestern Surgical Cong.; Am. Thoracic Soc.; A.A.A.S.; Am. Assn. of Hist. of Med.; Sou. Med. Assn.; Tex. Anti-tuberculosis Assn.; Houston Heart Assn.; Postgraduate Med. Assembly of Sou. Tex.; Houston Gastroenterology Soc.; Indusl. Med. Assn.; Houston Surg. Soc.; Kappa Sigma; Phi Chi; Phi Eta Sigma; Kappa Mu Epsilon. Serv. Rec.: U.S.M.C.R., 1942-45 (Retired Major).



WHERRY, Edgar T(heodore) (Ph.D.), Prof. Emer., Univ. of Pa., Phila. 4, Pa. PLANT ECOLOGY. b. Sept. 10, 1885, Phila., Pa. s. Albert C. and Elizabeth S. (Doll) W. Edn.: B.S., 1906, Ph.D., 1909, Pa. m. E. Gertrude Smith of Phila., Pa., Jan. 1, 1914. Exp.: Lectr., Wagner Free Inst. of Sci., Phila., Pa., 1908-13; Asst. Dept. of Geol., Univ. of Pa., summer, 1908-09; Instr., Lehigh Univ., 1908-09; Asst. Prof., Lehigh Univ., 1909-13; Asst. Curator, U. S. Natl. Museum, 1913-17; Asst. Crystallographer to Prin. Chem., Bur. of Chem., U.S.D.A., 1917-30; Lectr., Dept. of Agri. Grad. Schl.; Assoc. Prof. of Bot., Univ. of Pa., 1930-38; Prof., 1938-55; Prof. Emer., 1955—; Lectr., Barnes Fdtn., Merion, Pa., 1941-56. Mem.: Fellow, A.A.A.S.; A.C.S.; Am. Fern Soc., Pres., 1934-38; Ecol. Soc. of Am.; Geol. Soc. of Am., Fellow; Mineralog. Soc. of Am., Fellow, Pres., 1923. Author: Wild Flowers of Mt. Desert Id., Me., 1928; Guide to Eastern Ferns, 1937, 2nd Edn., 1942; Wild Flower Guide, 1948; The Genus Phlox, 1955; The Fern Guide, 1961. Ph.D. Dissertation: Contributions to the Mineralogy of the Newark Group in Pa. Travel: Rsch. Student, Heidelberg Univ., Ger., 1910. Gen. Int.: Cofounder and Mgng. Ed., Am. Mineralogist, 1919-21; Asst. Ed., Chem. Abstracts, 1913-38; Founder and Ed., Bull. Am. Rock Garden Soc., 1943-47. Hobby: Photography. Listed in: A.M.S.; W. W. in Am.

WHEELER, Elizabeth Lockwood (Dr. P.H.), Prof. of Health Edn., Cent. Mich. Univ., Mt. Pleasant, Mich. Home Add.: Rt. 3, Maple Hill., Mt. Pleasant, Mich. HEALTH SCIENCE. b. Laingsburg, Mich., May 30, 1907. d. Frederick and Marie (Lyon) W. Edn.: B.S., Wayne State Univ., 1932; M.A., Cornell Univ., 1938; M.P.H., Harvard Univ., 1946; Dr. P.H., ibid., 1948. m. George R. Wheeler, 1951. Exp.: Sci. Tchr., Detroit, Mich., 1926-45; Instr., Wayne Univ., 1937-39; Asst. Prof., Boston Univ., sum., 1946; Rsch. Fellow, Nutr. Edn., Harvard Univ., 1945-48; Rsch. Assoc., Schl. of Pub. Health, Harvard Univ., 1948-49; Assoc. Dir., Edn. Serves., Natl. Found. for Infantile Paralysis, 1950-51; Lectr. in P.H. and Edn., Univ. of Mich., 1953-57; Prof. of Health Edn., Cent. Mich. Univ., 1957—. Mem.:

Natl. Assn. Rsch. In Sci. Tchng.; Natl. Sci. Tchrs. Assn.; Coun. Elem. Sci. Inter.; Am. Home Econ. Assn.; Am. Assn. Univ. Women; Soc. P. H. Edrs.; Am. Pub. Health Assn.; A.A.A.S.; Am. Assn. Health, Phys. Edn. and Rec.; Am. Schl. Health Assn.; N.E.A. Contbr. to: Sci. Edn.; Am. Biol. Tchr.; Jour. Am. Assn. for Health, Phys. Edn. and Rec.; Nutr. Rev.; Pract. Home Econ.; H. S. Jour.; Edn. Digest; Jour. of Schl. Health; Sci. Coun.; N.E.A. Jour. Gen. Int.: Fellow, A.A.A.S., AAHPER; Rec. Dist. Serv. Award in Sci. Edn., N.A.R.S.T., 1959. Areas of Rsch.: Nutrition Education; Health Education.

WHEELER, Gordon Kirke (Mr.), Rsch. Grp. Hd., R. T. Vanderbilt Co., Inc., 33 Winfield St., E. Norwalk, Conn. Home Add.: 181 Tanglewood Rd., Trumbull, Conn. ORGANIC NITROGEN HETEROCYCLICS AND CURING AGENTS FOR ORGANIC COATINGS (ORGANIC CHEMISTRY). b. Westmoreland, N. H., Oct. 26, 1916. s. Kirke Warren and Lena M. (Smith) W. Edn.: B.S., Bates Coll., Lewiston, Me., 1940. m. Lillian M. Kasulat, May 3, 1952. c.: Geraldine Marie. Exp.: Chemist, R. T. Vanderbilt Co., E. Norwalk, Conn., 1940-51; Rsch. Grp. Hd., ibid., 1951—. Hon. Pos.: Chmn., Western Conn. Sect., Am. Chem. Soc., 1962. Mem.: Am. Philatelic Congress; Am. Chem. Soc.; Am. Assn. for the Adv. of Sci. Contbr. to: Indust. and Engrng. Chem. Areas of Rsch.: Organic Nitrogen Heterocyclics and Curing Agents for Organic Coatings; Fugnicides; Metal Chelates.

WHEELER, John Archibald (Ph.D.), Prof. of Phys., Princeton Univ., Princeton, N. J. Home Add.: 30 Maxwell Lane, Princeton, N. J. THEORETICAL PHYSICS. b. Jacksonville, Fla., July 9, 1911. s. Joseph Lewis and Mabel (Archibald) W. Edn.: Ph.D., Johns Hopkins Univ., 1933. Hon. Degs.: Sc.D., Western Res. Univ., 1958; Sc.D., Univ. of N. C., 1959. m. Janette Hegner, June 10, 1935. c.: Isabel Letitia W. Ufford; James English; Alison Christie. Exp.: Asst. Prof., Univ. of N. C., 1935-38; Asst. Prof., Princeton Univ., 1938-42; Physicist, Manhattan Proj., Chicago, Wilmington, Hanford, 1942-45; Assoc. Prof., Princeton Univ., 1945-47; Prof., ibid., 1947—; Dir., Proj. Matterhorn (Thermonuclear Weapons Design), ibid., 1951-53; Vis. Prof., Univ. of Leiden (Lorentz Prof.), 1956; Vis. Prof., Univ. of Calif., Berkeley, 1960; Vis. Prof., Univ. of Kyoto, 1962. Hon. Pos.: Edl. Bd., Phys. Rev., Rev. of Mod. Phys.; Chmn., Joint Comm. of Am. Phys. Soc. and Am. Philos. Soc. on Hist. of Theoretical Phys. in the 20th Cent.; Trustee, Battelle Mem. Inst.; Trustee, Princeton Univ. Press, 1961—; Visiting Comm., Oak Ridge Natl. Lab., 1957—; Coun., Am. Phys. Soc.; Consult., AEC Weapons Work, 1950—. Mem.: Fellow, Am. Phys. Soc.; Am. Philos. Soc.; Fellow, A.A.A.S.; Am. Acad. Arts and Scis.; Natl. Acad. of Scis.; Sigma Xi; Phi Beta Kappa. Author: Geometrodynamics, 1962. Contbr. to: Phys. Rev.; Rev. Mod. Phys. Areas of Rsch.: Nuclear Fission and Nuclear Structure; Scattering Theory; Electromagnetic Action at a Distance; Asymptotic Approximation Methods; General Relativity.

WHIPPLE, Fred Lawrence (Ph.D.), Dir., Smithsonian Instn. Astrophysical Observatory; Astronomer, Harvard Coll. Observatory, 60 Garden St., Cambridge 38, Mass. Home Add.: 35 Elizabeth Rd., Belmont 78, Cambridge, Mass. ASTRONOMY. b. Red Oak, Ia., Nov. 5, 1906. s. Harry Lawrence and Celestia (MacFarland) W. Edn.: A.B., Univ. of Calif., 1927; Ph.D., ibid., 1931. Hon. Deg.: M.A., Harvard Univ., 1945; Sc.D., Am. Internatl. Coll., 1958; Sc.D., Temple Univ., 1961; D.Litt., Northeastern Univ., 1961. m. Dorothy Woods, 1928 (div. 1935), m. 2nd, Babette Frances Samelson, 1946. c.: Earle Raymond; Dorothy Sandra; Laura. Exp.: Tchng. Fellow, Univ. of Calif., 1927-29; Lick Observ. Fellow, 1930-31; Instr., Stanford Univ., summer, 1929; Instr., Univ. of Calif., summer, 1931; Staff Mem., Harvard Coll. Observatory, 1931—; In Chg. Oak Ridge Station, ibid., 1932-37; Instr., Harvard Univ., 1932-38; Lectr., ibid., 1938-45; Assoc. Prof., ibid., 1945-50; Prof., ibid., 1950—; Chmn., Dept. of Astron., ibid., 1949-56; Rsch. Assoc., Radio Rsch. Lab., O.S.R.D., 1942-45; Dir., Smithsonian Instn. Astrophys. Observatory, 1955—. Hon. Pos.: Mem., Space Sciences Working Grp. on Orbiting Astronomical Observatories, Natl. Aeronautics and Space Admin., 1959—; Chief Investigator of Project, Optical Tracking of Artificial Earth Satellites sponsored by the Natl. Sci. Fdn. for the Natl. Acad. of Sciences in the Internatl. Geophys. Year Program; Project Dir., Harvard Meteor Project, 1958; Mem., Internatl. Acad. of Astronautics, Internatl. Astronautical Fed., 1961—; Mem., Scientific Advisory Bd. to U.S.A.F., 1953—; and many others. Mem.: Pi Mu Epsilon; Phi Beta Kappa Sigma Xi; Am. Acad. Arts and Scis.; Am. Philos. Soc.; A.A.A.S.; Am. Astron. Soc.; Am. Meteor. Soc.; Am. Geophys. Union.; Am. Meteorolog. Soc.; Fellow, Am. Astron. Soc.; Fellow, Am. Rocket Soc.; Astron. Soc. of Pacific; Cosmos Club; Examiner Club of Boston. Author: Earth, Moon and Planets, 1942. Contbr. to: Astron. Jour.; Trans. Am. Geophys. Union; Bull. Am. Meteorol. Soc.; Science; Jour. Meteorol.; Inter. Astron. Union; Proc. Natl. Acad. Sci.; Astrophys. Jour.; Astronaut. Scis. Rev.; Nature; Jour. Geophys. Rsch.; oJur. Atmospheric and Terrestrial Phys. Gen. Int.: Rec. Donohue Medals for Indep. Discov. of 6 new comets; Pres. Cert. of Merit for Sci. work during W.W. II; J. Lawrence Smith Medal of Natl. Acad. of Scis. for rsch. on meteors, 1949; Except. Serv. Award, U.S.A.F., 1960; Medal from Univ. of Liege, Belgium for Astron. Rsch., 1960; Space Flight Award, Am. Astronaut. Soc., 1961. Areas of Rsch.: Astronomy; Orbits of Comets, Asteroids and Meteors; Stellar and Solar System Evolution.

WHIPPLE, Paul Warren (Mr.), Computer Systems Analyst, Federal Aviation Agency, Wash., D. C. Home Add.: 7806 Aberdeen Rd., Bethesda, Md. MANAGEMENT SYSTEMS RESEARCH. b. Tonganoxie, Kans., Jan. 21, 1915. s. John G. and Ola (Bull) W. Edn.: B.A., Willamette Univ., 1941; M.A., Am. Univ., 1950. m. Irma Stark, Nov. 20, 1948. c.: Sara Elizabeth; Laura Melanie. Exp.: Tech. Editor, Office Chf. of Ord., Army, Wash., D. C., 1941-42, 1946-47; Mgmt. Analyst, U. S. Weather Bur., Wash., D. C., 1947-50; Admin. Analyst, U. S. Dept. of Agri., Wash., D. C., 1950-52; Mgmt. Analyst, Exec. Office of Secy. of Navy, Wash., D. C., 1952-53; Mgmt. Analyst, Bur. of Yards and Docks, Wash., D. C., 1953-55; Sr. Computer Systems Analyst, Bur. of Naval Personnel, Wash., D. C., 1955-59; State Data Systems Coordinator, State of Ore., 1959-61; Computer Systems Analyst, Fed. Aviation Agency, Wash., D. C., 1961—. Mem.: Am. Soc. for Pub. Admin.; Soc. for Gen. Systems Rsch.; Inst. of Mgmt. Scis.; Northwest Computing Assn. Serv. Rec.: U.S.A.F., 1942-46. Gen. Int.: Designed Overall Plan for Naval Manpower Info. System, Dept. of Navy; Planned Info. Mgmt. System for Ore. State Govt. Areas of Rsch.: Mgmt. Systems; Organization.

WHITAKER, Thomas W(allace) (Ph.D.), Rsch. Geneticist, Leader, Leafy Vegetable Investigations, P. O. Box 150, La Jolla, Calif. GENETICS, CYTOLOGY, PLANT BREEDING, ETHNOBOTANY. b. Monrovia, Calif., Aug. 13, 1905. s. Walter R. and Mamie (Dunne) W. Edn.: B.S., Univ. of Calif., 1927; M.S., Univ. of Va., 1929; Ph.D., ibid., 1931. m. Mary B. Sommerville, Aug. 15, 1931. c.: Beverley; Thomas W., Jr. Exp.: Dupont Fellow, Univ. of Va., 1927-31; Fellow of the Arnold Arboretum and Assoc. in Bot., Harvard Univ., 1931-33; Assoc. Prof. of Bot., Agnes Scott Coll., 1934-36; Assoc. Geneticist, B.P.I.S. and A.E., U. S. Dept. of Agri., 1936-39; Geneticist ibid. 1939-53; Sr. Geneticist ibid. 1953-56; Prin. Geneticist Crops Rsch., A R S., 1956-61; Rsch. Geneticist, ibid., 1961—. Hon. Pos.: Pres., Fellows of Natural History Soc. of San Diego, 1940; Chmn., Rsch. Coun., San Diego Zool. Soc. Mem.: Alpha Zeta; Sigma Xi; Am. Nat.; Bot. Soc. Am.; Torrey Bot. Club; Genetics Soc. Am.; Fellow, A.A.A.S.; A.A.U.P.; Am. Genetics Assn.; Kappa Sigma. Author The Cucurbits, 1962. Contbr. to: Madrono; Proc. Am. Soc. Hort. Sci.; Jour. Agri. Rsch.; Econ. Bot.; Plant Life; Am. Natl.; Am. Jour. Bot.; Handbuch der Pflanzenzuchtung; and others. Gen. Int.: Recd. Andrew Flemming Prize in Biol., 1931; Fellow, John Guggenheim Mem. Fdtn., 1946-47, 1959. Areas of Rsch.: Authority on the Cultivated Cucurbitaceae and the Genus Lactuca, Origin of the Cultivated Cucurbita.

WHISKIN, Frederick Edward (M.D.), Psychiatrist, Age Center of New England; Asst. Attend. Psych., McLean Hosp. and Asst. in Psychiatry, Harvard Med. Schl., Boston and Belmont, Mass. Home Add.: 306 Beacon St., Boston 16, Mass. GERONTOLOGICAL PSYCHIATRY. b. Cupar, Sask., Can., Feb. 9, 1924. s. Frederick and Florence (Baker) W. Edn.: B.A., Univ. of Sask., Can., 1944; M.D., C.M., McGill Univ., 1948. m. Celesta Legendre, Sept., 1949. Exp.: Psychiatrist, Age Center of New England, Boston, Mass., 1957—; Asst. Attending Psych., McLean Hosp., Belmont, Mass., 1958—; Asst. in Psychiatry, Harvard Med. Schl., Boston, Mass., 1957—; Dir., Brookline Court Clinic, Brookline, Mass., 1961—. Mem.: AAAS; Am. Psychiatric Assn.; Am. Med. Assn.; The Gerontological Soc.; Boston Soc. for Gerontologic Psychiatry; Inst. of Gen. Semantics; Assn. for the Psych. Treatment of Offenders. Contbr. to: Jour. of Gerontology; Jour. of Psychosomatic Med. Serv. Rec.: USAF, 1955-57. Areas of Rsch.: Gerontological Rsch. with particular emphasis on the Psychology of Normal Aging; Delinquency; Psychotherapy of Psychoses.

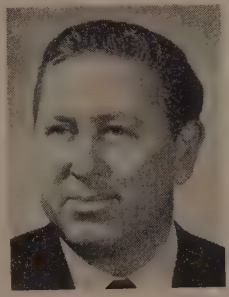
WHITCOMB, Warren Draper (Mr.), Rsch. Prof. in Entomology, Univ. of Mass., Waltham Field Sta., Waltham, Mass. Home Add.: 82 Plympton St., Waltham 54, Mass. BIOLOGY AND CONTROL OF INJURIOUS INSECTS ON FRUIT, VEGETABLES AND FLORICULTURAL CROPS. b. Waltham, Mass., June 3, 1895. s. John F. and Eva Frances (Draper) W. Edn.: B.S., Mass. Agric. Coll., 1917. m. Neva Frances Owens, Dec. 29, 1921. c.: Doris Mae; Frances Draper; Richard Owens; Susanne Florence. Exp.: Sci. Asst., Bur. of Entomology, U.S.D.A., Paxinos, Pa., Yakima, Wash., 1917-19; Asst. Entomologist, ibid., New Orleans, La., 1920-25; Asst. Rsch. Prof., Mass. Agri. Coll., Univ. of Mass., 1926-35; Research Prof., Expt. Sta., ibid., 1936—. Mem.: Am. Soc. Hort. Sci.; Entomological Soc. of Am.; Sigma Xi; Theta Chi; A.F. & A.M. Contbr. to: Jour. of Economic Entomol.; Bull. of Mass. Agri. Exptl. Sta. Serv. Rec.: U. S. Army, 1918-19. Areas of Rsch.: Fruit and Vegetable Insect Pests in New England; Effect of Temperature on Insects and Insecticides.

WHITE, Edith Grace (Ph.D.), Prof. Emer. of Biol., Wilson Coll., Chambersburg, Pa. Home Add.: 1312 Edgar Ave., Chambersburg, Pa. ICHTHYOLOGY. b. Boston, Mass., May 16, 1890. d. Joseph Adie and Elizabeth (Kelly) W. Edn.: A.B., Mt. Holyoke Coll., 1912; A.M., Columbia Univ., 1913; Ph.D., ibid., 1918. Exp.: Rsch. Asst., Princeton Univ., 1915-16; Instr. and Hd., Dept. of Biol., Heidelberg Univ., Tiffin, O., 1918-20; Prof. of Biol. and Hd. Dept., Shorter Coll., Rome, Ga., 1920-23; Prof. of Biol. and Chmn. Dept., Wilson Coll., Chambersburg, Pa., 1923-58; Prof. Emer., ibid., 1958—. Hon. Pos.: Rsch. Assoc. in Ichthyol., Am. Museum of Nat. History, 1933-47; Pres., Nu Pa. Chapters, Phi Beta Kappa, 1955-56. Mem.: Fellow, A.A.A.S.; Phi Beta Kappa; A.S.P.B.; Am. Soc. Ichthyologists and Herp.; Am. Genetic Assn., Eugenics Soc.; A.A.U.W. Author Interrelationships of the Elasmobranchs, 1937; Principles of Genetics, 1940; Textbook of Gen. Biol., 3rd ed., 1946; Lab. Manual of Gen. Biol., 3rd ed., 1947; Genetics, 1962. Contbr. to: Am. Museum Novitates, etc. Gen. Int.: Year of travel in the Orient, under the auspices of Am. Mus., studying elasmobranch fishes, lectrng., etc. Areas of Rsch.: Elasmobranch Fishes; Luminous Organs of Fishes and some Fields of Genetics; Zool. and Gen. Biol.; Ichthyology; Genetics.

WHITE, Henry Ford (Ph.D.), Prof. of Economics, Bradley Univ., Peoria, Ill. ECONOMICS; RELATED SOCIAL STUDIES. b. Gilmer, Tex. s. Robert Franklin and Ada Lee (Jones) W. Edn.: Grad., Sam Houston Normal Inst., Tex., 1917; B.S., Sam Houston State Tchrs. Coll., 1920; M.A., Baylor Univ., 1921; Ph.D., Tex., 1931; Post Doctoral Work, George Peabody Coll. for Tchrs., summer, 1942. Exp.: Supt. of Schls., Tex., 1916-24; Tchng. Fellowship, Univ. of Tex., 1922-23; Tchng. Fellowship in Econ., Baylor Univ., summers, 1921-22; Visiting Asst. Prof. of Hist. and Polit. Sci., Univ. of Del., 1927-28; Visiting Instr. of Econ., Milwaukee Sta. Tchrs. Coll., summer, 1928; Visiting Instr., Soc. Sci., Asheville Nor. and Tchrs. Coll., Asheville, N. C.; Visiting Prof. of Econ., and Sociol., E. Tex. State Tchrs. Coll., Commerce, Tex., summers, 1935-36; Hd. and Found. of Dept. of Econ. and Sociol., Ga. Sta. Coll. for Women, 1928-33; Prof. of Econ., Evening Schl., Univ. of Ga., 1933-34; Hd. of Div., Econ. and Sociol. and Asst. Dean, Cox Coll., 1933-34; Hd. of Div. of Econ. and Bus. Admin., Ohio Northern Univ., Ada, Ohio, 1934-35; Hd. of Div. Soc. Sci., John Brown Univ., Siloam Springs, Ark., 1935-37; Hd. Dept. of Econ. and Sociol., Southeastern State Coll., Durant, Okla., 1937-40; Hd. of Dept. of Econ. and Sociol., Oshkosh Sta. Tchrs. Coll., Wis., Hd. of Dept. of Econ. and Sociol., Limestone Coll., Gaffney, S. C., 1941-1940-41; Faculty, Soc. Sci., Limestone Coll., Gaffney, S. C., 1941-42; Hd. of Div. of Econ. and Bus. Admin., John Brown Univ., 1942-45; Hd., Div. of Soc. Sci., John Brown Univ., 1945-48; Prof. Econ., Bradley Univ., 1948—; Student Asst. in Hist., Univ. of Tex., 1925-26; Co-founder, Internatl. Rel. Club, Univ. of Tex., and Ga. State Coll. for Women; Fac. Com., Publications, Co- and Ga. State Coll. for Women; Fac. Com., Publications, Co-Sponsor Frat., etc.; Ed.-in-Chf., John Brown Univ. Publications, 1944-45. Mem.: Am. Econ. Assn.; Am. Soc. Soc.; Southwestern Soc. Sci. Assn.; So. Soc. Soci.; Am. Hist. Assn.; Miss. Valley Hist. Assn.; S. Econ. Assn.; A.A.U.P.; Phi Delta Kappa (Charter Mem., Bradley Univ. Chapter); Internatl. Assn. for Labor Leg.; Pi Gamma Mu; Internatl. Rel. Club; Eugene Field Soc.; Fellow, Rsch. Bur. for Postwar Econ.; Am. Legion; C. of C.; Kiwanis; Red, Red Rose; Schoolmasters; Mason. Author: Abiding Mother, 1947; Genuine Mother, 1947; Tributes to Mother, 1947; Mother Through the Ages, 1947; The Farmer and Economic Progress, 1947; A Syllabus to Accompany the Farmer and Econ. Progress, 1947; Marketing Problems and Policies, 1947; Agricultural Problems and Policies, 1947; Cooperative Marketing of Farm Products in the U. S., 1937; Federal Approaches to Our Econ. Order, 1938; etc. Ph.D. Dissertation: The Economic and Social Development of Arkansas Prior to 1836. Serv. Rec.: Naval Sect., Students A.T.C., Univ. Tex., 1918. Travel: N. Am. Listed in: W. W. in Am.; W. W. in Pi Gamma Mu; Biog. Encyc. of the World; Book of Authorities; etc.

WHITE, Howard Sidney (Mr.), Physicist, Lawrence Radiation Lab., Univ. of Calif., Berkeley, Calif. Home Add.: 5643 Rosalind Ave., El Cerrito, Calif. BUBBLE CHAMBER PHYSICS; MATHEMATICAL DATA PROCESSING AND DEVELOPMENT OF IMPROVED COMPUTER RELATED HARDWARE. b. McAlester, Okla., Nov. 30, 1928. s. Howard and Wilma (Smith) W. Edn.: Ph.B., Univ. of Chicago, 1947; B.S., Univ. of Okla., 1949; M.A., ibid., 1951. m. Juanita Louise Fletcher, Feb., 1950. c.: Howard Sidney; Timothy Whitney. Exp.: Electl. Engr., Halliburton Oil Well Cementing Co., Wichita Falls, Tex., 1951-52; Rsch. Asst., Lick Obs., Univ. of Calif., Mt. Hamilton, Calif., 1952-53; Physicist, Lawrence Radiation Lab., Univ. of Calif., Berkeley, Calif., 1953—. Mem.: AAAS; Am. Astronomical Soc.; Assn. for Computing Machinery; Sigma Xi. Contbr. to: Astrophysical Jour.; Physical Review. Areas of Rsch.: Application of advanced digital computers to analysis of data from high energy nuclear physics; Design of systems for automatic pattern recognition and rapid precision measurement of data under computer control.

WHITE, Joe Lloyd (Ph.D.), Prof. of Agron., Dept. of Agron., Purdue Univ., Lafayette, Ind. Home Add.: 2305 Roselawn, Lafayette, Ind. SOIL SCIENCE (SOIL MINERALOGY AND CHEMISTRY). b. Pierce, Okla., Nov. 8, 1921. s. Claude A. and Alta (Denney) W. Edn.: B.S., Okla. St. Univ., 1944; M.S., ibid., 1945; Ph.D., Univ. of Wis., 1947. m. Wanita Robertson, May 29, 1945. c.: Lerril; Darla Jo; Ronna; Bren; Janiel. Exp.: Asst. Prof., Purdue Univ., 1947-51; Assoc. Prof., ibid., 1951-57; Prof., ibid., 1957—. Hon. Pos.: Chmn., Ninth National Clay Conference, Purdue Univ., 1960; Mem., Clay Minerals Comm., NAS-NRC, 1959-62. Mem.: Am. Soc. Agron.; Soil Sci. Soc. Am.; Am. Chem. Soc.; Am. Cryst. Assoc.; Sigma Xi; Mineral. Soc. Am.; Mineral. Soc. of Gr. Britain; Clay Minerals Grp.; Geochem. Soc.; Ind. Acad. of Sci.; Phi Kappa Phi; Phi Lambda Upsilon. Contbr. to: Soil Sci. Soc. Am. Procs.; Soil Sci.; Analytical Chem.; Nature; Clays and Clay Minerals; Silicates Industriels. Gen. Int.: Rockefeller Fellow in the Nat. Scis. of the Natl. Rsch. Council, 1953-54; Studied at Rothamsted Exptl. Station, Harpenden, England. Areas of Rsch.: Soil Mineralogy and Genesis; Clay Mineralogy.

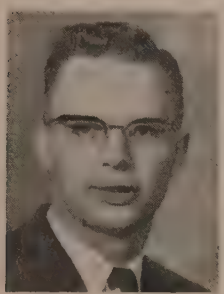


WHITE, John A(nderson) (Ph.D.), Prof. of Biol., Long Beach St. Coll., Long Beach 4, Calif. Home Add.: 4202 Monogram Ave., Lakewood, Calif. VERTEBRATE PALEONTOLOGY (TERTIARY AND QUATERNARY RODENTS). b. Salvador, Bahia, Brazil, Oct. 18, 1919. s. Maxcy Gregg and Kate (Cox) W. Edn.: A.B., William Jewell Coll., 1942; Ph.D., Univ. of Kan., 1953. m. Alice Bruce, June 6, 1948. c.: James Jeffrey. Exp.: Instr., Wm. Jewell Coll., 1946-47; Instr., Univ. of Ill., 1953-55; Prof., Long Beach St. Coll., 1955—. Hon. Pos.: 2nd Vice-Pres., So. Calif. Acad. of Scis.; Rsch. Assoc., Los Angeles Co. Mus. Mem.: Am. Soc. of Mammalogists; Kan. Acad. of Scis.; So. Calif. Acad. Sci.; Australian Mammal Soc.; Soc. Systematic Zool.; A.A.A.S.; Am. Soc. Zool.; Soc. for the Study of Evolution; Paleontol. Soc.; Soc. of Vertebrate Paleontol.; Sigma Xi; Phi Sigma; Beta Beta Beta; Kappa Alpha. Contbr. to: Jour. of Mammalogy; Trans. Kan. Acad. of Sci.; Science; Pub. of Mus. of Nat. Hist., Univ. of Kan. Serv. Rec.: U. S. Army, Med. Dept., 1942-46. Areas of Rsch.: Paleontology; Taxonomy; Morphology and Evolution of Rodents.

WHITE, John William (Mr.), Instr., Pa. St. Univ., Tyson Bldg., University Park, Pa. Home Add.: 1311 N. Allen, State College, Pa. FLORICULTURIST, PLANT PHYSIOLOGIST. b. Ardmore, Okla., Aug. 9, 1933. s. Don L. and Willette (Estes) W. Edn.: B.S., Okla. St. Univ., 1955; M.S., Colo. St. Univ., 1957. m. Peggy Barton, June 1, 1954. c.: Mark Daniel; Sally Louise. Exp.: Rsch. Asst., Colo. St. Univ., 1955-57; Field Liaison, Park Elitch Wholesale Florist, Denver, Colo., 1957-59; Instr., Pa. St. Univ., 1959—. Mem.: Am. Carnation Soc.; Pa. Flower Growers; W. A. Burpee Award for Horticulture; Sigma Xi; Phi Sigma; Am. Soc. Hort. Sci.; Phi Epsilon Phi; Soc. Am. Flor.; Alpha Zeta; Am. Inst. Biol. Sci.; Gamma Sigma Delta; Alpha Gamma Rho. Contbr. to: Proc. Am. Soc. Hort. Sci.; Pa. Flower Growers Bull.; The Exchange; Sou. Florist and Nurseryman; Colo. Flower Growers Bull. Serv. Rec.: U.S.N.R., 1953-61. Areas of Rsch.: Experiments, Soil Physics and Soil Chemistry with Applications to Container Grown Plants.

WHITE, Milton Grandison (Ph.D.), Higgins Prof. of Physics, Princeton Univ., Princeton, N. J. Home Add.: 124 Quaker Rd., Princeton, N. J. PHYSICS, NUCLEAR AND ELEMENTARY PARTICLES AND HIGH ENERGY ACCELERATORS. b. Claremont, Calif., Jan. 12, 1910. s. Francis H. and Anna (Fairchild) W. Edn.: A.B., Univ. of Calif., 1931; Ph.D., ibid., 1935. m. Elizabeth Higley, Jan. 22, 1935. c.: Mrs. Ann Fairchild W. Bruner; Margaret Wynter; David Milton. Exp.: Natl. Rsch. Coun. Fellow, Princeton Univ., 1935-37; Asst. Prof., ibid., 1939-45; Mem., Radiation Lab., Mass. Inst. of Technol., 1940-42; Division Head, Radiation Lab., ibid., 1942-46; Prof., Princeton Univ., 1946—; Chmn., Accelerator Dept., Brookhaven Natl. Lab., 1948-50; Dir., Princeton-Pa. Accelerator Lab., Princeton Univ., 1956—. Mem.: A.P.S.; Sigma Xi; Gamma Alpha; Phi Beta Kappa. Contbr. to: Physical Rev.; Rev. of Scientific Instruments. Areas of Rsch.: Nuclear Physics; Elem. Particles; Design of High Energy Accelerators; Radar Design.

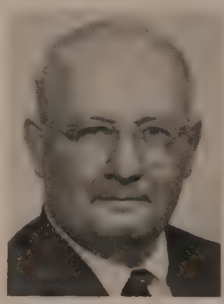
WHITE, Paul Sherrick, Jr. (Mr.), Field Serv. Engr., Gen. Elec. Co., Phila., Pa. Home Add.: 860 Pearl St., Salina, Kans. PHYSICS. b. Barberton, Ohio, Nov. 29, 1936. s. Paul Sherrick and Helene Elizabeth (Durant) W. Edn.: B.A., Carleton Coll., 1958. m. Celeste Corrales-Icaza, July, 1959. c.: Ana Marina. Exp.: Physicist, Diamond Ordance Fuze Labs., Wash., D. C., 1958-59; Engr., Gen. Elec. Co., Heavy Mil. Electronics Dept., Syracuse, N. Y.,1959-61; Engr, Missile and Space Vehicle Dept., Gen. Elec. Co., Phila., Pa., 1961—. Mem.: Am. Physical Soc.; AAAS; Frontier Lodge #45. Areas of Rsch.: Radar and Infra-red.



WHITE, Robert Brown (M.D.), Assoc. Prof., Dept. of Neurology and Psychiatry, Univ. of Tex. Med. Branch, Galveston, Tex. Home Add.: 2323 Sealy St., Galveston, Tex. PSYCHOANALYSIS AND PSYCHIATRY. b. Ennis, Tex., Jan. 5, 1921. s. Robert B. and Willia E. (Latimer) W. Edn.: B.S., Tex. A & M Coll., 1941; M.D., Univ. of Tex. Med. Branch, 1944. m. Jimmie E. Sims, 1942. c.: Robert B., Jr.; Canelia E.; Margaret E. Exp.: Interne, Phila. Gen. Hosp., Phila., Pa., 1944-45; Resident in Psychiatry, Univ. of Tex. Med. Branch, Galveston, Tex., 1945-46, 1948-49; Fellow in Psychiatry, Austen Riggs Center, Stockbridge, Mass., 1949-51; Asst. Psychiatrist to Sr. Psychiatrist, ibid., 1951-62; Tchg. Analyst, New Orleans Psychoanalytic Inst., La., 1961—; Assoc. Prof., Dept. of Neurology and Psychiatry, Univ. of Tex. Med. Branch, Galveston, Tex., 1962—. Hon. Pos.: Diplomate, Am. Bd. of Psychiatry and Neurology, 1950. Mem.: Blockley Med. Soc.; Am. Med. Assn.; Am. Psychiatric Assn.; Am. Group Psychotherapy Assn.; Titus Harris Soc.; Am. Psychoanalytic Assn.; A.A.A.S.; Western New England Psychoanalytic Soc.; Tex. Med. Assn.; Tex. Psychiatric Assn.; New Orleans Psychoanalytic Soc.; Alpha Omega Alpha. Contbrng. Author: The Patient and the Mental Hospital. Contbr. to: Texas Reports on Biol. and Med.; The Jour. of Nervous and Mental Diseases; Jour. of Abnormal and Social Psychology; Internatl. Jour. of Psychoanalysis; Internatl. Jour. of Group Psychotherapy; Diseases of the Nervous System. Serv. Rec.: A.U.S., 1946-48. Areas of Rsch.: Group Dynamics; Group Psychotherapy; Psychoanalysis.

WHITE, Richard Paul (Ph.D.), Assoc. Prof. of Pharmacology, Univ. of Tenn., Med. Units, Memphis, Tenn. Home Add.: 329 Peg Lane, Memphis 17, Tenn. PHARMACOLOGY-NEUROPHARMACOLOGY. b. Gary, Ind., May 27, 1925. s. Dolphia LeRoy and Edna (Wickey) W. Edn.: B.S., Ind. State Coll., 1947; M.A., Univ. of Kans., 1949; Ph.D., ibid., 1954. m. Ethel Mae Miller, June 7, 1947. c.: Paul; Thurman Richard. Exp.: Asst. Instr. of Physiol., Univ. of Kans., 1947-49; Instr. of Physiol., ibid., 1949-54; Psychophysiologist, Galesburg St. Rsch. Hosp., Galesburg, Ill., 1954-56; Instr. in Pharmacol., Univ. of Tenn. Med. Units, Memphis, Tenn., 1956-57; Asst. Prof. of Pharmacol., ibid., 1957-59; Assoc. Prof. of Pharmacol., ibid., 1959—. Mem.: Am. Soc. for Pharmacol. and Exptl. Therapeutics, N. Y. Acad. of Sci.; Sigma Xi; A.A.A.S.; Ill. Acad. of Sci.; Phi Sigma; Phi Chi. Contbr. to: Jour. Lab. and Clin. Med.; Jour. Appl. Physiol.; Am. Jour. Physiol.; Proc. Soc. Exptl. Biol. and Med.; Jour. Neurophysiol.; A.M.A. Arch. Neurol. and Psychiat.; Jour. Pharmacol. and Exptl. Therapy; Arch. Int. Pharmacodyn; Exptl. Neurol; Fed. Proc.; Pharmacologist. Areas of Rsch.: Neuropharmacology and Exptl. Neurology.

WHITE, Robert Joseph (Ph.D., M.D.), Asst. Prof. of Neurosurgery, Western Reserve Univ., Chief of Neurosurgery, Metropolitan General Hospital, 3395 Scranton Rd., Cleveland, Ohio. Home Add.: 1482 Parkhill, Cleveland Heights, Ohio. NEUROSURGERY. b. Duluth, Minn., Jan. 21, 1926. s. Robert James and Catherine (Sinnott) W. Edn.: B.S., Univ. of Minn., 1951; M.D., Harvard Univ. Schl. of Med., 1953; Ph.D., Univ. of Minn., 1962. m. Patricia Murray, June 11, 1955. c.: Robert; Christopher; Patricia; Michael; Daniel. Exp.: Fellowship in Neurologic Surgery, Mayo Clinic, Rochester, Minn., 1955-58; Asst. to Staff in Neurologic Surg., ibid., 1959; Rsch. Assoc., ibid., 1960; Asst. Prof. of Neurosurgery, Western Reserve Univ., Chief of Neurosurgery, Metropolitan Gen. Hosp., Cleveland, Ohio, 1961—. Mem.: Sigma Xi; Alpha Omega Alpha; Boyleston Med. Soc.; AAAS; A.M.A.; Ohio State Med. Assn.; Cleveland Acad. of Med.; Phi Beta Phi. Contbr. to: Neurology; Jour. of Neurosurgery; Arch. of Neuro.; Jour. of Surgical Rsch. Serv. Rec.: AUS, 1944-46. Gen. Int.: Consultant in Neurosurgery, visitant, Crile Vet. Admin. Hosp; Visitant, Lakeside Hosp., Cleveland, Ohio. Areas of Rsch.: Experimental surgery of nervous system; brain metabolism.



WHITE, William Luther (M.D.), Chf. Plastic Surgery, Univ. of Pittsburgh Med. Center, 3500 Fifth Ave., Pittsburgh 13, Penna. Home Add.: 237 Morrison Dr., Pittsburgh 16, Pa. PLASTIC SURGERY. b. Raleigh, N. C., Feb. 25, 1912. s. George L. H. and Marie Louise (Riggsbee) W. Edn.: B.S., N. C. Sta. Coll., 1934; B.S., ibid., 1935; M.S., ibid., 1939; M.D., Jefferson Med. Coll., 1939. m. Wilma Louise Watrous, Sept., 1938. c.: William; George; Deborah; Nancy; Candace; Mark. Exp.: Rsch. Fellow, Univ. of Pa., Phila., Pa., 1941-44; Clin. Asst. Prof., Womens Med. Coll., Phila., Pa., 1946-47; Instr. Grad. Schl., Univ. of Pa., 1946-48; Instr., Univ. of Pittsburgh, Pittsburgh, Pa., 1947-53; Clinical Asst. Prof., ibid., 1953-59; Clin. Assoc. Prof., ibid., 1959—. Mem.: Am. Soc. Plastic and Reconstructive Surg.; Am. Coll. Surg.; Am. Soc. for Surg. hand; Royal Soc. Med.; N. Y. Acad. Sci.; Nu Sigma Nu. Author: Surgical Clinics, North Am., 1959. Contbr. to: Jour. of Urol.; Encyc. of Med. & Surg.; Am. Jour. of Med. Sci.; Internatl. Clinics; Ann. of Surg.; Jour. A.M.A.; Surg. Clins. of N. Am.; U. S. N. Bull.; Pa. Med. Jour.; Jour. of Plastic & Reconstructive Surg.; Jour. Chris. Med. Soc. of India; Trans. Internatl. Soc. of Plastic Surgs.; Cancer Bull.; A.M.A. Archs. of Pathol. Serv. Rec.: USNR, 1944-46. Gen. Int.: Travel in Asia and Africa devoted to Surgical Rehabilitation in Leprosy. Areas of Rsch.: Genetics; Surgical Infections Wound Healing; Reconstructive Surgery of the Hands.

TE, William Clinton (M.D.), Dir. of Labs., City and County of ver, Denver Gen. Hosp., Denver, Colo. Home Add.: 3121 Cherry Ridge Rd., Englewood, Colo. PATHOLOGY. b. Albemarle Co., Va., Nov. 22, 1911. s. Llewellyn Gordon and Caroline (Rawlings) W. Edn.: B.S., Va. Milit. Ins., 1933; M.D., Univ. of Va., 1937. m. Frances Daniel, July, 1938. c.: William Clinton, Jr.; Elizabeth Llewellyn. Exp.: Med. Dir., Atomic Energy Comm., Los Alamos, New Mex., 1946-49; Asst. Prof., Univ. of Colo. Schl. of Med., Denver, Colo., 1952—; Dir. of Labs., Denver Gen. Hosp., 1952—. Hon. Pos.: Pres., Colo. Soc. of Clinical Pathologists, 1959-60; Past Adv. Coun., Am. Soc. of Clin. Path.; Past Pres., Staff, Denver General Hosp.; Past Pres., Los Alamos Co. Med. Soc. Mem.: Internatl. Acad. of Pathol.; Coll. of Am. Pathols.; . Soc. of Clin. Pathol.; A.A.A.S.; Am. Assn. of Blood nks; Assn. of Am. Physicians and Surgeons; Mountain tes Soc. of Electron Microscopists; Nu Sigma Nu; Kiwanis; Mason; Shriner. Contbr. to: Cancer; Am. Jour. of Clinical thol.; Jour. of Am. Med. Assn. Serv. Rec.: AUS, 1938-46. eas of Rsch.: Toxicology; Pathology; Electron Microscopy; Bacteriology.

HITEHILL, Arthur Murray, Jr. (Ph.D.), Reynolds Prof. of Human lations in Industry, Schl. of Bus. Administration, Univ. of N. C., Chapel Hill, N. C. Home Add.: Coker Dr., Chapel Hill, N. C. SOCIAL SCIENCES. b. Bronxville, N. Y., Nov. 26, 1919. s. Arthur Murray and Rebecca Elizabeth (Dubbs) W. Edn.: Ph.D., Univ. of Va., 1945; M.A., ibid., 1944; B.S., ibid., 1942. m. Rose Douglass Moore, 1942. c.: Arthur Murray, III; Barbara Douglass. Exp.: Rsch. Assoc., Univ. of Va., 1945-48; Visiting Fellow, Harvard Bus. Schl., 1948-49; Prof., Univ. of N. C., 1949—. Hon. Pos.: Fulbright Lectr., Keio Univ., Tokyo, Japan, 1957-58; Rsch. Scholar, Am. Philosophical Soc. Mem.: Acad. of Mgmt.; Sou. Econ. Assn.; Am. Bus. Writing Assn.; Pi Kappa Alpha; Alpha Kappa Psi. Author: The Human

spects of Administration, 1955. Co-Author: Cases on Human elations in Management, 1958. Contbr. to: Calif. Mgmt. Rev.; he Rotarian; Bull., Kokusai Bunka Shinkokai; Jour. of Acad. of Mgmt.; The Japan Times; Hoken Nenkin Tenbo; Keieisha; Sat. vening Post; The Diary; Bull., Am. Bus. Writing Assn.; The oice; N. Y. Times; Hanover Pension Bull.; Personnel Jour.; ollegiate News and Views; Commonwealth. Areas of Rsch.: luman Relations in Bus.; Personnel Mgmt.; Cultural Values in ehavior; Mgmt. in the Far East.

WHITEHOUSE, Frederick A. (Ed.D.), Dir. of Rehabilitation, Am. Heart Assn., 44 E. 23rd St., N.Y.C. Home Add.: 37 Huntington Rd., Garden City, N. Y. REHABILITATION, PSYCHOLOGY, VOCATIONAL COUNSELING. b. N.Y.C., July 23, 1910. s. Frederick Ernest and Lillian May (Drake) W. Edn.: B.A., St. John's Univ., 1932; M.A., Columbia Univ., 1940; Ed.D., N. Y. Univ., 1952. m. Eleanor M. Frentzel, Jan. 11, 1936. c.: Susan Valerie. Exp.: Schl. Counselor Psychologist, Conn. St. Dept. of Edn., Div. of Vocat. Edn., Torrington and Meriden, Conn., 1943-46; Dir. of Vocatl. Rehabilitation, Inst. for the Crippled and Disabled, N.Y.C., 1947-53; Dir. of Rehabilitation, Am. Heart Assn., N.Y.C., 1953—. Hon. Pos.: Past Pres., Natl. Coun. on Psychological Aspects of Disability; Past Pres., N. Y. Rehabilita-

tion Assn.; Policy Comm., Natl. Rehabilitation Assn. Mem.: Am. Psychological Assn., Fellow; Am. Publ. Health Assn., Fellow; A.A.A.S., Fellow; Am. Personnel and Guidance Assn.; Phi Deta Kappa; Kappa Delta Pi. Contbr. to: Jour. of Rehabilitation; Am. Jour. of Occupational Therapy; Exceptional Children; Cerebral Palsy Review; Disease of the Chest. Areas of Rsch.: Clinical Teamwork; Rehabilitation Philosophy; Habilitation; Psychological Aspects of Cardiovascular Disease; Rehabilitation Centers.

WHITING, John Randolph (Mr.), Publisher, Popular Science Monthly, 355 Lexington Ave., New York 17, N. Y. Home Add.: Hancock Pl., Irvington, N. Y. EDITING AND PRESENTATION, POPULARIZATION. b. N.Y.C., Apr. 22, 1914. s. John C. and Elizabeth (Zittel) W. Edn.: A.B., Ohio Univ., 1936. m. Helen Gamertsfelder, 1937. c.: Wendy; Merry; Robin. Exp.: Editor, Science Illustrated Mag., N.Y.C., 1947-50; Ed. and Pub., Flower Grower Mag., ibid., 1950-61; Exec. Vice-Pres. and Publr., Popular Sci. Publ. Co., ibid., 1961—. Mem.: Nat. Assn. Sci. Writers; Assoc., Photographic Soc. of Am.; A.A.A.S.; Phi Delta Theta; Kappa Alpha Mu; Sigma Delta Chi. Author: Photography Is a Language, 1946. Areas of Rsch.: Photography; Pictorial Journalism; Presentation of Technical Material to Specialized Audiences.

WHITENER, Paul Douglas (Mr.), Prof. of Chem., Winthrop Coll., Rock Hill, So. Car. Home Add.: 640 Coll. Ave., Rock Hill, S. C. ORGANIC CHEMISTRY; BIOCHEMISTRY. b. Hickory, N. C., Nov. 12, 1912. s. E. H. and Elizabeth (Frye) W. Edn.: B.S., Appalachian Coll., 1936; M.S., Univ. of Ala., 1939. m. Selma Hamrick, 1937. c.: Rebecca Kay. Exp.: Tchr., Techn., H. Schl., Charlotte, N. C., 1940-41; Chemist, U. S. Army, 1941-45; Chf. Chemist, Phoenix Oil Co., Augusta, Ga., 1945-48; Prof., Chem., Winthrop Coll., 1948—. Hon. Pos.: Speaker, ACS Bureau; Fellow, Am. Inst. of Chemists. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; Am. Assn. for the Adv. of Sci.; S. C. Acad. of Sci.; Kiwanis. Editor: The Chemical Formulary. Contbr. to: S. C. Acad. of Sci. Bull. Gen. Int.: Devised New Methods of Analytical Organic Chemistry. Areas of Rsch.: Analytical Methods in Organic and Biochemistry; Determination of Trace Elements in Organic Compounds.

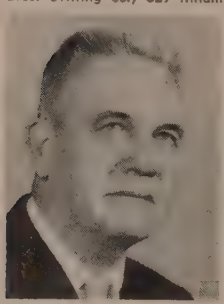
WHITLEY, Ona Ruth (Miss), Dir. (Retired), of Diptheria and Mycol. Lab. and Sr. Bacteriol. and Mycologist, Ind. Sta. Bd. of Health, Indianapolis, Ind. Home Add.: 1000 E. Franklin St., Monroe, N. C., DIPHTHERIA AND MYCOLOGY. b. Monroe, N. C., Dec. 6, 1898. d. A. D. N. and Elizabeth (Belk) W. Edn.: M.Sc., Johns Hopkins Univ., 1934; A.B., Univ. of N. C., 1924; B.A., Queens Coll., 1920. Exp.: Tchr., H. S. Sci., N. C., 1920-23; Hd. of Sci. Dept., Chapel Hill H. Schl., Chapel Hill, N. C., 1924-29; Instr., Botany and Biol., Sum. Sess., Univ. of N. C., Chapel Hill, N. C., 1924-26; Asst. Bacteriol., Md. St. Dept. of Health, Central Lab., Baltimore, Md., 1930-36; Assoc. Bacteriol. and Bacteriol. in Charge, Md. St. Dept. of Health, St. Branch Lab., Hagerstown, Md., 1936-39; Sr. Bacteriol. and Mycolo., Ala. St. Dept. of Health, Montgomery, Ala., 1942-46; Sr. Bacteriol. and Mycol. and Dir. of Diphtheria and Mycol. Labs., Ind. St. Bod. of Health, Indianapolis, Ind., 1946-61. Mem.: Royal Soc. of Health; Soc. of Am. Bacteriols., Natl. and Ind. Branch, Secy. and Treas., Ind. Branch, 1952-54; Fellow, Am. Assn. for the Adv. of Sci.; Am. Pub. Health Assn., Fellow; N. Y. Acad. of Sci.; Am. Men of Sci.; The Womans Rotary Club of Indianapolis. Contbr. to: Jour. of Lab. and Clin. Med.; Jour. of Hygiene, Am.; Pub. Health Reports; The Funnel. Areas of Rsch.: Diphtheria and Mycology.

WHITMORE, Edward John (Ph.D.), Engrng. and Mfg. Mgr., Sylvania Elec. Prods., Microwave Device Div., 1891 E. 3rd St., Williamsport, Pa. Home Add.: 601 Glenwood Ave., Williamsport, Pa. PHYSICAL ELECTRONICS. b. Luton, Eng., Dec. 1, 1916. s. Edward Randolph and Margaret (Harris) W. Edn.: A.R.C.S., Royal Coll. of Sci., London, 1936; B.Sc., London Univ., 1937; D.I.C., Imperial Coll. of Sci. and Tech., 1938; Ph.D., London Univ., 1939. m. Gwyneth Morgan, 1951. c.: Virginia; Judith; Martin; Andrew. Exp.: Chief Engr., Ferranti Ltd., Granton, Scotland, 1947-55; Engrng. Mgr., Can. Marconi Co., Montreal, Can., 1955-60; Engrng. Mgr., Sylvania Elec. Prods. Inc., Microwave Device Div., Williamsport, Pa., 1960—. Mem.: Phys. Soc.; Inst. of Phys., London; Inst. of Elect. Engrs.; Am. Phys. Soc.; Inst. of Radio Engrs.; A.A.A.S.; Mensa. Contbr. to: Trans. Faraday Soc.; Jour. of Sci. Instrum.; Engrng. Areas of Rsch.: Electron Diffraction; Crystallography; Vacuum Technology; Microwave Technology; Vacuum Tubes; Gas Discharge Phenomena.

WHITMORE, Frank Charles (Ph.D.), Coordinator, NASA Prog. Office, A. & M. Coll. of Tex., Coll. Sta., Tex. Home Add.: 704 Inwood Dr., Bryan, Tex. LOW TEMPERATURE PHYSICS AND SOLID STATE PHYSICS. b. Baltimore, Md., Mar. 7, 1923. s. Clarence Edgar and Grace Lenore (Wolfe) W. Edn.: A.B., Gettysburg Coll., 1949; M.S., Univ. of Del., 1951; Ph.D., Tex. A. & M. Coll., 1960. m. Dale Keller, Mar. 31, 1943. c.: Nancy; Linda; Joan; John; Carol. Exp.: Instr., Univ. of Del., Newark, Del., 1950-51; Instr., Physics, A. & M. Coll., 1951-56; Asst. Prof., ibid., 1956-61; Sr. Scientist, Jet Propulsion Lab., Caltech, Pasadena, Calif., 1961-62; Coordi-

W. Edn.: B.S., Calif. Inst. Tech., 1933; M.S., ibid., 1934; Ph.D., ibid., 1936. m. Anneliese Vogel, 1935. c.: Paul Richard; James Bernard. Exp.: Party Chief, Western Geophys. Co., Calif., 1936-42; Geophys., Pan Am. Petr. Corp., Tulsa, Okla., 1942-58; Consult. Geophys., ibid., Fort Worth, Tex., 1958—. Mem.: Soc. Explor. Geophys.; Assn. Petr. Geol.; Geophys. Union; Seis. Soc. of Am.; European Assn. of Explor. Geophys.; Sigma Xi; Tau Beta Pi. Contbr. to: Geophys.; Proc. Geoph. Soc. of Tulsa. Areas of Rsch.: Interpretational Methods and Field Methods of Geophysical Exploration for Petroleum.

WIEGAND, Frederick William, Sr. (Mr.), Pres. and Mgr., Wiegand Bros. Drilling Co., 629 Milam Bldg., San Antonio 1, Tex. Home Add.: 2000 W. Summit Ave., San Antonio 1, Tex. GEOLOGICAL ENGINEER (GEOPHYSICS). b. San Luis, Potosi, Mex., May 27, 1900. s. Ferdinand J. and Mathilda (Ostermaier) W. Edn.: B.S., Mass. Inst. Technol., 1922. m. Navene Lee, June 22, 1935. c.: Phyllis Ann French; Fredrica Wilma W.; Frederick William, Jr. Exp.: Engr., Fresnillo Mining Co., Pachuca, Mex., 1919-20; Engr., Standard Oil of N. J., Tampico, Mex., 1922-24; Partner, Engr., Wiegand Bros. Drilling Co., Tex. and Mex., 1924-62; Pres. and Mgr., Wiegand Bros. Drilling Co., San Antonio, Tex., 1962—. Hon. Pos.: Past Cmdr., Post No. 1, Am. Legion, Tampico, Mex.; Past Pres., P.-T.A., Lockhart, Tex.; Pres., Parent's Club, Jefferson H. S. R.O.T.C. Mem.: Am. Assn. of Pet. Geologists; Mex. Assn. of Pet. Geologists; Am. Geophys. Union; Tex. Soc. of Profl. Engrs.; 32° Mason; Alzafar Temple; Shriner; Country Club, Tampico, Mex. Serv. Rec.: Officers Trng. Corps, 1918. Gen. Int.: Discovered many oil fields in Tex. and Mex.; Drilled over 2,000 wells; Received Patriotic citations from U. S. Govt. for Farm Serv. during World War I, II and the Korean Conflict and citations for water installations at Tex. Air Force Bases. Areas of Rsch.: Magnetic Geophysics for Location of Oil and Minerals, Seismic and Electrical Geophysics, Research for Secondary Recovery of Oil and Gas, Deep Oil Well Drilling, Waterwell Drilling, Non-Ferous Mining, De-Watering of Mines, Water Reservoir Engineering, Military Engineering and Marine Engineering.



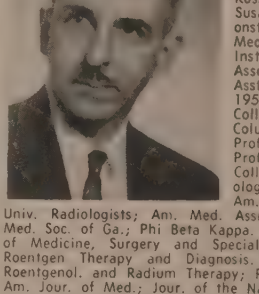
WIENER, Israel (M.D.), Physician, 13011 W. McNichols Rd., Detroit 35, Mich. Home Add.: 19360 Coyle Ave., Detroit 35, Mich. ALLERGY. b. N.Y.C., Feb. 8, 1911. s. Samuel Juda and Ethel Leah (Piser) W. Edn.: B.A., Wayne Univ., 1931; B.M., ibid., Coll. of Med., 1934; M.D., ibid., 1935. m. Anna D. Daitch, 1939. c.: Edward Lee. Exp.: Chief of Allergy, Dept. of Med., Mt. Carmel Mercy Hosp., Detroit, Mich., 1954—. Hon. Pos.: Pres.-Elect, Mich. Allergy Soc., 1962-63; Vice-Pres., Jewish Natl. Fund Coun. of Detroit. Mem.: Fellow, Am. Coll. Allergists; Mich. St. Med. Soc.; Wayne Co. Med. Soc.; Am. Med. Assn.; Israel Med. Assn.; Mich. Allergy Soc.; Jerusalem Acad. of Med.; Am. Soc. Int. Med.; A.A.A.S.; N. Y. Acad. Sci. Serv. Rec.: U. S. Army Med. Corps, 1941-46. Areas of Rsch.: Allergy.

WIER, Charles E. (Ph.D.), Hd. of Coal Sec., Ind. Geological Survey, Bloomington, Ind. Home Add.: 520 No. Fess Ave., Bloomington, Ind. ECONOMIC GEOLOGY. b. Jasonville, Ind., May 15, 1921. s. John W. and Ethel C. (Kneeland) W. Edn.: B.A., Ind. Univ., 1943; M.A., ibid., 1950; Ph.D., ibid., 1955. m. Nellie Jean Altop, Mar., 1949. c.: Catherine; Donald; Ronald. Exp.: Field Geologist, Ind. Geological Surv., Bloomington, Ind., 1947-49; Hd. of Coal Sec., ibid., 1949—; Lectr., Ind. Univ., 1961—. Hon. Pos.: Past Chmn., Group on Coal Geol., Geol. Soc. of Am.; Vice-Pres., Ind. Coal Preparation and Utilization Soc. Mem.: Am. Assn. Petroleum Geol.; Geol. Soc. Am.; Am. Inst. Mining Engrs.; Soc. Econ. Geol.; Sigma Xi; Ind. Acad. Sci.; Sigma Gamma Epsilon. Contbr. to: Bull. Soc. of Econ. Geol. Survey Coal Inv.; Compass of Sigma Gamma Epsilon; Outdoor Ind., many more. Serv. Rec.: A.U.S., 1943-46. Areas of Rsch.: Coal Geology, Resources, and Stratigraphy and Sedimentation of Pennsylvanian Rocks.

WIENER, Philip Paul (Ph.D.), Prof. of Philos., City Coll., N. Y. 31, N. Y. Home Add.: 320 Lyncroft Rd., New Rochelle, N. Y. HISTORY AND PHILOSOPHY OF SCIENCE. b. N.Y.C., July 8, 1905. s. Elias and Sophia (Friedman) W. Edn.: B.S., City Coll., N. Y., 1925; M.A., Columbia Univ., 1926; Ph.D., Univ. So. Calif., 1931. Hon. Deg.: D.H.L., Kenyon Coll., 1961. m. Gertrude Sohler, 1934. c.: Leonard; Marjorie. Exp.: Tchng. Fellow, Univ. of Calif., 1926-27; Instr., City Coll., 1933-43; Asst. Prof., ibid., 1943-48; Assoc. Prof., ibid., 1948-53; Prof., ibid., 1953—; Fulbright Lectr., France, 1953-54; Vis. Prof., Univ. of Mich., Univ. of Minn., Claremont, 1950, '54, '55; Sr. Scholar, Univ. of Hawaii, 1962-63. Hon. Pos.: Exec. Ed., Jour. of Hist. of Ideas; Pres., C. S. Peirce Soc., 1958-59; Chmn., Philos. Dept., City Coll., 1959—; Pres., Conf. on Sci. Method, 1960-61; Vice-Pres., Int. Soc. Hist. of Ideas, 1960. Mem.: A.A.A.S.; Am. Philos. Assn.; Mind; Brit. Soc. Hist. and Philos. Sci.; Internatl. Soc. Hist. of Ideas; Phi Beta Kappa. Author: Evolution and Founders of Pragmatism, 1949; Leibniz, 1950; Readings in Philosophy of Science, 1953; Duhem's Aims and Structure of Physical Theory, 1954; Studies in Philosophy of C. S. Peirce, 1956; Values in a Universe of Chance, 1958. Contbr. to: Jour. of Hist. of Ideas; Jour. of Philos.; OSIRIS; ISIS; Philos. Rev. Serv. Rec.: U. S. Army Air Force, 1943-44. Gen. Int.: Co-Founder, Jour. of Hist. of Ideas, 1940; Co-Founder of Internatl. Soc. for Hist. of Ideas, 1960. Areas of Rsch.: Leibniz' Universal Logic; Charles Peirce's Philosophy of Science and Language; Pragmatism and Evolution in American Thought; East-West Culture and Thought.

WIETING, Philip Lowell (Mr.), Rsch. Assoc., Dept. of Surgery, Univ. Miami Med. Schl., Miami, Fla. Home Add.: 6 Chevy Chase Rd., Huntington, L. I., N. Y. CHEMISTRY AND PHYSIOLOGY-WORK IN CANCER CHEMOTHERAPY. b. Pittsfield, Mass., Mar. 28, 1934. s. Lowell and Margret (Gowry) W. Edn.: A.B., Fla. So. Univ., 1959; M.A., ibid., 1960. Exp.: Rsch. Assoc., Miami Med. Schl., 1960-61; Rsch. Assoc., Dept. of Surgery, ibid., 1961—. Mem.: A.C.S.; Am. Assn. for the Adv. of Sci.; Alpha Tau Omega. Contbr. to: Surgical Form; Artificial Internal Organs. Serv. Rec.: U. S. Army, 1952-54. Gen. Int.: Using Chemotherapy in Perfusion to Kill Cancer with Good Results. Areas of Rsch.: Regional Perfusion Using Chemotherapy to Kill Cancer Cells; Heart Lung Machine; Artificial Kidney.

WIGH, Russell (M.D.), Prof. of Radiology, Med. Coll. of Ga., Augusta, Ga. Home Add.: 3041 Lake Forest Dr., Augusta, Ga. RADIOLOGY. b. Weehawken, N. J., Nov. 17, 1914. s. Joseph John and Selma (Taussig) W. Edn.: B.S., Rutgers Univ., 1935; M.D., Harvard Med. Schl., 1939. m. Emily Wyman, June 11, 1939. c.: Russell John; Richard Joseph; Susan Pamela. Exp.: Asst. Demonstrator in Radiology, Jefferson Med. Coll., Phila., Pa., 1946-49; Instr., Radiology, ibid., 1949-50; Assoc. in Radiology, ibid., 1950; Asst. Prof. of Radiology, ibid., 1950-52; Asst. Prof. of Radiology, Coll. of Physicians and Surgeons, Columbia Univ., 1952-54; Assoc. Prof., Radiology, ibid., 1954-56; Prof. and Chmn. Radiol., Med. Coll. of Ga., 1956—. Mem.: Radiology. Soc. of No. Am.; Fellow, Am. Coll. of Radiol.; Assn. of Univ. Radiologists; Am. Med. Assn.; Richmond Co. Med. Soc.; Med. Soc. of Ga.; Phi Beta Kappa. Contbng. Author: Cyclopedia of Medicine, Surgery and Specialties, Revision Service, 1948; Roentgen Therapy and Diagnosis. Contbr. to: Am. Jour. of Roentgenol. and Radium Therapy; Radiol.; Am. Jour. of Surgery; Am. Jour. of Med.; Jour. of the Natl. Cancer Inst. War Record U. S. Army, 1941-45. Gen. Int.: Certificate of Merit for Exhibit on Gastric Photofluorography from the Radiological Soc. of No. Am. Areas of Rsch.: The Early Detection of Gastric Carcinoma and Gastric Adenomas by Photofluorography; Radiolog. Clin. Investigations.



WIIN-NIELSEN, Aksel Christopher (Ph.D.), Dr., Natl. Ctr. for Atmospheric Rsch., Boulder, Colo. Home Add.: 966 10th St., Boulder, Colo. DYNAMIC METEOROLOGY, GENERAL CIRCULATION OF THE ATMOSPHERE. b. Juelsminde, Denmark, Dec. 17, 1924. s. Aage and Marie Petre (Christophersen) W. Edn.: M.Sc., Univ. of Copenhagen, Denmark, 1950; M.Sc., Univ. of Stockholm, Sweden, 1957; Ph.D., ibid., 1960. m. Bente H. Zimsen, Dec. 5, 1953. c.: Charlotte; Barbro Marianne; Karen Margrete. Exp.: Meteorolt., Danish. Meteorol. Inst., Copenhagen, Denmark, 1952-55; Staff Mem., Internatl. Meteorol. Inst., Stockholm, Sweden, 1955-58; Asst. Prof., Univ. of Stockholm, Stockholm, Sweden, 1957-58; Staff Mem., Joint Numerical Weather Prediction Unit, Wash., D. C., 1959-61; Staff Mem., Natl. Ctr. for Atmospheric Rsch., 1961—. Mem.: Swedish Geophys. Soc.; Am. Geophys. Union; Am. Meteorol. Soc. Contbr. to: Geophysica, Finland; Berichte des Deutschen Wetterdienst; Tellus; Monthly Weather Rev.; Jour. of Meteorol. Gen. Int.: Short-Range Numerical Weather Prediction. Areas of Rsch.: Dynamical Aspects of Atmospheric Circulations, the General Circulation of the Atmosphere; The Energetics of the Atmosphere; Short-Range Weather Prediction; Applied Mathematics (Electronic Computers).

WILAND, Julius (Mr.), Supv. Inc., Somerville, N. J. Home Add.: 29 Demond Pl., Somerville, N. J. FOREIGN BODY PATHOLOGY; SUTURE TENSILE STRENGTH; ABSORPTION AND TISSUE ACCEPTABILITY; EXPERIMENTAL SURGERY; HISTOPATHOLOGY. b. N.Y.C., Mar. 17, 1913. s. Jacob and Fanny Pearl (Zucherman) W. Edn.: B.S., Columbia Univ., 1937; Certificate in Sanitary Engrng., Army Program, Brooklyn Poly Inst., 1942; Certificate in Clin. Pathol., Army Program, Univ. of Tenn. Med. Schl., 1943. m. Edith Garfinkle, Nov. 23, 1941. c.: Paulette Eileen; Marlene Sue. Exp.: Rsch. Biochem., N. Y. Post Grad. Med. Schl., 1937-42; Rsch. Biochem., S. E. Massengill, Bristol, Tenn., 1946-47; U. S. Pub. Health Grant in Enzymol., Woman's Med. Coll., 1947-48; Supv.

Suture and Rsch. Pathol. Lab., Ethicon Inc., 1948—. Mem.: N. Y. Acad. of Sci.; A.A.A.S. Contbr. to: Hemostatic Surg. Dressings; Surg. Gynecol. and Obstetrics; Jour. of Am. Geriatrics Soc.; Jour. of Am. Pharm. Assn. Sci. Edn.; Arch. of Pathol.; Am. Heart Jour.; Arch. of Surg.; Am. Jour. of Med. Sci.; Annals of Surg.; Endocrinol.; Jour. Infectious Diseases. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Park Comm., Franklin Township; Dir. Teen-Age Club, Pine Grove Manor Coop.; U. S. Patent, 1956. Areas of Rsch.: Sutures, Absorption Tissue Acceptability; Histopathology; Experimental Surgery; Antigenicity.

WILBUR, Leslie Clifford (Mr.), Prof. of Mech. Engrng. and Dir. of Nuclear Reactor Facility, Worcester Polytech. Inst., Worcester, Mass. Home Add.: P. O. Box 97, Walnut St., Berlin, Mass. MECHANICAL ENGINEERING — REACTOR TECHNOLOGY. b. Johnston, R. I., May 12, 1924. s. Clifford E. and Isabel (Winsor) W. Edn.: B.S. in M.E., Univ. of R. I., 1948; M.S., Stevens Inst. of Tech., 1949. m. Gertrude Widmer, Sept. 9, 1950. c.: Clifford Leslie; Kenneth Charles. Exp.: Instr. to Asst. Prof., Duke Univ., Durham, N. C., 1949-57; Assoc. Prof. of M.E., Worcester Poly. Tech. Inst., 1957-61; Prof. of M.E., ibid., 1961—; Dir. of Nuclear Reactor Facility, ibid., 1958 —. Hon. Pos.: Secy.-Treas., Eastern N. C. Sect., A.S.M.E., 1953-56; Vice-Chmn., Eastern N. C. Sect., A.S.M.E., 1956-57; Mem. at Large, Exec. Comm., Northeastern Sect., Am. Nuclear Soc., 1961-62. Mem.: Am. Soc. for Engrng. Edn.; A.A.A.S.; Am. Soc. of Mech. Engrs.; Am. Nuclear Soc.; Sigma Xi; Phi Kappa Phi; Tau Beta Pi; Pi Tau Sigma; Tau Kappa Epsilon. Serv. Rec.: U. S. Army, 1943-46. Areas of Rsch.: Nuclear Reactor Technology; Thermodynamics.

WILCOX, Churchill Klages (Lt. Col., U.S.A.F.), Chief, EDPM Programming Branch, Data Systems Ctr., 544th Reconnaissance Technical Group (SAC), Offutt A.F.B., Neb. Home Add.: 2308 Wayne St., Bellevue, Neb. APPLIED MATHEMATICS (COMPUTER PROGRAMMING), D. P. SYSTEMS ANALYSIS AND DESIGN. b. Cincinnati, Ohio, May 30, 1916. s. George M. and Ruth (Tavender) W. Edn.: A.B., Youngstown Univ., 1938; B.S., Ohio St. Univ., 1940; M.S., N.Y.U., 1950; Work on Ph.D., ibid., 1951. m. Edith Fairbanks, Nov. 11, 1942. c.: Barbara Susan; Sandra Lynn. Exp.: Sci. Tchr., H. S., New Wash., Ohio, 1940-41; Metallurgical Observer, Youngstown Sheet and Tube Co., 1941-42; Intelligence Technician, U. S. A., 1942; Meteorologist, U.S.A.F., E.T.O. during W.W. II, in Far East during Korean War, 1943-56; Computer Programmer, Headquarters SAC, Offutt A.F.B., 1956-58; Chief, Missile Operations Branch, Trajectory Ctr., ibid., 1958-59; Chief, Data Services Branch, 1959-60. Hon. Pos.: Pres., Omaha-Offutt Chapt., Am. Meteorological Soc.; Nominated for Exec. Bd. of SHARE. Mem.: Am. Meteorological Soc.; Am. Geophysical Union; Am. Rocket Soc.; A.A.A.S.; Assn. for Computing Machinery; Northwest Computing Assn.; Sigma Delta Beta, Youngstown Univ.; Freemasons. Areas of Rsch.: Upper Atmosphere; Application of Computer to Problems of Aerial Navigation; Trajectory Analysis and Computation for Ballistic Missiles; Application of EDP Systems to Intelligence Data Handling and Information Processing.

WILCOX, Ethelwyn B. (Ph.D.), Prof. of Nutrition, Utah St. Univ. of Agri. and Applied Sci., Logan, Utah. NUTRITION. b. Mar. 19, 1906, Wyoming, Ia. d. Edwin and Mary (Cameron) W. Edn.: B.S., Ia. St. Coll., 1931; M.S., ibid., 1937; Ph.D., ibid., 1942. Exp.: Rsch. Asst., 1937-42, Ia. St. Coll.; Asst. Home Economist, Expt. Sta., St. Coll. of Wash., 1942-43; Asst. Prof. of Nutrition, Coll. of Family Life, Utah St. Univ., 1943-44; Assoc. Prof. of Nutrition, ibid., 1944-48; Prof., Nutrition, ibid., 1948—. Mem.: Sigma Xi; Phi Kappa Phi; Omicron Nu; Iota Sigma Pi; Sigma Delta Upsilon; Phi Upsilon Omicron; A.C.S.; A.A.U.P.; Am. Home Econ. Assn.; Am. Diet. Assn.; Food Tech.; A.A.U.W. Ph.D. Dissertation: Distribution and Partition of Fats in Certain Tissues of Rats Fed a Diet Containing Dried Autoclaved Pork Muscle. Listed in: A.M.S.

WILCOX, James Dudley (Mr.), Chief, Aerosol Physics Lab., Directorate of Rsch., Chem. Rsch. and Devel. Labs., Army Chem. Ctr., Md. Home Add.: R.F.D. 3, Box 240, Bel Air, Md. PHYSICAL CHEMISTRY (AEROSOLS). b. Salem, W. Va., Mar. 2, 1922. s. Hayden Dorsey and Lulu (Smith) W. Edn.: B.S., Salem Coll., W. Va., 1944. m. M. Catherine Burkhart, Nov., 1958. c.: J. Dudley; Deborah C.; Ronald D.; Karen Del. Exp.: Pigment Chemist, Eagle-Picher Rsch. Labs., Joplin, Mo., 1946-48; Paint and Varnish Chemist, Farboil Paint Co., Baltimore, Md., 1948; Phys. Chemist, Chem. Div., Tech. Command, Army Chem. Ctr., Md., 1948-49; Chief, Phys. Methods Sect., Tech. Command, ibid., 1949-53; Chief, Aerosol Dissemination Gr., Directorate of Rsch., ibid., 1953-61; Chief, Aerosol Physics Lab., Directorate of Rsch., ibid., 1961—. Mem.: Rsch. Soc. of Am.; Am. Geophys. Union; Air Pollution Control Assn.; USLTA Tennis Umpires Assn.; Northern Md. Assn. for Retarded Children. Contbr. to: Armed Forces Chem. Jour.; A.M.A. Arch. of Occ. Med. and Ind. Health; Air Pollution Control Assn. Jour.; Air Engrng.; Jour. Franklin Inst.; Jour. of Applied Polymer Sci. Serv. Rec.: U.S.N.R., 1944-46. Areas of Rsch.: Mechanisms of Generation, Dissemination, Sampling and Measurement of Liquid and Solid Airborne Particles; Sub-Micron Aerosols, Filtration of Aerosols; Color Measurement of Signal Smokes; Fluid Dynamics and Electrostatics.

WILDER, Arthur B. (D.Sc.), Chief Metallurgist, Natl. Tube Div., U. S. Steel Corp., 525 William Penn Pl., Pittsburgh 30, Pa. Home Add.: 1641 Williamsburg Rd., Pittsburgh 16, Pa. METALLURGY OF IRON AND STEEL. b. Connellsville, Pa., Aug. 17, 1904. s. John and Joan (Barthen) W. Edn.: B.S., Mt. Union Coll., 1925; M.A., Ohio St. Univ., 1928; D.Sc., Harvard Univ., 1933. m. Vanita Ruch, Aug. 27, 1930. c.: Lowell W.; Nancy J. Exp.: Instr., Metallurgical Engrng., Harvard Univ., 1930-33; Rsch. Metallurgist, Am. Steel and Wire Div., U. S. Steel Corp., 1930-33; Prof., Metallurgical Engrng., Univ. of Ill., 1935-39; Rsch. Supvr., Jones & Laughlin Steel Corp., 1939-44; Chief Metallurgist, Natl. Tube Div., U. S. Steel Corp., 1944—. Hon. Pos.: Chmn., A.I.M.E. Acid Bessemer and Basic Oxygen Steel Comm.; Chmn., A.I.S.I. Tubular Products Commn.; Dir., Metallurgical Soc. of A.I.M.E.; Trustee, Mt. Union Coll. Mem.: A.S.M.E.; A.I.M.E.; A.W.S.; A.I.S.I.; A.S.C.E.; A.S.T.M.; A.S.M.; Sigma Alpha Epsilon; Gamma Alpha; Sigma Xi; Pittsburgh C. of C. Contbr. to: Pipeline Industry; Petrol. Engr.; Oil and Gas Jour.; Metal Progress; Iron Age; Mechanical Engrng.; Steel; Blast Furnace and Steel Plant; Trans. of: A.S.T.M.; A.W.S.; A.I.S.I.; A.P.I.; A.S.M.; A.I.M.E.; A.S.C.E. Areas of Rsch.: Rsch. in Steel Production, Welding, High Temperature Properties of Metals, Manufacture of Pipe, Fatigue of Metals, Heat Treatment of Steel, Nondestructive Testing, Aging of Steel, Embrittlement of Metals and Toughness Properties of Steel.

WILDER, George Edward (Mr.), Mgr., Standard Solvent Co., 624 S. Mich. Ave., Chicago, Ill. Home Add.: 2926 Harlem Ave., Riverside, Ill. TECHNICAL METAL COATINGS—SURFACE TENSION. b. St. Louis, Mo., Nov. 21, 1903. s. George Edward and Mary Ellen (Cronin) W. m. Adria Loomis, Oct. 24, 1956. Exp.: Mgr., Standard Solvent Co., 1934—. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci. Contbr. to: Domestic Engrng.; Refrigeration Industry. Areas of Rsch.: Surface Tension; Technical Metal Coatings.

WILDER, Joseph (M.D.), Clinical Prof. of Neurology, N. Y. Med. Coll., N.Y.C. Home Add.: 1199 Park Ave., New York 8, N. Y. NEUROLOGY AND PSYCHIATRY.

b. Drohobycz, Austria, Feb. 13, 1895. s. Dr. Isidor and Frieda (Lauterbach) W. Edn.: M.D., Univ. of Vienna Med. Schl., 1919. m. Hedy Walter, May 22, 1931. c.: Viola W. Breit; Diana W. Weinberg. Exp.: Intern, Res., Act. Dir., Various Hosps., Vienna, 1919-29; Asst. Prof., Univ. of Vienna, 1930; Med. Dir., Rosenhuegel, Vienna, 1931-38; Assoc. Prof., Neuropsychiatry, Vienna, 1937; Consult., Attend., Various Hosps., N. Y., 1939—; Assoc., later Clin. Prof. of Neurol., N. Y. Med. Coll., 1955—. Hon. Pos.: Pres., Internatl. Basimetric Soc. Mem.: Am. Psychiatric; Am. Psychosomatic Soc.; Acad. of Neurology; A.A.A.S.; N. Y. Acad. of Sci. Author: Tic Convulsif, 1927; Headache, 1934; Hypoglycemia, 1938. Areas of Rsch.: Clin. Neurol., Psychiat., Psychotherapy, Endocrinol., Physiol.

WILFON, James Gordon (Mr.), Pharmacol., Smith, Kline and French Labs., Phila., Pa. Home Add.: 4520 Canning Ave., Merchantville 8, N. J. PHARMACOLOGY. b. Camden, N. J., Feb. 22, 1928. s. James L. and Eva (Bingley) W. Edn.: B.S., Kent St. Univ., 1951. m. Jeanne Heal, June 14, 1952. c.: Susan Gail; Kathy Lynn. Exp.: Pharmacol., Smith, Kline and French Labs., Phila., Pa., 1953—. Mem.: N. Y. Acad. Scis.; A.A.A.S.; Physiol. Soc. of Phila. Serv. Rec.: Rsch. Asst., Army Chem. Ctr., 1952-53. Areas of Rsch.: Neurological and Cardiovascular Pharmacology.

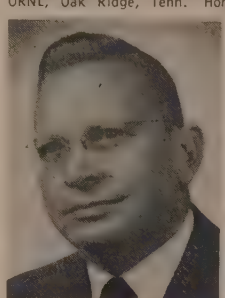
WILGUS, Herbert Sedgwick, III (Ph.D.), Rsch. Chem., Eastman &odak Co., Rochester, N. Y. Home Add.: 43 D Northgate Manor, Rochester 16, N. Y. ORGANIC CHEMISTRY. b. Ithaca, N. Y., Oct. 12, 1931. s. Herbert Sedgwick, Jr. and Evelyn Elizabeth (Reyna) W. Edn.: B.S., Colo. St. Univ., 1954; M.S., ibid., 1955; Ph.D., Univ. of Minn., 1960. m. Alice M. Schenefeld, Apr. 2, 1961. Exp.: Rsch. Chem., Eastman Kodak Co., Rochester, N. Y., 1960—. Mem.: A.A.A.S.; Am. Chem. Soc.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. Org. Chem. Serv. Rec.: U. S. Army, 1956-57. Areas of Rsch.: Organic Syntheses; Photographic Chemistry.

WILKENING, Eugene Arthur (Ph.D.), Prof. of Rural Sociol., Univ. of Wis., Madison 6, Wis. RURAL SOCIOLOGY AND SOCIAL PSYCHOLOGY. b. Oak Ridge, Mo., July 7, 1916. s. Theodore C. and Myrtle (Lang) W. Edn.: B.S., Univ. of Mo., 1937; M.A., ibid., 1939; Ph.D., Univ. of Chicago, 1949. m. Helena Emerson, Oct. 17, 1947. c.: Kenneth; Dean; Karen. Exp.: Rural Rehab. Supvr., Farm Security Admin., 1938-40; Personnel Officer, U. S. Army, 1942-46; Instr. in Rural Sociol., N. C. St. Coll. of Agri. and Engrng., 1946-51; Soc. Science Rsch. Council Fellow, 1948-49; Asst. Prof. to Prof. of Rural Sociol., Univ. of Wis., Madison, Wis., 1951—; Chmn., Dept. of Rural Sociol., 1955-59; Fulbright Rsch. Scholar, Melbourne, Australia, 1959-60; Hon. Pos.: Pres.-Elect, Rural Sociol. Soc., 1961-62. Mem.: Rural Sociol. Soc.; Am. Sociol. Soc.; Soc. Rsch. Assn., Appl. Anthropol.; A.A.U.P.; Alpha Zeta. Contbr. to: Rural Sociol.; Am. Sociol. Rev. and Social Forces. Special Int.: Acceptance of Farm Technology, Communication, and Rural Family.

WILKINS, Willie Thomas, Jr. (D.D.S.), Dental Surgeon, 1008 S. Ashe St., Greensboro, N. C. Home Add.: Rt. 6, Box 198, Greensboro, N. C. DENTISTRY AND DENTAL SURGERY. b. Durham, N. C., Dec. 10, 1929. s. Willie T., Sr. (dec.) and Ida Belle (Boddie) W. Edn.: B.S., N. C. A. & T. Coll., 1949; D.D.S., Howard Univ. Coll. of Dentistry, Wash., D. C., 1960. Exp.: Tchr., Sci. and Band, Central H. S., Hillsboro, N. C., 1950-51; Grad. Studies, Georgetown Univ., Oral Surg. Dept., Wash., D. C., 1960; Intern of Oral Surgery, D. C. Gen. Hosp., ibid., 1960-61; Pract. of Dentistry and Dental Surgery, Hampton Clinic Bldg., Greensboro, N. C., 1961—. Mem.: Royal Soc. of Health, London; Am. Dental Soc. of Anesthesiol.; Am. Dental Assn.; Federation Dentaire Internationale; Am. Schl. Health Assn.; A.A.A.S.; Greensboro Med. Soc.; Chi Delta Mu; Y.M.C.A. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Techniques of Tooth Implantation and Techniques for Localized Osteitis Treatment.

WILKENING, George Martin (Mr.), Assistant Chief, Industrial Hygienist, Humble Oil and Refining Co., Houston 1, Tex. Home Add.: 11625 Joan of Arc Dr., Houston 24, Tex. ENVIRONMENTAL HEALTH (ENVIRONMENTAL SCIENCES). b. N.Y.C., Dec. 31, 1923. s. George Herbert and Mary V. (Doyle) W. Edn.: B.S., Queens Coll., 1949; M.S., Columbia Univ., 1950. m. Lorraine Morris, Aug. 26, 1950. c.: Karen; George; Robert. Exp.: Industrial Hygienist, Va. St. Health Dept., Richmond, 1950-51; Indust. Hygienist, Esso Rsch. and Engrng. Co., Linden, N. J., 1952-56; Sr. Indust. Hygienist, Esso Standard Oil, N. Y., 1956-61; Asst. Chf., Industrial Hygienist, Humble Oil and Refining Co., Houston, Tex., 1961 ; Lectr. in Pub. Health and Administrative Med., Columbia Univ. Hon. Pos.: Fellow in Environmental Med., Johns Hopkins Univ., 1951-52; Tech. Adv. to Med. Adv. Comm. of the Am. Petroleum Inst. Mem.: Am. Assn. Adv. Sci.; Acoustical Soc. of Am.; Am. Industrial Hyg. Assn.; Inst. of Environmental Scis., Am. Soc. of Heating, Refrigerating and Air Conditioning Engrs., Air Pollution Control Assn.; Am. Pub. Health Assn.; R.E.S.A. Contbrng. Author: Industrial Noise Manual, 1958. Contbr. to: Jour. Am. Industrial Hyg. Assn. Serv. Rec.: U.S.A.F., 1942-46. Gen. Int.: Establishment of programs for the evaluation and control of environmental health hazards in petroleum operations. Areas of Rsch.: Engineering Control of Industrial Noises; Noise and Its Effects on Hearing; Toxicological and Physiological Effects of Physical, Chemical and Biological Agents; Engineering Control of Environmental Hazards.

WILKINSON, Michael Kennerly (Ph.D.), Physicist, Solid State Div., ORNL, Oak Ridge, Tenn. Home Add.: 124 E. Morningside Dr. Oak Ridge, Tenn. PHYSICS b. Palatka, Fla., Feb. 9, 1921 s. Robert Ridley and Lucille (Kennerly) W. Edn.: B.S., The Citadel, 1942; Ph.D., Massachusetts Inst. of Tech., 1950. m. Virginia Sleap, 1944. c.: Robert Warren; William Michael; Lucille Elizabeth. Exp.: Rsch. Assoc., Mass. Inst. of Tech., Cambridge, Mass., 1948-50; Physicist, Oak Ridge Natl. Lab., Oak Ridge, Tenn., 1950—; Neely Visiting Prof., Ga. Inst. of Tech., Atlanta, Ga., on leave of absence from Oak Ridge, 1961-62; Section Ldr., Solid State Div., Oak Ridge National Lab., 1962—. Mem.: Fellow, Am. Phys. Soc.; Am. Crystallographic Assn.; Am. Assn. for the Adv. of Sci.; Tenn. Acad. of Sci.; Southeastern Sect. A.P.S.; Sigma Pi Sigma; Sigma Xi; R.E.S.A. Contbr. to: Phys. Rev.; Jour. of Appl. Physics; Am. Jour. of Physics; Revs. of Mod. Physics; Jour. of Physics and Chem. of Solids; Jour of Phys. Soc. of Japan; Annual Rev. of Nuclear Sci.; McGraw-Hill Encycl. of Sci. and Technol.; Jour. of Am. Chem. Soc. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Neutron Diffraction, X-ray Diffraction; Magnetic Properties of Solids; Physical Electronics.



WILLARD, Charles Julius (Ph.D.), Prof. of Agron. Emer., 1827 Neil Ave., Ohio St. Univ., Columbus 10, Ohio. Home Add.: 307 E. Longview Ave., Columbus 2, Ohio. FORAGE CROP PRODUCATION; WEED CONTROL. b. Manhattan, Kan., Feb. 14, 1889. s. J. T. and Lydia (Gardiner) W. Edn.: B.S., Kan. St. Univ., 1908; B.S., Univ. of Ill., 1910; M.S., ibid., 1917; Ph.D., Ohio St. Univ., 1926. m. Jacqueline Ulmer, June 19, 1937. c.: Charlene Marie. Exp.: Farmer, Bradford, Kan., 1911-13; Farmer, Williamsburg, Va., 1913-16; Asst. Prof., Ohio St. Univ., 1917-26; Prof., ibid., 1926—; Assoc. in Agron., Ohio Agric. Expt. Sta., Wooster, Ohio, 1925-51; Prof. of Agron., ibid., 1951—; Editor, Weeds, Jour. of Weed Soc. of Am., 1958—; Sr. Sci. London Embassy, U. S. Dept. St., 1948. Hon. Pos.: Pres., N. Cent. Weed Control Conf., 1948; Pres., Am. Soc. of Agron., 1954. Mem.: A.A.A.S.; Am. Soc. Agron.; Soil Sci. Soc. Am.; Crop Sci. Soc. Am.; Am. Soc. Plant Physiol.; Weed Soc. Am.; N. Cent. Weed Control Conf.; Conf. Biol. Edrs.; Soil Cons. Soc. Am.; Ohio Acad. Sci.; Sigma Xi; Gamma Sigma Delta; Phi Kappa Phi; Acacia; Alpha Zeta. Contbr. to: Agron. Jour.; Weeds. Areas of Rsch.: Methods of Seeding Forages; Time of Cutting Alfalfa; Red Clover and Other Forages; Chemical Weed Control, Forage Mixtures; Sweetclover as Soil Improving Crop; Rotation Experiments.

WILLEKE, Gene Elvin (Mr.), Hydraulic Rsch. Engr., U. S. Bur. of Pub. Roads, Wash. 25, D. C. Home Add.: R.R. 1, Dola, Ohio. CIVIL ENGINEERING. b. Dola, Ohio, Sept. 5, 1934. s. Gale Charles and Mildred Elizabeth (Marling) W. Edn.: A.B., Ohio No. Univ., 1956; B.S.C.E., ibid., 1957; M.S.C.E., Stanford Univ., 1960. Exp.: Res. Engr., Madison Eng. Assocs., Mansfield, Ohio, 1957; Hydraulic Rsch. Engr., U. S. Bur. of Pub. Roads, Wash., D. C., 1960—. Mem.: Am. Soc. of Civ. Engrs.; Am. Geophys. Union; Permanent Internatl. Assn. of Navigation Congrs.; Natl. Planning Assn.; D. C. Soc. of Profl. Engrs.; Natl. Soc. of Profl. Engrs.; Nu Theta Kappa. Contbr. to: Am. Engr.; Jour. Geophys. Rsch. Serv. Rec.: U. S. Army Corps of Engrs., 1957-59. Gen. Int.: Registered Profl. Engr., Ohio; Registered Surveyor-in-Trng., Ohio. Areas of Rsch.: Hydraulic Engineering and Urban Hydrology; Water Resources Management.

WILLEY, Robert Bruce (Ph.D.), Asst. Prof. of Biol., Ripon Coll., Ripon, Wis. Home Add.: 519 Lincoln St., Ripon, Wis. BIOLOGY. COMPARATIVE INVERTEBRATE ANATOMY AND CYTOLOGY, INSECT NEUROANATOMY AND BEHAVIOR. b. New Jersey, Sept. 15, 1930. s. Walter Howard and H. Cecelia (Baerman) W. Edn.: A.B., N. J. St. Tchrs. Coll., 1952; M.A., Harvard Univ., 1956; Ph.D., ibid., 1959. m. Ruth H. Lippitt, Jan. 14, 1956. Exp.: Tchr., West Orange Sr. H. S., West Orange, N. J., 1952-54; Tchng. Fellow, Harvard Univ., 1954-57; Asst. Prof., Ripon Coll., 1959—. Mem.: Am. Soc. Zool.; Am. Genetic Assn.; Sigma Xi; Kappa Delta Pi. Contbr. to: Jour. of Ultrastructure Rsch.; Jour. of Morphol.; Gen. and Comp. Endocrinol. Areas of Rsch.: Cockroach Neuroanatomy; Grasshopper Courtship Behavior and Interspecies Reactions; Ultrastructure of Neurosecretory Cells; Neuroglia and Blood Cells; Comparative Anatomy and Evolution of Orthoptera.

WILLHEIM, Robert (M.D.), Head of Tumor Dept., Inst. of Applied Biol., 164 E. 91st St., N.Y.C. Home Add.: 165 E. 90th St., N. Y. C. BIOCHEMISTRY AND TUMOR RESEARCH. b. Krakau, Austria, Feb. 17, 1885. s. Ignaz and Louise (Abeles) W. Edn.: M.D., Univ. of Vienna, 1909. m. Olga Gross, Aug. 15, 1920. c.: Reuben; Imanuel; Benjamin. Exp.: Physician, 1910—; Hd. of Tumor Dept., Inst. of Applied Biol., N.Y.C., 1958—. Mem.: A.C.S.; Soc. for Exptl. Biol. and Med.; N. Y. Acad. of Sci.; A.A.A.S.; Sigma Xi. Co-author: The Laboratory Methods in the Viennese University Hospitals, 1927; Ways and Results of Chemical Cancer Research, 1936; Biochemistry of Malignant Tumors, 1943. Serv. Rec.: W.W. I, W.W. II. Areas of Rsch.: Cancer Rsch.; Chem. of Proteins; Studies About Carcinolysis.

WILLIAMS, Adrian Harry (Mr.), Asst. Chf., Surface Water Br., U. S. Geol. Survey, 2230 G. S. A. Bldg., Wash. 25, D. C. Home Add.: 3507 Kent St., Kensington, Md. HYDROLOGY. b. Chelan, Wash., Feb. 10, 1905. s. Horace V. (dec.) and Leone Fay (Hopkins) W. Edn.: B.S.C.E., Ore. St. Univ., 1926. m. Leila Myrl Miller, 1925. c.: Mrs. Beverly Jean Bailey; Mrs. Carole Joan Pumphrey; Mrs. Dayle Janice Whipple. Exp.: Hydr. Engr., U. S. Geol. Survey, Ariz., Ore., 1927-40; Asst. State Dir. and State Advr. on Occupational Deferments for Montana Selective Serv. Syst., 1940-41; Hydr. Engr., ibid., N. Y., Mont., Wash., D. C., 1946—. Hon. Pos.: Chmn., Mem. Qualifications Comm., Natl. Capital Sect., A.S.C.E.; Dept. of Interior Rep. and Past Chmn., Subcomm. on Hydrol., Inter Agency Comm. on Water Resources. Mem.: Am. Soc. of Civil Engrs.; Am. Geophys. Union; Alpha Sigma Phi; Sigma Tau; Scabbard and Blade; Cosmos Club, Wash., D. C. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Hydrology of Surface Waters.

WILLIAMS, Douglas Frederick (Mr.), Tchr., Marquette Pub. Schls., Marquette, Mich. Home Add.: 1513 Birch Mtd. Rt. #1, Marquette, Mich. CHEMISTRY—PHYSICAL SCIENCE. b. Laurium, Mich., July 23, 1927. s. Fred and Marion (Niemi) W. Edn.: A.B., Northern Mich. Coll., 1950; M.A., Univ. of Mich., 1953. m. Olga Mykkanen, Apr. 20, 1957. c.: Tara Jean. Exp.: Tchr., Republic H. S., Republic, Mich., 1950-52; Tchr., Marquette H. S., Marquette, Mich., 1952-57; Tchr., Hibbing High, Hibbing, Minn., 1959-60; Tchr., Marquette H. S., 1960—. Hon. Pos.: Regional Rep. Mich. Sci. Tchrs. Assn. Mem.: N.E.A.; N.S.T.A.; Am. Assn. for the Adv. of Sci.; Mich. Edn. Assn.; Mich. Sci. Tchrs. Assn. Serv. Rec.: U.S.A.F., 1945-46. Gen. Int.: N.S.F. Academic Yr. Grant, Univ. of Tex., 1957-58; N.S.F. Summer Grant, Mich. State Univ., 1959. Areas of Rsch.: Physical Scis.; Science Facilities.

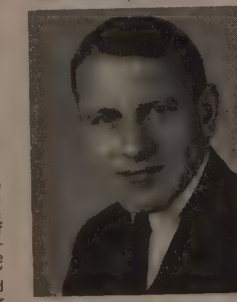
WILLIAMS, Gardner (Ph.D.), Prof. of Philos., Univ. of Toledo, Toledo, Ohio. BIOLOGY, PSYCHOLOGY, SOCIOLOGY—THE EVOLUTION OF MAN. b. Apr. 25, 1895, N.Y.C. s. Henry D. and Euretta Elizabeth (Gardner) W. Edn.: A.B., Columbia Univ., 1916; A.M., Harvard, 1924; Ph.D., Mich., 1929. m. Doris L. Bennett (A.B., Wis., 1923; A.M., Wis., 1924), 1928. d. Dr. and Mrs. William Chase Bennett, Madison, Wis. Exp.: Instr., Middlebury Coll., Middlebury, Vt., 1922-25; Instr., Univ. of Mich., 1925-26; Instr., Univ. of Mich., 1929-31; Univ. of Toledo, 1931—; Prof. of Philos. and Chmn. of the Dept. of Philos. Hon. Pos.: Pres., Toledo Chapt., Am. Humanist Assn. Mem.: Am. Philos. Assn.; A.A.U.P.; Ohio Philosophical Assn.; A.A.A.S.; Phi Beta Kappa; Toledo Naturalists Assn., Past Pres. Author: The Human Perspective, 1930, printed by Ed. Kramer, Ore., Wis.; Humanistic Ethics, 1951, Philosophical Lib., N. Y.; Co-author: Relig. Liberals Reply. Contbr. to: Jour. of Philos.; Jour. of Social Philos.; Philos. Rev.; Jour. of Liberal Relig.; Unity (Chicago); Ethics. Ph.D. Dissertation: The Role of Pleasure in the Theory of Value, Published Under Title "The Human Perspective." Former Editor, "Unitarian Register," 1957. War Record: Enlisted U. S. Army, Dec., 1917. Discharged as 2nd Lt., Res. in Air Corps with Rank of Pilot. Travl: Europe. Achievements of Gen. Int.: Elected Fellow of A.A.A.S. in Dec., 1940. Listed in: Who's Who in Philos.; Dir. of Amer. Scholars; Who's Who in Am. Edn.; Who's Who in the Mid-West.

WILLIAMS, John Frederick (Ph.D.), Supvr. of Rsch. in Analytical Chem., Rsch. Dept., Liggett and Myers Tobacco Co., Durham, N. C. Home Add.: 3420 Sheridan Dr., Durham, North Carolina. CHEMISTRY. b. York, S. C., May 14, 1923. s. E. Meek and Laura Isabella (Pegram) W. Edn.: B.S., Univ. of S. C., 1944; M.S., Clemson Coll., 1951; Ph.D., Univ. of Va., 1954. m. Billie M. Lowry, Nov. 9, 1945. c.: John Franklin. Exp.: Chem. Instr., Clemson Coll., 1949-51; Pratt Fellow, Univ. of Va., 1951-54; Rsch. Chem., Liggett and Myers Tob. Co., Durham, N. C., 1954-59; Rsch. Supvr., ibid., 1959—. Mem.: Am. Chem. Soc.; Am. Assn. for Adv. of Sci.; Soc. for Applied Spectroscopy; Coblentz Soc.; N. C. Acad. of Sci.; Blue Key; Sigma Xi; Kiwanis Internatl. Contbr. to: Analytical Chem.; Tobacco Sci. Serv. Rec.: U. S. Naval Reserve, 1944-47. Areas of Rsch.: Chemical and Instrumental Methods of Analysis as Applied to the Study of Natural Products.

WILLIAMS, Josephine Kaye (M.D.), Prof. of Biol. and Allied Subjects, Southwestern Assembly of God Coll., Waxahachie, Tex. Home Add.: 1000 Sycamore St., Waxahachie, Tex. HUMAN PHYSIOLOGY. b. Ft. Worth, Tex., July 6, 1891. d. Walter Edward Kaye and Mary (Akin) K. Edn.: B.A., Mary-Hardin Baylor Coll. for Women, 1915; M.D., Baylor Univ. Coll. of Med., 1921; Interne, New England Hosp. for Women and Children, Mass., 1922. m. Rev. William A. Williams, 1932. Exp.: Tchr., English, H. S., Fort Worth, Tex., 1915-18; Pediatrician, Obstetrician, Baylor Hosp., Dallas, Tex., 1922-23; Pastor, Assembly of God Church, Eastland, Tex., 1924-26; Evangelist, Phila., Pa., 1926-40; Prof. Biol., Southwestern Assembly of God Coll., 1946—. Hon. Pos.: W.C.T.U. Natl. Lectr., 1935-40; N. J. Dir. of Health and Med. Temperance, 1935-40. Mem.: Ordained Minister Assemblies of God. Author: Evolution Disproved, co-author, 1959.

WILLIAMS, Martha Ethelyn (Miss), Mgr., Technical Information Rsch. Sec., Chemistry Rsch. Div., Armour Rsch. Foundation of Ill. Inst. of Tech., Chicago, Ill. Home Add.: 5701 N. Sheridan, Chicago, Ill. CHEMISTRY. b. Chicago, Ill., Sept. 21, 1934. d. Harold M. and Alice (Fox) W. Edn.: B.A., Barat Coll., 1955; M.A., Loyola Univ., 1957. Exp.: Tech. Asst., to Asst. Chemist to Assoc. Chem., to Asst. Mgr., Armour Rsch. Found., Chicago, Ill., 1957-62; Mgr., ibid., 1962—. Mem.: A.C.S.; Am. Rocket Soc.; A.A.A.S.; Phi Sigma Tau. Contbr. to: Encyclopedia of Chem.; Industrial Labs. Areas of Rsch.: Chemical Literature Rsch.; Information Retrieval.

WILLIAMS, Louis Gressett (Ph.D.), Aquatic Biologist in Charge of Plankton Analysis, R. A. Taft Sanitary Engrng. Ctr. of the U. S. Pub. Health Serv., Cincinnati 26, Ohio. Home Add.: 1401 Collinsdale Ave., Cincinnati 30, Ohio. MARINE AND FRESH-WATER ECOLOGY, UP-TAKE OF RADIONUCLIDES BY ALGAE, PLANKTONIC ORGANISMS OF THE LAKES AND RIVERS OF THE UNITED STATES. b. Owensboro, Ky., Oct. 28, 1913. s. Rev. W. W. and Ella (Lohrfink) W. Edn.: A.B., Marshall Coll., 1937; M.A., Duke Univ., 1940; Ph.D., ibid., 1948; Grad. work, Univ. of Hawaii; Grad. work, Univ. of Calif. m. Dorothy Huntley, May 31, 1942. c.: Mac; Bobby. Exp.: Teaching Fellowship, Univ. of Hawaii, 1938-40; Tchr. of Biol., Sarasota H. S., Sarasota, Fla., 1939-40; Tchr. of Biol., New Hanover H. S., Wilmington, N. C., 1940-41; Grad. Asst. in Bot., Duke Univ., 1946-47; Instr. in Bot., Univ. of N. C., 1948; Prof. of Biol., Furman Univ., 1948—. Hon. Pos.: Chmn. of the Com. on Sci. Edn. for the S. C. Acad. of Sci. Mem.: N. C. Acad. of Sci.; S. C. Acad. of Sci.; Assn. of South-



eastern Biologists; Psycholog. Soc. of Am.; Botanical Soc. of Am.; Am. Soc. of Limnol. and Oceanog.; A.A.A.S.; Am. Inst. of Biological Scis.; A.A.U.P.; Soc. of Sigma Xi. Contbr. to: Sci.; Ecology; Bull. of the Torrey Botanical Club; Am. Jour. of Bot.; Jour. of the Elisha Mitchell Scientific Soc.; Furman Studies. War Record: U. S. Navy, 1941-45. Gen. Int.: On 132 TV programs on WFBC-TV, Greenville, S. C., on topics of Biological Edn.; Ford Fdtn. Fellowship; Carnegie grants for rsch. Areas of Rsch.: 1955 summer rsch. at the Oak Ridge Inst. of Nuclear Studies, working on metabolism of cesium-134 in rabbits.

WILLIAMS, Roger Terry (Mr.), Tchng. Asst., Dept. of Meteorol., U.C.L.A., Los Angeles 24, Calif. Home Add.: 560 No. Fifth Ave., Covina, Calif. DYNAMIC METEOROLOGY AND NUMERICAL WEATHER PREDICTION. b. Covina, Calif., June 15, 1936. s. Roger and Cleora (Horner) W. Edn.: A.B., Univ. of Calif., Los Angeles, 1959; M.A., ibid., 1961. Exp.: Rsch. Asst., Dept. of Meteorol., U.C.L.A., Los Angeles, 1959-61; Tchng. Asst., Dept. of Meteorol., ibid., 1961—. Mem.: Am. Meteorol. Soc.; Am. Geophys. Union; Royal Meteorol. Soc.; Meteorol. Soc. of Japan; Phi Beta Kappa; Sigma Xi; Chi Epsilon Pi; Pi Mu Epsilon.

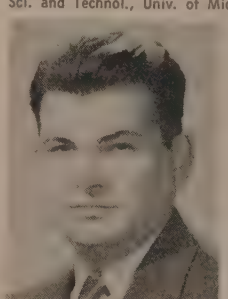
WILLIAMS, Roger Wright (Ph.D.), Assoc. Prof., Med. Entomol., Schl. Pub. Health and Adm. Med., Columbia Univ., 600 W. 168th St., N. Y. 32, N. Y. Home Add.: 28 Sunset Terrace, Tenafly, N. J. MEDICAL ENTOMOLOGY AND PARASITOLOGY. b. Great Falls, Mont., Jan. 24, 1918. s. Elmer Howard and Mary Stuart (Davidson) W. Edn.: B.S., Univ. of Ill., M.S., ibid., 1941; Ph.D., Columbia Univ., 1947; C.A. P. and E., Univ. of London, 1957. m. Marjorie M. Jones, May 9, 1943. c.: Barbara; Stuart Roger. Exp.: Jr. Sci. Helper, U.S.D.A., Toledo, Ohio, 1941; Tchng. Asst., Cornell Univ., 1942; Tchng. Asst., Univ. of N. C., 1942-43; Rsch. Asst., Rsch. Assoc., Asst. Prof., Assoc. Prof., Columbia Univ., 1944—. Mem.: Roy. Soc. Trop. Med. and Hyg.; Ent. Soc. Am.; A.A.A.S.; Am. Soc. Trop. Med. and Hyg.; Am. Soc. Parasitol.; Ent. Soc. Wash.; Am. Mosq. Cont. Assn.; Soc. of System. Zool.; N. Y. Soc. Trop. Med.; Elisha Mitchel Sci. Soc.; Alpha Kappa Lambda; Phi Sigma; Tenafly Nature Ctr. Assn.; Tenafly Community Orchestra. Contbr. to: Bull. Brooklyn Ent. Soc.; Can. Entom.; Psyche; Entom. News; Ann. Ent. Soc. Am.; Am. Jour. Trop. Med.; Am. Midland Naturalist; Science; Jour. Parasitol.; U.S.P.H. Reps.; Soap and San. Chems.; Am. Jour. Trop. Med. and Hyg.; Proc. Ent. Soc. Wash.; Jour. Econ. Ent.; Mosq. News; Ecol.; Jour. Helminthol. Serv. Rec.: U.S.-N.R., 1943-46. Gen. Int.: Eli Lilly Rsch. Fellow, 1942-43; Rockefeller Found. Travel Fellow, 1947, '56; N.S.F. Postdoct. Fellow, 1956-57; L.S.U. Fellow in Trop. Med., 1957. Areas of Rsch.: Transmission of Arthropod-Borne Diseases; Control of Arthropods of Medical Importance; Biology and Life Cycle of Medically Important Arthropods; Life Cycle of Helminth Parasites of Animals.

WILLIAMS, Tyler Edward, Jr. (Mr.), Special Asst. for Control-Ordnance Mgmt. Engrng. Agency, Rock Island Arsenal, Ill. Home Add.: 3414 N. Wash. St., Davenport, Ia. MANAGEMENT-INDUSTRIAL ENGINEERING, PLANNING AND CONTROL SYSTEMS. b. Chicago, Ill., July 10, 1926. s. Tyler E. and Anne (Salmon) W. Edn.: B.S., Ill. Inst. of Technol., 1951; M.S., ibid., 1956. m. Frances Reif, Aug. 27, 1949. c.: Tyler, III; Michael; Thomas; Margaret; Gerard. Exp.: Asst. Div. Supt., Oscar Mayer and Co., Chicago, Ill., 1950-52; Sr. Ind. Engr., Am. Gage and Mach. Corp., Simpson Elec. Co. Div., Chicago, Ill., 1952-53; Ind. Engrng. Mgr., Am. Gage and Mach. Corps. Affiliated Screw Products Co. Div., Chicago, Ill., 1953-54; Sr. Ind. Engrng. Staff, Bendix Aviation Corp., Davenport, Ia., 1954-55; Tech. Coordinator, Ordnance Mgmt. Engrng. Agency, Ordnance Corps, U. S. Army; Ordnance Corps, U. S. Army, Rock Island Arsenal, Ill., 1955-60; Spec. Asst. for Control, ibid., 1961—. Hon. Pos.: Hon. Mem. of Faculty and Staff, The Ordnance Schl., Aberdeen Proving Ground, Md.; U. S. Army Logistics Mgmt. Ctr., Fort Lee, Va. Mem.: A.A.A.S.; Am. Inst. of Ind. Engrs.; Am. Soc. of Public Admin.; Am. Ordnance Assn.; Am. Soc. for Engrng. Edn.; Coun. for Basic Edn.; The Inst. of Mgmt. Scis.; Quad City Operations Rsch. Soc.; Soc. for General Systems Rsch.; Benevolent and Protective Order of Elks. Serv. Rec.: U. S. Navy, W.W. II. Gen. Int.: Registered Profl. Engr., Iowa and Ind. Areas of Rsch.: Engineering Management, Work Planning System Development.

WILLIAMS, Ronald Lee (Mr.), Grad. Study, Pharmacol., Tulane Univ. Schl. of Med., Dept. of Pharmacol., 1430 Tulane Ave., New Orleans, La. Home Add.: 4534 Constance, N. O., La. PHARMACOLOGY. b. Koleen, Ind., June 26, 1936. s. Marion Raymond and Doris May (Lynch) W. Edn.: B.S., Butler Univ. Coll. of Pharm., 1959; M.S., ibid., 1961. m. Sondra S. Cobb, June 7, 1957. Exp.: Pharmacist, Hook Drug Co., Indianapolis, Ind., 1959-60; Grad. Asst., Butler Univ., 1959-61. Mem.: A.A.A.S.; A.Ph.A.; Ind. Ph.A.; Rho Chi Soc.; Phi Delta Chi. Areas of Rsch.: The Pharmacology of Certain Hydrazides; Special Interest in Chemobiodynamics, and Renal Pharmacology.

WILLIAMSON, C(larence) Kelly (Ph.D.), Assoc. Prof. of Bacteriol., Miami Univ., Oxford, Ohio. Home Add.: 104 McKee Ave., Oxford, Ohio. MICROBIOLOGY AND IMMUNOLOGY. b. McKeesport, Pa., Jan. 19, 1924. s. James Frederick and Loretta Regina (McDermott) W. Edn.: B.S., Univ. of Pitt., 1949; M.S., ibid., 1951; Ph.D., ibid., 1955. m. Dorothy B. Ohlsson, 1951. c.: Lisa Ann; Erik James. Exp.: Instr., Univ. of Pitt., 1951-55; Asst. Prof., Miami Univ., 1955-57; Assoc. Prof., ibid., 1957—. Mem.: A.A.A.S.; Soc. of Sigma Xi; Rho Chi; Am. Soc. for Microbiol.; Soc. for Microbiol.; Eng.; Phi Sigma; A.A.-U.P.; Kappa Psi; Torch. Contbr. to: Jour. of Bacteriol.; Zeitschrift fur Allg. Mikrobiol.; Jour. of Pharm. Scis.; Abs. 7th Internatl. Cong. Microbiol. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Microbic Dissociation of Pseudomonas aeruginosa; Classification and Polysaccharides of Viridans Streptococci; Acute Glomerulonephritis.

WILLIS, David Edwin (Mr.), Assoc. Rsch. Geophysicist, Inst. of Sci. and Technol., Univ. of Mich., Ann Arbor, Mich. Home Add.: 701 Mt. Pleasant St., Ann Arbor, Mich. GEOPHYSICS, SEISMOLOGY. b. Cleveland, Ohio, Mar. 13, 1926. s. Russell E. and Eleanor (Himebaugh) W. Edn.: B.S., Western Reserve Univ., 1950; M.S., Univ. of Mich., 1957. m. Martha Mumma, Jan. 3, 1948. c.: Karen Elizabeth; Mark Elliott; Marta Lou. Exp.: Asst. Supvr. and Party Chief, Keystone Exploration Co., Houston, Tex., 1950-55; Rsch. Assoc., Univ. of Mich., 1955-60; Assoc. Rsch. Geophysicist, ibid., 1960—. Hon. Pos.: Secy., Eastern Sect., Seismological Soc. of Am. Mem.: Seismological Soc. of Am.; Soc. of Exploration Geophysicists; Am. Geophys. Union; European Soc. of Exploration Geophysicists; Sigma Xi; Phi Beta Kappa. Contbr. to: Bull. Seismological Soc. of Am.; Earthquakes Notes; Jour. Acoustical Soc. of Am. Serv. Rec.: U. S. Navy, W.W. II. Areas of Rsch.: Seismic Wave Propagation Studies, Seismic Background Noise, Acoustic Wave Propagation, Geophysical Exploration and Management, Lateral Seismic Velocity Gradients.



WILLMS, Charles Ronald (Ph.D.), Research Scientist, Clayton Fdn. Biochemistry Institute, University of Texas, Austin Tex. Home Add.: 1429 Schulle Drive, San Marcos, Tex. BIOCHEMISTRY (ENZYME AND PROTEIN CHEMISTRY). b. Rupert, Idaho, June 26, 1933. s. Emil Charles and Thelma (Cox) W. Edn.: B.A., Univ. of Tex., 1955; M.A., Southwest Tex. St. Coll., 1956; Ph.D., A. and M. Coll. of Tex., 1960. m. Dianne Johnson, Dec. 27, 1955. c.: Deborah Lynn; Kathryn Gayle; Fredrick Cox. Exp.: Rsch. Asst., Sanitary Engrng. Rsch. Lab., Univ. of Tex., Austin, Tex., 1954-55; Lab. Instr., Southwest Tex. St. Coll., 1955-56; Rsch. Asst., A. and M. Coll. of Tex., 1956-57; Tchng. Asst., ibid., 1957-58; Rsch. Asst., ibid., 1958-59; Asst. Prof. of Chem., Southwest Tex. St. Coll., 1959-62; Rsch. Scientist, Clayton Fdn. Biochem. Inst., Univ. of Tex., 1962—. Mem.: Am.

n. Soc.; Am. Assn. Adv. Sci.; Soc. Am. Bacteriologists; Kappa Phi; Sigma Xi. Contbr. to: Microchemica Acta; Soc. for Expmtl. Biol. and Med.; Fed. Proc. Serv. Rec.: S. Naval Reserve, 1951-58. Areas of Rsch.: Enzyme and ein Chemistry; Chromatographic Analysis.

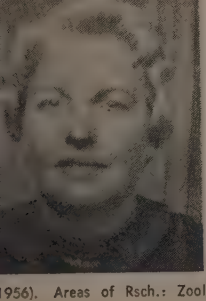
SON, Bill John (O.D.), Dr. of Optometry, 311 Heinlen St., oore, Calif. Home Add.: 649 B. St., Lemoore, Calif. OPTOMETRY—CONTACT LENSES AND OPTICAL COLLIMATION. b. Duncan, Okla., May 30, 1925. s. John Livingston (dec.) and Jewel (Landress, dec.) W. Edn.: A.A., Los Angeles City Coll., 1948; B.V.S., Los Angeles Coll. of Optometry, 1950; D.Opt., ibid., 1951. Exp.: Chief Technician, Burton Mfg. Co., Los Angeles, Calif., 1952-54; Dr. of Optotmetry, Lemoore, Calif., 1954—. Mem.: Fellow, Am. Acad. of Optometry; Fellow, Am. Assn. for the Adv. of Sci.; Diplomate of Bd. Internatl. Coll. of Ocular Sci.; Clinical Assoc. Optometric Ext. Program; Mem. of Illuminating Engrng. Soc.; Am. Optometric Fdtn.; Eye Rsch. Found.; Better Vision Inst.; Vision Conserv. Inst.; Am. and

ff. Optometric Assn.; Omega Delta Natl. Opt.; Calif. F. & .; Order of Eagles; Am. Legion; V.F.W. Contbr. to: Optom. ekly; Optical Jour.; Rev. of Opt. Serv. Rec.: U. S. Marine p, 1942-45; Reserves, 1946, 1950. Areas of Rsch.: Optetry; Contact Lenses; Optical Collimation.

LSON, Charles Morrow (Mr.), Author, Wilson Pl., Putney, Vt. 'ERNATIONAL AGRICULTURE AND INTERNATIONAL TRADE. b. Fayetteville, Ark., June 16, 1905. s. Joseph M. Dickson and Mattie Maud (Morrow) W. Edn.: B.A., Univ. of Ark., 1926. m. Martha Lois Starr, 1939. c.: Charles Morrow, Jr.; James Starr; Joseph Matthew. Exp.: Reporter, St. Louis Post Dispatch, St. Louis, Mo., 1926-29; Reporter, Correspondent, The N. Y. Times, N. Y. City, 1930-34; Exec. Employee, United Fruit Co., Boston, Mass., 1938-58; Spec. Consult., Firestone Plantations Co., Liberia, Africa, 1945-51; Spec. Consult., ibid., Akron, Ohio, 1951—; Author, Putney, Vt., 1961—. Mem.: Am. Assn. Adv. Sci.; Foreign Policy Assn.; Vt. Hist. Soc.; Sigma Chi. Author: New Crops for the New World, 1945; Ambassadors in

nite, 1945; Tropics: World of Tomorrow, 1950; Grass and ople, 1961; Common Sense Credit, 1962; The Roots of America, 36; Backwoods America. Contbr. to: Scient. Am.; Sci.; Nat. story; Nature Mag.; Harper's Mag.; Current History; Rev. of vs.; Today's Health; N. Y. Times Mag. Serv. Rec.: U. S. my, 1929-30, 1942-44. Gen. Int.: Assoc. Developer of Intermisphere Crop Introduction Program, United Fruit Co., 1938-46 d Advanced Clonal Rubber Program, Firestone Plantations Co., 945-50; Mgr. for Donor of Maya Archeological Exploration, rnegie Institution. Areas of Rsch.: Tropical Agriculture, Anal and Perennial Grasses; Certain Film Recording Methods.

ILSON, Frances Georgine (Miss), Assoc. Prof. of Biol., E. Los ngeles Coll., Los Angeles 22, Calif. Home Add.: 343 So. Madison Ave., Pasadena, Calif. ZOOLOGY. b. Iowa, Feb. 14, 1915. d. E. E. and Georgia (McDonnell) W. (both dec.). Edn.: B.S., Drake Univ., 1936; M.S., ibid., 1937; Ph.D. cand., Univ. of S. Calif., 1948. Exp.: Prof., N. Park Coll., Chicago, 1938-40; Instr., Oak Park H. S., ibid., 1940-49; Assoc. Prof., E. Los Angeles Coll., 1949—. Hon. Pos.: Mem. Chmn., Phi Sigma, Pi Lambda Theta, Phi Delta Gamma. Mem.: A.A.A.S.; A.A.U.P.; S. Calif. Acad. Sci.; Phi Sigma; Psi Chi; Y.W.C.A. Contbr. to: Pi Lambda Theta News. Serv. Rec.: Women's Army Corps, 1940-43. Gen. Int.: Am. Dependents Schls., Far East Commmand (Japan), 1954-55; 1st Am. Woman Tchr. in U.S.S.R.



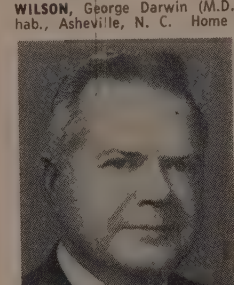
1956). Areas of Rsch.: Zoology; Embryology.

WILSON, Coyt Taylor (Ph.D.), Assoc. Dir., Agric. Expt. Sta. and sst. Dean, Schl. of Agric., Auburn Univ., Auburn, Ala. Home dd.: 1301 Opelika Rd., Auburn, Ala. PLANT PATHOLOGY. b. ulton, Miss., July 27, 1913. s. Sumpter Allen and Bertha Davis) W. Edn.: B.S., Ala. Polytech. Inst., 1938; M.S., ibid., 941; Ph.D., Univ. of Minn., 1946. m. Alma Inez Brackeen, 936. c.: Patricia Ann; Kenneth Wade. Exp.: Instr., Univ. of Minn., 1941-43; Plant Pathologist, Ala. Polytech. Inst., 1944-50; ssoc. Dir., and Asst. Dean, Auburn Univ., 1951—. Mem.: Sigma Xi; Phi Kappa Phi; Gamma Sigma Delta; Alpha Zeta. Contbr. to: Phytopathol. and Ala. Expt. Sta. Publications. Areas of Rsch.: Phytopathology and Agricultural Research Administration.

WILSON, Gale Edward (M.D.), Chief Pathologist, King Co. Coroner's Office, 109 County-City Bldg., Seattle 4, Wash. Home Add.: 1005 E. Blaine St., Seattle 2, Wash. FORENSIC PATHOLOGY AND LEGAL MEDICINE. b. Minneapolis, Minn., Aug. 30, 1905. s. Daniel Edward and Gladys (Crandall) W. Edn.: B.S., Univ. of Wash., 1926; M.D., Harvard Med. Schl., 1930. m. Lois Carroll, July 25, 1928. c.: Galeta Lois W. Burns; Carroll Leanne W. Exp.: Austin Tchng. Fellow, Harvard Med. Schl., 1927-30; Autopsy Surgeon and Chief Pathologist, King Co. Coroner's Office, Seattle, Wash., 1935—; Pathologist and Dir. of Labs., Columbus Hosp., ibid., 1938-57; Pathologist, Group Health Hosp., ibid., 1951-57; Staff Physician, Boeing Airplane Co., ibid., 1951—, Hon. Pres., Archaelogical Inst. of Am., Seattle, 1959-60; Diplomate,

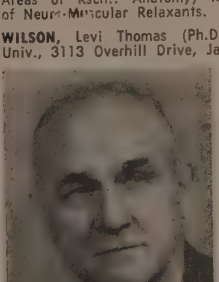
Am. Bd. Legal Med. Mem.: King Co. Med. Soc.; Wash. State Med. Assn.; Am. Med. Assn.; Wash. State Soc. Pathologists; Fellow, Am. Acad. Forensic Sci. Boylston Soc., Harvard; Fellow, Am. Coll. of Legal Med.; British Assn. in Forensic Med.; Am. Assn. Adv. Sci. Contbr. to: Jour. Am. Med. Assn.; Jour. Forensic Scis.; Postgrad. Med.; Anatomical Rec. Serv. Rec.: U.S.A.F., 1940; 1942-43. Areas of Rsch.: Forensic Pathology with especial reference of Relation of Heart and great Vessel Injury to external trauma.

WILSON, George Darwin (M.D.), Consultant, Phys. Med. and Rehab., Asheville, N. C. Home Add.: 100 Horizon Hill Rd., Asheville, N. C. PHYSICAL MEDICINE; REHABILITATION GERIATRICS. b. Wellsburg, W. Va., July 8, 1909. s. Charles Leslie and Margaret Alcorn (Bucy) W. Edn.: A.B., W. Va. Univ., 1933; B.S., ibid., 1935; M.D., Temple Univ. Med. Schl., 1937. m. Gladys Mullen, Apr. 30, 1938. c.: Margaret Ann; Barbara Jean; Thomas Darwin. Exp.: Instr., La. Sta. Univ. Med. Schl., New Orleans, La., 1938-39; Priv. Pract., Greenville, N. C., 1939-41; Dir. of Phys. Med., Natl. Soc. of Crippled Children and Adults, Chicago, Ill., 1946; Consultant, Greensboro Polio Unit, Greensboro, N. C., 1946-47; Consultant Area VA Office, Atlanta, Ga., 1946—; Consultant, VA Hosp., Oteen, N. C., 1946—; Consultant,



Surgeon Gen. Office, U. S. Army, Wash., D. C., 1946—; Consultant, Phys. Med. and Rehab., Asheville, N. C., 1961—. Mem.: Am. Congress of Phys. Med. and Rehab.; Am. Acad. of Phys. Med. and Rehab.; N. C. Med. Soc.; Fellow, Am. Med. Assn.; Am. Assn. for the Adv. of Sci.; Pan-Am. Med. Assn.; Am. Med. Writer's Assn.; Fellow, N. Y. Acad. of Sci.; Fellow, Am. Geriatrics Soc.; Chmn. Sect. of Natl. Doctors Comm.; N. C. Hist. and Literary Soc.; Southern Med. Assn.; Kappa Alpha; Phi Beta Pi. Contbr. to: N. C. State Med. Jour.; Archives of Phys. Med.; Southern Med. Jour. Serv. Rec.: U. S. Army, 1941-46. Gen. Int.: Awarded Legion of Merit, U. S. Army, 1946; Babcock Surgery Prize, Philadelphia, 1937; Editor, Phi Beta Pi Quarterly. Areas of Rsch.: Anatomy; Research Continues in Clinical Use of Neuro-Muscular Relaxants.

WILSON, Levi Thomas (Ph.D.), Prof. of Physics, Jacksonville Univ., 3113 Overhill Drive, Jacksonville 11, Fla. MATHEMATICS; PHYSICS. b. 1885, Jonesboro, Ark. s. Geo. W. and Sarah (Stroud) W. Edn.: A.B., Wash. and Lee Univ., 1909; M.A., ibid., 1910; M.A., Columbia Univ., 1913; Ph.D., Harvard Univ., 1915. m. 1st, Barbara Belle (Smohl) (dec.). m. 2nd, Hazel (Schoonmaker) of Westfield, Mass., July 14, 1938. d. Dr. and Mrs. Arthur T. Schoonmaker. c.: Martha Sarah (Mrs. Carl W. Burrows, Jr.); Thomas George. Exp.: Instr. of Math., Wash. and Lee Univ., 1909-10; Instr. of Math., Univ. of Va., 1910-11; Instr. and Asst., Math., Columbia Univ., 1911-13; Instr. of Math., Harvard Univ., 1913-15; Instr. of Math., Univ. of Ill., 1915-17; United States Naval Academy, Instr., 1917-20; Asst.

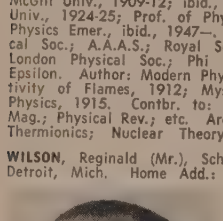


Prof., 1920-25; Assoc. Prof., 1925-35; Prof., 1935-42; Sr. Prof. and Dean of Dept. of Math., 1942-51; Prof. Emer., U. S. Naval Acad.; Prof. of Math. and Phys., and Hd., Dept. of Phys., Alabama State Coll., Jacksonville, Ala., 1951-56; Lectr., Math., Gadsden Center Univ., Ala., 1952-56; Prof. Emer., Ala. State Coll., Jacksonville; Prof. and Chmn., Math. and Phys., Doane Coll., 1956-59; Prof., Phys., Jacksonville Univ., 1959—; Prof.,

Hd. of Dept. of Physics and Physical Sci., Jacksonville Univ., Jacksonville, Fla., 1960-61; Prof., Physics, ibid., 1961—. Mem.: Am. Math. Soc.; A.S.E.E.; Am. Assn. of Physics Tchrs.; Fla. Acad. of Sci.; Ala. Acad. of Sci.; Edn. Survey Conf. the Eng. Schl., Ft. Belvoir, 1952; Ninth Natl. Conf. on Higher Edn., 1954; Exchange Club; Phi Beta Kappa; Raven Soc. Author: Analytical and Applied Mechanics, 3rd Ed., 1951, Clements and Wilson; Manual of Math. and Mech., 2nd Edn., 1947, Clements and Wilson. Ph.D. Dissertation: Conformal Transformation of Curvilinear Angles. Listed in: W.W. in S. and S.W.; A.M.S.; Who Knows—and What; Internatl. Blue Book; W.W.A.E. Special Int.: Math., Phys. (Admin.).

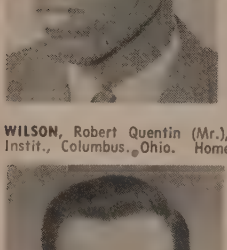
WILSON, Harold Albert (D.Sc.), Prof. Emeritus of Physics, Rice Univ., Houston, Tex. Home Add.: 1515 Milford, Houston, Tex. PHYSICS. b. York, England, Dec. 1, 1874. s. A. W. and Ann (Gill) W. Edn.: M.Sc., Leeds, 1897; D.Sc., London, 1900; M.A., Cambridge, 1904. m. Marjorie E. Paterson Smyth, 1912. c.: Kathleen; Joan; John; Stephen. Exp.: Fellow, Trinity Coll., 1901-07; Prof. of Physics, Kings Coll., 1905-09; Prof. of Physics, McGill Univ., 1909-12; ibid., Rice Univ., 1912-24; Profl. Glasgow Univ., 1924-25; Prof. of Physics, Rice Inst., 1925-47; Prof. of Physics Emer., ibid., 1947—. Mem.: Am. Phil. Soc.; Am. Physical Soc.; A.A.A.S.; Royal Soc. London; Cambridge Phil. Soc.; London Physical Soc.; Phi Beta Kappa; Sigma Xi; Sigma Pi Epsilon. Author: Modern Physics, 1923, 1959; Electrical Conductivity of Flames, 1912; Mysteries of the Atom; Experimental Physics, 1915. Contbr. to: Phil. Trans. R.S.; Proc. R.S.; Phil. Mag.; Physical Rev.; etc. Areas of Rsch.: Conductivity of Gases; Thermionics; Nuclear Theory; Relativity.

WILSON, Reginald (Mr.), Schl. Psycholt., Detroit Bd. fo Edn., Detroit, Mich. Home Add.: 2715 Rochester, Detroit 6, Mich.



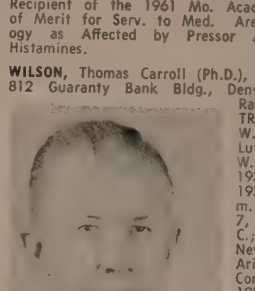
CLINICAL PSYCHOLOGY. b. Detroit, Mich., Feb. 24, 1927. s. Oliver, Sr. and Nancy M. (Golden) W. Edn.: B.S., Wayne St. Univ., 1950; M.A., ibid., 1958. m. Dolores Stewart, Apr. 2, 1960. Exp.: Tchr., Detroit Bd. of Edn., Detroit, Mich., 1950-60; Schl. Psycholt., Det. Bd. of Edn., 1960—. Mem.: Mich. Acad. of Sci.; Am. Assn. Adv. Sci.; Am. Acad. of Polit. and Social Sci.; Phi Delta Kappa. Contbr. to: Abstracts of the Mich. Acad.; The Mich. Psycholt. Serv. Rec.: U. S. Army Air Force, W. W. II. Areas of Rsch.: Predicting Adjustment of Emotionally Disturbed Boys; Use of Life Space Techniques (Fritz Redl) with Classes for the Emotionally Disturbed.

WILSON, Robert Quentin (Mr.), Technical Advisor, Battelle Mem. Instit., Columbus, Ohio. Home Add.: 2675 Andover Rd., Columbus 21, Ohio. CHEMICAL ENGINEERING. b. Bloomington, Ind., Nov. 26, 1920. s. Ira T. and Lillian (Tufford) W. Edn.: B.S., Heidelberg Coll., 1942; M.S., Ohio Sta. Univ., 1947. m. Kathryn Anne Zartman, Jan. 31, 1943. c.: James G.; Mary J.; Donald I. Exp.: Rsch. Engr., Battelle Mem. Inst., Columbus, Ohio, 1948-50; Exec. Officer, Test Branch, Armed Forces Spec. Weapons Project, Wash., D. C., 1950-53; Asst. Chief, Chem. Engrng. Rsch., Battelle Mem. Inst., 1953-55; Gen. Mgr., London, England, Battelle Inst., LTD., 1955-58; Dir., Y. B. Bavon LTD., ibid., 1956-58; Tech. Advisor, Battelle Mem. Inst., Columbus, Ohio, 1958—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Assn. for the Adv. of Sci.; Tau Beta Pi; Phi Lambda Upsilon. Contbr. to: Chem. Industry; Chem. Engrng. Symposium Series; Am. Inst. of Chem. Engrng. Jour.; Chem. Prods.; The Chem. Age; The Chem. Age of India; Battelle Tech. Review. Serv. Rec.: U. S. Naval Officer, 1942-46, 1950-53. Gen. Int.: Space Fuel and Atomic Energy Developments. Areas of Rsch.: Process Development; Phase Equilibrium, Atomic Weapons Effects, Research Management.



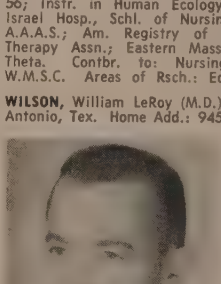
WILSON, Vernon E. (M.D.), Dean, Univ. of Mo. Schl. of Med., Dir., Univ. of Mo. Med. Center, Columbia, Mo. Home Add.: R.F.D. #4, Columbia, Mo. MEDICINE, PHARMACOLOGY. b. Plymouth Co., Iowa, Feb. 16, 1915. s. W. Earl and Elizabeth (Kinney) W. Edn.: B.S., Univ. of Ill., 1950; M.S., ibid., 1952; M.D., ibid., 1952. m. Ula Rhone, July 3, 1947. c.: William Earl; Carla Jean. Exp.: Asst. in Pharm., Univ. of Ill., Schl. of Med., 1950-52; Asst. and Assoc. Dean, Univ. of Kans., 1953-59; Prof. of Pharm., Dean, Schl. of Med., Dir., Med. Center, Univ. of Mo. Schl. of Med., 1959—. Hon. Pos.: Chmn., Advisory Comm. on State Institutions of Kans., 1956-59; Asst. Secy., Liaison Comm. on Accreditation for AAA Institutions of Kans, 1958-62; Mem. of Exec. Coun., A.A.M.C.; Mem. of the Bd. of the Mental Health Found. Mem.: Am. Med. Coll.; Am. Assn. of the Hist. of Med.; Am. Med. Assn.; Am. Acad. of General Practice; Sigma Xi; Alpha Kappa Kappa; Phi Mu Phi; Alpha Omega Alpha; Pi Kappa Epsilon; Rotary; C. of C. Contbr. to: A.M.A. Archives of Internal Med.; Jour. of Pharmacology; Experimental Therapeutics; Jour. of Kans. Med. Soc.; Mo. Med. Jour. on Med. Edn. Serv. Rec.: U.S.N.R., 1943-46. Gen. Int.: Recipient of the 1961 Mo. Acad. of General Practice Citation of Merit for Serv. to Med. Areas of Rsch.: Renal Pharmacology as Affected by Pressor Amines Histamines and Anti-Histamines.

WILSON, Thomas Carroll (Ph.D.), Div. Geologist, Gulf Oil Corp., 812 Guaranty Bank Bldg., Denver, Colo. Home Add.: 1172 Race St., Denver 6, Colo. PETROLEUM GEOLOGY. b. Piedmont, W. Va., Oct. 17, 1906. s. Thomas Luther and Alice Mabel (Carroll) W. Edn.: A.B., Cornell Univ., 1935; M.S., Univ. of Pittsburgh, 1936; Ph.D., Cornell Univ., 1938. m. Louita Garner Dodson, Aug. 7, 1948. c.: Thomas T.; Alison C.; Louita G. Exp.: Control Engr., Nev. Consolidated Copper, Ray, Ariz., 1928-29; Geol., Gulf Oil Corp., Venezuela and Colombia, 1929-35; Geol., W. Va. Gas Corp., Charleston, W. Va., 1936-38; Geol., Atlantic Refining Co., Cuba, Nicaragua, Venezuela, 1938-48; Area Geol., Gulf Oil Corp., Casper, Wyo., 1951-55; Area Mgr., Gulf Oil Corp., ibid., 1955-56; Div. Geologist, Gulf Oil Corp., Denver, Colo., 1956—. Hon. Pos.: Pres., Wyo. Geol. Soc., 1955. Mem. Fellow, Geol. Soc. of Am.; Am. Assn. Adv. Sci.; Am. Geophys. Union; Soc. of Exploration Geophysicists; Am. Assn. Petroleum Geologists; Sigma Gamma Epsilon. Areas of Rsch.: Structural Geology.



WILSON, Virginia May (Miss), Sci. Instr., Beth Israel Hosp., Schl. of Nursing, Boston, Mass. Home Add.: 45 Elm St., Raynham, Mass. TEACHING OF BASIC BIOLOGICAL AND PHYSICAL SCIENCES TO STUDENTS OF NURSING, REGISTERED PHYSICAL THERAPIST. b. Stuart, Iowa, Apr. 22, 1923. d. Dr. Joseph J. and Elizabeth J. (Taylor) W. Edn.: B.S., in Ed., Boston Univ. Schl. of Edn., 1951; Ed.M., ibid., 1952. Exp.: Sci. Instr., Framingham Union Hosp. Schl. of Nursing, Framingham, Mass., 1953-55; Tchng. Fellow in Human Ecology, Boston Univ. Schl. of Nursing, 1955-56; Instr. in Human Ecology, ibid., 1956-60; Sci. Instr., Beth Israel Hosp., Schl. of Nursing, Boston, Mass., 1960—. Mem.: A.A.A.S.; Am. Registry of Physical Therapists; Am. Physical Therapy Assn.; Eastern Mass. League for Nursing; Pi Lambda Theta. Contbr. to: Nursing Outlook. Serv. Rec.: W.A.C., W.M.S.C. Areas of Rsch.: Educational Measurements.

WILSON, William LeRoy (M.D.), Suite 3C Medical Profl. Bldg., San Antonio, Tex. Home Add.: 945 Contour Dr. East, San Antonio, Tex.



INTERNAL MEDICINE, HEMATOLOGY AND CANCER CHEMOTHERAPY. b. Sidney, Ohio, Feb. 20, 1925. s. Charles Edward and Gertrude (Trimble) W. Edn.: M.D., Baylor Coll. of Medicine, 1948. m. Joanne Benedict, April 2, 1960. Exp.: Instr., Baylor Univ. Coll. of Med., Tex., 1953-57; Asst. Prof. of Med., Hanemann Med. Coll., Pa., 1947-60. Mem.: Am. Coll. of Physicians; N. Y. Acad. of Sci.; Am. Assn. for Cancer Rsch.; Internatl. Soc. of Internal Med.; Am. Soc. of Hematology; Phi Chi. Contbr. to: Southern Medical Jour.; A.M.A. Archives of Int. Med.; Blood; Antibiotic Med. and Clin. Therapy; Am. Jour. of Med. Scis.; Jour. of Urology; Current Therapeutic Rsch.; Cancer Chemotherapy Reports; Cancer. Serv. Rec.: U. S. Air Force, 1954-56; 1949-50. Areas of Rsch.: Hematology and Cancer Chemotherapy.

WILSON, William Solomon (Ph.D.), Prof. of Chem. and Hd. Dept. of Chem. Engrng. and Chem., Univ. of Alaska, Box 13, College, Alaska. CHEMISTRY; PHYSICS. b. Reynoldsburg, Ohio, Aug. 9, 1908. s. Luda and Lena (Metzger) W. Edn.: B.S., Brown Univ., 1931; M.S., ibid., 1934; Ph.D., Yale Univ., 1936. Exp.: Chemist, Shell Development Co., 1937-38; Instr. in Chem. and Math., Blue Ridge Coll., New Windsor, Md., 1939-40; Asst. Prof. of Physics, Assoc. Prof. of Physical Sci., Hd. Dept. of Physical Sci., Georgetown Coll., Georgetown, Ky., 1940-47; Asst. Prof. of Chem., Univ. of Wyo., Laramie, Wyo., 1948-49; Prof. of Chem. and Hd. Dept of Chem., Univ. of Alaska, College, Alaska, 1947-48, 1949-57; Prof. of Chem., and Hd. Dept. of Chem. Engrng. and Chem., ibid., 1957—; Acting Dir., Geophysical Inst., ibid., 1950-52; Assoc. Dir., ibid., 1952-54. Hon. Pos.: Exec. Com., Alaska Div., A.A.A.S., 1951-52. Mem.: Amer. Chem. Soc.; Am. Phys. Soc.; Am. Inst. of Chem., Fellow; Am. Meteorol

c.; Fellow, A.A.A.S.; Am. Geophysical Union; Franklin Inst.; n. Physics Tchrs. Assn.; Natl. Sci. Tchrs. Assn.; Ky. Acad. i.; Natl. Geographical Soc.; Natl. Edn. Assn.; Arctic Inst. N. Am.; N. Y. Acad. of Sci.; Lambda Chi Alpha; Sigma Xi; i Delta Kappa; Gamma Sigma Epsilon; Kiwanis. Contbr. to: ys. Rev.; Trans. Am. Geophys. Union; Proc. Alaska Sci. nf. Special Int.: Physical Chem.; Wave Mechanics; Theoretical ganic Chem.; Geophysics; Sci. Edn.

ILTZ, Muriel Rita (Miss), Speech and Hearing Therapist, Div. Instrn., New Orleans Pub. Schls., 703 Carondelet St., New Orleans, La. Home Add.: 4836 Coliseum St., New Orleans, La. AUDIOLOGY AND SPEECH PATHOLOGY. b. New Orleans, La., May 17, 1928. d. Philip Galbert, Sr., M.D. and Teresa Rita (Charles) W., R.N. Edn.: B.A., Xavier Univ., 1950; M.S., Syracuse Univ., 1957; Univ. of Wisc., Summer, 1958; St. Univ. of Iowa, Summer, 1960; Stanford Univ., Summer, 1961. Exp.: Tchr. of Upper Elem. Grades, Orleans Parish Schl. Syst., New Orleans, La., 1951-57; Speech and Hearing Therapist, New Orleans Pub. Schls., 1957—. Hon. Pos.: Mem. of Maths. Textbook Evaluation Comm. for Upper Elem. Grades, Orleans Parish Schls. Mem.: Am. Speech and Hearing Assn.; Alexander Graham Bell

ssn. for the Deaf; Coun. for Exceptional Children; Am. Assn. or the Adv. of Sci.; La. Edn. Assn.; Alumni Clubs of Xavier nd Syracuse Univs.; Alpha Kappa Alpha; B-Sharp Music Club. en. Int.: Awarded Clin. Cert. in Speech by Am. Speech and earing Assn. (1960) Recipient of Radio Station WYLD, Citizen f the Day Citation in Recognition of Civic Serv. and Adv., 960.

WINCHESTER, Clarence Floyd (Ph.D.), Animal Husbandman (Nutrition), Technical Advisory Unit, U. S. Bureau of Commercial Fisheries, 408 Atlantic Ave., Boston 10, Mass. Home Add.: 43 Atlantic Terrace, Lynn Mass. NUTRITION OF FARM ANIMALS. b. Chicago, Ill., Oct. 14, 1901. s. Leon A. and Nina Pearl (Thompson) W. Edn.: B.S., Univ. of Calif., 1924; M.S., ibid., 1935; Ph.D., Univ. of Mo., 1939. m. Alma Elizabeth Tatsch, Sept. 25, 1943. Exp.: Tchr., Calif. Schls., 1924-31; Agril. Rsch. Scientist, Univ. of N. H., 1931-32; Agril. Rsch. Scientist, Univ. of Calif., Berkeley and Davis, 1932-37; Agril. Rsch. Scientist, Univ. of Mo., 1937-42; Assoc. Prof., Univ. of Fla., 1947-49; Agril. Rsch. Scientist, USDA Rsch. Center, 1949-57; Livestock Advisor, USOM to Ceylon (ICA, Dept. of State),

1957-59; Agril. Rsch. Scientist, USDA Rsch. Center, 1959-61; Animal Nutritionist, U. S. Bureau of Commercial Fisheries, Boston, Mass., 1961—. Mem.: Fellow, Am. Assn. Adv. of Sci.; Am. Soc. for Animal Production; Alpha Chi Sigma; Gamma Sigma Delta; Gamma Alpha; Sigma Xi. Contbr. to: Jour. Am. Soc. for Animal Production; Poultry Sci.; Proc. Soc. Exptl. Biol. and Med.; Sci. Serv. Rec.: U. S. Army, 1942-47. Areas of Rsch.: Nutrition of Farm Animals; Energy Metabolism; Uses of Radioisotopes in Biological Research; Endocrine Function and Uses of Feed Additives in Animal Production; Protein, Energy, and Water Requirements of Cattle.

WING, Henry J. (Ph.D.), Asst. Mgr. of Rsch., Chesebrough-Ponds, Inc., Clinton, Conn. Home Add.: 12 Pratt Rd., Clinton, Conn. CHEMISTRY. b. Steele City, Nebr., Nov. 28, 1898. s. Henry J. and Kate (Faxon) W. Edn.: B.Sc., Univ. of Nebr., 1921; M.Sc., ibid., 1925; Ph.D., St. Univ. of Ia., 1929. m. Esther L. Jackson, 1925. c.: Henry J., Jr. Exp.: Asst. Prof. Chem., Doane Coll., 1924-26; Asst. Prof. Chem., S. Dak. St. Coll., 1926-28; Chemist, Natl. Bur. of Stand., Wash., D. C., 1929-34; Chemist, E. I. duPont de Nemours and Co., Parlin, N. J., 1934-39; Chemist, Johnson and Johnson, New Brunswick, N. J., 1939-44; Rsch. Dir., Northam Warren Corp., Stamford, Conn., 1944-54; Asst. Mgr. of Rsch., Chesebrough-Ponds, Inc., Clinton, Conn., 1955—. Hon. Pos.: Chmn., Western Conn. Sect., Am. Chem.

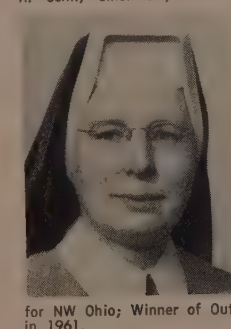
Soc. Mem.: Am. Chem. Soc.; Fellow, A.A.A.S.; N. Y. Acad. Sci.; Am. Inst. Chem.; Soc. Cos. Chem.; Sigma Tau; Alpha Chi Sigma; Phi Lambda Upsilon; Rotary. Contbr. to: Jour. Phys. Chem.; Jour. Am. Chem. Soc.; Ind. Engr. Chem.; Sci.; Jour. Rsch., Natl. Bur. Stand.; Jour. Soc. Cos. Chem. Serv. Rec.: U.S.N.R.F., 1918; C. W. Res., 1926-40. Areas of Rsch.: Chemistry of Rubber; Nitrocellulose Lacquers; Cosmetics.

WINDLE, Ernest (Mr.), Judge, Catalina Judicial Dist., City Hall, P. O. Box V-1, Avalon, Santa Catalina Island, Calif. Home Add.: 374 Whittly Ave., Avalon, Calif. MOTIVE AND MOTIVATION (HUMAN ELECTRONICS). b. England, Mar. 16, 1879. s. John and Elizabeth (Wilkinson) W. Edn.: English pub. schl.; Alston's Commercial Law & Bus. Schl.; Ruskin Coll., Oxford, Eng. m. Miriam Rushton, Nov. 25, 1902. c.: John William; Dorothy. Exp.: Newspaper Correspondent and Editor and Owner-publisher, The Catalina Islander, Avalon, Calif., 1907-50; Private Bus., Store and Printing Business, 1907-50; Judge, Catalina Judicial Dist., 1917—. Hon. Pos.: Pres., Catalina Island Museum Soc., Avalon, 1951—. Mem.: A.A.A.S.; Independent order of Foresters; Rotary. Co-author: Man and His Motives, 1954. Areas of Rsch.: Human Electronics; Human Behavior; Psychology, Sociology, Anthropology.

WING, Merle Wesley, Assoc. Prof. of Sci., State Univ. Coll., Cortland, N. Y. Home Add.: 72 Church St., Cortland, N. Y. ZOOLOGY. b. Maine, Aug. 14, 1916. s. Alton L. and Ella (Dickey) W. Edn.: B.S., Univ. of Maine, 1939; Ph.D., cand., Univ. of Minn. Exp.: Assistant Prof., N. Car. State College, Raleigh, N. C., 1942-51; Asst. Prof., Tulane Univ., New Orleans, La., on leave, 1945-46; Asst. Prof., Middle Tenn. State Coll., Murfreesboro, Tenn., 1958-60; Assoc. Prof., State Univ. Coll., Cortland, N. Y., 1960—. Mem.: A.A.A.S.; Am. Chem. Soc.; Am. Inst. of Phys.; Mathl. Assn. of Am.; Am. Inst. of Biol. Sci.; Soc. of Systematic Zool.; Soc. for Study of Evolution; Assn. for The Study of Animal Behavior; L'Union Internationale pour l'etude des insectes sociaux; Royal Entomol. Soc.;

N. C. Entomol. Soc.; Sigma Pi Alpha. Co-Author: Zoology Laboratory Guide, 1961. Contbr. to: Ent. News; Canad. Ent.; Jour. N. Y. Ent. Soc.; Trans. Roy. Ent. Soc. of London; Revista de Entomologia; Scientific Monthly. Areas of Rsch.: Myrmecology and the Study of Myrmecophiles.

WINKELJOHN, Mary Irenaea (Sister), C. PP. S., Prin., Regina H. Schl., Cincinnati, Ohio. Home Add.: 5400 Fenwick Ave., Cincinnati (Norwood) 12, Ohio. BIOLOGICAL SCIENCE; CHEMISTRY. b. Celina, Ohio, March 31, 1916. d. August and Philomena (Tiettmeyer) W. Edn.: B.S., Univ. of Dayton, 1939; M.S., Catholic Univ. of Am., Wash., D. C., 1945. Exp.: Tchr., Regina H. Schl., Cincinnati, Ohio, 1940-44; Tchr., ibid., 1946-50; Prin., St. Joseph H. Schl., Wapakoneta, Ohio, 1950-57; Prin. and Tchr., Regina H. Schl., Cincinnati, Ohio, 1957—. Hon. Pos.: Mem. of the Natl. Advisory Coun. of the NCEA in Sci. Mem.: Sigma Xi; Am. Assn. for the Adv. of Sci.; Ohio Acad. of Sci.; Natl. Sci. Tchr. Contbr. to: Catholic Educator; Schl. Sci. and Maths.; Book Revs. Gen. Int.: Winner of Kroger Award in Sci.



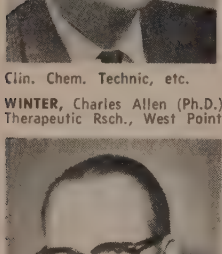
for NW Ohio; Winner of Outstanding Teacher Award for SWOSEA in 1961.

WINKLER, Marvin Howard (Ph.D.), Assoc. Investigator, Protein Fdtn., 281 South St., Jamaica Plain 30, Mass. Home Add.: 83 Glen Ave., Newton Center 59, Mass. BIOPHYSICAL CHEMISTRY. b. Brooklyn, N. Y., Dec. 17, 1926. s. Harry and Bessie (Kassel) W. Edn.: B.A., N. Y. Univ., 1949; M.S., ibid., 1951; Ph.D., ibid., 1954. m. Amelia Bleicher, Oct. 23, 1953. c.: Barbara Ruth. Exp.: Rsch. Asst., Roswell Park Memorial Inst., Buffalo, N. Y., 1954-55; Rsch. Assoc., ibid., 1955-58; Assoc. Investigator Protein Found., Boston, Mass., 1958—. Mem.: A.C.S.; Biophys. Soc.; A.A.-A.S.; Sigma Xi. Contbr. to: Rev. Sci. Inst.; Jour. Phys. Chem.; Jour. A.C.S.; Jour. Immun.; Vox Sang.; Biochem. Biophys. Acta.; Jour. Molecular Biol. Serv. Rec.: U. S. Army Air Corps, 1944-46. Areas of Rsch.: Biophysical Chem.;

Structure of Proteins.

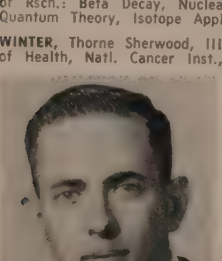
WINTER, Carlton Vernon (D.D.S.), Pedodontist, 1529 Elizabeth Ave., Charlotte, N. C. Home Add.: 1620 Lyndale Place, Charlotte 9, N. C. PEDIATRIC DENTISTRY. b. Charleston, S. C., June 11, 1928. s. Carlton O. and Ethel (Doniphen) W. Edn.: B.S., Univ. of S. C., 1950; D.D.S., Emory Univ., 1958; M.S., Univ. of N. C., 1959. m. Carrie Cole, June 7, 1952. c.: Pattie. Exp.: Pedodontist, Private Practice, Charlotte, N. C., 1959—. Mem.: Am. Dental Assn.; Am. Soc. of Dentistry for Children; A.A.A.S.; Am. Acad. of Dental Med.; Pi Kappa Phi; Delta Sigma Delta; Rotary Club. Contbr. to: Jour. of N. C. Dental Soc. Serv. Rec.: U. S. Army, 1952-54. Areas of Rsch.: Primarily Pulpal Reactions of Primary Teeth to Pulpotomy; Special Work Done Previously in Fields of Histologic Staining and Technic; Clin. Chem. Technic, etc.

WINTER, Charles Allen (Ph.D.), Dir. of Physiol., Merck Inst. for Therapeutic Rsch., West Point, Pa. Home Add.: Blue Bell, Pa. PHYSIOLOGY, PHARMACOLOGY. b. Carmi, Ill., Sept. 17, 1902. s. David P. and Amanda (Fowler) W. Edn.: B.A., Southwestern Coll., Kans., 1926; Ph.D., Univ. of Buffalo, 1935. m. Janet Ferguson, Sept. 30, 1928. c.: Donald Ferguson; Susan Eleanor; Richard Allen. Exp.: Instr., Biol., Univ. of Buffalo, 1928-32; Asst., Instr., Physiol., ibid., 1932-36; Instr., Asst. Prof., Physiol., Univ. of Iowa, 1936-44; Assoc. Prof., Physiol., Univ. of Okla., 1944-46; Hd., Pharmacol., Merck Inst. for Therapeutic Rsch., 1946-56; Dir., Physiology, ibid., 1956—. Hon. Pos.: Chmn., Gordon Rsch. Conf., Medicinal Chem., 1952. Mem.: Am. Physiol. Soc.; Soc. Pharmacol. and Exptl. Therap.; Fellow, A.A.A.S.; Soc. Exptl. Biol. and Med.; Endocrine Soc.; N. Y. Acad. Sci.; Soc. Suisse de Physiol. Chimie physiol. et pharmacol.; Royal Soc. Med., London; Sigma Xi; Gamma Alpha; Kiwanis. Contbr. to: Jour. Pharm. Exptl. Therap.; Arch. internat. de pharmacodyn.; Proc. Soc. Exptl. Biol. and Med.; Jour. Exptl. Med.; Endocrinology; Jour. Am. Pharmaceut. Assn., Sci. Edn.; Fed. Proc.; Am. Jour. Ophthal.; Jour. Allergy; Am. Jour. Physiol.; Anat. Rec.; Ciba Fdtn. Sympos. on Endocrin.



WINTER, Rolf Gerhard (D.Sc.), Assoc. Prof. of Phys., The Pa. State Univ., Univ. Park, Pa. Home Add.: 829 N. Thomas St., State Coll., Pa. NUCLEAR PHYSICS. b. Dusseldorf, Germany, June 30, 1928. s. Julius and Erika (Wolff) W. Edn.: B.Sc., Carnegie Inst. of Techn., 1948; M.Sc., ibid., 1950; D.Sc., ibid., 1952. m. Patricia Mae Saibel, Jan. 31, 1951. c.: Erika Louise; Edward Paul Merritt; James Frederick. Exp.: Rsch. and Grad. Asst., Carnegie Inst. of Techn., 1947-51; Instr., Western Reserve Univ., Ohio, 1951-52; Asst. Prof., ibid., 1952-54; Asst. Prof., Pa. State Univ., 1954-60; Assoc. Prof., ibid., 1960—; Temp. Visiting Rsch. Physt., Carnegie Inst. of Techn., 1955-56; Visit. Rsch. Physt., Univ. of Oxford, Oxford, England, 1961-62. Mem.: Am. Phys. Soc.; Am. Assn. Univ. Profs. Contbr. to: Phys. Rev.; Am. Jour. of Phys.; Nuclear Instruments and Methods; Nature; Rev. of Scient. Instruments; Jour. of Appl. Phys.; Bull. of the Am. Phys. Soc. Areas of Rsch.: Beta Decay, Nuclear Reactions, Accelerator Magnets, Quantum Theory, Isotope Applications.

WINTER, Thorne Sherwood, III (M.D.), Clin. Assoc., Natl. Insts. of Health, Natl. Cancer Inst., Bethesda 14, Md. Home Add.: 4553 S. Chelsea Lane, Bethesda 14, Md. INTERNAL MEDICINE. b. Greenville, S. C., Dec. 7, 1932. s. Thorne Sherwood, Jr. and Blanche (Attaway) W. Edn.: M.D., Harvard Med. Schl., 1958. m. Constance Blunt, Aug. 2, 1957. c.: Allison Anne; Meredith Lynn. Exp.: Intern and Jr. Asst. Res. in Med., Peter Bent Brigham Hosp., Boston, Mass., 1958-60; Rsch. Fellow in Cardiology, Emory Univ. Schl. of Med., Atlanta, Ga., 1960-61; Clin. Assoc., Natl. Cancer Inst., Bethesda, Md., 1961—. Mem.: Am. Assn. for the Adv. of Sci.; Am. Heart Assn.; Phi Beta Kappa; Alpha Omega Alpha; Omicron Delta Kappa; Phi Eta Sigma; Alpha Tau Omega; Nu Sigma Nu. Serv. Rec.: U. S. Pub. Health Serv., 1961—. Areas of Rsch.: Cancer Chemotherapy; Heart Disease; Hemodynamics.



WINTER, Wesley Phillips (Mr.), Assoc. Prof., Penn. St. Univ., University Park, Pa. Home Add.: 505 S. Pugh St., State College, Pa. METALS PROCESSING (METAL CASTING). b. Myerstown, Pa., July 26, 1911. s. William Phillips and Elizabeth (James) W. Edn.: B.S., Penn. State Univ., 1935; M.Ed., ibid., 1952. m. Letitia Clark, July 3, 1936. c.: William Phillips; Harry Clark. Exp.: Craft Instr., Inst. of Living, Hartford, Conn., 1935-36; Shop Tchr., Plainville H. S., Plainville, Conn., 1936-41; Shop Tchr., Housatonic Valley Reg. H. S., Falls Village, Conn., 1941-47; Instr., Penn. State Univ., 1947-58; Asst. Prof., ibid., 1958-62; Assoc. Prof., Ind. Engrng. Dept., ibid., 1962—. Hon. Pos.: Chmn., Pub. Comm., Edn. Div., Am. Foundrymen's Soc.; Exec. Comm., ibid. Mem.: Phi Delta Kappa; Iota Lambda Sigma; Am. Foundrymen's Soc.; Am. Soc. Metals; A.S.E.E. Co-Author: Introduction to Foundry Technology, 1958; Gray Iron Foundry Practice, 1957. Contbr. to: Foundry.

WINTERKORN, Hans Friedrich (Dr.), Hd. of Soil Physics and Material Sci. Labs., Dept. of Civil Engrng., Princeton Univ., Princeton, N. J. PHYSICAL CHEMISTRY OF SOILS AND CONSTRUCTION MATERIALS. b. Mannheim, Baden, Germany, Nov. 24, 1905. s. Valentin de Guenome and Elisabetha Christina (de Gedde) W. Edn.: Volksschule Ludwigshafen a/Rh. Germany, 1912-15; Royal Bavarian Humanistic Gymnasium Ludwigshafen a/Rh. Bavaria, 1915-24; Ruperto-Carola Univ., Heidelberg, Germany, 1924-31; Dr. of Natural Philosophy in Phys. Chem., Heidelberg, Germany, 1931. m. Hazel Katharine zum Waldt, Oct. 13, 1940. c.: Hans F. zum Waldt, III; Erik Guinemer de Gedde. Exp.: Hd., Div. of Chem., Schl. of Adult Edn., Mannheim, Baden, Germany, 1929-31; Rsch. Chemist and Engr., Mo. State Hwy. Dept., 1931-32; Rsch. Consultant, ibid., 1932-42; Visiting Asst. Prof. of Chem., Univ. of Mo., 1932-33; Rsch. Assoc. in Soils, ibid., 1933-40; Rsch. Assoc. Prof. of Soil Mechanics, Schl. of Engrng., ibid., 1940-42; Rsch. Consultant of Vialidad Nacional of Argentina, 1937-40; Assoc. Prof. of Civil Engrng., Univ. of Mo., 1942-43; Consultant and Dir. of Rsch. Contract for Airport Develop. Sect. of the Civil Aeronautics Admin., 1942-46; Chmn., Soil Tech. Sect. of Soil Sci. Soc. of Am., 1943-45; Dir. of Soil Physics Lab. and Assoc. Prof. of Civil Engrng., Princeton Univ., Princeton, N. J., 1943-55; Prof. of Civil Engrng., 1955—; Consultant, Turkish Hwy. Engrng. Mission to U.S.A., 1945; Consultant to Pvt. Road-Improvement Interests in Argentina, 1946; Consultant to Bur. of Yards and Docks, U. S. Navy Dept., 1947-52; Consultant to Pan-Am Div. of the A.R.B.A., 1948—; Lectr. at Austrian, German and Swiss Technical Univs. and Consultant for the respective Govts. on Rural Road Constrn., 1958; Consultant to Office of Saline Water, U. S. Dept. of Interior.; Consultant, General Electric Co. on Lunar Soil Problems. Mem.: Fellow, Am. Inst. of Chemists; Fellow, Am. Geographic Soc.; Fellow, A.A.A.S.; Am. Chem. Soc.; Geophysical Un.; Soc. for Engrng. Edn.; Acad. Polit. Sci.; A.A.U.P.; Assn. of Asphalt Paving Technologists; Am. Road Builders Assn.; Am. Soc. Civil Engrs.; Hwy. Rsch. Board; Chmn. of Comm. on Physics, Chem. Phenomena in Soils; N. Y. Acad. Sci.; German Road Rsch. Soc.; Hon. Chf. "Eagle-Bear" of the Black Foot Tribe; Order of Merit from the German Federal Republic, 1957; Tau Beta Pi; Gamma Alpha; Alpha Chi Sigma; Sigma Xi. Contbr. to: Annalen der Physik, Germany; Soil Sci.; Indus. and Engrng. Chem.; Pros. Soil Sci. Soc. Am.; Proc. Hwy. Rsch. Bd.; etc. War Record: Development of Waterproofing Methods for Fighter Fields for Air Force, and for Landing Beach Stabilization for Navy. Gen. Int.: Dr. Winterkorn is Internationally Regarded as the Father of the Sci. of Soil Stabilization. Special Int.: Specialist on Properties of Water in Colloidal System especially as revealed by Electro-Osmosis and Thermo-Osmosis; Discoverer of the Electric Effect in Thermo-Osmosis.

WINTERNITZ, William Welch (M.D.), Assoc. Prof., Dept. of Med., Univ. of Ky. Med. Ctr., Lexington, Ky. Home Add.: 1235 Eldemere, Lexington, Ky. ENDOCRINOLOGY AND METABOLISM. b. New Haven, Conn., June 21, 1920. s. Milton C. and Helen (Watson) W. Edn.: A.B., Dartmouth Coll., 1942; M.D., Johns Hopkins Med. Schl., 1945. m. Mary Prymak, Mar., 1949. c.: William; Helen; Paul. Exp.: Post Doctoral Fellow, U.S.P.H.S., Yale Univ. Schl. of Med., 1950-52; Instr., Asst. Prof., ibid., 1952-59; Spec. Rsch., Fellow, U.S.P.H.S., Univ. Coll. Hosp. Med. Schl., London, England, 1959-60; Assoc. Prof., Univ. of Ky. Med. Ctr., 1959—. Mem.: A.A.A.S.; Endocrine Soc.; A.M.A.; Am. Fed for Clin. Rsch.; Sigma Xi; Alpha Omega Alpha. Contbr. to: Proc. Soc. Exptl. Biol. & Med.; Yale Jour. Biol. and Med.; Endocrinol.; The Coun. St. Med. Jour.; Fed. Proc.; Am. Jour. Physiol.; Clin. Rsch.; Fert. & Sterility; Conn. Med.; Jour. of the K.S.M.A. Serv. Rec.: U. S. Army, 1946-48. Areas of Rsch.: Endocrinol. and Metabolism.

WISE, C. Edward, Jr. (Ph.D.), Chief Scientist-Advisor, Hdqs. U. S. Marine Corps, Wash., D. C. Home Add.: 7802 Cole Ave., Takoma Park, Md. CHEMISTRY—PHYSICAL AND BIOLOGICAL. b. Baltimore, Md., July 26, 1921. s. Clarence E. and Laura Elizabeth (Offutt) W. Edn.: Sc.B., Dickinson Univ., 1941; Ph.D., Syracuse Univ., 1949; LL.B., George Washington Univ., 1954. m. Ruth Mary Edwards, 1955. c.: Janis Lynn; Debra Ann. Exp.: Chemist, Natl. Bureau of Standards, Wash., D. C., 1943-47; Assoc. Gen. Phys. Scientist, ibid., 1947-51; Phys. Sci. Admin., Navy Dept., Bureau of Ordnance, Washington, D. C., 1951-54; Chem. Engr., Supvr., Phys. Sci. Admin., Hdqs., U. S. Marine Corps., ibid., 1954-60; Chief Scientist, Advisor, Hdqs. U. S. Marine Corps, ibid., 1960—. Hon. Pos.: Mem.,

Numerous Navy Dept., Defense Dept., Scientific and Tech. Com. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Gephys. Union; Am. Rocket Soc.; Alpha Chi Rho; Delta Theta Phi; Kappa Beta Phi; Sigma Xi; Chem. Engrs. Club of D. C. Contbr. to: Abstracter for Chem. Abstracts; Navy Tech. Forum. Gen. Int.: OSRD Award for contributions to atom bomb program; War Dept. Award for contribution to Manhattan Dist. Project. Areas of Rsch.: Separation of isotopes; Mass spectrometric analysis techniques, Rocket and missile propulsion, limited and Guerrilla warfare tactics and systems, degradation of polymers; mass spectra of hydrocarbons.

WISE, Ernest George (Ph.D.), Prof. of Sci., State Univ. Coll. at Oswego, N. Y. Home Add.: 90 6th Ave., Oswego, N. Y. SCIENCE EDUCATION. b. Dunkirk, N. Y., Sept. 6, 1920. s. Ernest A. and Evelyn (Studeman) W. Edn.: B.Ed., St. Univ. Coll. at Fredonia, N. Y., 1942; M.A., Columbia Univ., 1947; Ph.D., Syracuse Univ., 1960. m. Geraldine Plank, June, 1950. c.: Gail Beverly and Barbara Jean. Exp.: Science and Math. Tchr., Campus Schl., St. Univ. Coll. at New Paltz, N. Y. 1947-48; Assoc. Prof. of Sci., Coll. of Edn., Oswego, N. Y., 1948-61; Prof. of Sci., Sta. Univ. Coll. at Oswego, N. Y., 1961—. Mem.: A.A.A.S.; Am. Assn. of Univ. Prof.; Faculties Assn.; N.S.T.A.; St. Univ. of N. Y. Tchrs. Colleges; N. Y. State Tchrs. Assn.; Assn. for the Edn. of Tchrs. in Science; Sigma Zeta. Co-Author: Experiments in Physical Sci., 1954. Serv. Rec.: Army. Attended Natl. Sci. Found. Inst. sponsored by the Botanical Soc. of Am. and Washington Sta. Univ., Summer, 1961; Attended N.S.F. Inst. on Radiation Biol. and Radiation Physics, Syracuse Univ., Summer, 1962. Areas of Rsch.: Science Education at the Elementary and Secondary Level.

WISE, Samuel Paul, III (M.D.), Assoc. Chief of Staff for Rsch., Vet. Adm. Hosp., Perry Point, Md. Home Add.: 1141-4th St., Perry Point, M. INTERNAL MEDICINE; RESEARCH IN PSYCHOPHYSIOLOGY AND PSYCHOPHARMACOLOGY. b. Plains, Ga., May 8, 1921. s. Burr Thaddeus and Louise (Lamar) W. Edn.: A.B., Emory Univ., 1941; M.D., Tulane Univ. Schl. of Med., 1946. m. Ruth Sturgeon, Jan. 5, 1947. c.: Samuel Paul, IV; Blake Burr; Frank Lamar. Exp.: Chief, Med. Serv., Daily Vinsant Mem. Hosp., San Benito, Tex., 1956-57; Secy. and Chief of Staff, ibid., 1957-58; Assoc. Attending Phys., Jefferson Davis Hosp., Houston, Tex., 1959-60; Asst. Clinical Prof. Medicine, Baylor Univ. Coll. of Med., Houston, Tex., 1959-60; Assoc. Chief of Staff for Rsch., Vet. Adm. Hosp., Perry Point, Md., 1960—. Mem.: Diplomate, Am. Bd. of Internal Med.; Am. Trudeau Soc.; Fellow, Am. Acad. of Psychosomatic Med.; Fellow, Am. Geriatric Soc.; Am. Heart Assn., Coun. on Basic Sciences; Am. Soc. of Internal Med.; N. Y. Acad. of Scis.; Tex. Acad. of Internal Med.; Am. Assn. for the Adv. of Sci.; Southern Med. Assn.; Soc. for Psychophysiological Rsch.; Sigma Alpha Epsilon; Phi Chi; Alpha Omega Alpha; Milit. Order of World Wars; Ret. Offs. Assn.; Past Pres., San Benito, Tex., Kiwanis Club, 1958. Contbr. to: New Orleans Med. and Surg. Jour.; U. S. Armed Forces Med. Jour.; Tex. Med. Jour.; Jour. Am. Med. Assn. Serv. Rec.: U. S. Army, 1947-54. Gen. Int.: Vocal Soloist; Authority on Life of Major Gen. Leonard Wood, Biography in Preparation. Areas of Rsch.: Psychophysiology and Psychopharmacology; Conditional Reflexes in Animal and Man, EEG Activators and Effects of Psychotropic Drugs on EEG and other Physiologic Parameters.

WISE, Walter Robertson, Jr. (Ph.D.), Structural Rsch. Engr., U. S. Naval Ordnance Lab., White Oak, Silver Spring, Md. Home Add.: 10316 Parkman Rd., Silver Spring, Md. ENGINEERING MECHANICS, FUNDAMENTAL RESPONSE PHENOMENOLOGY OF ENGINEERING STRUCTURES SUBJECTED TO EXPLOSIVE LOADING: RAPID, GROSS PLASTIC DEFORMATION OF METALS DIRECTED TO ENHANCING THE EXCURSION CONTAINMENT POTENTIAL OF NUCLEAR REACTORS. b. Onancock, Va., Sept. 5, 1918. s. Walter Robertson, Sr. and Beatrice (Crockett) W. Edn.: B.S., Duke Univ., 1952; M.S., Univ. of Md., 1955; Ph.D., ibid., 1959. m. Miriam Adams, Sept. 1, 1948. c.: Walter Robertson, III; Jane Adams; Margaret Lynn. Exp.: Engr., Standard Oil Co., N. Y. City, Lt. and Lt. Comdr., U. S. Maritime Service, 1942-45; Master Mechanic, L. P. O'Connor Construction Co., Caracas, Venezuela, 1945-46; Chf. Engr. of Steam Vessels, U. S. Maritime Comm., Tankers Co., Inc., N. Y. City, 1947; Mechanical Engr., U. S. Naval Ordnance Lab., White Oak, Silver Spring, Md., 1952-55; Supvry. Structural Rsch. Engr., ibid., 1956—; Lectr. and Grad. Advisor (dynamics, elasticity), Univ. of Md., 1957—. Mem.: Am. Soc. for Engrng. Edn.; Am. Soc. of Mechanical Engrs.; Soc. for Exptl. Stress Analysis; A.A.A.S.; Natl. Soc. of Prof. Engrs.; Pi Tau Sigma; Pi Mu Epsilon; Order of St. Patrick. Gen. Int.: Licensed Chief Engineer of Steam and Motor Vessels, Any Horsepower; Registered Professional Engr., Md. Areas of Rsch.: Engrng. Mechanics, Dynamics, Elasticity, Plasticity; Fundamental Response of Engrng. Structures Subjected to Explosion Loading; Rapid, Gross Plastic Deformation of Metals; Containment of Nuclear Excursions; Scaling Phenomenology of Engrng. Mechanics.

WISELOGLE, Frederick Yager (Sc.D.), Assoc. Dir. in Chg. of Development, The Squibb Inst. for Med. Rsch., New Brunswick, N. J. Home Add.: 1163 Revere Rd., Colonial Gardens, North Brunswick, N. J. ORGANIC CHEMISTRY. b. Albion, Mich., May 18, 1912. s. Andrew J. and Florence (Yager) W. Edn. B.S., Univ. of Mich., 1932; M.S., ibid., 1934; Sc.D., ibid., 1936. m. Louise Ryder, Oct. 13, 1945. c.: Betsy; Ann Dee; William; Margaret. Exp.: Asst. in Chem., Johns Hopkins Univ., 1936-37; Instr., ibid., 1937-39; Assoc., ibid., 1939-43; Assoc. Prof., ibid., 1943-46; Asst. to the Dir., The Squibb Inst., 1946-49; Assoc. Dir. in Chg. Chem. Rsch., ibid., 1949-61; Assoc. Dir. in Chg. of Devel., ibid., 1962—. Hon. Pos.: Pres., N. Y. Acad. Scis., 1961. Mem.: Am. Chem. Soc.; A.A.A.S.; N. Y. Acad. Scis. Editor: A Survey of Antimalarial Drugs, 1941-45. Contbr. to: Jour. Org. Chem.; Jour. Am. Chem. Soc. Areas of Rsch.: Chemotherapy of Malaria; Tuberculosis.

WISTREICH, Hugo Eryk (Ph.D.), Director of Research, Preservaline Mfg. Co., Flemington, N. J. Home Add.: R.D. 5, Flemington, N. J. FOOD SCIENCE AND TECHNOLOGY; BIOCHEMISTRY. b. Jasto, Poland, Aug. 8, 1930. s. Salomon and Channa (Menasse) W. Edn.: Ingenieur, I.T.P.A., Paris, France, 1953; Certificate, I.R.H.O., ibid., 1954; M.S., Rutgers Univ., 1957; Ph.D., Rutgers Univ., 1959. m. Lucy Moreland, Jan. 25, 1958. c.: Diana Carew. Exp.: Rsch. Asst., Radio Free Europe, 1954-55; Rsch. Fellow, Rutgers Univ., 1955-58; Dir. Rsch., Reliable Packing Co., Chicago, 1958-60; Dir., Rsch., Preservaline Mfg. Co., Flemington, N. J., 1960—; Abstractor, Chem. Abstracts, 1958—. Mem.: A.A.A.S.; Inst. Food Tech.; Am. Chem. Soc.; Western Soc. Engrs. Am. Soc. Quality Control; Sigma Xi; Phi Tau Sigma. Contbr. to: Food Technology; Chem. Abstracts; Analytical Chem. General Int.: Languages: English, French, Russian, Polish, German. Areas of Rsch.: Diffusion of Inorganic Ions in Biological Tissues; Analysis of Biological Materials; Electrical Anesthesia.

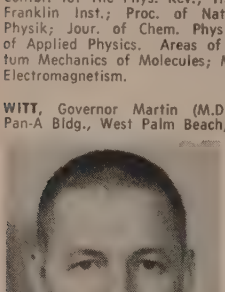
WITKIN, George Joseph (D.D.S.), 630 Fifth Ave., N. Y. 20, N. Y. Home Add.: 43 Chesterfield Rd., Scarsdale, N. Y. PERIODONTIA AND ORAL MEDICINE; DENTAL EDUCATION. b. N. Y. C., Dec. 22, 1915. s. William and Ida Bloom (Wasilsky) W. Edn.: A.B., Wash. Sq. Coll., N. Y. Univ., 1938; D.D.S., Coll. of Dentistry, N. Y. Univ., 1942. m. Mildred Hope Fisher, June 22, 1940. c.: Georgia Hope; Roy Thomas. Exp.: Rsch. Fellow, N. Y. Univ. Coll. of Dentistry, 1942; Instr., ibid., 1946-49; Asst. Prof., ibid., 1949-59; Assoc. Prof., ibid., 1959—; Dir. of Tchr. Trng. Prog., ibid., 1960—. Hon. Pos.: Diplomate, Am. Bd. of Periodontol.; Consultant, U.S.P.H.S.; Consult., N. Y. City Municipal Civil Serv. Comm. Mem.: Am. Academy of Dental Medicine; N. Y. Acad. of Sci.; Northeastern Soc. Periodontists; Am. Soc. Peridontists; Am. Acad. Periodontal.; Scientific Rsch. Soc. of Am.; Internatl. Assn. Dental Rsch.; Am. Coll. Dentists; A.A.A.S.; A.A.U.P.; Assn. Paulista de Cirurgioes Dentista, Brazil; Omicron Kappa Upsilon; Alpha Omega; Royal Yachting Assn.; Scarsdale Town Club; Comm. Boy Scouts. Contbrng. Author: Review of Dentistry, 1949, 1954; Textbook of Periodontia, 1950; Oral Diagnosis and Treatment, 1957; Practice of Periodontia, 1960. Contbr. to: Jour. Acad. Dental Med.; West. Dent. Soc. Bull.; Jour. Periodontol.; Jour. Dental Edn.; Jour. Am. Dental Assn.; N. Y. Jour. Dentistry; Jour. Dental Rsch. Serv. Rec.: U. S. Army, 1942-46. Areas of Rsch.: Periodontology and Oral Medicine; Dental Education.

WITLIN, Bernard (D.Sc.), 43rd and Kingsessing Ave., Philadelphia 4, Pa. Home Add.: 6203 N. 11 St., Philadelphia 41, Pa. MICROBIOLOGY AND PUBLIC HEALTH, BLOOD BANKING AND CLINICAL PATHOLOGY. b. Philadelphia, Pa., July 18, 1914. s. Isadore and Minnie (Needleman) W. Edn.: A.B., Univ. of Calif., Los Angeles, 1936; M.Sc., Philadelphia Coll. of Pharm. and Sci., 1938; D.Sc., ibid., 1940. m. Frances Freed, Jan. 20, 1944. c.:

Marcia Ellen; Ira Martin. Exp.: Instr., Philadelphia Coll. of Pharm. and Sci., 1940-41; Sr. Bacteriologist, U.S.P.H.S., 1941-47; Assoc. Prof., Philadelphia Coll. of Pharm. and Sci., 1947—; Prof., Pa. State Co.l. of Optometry, 1949—; Assoc. Prof., Philadelphia Coll. of Osteopathy, 1947—; Clin. Pathol., Metropolitan Hosp., 1952 -. Mem.: S.A.B.; A.A.A.S.; Pa. Acad. Sci.; Hawaiian Acad. Sci.; N. Y. Acad. Sci.; A.P.H.A.; A.Ph.A.; Royal Soc. Health, England; Biol. Stain Commn., U. S.; Assn. Milit. Surgs.; Alpha Sigma Pi; Rho Chi; Sigma Chi. Author: Lab. Methods Bd. of Health, Terr. of Hawaii, 1944; Manual of Serology, 1955—; Manual of Med. Bacteriol., 1954—; The Exotic Diseases, 1960. Contbr. to: Hawaiian Med. Jour.; Pub. Health Reports; Jour. Exptl. Biol. and Med.; Jour. Am. Pub. Health Assn.; Jour. Am. Pharm. Assn.; Am. Jour. of Pharm.; Jour. Pa. Osteopathic Assn.; etc. Serv. Rec.: U.S.P.H.S., 1941-47. Areas of Rsch.: Blood Banking; Antiseptics and Disinfectants; Sanitization; Tropical Disease; Biological Warfare and Clinical Pathology.

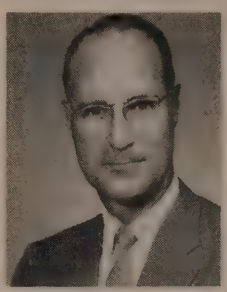
WITMER, Enos Eby (Ph.D.), Asst. Prof., Physics Dept., Univ. of Pa., Phila. 4, Pa. Home Add.: 281 Hathaway Lane, Wynnewood, Pa. THEORETICAL AND MATHEMATICAL PHYSICS. b. near Lancaster, Pa., Nov. 28, 1898. s. Aaron R. and Ida C. (Eby) W. Edn.: A.B., Franklin and Marshall Coll., 1920; Ph.D., Univ. of Pa., 1923. Hon. Deg.: Sc.D., Franklin and Marshall Coll., 1951. m. Dr. Anne M. Breuer Springer, Dec. 23, 1961. Exp.: Harrison Rsch. Fellow, Univ. of Pa., 1923-25; Natl. Rsch. Fellow, Harvard Univ., 1925-27; Natl. Rsch. Fellow, Univ. of Goettingen, 1927-28; Asst. Prof. of Physics, Univ. of Pa., 1928—; War Researcher, Moore Schl. of E.E., ibid., 1942-45; Project Leader in the Thermodynamics Rsch. Lab., ibid., 1945-50. Mem.: Fellow, Am. Physical Soc.; Fellow, A.A.A.S.; Mem. of Am. Assn. of Physics Teachers; Mem., Am. Institute of Physics; The Franklin Institution; Rittenhouse Astronomical Society; A.A.U.P.; Sigma Xi; Phi Beta Kappa; Pi Mu Epsilon; Faculty Club of Univ. of Pa. Contbr. to: The Phys. Rev.; The Philosophical Mag.; Jour. of the Franklin Inst.; Proc. of Natl. Acad. of Sci.; Zeitschrift fur Physik; Jour. of Chem. Physics; Jour. Am. Chem. Soc.; Jour. of Applied Physics. Areas of Rsch.: Quantum Mechanics; Quantum Mechanics of Molecules; Molecular Spectra; Nuclear Physics; Electromagnetism.

WITT, Governor Martin (M.D.), Pediatric Endocrinologist, 414 Pan-A Bldg., West Palm Beach, Fla. Home Add.: 1076 N. Ocean Blvd., Palm Beach, Fla. PEDIATRIC ENDOCRINOLOGY AND METABOLISM. b. Youngstown, Ohio, June 11, 1919. s. Francis J., Sr. and Helen May (Bixler) W. Edn.: A.B., (cum laude) Adelbert Coll., 1947; M.D., West. Res. Univ. Schl. of Med., 1951. m. Florence Elizabeth Meyer, 1942. c.: Melanie Anna; Gerhardt Meyer; Selina Jane. Exp.: Intern, Yale Univ., Dept. of Pediatrics, 1951-52; Res., ibid., 1952-54; Res. Phys., Southbury Training Schl., Southbury, Conn., 1953; NIAMD (NIH) Research Grant, Kinderspital, Zurich, 1960-61; Clin. Instr., Univ. Miami Med. Schl., 1959-62; Pediatric Endocrinologist, Pan-A Bldg., West Palm Beach, Fla., 1962— Hon. Pos.: Pediatric Consultant, Children's Bureau Migratory Labor Rsch. Proj., 1956-62. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Fellow, Am. Acad. of Pediatrics; Fla. Pediatric Assn.; Am. Med. Assn.; Palm Beach Co., Hist. Soc.; Swiss Alpine Club, Zurich Chapt. Contbr. to: Jour. of Comparative Psychol.; Helvitia Acta Pediatrica; Fla. St. Bd. of Health Repts.; Med. Enonomics; Schw. Med. Woch. Serv. Rec.: U. S. Air Force, 1940-45. Areas of Rsch.: Amino Acid and Sugar Metabolism of Hereditary Diseases.

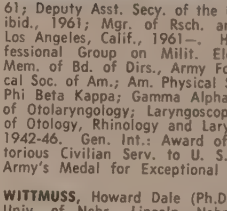


WITT, Peter Nikolaus (M.D.), Assoc. Prof. of Pharmacol., Upstate Med. Center of State Univ. of N. Y., 766 Irving Ave., Syracuse, N. Y. Home Add.: 125 High St., Manlius, N. Y. PHARMACOLOGY OF THE CENTRAL NERVOUS SYSTEM AND HEART MUSCLE. b. Berlin, Germany, Oct. 20, 1918. s. Felix H. and Emma (von Mendezssohn) W. Edn.: M.D., Berlin, Germany, 1944; Privat Dozent, Bern, Switzerland, 1956. m. Ingeborg A. Feiler, Feb., 1949. c.: Elise M.; Mary E. Exp.: Asst., Univ. of Tubingen, Germany, 1945-49; Sr. Asst., Univ. of Bern, Switzerland, 1949-56; Rockefeller Fellow, Harvard Med. Schl., 1952-53; Asst. to Assoc. Prof., State Univ. of N. Y., Syracuse, N. Y., 1956—. Mem.: German Pharmacol. Soc.; Swiss Pharmacol. Soc.; Am. Soc. for Pharmacol. Exptl. Therap.; N. Y. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Sigma Xi. Author: Die Wirkung von Substanzen auf den Netzbau der Spinne als biologischer Test. Contbr. to: Jour. of Pharmacol.; Jour. of Pharmacol. and Exptl. Therap. Gen. Int.: Spider Test. Areas of Rsch.: The Influence of Drugs on Web Building Behavior of Spiders; Changes of Contractility of Heart Muscle and Ion Movements with Cardioactive Drugs.

WITTING, Edward George (Ph.D.), Mgr., Rsch. and Devel., Cannon Elect. Co., 3208 Humboldt St., Los Angeles 31, Calif. Home Add.: 1020A Huntington Dr., Arcadia, Calif. b. N. Y. C., N. Y., July 31, 1904. s. Charles Herman and Jennie Clayton (Pipe) W. Edn.: Ph.D., Johns Hopkins Univ., 1935. m. Mary Tomkinson Carson, June 21, 1934. c.: William C.; Joyce A. Exp.: Bell Tel. Labs., N. Y., 1922-30; Student, Johns Hopkins Univ., 1930-35; Physicist, Otological Rsch. Lab., Abington Mem. Hosp., Abington, Pa., 1935-40; Physicist, Army Signal R. & D. Lab., Ft. Monmouth, N. J., 1940-42; Chf. of Engrng. Staff and Dir., Physical Scis. Div., Army Signal R. & D. Lab., Ft. Monmouth, N. J., 1946-56; Chf. Scientist, Signal Corps, U. S. Army, Wash., 1956; Deputy Dir. of Rsch. and Develop., ibid., 1956-61; Deputy Asst. Secy. of the U. S. Army (Rsch. and Developmt.), ibid., 1961; Mgr. of Rsch. and Developmt., Cannon Elect. Co., Los Angeles, Calif., 1961—. Hon. Pos.: Mem. of Natl. Bd., Professional Group on Milit. Electronics, Inst. of Radio Engrs.; Mem. of Bd. of Dirs., Army Forces Mgmt. Assn. Mem.: Acoustical Soc. of Am.; Am. Physical Soc.; Fellow, Inst. of Radio Engrs.; Phi Beta Kappa; Gamma Alpha; Sigma Xi. Contbr. to: Archives of Otolaryngology; Laryngoscope; Acta Oto-Laryngologica; Annals of Otology, Rhinology and Laryngology. Serv. Rec.: U. S. Army, 1942-46. Gen. Int.: Award of Secy. of Army's Medal for Meritorious Civilian Serv. to U. S. Army, 1960; Award of Secy. of Army's Medal for Exceptional Civilian Serv., U. S. Army, 1961.

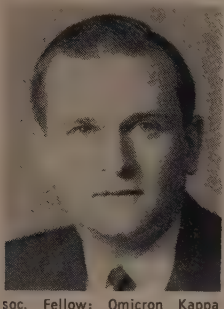


WITTMUSS, Howard Dale (Ph.D.), Assoc. Prof., 201 Agric. Engr., Univ. of Nebr., Lincoln, Nebr. Home Add.: 1808 Morningside Dr., Lincoln 6, Nebr. AGRICULTURAL ENGINEERING AND SOIL PHYSICS. b. Papillion, Nebr., July 15, 1922. s. Albert E. and Ella (Ziesler) W. Edn.: B.S., A.E., Univ. of Nebr., 1947; M.S., A.E., ibid., 1950; Ph.D., Agron. and Agric. Engrng., ibid., 1956. m. Mildred Schlaphoff, Aug. 5, 1950. c.: Jane Marie; Steven Howard; Lynne Ellen. Exp.: Rsch. Asst., Univ. of Nebr., 1952-56; Asst. Prof., ibid., 1956-58; Assoc. Prof., ibid., 1958—. Mem.: Am. Soc. of Agric. Engrs.; Agronomy Soc.; Sigma Xi; Gamma Sigma Delta. Contbr. to: Soil Sci. Soc. of Am. Procs.; Agric. Engrng. Jour. Serv. Rec.: U. S. Naval Reserve, 1944-46, 1950-52. Gen. Int.: Developed Till-Plant Method of Minimum Tillage for Row Crop Production. Areas of Rsch.: Research in Tillage Methods and Conservation of Soil and Water.



WITTY, Paul A. (Ph.D.), Dir. of Psycho-Educational Clin.; Prof. of Edn., Schl. of Edn., Northwestern Univ., Evanston, Ill. Home Add.: 531 Grove St., Apt. B2, Evanston, Ill. EDUCATIONAL PSYCHOLOGY—THE GIFTED CHILD; READING MENTAL HEALTH. b. Terre Haute, Ind., July 23, 1898. s. William L. and Margaret (Kerr) W. Edn.: A.B., Ind. State Tchrs. Coll., 1920; M.A., Columbia Univ., 1923; Ph.D., ibid., 1931. Exp.: Schl. Psychologist, Scarborough on Hudson, 1922-24; Assoc. Prof. and Prof. of Ednl. Psychol., Univ. of Kans., 1924-30; Prof. of Edn. and Dir., Psycho-Ednl. Clinic, Northwestern Univ., 1930—. Hon. Pos.: Mem. of Advisory Bd., Air Trng. Command; Ed., Exceptional Children; Jour. of Ednl. Psychol.; Natl. Parent-Tchr.; Vice-Pres., Am. Assn. for Gifted Children; Consultant, The Golden Book Encyclopedia, 1959-60; Past-Pres., Internatl. Council for the Improvement of Reading, now Internatl. Reading Assn.; Chmn. Com. for 1960 N.S.S.E. Yearbook. Mem.: Fellow, A.A.A.S.; Fellow, Am. Psychological Assn.; Am. Childhood Assn. Internatl.; Am. Edn. Rsch. Assn.; Assn. for Supvn. and Curr. Devel.; Internatl. Coun. for Exceptional Children; Internatl. Reading Assn.; Kappa Delta Pi; Midwestern Psychol. Assn.; Natl. Soc. for the Study of Edn.; Natl. Edn. Assn.; Phi Delta Kappa; Sigma Nu; Soc. for Adv. of Edn. Author: Freedom and Our U. S. Family, 1939; Helping the Gifted Child, 1951; How to Become A Better Reader, 1955; How to Improve Your Reading, 1956; Reading in Modern Education, 1949; Streamline Your Reading, 1951; Study of Deviates in Play, 1931; You Can Read Better, 1953. Co-author: A Development Reading Program for Grades 6 thru 9, 1956; Educational Psychology, 1951; Elementary Educational Psychology, 1953; It's Fun to Find Out Series of Film Readers, 1950; Psychology of Play Activities, 1927; Reading and The Educative Process, 1939; Salome Goes to the Fair, 1959; Teaching the People's Language, 1945; You and The Constitution, 1951; Your Child and Radio, TV, Comics and Movies, 1952; Essentials of Educational Psychology, 1949; Developing Your Vocabulary, 1960. Ed.: The Gifted Child; Mental Health in The Classroom; Mental Hygiene in Modern Education; Reading for Interest Series of Readers; Reading Round-Up. Assoc. Ed.: Highlights for Children. Serv. Rec.: U. S. Army, 1942-44. Gen. Int.: In Appreciation for Outstanding Work, Golden Anniversary White House Conference on Children 1959-60; Phi Delta Kappa, For His Distinguished Contributions As Teacher, Researcher and Author in Am. Edn., 1960.

WOELFEL, Julian B. (D.D.S.), Assoc. Prof., Div. of Prosthodontics, Ohio St. Univ. Coll. of Dentistry, Private Practice, 1531 Perry St., Columbus, Ohio. Home Add.: 445 W. 8th Ave., Columbus, Ohio. PROSTHODONTICS AND RELATED FIELDS. b. Baltimore, Md., Dec. 17, 1925. s. Norman and Florence (Carpenter) W. Edn.: D.D.S., Ohio St. Univ. Coll. of Dentistry, 1948. m. Marcile Cottrell, May 1, 1948. c.: Bradford Bruce; Barry Edwin; Jay Bryan. Exp.: Instr., Ohio St. Univ., Coll. of Dentistry, 1948-51; Asst. Prof., ibid., 1951-54, 1956-57; Assoc. Prof., ibid., 1958—. Hon. Pos.: Rsch. Assoc., Am. Dental Assn.; Rsch. Div., Natl. Bur. of Stans. Mem.: Internatl. Coll. of Dentists, Fellow; Fed. Dentaire Internationale; Internatl. Assn. for Dental Rsch.; Am. Prosthodontic Soc.; Acad. of Denture Prosthetics, Assoc. Fellow; Omicron Kappa Upsilon; Columbus Dental Soc.; Am. Dental Assn. Contbr. to: Jour. Pros. Dentistry; Jour. Am. Dental Assn.; Internatl. Dental Jour.; U. S. Armed Forces Med. Jour. Serv. Rec.: U. S. Army Dental Corps, 1954-56. Areas of Rsch.: Determining the Relative Accuracy in Impressions Using Different Materials and Technics; Evaluation of Resin Denture Base Materials; Determining the Constancy of Mandicular Rest Position by Means of Combined Cephalometric X-Rays and Electromyography; The Effect of Occlusal Patterns on Edentulous Individuals; Contour Comparisons of Impressions and Edentulous Ridges; Rheological Study of Plastic Impression Materials.



WOGAN, Gerald Norman (Ph.D.), Asst. Prof., Mass. Inst. of Tech., Cambridge, Mass. Home Add.: 87 Jensen Rd., Watertown 72, Mass. FOOD TOXICOLOGY, PHYSIOLOGY. b. Altoona, Pa., Jan. 11, 1930. s. Thomas B. and Florence (Corl) W. Edn.: B.S., Juniata Coll., 1951; M.S., Univ. of Ill., 1953; Ph.D., ibid., 1957. m. Henrietta Hoenicke, Aug. 24, 1957. c.: Christine F.; Eugene E. Exp.: Instr., Univ. of Ill., Urbana, Ill., 1956-57; Asst. Prof., Rutgers Univ., New Brunswick, N. J., 1957-62; Asst. Prof., Mass. Inst. of Tech., 1962—. Mem.: Soc. of Toxicol.; N. Y. Acad. of Scis.; Sigma Xi; Am. Assn. for the Adv. of Sci. Contbr. to: Am. Rev. of Respiratory Dis.; Proc. Soc. Exptl. Biol. and Med.; Klinische Wochenschft. Areas of Rsch.: Physiologic and Biochemical Responses to Toxic Compounds; Water Electroyte Metabolism; Endocrinology.

WOHLAUER, Gabriele Elisabeth Marianne (Miss), Literature Chemist, Shell Devel. Co., Emeryville 8, Calif. Home Add.: 35 Hemway Terrace, San Francisco 17, Calif. PHYSICAL CHEMISTRY; LINGUISTICS. b. Berlin, Germany, Jan. 3, 1925. d. Hans and Helena (Riedl) W. Edn.: A.B., Hunter Coll., 1952; M.S., Ia. State Coll., 1956. Exp.: Lit. Chemist, Shell Devel. Co., Emeryville, Calif., 1956—. Mem.: Am. Chem. Soc.; Am. Documentation Inst.; Am. Assn. for the Adv. of Sci.; Sigma Delta Epsilon. Contbr. to: Jour. Am. Chem. Soc.; Advances in Chemistry Series. Areas of Rsch.: X-Ray Crystallography; Determination of the Crystal Structure of Palladium Dimethylglyoxime; Documentation.

WOLF, Alfred Abraham (Ph.D.), Dir. of Rsch., Emertron, Inc., A Subsidiary of Emerson Radio and Phonograph Corp., Silver Spring, Md. Home Add.: 8508 16th St., Silver Spring, Md. MATHEMATICAL ASPECTS OF NONLINEAR THEORY AND STOCHASTIC PROCESSES, APPLIED MATHEMATICS, NONLINEAR SYSTEMS THEORY AND ELECTRICAL ENGINEERING. b. Phila., Pa., July 21, 1925. s. Jacob and Anna (Wolf) W. Edn.: B.S., E.E., Drexel Inst. of Tech., 1948; M.S., E.E., Moore Schl. of Elec. Engrng., Univ. of Pa., 1954; Ph.D., Univ. of Pa., 1958. m. Enid Gordon, Nov. 24, 1957. c.: Marcus Meir; Laurence Jonathan. Exp.: Hd. of Analysis, Anti-Submarine Warfare Div., A.E.E.L., Naval Air Develop. Center, Johnsville, 1949-54; Consultant, Philco Corp., Phila., Pa., 1950-51; Asst. Prof., Moore Schl. of Elec. Engrng., Univ. of Pa., 1954-59; Tech. Asst. to Vice-Pres. and Gen. Mgr., Elec. Div., Stromberg Carlson Co., Div. of Gen. Dynamics Corp., N. Y., 1959-61; Dir. of Rsch., Emertron, Inc., Silver Spring, Md., 1961—. Hon. Pos.: Am. Scientific Repr. to NATO, 1950; Mem., Feedback Control Comm., A.I.E.E.; Mem. of Exec. Comm. and Secy. of Professional Group on Automatic Controls, Phila. Sect., I.R.E.; Chmn., Marine Scis. Session, Fall Meeting of Instrument Soc. of Am., Los Angeles, 1961; Asst. Secy., 6th Milit. Electronics Convention, I.R.E., 1962. Mem.: Inst. of Radio Engrs.; Am. Inst. of Elec. Engrs.; Sigma Xi; R.E.S.A.; and others. Contbrng. Author: Vol. 15 and Vol. 16, Natl. Electronics Conf., 1959, 1960. Contbr. to: Proc., Inst. of Radio Engrs.; Trans., Am. Inst. of Elec. Engrs.; Jour. of Speech Pathol. and Therapy; Proc., Natl. Electronics Conf.; Records of Am. Speech and Hearing Assn.; Records of Eleventh Congress of Assn. Logopedics and Phoniatrics; Jour. Franklin Inst. Serv. Rec.: U. S. Army, W.W. II. Gen. Int.: Developed first consistent mathematical theory for the analysis of a certain class of nonlinear systems for both deterministic and stochastic processes, author of 40 papers on this subject. Areas of Rsch.: Nonlinear differential equations, Nonlinear systems, Stochastic Processes, Statistical Theory, Systems Engrng., Applied Mathematics and Electrical Engrng. Speech Theory.

WOIDICH, Francis de Sales (M.D.), Dir., The Wash. Inst. for Biophys. Rsch., 1735 New Hampshire Ave., N.W., Wash. 9, D. C. Home Add.: 1735 New Hampshire Ave., N.W., Wash. 9, D. C. BIOPHYSICS; PHYSIOLOGY. b. Battle Creek, Mich., March 6, 1925. s. Francis de Sales and Emily Barbara (Zelenka) W. Edn.: B.S., Harvard Coll., 1945; M.D., George Wash. Univ. Schl. of Med., 1952. Exp.: Rsch. Fellow, Geo. Wash. Univ. Schl. Med., Wash., D. C., 1953-54; Rsch. Assoc., ibid., 1954-59; Dir., The Wash. Inst. for Biophys. Rsch., 1959—. Mem.: The Biophys. Soc.; N. Y. Acad. of Scis.; The Am. Assn. for the Adv. of Sci. Serv. Rec.: U. S. Naval Reserve, 1945-47. Areas of Rsch.: Effects of Narrow-Band Electromagnetic and Sonic Fields on Neuro-Endocrine Function and Tumor Growth in Mammals; Sensory-Autonomic and Sensory-Endocrine Responses.

WOLF, Edna (Miss), Chf. Physical Therapist, St. Vincent's Hosp., 7th Ave. and W. 11th St., N. Y. C., N. Y. Home Add.: 191 Cathedral Ave., Hempstead, N. Y. PHYSICAL THERAPY; MEDICAL ELECTRONICS. b. Mineola, N. Y., Oct. 13, 1929. d. Harry and Bessie (Finkelstein) W. Edn.: B.S., Ithaca Coll., 1952; Cert. in Physical Therapy, N. Y. Univ., 1956; M.A., ibid., 1956. Exp.: Staff Physical Therapist, N. Y. Hosp., 1952-53; Staff Physical Therapist, Bellevue Hosp., 1953-56; Chf. Physical Therapist, Beekman Downtown Hosp., N. Y. C., 1956-58; Chf. Physical Therapist, St. Vincent's Hosp., 1958—; Tchng. Asst., N. Y. Univ., 1958—. Hon. Pos.: Mem. of Comm. on Examinations, Am. Physical Therapy Assn. Mem.: Am. Assn. Adv. Sci.; Am. Physical Therapy Assn.; Inst. of Radio Engrs.; Pi Theta Phi. Contbr. to: Jour. of Am. Physical Therapy Assn. Areas of Rsch.: Electrotherapy; Medical Electronics.

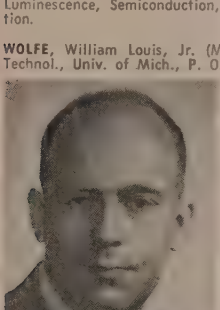
WOLF, Frank James (Ph.D.), Asst. Dir. Microbiol., Merck, Sharp and Dohme Rsch. Labs., Rahway, N. J. Home Add.: 38 Genesee Trail, Westfield, N. J. ORGANIC CHEMISTRY; NATURAL PRODUCTS ISOLATION. b. Xenia, Ohio, Nov. 7, 1916. s. Frank A. and Helen S. (Hollingshead) W. Edn.: A.B., Miami Univ., 1938; Ph.D., Univ. of Ill., 1942. m. Helen Sellmyer, Feb. 5, 1942. c.: Judith Anne; Frank Russell; Barbara Jane. Exp.: Res. Chemist, 1942-48, synthesis of organic compounds, sulfonamides and heterocycles, Antibiotic Isolation, 1948-53, Mgr. Natl. Prod. Isol., 1953-59; Asst. Dir. Microbiol. Antibiotics and related products, 1959. Mem.: Am. Chem. Soc.; Am. Inst. Biol. Scis.; A.A.A.S.; Phi Beta Kappa; Phi Sigma; Phi Lambda Upsilon; Alpha Chi Sigma. Contbr. to: Jour. Am. Chem. Soc.; Anti. and Chemother.; Anti. Ann. Areas of Rsch.: Natural Products—Isolation and Purification, Ion Exchange Processes.

WOLF, George A., Jr. (M.D.), Exec. Dir., Tufts-New England Med. Ctr., Vice Pres. for Med. and Dental Affairs, Tufts Univ., 37 Bennet St., Boston 11, Mass. Home Add.: 24 Hidden Rd., Weston, Mass. INTERNAL MEDICINE. b. E. Orange, N. J., Apr. 20, 1914. s. George Anton, Sr. and Jane (Devine) W. Edn.: B.S., N. Y. Univ. Hgts. Coll., 1936; M.D., Cornell Univ. Med. Coll., 1941. m. Marguerite Hurrey, Aug. 2, 1939. c.: Patricia; Deborah. Exp.: Intern, Med., N. Y. Hosp., N. Y., 1941-42; Asst. Res. in Med., N. Y. and Assn. in Med., Cornell Univ. Med. Coll., 1942-43; Res. Phys., N. Y. Hosp., N. Y., 1943-44; Instr. in Med., Cornell Univ., N. Y., 1944; Asst. Prof. Clin. Med., ibid., 1949-52; Asst. Dir., N. Y. Hosp., 1950-52; Dean and Prof. of Clin. Med., Univ. of Vt. Coll. of Med., Burlington, Vt., 1952-61; Vice Pres. for Med. Affairs and Exec. Dir., Tufts-New

England Med. Ctr., 1961—. Hon. Pos.: Exec. Coun., Assn. of Am. Med. Colls.; Natl. Advisory Coun. on Health Rsch. Facilities, U. S. Pub. Health Serv.; Advisory Comm., Natl. Disease and Therap. Index. Mem.: Phi Beta Kappa; Alpha Omega Alpha; Am. Assn. for the Adv. of Sci.; Sigma Xi; Harvey Soc.; Am. Bd. of Internal Med.; Fellow, Am. Coll. of Phys. Contbr. to: Jour. Comp. Neurol.; Am. Jour. Physiol.; Anat. Rec.; An. Int. Med.; Am. Rev. Tuberc.; Jour. Am. Med. Assn.; Bull. N. Y. Acad. of Med.; Am. Jour. Nursing; Penn. State Med. Jour.; W. Va. State Med. Jour.; Jour. Med. Edn.; Cecil's Med. Areas of Rsch.: Cardiovascular Physiol. and Med. Edn.

WOLFF, Gunther Arthur (Sc.D.), Sect. Head, Solid State Materials Rsch., The Harshaw Chem. Co., Cleveland, Ohio. Home Add.: 4944 Glenlyn Rd., Cleveland 24, Ohio. SOLID STATE PHYSICS AND CHEMISTRY; EMPHASIS ON CRYSTALLOGRAPHIC ASPECTS, SEMICONDUCTORS AND PHOSPHORS. b. Essen, Rheinland, Germany, Mar. 31, 1918. s. Joseph and Anna (Breidecker) W. Edn.: B.S., Berlin Univ., 1944; M.S., ibid., 1945; Sc.D., Tech. Univ. of Berlin, 1948. m. Gertrude Stolte, Feb. 27, 1945. c.: Christiana; Francis. Exp.: Rsch. Assoc., then Deputy Chief, Crystal Kinetics Dept., Fritz-Haber Inst., Berlin-Dahlem, Germany, 1944-53; Consultant, Res. Team Leader, U. S. Army Signal Res. and Dev. Labs., Ft. Monmouth, N. J., 1953-60; Sect. Head, Materials Rsch., The Harshaw Chem. Co., Cleveland, Ohio, 1960—. Mem.: Am. Phys. Soc.; The Electrochem. Soc.; Am. Chem. Soc.; Am. Crystallographic Assn.; Am. Geophys. Union; Am. Mineral. Soc. Contbr. to: Z. Electrochem.; Z. Naturf.; Z. phys. Chem., Chem. Berichte; Jour. Electrochem. Soc.; Proc. on the Reactivity of Solids; Research; Am. Mineral.; Phys. Rev.; Internatl. Colloq. on Semiconductors and Phosphors; Acta Cryst.; Discussion Faraday Soc.; Appl. Spectroscopy; Z. Krist.; Proc. on the Physics of Cloud and Precipitation Particles; U. S. Patents. Areas of Rsch.: Crystal Growth, Crystal Kinetics, Luminescence, Semiconduction, Materials Preparation and Purification.

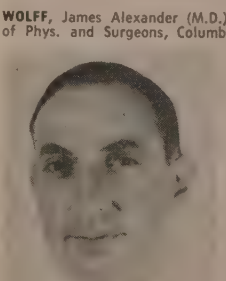
WOLFE, William Louis, Jr. (Mr.), Rsch. Engr., Inst. of Sci. and Technol., Univ. of Mich., P. O. Box 618, Ann Arbor, Mich. Home Add.: 1717 Collegewood Dr., Ypsilanti, Mich. OPTICS AND INFRARED TECHNOLOGY. b. Yonkers, N. Y., Apr. 5, 1931. s. William Louis, Sr. and Louise (Becker) W. Edn.: B.S., Bucknell Univ., 1953; M.S., Univ. of Mich., 1956. m. Mary Lou Bongort, 1955. c.: Carol Anne; Barbara Leatha. Exp.: Asst. Project Engr., Sperry Gyroscope Co., Great Neck, N. Y., 1953; Rsch. Asst. to Rsch. Engr., Univ. of Mich., 1953—. Hon. Pos.: Adolph Lomb Comm. of the Optical Soc. of Am.; Editor and Mem. Exec. Comm., Procs. of the Infrared Information Symposia. Mem.: Optical Soc. of Am.; Univ. of Mich. Sci. Club; Phi Beta Kappa; Sigma Xi; Omicron Delta Kappa; Sigma Pi Sigma; Pi Mu Epsilon; Phi Eta Sigma; Tau Kappa Epsilon. Co-Author: Fundamentals of Infrared Technology, 1962. Contbr. to: Jour. of Optical Soc. of Am.; App. Optics; Am. Documentation; ONR Rsch. Revs.; Infrared Physics. Areas of Rsch.: Properties of Infrared Optical Materials, Optical Design; Physical Optics; Communication Theory Applied to Optics.



WOLFF, Ivan A. (Ph.D.), Chief, Indl. Corps Lab., Northern Utiliz Rsch. and Devel. Div., U. S. Dept. of Agric., 1815 N. University St., Peoria, Ill. Home Add.: 1424 W. Margaret, Peoria, Ill. ORGANIC CHEMISTRY; CHEMISTRY OF NATURAL PLANT PRODUCTS. b. Louisville, Ky., Feb. 10, 1917. s. Harry J. and Hermine (Wolff) W. (both dec.). Edn.: A.B., Univ. of Louisville, 1937; M.A., Univ. of Wis., 1938; Ph.D., ibid., 1940. m. Mary Strawitz, 1941. c.: Martin; Ronald; Harold; James. Exp.: Asst. Chem., N. Utiliz. Rsch. and Devel. Div., Agric. Rsch. Serv., U. S. Dept. Agric., Peoria, Ill., 1941-42; Assoc. Chem., ibid., 1943-46; Chem., ibid., 1946-48; Group Leader, ibid., 1949-58; Lab. Chief, ibid., 1958—. Hon. Pos.: Coun. Mem., Econ. Botany Soc. Mem.: Am. Chemical Soc. Contbrng. Author: Yearbook of Agriculture, 1950-51 and Centennial Yearbook, 1962; The Chemistry and Technology of Cereals as Food and Feed, 1959; Germ Plasm Resources, 1961. Contbr. to: Jour. of Am. Chemical Soc.; Jour. of Am. Oil Chem. Soc.; Jour. of Organic Chem.; TAPPI; Jour. of Agricultural Food Chem.; Chemurgic Dig.; Cereal Chem.; Ind. Eng. Chem. Gen. Int.: U.S.D.A. Superior Serv. Award, 1957; Mem. of Tech. Study group which toured Soviet Union, 1958. Areas of Rsch.: Costituents of Agricultural Crops of the Northern Region; Led to Production of Cellophane-like Films from Special Starches; New Information on Properties and Reactions of Dialdehyde Starch, A Polymer Now Being Made Commercially Because of Its Industrial Interest; Development of Numerous Chemical Derivatives from Cereal Grains That Hold Promise for Future Utility; basic research on chemical composition of uncultivated plants to discover and develop new crops for the United States.

WOLFF, Frederick W. (M.D.), Asst. Prof. of Med., Sta. 915, Johns Hopkins Hosp., Baltimore 5, Md. CLINICAL PHARMACOLOGY. b. Berlin, Germany, Aug. 21, 1920. s. Dr. Bruno and Elisabeth (Landau) W. Edn.: M.B., B.S., Durham Univ., England, 1946; M.D., ibid., 1957. m. Catherine Keenan, 1950. c.: Susan; Peter; Catherine F. Exp.: Internship, Royal Victoria Infirmary, Newcastle-on-Tyne, 1946-47; Registrar in Endocrinology, Whittington Hosp., London, England, 1952-54; Clinical Pharmacologist, Wellcome Rsch. Inst., ibid., 1955-58; Asst. Prof. of Med., Johns Hopkins Hosp., Baltimore, Md., 1958—. Mem.: British Pharmacol. Soc.; Royal Soc. of Med.; Am. Diabetes Assn.; N. Y. Acad. of Scis. Author: The Mode of Action of Insulin, Oxford, 1960. Contbr. to: The Lancet; British Med. Jour.; Diabetes; Jour. of Chronic Diseases; Postgrad. Med. Jour. Serv. Rec.: Royal Air Force, 1950-52. Areas of Rsch.: Transfer of Therapeutic Agents from Laboratory to Man. Design and Assessment of Clinical Trials.

WOLFF, James Alexander (M.D.), Assoc. Prof. of Clin. Peds., Coll. of Phys. and Surgeons, Columbia Univ., N. Y. City, N. Y. Home Add.: 4439 Waldo Ave., N. Y. City 71, N. Y. PEDIATRIC HEMATOLOGY AND PEDIATRICS. b. N. Y. City, N. Y., June 19, 1914. s. William F. and Blanche (Reitlinger) W. Edn.: A.B., Harvard Coll., 1935; M.D., N. Y. Univ. Coll. of Med., 1940. m. Janet Loeb, June 24, 1946. c.: James Alexander, Jr.; John Kendall; Barbara Ann; Timothy Grant. Exp.: Asst. Prof. of Peds., Coll. of Phys. and Surgeons, Columbia Univ., 1953-58; Assoc. Prof. of Clin. Peds., ibid., 1958—; Assoc. Attending, Ped., Babies Hosp., Columbia-Presby. Med. Ctr., ibid., 1958—. Mem.: Chmn., Program Comm., N. Y. Soc. for Study of Blood, 1961-62; Consultant Pediatrician, Francis Delafield Hosp., St. Barnabas Hosp., Northern Westchester Hosp., and Englewood Hosp., N. J., 1951—; Med. Advisory Comm., N. Y. Chap. of Nemophilia Found., Cooleys Anemia and Blood Found. Mem.: Am. Bd. of Peds.; Soc. for Ped. Rsch.; N. Y. Soc. for the Study of Blood; N. Y. Acad. of Med.; N. Y. Acad. of Scis. Contbrng. Author: Holt Pediatrics, 1953, 1962. Contbr. to: Am. Jour. of Diseases of Children; Jour. of Clin. Invest.; Blood, The Jour. of Hematol. Serv. Rec.: U. S. Army, 1942-45. Areas of Rsch.: Pediatric Hematology.



WOLFF, Kurt Julius (M.D.), Assoc. Chf. of Staff, Edn. and Rsch., Vet. Admin. Hosp., Coatesville, Pa. PSYCHIATRY. b. M. Friedland, Germany, July 17, 1907. s. Oscar and Flora (Machol) W. Edn.: M.D., Frederick Williams Univ., Berlin, Germany, 1932. Hon. Degrs.: Assoc. in Psychiatry, The Univ. of Pa. Med. Schl., 1959. m. Maria De Capitani, May 8, 1937. Exp.: Dir., Geriatric Treatment and Rsch. Unit, Osawatomie, Kans., 1957-58; Clin. Dir., Galesburg Sta. Rsch. Hosp., Galesburg, Ill., 1958-59; Assoc. Chf. of Staff, Edn. and Rsch., V.A. Hosp., Coatesville, Pa., 1959—. Hon. Pos.: Assoc. in Psychiatry, The Univ. of Pa., Med. Schl.; Mem., Comm. on Aging the Am. Psychiatric Assn., 1962. Mem.: Am. Geriatrics Soc., Fellow; Gerontol. Soc., Inc., Fellow; A.M.A.; Am. Psychiatric Assn.; A.A.A.S.; The Menninger Schl. of Psychiatry; Am. Soc. of Group Psychotherapy and Psychodrama. Author: Terapia Vitalistico-Costitutionale, Vannini, Brescia, 1936; The Biological, Sociological and Psychological Aspects of Aging, 1959; Geriatric Psychiatry, 1962. Contbr. to: Jour. of Am. Geriatrics Soc.; Geriatrics; Mental Hosps.; Mental Hyg.; The Internatl. Jour. of Soc. Psychiatry. Areas of Rsch.: Geriatrics; Psychiatry.

WOLFF, Jesse (O.D.), Optometrist, 205 Rookery Bldg., Spokane, Wash. Home Add.: South 2623 Arthur St., Spokane, Wash. OPTOMETRY. b. Los Angeles, Calif., Apr. 1, 1888. s. Siegfried and Bertha (Jacobs) W. Edn.: O.D., Phila. Coll. of Optometry, 1912. m. Jennie Edith Lapin, June 10, 1913. c.: Lionel; Erma; Alvin. Exp.: Optometrist, Spokane, Wash. Mem.: Am. Acad. of Optometry; Wash. Inst. of Med.; Lions; Chamber of Commerce. Contbr. to: Optometric Weekly; Jour. of the Am. Acad. of Optometry; Archives of Optometry. Areas of Rsch.: Field Testing, Optometric; Accommodation, Convergence.

WOLFF, Richard Charles (M.D.), Chief Clinical Research Lab., U.S.A.F. Hosp., Lackland, Lackland Air Force Base, Tex. Home Add.: 120 E. Perimeter Dr., San Antonio 27, Tex. MEDICINE—ANESTHESIOLOGY; PHYSIOLOGY; METEROLOGY. b. Caldwell, N. J., Jan. 21, 1924. s. Rudolph Erich and Mary Kathryn (Dietz) W. Edn.: A.B., Middlebury Coll., 1948; M.A., Boston Univ., 1949; M.D., Univ. of Vt., 1953. m. Sybil Burnham, Sept. 2, 1950. c.: Eric Charles; Richard Dane. Exp.: Intern, Syracuse Univ. Hosp., Syracuse, N. Y., 1953-54; Res. Anes., Hosp. Univ. Pa., Phila., Pa., 1954-56; Tchng. Fellow, Hosp. Univ. Pa., ibid., 1956-57; Chief Anesthesiol., U.S.A.F. Hosp., Clark, Philippine Islands, 1958-60; Chief Anes., 809th Med. Group (S.A.C.), MacDill AFB, Fla., 1960-61; Asst. Chief Anes., U.S.A.F. Hosp., Lackland, Lackland AFB, Tex., 1961-62; Chief, Clinical Research Lab., ibid., 1961—. Hon. Pos.: Chmn. Edn. Comm. for Res. and Interns U.S.A.F. Hosp., Clark; Instr. in Med., Univ. of Santo Tomas, Manila, Philippine Island. Mem.: Diplomate of the Am. Bd. of Anesthesiols.; Fellow, Am. Coll. of Anesthesiols.; Diplomate of the Am. Bd. of Med. Exams.; Am. Med. Assn.; Tex. Soc. of Anesthesiologists; Alpha Chi Sigma; Alpha Sigma Psi; Nu Sigma Nu; Sigma Xi; Comm. Cub Scout Pack. Contbr. to: Fed. Procs.; Am. Jour. of Physiol.; Current Researches in Anesthesia and Analgesia. Serv. Rec.: U. S. Army, 1942-55; U.S.A.F., 1955—. Areas of Rsch.: Research in Physiology and Anesthesiology.

WOLFLE, Dael (Lee) (Ph.D.), Exec. Officer, Am. Assn. for the Advancement of Science, 1515 Mass. Ave., N.W., Wash. 5, D. C. Home Add.: 2801 Rittenhouse St., N.W., Wash. 15, D. C. PSYCHOLOGY. b. Puyallup, Wash., March 5, 1906. s. David H. and Elizabeth (Pauly) W. Edn.: B.S., Univ. of Wash., 1927; M.A., ibid., 1928; Ph.D., Ohio State Univ., 1931. Hon. Deg.: D.Sc., Drexel Inst. of Tech., 1956; Ohio State Univ., 1957; Western Mich. Univ., 1960. m. Helen Morrill, Dec. 28, 1929. c.: Janet Helen; Lee Morrill; John Morrill. Exp.: Instr. in Psychol., Ohio State Univ., 1929-32; Prof. of Psychol., Univ. of Miss., 1932-36; Examiner in Biol. Scis., Asst. and Assoc. Prof., Univ. of Chicago, 1936-45; Exec. Secy., Amer. Psychol. Assn., 1946-50; Dir., Comm. on Human Resources & Advanced Trng., 1950-54; Exec. Officer, Amer. Assn. for the Advancement of Sci., 1954—. Mem.: Sigma Xi; A.A.U.P.; A.A.A.S.; Amer. Psychol. Assn.; Psychometric Soc. Author: Factor Analysis to 1940, 1941; America's Resources of Specialized Talent, 1954; Science and Public Policy, 1959. Editor: Symposium on Basic Research, 1959. Areas of Rsch.: Scientific and specialized manpower.

WOLFSON, Kurt (Ph.D.), Vice Pres., Dir. of Rsch., Anken Chem. and Film Corp., Hix Ave., Newton, N. J. Home Add.: 37 Foster St., Newton, N. J. PHOTOGRAPHIC CHEMISTRY; GRAPHIC ARTS, ESPECIALLY ROTOGRAVURE AND ORGANIC AND COLLOID CHEMISTRY. b. Germany, June 29, 1898. s. Arno and Margaret (Eisenstaedt) W. Edn.: B.S., Univ. of Munich, 1921; M.S., Univ. of Koenigsburg, 1922; Ph.D., Univ. of Berlin, 1925. m. Kate Lasch, May 15, 1924. c.: Marion; Hesse. Exp.: Rsch. Chem., Joachim Wiernick Co., Germany, 1925-26; Plant Supt., Rotophot, Inc., Berlin, Germany, 1926-30; Rsch. Chem., Mimosa, Inc., Dresden, Germany, 1930-33; Tech. Dir., Jour. La Meuse Liege, Belgium, 1933-35; Consult. Chem., Tensi Sa Milano Corp., Italy, 1935-36; Tech. Dir., Rotogravure Dept., Brown and Bigelow, St. Paul, Minn., 1936-39; Vice Pres., Dir. of Rsch. and Devel. and Mem. Bd., Anken Chem. and Film Corp., Newton, N. J., 1940—; Consult., Tiefdruck Syndicate, Germany, 1926-30; Consult., Standard Process Corp., Ill., 1939-50. Mem.: Am. Chem. Soc., S.P.S.E.; Am. Assn. for Adv. of Sci.; S.R.E. Serv. Rec.: German Army, 1916-18. Areas of Rsch.: Photographic Chemistry; Graphic Arts, especially Rotogravure and Organic and Colloid Chemistry.

WOLFSON, Robert G. (Ed.D.), Exec. Vice Pres., Dir. of Rsch. and Devel., Goldberg Instruments, Ltd., Tel-Aviv, New Orleans, New York. Home Add.: 142-20 84th Dr., Jamaica 35, N. Y. CORPORATION COUNSELING, RESEARCH AND DEVELOPMENT MANAGEMENT. b. Brooklyn, N. Y., July 11, 1926. s. Joseph and Bertha (Diamond) W. Edn.: B.S., N. Y. Univ., 1950; M.A., Ariz. St. Coll., 1957; Ed.D., Ariz. St. Univ., 1960. m. Anne Beanstock, Apr. 22, 1948. c.: Thea Leslie. Exp.: Chief of Product Devel., Motorola, SPD, Inc., Phoenix, Ariz., 1955-58; Lectr., Ariz. St. Univ., 1958-60; Vice Pres. and Exec. Dir., Adelphia Rsch. Ctr., Mineola, N. Y., 1960-61; Exec. Vice Pres. and Dir. of Rsch. and Devel., Goldberg Instruments, Ltd., Tel-Aviv, New Orleans, New York, 1961—. Hon. Pos.: Adv., Mayors and Govnrs. Employ the Handicapped Comm.; Chmn., Rehabilitation Inst.; Adv., Inter Profl. Group Health and Welfare Coun. of Nassau Co. Mem.: A.A.A.S.; Natl. Vocl. Guid. Assn.; Am. Personnel and Guid. Assn.; Am. Soc. Train. Direct.; Natl. Rehab. Assn.; Char. Mem., Ariz. Acad. Sci.; Phi Delta Kappa; Psi Chi. Author: The Effectiveness of a Medical Control, Work Training, Employment, and Placement Program for Epileptic Adults, 1960. Contbr. to: Rsch. and Devel.; Jour. of Am. Soc. of Training Dirs.; Voc. Guid. Qtly.; Ariz. Days and Ways; Edn. Dig.; SRVCTA Jour. Serv. Rec.: U.S.N.R., 1944-46; U.S.N. Rsch. Res., 1946—. Gen. Int.: Creative Arts Award, 1951, 1957; Cert. of Achievement, Rehabilitation, 1958, 1959, 1960. Areas of Rsch.: Industrial Organization; Industrial Management; Industrial Psychology; Industrial Counseling.

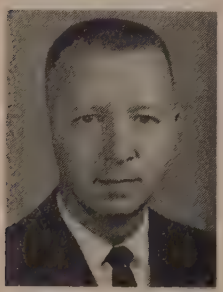
WOLIN, Samuel (Mr.), Sr. Design Staff Engr., Vertol Div. of Boeing Co., Morton, Pa. Home Add.: B-3 Broomall Terrace, Lawrence and Langford Roads, Broomall, Pa. ELECTRONICS AND MATHEMATICS. b. New York City, Feb. 12, 1909. s. Eli and Dina (Levine) W. Edn.: B.S., Coll. of the City of N. Y., 1930; M.S., ibid., 1931; A.M., Columbia Univ., 1941. m. Dorothy Hirsch, Oct. 25, 1942. c.: Eleanor Iris and Karen Barbara. Exp.: Instr. of Math. and Sci., H. S., Technical Schls., Vocational Schls., N. Y. City, 1930-42; Instr. of Radio Engrng., U. S. Army Air Force, Yale Univ., Scott Field, Ill., 1942-44; Instr. of Electrical Communications, Mass. Inst. of Technol., 1944-45; Radio Engr., Raytheon Mfg. Co., Waltham, Mass., 1945; Radio Engr., R.C.A. Victor Div., Camden, N. J., 1945-46; Electronic Rsch. Engr., Bartol Rsch. Fdn., Franklin Inst., Swarthmore, Pa., 1946-47; Electronic Engr. and Electronic Scient., U.S.N. Air Devel. Ctr., A.E.E.L., Johnsville, Pa. and Philadelphia, Pa., 1947-57; Sr. Electronic Engr., McDonnell Aircraft Corp., Missile Engrng. Div., St. Louis, Mo., 1957-60; Sr. Electronic Engr., Lockheed Electronics Co., 1960-61; Sr. Design Staff Engr., Vertol Div. of Boeing Co., Rsch., and Development Dept., Morton, Pa., 1961—. Mem.: Phi Beta Kappa; Inst. of Radio Engrs.; A.A.A.S.; Soc. of Indutsrial and Applied Math. Contbr. to: Jour. of the Optical Soc. of Am.; Applications and Industry, A.I.E.E. Areas of Rsch.: Electronic Systems Engrng. for Space Vehicles, Guided Missiles, Aircraft and VTOL; Applied Electromagnetic Theory (Antennas, Radomes, Radio Propagation, Optics); Applied Math.

WOLINSKY, Joseph (Ph.D.), Assoc. Prof., Purdue Univ., Lafayette, Ind. Home Add.: 823 Elmwood Dr., West Lafayette, Ind. ORGANIC CHEMISTRY. b. Chicago, Ill., Dec. 3, 1930. s. Gershon and Rose (Tefsky) W. Edn.: B.S., Univ. of Ill., 1952; Ph.D., Cornell Univ., 1956. m. Shelia L. Rubin, July 15, 1951. c.: Debra Sue; Kharry Beth; Rebecca Ellen; Michael R. Exp.: Proj. Assoc., Univ. of Wis., 1956-58; Asst. Prof., Purdue Univ., 1958-61; Assoc. Prof., ibid., 1962—. Mem.: Am. Chem. Soc.; Alpha Chi Sigma. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Org. Chem.; Chem. and Ind.; Tetrahedron. Areas of Rsch.: The Chemistry of Terpenes, Alkaloids and Related Natural Products.

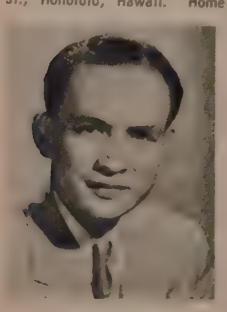
WOLKEN, Jerome Jay (Ph.D.), Hd. Biophysical Rsch. Laboratory, Eye and Ear Hosp., Univ. of Pittsburgh Medical Center, Pittsburgh 13, Pa. Home Add.: 5817 Elmer St., Pittsburgh 32, Pa. MEDICAL RESEARCH-BIOPHYSICS. b. Pittsburgh, Pa., Mar. 28, 1917. s. Abraham I. and Dina (Lunda) W. Edn.: B.S., Univ. of Pittsburgh, 1946; M.S., Univ. of Pittsburgh, 1948; Ph.D., ibid., 1948. m. 1st, Dorothy Olive Mallinger, June 21, 1945, (dec.), 2nd Tobey J. Holstein, Jan. 26, 1956. c.: Ann Alex.; A. Jonathan; H. Johanna; Erik A. Exp.: Rsch. Asst., Westinghouse Electric Co., Pittsburgh, Pa., 1940-41; Rsch. Fellow, Mellon Inst., 1943-47; Instr., Univ. of Pittsburgh, 1947-49; Fellow, Rockefeller Inst., 1950-52; Assoc. Prof., Univ. of Pittsburgh, Medicine Biochemistry, Biophysics, ibid., 1953-60; Hd. Biophysical Rsch. Laboratory, Eye and Ear Hosp., Univ. of Pittsburgh Medical Center, 1953—; Rsch. Prof. in Physiol., Univ. of Pittsburgh Schl. of Med., 1961—. Hon. Pos.: Fellow, U. S. Public Health Service and Atomic Energy Commn.; Fellow of the Natl. Rsch. Coun., Am. Cancer Soc.; Natl. Coun. to Combat Blindness. Mem.: Am. Chem. Soc.; Natl. Biophysics Soc.; Optical Soc.; Soc. of General Physiology; Soc. for Rsch. in Ophthalmology; Soc. of Protozoology; Am. Assn. for the Advancement of Sci.; Sigma Xi; Phi Sigma. Contbr. to: Jour. Gen. Phys.; Jour. Protozool.; Nature; Exptl. Cell Biol.; Jour. Cell Comp. Physiol.; Trans. N. Y. Acad. Sci.; Brookhaven Symposia; Jour. Exptl. Zool.; Jour. Biophys. Biochem. Cytol.; Biochim. et Biophys. Acta; Sci.; Ann. N. Y. Acad. Sci.; Am. Scientist; Ann. Rev. Plant Physiol.; Euglena. Serv. Rec.: U. S. Navy, 1941-43. Gen. Int.: Career Award, U.S.P.H.S., 1962. Areas of Rsch.: Photobiology, Photosynthesis and Vision.

WOLKISER, Arthur M(artin) (Ph.D.), Consulting Economist, Suite 815, 26 Broadway, N. Y. 4, N. Y. Home Add.: 225 East 54th St., New York 22, N. Y. FINANCE, BANKING, AND INVESTMENTS. b. Austria, Sept. 21, 1892. s. Norbert and Malwina (Maschler) W. Edn.: Ph.D., Univ. of Berlin, 1911. Exp.: Mem. Faculty, Banking Dept., Columbia, 1931-38; Dir. of Rsch., Affiliated Fund, N. Y., N. Y., 1937-42; Consulting Economist, New York, N. Y., 1942—; U. S. Strategic Bombing Survey, European Theatre of Operations, 1945; Lecturer, Brooklyn Coll., 1946-47; Dir., Affiliated Fund and Associated Investment Funds, 1942-46. Mem.: Am. Econ. Assn.; Am. Finance Assn.; A.A.A.S.; Royal Econ. Soc.; Men's Faculty Club, Columbia Univ.; N. Y. Athletic Club; The West Side Tennis Club. Author: Economic Bases of Wealth and Welfare of New York City, 1943. Contbr. to: Barron's Trusts and Estates; Commercial and Financial Chronicle. Serv. Rec.: European Theatre of Operations, 1945-46. Gen. Int.: Winner of Barron's Open Forum on Best Securities for Recovery or Inflation, 1935-37. Areas of Rsch.: Economic Theory; Stock Market Forecasting; International Economics.

WOMACK, C(harles) Ray (M.D.), Prof. and Chmn., Dept. of Microbiology, Univ. of Tenn., 858 Madison Ave., Memphis 3, Tenn. Home Add.: 2661 Lakecrest Circle, Memphis 27, Tenn. MICROBIOLOGY; INTERNAL MEDICINE (INFECTIOUS DISEASES) b. Cookeville, Tenn., Jan. 28, 1921. s. James Ray and Idah Mai (Frogue) W. Edn.: B.A., Vanderbilt Univ., 1943; M.D., Vanderbilt Univ. Schl. of Medicine, 1945. m. Dorothy L. Gardner, Apr. 2, 1947. c.: Ray Gardner. Exp.: Intern, Medicine, Vanderbilt Univ. Hosp., Nashville, Tenn., 1945-46; Fellow in Psychiatry, Vanderbilt Univ. Schl. of Med., 1948; Asst. Resident Physician, Vanderbilt Univ. Hosp., 1948-49; Rsch. Fellow, Thorndike Memorial Lab., Boston City Hosp., Boston, Mass., 1949-51; Chf. Res. Physician, Vanderbilt Univ. Hosp., 1951-52; Asst. in Med., Vanderbilt Univ., 1948-49; Rsch. Fellow in Med., Harvard Med. Schl., 1949-51; Instr. in Med., Vanderbilt Univ., 1951-52; Instr. in Microbiology, L.S.U., 1952-53; Asst. Visiting Physician, Charity Hosp. of La., New Orleans, La., 1952-53; Visiting Physician, ibid., 1953-60; Asst. Prof. of Microbiology, LSU, 1953-57; Asst. Prof. of Medicine, LSU, 1955-60; Assoc. Prof. of Microbiology,, LSU, 1957-60; Assoc. Bacteriologist, City of Memphis Hosp., 1960-62; Prof. of Microbiology, Univ. of Tenn. Med. Units, 1960-62; Assoc. Prof. of Med., ibid., 1961—; Chmn., Dept. of Microbiol., ibid., 1962—. Mem.: Am. Coll. of Physicians (Fellow); Am. Federation for Clinical Rsch.; A.A.A.S.; Am. Soc. for Experimental Pathology; N. Y. Acad. of Sci.; Tenn. Acad. of Sci.; Am. Acad. of Microbiol., Fellow; Am. Soc. for Microbiol.; The Tissue Culture Assn.; A.A.U.P.; Diplomate, Am. Bd. of Internal Med.; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi; Kappa Alpha; Alpha Kappa Kappa; Reserve Officers Assn. of the U. S. Contbr. to: Jour. of Immunology; Proc. Soc. Exp. Biol. Med.; Jour. of Lab. and Clinical Med.; Am. Jour. of Med. Sci.; Annals of Int. Med.; Arch. of Int. Med.; Am. Jour. of Med.; Sci.; Med. et Hygiene. Serv. Rec.: A.U.S., 1946-47; now Major, M.C., U.S.A.R. Areas of Rsch.: Virology and Virus Diseases; Tissue Culture; Immunology of Viruses; Antibiotic Chemotherapy; Medical Microbiology.



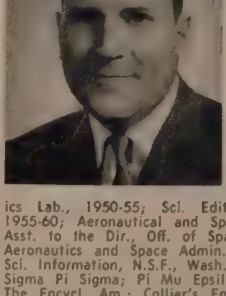
WONG, Robert Tuck (M.D.), Physician and Surgeon, 1147 Union St., Honolulu, Hawaii. Home Add.: 3777 Diamond Hd. Circle, Honolulu, Hawaii. OPHTHALMOLOGY. b. Hilo, Hawaii, June 28, 1911. s. Wong Hing and Ah Tai (Chock) W. Edn.: B.S., Univ. of Hawaii, 1932; M.D., Jefferson Med. Coll., 1936; M.Med. Sci., Univ. of Pa., 1946 in Ophthalmology. m. Harriet Leong, 1934. c.: Stephen; Bradley. Exp.: Intern, Jefferson Hosp., 1936-38; Grad. Study Ophthalmol. Univ. of Pa., 1939-40; Res. Ophthalmologist, Cleveland City Hosp., 1940-41; Visiting Staff Ophthalmologist, Queen's Hosp. and St. Francis Hosp., 1941—, Honolulu, Hawaii; Pres., Am. Coll. of Surgeons, Hawaii Chapt., 1961. Mem. Fellow, Am. Bd. of Ophthalmology; Am. Coll. of Surgeons; Am. Acad. of Ophthalmology and Otolaryngology; Pan Pacific Surgical Assn. Contbr. to: Arch. of Ophthalmology.



WOO, Peter Wing Kee, (Ph.D.), Research Chemist, Parke, Davis and Company, Detroit, Mich. Home Add.: 498 Funston Ave., San Francisco, Calif. ORGANIC CHEMISTRY. b. Canton, China, June 22, 1934. s. Yu Chang and Lim Tsing (Poon) W. Edn.: B.S., Stanford Univ., 1955; Ph.D., Chem., Univ. of Ill., 1958. Exp.: Rsch. Asst., Univ. of Ill., Urbana, Ill., 1955-56; Fellow, ibid., 1956-57; Robert Carr Fellow, ibid., 1957-58; Assoc. Rsch. Chemist, Parke, Davis, and Co., 1958-62; Rsch. Chemist, ibid., 1962—. Mem.: Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi; Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Alpha Chi Sigma. Contbr. to: Jour. of the Am. Chem. Soc.; Tetrahedron Letters. Areas of Rsch.: Chem. (Isolation, Structural and Configurational Determination) of Antibiotics, Carbohydrates, and Aminosugars.

WOOD, David Shotwell (Ph.D.), Prof. Mech. Engrng., Calif. Inst. of Tech., Pasadena, Calif. Home Add.: 590 Elm Ave., Sierra Madre, Calif. MECHANICAL ENGINEERING AND MATERIALS SCIENCE. b. Akron, Ohio, May 21, 1920. s. H. Randolph and Janet (Stevenson) W. Edn.: B.S., Calif. Inst. of Tech., 1941; M.S., ibid., 1946; Ph.D., ibid., 1949. m. Constance L. Simonsen, 1945. c.: Alison J. Exp.: Rsch. Engr., Calif. Inst. of Tech., 1941-44; Staff Engr., Manhatton Dist., U. S. Corp of Engrs., Los Alamos, N. M., 1944-45; Prof., Calif. Inst. of Tech., 1950—. Mem.: Am. Soc. Mech. Engrs.; Am. Soc. for Metals; A.A.A.S.; Am. Soc. for Testing Materials; Tau Beta Pi. Contbr. to: Jour. of Applied Mechanics; Acta Metallurgica; Trans. Am. Soc. for Metals; Proc. Am. Soc. for Testing Materials; Jour. Mech. and Physics of Solids. Areas of Rsch.: Response of Materials to High Speed Deformation, Propagation of Plastic Strain Waves in Solids, Brittle Fracture of Metals, Theory of Dislocations in Crystals.

WOOD, Fergus James (Mr.), Program Dir. for Foreign Sci. Information, Office of Sci. Information Serv., Natl. Sci. Fdtn., Wash. 25, D. C. Home Add.: 10408 Sweetbriar Pkwy., Silver Spring, Md. SCIENTIFIC RESEARCH ANALYSIS. b. London, Ont., Can., May 13, 1917. s. Louis A. and Dora I. (Elson) W. Edn.: A.B., Univ. of Calif., Berkeley, 1938; Univ. of Calif., 1938-39; Yerkes Obs., Univ. of Chicago, 1939-40; Univ. of Mich., 1940-42; Calif. Inst. of Technol., 1946. m. Doris M. Hack, Sept. 14, 1946. c.: Kathryn Celeste; Bonnie Patricia. Exp.: Tchng. Asst., Univ. of Mich., 1940-42; Instr. of Physics and Astronomy, Pasadena City Coll., 1946-48; Instr. of Physics and Astronomy, John Muir Coll., 1948-49; Asst. Prof. of Physics, Univ. of Md., 1949-50; Assoc. Physicist, Johns Hopkins Univ. Applied Physics Lab., 1950-55; Sci. Editor, The Encyclopedia Americana, 1955-60; Aeronautical and Space Rsch. Scientist, and Scientific Asst. to the Dir., Off. of Space Flight Programs, Hdqrs., Natl. Aeronautics and Space Admin., 1960-61; Prog. Dir. for Foreign Sci. Information, N.S.F., Wash., D. C., 1961—. Mem.: A.A.A.S.; Sigma Pi Sigma; Pi Mu Epsilon; Delta Phi Alpha. Contbr. to: The Encycl. Am.; Collier's Encycl; Grolier Encycl. Serv. Rec.: U.S.A.F., 1942-46. Areas of Rsch.: Scientific Information and Rsch. Analysis; Geophysical and Aerospace Rsch.; Wind-profile and Turbulence Studies over Navy Ships at Sea; Science Education, History and Documentation; Documentary Scientific Films.



WOOD, Stephen Lane (Ph.D.), Asst. Prof., Dept. Zoology and Entomol., Brigham Young Univ., Provo, Utah. Home Add.: 745 N. 1000 E., Provo, Utah. SYSTEMATIC ENTOMOLOGY. b. Logan, Utah, July 2, 1924. s. John Karl and Phebe (Ricks) W. Edn.: B.S., Utah Sta. Univ., 1946; M.S., ibid., 1948; Ph.D., Univ. of Kans., 1953. m. Elizabeth Griffin, June 2, 1947. c.: Katherine; John Griffin; Marian. Exp.: Sci. Tchr., Beaver H. Schl., Beaver, Utah, 1948-50; Entomologist, Can. Dept. Agric., Ottawa, Ontario, Can., 1953-56; Asst. Prof., Brigham Young Univ., 1956—. Hon. Pos.: Chmn., Comm. on Common Names of Insects, Entomol. Soc. of Am. Mem.: Entomol. Soc. of Am.; Entomol. Soc. of Kans.; Am. Assn. for the Adv. of Sci.; A.I.B.S.; Phi Beta Kappa. Author: Families Scolytidae and Platypodidae in Insects of Micronesia, 1960. Contbr. to: Univ. Kans. Sci. Bull.; Can. Entomol.; Coleopterists Bull.; Great Basin Nat.; Annals of the Entomol. Soc. of Am.; Jour. of the Entomol. Soc. of Kans. Serv. Rec.: U. S. Army, 1943. Gen. Int.: Internationally Known

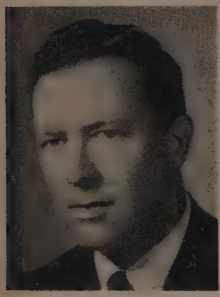
Authority on Bark and Ambrosia Beetles (The Families Scolytidae and Platypodidae of the Order of Coleoptera). Areas of Rsch.: Systematics of Bark and Ambrosia Beetles.

WOOD, John Archibald (M.D.), Instr. in Med., Columbia Univ. Coll. Phys. and Surgs., New York 32, N. Y. Home Add.: 115 Westervelt Ave., Tenafly, N. J. MEDICINE. b. New York, N. Y., May 5, 1922. s. Archibald O. M. (M.D.) and Phebe (Sprague) W. Edn.: A.B., Harvard Coll., 1943; M.D., ibid., Med. Schl., 1946. m. Louise Gaillard, July 3, 1947. c.: Amelia Gaillard; Randolph Faulkner; Charles Macdonald. Exp.: Interne, Presby. Hosp., New York, N. Y., 1946-47; Jr. Asst. Res., ibid., 1949-50; Asst. Res. Cardiol., ibid., 1950-51; Sr. Asst. Res., ibid., 1951-52; Asst. in Med., ibid., 1952-60; Instr. in Med., ibid., 1960—. Mem.: Harvey Soc. of N. Y.; N. Y. Acad. of Scis.; A.A.U.P.; Phi Beta Kappa; Am. Assn. for Adv. of Sci.; Internatl. Cardiovascular Soc. Contbr. to: Circulation; Am. Heart Jour.; N. Eng. Med. Jour. Serv. Rec.: U. S. Army, Med. Corps, 1947-49. Areas of Rsch.: Cardio-Pulmonary Physiology.

WOOD, Walter Frank (Ph.D.), Prin. Operations Analyst, Cornell Aeronautical Lab., Buffalo, N. Y. Home Add.: 4451 Arondale Rd., Williamsville 21, New York. PHYSICAL GEOGRAPHER. b. Red Wing, Minn., Mar. 17, 1914. s. Frank H. and Mary E. (Bolland) W. Edn.: B.S., Wis. State Coll., River Falls, 1940; M.S., Univ. of Wis., 1947; Ph.D., ibid., 1951. m. Elaine Clausen, Dec. 30, 1941. c.: David; Mary; Robert. Exp.: Asst. Prof., State Univ. of Iowa, 1950-55; Branch Chief, Quartermaster R. and E. Command, Natick, Mass., 1955-62; Prin. Operations Analyst, Cornell Aeronautical Lab., Buffalo, N. Y., 1962—. Mem.: Assn. of Am. Geographers; Am. Geophys. Union; Am. Assn. Adv. Sci. Author: Predictive Methods in Topographic Analysis, 1959; A Quantitative System for Classifying Landforms, 1960. Serv. Rec.: U. S. Army Air Force, 1941-46. Areas of Rsch.: Application of probability to the estimation of quantitative characteristics of earth configuration and climatology.

WOOD, William Henry (Mr.), Consultant, Westinghouse Electric Corp., Pittsburgh, Pa. Home Add.: Rt. 1, Box O, Rockbridge, Ohio. CHEMICAL PHYSICS. b. Granby, Mo., Aug. 23, 1905. s. George W. and Frances (Farley) W. Edn.: B.Sc., Univ. of Mo., 1929; M.A., ibid., 1930. m. Lulu M. Hecathorn, Jan. 9, 1932. c.: Patricia; Sandra; Larry; David. Exp.: Rsch. Chemist, Phillips Petro. Co., Bartesville, Okla., 1931-36; Dir. of Rsch., Harris Intertype Corp., Cleveland, Ohio, 1936-56; Consultant, Westinghouse Electric Corp.; Tex. Instruments, Dallas; Internatl. Resistance, Philadelphia; Owens-Ill. Glass., Toledo; Mergenthaler Linotype Co., Brooklyn, 1956—. Mem.: A.A.A.S.; Soc. Mot. Pict. and Tel. Engrs.; Tech. Assn. Graphic Arts; Ohio Acad. of Sci.; Am. Chem. Soc. Contbr. to: TAGA Proc.; Electron Beam Processes. Gen. Int.: Sixty patents or application, U. S. and foreign, in field. Listed in: Am. Men of Sci. Areas of Rsch.: Photographic and photomechanical processes; Electronic glasses; solid state and semi-conductors; molecular electronics.

WOODBURY, Max Atkin (Ph.D.), Rsch. Prof., Rsch. Coordinator, Rsch. Div. Coll. of Engrng., N. Y. Univ., N. Y. 53, N. Y. Home Add.: 3750 Hudson Manor Terr., N. Y. 63, N. Y. MATHEMATICS. b. St. George, Utah, Apr. 30, 1917. s. Angus Munn and Grace (Atkin) W. Edn.: B.S., Univ. of Utah, 1939; M.S., Univ. of Mich., 1940; Ph.D., ibid., 1948. m. Lida Gottsch, 1947. c.: Carol; Ten-Eyck; Christopher; Gregory. Exp.: Instr., Maths., Univ. of Mich., 1947-49; Rsch. Investigator, Princeton Univ., 1950-52; Assoc. Prof., Univ. of Pa., 1953-54; Prin. Investigator, Logistics Rsch. Proj., George Wash. Univ., 1954-56; Rsch. Prof. and Rsch. Coord., N. Y. Univ., 1956—. Hon. Pos.: Mem., Inst. Adv. Study, 1949-50; Mem., Am. Mathl. Soc.; Advry. Comm. on Computers in Rsch. of Natl. Insts. of Health; Guest Investigator, Rockefeller Inst., 1961-62; Vice-Pres., T.I.M.S., 1961-62; Pres., B.I.O., 1961; Coun., Mem., S.I.A.M., 1953-56. Mem.: Am. Stat. Assn.; Am. Meteorol. Soc.; Assn. for Computing Machinery; Biometric Soc.; Bio-Biomed. Information; Processing Org.; Inst. Math. Stat.; Inst. Mgt. Scis.; N. Y. Acad. of Scis.; Operations Rsch. Soc. of Am.; Soc. for Ind. and Appl. Math.; Phi Beta Kappa; Sigma Xi. Contbr. to: Am. Math. Soc.; Annals of Math. Stat.; Behavioral Sci.; British Jour. of Stat. Psychol.; Jour. of Am. Med. Assn.; Psychometrika; Trans. of Am. Math. Soc. Serv. Rec.: U. S. Army Air Force, 1941-46; U. S. Naval Res. (Ret.). Gen. Int.: Consultant Gen. Elect. Co., Systems Devel. Corp.; Frankford Arsenal; National Bureau of Standards; Natl. Sci. Foundation.



WOODHAM, Donald W. (Mr.), Analytical Chemist, Entomol. Rsch. Div., Ga. Coastal Plains Expt. Station, Tifton, Ga. Home Add.: 102 Lewis St., Tifton, Ga. INSECTICIDE RESIDUES RESEARCH. b. Jacksonville, Ala., July 9, 1929. s. L. D. and Ezma (McCaghren) W. Edn.: B.S., Jacksonville Sta. Coll., 1954. m. Nina Hester, Feb. 14, 1954. Exp.: Chem. Aide, Phosphate Devel. Works, Tenn. Valley Authority, Wilson Dam, Ala., 1954-55; Analytical Chemist, ibid., 1955-57; Analytical Chemist, U. S. Dept. of Agric., Entomol. Rsch. Div., Ga. Coastal Plains Expt. Station, 1957—. Mem.: Am. Chem. Soc.; Ga. Sect. A.C.S.; Am. Assn. for the Adv. of Sci.; Entomol. Soc. of Am.; Ga. Sect., E.S.A.; A.I.B.S. Contbr. to: Jour. of Econ. Entomol.; Jour. of Agric. and Food Chem. Serv. Rec.: U. S. Army, 1951-52. Areas of Rsch.: General Analyses of Phosphorous Compounds; Research on Insecticide Residues on Crops, Fruits, Vegetables and Animal Products.

WOODMANSEE, Robert Asbury (Ph.D.), Prof. of Biol., Univ. of Sou. Miss., Hattiesburg, Miss. Home Add.: 817 Quinn St., Hattiesburg, Miss. PLANKTON. b. Cincinnati, Ohio, Mar. 6, 1926. s. Ralph Burdsal and Helen (Asbury) W. Edn.: B.S., Univ. of Miami, 1948; M.S., ibid., 1949; Ph.D., Wes. Res. Univ., 1952. m. Hazel Hudson, Sept., 1949. c.: Brenda; Carla; Donna. Exp.: Oceanogr., U. S. Navy Hydrogr. Off., 1952-54; Prof., Univ. of Sou. Miss., 1954—. Mem.: Ecol. Soc. of Am.; Am. Soc. of Limnol. and Oceanogr.; Assn. of SE Biol.; Beta Beta Beta; Sigma Xi. Contbr. to: Ecol. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Plankton.

WOODS, Farris Hardin (Ph.D.), Chmn., Div. of Math. and Sci., Cent. Methodist Coll., Fayette, Mo. Home Add.: 305 Corprew, Fayette, Mo. VERTEBRATE EMBRYOLOGY. b. Osceola, Mo., July 22, 1898. s. Edward Bell and Mary Eliza (Farris) W. Edn.: A.B., Cent. Coll., 1920; M.A., Univ. of Mo., 1926; Ph.D., ibid., 1929. m. N. Leona Asel, Aug. 15, 1924. Exp.: Instr. to Asst. Prof., Univ. of Mo., 1929-36; Chemist, Socony Vacuum Oil Co., 1938-43; Chemist, H. K. Stahl Co., 1943-50; Production Mgr., ibid., 1950-55; Prof. Biol., Cent. Meth. Coll., 1955—. Mem.: A.A.A.S.; S.A.E.; Am. Inst. Biol. Scis.; A.S.L.E.; Midwest Coll. of Biol. Tchrs.; Sigma Xi; Sigma Epsilon Pi. Co-Author: Laboratory Directions for General Zoology, 1932. Contbr. to: Journal of Morphol.; Wilson Bull. Serv. Rec.: S.A.T.C., 1918. Areas of Rsch.: Reproduction in Mussels; Ornithology; Vertebrate Embryology.

WOODS, Kenneth Brady (Mr.), Head, Schl. of Civil Engineering, Purdue Univ., W. Lafayette, Ind. Home Add.: 902 N. Chauncey Ave., W. Lafayette, Ind. CIVIL ENGINEER, EDUCATOR, CONSULTING ENGINEER. b. Sunnyside, Wash., Aug. 14, 1905. s. Clarence Rockwell and Lucy (Brady) W. Edn.: B.C.E., The Ohio St. Univ., 1932; C.E., ibid., 1937. m. Vivian G. Trautman, Feb. 14, 1930. c.: Ronald Edward; Jerry Lee; Kenneth Norman. Exp.: Instr., part-time, The Ohio State Univ., 1930-33; Asst. Engr. in Charge of Soils work, Ohio St. Dept. of Hwys., Columbus, Ohio, 1933-39; Prof., Hwy. Engr., Assoc. Dir., Joint Hwy. Rsch. Proj., Purdue Univ., 1939-54; Hd., Schl. of Civil Engr., Dir., Joint Hwy. Rsch. Proj., ibid., 1954—. Hon. Pos.: Mem., Exec. Comm., Hwy. Rsch. Bd., 1956; Chmn., Natl. Advry. Comm., A.A.S.H.O. Rd. Test, 1956-62; Pres., Am. Soc. for Testing and Materials, 1958-59; Mem., Bd. of Dirs., ASTM; Mem., Com. on Engr. Edn. Chmn., 1961-62. Mem.: Hwy. Rsch. Bd.; Am. Soc. for Testing and Materials; Am. Concrete Inst.; Assn. of Asphalt Paving Technologists; Natl. Soc. Prof. Engrs.; Am. Rd. Builders Assn.; Am. Soc. Civil Engrs.; Am. Soc. Engr. Edn.; Sigma Xi; Chi Epsilon; Triangle; Tau Beta Pi. Author: Highway Engineering Handbook, 1960. Contbr. to: Am. Soc. For Testing and Materials; Highway Research Bd. of Natl. Rsch. Coun.; Am. Soc. of Civil Engrs. Gen. Int.: Awarded by Hwy. Rsch. Bd., Paper for Outstanding Merit, 1945; and for Outstanding Contribution to Hwy. Rsch., 1949; Ind. Soc. of Profl. Engrs., Ind. Engr. of the Year., 1962; Dist. Alumnus Award, Ohio St. Univ., 1961. Areas of Rsch.: In the General field of materials, especially soils, permafrost, concrete and concrete Aggregates, Asphaltic mixtures.

WOODS, Lloyd L. (Ph.D.), Hd., Dept. of Chem., and Chmn., Div. Natural and Physical Sciences, Tex. Southern Univ., Houston, Tex. ORGANIC CHEMISTRY. b. Iola, Kans., Mar. 2, 1908. s. Arthur G. and Minnie (Montgomery) W. Edn.: A.B., Friends Univ., 1930; M.S., Kans. State, 1934; Ph.D., ibid., 1944. m. Dora Keeton, Aug. 15, 1932. c.: Elaine. Exp.: Prof. and Hd., Dept. of Chem., St. Augustine's Coll., Raleigh, N. C., 1931-38; Prof. of Chem. and Hd. Dept., Tex. Southern Univ., Houston, Tex., 1948—. Mem.: Kans. Acad. Sci.; Tex. Acad. Sci. (Fel'ow); Am. Chem. Soc.; A.A.U.P.; Fellow, Chem. Soc. of London; (Fellow), Am. Inst. of Chemists; Kappa Alpha Psi; Beta Kappa Chi; Phi Lambda Upsilon. Contbr. to: Jour. Chem. Edn.; Jour. Am. Chem. Soc.; Schl. and Soc.; Jour. Org. Chem. Special Int.: Chem. of Pyrones; Chem. of Kojic Acid.

WOODWARD, Carl Samuel (Ed.D.), Chmn. Physics Dept., E. Tenn. Sta. Coll., Johnson City, Tenn. Home Add.: 2839 W. Walnut St., Johnson City, Tenn. PHYSICS. b. Okla. City, Okla., Sept. 17, 1905. s. Charles Fremont and Nellie B. (Whitney) W. Edn.: A.B., Okla. City Univ., 1928; M.S., Univ. of Okla., 1931; Ed.D., Okla. St. Univ., 1962. m. Virginia Mathis, June 8, 1931. c.: Charles Frederick; Martha Nell. Exp.: Engr., Bell Tele. Labs., N. Y. City, 1930-32; Sci. Instr., Seminole H. Schl., Seminole, Okla., 1933-37; Physics Instr., Classen H. Schl., Okla. City, Okla., 1937-41; Assoc. Prof., Central Sta. Coll., Edmond, Okla., 1941-57; Prof. and Chmn. Physics Dept., E. Tenn. Sta. Coll., 1957—. Hon. Pos.: Grad. Magna Cum Laude, Okla. City Univ.; Chmn., Phys. Sci. Sect. of Okla. Acad. of Sci., 1953-54. Mem.: Am. Phys. Soc.; Am. Assn. for the Adv. of Sci.; Southeastern Sect. Am. Phys. Soc.; Am. Assn. of Physics Tchrs.; Tenn. Acad. of Sci.; Kappa Alpha; Sigma Pi Sigma; Pi Kappa Delta. Contbr. to: Phys. Rev.; Procs. of the Okla. Acad. of Sci. Serv. Rec.: Commissioned Instructor, U. S. Naval Academy, 1942-46; Naval Reserve, 1942—. Areas of Rsch.: Photoelectric Effect and Related Investigations.

WOODWARD, Kent Thomas (M.D.), Grad. Schl., Univ. Rochester Schl. of Med. and Dent., Rochester, N. Y. Home Add.: 140 Palo Alto Dr., Rochester 23, N. Y. INTERNAL MEDICINE, NUCLEAR MEDICINE, RADIATION BIOLOGY. b. Cleveland, Ohio, Dec. 11, 1923. s. Stuart H. and Ada (Quirk) W. Edn.: B.S., Clemson A. and M. Coll., 1947; M.D., Med. Coll. of S. C., 1947. m. Mary Kellogg, Dec. 29, 1949. c.: Jan; Kent T., Jr.; Douglas W. Exp.: Intern, Boston City Hosp., 1947-48; Res. in Med., Georgetown Med. Center, Wash., D. C., 1948-49; Res. in Med., Fitzsimons Army Hosp., Denver, Colo., 1949-51; Res. in Med., Walter Reed Army Hosp., 1951-52; Staff Mem., Los Alamos Scientific Lab., N. Mex., 1952-56; Chmn., Dept. Biophysics, Inst. of Rsch., Walter Reed Army Med. Ctr., 1956-60; Grad. Schl., Univ. of Rochester Schl. of Med. and Dent., 1960—. Mem.: Radiation Rsch. Soc.; Health Physics Soc.; Am. Med. Assn.; A.A.A.S.; Soc. Nuclear Med.; Assn. Milit. Surg.; Phi Rho Sigma. Contbr. to: Science; Radiation Rsch.; Proc. Soc. Exptl. Biol. and Med.; Nature; Jour. Bacteriol.; Proc. Health Physics Soc. Serv. Rec.: U. S. Army Med. Corps, 1949—. Areas of Rsch.: Biological Effects of Ioniz. Radiation.

WOODWARD, Richard Horace (D.Sc.), Vice Pres. and Dir., Pickard and Burns, Inc., 105 Fourth Ave., Waltham 54, Mass. Home Add.: 46 Prospect St., Belmont 78, Mass. PHYSICS, RADIO NAVIGATION AND RADIO PROPAGATION. b. West Orange, N. J., Dec. 31, 1908. s. Horace Arthur and Helen Lee (Schiedt) W. Edn.: B.S., Harvard Univ., 1932; M.S., ibid., 1933; D.Sc., ibid., 1935. m. Millicent Parker Cox, July 3, 1945. c.: Richard Morris; Alan Cox. Exp.: Staff Mem., Mass. Inst. Tech., 1941-45; Rsch. Sci., Harvard Univ., 1945-48; Sci., Vice Pres., Pickard and Burns, Inc., Waltham, Mass., 1948—. Mem.: Inst. of Rad. Engrs. Contbrng. Author: Radiation Laboratory Series, 1945. Contbr. to: Jour. Geophys. Rsch. Areas of Rsch.: Radio Navigation; Radio Propagation.

WOODWARD, Richard J. (Mr.), Board Chmn. and Chief Engr., Woodward-Clyde-Sherard and Assocs., 1150 28th St., Oakland, Calif. Home Add.: 2906 Hillegass Ave., Berkeley, Calif. SOIL AND FOUNDATION ENGINEERING. b. Pueblo, Colo., Dec. 16, 1907. s. Richard J. and Anna C. (Earley) W. Edn.: B.S., Colo. Coll., 1930; M.S., Univ. of Calif., 1947. m. Irene Campbell, Aug. 29, 1932. c.: Rita; Sue; Richard; Patricia. Exp.: Bookkeeping, Acctng. and Purchasing with various firms, 1930-35; Owner and Mgr., Pub. Food Mart, Albuquerque, N. Mex., 1935-41; Engr., U. S. Navy Dept., Vallejo, Calif., 1941-45; Lectr., Civil Engrng., Univ. of Calif., Berkeley, part-time, 1946-47; Mem., Civil Engrng. Faculty, Univ. of Calif., 1947-50; Partner, later Bd. Chmn. and Chief Engr., Woodward-Clyde-Sherard and Assocs. and predecessor firms, Oakland, Calif., 1950—. Hon. Pos.: Adv. Bd., Coll. of the Holy Name, Oakland, Calif.; Regis. Prof. Engr., Calif., N. Y., Wash., Colo. and Wyo. Mem.: Fellow, A.S.C.E., Hwy. Rsch. Bd.; A.A.A.S.; U. S. Natl. Coun. on Soil Mech. and Fdtn. Engrng.; Consulting Engr., Assn. of Calif.; Struct. Engr. Assn. of N. Calif.; Delta Epsilon; Chi Epsilon; Sigma Xi; Serra Club; Engineers Club of San Francisco; Athens Athletic Club of Oakland. Contbr. to: Hwy. Rsch. Bd.; Proc. Internatl. Confs. on Soil Mech.; Proc., Am. Soc. Civil Engrs.

WOODY, McIver (M.D.), 552 Westminster Ave., Elizabeth, N. J. PHYSICIAN, OCCUPATIONAL MEDICINE. b. Louisville, Ky., Mar. 16, 1886. s. Samuel Elisha and Emma Calmes (McIver). Edn.: A.B., Univ. of Richmond, 1905; A.B., Harvard Univ., 1907; M.D., ibid., 1912. m. Regina Llewellyn Jones, May 1, 1918. c.: McIver Wallace; Regina Llewellyn; Emma McIver. Exp.: Austin Tchng. Fellow, Harvard Med. Schl., 1914-19; Secy. of Faculty of Med., ibid., 1917-18; Dean, Prof. of Surg., Univ. of Tenn., 1920-21; Dean, Prof. of Surgery, Baylor Univ., 1921-22; Physician, Standard Oil Co. of N. J., 1922-44; Med. Dir., Esso Standard Oil Co., 1944-51; Med. Consultant, Railroad Retirement Bd., 1951—. Hon. Pos.: Med. Adv. Bd., Am. Petroleum Inst., 1949-51 (Chmn., 1945-46); Diplomate, Am. Bd. Prev. Med.; Fellow, A.A.A.S.; Am. Coll. of Physicians; Ind. Med. Assn.; N. Y. Acad. Med.; Mass. Med. Soc.; Kappa Alpha Order; Phi Beta Pi; Phi Beta Kappa; Harvard Club of N. Y. C. Contbr. to: Am. Med. Assn. Jour.; Tex. Med. Jour.; New England Jour. of Med.; N. Y. Med. Jour.; Mich. Med. Jour.; Ind. Med. Serv. Rec.: U.S.A. Areas of Rsch.: Surgical Pathology; Occupational Medicine.

WOOLLATT, Lorne Hedley (Ph.D.), Assoc. Comm., St. Edn. Dept., Albany, N. Y. Home Add.: 29 Parkwood Dr., Albany 5, N. Y. EDUCATION. b. Wolseley, Sask., Can., Feb. 5, 1910. s. Hedley William and Edna L. (Moore) W. Edn.: B.A., Univ. of Sask., 1930; B.Ed., ibid., 1939; M.Ed., ibid., 1944; Ph.D., Columbia Univ., 1948. m. Gayle E. Mason, July 19, 1933. c.: Marilyn E. Rose W. Peckham. Exp.: Prin., Rural Schls. in Sask., 1931-39; Tchr., Balfour Tech. Schl., Regina, Sask., 1939-46; Asst. Prof., Tchrs. Coll., Columbia Univ., 1946-53; Dir. of Rsch., Baltimore Pub. Schls., Baltimore, Md., 1953-59; Assoc. Comm., St. Edn. Dept., Albany, N. Y., 1959—. Hon. Pos.: Study Comm., Assn. of Chief St. Schl. Officers. Mem.: Am. Edn. Rsch. Assn.; A.A.A.S., Fellow; Phi Delta Kappa; Univ. Club of Albany. Author: The Cost Quality Relationship on the Growing Edge, 1948. Contbr. to: Tchrs. Coll. Record, The Schl., Jour. Natl. Schl. Prins. Assn. Gen. Int.: Consult., St. Aid Studies, New York and Md. Areas of Rsch.: Administration Cost of Education Index; The Strategy of Teaching; Teacher-Pupil Behavior.

WOOLLEY, George W. (Ph.D.), Mem. Chief Div. of Tumor Biol., Sloan-Kettering Instit., 410 E. 68th St., N. Y. 21, N. Y. Home Add.: 345 E. 68th St., N. Y. 21, N. Y. MEDICAL (CANCER) RESEARCH; GENETICS. b. Osborne, Kans., Nov. 9, 1904. s. George Aitcheson and Nora Bell (Jackson) W. Edn.: B.S., Ia. St. Univ., 1930; Univ. of Wis., M.S., 1931; Ph.D., ibid., 1935. m. Anne Geneva Collins, Nov. 2, 1936. c.: George Aitcheson; Margaret Anne; Lawrence Jackson. Exp.: Fellow, Univ. of Wis., Madison, Wis., 1930-31; Asst., ibid., 1932-35; Fellow, ibid., 1935-36; Mem. Staff, Roscoe B. Jackson Mem. Lab., 1937-49; Vice Pres. Bd. of Dirs., ibid., 1943-47; Asst. Dir. and Scientific Adm., ibid., 1947-49; Mem., Chief Dev. Steriod Biol., Sloan-Kettering Institute, 1949-58; Mem., Chief Div., Human Tumor Exptl. Chemotherapy, ibid., 1958-61; Mem. Chief Div. of Tumor Biol., ibid., 1961—; Prof. of Biol., ibid., 1951—. Hon. Pos.: Consultant, Natl. Cancer Instit., 1951—; Mem., Bd. of Trustees, Dalton Schls., Inc., N. Y. City; Visiting Rsch. Assoc., Jackson Mem. Lab., 1949-58. Mem.: Am. Assn. for Cancer Rsch.; Am. Assn. for the Adv. of Sci., Fellow; Soc. for Study of Devel. and Growth; N. Y. Acad. of Sci., Fellow; Am. Soc. of Human Genetics; Mount Desert Island Biol. Lab.; Soc. for Exptl. Biol. and Med.; Am. Instit. of Biol. Socs.; Am. Genetic Assn., Mem. of Advisory Comm.; Wis. Acad. of Sci., Arts and Letters; Roscoe B. Jackson Mem. Lab. Assn.; Genetics Soc. of Am.; Sigma Xi; Assoc. Mem. of Am. Museum of Natl. History. Contbr. to: Cancer; Jour. of Natl. Cancer Instit.; Jour. of Heredity. Gen. Int.: Author and Contbr. to 100 Scientific Articles and a Number of Scientific Books. Areas of Rsch.: Medical Research, Cancer; Genetics; Endocrinology; Nucleic Acids; Chemotherapy.

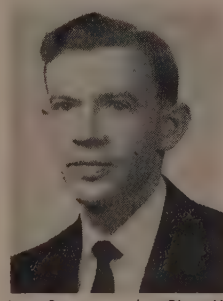
WOOLRICH, Willis Raymond (Mr.), Dean Emer. and Prof. of Mech. Engrng., Coll. of Engrng., Univ. of Tex., P.O. Box 4647, N. Austin P.O., Austin 51, Tex. Home Add.: 700 Texas Ave., Austin 5, Tex. AIR CONDITIONING AND REFRIGERATION. b. Mineral Point, Wis., Mar. 1, 1889. s. George and Hanna M. (Suthers) W. Edn.: B.S.E.E., Univ. of Wis., 1911; P.D.M.E., ibid., 1923. m. Neena Myhre, Aug. 29, 1914. c.: June B. W. Morgan; Avis Maxine; Willis Raymond, Jr.; Paul F.; George Dean (dec.); Thomas Edwin. Exp.: Steam Engr., Mineral Point

Elect. Co., Mineral Pt., Wis., 1906-07; Steam Engr., Hazel Patch Mining Co., ibid., 1906-07; Dir. Main Asst., Commonwealth Edison Co., Chicago, Ill., 1910; Mfg. Trainee and Asst. Methods Engr., Wes. Elect. Co., ibid., 1912-13; Dir. Shop Schls., Internat. Harvester Co., ibid., 1913-16; Engrng. and Mgmt. Consult., Tenn. and Ky., 1916-33; Instr., DePaul Univ., 1911-12; Asst. Prof., Prof., Univ. of Tenn., 1916-33; Dean of Engrng. and Dir. of Engrng. Rsch., Univ. of Tex., 1936-58; First Consult. and Interim Pres., Mid. East Tech. Univ., Ankara, Turkey, 1959-60. Hon. Pos.: Dir., Small Ind. Div., Tenn. Valley Authority, 1933-36; Chief Sci. Officer and Sci. Attache, Am. Embassy, London, 1948-49; Consult., U. S. Patents Bd., Wash., D. C., 1950; Reg. Adv. and Reg. Dir. Engrng. Sci. War Training Coun. of U. S., 1942-45; Spec. Consult., U. S. Dept. Interior on De-Salting of Water, 1954—; Past Pres., Tex. Acad. Sci.; Past Vice Pres., Engrng., AAAS; Past Natl. Vice Pres., Am. Soc. Mech. Engrs.; Past Pres., Am. Soc. Engrng. Edn.; Past Pres., Engrng. Coll. Rsch. Coun.; Fulbright Comm. of Gr. Brit.; Dir., Am. Soc. of Heating, Ventilating and Air Conditioning Engrs.; Past Chmn., Natl. Edn. Comm., Am. Soc. Profl. Engrs.; Internatl. Vice Pres., Internatl. Du Froid, Comm. IX, Ednl., Paris, Fr. Mem.: Fellow, Am. Soc. Mech. Engrs.; Fellow and Life Mem., Am. Soc. Heating, Ventilating, Refrigeration and Air Conditioning Engrs.; Fellow, Soc. of Arts, Gr. Brit.; Mem., Newcomen Soc., ibid.; Fellow, Tex. Acad. Sci.; Am. Soc. Pract. Refrig. Engrs.; Am. Soc. Prof. Engrs. and Reg. Engrs. in Tenn., Tex. and Ia.; Am. Coun. of Internat. Refrig.; Am. Soc. for Engrng. Edn. Author: Handbook of Refrigeration, 1929; Handbook of Steam Engineering, 1925; Processing of Cottonseed, 1935; Textbook on Air Conditioning, 1958.

WORK, Harold K. (Ph.D.), Assoc. Dean and Dir. of Rsch. Div., Coll. of Engrng., N. Y. Univ., N. Y. 53, N. Y. Home Add.: 41 Storer Ave., Pelham, N. Y. CHEMICAL ENGINEERING. b. Hartford, Conn., May 21, 1901. s. Norman Porter and Hattie Simons (Lincoln) W. Edn.: A.B., Columbia Coll., 1923; Ch.E., Columbia Engrng. Schl., 1925; Ph.D., Univ. of Pgh., 1929. m. Margaret Leal, Dec. 28, 1925. c.: Mary Jane Laity; Harriet Lincoln Luce; Harold K., Jr.; Virginia Leal Foulke. Exp.: Rsch. Fellow, Mellon Inst., Pgh., Pa., 1925-29; Chem. Engr., Aluminum Co. of Am., Pgh., Pa., 1934-36; Div. Hd., Rsch. Labs., ibid., 1929-34; Mgr. Rsch. and Devel., Jones and Laughlin Steel Corp., Pgh., Pa., 1936-47; Dir. of Rsch., ibid., 1947-49; Dir., Rsch. Div., Coll. of Engrng., N. Y. Univ., 1949—; Assoc. Dean, ibid., 1957—. Hon. Pos.: Dir., Engrng. Fdtn., 1959—; Chmn., Am. Chem. Soc., 1945; Vice Pres., Am. Soc. for Engrng. Edn., 1954-56; Pres., Am. Soc. for Metals, 1948-49; Advry. Bd. on Quartermaster Rsch. and Devel. of Natl. Acad. of Scis., Natl. Rsch. Coun. Univ. Corp. for Atmospheric Rsch. (UCAR), Mem., Bd. of Dirs., Mem., Exec. Comm. Mem.: Theta Tau; Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Am. Inst. of Chem.; Am. Inst. Ch. Engrng.; A.I.M.E.; A.S.E.E.; A.S.M.; A.S.T.M.; N. Y. Acad. of Sci.; Phi Beta Kappa; Phi Lambda Upsilon; Tau Beta Pi; Epsilon Chi; Sigma Xi; Pi Tau Sigma. Contbr. to: Jour. of Engrng. Edn.; Jour. of Metals. Areas of Rsch.: Coating of Aluminum, Manufacture of Iron and Steel, Research Management.

WORKMAN, Everly John (Ph.D.), Pres., N. Mex. Inst. of Mining and Technology, Socorro, N. Mex. Home Add.: Campus Station, Socorro, N. Mex. PHYSICS AND GEOPHYSICS. b. Loudonville, Ohio, July 2, 1899. s. William Truman and Rosella (Boner) W. Edn.: B.S., Whitman Coll., 1924; Ph.D., Univ. of Va., 1930. Hon. Deg.: D.Sc., Whitman Coll., 1955. m. Jacqueline Lasater, June 10, 1926. Exp.: Instr. in Physics, Whitman Coll., 1924-26; Instr. in Physics, N. D. State Univ., 1927-28; Natl. Rsch. Fellow, Bartol Rsch. Fdtn. of the Franklin Inst. of Tech., 1930-31; Natl. Rsch. Fellow, Calif. Inst. of Tech., 1931-32; Assoc. Prof. of Physics, Univ. of N. Mex., 1933-34; Prof. of Physics, ibid., 1942-46; Pres., Dir. of Rsch. and Devel., N. M. Inst. of Mining and Technol., 1946—. Hon. Pos.: Mem., Advy. Com., Rocky Mtn. Office of the Inst. of Internatl. Edn.; Gen. Tech. Advisory Com., U. S. Dept. of Interior, Office of Coal Rsch. Mem.: Fellow, Am. Phys. Soc.; Fellow, Am. Assn. Adv. Sci.; Am. Inst. of Physics; Am. Acad. of Polit. Sci.; Am. Meteorol. Soc.; Am. Geophys. Union; Am. Soc. of Range Mgmt.; N. M. Mining Assn.; Cosmos Club of Wash.; Phi Beta Kappa; Sigma Xi; Beta Theta Pi. Contbr. to: Phys. Rev.; Physics; Jour. of Gen. and Appl. Phys.; Jour. Appl. Phys.; Rev. Sci. Instr.; The Alumnus; Bull., Am. Meteorol. Soc.; U. S. Natl. Advisory Com. for Aeronautics; Tech. Note; Encycl. Brittanica; Bull. Am. Phys. Soc.; Terrestrial Magnetism and Atmospheric Electricity; Nature; Jour. of Range Mgmt.; Sci.; Transactions. Gen. Int.: Awarded the U. S. Navy Distinguished Public Serv. Award, 1957; and the U. S. Army Cert. of Merit. Areas of Rsch.: Fields of thermodynamics, penetration radiation measurements, many types of instrumentation, thunderstorms, atmospheric electricity, precipitation phenomena, and lightning. Ordnance Research devices.

WORLEY, Joseph Francis (Mr.), Plant Pathol., U. S. Dept. Agric., Crops Rsch. Div., Plant Industry Station, Beltsville, Md. Home Add.: 4000 Tunlaw Rd., N.W., Wash. 7, D. C. PLANT VIROLOGY. b. Wash., D. C., Oct. 10, 1928. s. Joseph Frank and Lottie (Carson) W. Edn.: A.A., George Wash. Univ., 1954; B.S., ibid., 1955; M.S., ibid., 1958. m. Anita Stouffer, 1958. Exp.: Student Tchr., George Wash. Univ., Wash., D. C., 1954-56; Bacteriol. Technician, Am. Type Culture Coll., Wash., D. C., 1954-56; Plant Pathol., U. S. Dept. of Agric., Beltsville, Md., 1956—. Mem.: Am. Phytopathol. Soc.; Am. Assn. for the Adv. of Sci.; Phi Epsilon Phi. Contbr. to: Sci.; Phytopathol.; Virology; Forest Sci.; Plant Disease Reporter. Serv. Rec.: U. S. Army Med. Corps, 1951-52; Reserve, 1953-58. Gen. Int.: Demonstrated a Plant Virus Could Establish Infection Sites Following Translocation in the Water Stream of Plants; Demonstrated Soil Moisture Could Radically Alter the Mycorrhizal Assn. of Pine Roots. Areas of Rsch.: Movement and Distribution of Plant Viruses in Plants; Chemical Control of Plant Virus Diseases.



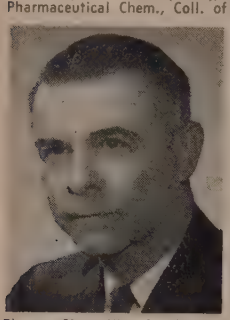
WORMELLE, Ruth Lenderking (Mrs.), Instr., Zool., Balt. Jr. Coll., Balt., Md. Home Add.: Windsor Mill Rd. Ext., Rt. 5, Box 130 H, Balt. 7, Md. GENETICS AND CYTOLOGY; MARINE BIOLOGY. b. Balt., Md., Dec. 24, 1904. d. Louis T. Lenderking and Matilda (Udich) L. Edn.: B.A., Western Md. Coll., 1926; M.S., Cornell Univ., 1932. m. Curtis Nickerson Wormelle, 1954. Exp.: Tchr., Aberdeen H. S., Aberdeen, Md., 1926-27; Tchr., Balt. H. Schls., Balt., Md., 1927-55; Instr., Balt. Jr. Coll., 1955—. Mem.: Am. Assn. for the Adv. of Sci.; Md. Acad. of Sci.; Md. Ornithol. Soc.; Natl. Assn. of Biol. Tchrs.; Md. Assn. of Biol. Tchrs.; Phi Alpha Mu; Mtn. Club, Md.; Women's Democratic Club of Second Dist., Balt. Co., Md. Contbr. to: Quart. Jour. of Fla. Acad. of Scis.; Bull. of Marine Sci. of the Gulf and Caribbean. Areas of Rsch.: Growth, Distribution and Periodity.

WORNE, Howard Edward (M.D.), Scientific Dir., Natl. Fdtn. for Metabolic Rsch., 1100 Cornell Ave., Merchantville, N. J. Home Add.: Cooper River Plaza, North River Drive, Pennsauken, N. J. NUTRITION AND MEDICAL BIOCHEMISTRY. b. Phila., Pa., Mar. 1, 1914. s. Edward H. and Lillian (Green) W. Edn.: B.S., McKinley Coll., 1934; M.S., ibid., 1935; Ph.D., Univ. of Berlin, 1939; M.D., Univ. Libre Mexicana, 1940; Ph.D., St. Andrews (Great Britain), 1948; D.Sc., ibid., 1957; D.Sc. (Honoris Causa), ibid., 1957; La Universidad Nacional del Sureste, M.D., 1959; Instituto Politechnico Nacional, Ph.D., 1962. Exp.: Rsch. Fellow, Natl. Grain Yeast Corp., 1935-37; Rsch. Fellow, Brass Yeast Corp., 1938-39; Group Rsch. Leader, Colton Chemical Co., 1940-41; Dir. of Rsch., United Chemicals, Ltd., 1941-42; Scientific Director, Natl. Institute of Biochemistry, 1942-47; Consult. to U. S. Army A. F.; Vice-Pres., in Chg. of Rsch. and Dev., Synthetic Resins, Inc., 1943-47; Vice-Pres. in Chg. of Rsch., Pentavir Div., A. P. deSanno & Son, Inc., 1947-48; Tech. Dir., ibid., 1948-49; Chmn., Dept. of Biological Chem. and Nutrition, The Robinson Found., 1950-53; Scientific Dir., ibid., 1953-55; Scientific Dir., Natl. Found. for Metabolic Rsch., 1955—; Pres., Pharmaceutical Industries, Inc., 1955. Hon. Pos.: Chmn., 2nd Conf. on Fat Metabolism of the Robinson Fdtn.; Sci. Coun., Internatl. Soc. for Rsch. on Nutrition; Centro Studie Scambi Internazionali; Diplomate, Am. Bd. of Bio-Analysts; Fellow, Am. Coll. of Bio-Analysts; Fellow, Am. Coll. of Med. Technologists; Assoc. Regional Examiner, Am. Bd. of Bio-Analysts. Mem.: Am. Chem. Soc.; Soc. for Exptl. Nutrition; A.A.A.S.; N. Y. Acad. of Sci.; Natl. Exchange Club; Soc. Am. Milit. Engrs.; Soc. Cosmetic Chem.; Internatl. Bronchoesophageal Soc.; The Franklin Inst.; Rsch. Prof. of Biochem. and Nutrition, Internatl. Faculty, St. Andrews Univ. (Gr. Britain), 1957; Rsch. Coun., Natl. Fisheries Inst.; Sr. Consultant, Biochem. and Nutrition, Leprosy Relief Soc. for Ryukyu Islands. Contbr. to: Jour. of the Soc. of Cosmetic Chemists; Am. Jour. of Med. Scis.; Archives of Rsch.; Jour. of Biol. Chem.; Med. Times; Jour. of Nutrition. Areas of Rsch.: Fat Metabolism (polyunsaturated fatty acids); Nutrition, Endocrinology, Biochemistry of Allergy, Enzymology.

WORNICK, Robert Charles (Mr.), Profl. Engr., Chas Pfizer and Co., Inc., Terre Haute, Ind. Home Add.: 703 W. Prospect Ave., Terre Haute, Ind. CHEMICAL ENGINEERING. b. Bellows Falls, Vt., June 13, 1924. s. Anthony Joseph and Helen (Moore) W. Edn.: B.Ch.E., Columbia Univ. Schl. of Engrng., 1950.

m. Helga Peters, Mar. 7, 1953. c.: Russell. Exp.: Food Tech., Chas Pfizer and Co., Inc., Brooklyn, N. Y., 1950-52; Hd., Chem. Labs., ibid., Terre Haute, Ind., 1953-59; Profl. Engr., ibid., 1960—. Hon. Pos.: Editor, Cereal Sci. Today; Ed., Vitamin Abs. Mem.: Am. Inst. Chem. Engrs.; Natl. Soc. Profl. Engrs.; Am. Chem. Soc.; Inst. Food Technol.; Assn. Vitamin Chem.; Am. Assn. Cereal Chem.; A.A.A.S.; Assn. Oper. Millers; Am. Assn. Feed Microscop.; Boy Scouts of Am. Author: Premixing Micro-Ingredients, 1956; Feed Pelleting and Its Effects on Micro-Ingredients, 1959. Contbr. to: Jour. Agr. and Food Chem.; Cereal Sci. Today; Feedstuffs; Wes. Feed and Seed; Agr. Engrng.; Proc. Feed Prodn. Schl.; Intl. Symp. on Antibiotics in Agric. Serv. Rec.: U. S. Army, 1943-45. Gen. Int.: Abstractor of Russian and German papers for Chem. Abs. Areas of Rsch.: Vitamin Enrichment of Foods; Micro-Ingredient Supplementation of Animal Feeds; Quality Control of Pharmaceuticals; Foods and Feeds; Processing and Preservation of Foods and Feeds.

WORRELL, Lee Frank (Ph.D.), Dean of Coll. of Pharm., Prof. of Pharmaceutical Chem., Coll. of Pharm., Univ. of Tex., Austin 12, Tex. Home Add.: 3411 Foothill Terrace, Austin 3, Tex. ANALYTICAL PHARMACEUTICAL CHEMISTRY. b. Orleans, Ind., February 27, 1913. s. Frank S. and Grace L. (Hollowell) W. Edn.: B.S. in Pharm., Purdue Univ., 1935; Ph.D., ibid., 1940. m. Mary Dee Pickens, July 15, 1934. c.: Mrs. Shirley Yvonne Kauper. Exp.: Instr. to Assoc. Prof., Drake Univ., Des Moines, Ia., 1938-42; Instr. to Assoc. Prof., Univ. of Mich., Ann Arbor, Mich., 1942-60; Prof., Univ. of Tex., Austin, Tex., 1960—; Dean, Coll. Pharm., ibid., 1962—. Hon. Pos.: Pres., Mich. Acad. of Pharm., 1953. Mem.: Am. Pharm. Assn.; Am. Assn. for the Adv. of Sci.; Am. Chem. Soc.; Mich. Acad. of Pharm.; Sigma Xi; Rho Chi; Kappa Psi; Phi Delta Chi; Phi Lambda Upsilon; Phi Kappa Phi; Alpha Chi Sigma. Contbrng. Author: Food and Food Products, 1951; American Pharmacy II, 1947; Pharmaceutical Compounding and Dispensing, 1955. Contbr. to: Jour. Am. Pharmaceutical Assn.; Drug Standards; Am. Jour. of Hosp. Pharm. Areas of Rsch.: Analytical Pharmaceutical Chemistry and Instrumentation.

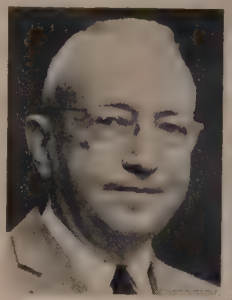


WORZEL, John Lamar (Ph.D.), Asst. Dir., Lamont Geol. Obs., Palisades, N. Y.; Prof. of Geophys., Columbia Univ., New York, N. Y. Home Add.: Palisades, N. Y. GEOPHYSICS. b. Staten Island, N. Y., Feb. 21, 1919. s. Howard Henry and Marie Alma (Wilson) W. Edn.: B.S., Lehigh Univ., 1940; M.A., Columbia Univ., 1948; Ph.D., ibid., 1949. m. Dorothy Crary, Nov. 22, 1941. c.: Sandra; Howard; Richard; William P. Exp.: Rsch. Assoc., Woods Hole Oceanogr. Inst., Woods Hole, Mass., 1940-46; Asst. Dir., Lamont Geol. Obs., Palisades, N. Y., 1951—; Prof., Columbia Univ., 1957—. Mem.: Sigma Xi; Pi Mu Epsilon; Tau Beta Psi; SSA; SEG; Fellow, Geol. Soc. Am.; UGGI; Am. Phys. Soc.; AAAS; Am. Geophys. Union; Boy Scouts. Contbr. to: Bull. Geol. Soc. Am.; Geophys.; Jour Geophy. Rsch.; Trans. AGU; Bull. Geodesique; Proc. Natl. Acad. Sci.; Deep-Sea Rsch; OIKOS. Areas of Rsch.: Gravity at Sea; Seismic Refraction at Sea; Underwater photography; Sound Transmission of Sea Water and Oceanography.

WREN, Frank Lynwood (Ph.D.), Prof. of Math., San Fernando Valley State Coll., Northridge, Calif. Home Add.: 8956 Etiwanda Ave., Northridge, Calif. MATHEMATICS EDUCATION. b. Yorkville, Tenn., Sept. 28, 1894. s. Franklin and Adelaide (Flowers) W. Edn.: B.A., Univ. of the South, 1915; M.A., George Peabody Coll. for Tchrs., 1925; Ph.D., Univ. of Chicago, 1930. m. Alleyne Talley, 1921. c.: Elizabeth Alleyne; Frances Virginia. Exp.: Tchr., City H. S., Martin, Tenn., 1915-17; Tchr., McFerrin Schl., Martin, Tenn., 1919-21; Tchr., The McCallie Schl., Chattanooga, Tenn., 1921-24; Prof., George Peabody Coll., 1927-59; Visiting Prof. of Math., Univ. of Calif., Los Angeles, 1958; Prof., San Fernando Valley State Coll., 1959—. Hon. Pos.: Natl. Coun. of Tchrs. of Math., Vice Pres., 1940-41, Pres., 1944-45; Tenn. Acad. of Sci., Vice-Pres., 1940-41, Pres., 1941-42; Cent. Assn. of Sci. and Math., Dir., 1955-58, Vice-Pres., 1958-59. Mem.: Natl. Coun. of Tchrs. of Math.; Math. Assn. of Am.; Calif. Math. Coun.; Tenn. Acad. of Sci.; Fellow, Am. Assn. for Adv. of Sci.; Sigma Xi; Phi Beta Kappa; Phi Delta Kappa; Kappa Delta Pi; Kappa Sigma. Author: Teaching of Secondary Mathematics, 1960; Learning to Use Arithmetic Series, 1962; Elements of Algebra, 1962; Trigonometry for Secondary Schools, 1963. Contbr. to: The Math. Tchr.; Bull. of Am. Math Soc.; Am. Math. Monthly; The Peabody Jour. Serv. Rec.: U. S. Army, 1917-19. Areas of Rsch.: Mathematics Education.

WRIGHT, Cecil Benjamin (Ph.D.), Prof. and Hd. of Math. Dept., East Tex. State Coll., Commerce, Tex. Home Add.: 1603 Bonham St., Commerce, Tex. MATHEMATICS—THEORY OF GROUPS ALGEBRA. b. Dunbar, Iowa, Aug. 6, 1905. s. Charles Westley and Carolyn Marie (Horton) W. Edn.: B.A., Southern Methodist Univ., 1926; M.A., Univ. of Ill., 1930; Ph.D., Univ. of Pittsburgh, 1934. m. Maurine Lewis, Apr. 4, 1936. Exp.: Asst., Univ. of Pittsburgh, 1930-35; Instr., Sou. Methodist Univ., 1935-38; Assoc. Prof., East Tex. State Coll., 1938-42; Prof., ibid., 1942—; Hd. of Dept., ibid., 1946—. Hon. Pos.: Vice-Chmn., Tex. Sect. of M.A.A., 1952; Chmn., Tex. Sect., M.A.A., 1953. Mem.: Math. Assn. of Am.; Am. Math. Soc. Areas. of Rsch.: Algebra—Collineation Groups.

WRIGHT, Donald D. (Mr.), Mgr. of Labs., B. F. Goodrich Footwear and Flooring Co., Watertown, Mass. Home Add.: 53 Barnard Ave., Watertown, Mass. CHEMISTRY OF RUBBER AND PLASTICS. b. Leslie, Mich., July 24, 1897. s. Ernest and Rena (Wood) W. Edn.: B.S., Univ. of Mich., 1920. m. Gladys Marshall, 1923. c.: Patricia. Exp.: Instr. of Gen. Chem., Univ. of Mich., 1919-20; Chemist, Hood Rubber Co., Watertown, Mass., 1920-24; Chief Analytical Chemist, ibid., 1924-47; Chief Chemist, ibid., 1947-55; Mgr. of Labs., B. F. Goodrich Footwear and Flooring Co., 1955-62. Hon. Pos.: Chmn., Boston Rubber Group, Rubber Div. of A.C.S., 1942. Mem.: A.A.A.S.; A.C.S.; A.S.T.M.; Alpha Chi Sigma. Contbr. to: Rubber Chem. and Technol. Gen. Int.: Licnsed Professional Engineer in Commonwealth of Mass.; Revision of ASTM Specs. D-377 and D-334; Co-Founder of Elastomer and Plastics Section of Northeastern Section of A.C.S. Areas of Rsch.: Compounding by Rubber (Soft and Ebonite); Tear Tests; Evaluations of Elastomers and Vinyl Resins; Pigments and Accelerators; Tires, Footwear, Flooring, Latex Dipped Goods and Coated Fabrics.



WRIGHT, Herbert Fletcher (Pr.D.), Prof. Psychol., Chmn., Dept. of Psychol., Univ. of Kans., Lawrence, Kans. Home Add.: 733 Mississippi St., Lawrence, Kans. PSYCHOLOGY, TEACHING AND RESEARCH. b. Muskegon, Mich., Dec. 11, 1907. s. Rev. William H. and Jennie C. (Raymond) W. Edn.: A.B., Nebr. Wesleyan Univ., 1930; M.A., Univ. of Cincinnati, 1931; Ph.D., Duke Univ., 1934. m. Lorene N. Graver, Sept., 1929. c.: William H.; Katharine Lenore. Exp.: Acting Prof., Psychol. and Sociol., Mercer Univ., 1934-35; Fellow, Gen. Edn. Bd., State Univ. of Iowa, 1935-36; Instr., Asst. Prof. Psychol., Carleton Coll., 1936-43; Lt., U.S.N.R., 1943-45; Asst. Prof. Psychol., Northwestern, 1945-47; Assoc. Prof., Prof., Psychol., Univ. Kans., 1947-; Chmn., Dept. of Psychol., ibid., 1962—. Mm. Am. Psychological Assn.; Am. Assn. for the Adv. of Sci.; Phi Beta Kappa; Sigma Xi. Co-Author: Child Behavior and Development, 1943; Methods in Psychological Ecology, 1950; One Boy's Day, 1951; Midwest and Its Children, 1955. Contbr. to: Jour. of Social Psychol.; Jour. of Abnormal and Social Psychol.; Duke Contbrs. to Psychological Theory; Child Development; Jour. of Edn'l. Psychol.; Jour. of Edn'l. Rsch.; Progressive Edn. War. Rec.: Lt., U.S.N.R., 1943-45. Areas of Rsch.: Psychological field studies; social-psychological studies of child behavior and development.

WRIGHT, Major (Mr.), Rsch. Staff, United Carr Fastener Corp., Cambridge, Mass. Home Add.: 35 Bridge St., Lexington 73, Mass. CHEMISTRY OF INTERFACE PHENOMENA. b. Watervliet, N. Y., July 12, 1916. s. Alvin W. and Alice (Ferris) W. Edn.: B.S., Ch.E., Syracuse Univ., 1940. m. Ruth Vaughn, Feb. 14, 1946. c. Kathleen; Richard; Stephen; Kevin. Exp.: Engr., Solvay Process Co., Syracuse, N. Y., 1945-51; Project Engr., Signal Corps, Ft. Monmouth, N. J., 1951-56; Project Engr., Hycon Mfg. Corp., Pasadena, Calif., 1956-58; Consult., Photo Information Systems, 1958; Mgr., Photo. Processing Rsch., Itek Corp., 1958-62; Rsch. Staff, United Carr Fastener Corp., Cambridge, Mass., 1962—. Mem.: A.A.A.S.; A.I.Ch.E.; A.C.S.; S.M.P.T.E.; S.P.S.E.; Theta Alpha. Contbr. to: S.P.S.E.; Airborne Radar Strip Recorder; Design Approach to Rapid High Acuity Photo. Processing; Selection of Film and Process for a High Acuity Photo System. Serv. Rec.: U.S.A.F., 1940-46. Areas of Rsch.: Photographic Information Systems, several Chemical and Design Patents, Patent Ion-exchange System for Photo Use; Photographic Tone and Quality Control.

WRIGHT, Howard Edwards, Jr. (Mr.), Sr. Rsch. Assoc., The Am. Tobacco Co., Dept. Rsch. and Devel., 400 Jefferson Davis

Highway, Richmond 24, Va. Home Add.: 5500 Queensbury Rd., Richmond 26, Va. ORGANIC CHEMISTRY AND PLANT CHEMISTRY. b. Petersburg, Va., June 29, 1913. s. Howard E. and Florence (Titus) W. Edn.: B.S., Hampden-Sydney Coll., 1935; M.S., Univ. of Richmond, 1937; Postgraduate Study, Univ. of N. C., 1937-39. m. Jean Owens Clark, Sept. 6, 1941. c.: Carolyn Clark; Jean Johnston; Sarah Early. Exp.: Rsch. Chemist, The Am. Tobacco Co., Rsch. Lab., Richmond, Va., 1939-43; Rsch. and Devel. Chemist, U. S. Naval Ord. Lab., Silver Spring, Md., 1943-46; Sr. Rsch. Assoc., The Am. Tobacco Co., Dept. Rsch. and Devel., Richmond, Va., 1946—. Mem.: Am. Chem. Soc.; Fellow, The Am. Instit. of Chemists; Am. Assn. for the Adv. of Sci.; Va. Acad. of Sci.; Plant Phenolics Group of North Am.; Alpha Chi Sigma; Chi Beta Phi; Sigma Pi Sigma; Chi Phi. Contbr. to: Jour. of Organic Chem.; Archives of Biochem. and Biophys.; Chem. and Indust.; Tobacco Sci.; Phytochem. Gen. Int.: U. S. Patent on Sealants and Potting Compounds for Electrical Detonators. Areas of Rsch.: Chemistry of Tobacco; Isolation and Identification of Tobacco Constituents; Development of Specialized Methods of Analysis.

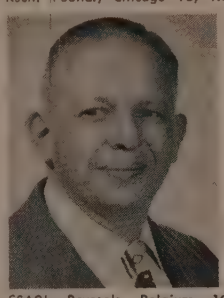
WRIGHT, Milton (Ph.D.), Dean, Coll. of Liberal Arts, Wilberforce, Ohio. ECONOMICS AND POLITICAL SCIENCE. b. Savannah, Ga., June 28, 1908. s. William Martin (dec.) and Edith (Burnside) W. Edn.: A.B., Wilbrforce Univ., 1926; A.M., Columbia Univ., 1928; Ph.D., Univ. of Heidelberg, Germany, 1932. m. Sue Helen Hurt, June 28, 1934. c.: Mrs. Francean Edith W. Patterson. Exp.: Dean, Samuel Huston Coll., 1928-32; Head, Dept. of Econs. and Polit. Sci., Wilberforce Univ., 1933—; Dean, Coll. of Liberal Arts, ibid., 1959—. Hon. Pos.: Chmn., Student Group, Ohio, W. Va., Y.M.C.A.; Natl. Chmn., Edni. Activities, Alpha Phi Alpha. Mem.: Am. Econ. Assn.; A.A.A.S.; Natl. Acad. of Econs. and Polit. Sci.; A.A.U.P.; Ohio Dir. of Edn.; Natl. Commissioner of Econs.; IBPOE of W. Author: Economic Development and Native Policy of Former German African Colonies, 1884-1918, 1932; A Guide to the Study of American National Government, 1949-1960; Workbook to the Study of Principles of Economics, 1945-'61, '62. Contbr. to: A.M.E. Rev. Gen. Int.: Hon. Fellow, Ohio State Univ., 1936; Fellow, Case Inst. of Technol., summer, 1953; Danforth Fellow, Columbia Univ.; Fellow, Univ. of Wis. summer, 1957; Fellow, Univ. of Chicago, summer, 1961; Inst. of Academic Deans, Carnegie Foundation, Harvard Univ., 1962. Areas of Rsch.: Cost of Attending Selected Coll.

WU, Ray J. (Ph.D.), Assoc. Mem., Pub. Health Rsch. Inst. of the City of N. Y. Home Add.: 524 E. 20th St., Apt. 3E, N. Y. 9, N. Y. BIOCHEMISTRY. b. Peking, China, Aug. 14, 1928. s. Hsien and Daisy (Yen) Wu. Edn.: B.S., Univ. of Ala., 1950; Ph.D., Univ. of Pennsylvania, 1955. m. Christina Chan, Aug. 11, 1956. c.: Albert; Alice. Exp.: Asst. Instr., Univ. of Pa., 1951-55; Damon Runyon Postdoctoral Fellow for Cancer Rsch., Pub. Health Rsch. Inst., N. Y. C., 1955-57; Asst., ibid., 1957-58; Assoc., ibid., 1958-61; Assoc. Mem., ibid., 1961—. Mem.: Am. Soc. of Biological Chemists; Sigma Xi; Alpha Chi Sigma; A.A.A.S. Areas of Rsch.: Carbohydrate Metabolism, Cancer Rsch., Enzymology, Nucleic Acids.

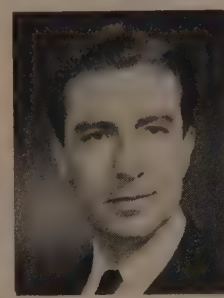
WRIGHTSTONE, Jay Wayne (Ph.D.), Asst. Supt., Bd. of Edn., 110 Livingston St., Brooklyn 1, N. Y. Home Add.: 21 Hickory Rd., Summit, N. J. EDUCATIONAL AND PSYCHOLOGICAL RESEARCH. b. Mechanicsburg, Pa., Mar. 4, 1904. s. Franklin Murray and Edith (Miller) W. Edn.: B.S., Univ. of Pa., 1925; M.A., N. Y. Univ., 1928; Ph.D., Tchrs. Coll., Columbia Univ., 1933. m. Kathleen Corbett, Apr. 13, 1935. c.: Kathleen; Jay Wayne. Exp.: Tchr., Smedley Jr. H. S., Chester, Pa., 1925-26; Tchr., Principal, Summit, N. J. Schls., 1926-31; Rsch. Assoc., Tchrs. Coll., Columbia Univ., 1932-37; Ohio State Univ., Asst. Prof., 1937-40; Dir. Edni. Rsch., Bd. of Edn., N. Y., 1940—; Asst. Supt., ibid., 1961—. Hon. Pos.: Advisory Editor, Jour. Edn. Rsch., and of Jour. Exptl. Edn. Mem.: Am. Psychol. Assn.; Am. Edni. Rsch. Assn.; A.A.A.S.; N. Y. Assn. Applied Psychologists; Am. Assn. Schl. Adminstrs.; Natl. Edn. Assn.; N. Y. Acad. Edni.; Phi Delta Kappa; Kappa Phi Kappa; Tau Kappa Epsilon. Author: Appraisal of Experimental High School Practices, 1936; Appraisal of New Elementary School Practices, 1938; What Tests Can Tell Us About Children, 1954; Evaluation in Modern Education, 1956. Contbrng. Author: Essentials of Educational Psychology, 1958. Contbr. to: Jour. Edni. Rsch.; Rev. Edni. Rsch.; Jour. Exptl. Edn.; Jour. Consulting Psychol.; Jour. Edni. Psychol.; Edni. and Psychological Measurement. Serv. Rec.: Consultant, U. S. Armed Forces Inst., W.W. II. Areas of Rsch.: Edni. and Psychological Rsch.; Test Construction.

WULFSBERG, Arthur Henry (Mr.), Technical Advisor, Collins Radio Co., Cedar Rapids, Ia. Home Add.: 2158 Lincolnshire Dr., S.E., Cedar Rapids, Ia. RADIO ENGINEERING. b. Elbow Lake, Minn., Aug. 25, 1921. s. Einar and Karen (Thorsen) W. Edn.: B.E.E., Univ. of Minn., 1942. m. Elizabeth Ann Wester, Nov. 24, 1957. c.: Rolf; Carolyn; Joanna. Exp.: Radio Engr., Sylvania Elec. Prod., Inc., Williamsport, Pa., 1942-45; Radio Engr., Collins Radio Co., Cedar Rapids, Ia., 1945-53; Dev. Group Hd., ibid., 1953-57; Devel. Dept. Hd., ibid., 1957-59; Devel. Div. Dir., ibid., 1959-61; Tech. Advisory, ibid., 1961—. Hon. Pos.: Chmn., Cedar Rapids Sect., Instit. Radio Engrs., 1956. Mem.: Instit. Radio Engrs., Sr. Mem.; Am. Instit. Elec. Engrs.; Am. Assn. for the Adv. of Sci.; Instit. of Navigation; Am. Mgt. Assn.; Tau Beta Pi; Eta Kappa Nu; Cedar Rapids Engrs. Club; C. of C. Contbr. to: IRE Convention Recs.; Electronics. Gen. Int.: Issued 7 U. S. Patents Radio Control and Tuning Systems, Oscillator System, Oscilloscope, Pulse Generator. Areas of Rsch.: Aeronautical Navigation and Communication equipment and Systems.

WYCKOFF, Peter Hines (Mr.), Asst. Dir., Physics Rsch., Armour Rsch. Found., Chicago 16, Ill. Home Add.: 635 Riverside Dr., Park Ridge, Ill. ATMOSPHERIC PHYSICS. b. Brooklyn, N. Y., June 1, 1913. s. Peter Culver and Martha (Schofer) W. Edn.: B.S., Carnegie Inst. of Tech., 1936; M.S., Calif. Inst. of Tech., 1937. m. Evelyn Jauquet, Nov. 17, 1942. c.: Peter. Exp.: Rsch. Engr., Westinghouse Rsch. Lab., E. Pittsburgh, Pa., 1937-41; Lt. Col. Air Corps, U.S.A., 1941-46; Lab. Chief, Geophysics Rsch. Dir., AFCRL, 1946-60; Asst. Dir., Physics Div., Armour Rsch. Fdtn., 1961—. Hon. Pos.: Chmn., Publs. Comm., Working Comm. on Rocketry for U. S. Natl. Comm. on I.G.Y., 1956-58; Pres., AFCRC Branch, Scientific Rsch. Soc. of Am., 1959; U. S. Delegate to CSAGI, Brussels, Belgium, 1955; U. S. Delegate to Internatl. Rocket and Satellite Working Session, Natl. Acad. of Sci., 1957; Dir. Program 4, Task Force III Operation Greenhouse. Mem.: Am. Rocket Soc.; Inst. Radio Engr.; Am. Inst. Elec. Engr.; A.A.A.S.; Am. Geophysical Union; Scientific Rsch. Soc. of Am.; Phi Kappa Phi; Sigma Pi Sigma; Tau Beta Pi; Sigma Xi. Author: Rocket As A Research Vehicle, 1958. Contbr. to: Transactions Inst. Soc. Am.; J.O.S.A.; Natl. Acad. of Sci. Serv. Rec.: U.S.A.A.C. Gen. Int.: Air Force Rocket Program for I.G.Y. Areas of Rsch.: Atmospheric Electricity, Cloud Physics, Upper Air Physics.



WYLIE, Charles Murray (M.D.), Assoc. Prof. of Publ. Health Admin., Johns Hopkins Schl. of Hygiene, Baltimore 5, Md. Home Add.: 617 Hastings Rd., Baltimore 4, Md. PUBLIC HEALTH AND PREVENTIVE MEDICINE. b. Dunfermline, Scotland, Sept. 20, 1924. s. Thomas M. and Mary Goodall (Symon) W. Edn.: M.B., Ch.B., Univ. of Glasgow, Scotland, 1947; Dr.P.H., Johns Hopkins Schl. of Hygiene, 1956; M.D., Univ. of Glasgow, Scotland, 1957; D.T.M. and H., London Schl. of Hygiene, England, 1958. m. Dorothy J. M. Hennessy, Jan. 31, 1959. c.: Christine; Adrian; Sheila. Exp.: Intern and Res., Different Gen. Hosp., U. S. A. and U.K., 1947-50; Health Dir., Va. State Health Dept., Richmond, Va., 1950-55; Asst. Prof. Publ. Health Admin., Johns Hopkins Schl. of Hygiene, 1958-62; Assoc. Prof., ibid., 1962—. Hon. Pos.: Secy., Md. Publ. Health Assn.; Pres., Johns Hopkins Internatl. Club. Mem.: Am. Assn. of General Practice; Assn. of Tchrs. of Preventive Med.; British Med. Assn.; Soc. of Med. Officers of Health; Va. State Med. Soc.; Kiwanis; Toastmasters Internatl. Contbr. to: Jour. of Chronic Diseases; Public Health Reports; Am. Heart Jour.; Archives of Phys. Med. and Rehabilitation; Jour. Am. Med. Assn.; Md. State Med. Jour. Serv. Rec.: U. S. Navy, 1955-57. Areas of Rsch.: Publ. Health Admin.; Chronic Diseases.

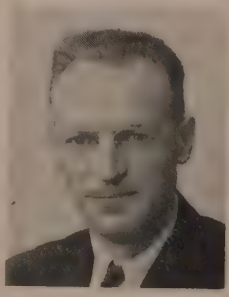


WYGANT, Noel D. (Ph.D.), Chief Div. Forest Insect Rsch., Rocky Mtn. Forest Exptl. Sta., U. S. Forest Serv., 221 Forestry Bldg. C.S.U., Ft. Collins, Colo. Home Add.: 1520 Peterson St., Ft. Collins, Colo. FOREST ENTOMOLOGY. b. Roanoke, Ind., Apr. 18, 1908. s. John H. and F. Josephine (Glock) W. Edn.: B.S.F., Purdue Univ., 1932; Ph.D., N. Y. State Coll. of Forestry, Syracuse Univ., 1940. m. Emily I. Langston, Sept. 3, 1933. c.: N. Duane; Dale I.; Linda K. Exp.: Entomologist, Forest Insect Lab., U. S. Dept. Agric., Ft. Collins, Colo., 1935-40; Entomol., Forest Insect Lab., U. S. Dept. Agric., Berkeley, Calif., 1940-42; Entomol., Rocky Mtn. Forest Expt. Sta. Div., Forest Insect Rsch., Ft. Collins, Colo., 1942—. Hon. Pos.: Chmn. Colo. State Univ., Chapter of Sigma Xi, 1957. Mem.: Soc. of Am. Forester; Entomol. Soc. of Am.; Ecolo. Soc. of Am.; Am. Assn. for the Adv. of Sci.; Fellow, A.A.A.S.; Sigma Xi; Phi Kappa Phi; Alpha Xi Sigma; Xi Sigma Pi; Alpha Zeta; Phi Sigma Kappa. Contbr. to: Jour. of Econ. Entomol.; Jour. of Forestry. Areas of Rsch.: Bork Beetles and Other Forest Insects.

WYLIE, Lloyd Ritchie (Ph.D.), Prof. Emeritus of Astron., Former Head, Dept. of Earth Sci., Wittenberg, Univ., Springfield, Ohio. Home Add.: 288 West First St., Springfield, Ohio. ASTRONOMY. b. Idana, Kans., Apr. 12, 1892. s. Oliver Moses and Mary Ida (Ritchie) W. Edn.: A.B., Park Coll., 1914; M.A., Northwestern Univ., 1922; Ph.D., ibid., 1932. m. Eula Treadway, Oct. 7, 1941. Exp.: Instr. in Astron., Northwestrn Univ., 1920-24; Asst. Prof. Math, Ohio Wesleyan, 1924-26; Assoc. Prof. of Math., Lake Forest Coll., 1926; Assoc. Prof., Math., Eastern Ill. State Tchrs. Coll., 1934-36; Asst. Astron., Assoc. Astron., Astronomer, U. S. Naval Observ., 1936-46; Prof. of Astron., Hd. of Dept., Wittenberg Univ., 1946-60; Hd. Dept. of Earth Sci., ibid., 1951-60. Hon. Pos.: Vice-Pres., Physics and Astronomy Sect., Ohio Acad. of Sci., 1952. Mem.: Am. Astronomical Soc.; A.A.A.S.; Fellow, Ohio Acad. of Sci.; Sigma Xi; Phi Gamma Delta; Sigma Pi Sigma. Contbr. to: Jour. of the Ohio Acad. of Sci.; Popular Astron.; Astronomical Jour.; Sky and Telescope; Ohio Jour. of Sci. War. Rec.: U. S. Army, 1917-18. Areas of Rsch.: Celestial Mechanics.

WYLLYS, Ronald Eugene (Mr.), Computer Systems Specialist, System Develop. Corp., 2500 Colorado Ave., Santa Monica, Calif. Home Add.: 21412 Arapahoe Trail, Chatsworth, Calif. INFORMATION STORAGE AND RETRIEVAL. b. Phoenix Ariz., May 14, 1930. s. Rufus Kay and Eugenia (Dunsmore) W. Edn.: B.A., Ariz. St. Univ., 1950. m. Jean Graham, Nov. 2, 1957. c.: Erika; Graham; Athala. Exp.: Mathematician, Dept. of Defense, Ft. Meade, Md., 1954-59; Assoc., Planning Rsch. Corp., Los Angeles, Calif., 1959-61; Computer Systems Specialist, System Devel. Corp., Santa Monica, Calif., 1961 . Mem.: Am. Documentation Institute; Assn. for Computing Machinery; Inst. of Radio Engrs.; Mathematical Assn. of Am.; Soc. for Industrial and Applied Math.; A.A.A.S.; Pi Mu Epsilon. Contbr. to: Communications of the A.C.M. Serv. Rec.: U. S. Navy, 1948-49, 1952-54. Areas of Rsch.: Information Storage and Retrieval.

WYMAN, LeRoy Linwood, Sr. (Mr.), Chief, Chem. Metallurgy, Natl. Bur. of Standards, Wash. 25, D. C. Home Add.: 5214 Elsmere Ave., Bethesda 14, Md. PHYSICAL METALLURGY; METALLOGRAPHY. b. Kenosha, Wis., Sept. 20, 1899. s. Thelo Linwood and Alice Gertrude (Lapp) W. Edn.: B.S., Univ. of Minn., 1922; Ch.E., ibid., 1923. m. Frieda Mildred Haupert, Aug. 31, 1922. c.: Gertrude Leona; Carolyn Jeanne; LeRoy Linwood, Jr. Exp.: Asst. Prof., Okla. Schl. of Mines, 1923-24; Metallurgist, Edison Lamp Wks., Gen. Electric Co., Harrison, N. J., 1924-29; Rsch. Metallurgist, Rsch. Lab., Gen. Elec. Co. and Knolls Atomic Power Lab., Schenectady, N. Y., 1929-53; Rsch. Supvr., War. Metallurgy Commn., NDRC-OSRD, Wash. D. C., 1942-43; Chf., Chem. Metallurgy, Natl. Bur. of Standards, Wash., D. C., 1953—. Hon. Pos.: Chmn., Comm. E-4 on Metallography, ASTM, 1938—; Chmn., Comm. A-10, 1958—. Mem.: Soc. Testing Materials; Am. Soc. Metals; Am. Crystallographic Assn.; Inst. of Metals; Am. Powder Metal Inst.; A.A.A.S.; Wash. Acad. Sci.; Am. Inst. Mining Met. Engrs.; Am. Ordnance Assn.; Alpha Chi Sigma. Contbr. to: Am. Soc. Metals-Trans. and Metal Progress; Am. Inst. M. and M. Engrs.; Am. Soc. Testing Materials. Serv. Rec.: U.S.A.E.F., 1918-19; U.S.C.G., 1941-45. Areas of Rsch.: Tungsten and Molybdenum, Powder Metallurgy, Phase Diagrams, Copper Embrittlement, Brazing, Pure Metals.



YABROFF, David Louis (Ph.D.), Mgr. of Chem. Rsch. and Devel., Shell Devel. Co., Emeryville, Calif. Home Add.: 3984 Los Arabis Dr., Lafayette, Calif. CHEMISTRY. b. Wichita, Kans., June 30, 1908. s. Oscar and Rose (Wall) Y. Edn.: B.S., Univ. of Nebr., 1929; Ph.D., Univ. of Calif., 1931. m. Evelyn R. Mittelman, Jan. 10, 1936. c.: Ronald; Stephen. Exp.: Chemist, Assoc. Dir., Shell Dev. Co., Emeryville, Calif., 1934-50; Mgr., Mfg. Rsch., Shell Oil Co., N. Y., 1951-52; Assoc. Dir., Shell Dev. Co., Emeryville, Calif., 1952; Dir., Agri. Rsch. Div., Shell Dev. Co., Denver, Colo., 1953-55; Mgr., Mkt. Devel. Dept., Shell Chemical Co., N. Y., 1955-58; Mgr., Rsch. and Devel., N. Y. Industrial Chem. Div., Shell Chem. Co., N. Y., 1959-61; Mgr. of Chem. Rsch. and Devel., Shell Dev. Co., Emeryville, Calif., 1961—. Mem.: Phi Beta Kappa; Phi Lambda Upsilon; Sigma Xi; Zeta Beta Tau; Am. Chem. Soc.; Commercial Chemists Devel. Assn.

YACORZYNSKI, George Kassimer (Ph.D.), Prof. and Head, Div. of Psychol., Dept. of Neurol. and Psychiatry, Northwestern Univ. Med. Schl., Chicago, Ill. MEDICAL PSYCHOLOGY. b. Nov. 21, 1907, New Haven, Conn. s. Kazimer and Maria (Kamodzinska) Y. Edn.: B.A., Univ. of Wash., 1932; M.S., ibid., 1934; Ph.D., Northwestern Univ., 1937. m. Coralie E. Ratliff of Medicine Hat, Alberta, Canada, Oct. 6, 1934. d. Fred and Margaret Palmer Ratliff. c.: Jennifer Anne. Exp.: Tchng. Fellow, Univ. of Wash., 1931-35; Asst. in Psychol., Northwestern Univ., 1935-37; Rsch. Assoc. and Post-Grad. Fellow, ibid., 1937-38; Instr. in Nervous and Mental Diseases, Northwestern Univ. Med. Schl., 1938-40; Assoc. in Nervous and Mental Diseases, ibid., 1940-43; Asst. Prof., Dept. of Neurol. and Psychiatry, ibid., 1943-46; Assoc. Prof., ibid., 1946-55; Prof., ibid., 1955—. Mem.: Am. Psychol. Assn.; Sigma Xi; A.A.A.S.; Am. Acad. of Psychoanalysis; Inst. of Med. of Chicago; Midwestern Psychol. Assn.; Ill. Psychol. Assn.; Ill. Soc. for Personality Study; Chicago Neurological Soc. Contbr. to: Scientific Med. and Psychol. Jour. Author: Med. Psychology: A Basis for Psychiatry and Clin. Psychology; Investigation of Carbon Dioxide Therapy. Listed in: A.M.S.; Who's Who in the Midwest. Special Int.: Psychopathology and Psychonurology.

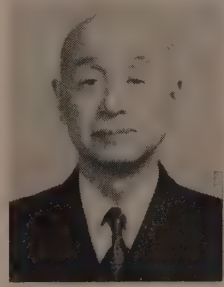
YACOVONE, Joseph Anthony (D.M.D.), Dentist, 23 Broad St., Pawtucket, R. I. Home Add.: 39 Sylvan Rd., Rumford 16, R. I. DENTAL RESEARCH, DENTISTRY. b. Pawtucket, R. I., June 19, 1915. s. John B. and Jennie S. (Rose) Y. Edn.: A.B., Brown Univ., 1936; D.M.D., Tufts Univ. Dent. Schl., 1942. m. Margaret M. Kilmartin, Apr. 19, 1950. c.: Brian J.; Carolyn Ann. Exp.: Rsch. Assoc., Tufts Univ., Schl. of Dent. Med., Boston, Mass., 1956-60; Assoc. Mem., Inst. of Stomatol. Rsch., Brookline, Mass., 1959—; Asst. Dent. Surgeon, St. Joseph's Hosp., Prov., R. I., 1946—; Instr., Univ. of R. I., Schl. of Dent. Hyg., Kingston, R. I., 1961—. Mem.: Internatl. Assn. for Dent. Rsch.; N. Y. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Am. Dent. Assn.; R. I. Dent. Soc. Contbr. to: Archives of Oral Biol. Serv. Rec.: U. S. Army Air Force, 1942-46. Areas of Rsch.: Clinical Dental Research.

YALE, Burton Allen (Mr.), NASA Prog. Mgr., Ramo Wooldridge, Canoga Pk., Calif., Local Add.: 905 16th N.W., Wash., D.C. APPLIED MATHEMATICS; COMPUTER PROGRAMMING COMPUTER APPLICATIONS. b. Bradford, Pa., Dec. 2, 1931. s. Clarence Raymond and Lena Helen (Marchurie) Y. Edn.: B.A., Univ. of Buffalo, 1956. m. Priscilla Jane Perry, 1955. c.: Burton, Jr.; Jamie Susan; Tamie Elizabeth. Exp.: Applications Consult., Bendix Pacific, N. Hollywood, Calif., 1959-60; Supvr., Applications, Bendix Computer, Los Angeles, Calif., 1960-61; Rep., Ramo Wooldridge, 1961—. Mem.: Am. Math. Assn.; S.I.A.M.; A.R.S.; N.R.S.; I.R.E.; A.C.M. Serv. Rec.: U. S. Navy, 1948-50. Areas of Rsch.: Digital Computer Systems; Design and Applications, Sales.

YADAVALLI, Sriramamurti Venkata (Ph.D.), Sr. Math. Physicist, Stanford Rsch. Inst., Menlo Park, Calif. Home Add.: 868 Thornwood Dr, Palo Alto, Calif PHYSICS, ELECTRICAL ENGINEERING. b. Secunderabad, Deccan, India, May 12, 1924. s. Yadavalli Sankara Somayajulu and Durgamba (Boddupalli) Y. Edn.: B.S., Andhra Univ., India, 1942; M.S., ibid., 1945; M.S., Univ. of Calif., 1949; Ph.D., ibid., 1953. m. Suzan Sunel, Apr. 26, 1952. Exp.: Officer-in-Charge, Physics and Chem. Labs., Engr. Rsch. Dept., Hyderabad, India, 1946-48; Tchng. Asst., Univ. of Calif., 1949-52; Lectr., ibid., 1952; Rsch. Engr., Inst. Engrng. Rsch., ibid., 1952-53; Mem., Technical Staff and Consulting Engr., Gen. Electric, Syracuse, N. Y., Palo Alto, Calif., 1953-59; Sr. Math. Physicist, Stanford Rsch. Inst., Menlo Park, Calif., 1959—. Mem.: Am. Phys. Soc.; Inst. of Radio Engrs.; Sigma Xi; A.A.A.S.; Calif. Acad. of Sci. Contbr. to: Jour. of Applied Phys.; Quarterly Applied Math.; Proc. I.R.E.; Jour. of Franklin Inst.; Jour. of Electronics and Control, London; Zeit fur Physik. Areas of Rsch.: Microwave Devices, Stochastic Processes, Electron and Plasma Physics, Mathematical Physics.

YALKOVSKY, Ralph (Ph.D.), Asst. Prof., State Univ. Coll., N. Y., N. Y. Home Add.: R.D. #2, Box 663, New Paltz, N. Y. MARINE GEOLOGY. b. Chicago, Ill., Oct. 11, 1917. s. Samuel (dec.) and Elizabeth (Lamb) Bloch Y. Edn.: B.S., Univ. of Chicago, 1946; M.S., ibid., 1955; Ph.D., ibid., 1956. Exp.: Clerk, U. S. Post Office, Chicago, Ill., 1937-49; Geologist, U. S. Corps of Engrs., Walla Walla, Wash., 1949-50; Jr. Civil Engr., St. of Calif., Div. of Highways, San Francisco, Calif., 1950-52; Geophysical Computor, Western Geophysical Co., Santa Barbara, Calif., 1952-54; Assoc. Engr., Crane Co., Chicago, Ill., 1955-56; Asst. Prof., Geol. Dept., Mont. St. Univ., 1956-61; Asst. Prof., St. Univ. Coll., New Paltz, N. Y., 1961—. Hon. Pos.: Chmn., Am. Geol. Inst., Boy Scout Comm., Western Mont.; Chmn., Housing Transportation Committee, G.S.A. Mem.: Hist. of Sci. Soc.; A.A.A.S., Fellow; Am. Soc. Limnology and Oceanography; Sigma Xi; Am. Geophysical Union; Kappa Epsilon Pi. Contbr. to: Jour. of Geol.; Jour. Geological Edn.; Bull. Geol. Soc. of Am.; The Mont. Almanac. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: M.S.U. Rsch. Grant, 1959-60; Visiting Investigator at Archivo General de Indias Seville, MUSEO Naval, Madrid and Instituto Espanol de Oceanografia, Madrid; O.N.R. Grant, Woods Hole Ocean. Inst., 1958; Diploma Instituto de Cultura Hispanica Madrid, 1960. Areas of Rsch.: Geochemistry of Recent Marine Sediments; Hist. of Oceanography; X-ray Diffraction Studies of Clay Minerals.

YAMAUCHI, Shoyei (M.D.), 1010 S. King St., Honolulu 14, Hawaii Home Add.: 2413 E. Manoa Rd., Honolulu, Hawaii. GENERAL SURGERY. b. Okinawa, Japan, Dec. 19, 1904. s. Shosei and Uto (Kameya) Y. Edn.: B.S., Univ. of Hawaii, 1929; M.D., Univ .of Mich., 1931. m. Erna Bergman, 1934. c.: Shoyei, Jr.; Shoji; Shosei. Exp.: Visiting Surgeon, St. Francis Hosp., Honolulu, Hawaii, 1935—; Visiting Surgeon, Queens Hosp., Honolulu, Hawaii, 1935—; Chf. Surgeon, Kuakini Hosp., Honolulu, Hawaii, 1947-57. Hon. Pos.: Comm. on Aging, St. of Hawaii; Chmn., Health Comm., Chronic Illness and Aging Committee, H.M.A. Mem.: A.A.A.S.; Sigma Xi; Am. Coll. of Surgeons; F.A.C.S.; Internatl. Coll. of Surgeons; F.I.C.S.; Am. Coll. of Cardiology; F.A.C.C.; A.M.A. Author: Chyluria, 1938 and 1945; Carciwoma of Stomach, 1943; Pseudomucinous Cystadenoma of Pancreas, 1933. Contbr. to: Jour. of Urology; Hawaii Med. Jour. Areas of Rsch.: General Surgery; Urology (Lymphatics); Health Problems of Aging.

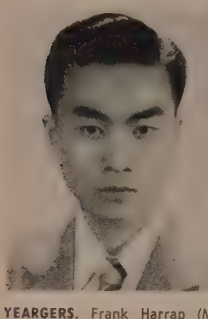


YANG, Samuel (Mr.), Rsch. Analyst, Reference Dept., Libr. of Congress, Washington 25, D. C. Home Add.: 1845 Irving St., N.W., Washington 10, D. C. ECONOMICS, GEOGRAPHY, LINGUISTICS INCHINESE AND JAPANESE LANGUAGES. b. Tientsin, China, July 10, 1895. Edn.: B.S., Tokyo Meiji Univ., Japan, 1916; B.A., Peyang Univ., China, 1919. m. Helen Han, July, 1921. c.: John Young; George; Jackson. Exp.: Bibliographer, Libr. of Congress, Wash., D. C., 1950-53; Prof., Schl. of Languages, Wash., D. C., 1954-55; Consultant, Coun. for Econ. and Indust., Wash., D. C., 1955-56; Rsch. Analyst, Libr. of Congress, Wash., D. C., 1956—. Mem.: Natl. Geographic Soc.; A.A.A.S. Author: Accountancy, 1920; Banking, 1922; Sino-Japanese Dictionary, 1935. Areas of Rsch.: Modern Chinese and Japanese Languages, Chinese Geography and Political and Economic Affairs.

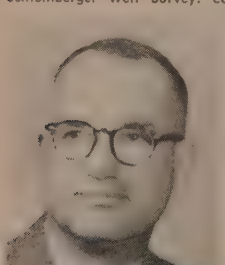
YARDLEY, John F., Chief Engr. for Project Mercury, McDonnell Aircrafts, Cape Canaveral, Fla.

YEH, Hsuan (D.Sc.), Prof. of Mech. Engrng. and Dir., Towne Schl. of Civil and Mech. Engrng., Univ. of Pa., Phila. 4, Pa. Home Add.: 505 Kennerly Rd., Springfield, Pa. MECHANICAL ENGINEERING, AERODYNAMICS, TURBOMACHINERY. b. Shanghai, China, Dec. 1, 1916. s. Wushao and Chengtsin (Hsiang) Y. Edn.: B.S., Chiao-Tung Univ., 1936; S.M., Mass. Inst. of Tech., 1944; Sc.D., ibid., 1950. Exp.: Instr., M.I.T., 1946-50; Rsch. Assoc., Asst. Prof., Assoc. Prof., Johns Hopkins Univ., 1950-56; Prof., Univ. of Pa., 1956—. Mem.: Am. Soc. of Mech. Engrs.; Am. Soc. of Engrng. Edn.; Inst. of the Aerospace Scis.; Am. Rocket Soc.; Am. Assn. of Univ. Profs.; The Franklin Inst.; Sigma Xi; Pi Tau Sigma. Author: Principles of Mechanics of Solids and Fluids, 1960. Contbr. to: Jour. Aerospace Scis.; Trans. of A.S.M.E. War Record: Chinese Air Force, 1936-46. Areas of Rsch.: Fluid Mechanics, Aerodynamics, Turbomachinery, Heat and Mass Transfer.

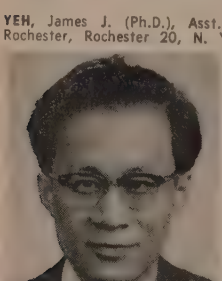
YAU, Stephen Sik-Sang (Ph.D.), Asst. Prof., Northwestern Univ., Evanston, Ill. Home Add.: 615 Case Pl., Evanston, Ill. ELECTRICAL ENGINEERING. b. China, Aug. 6, 1935. s. Pen Chi and Wing Chun (Shum) Y. Edn.: B.S., Natl. Taiwan Univ., China, 1958; M.S., Univ. of Ill., 1959; Ph.D., ibid., 1961. Exp.: Asst. Prof., Northwestern Univ., Evanston, Ill., 1961—. Mem.: Inst. of Radio Engrs.; Am. Mathl. Soc.; Soc. for Industrial and Appl. Math.; Eta Kappa Nu; Pi Mu Epsilon; A.A.U.P.; Am. Soc. for Engrng. Edn. Contbr. to: IRE Trans. on Circuit Theory; Jour. of Franklin Inst.; Jour. of the Soc. for Indust. and Applied Math. Areas of Rsch.: Circuit Theory; Graph Theory; Communications.



YEARGERS, Frank Harrap (Mr.), Area Mgr., Mid-Continent Area, Schlumberger Well Survey. Corp., 1012 First Natl. Bank Bldg., Tulsa, Okla. Home Add.: 4020 E. 42nd St., Tulsa, Okla. PETROLEUM ENGINEERING WITH ASSOCIATED PROBLEMS IN ELECTRICAL AND RADIATION LOGGING OF BORE HOLES. b. Wilkinsburg, Pa., Dec. 2, 1911. s. Albert Henry and Mary (Flanagan) Y. Edn.: B.S., Univ. of Pittsburgh, 1933; M.S., ibid., 1935. m. Pauline Klingensmith, June 16, 1936. c.: Edward; Paul; Frances Anne. Exp.: Location Manager, Schlumberger Well Surveying Corp., Houma, La., 1936-38; Location Mgr., ibid., Opelousas, La., 1938-49; Location Mgr., ibid., Harvey, La., 1949-52; Div. Mgr., La. Coast Div., ibid., Lafayette, La., 1952-59; Area Mgr., Mid-Continent Areas, ibid., Tulsa, Okla., 1959 . Mem.: A.A.A.S.; A.A.P.G.; A.P.I.; A.I.M.E.; Sigma Gamma Epsilon



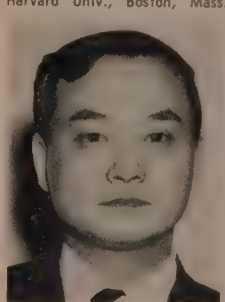
YEH, James J. (Ph.D.), Asst. Prof., Dept. of Math., Univ. of Rochester, Rochester 20, N. Y. Home Add.: 1170 Genesee St., Rochester 11, N. Y. MATHEMATICS (INTEGRATION IN FUNCTION SPACES, FUNCTIONAL ANALYSIS FUNCTIONAL EQUATIONS). b. Tainan, Formosa, Apr. 26, 1927. s. T. J. and T. A. (Lin) Y. Edn.: B.S., Natl. Taiwan Univ., Formosa, 1950; M.A., Univ. of Minn., 1954; Ph.D., ibid., 1957. Exp.: Instr., Univ. of Minn., 1957-58; Instr., Mass. Inst. of Technol., 1958-60; Asst. Prof., Univ. of Rochester, 1960—. Mem.: Am. Math. Soc.; Sigma Xi. Contbr. to: Trans. of the Am. Mathematical Soc.; Proc. of the Am. Mathematical Soc. Areas of Rsch.: Math. (Integration in Function Spaces, Functional Analysis, Functional Equations).



YELLIN, Joel Alan (Mr.), Chf. Pharmacist, The Hebrew Home for the Aged, 5901 Palisade Ave., Bronx 71, N. Y. Home Add.: 51 Bayley Ave, Yonkers, N. Y. HOSPITAL PHARMACY. b. Brooklyn, N. Y., Feb. 1, 1933. s. Abraham and Mollie (Rothchild) Y. Edn.: B.S., Coll. of Pharm., Columbia Univ., 1954. Exp.: Staff Pharmacist, Long Island Jewish Hosp., N. Y. C., 1957; Chf. Pharmacist, Hebrew Home for the Aged, 1957—. Hon. Pos.: Chmn., Pharm. Assembly, N. Y. St. Coun. of Hosp. Pharmacists; Chmn., Am. Soc. of Hosp. Pharmacists; Comm. on Pharm. Serv. in Nursing and Old Age Homes; Pres., N. Y. Chpt., ibid., Vice-Pres., N. Y. 5, Counc. of Hosp. Pharm. Mem.: Am. Pharm. Assn.; Am. Soc. of Hosp. Pharmacists; A.A.A.S.; Am. Inst. of the Hist. of Pharm.; Can. Soc. for Hist. of Pharm. Contbr. to: Jour. Am. Soc. of Hosp. Pharmacists; Columbia Grad.; N. Y. Inst. of Hosp. Pharm. Rev. Areas of Rsch.: Development of Hosp. Pharmacy in non-Hosp. Institutions—i.e., Chronic Disease Home, Old Age and Nursing Homes; "Geriatric Hosp. Pharmacy."

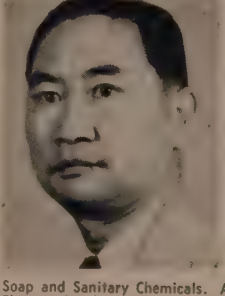
YEN, John T. C. (D.Sc.), Prof. of Geol. and Chmn., Dept., Villanova Univ., Villanova, Pa. Home Add.: 4 Lowry's Lane, Rosemont, Pa. INVERTEBRATE PALEONTOLOGY AND STRATIGRAPHY. b. Canton, China, Feb. 15, 1903. (U. S. Citizen by Naturalization). Edn.: B.A., St. John's Univ., 1927; B.Sc., Nanking, 1929; D.Sc., Glasgow Univ., 1948. m. Marie Louise Henry, 1945. Exp.: Asst. Zool., Peiping, 1929-34; Rsch. Assoc. Geol., Nanking, 1934-35; Rsch. Scientist in Belgium and France, 1936 and 1937; Humboldt Scholar in Germany and Austria, 1937-39; Exchange Lectr. in England under British Universities' Com., 1939 and 1940; Rsch. Scientist in different Univs., U.S.A., 1940-43; P-4 Geologist, U. S. Geol. Survey, 1943-45; Rsch. Paleontologist, U. S. Geol. Survey and U. S. Natl. Museum, Wash., D. C., 1945-53; Rsch. Geologist in Europe, 1955 and 1956; Prof. of Geol., Villanova Univ., 1956—; Chmn. Dept., 1958—; Cooperating Geologist, Pa. St. Geological Survey, 1960—. Mem.: Fellow, The Geol. Soc. of Am.; The Geol. Soc. of London; Am. Assn. for Adv. of Sci.; Am. Geophys. Union; The Paleontol. Soc.; Am. Geochem. Soc.; The Malac. Soc. of London; The Soc. of Systematic Zool.; Am. Ecological Soc.; Natl. Assn. of Geology Tchrs.; Am. Inst. of Geology. Contbr. to: Bull. of Geol. Soc. of Am.; Am. Jour. of Sci.; U. S. Geol. Survey Prof. Paper Series; Proc. Acad. of Natural Sci. of Phila.; Proc. of Calif. Acad. of Sci.; Proc. Malac. Soc., London; Geol. Mag. of Cambridge, England; Bull. of Royal Museum of Natural Hist. of Belgium; Jour. of Palentol.; Abhandlungen Series of Senckenberg Soc. of Frankfurt a.M., Germany and others. Areas of Rsch.: Invertebrate Paleontology and Stratigraphy, Invertebrate Ecology and Paleoecology, and Inter-continental Correlations.

YEN, Peter Kai-Jen (D.M.D.), Clinical Assoc. in Dental Medicine, Harvard Univ., Boston, Mass. Home Add.: 134 Upland Ave., Newton Highlands, Mass. BIOPHYSICS—RADIOACTIVE TRACER STUDIES OF CALCIFIED TISSUES: BONE AND TEETH. b. China, Feb. 10, 1921. s. Benjamin C. L. and Alice (Ling) Y. Edn.: D.D.S., W. China Union Univ. Dental Coll., 1947; D.M.D., Harvard Schl. of Dental Medicine, 1954. m. Chin-Ho Yu, Nov. 26, 1949. c.: Paul Michael; Stephen. Exp.: Asst., Harvard Univ., 1955-57; Instr., ibid., 1957-61; Assoc., ibid., 1961—. Mem.: Am. Dental Assn.; Internatl. Assn. for Dental Rsch.; Am. Assn. for the Advancement of Sci. Contbr. to: Am. Jour. of Orthodontics; Angle Orthodontics; Jour. of Dental Rsch. Areas of Rsch.: Uptake of Radiosodium in Bone and Teeth of Normal and Acidotic Rhesus Monkeys and Rats. Study of Bone and Teeth with I 131, Ca 45 and P 32 in Monkeys. Radiocalcium Turnover in Cranial Bones and Sutures at Various Time Intervals in Young and Old Rhesus Monkeys.



YIANNOS, Peter Nicholas (Ph.D.), Rsch. Group Leader, Scott Paper Co., Phila. 13, Pa. Home Add.: Apt. J-5, Yorkshire Apts., Chestnut St., Chester, Pa. SURFACE CHEMISTRY. b. Olympia, Greece, Nov. 27, 1932. s. Nicholas and Lorene (Katavelos) Y. Edn.: B.S.Ch.E., Univ. of Mo. Schl. of Mines., 1956; M.S., The Instit. of Paper Chem., Lawrence Coll., 1958; Ph.D., ibid., 1960. Exp.: Project Engr., Alton Box Board Co., Alton, Ill., 1956; Rsch. Group Leader, Scott Paper Co., Phila., Pa., 1960—. Mem.: Tappi; Am. Assn. for the Adv. of Sci.; Order of Ahepa; Univ. Club. of Phila.; Tau Beta Pi; Alpha Chi Sigma. Gen. Int.: Recipient of the Annual E. J. Albert Award of Tappi, May 25, 1961. Areas of Rsch.: Intermolecular Forces; Sizing; Absorbency; Wood Fiber Properties; Paper Testing; Pulp Processing.

YIP, Jethro Southerland (Mr.), Agri. Chem. and Entomologist, Twining Labs., Fresno, Calif. Home Add.: 796 Collins Ave., Fresno, Calif. CHEMISTRY AND ENTOMOLOGY. b. Victoria, B.C., July 28, 1895. s. Yip-Wan Shang and Mary (Mark) Y. Edn.: B.S., Univ. of Calif., 1921; M.S., ibid., 1923. m. Mabel Leo, July 6, 1936. Exp.: Control Chem., F. A. Frazier Co., Calif., 1924-25; Rsch. Entomologist, Calif. Spray-Chem. Co., 1925-29; Rsch. Entomol., Standard Oil Co. of Calif., 1930-31; Rsch. Entomolst., Growers Chem. Co., Calif., 1932-34; Rsch. Entomol., Bur. of Plant Ind., U.S.D.A., 1934-36; Rsch. Assoc., Plant Nutrition, Univ. of Calif., 1936-41; Chem. and Entomol., Twining Labs., Fresno, Calif., 1941—. Contbr. to: Pyrethrum Culture, Pa. Farmer; Jour. Econ. Entomol.; Indus. Engrng. Chem.; Soap and Sanitary Chemicals. Areas of Rsch.: Produced Pyrethrum Flowers in the First Year (in culture solution) and its Flowers having a total Pyrethrum content of over 5% as compared with those by Soil requiring two years and its flowers having a maximum Pyrethrum content of 2%.



YNTEMA, Leonard Francis (Ph.D.), Metallurgist, Bjorksten Rsch. Lab., (ret.), Madison, Wis. Home Add.: Wadsworth, Ill. INORGANIC CHEMISTRY. b. St. Johns, Mich., July 29, 1892. s. Douwe B. and Mary E. (Loomis) Y. Edn.: A.B., Hope Coll., 1915; A.M., Univ. of Ill., 1917; Ph.D., ibid., 1921. Hon.

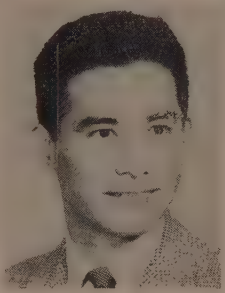
Deg.: D.Sc., Hope Coll., 1927. m. Margaret Jeannette Busey, Aug. 29, 1923. c.: Douwe Busey; George Busey; Mary Katherine. Exp.: Chemist, Bur. of Aircraft Prodn., Pgh., Pa., and Dayton, Ohio, 1917-19; Natl. Rsch. Fellow, Univ. of Ill. and Yale Univ., 1921-23; Instr., Univ. of Ill., Urbana, Ill., 1923-24; Asst. Prof., ibid., 1924-27; Assoc. Prof., ibid., 1927-30; Prof. of Chem., Hd. of Dept., St. Louis Univ., St. Louis, Mo., 1930-43; Dir., Rsch., Fansteel Metall. Corp., N. Chgo., Ill., 1943-57; Vice Pres., ibid., 1955-57; Sr. Metall., Stanford Rsch. Institute, Menlo Pk., Calif., 1957-59; Metall., Bjorksten Rsch. Lab., (ret.), 1959-61. Hon. Pos.: Chmn., Ill. Sect. Am. Chem. Soc., 1927. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Electrochem. Soc.; Am. Inst. Chemists; Alpha Chi Sigma; Sigma Xi; Phi Lambda Upsilon; Phi Eta. Contbr. to: Jour. Am. Chem. Soc.; Jour. of Opt. Soc.; Am. Ind. and Eng. Chem.; Jour. Phys. Chem. Areas of Rsch.: Inorganic Chemistry; Rare Earths; Electrochemistry of Nonaqueous Solutions; Metallurgy of Refractory Metals.

YODER, Rev. Fr. James Willard, Assoc. Prof. of Psychol., Paterson St. Coll., 300 Pompton Rd., Wayne, N. J. Rector, St. Luke's Episcopal Ch., Paterson, N. J. Home Add.: St. Luke's Rectory, 204 Maryland Ave., Paterson 3, N. J. CLINICAL PSYCHOLOGY. b. R. R. Shipshewana, Ind., May 19, 1902. s. James Michael and Sarah Ellen (Large) Y. Edn.: A.B., Tri-State Coll., 1922; M.A., Ind. Univ., 1926; B.D., Univ. of the South, 1956; Post Grad. Study, Ind. Univ. and N. Y. Univ. m. Elsie Mae Loertz, Oct. 2, 1932. c.: J. James; James W., Jr.; Felicia; Margaret; Sherida. Exp.: Pastor of Churches in Ind., N. Y. and N. J., 1922—; Psychologist, Ind. Univ. Med. Schl. and Hosps., 1931-33; Dir., Evansville, Ind. Guidance Clin, 1933-37; Psychologist, Eli Lilly and Co., Indianapolis, 1938-42; Instr., Purdue Univ., 1945-48; Dir., Relig. Edn., Diocese of New York, 1948-51; Lectr., New York Univ., 1950-51; Guest Prof., Univ. of the South, s.s., 1951; Psychologist, Mountainside Hosp., Montclair, N. J., 1956-58; Assoc. Prof. of Psychol., Paterson St. Coll., 1958—. Hon. Pos.: Exec. Comm., Ind. Assn. of Clin. Psych., 1940-45; Pres., Ind. Cong'l. Christian State Conf., 1935-36; Pres., Bd. of Dirs., Magic City Theatre Co., Inc.; Advisory Bd., Assn. for Academically Talented Children. Mem.: Am. Psych. Assn.; Assn. for Higher Edn.; Kappa Delta Pi; A.A.U.P.; Local, State and Natl. Edn. Assn.; Assn. N. J. State Coll. Faculties; Am. Church Union; Masonic; Past Master VanBuren Grange, Lagrange Co.; Greater Paterson Coun. of Churches. Contbr. to: Internatl. Jour. of Relig. Edn.: Living Church. Serv. Rec.: Aux. Chaplain, 1941-45. Areas of Rsch.: Relationships Between the Disciplines of Religion, Psychology, and Education: The Personality of Jesus; Aphasia; Clinical-Psychological Diagnosis and Therapy.

YOHO, Robert Oscar (Dr.), Dir., Pub. Health Edn., Ind. State Bd. of Health, Indianapolis, Ind. Home Add.: 2318 N. Fisher, Indianapolis, Ind. PUBLIC HEALTH AND SCHOOL HEALTH. b. Solsberry, Ind., Sept. 29, 1913. s. Oscar and Ola (Cox) Y. Edn.: A.B., Ind. Univ., 1934; M.A., ibid., 1939; H.S.D., ibid., 1957. m. Jeanette Slinkard, 1934. c.: Jon; Michael; Roberta. Exp.: Tchr. and Coach, Solsberry H. S., Solsberry, Ind., 1935-39; Tchr. and Coach, Mt. Vernon H. S., Mt. Vernon, Ind., 1939-41; Consultant, Health and Phys. Edn., Ind. St. Bd. of Health, 1941-44; Dir. of Health and Phys. Edn., ibid., 1944-45; Dir. of Bur. Pub. Health Edn. Record and Statistics, ibid., 1945—. Hon. Pos.: Fellow, Am. Acad. of Phys. Edn.; Vice-Pres. for Health A.A.H. Phys. Edn. and Rec.; Chmn., Pub. Health Edn. Sect., A.P.H.A.; Pres., Ind. Conf. on Soc. Work; Pres., Ind. Pub. Health Assn.; Pres., Ind. Heart Fund, 1960-61; U. S. Delegate, World Health Assembly, Geneva, Switz., 1959. Mem.: Am. Pub. Health Assn.; Soc. of State Dir. of Health and Phys. Edn.; Mem., Soc. of Pub. Health Educators; Mem., Joint Coun. on Health Edn., A.M.A.-N.E.A.; Am. Assn. for Health, Phys. Edn. and Rec.; Am. Acad. of Phys. Edn.; Masons; Shriner; Phi Epsilon Kappa. Contbrng. Author: Fit to Teach, 1958; Healthful School Environment, 1956; School Health Services, 1953; Children in Focus, 1954; Health Education, 1960. Contbr. to: Jour. Am. Assn. for Health, Phys. Edn. and Rec.; Jour. Am. Pub. Health Assn.; Schl. Safety; Monthly Bull., Ind. St. Bd. of Health; Jour. Schl. Health. Gen. Int.: Honor Award, Ind. Governors Commn. on Rec.; Honor Award Ind. Pub. Health Assn.; Honor Award Am. Assn. for Health, Phys. Edn. and Rec.; Honor Award Ind. Assn. for Health, Phys. Edn. and Rec.; Distinguished Serv. Award, Ind. Heart Assn.; Honor Award, Ind. Public Health Assn.; Prentiss Award, Cleveland Health Mission. Areas of Rsch.: Pub. Health Edn., Physical Edn., Rehabilitation.

YODER, John Richard (Mr.), Pres., Measurement Systems, Inc., 140 Water St., So. Norwalk, Conn. Home Add.: 345 Wilton Rd., Westport, Conn. ELECTRO-OPTICAL INSTRUMENTATION, DESIGN AND DEVELOPMENT. b. Cincinnati, Ohio, Jan. 20, 1922. s. Leonard A. and Edythe (Bollinger) Y. Edn.: B.S., Physics, Harvard Univ., 1946. m. Cynthia Hope, May 3, 1945. c.: Sandra Hope; Elizabeth Jane; Martha Lynn. Exp.: Engr., Airadio, Inc., Stamford, Conn., 1946-48; Group Leader, Devel., CGS Labs., Inc., ibid., 1948-53; Chf. Engr., Stelma, Inc., ibid., 1953-55; Chief, Adv. Devel. Secty., Perkin-Elmer Corp., Norwalk, Conn., 1955-60; Pres., Measurement Systems, Inc., ibid., 1960—. Mem.: Am. Phys. Soc.; Optical Soc. of Am.; Inst. of Radio Engrs.; Am. Rocket Soc. Serv. Rec.: U.S.A.A.F., 1943-45. Areas of Rsch.: Design and Development of Electro-Optical Equipment; Reconnaissance Devices; Image Analysis and Transmission Apparatus; Spectrophotometric and Radiometric Instruments and Automatic Optical Control and Measuring Equipment.

YONEHIRO, Earl Grant (M.D., Ph.D.), Surgeon, St. Louis Park Med. Ctr., 4959 Excelsior Blvd., Minneapolis 16, Minn. Home Add.: 5800 Bernard Pl., Mlps. 24, Minn. MEDICINE-SURGERY. b. New Castle, Calif., Mar. 25, 1925. s. John S. and Kay (Funaoka) Y. Edn.: M.D., Univ. of Rochester, 1952; Ph.D., Univ. of Minn., 1960. m. Janet Johns, Oct. 22, 1960. c.: Bruce Lane. Exp.: Intern, Univ. Minn. Hosps., Minneapolis, Minn., 1952-53; Am. Cancer Soc. Fellow in Surgery, ibid., 1955-58; Med. Fellow, ibid., 1953-55; Trainee, U. S. Pub. Health Fellow in Cancer, Univ. of Minn. Hosp., Mlps., Minn., 1958-59; Supvr., Cancer Rsch., ibid., 1958-60; Clinical Instr., Univ. of Minn. Med. Schl., ibid., 1960-61; Clin. Asst. Prof., ibid., 1961—; Surg., St. Louis Park Med. Ctr., Minneapolis, Minn., 1962—. Mem.: Diplomate Am. Bd. of Surgery; Fellow, Am. Fed. for Clin. Rsch.; Am. Assn. for the Adv. of Sci.; Minn. Med. Found.; Comm. on Cancer for Minn. St. Med. Assn.; Fellow, Minneapolis Surg. Soc.; Hennepin Co. Med. Soc.; Am. Med. Assn.; Mem. Clin. Staff of Various Hosps. Contbr. to: Annals of Surgery; Minn. Med.; Surgical Forum; Proc. Soc. Exptl. Biol. and Med.; Surgery; Surg., Gynec. and Obst. Serv. Rec.: U. S. Infantry, 1944-45. Areas of Rsch.: Gastrointestinal Physiology and Cancer Research.



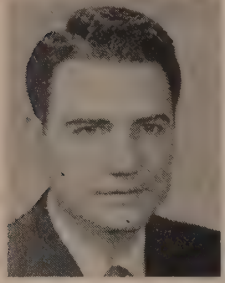
YOOD, Harold Stanley (M.D., F.I.C.A.), Physician, 1009 Park Ave., Plainfield, N. J. Home Add.: 1034 Kenyon Ave., Plainfield, N. J. INTERNAL MEDICINE. b. Plainfield, N. J., Feb. 23, 1920. s. Raphael and Netta (Newcorne) Y. Edn.: B.A., Univ. of Va., 1940; M.D., ibid., 1943. m. Helen K. Hull, 1941. c.: Pamela; Patricia; Paula; Andrew. Exp.: Sr. Attending Physn., Div. of Int. Med., Muhlenberg Hosp., Plainfield, N. J., 1959—. Mem.: A.M.A.; N. J. Med. Soc.; Union Co. Med. Soc.; Am. Heart Assn.; Am. Coll. of Gastroenterol.; Am. Geriats. Soc.; N. J. Diet. Assn.; N. Y. Acad. of Sci.; Am. Assn. for the Adv. of Sci.; Lions Club. Contbr. to: Jour. of the N. J. Med. Soc. Serv. Rec.: U. S. Army, 1943-45.

YORK, Herbert Frank (Ph.D.), Chancellor, Univ. of Calif., San Diego, Box 109, La Jolla, Calif. Home Add.: 7510 Pepita Way, La Jolla, Calif. EXPERIMENTAL PHYSICS. b. Rochester, N. Y., Nov. 24, 1921. s. Herbert Frank and Nellie (Lang) Y. Edn.: A.B., Univ. of Rochester, 1942; M.S., ibid., 1943; Ph.D., Univ. of Calif., Berkeley, 1949. Hon. Deg.: D.Sc., Case Inst. of Tech., 1960. m. Sybil Dunford, Sept. 28, 1947. c.: David Winters; Cynthia; Rachel. Exp.: Tchng. Asst., Univ. of Rochester, 1942-43; Physicist, Radiation Lab., Univ. of Calif., Berkeley, 1943-54; Asst. Prof., Physics, ibid., 1951-56; Assoc. Prof., Physics, ibid., 1956-58; Assoc. Dir., Radiation Lab., ibid., 1954-58; Dir., Lawrence Radiation Lab., Livermore, 1954-58; Chf. Scientist, Advanced Rsch. Projects Agency, Dept. of Defense, Wash., D. C., 1958; Dir., Advanced Rsch. Projects Div., Inst. for Defense Analyses, ibid., 1958; Dir. of Defense Rsch. and Engrng., Office of the Secy. of Defense, The Pentagon, ibid., 1958-61; Chancellor, Univ. of Calif., San Diego, La Jolla, Calif., 1961—. Hon. Pos.: Mem., Pres. Sci. Advisory Com., Defense Advisory Com. on Edn. in the Armed Forces. Mem.: Am. Phys. Soc.; Am.

Astronautical Soc., Inc.; Am. Rocket Soc.; Inst. of Aeronautical Sciences; Sigma Xi; Rotary; C. of C. Contbr. to: Physical Rev. Index; Astrophys. Jour. Gen. Int.: Received the Ernest Orlando Lawrence Meml. Award of the Atomic Energy Commn. Areas of Rsch.: Application of Atomic Energy to the National Defense and Elementary Particles.

YOON, Chai Hyun (Ph.D.), Assoc. Prof., Boston Coll., Chestnut Hill, Mass. Home Add.: 10 Leighton Rd., Hyde Park, Mass. GENETICS. b. Korea, Aug. 14, 1920. s. Min Bo and Song Nyo (Kim) Y. Edn.: A.B., Alma Coll., 1949; Ph.D., Ohio St. Univ., 1953. m. June Ginoza, July 18, 1953. c.: Diana. Exp.: Instr. and Rsch. Assoc., Ohio St. Univ., 1953-55; Asst. Prof., Lycoming Coll., Pa., 1955-57; Asst. Prof., Boston Coll., 1958-61; Assoc. Prof., ibid., 1961—. Mem.: Sigma Psi; A.A.A.S.; Am. Inst. Biol. Scis.; Am. Genetic Assn.; Genetic Soc. of Am. Author of: The Korean Students Under Japanese Imperialism, 1951. Contbr. to: Genetics; Jour. of Heredity; Am. Naturalist; Sci.; Neurol. Serv. Record: Korean Independence Army, 1944-45. Areas of Rsch.: Study of Neuromuscular Mutataions in Mice.

YOUMANS, Julian Ray (M.D., Ph.D.), Assoc. Prof. of Neurosurgery and Asst. Prof. of Anatomy, Univ. Med. Ctr., Jackson, Miss. Home Add.: 5615 Brentwood Dr., Jackson, Miss. NEUROSURBERY.



b. Baxley, Ga., Jan. 2, 1928. s. John Edward and Jennie Lou (Milton) Y. Edn.: B.S., Emory Univ., 1949; M.D., ibid., 1952; M.S., Univ. of Mich., 1955; Ph.D., ibid., 1957. m. Nancy Nesbit, Jan., 1954. c.: Reed Nesbit; John Edward; Julian Milton. Exp.: Asst. Prof. of Neurosurgery, Univ. of Miss., Schl. of Med., 1959-62; Assoc. Prof. of Neurosurgery and Asst. Prof. of Anat., ibid., 1962—. Hon. Pos.: Chmn., Trauma Com. of Miss. of Am. Coll. of Surgeons. Mem.: Am. Acad. of Neurol.; Congress of Neurol. Surgeons; Harvey Cushing Soc.; Am. Bd. of Neurosurgery; Alpha Epsilon Upsilon; Phi Chi. Contbr. to: Jour. of Neurosurgery; Urology; Excerpta Medica Internatl.; Jour. of Miss. Med. Assn. Serv. Rec.: U. S. Navy, 1944-46. Areas of Rsch.: Anatomy and Physiology of the Temporal Lobe of the Macaque; Cerebral Tissue and Ventricular Fluid PO_2, pH and pCO_2 and Their Relationships to Normal and Abnormal Cerebral Function.

YOUMANS, William Barton (M.D.), Prof.; Chmn. of Physiol. Dept., Univ. of Wis., Madison 6, Wis. Home Add.: 3317 Lake Mendota Dr., Shorewood Hills, Madison, Wis. PHYSIOLOGIST. b. Cincinnati, Ohio, Feb. 3, 1910. s. Charles Trimble and Lucy (Gardiner) Y. Edn.: B.S., Western Ky. St. Coll., 1932; M.A., ibid., 1933; Ph.D., Univ. of Wis., 1938; M.D., Univ. of Ore., Med. Schl., 1944. m. Cynthia Holbrook, Nov. 24, 1932. c.: Carol Anne; Charles Gilbert. Exp.: Lab. Asst. in Biol., Western Ky. St. Coll., Bowling Green, Ky., 1930-32; Instr., ibid., 1932-35; Rsch. Asst., Physiol., Univ. of Wis., 1935-36; Instr., ibid., 1936-38; Instr., Physiol., Univ. of Ore., 1938-39; Asst. Prof., ibid., 1939-41; Assoc. Prof., ibid., 1941-42; Prof. of Physiol., ibid., 1942-46; Prof. and Chmn. of Physiol., ibid., 1946-52; Prof. and Chmn. of Physiol., Univ. of Wis., 1952—. Hon. Pos.: Physiological Study Sec., U.S.P.H.S., 1952-56; Physiol. Trng. Comm., U.S.P.H.S., 1958-62. Mem.: Am. Physiol. Soc.; Soc. for Exptl. Biol. and Med.; Am. Soc. Pharmacol. and Exptl. Therapeutics; Sigma Xi; Alpha Omega Alpha; Gamma Alpha; Phi Sigma. Author: Basic Medical Physiology, 1952; Human Physiology, 1954; Fundamentals of Human Physiology, 1957. Contbr. to: Am. Jour. of Physiol.; Proc. of Soc. for Exptl. Biol. and Med.; Fed. Proceedings; Jour. Pharmacol. and Exptl. Therapeutics; Anesthesiol.; Circulation; Am. Jour. Med.; Annals of Internal Med.; The Physiol.; Am. Jour. of Digestive Disease; Jour. of A.M.A.; Gastroenterol.; Am. Heart Jour.; Annual Rev. of Physiol.; Annals of Western Med. and Surg. Gen. Int.: Introduced Use of Vasopressor Agents to Revert Paroxysmal Tachycardia. Areas of Rsch.: Neural Control of Visceral Functions, Especially Cardiorespiratory and Gastrointestinal.

YOUNG, Arthur N(ichols) (Ph.D.), Financial Adviser, 1060 Kewen Dr., San Marino 9, Calif. ECONOMICS AND FINANCE. b. Los Angeles, Calif., Nov. 21, 1890. s. Rev. William Stewart and Adele (Nichols) Y. Edn.: A.B., Occidental, 1910; A.M., Princeton Univ., 1911; Ph.D., ibid., 1914; LL.B., George Wash. Univ., 1927. Hon. Deg.: LL.D., Occidental Coll., 1937. m. Nellie May Bailey, June 11, 1915. c.: Elizabeth Y. Roulac; Allen; William D. Exp.: Instr., Princeton Univ., 1915-17; Adviser on Taxation to Mex., 1918; Trade Expert, War Trade Bd., 1918; Trade Commnr. in Spain, 1919; Economist, Dept. of State, 1919-20; Financial Adviser to Honduras, 1920-21; Econ. Adviser to Dept. of State, 1922-28; Financial Adviser to China, 1929-47; Chf. of Financial Mission to Saudi-Arabia, 1951-52; Financial Consultant, Foreign Operations Administration, to Latin American Countries, 1954; Financial Consultant, Internatl. Co-operation Admin. in Laos and Cambodia, 1957-58; Guggenheim Fellowship, 1956-57 and 1958. Hon. Pos.: Trustee, Occidental Coll.; Dir., Counsellors Investment Fund. Mem: Am. Econ. Assn.; Acad. of Polit. and Soc. Sci.; Am. Guild of Organists; Phi Beta Kappa; Phi Gamma Delta; Cosmos Club. Author: The Single Tax Movement in the U. S., 1916; Spanish Finance and Trade, 1920. Contbr. to: Am. Econ. Rev.; Foreign Affairs. Gen. Int.: Speaker including Radio and TV and Writer on Financial and Internatl. Subjects. Areas of Rsch.: Internatl. Econ. and Financial Matters, Currency and Pub. Finance.

YOUNG, Clarence Bernard Fehrler (Ph.D.), Pres., Cracker Asphalt Corp., P. O. Drawer 775, Douglasville, Ga. Home Add.: P. O. Box 531-A, Douglasville, Ga. CHEMISTRY AND ELECTROMETALLURGY. b. Birmingham, Ala., May 13, 1908. s. Francis D. and Lena Edna (Fehrler) Y. Edn.: B.S., Howard Coll., 1930; M.S., Columbia Univ., 1931; Ph.D., ibid., 1934. m. Louise Frances Ellis, Dec. 31, 1935. c.: Charles E.; Frank Bernard; James T. Exp.: Consult. for a number of Eastern Mfgs., 1939-44; Exec. Vice-Pres., Natl. So. Product Corp., 1944-52; Pres., Warrior Asphalt, Tuscaloosa, Ala., 1949-55; Pres., Ala. Southern, Tuscaloosa, 1949—; Pres., M'Lady Inc., Tuscaloosa, 1952—; Pres., Apley N. Austin Co., Pequabuck, Conn., 1952-55; Pres., Auromet Corp., N.Y.C., 1953-56; Pres., Cracker Asphalt Corp., Douglasville, Ga., 1955—. Hon. Pos.: Pres., Douglasville C. of C., 1957-59; Chmn., Park Comm., Douglas Co., 1958-59; Elder, Church of Christ, Douglasville, Ga. Mem.: C. of C.; A.A.A.S.; Fellow, Am. Inst. Chem.; N.Y.C. Athletic Club. Author: Surface Acting Agents, 1945; Chemistry for Electroplating, 1947. Areas of Rsch.: Chemistry and Electroplating.

YOUNG, Donald Rudolph (Ph.D.), Human Performance Requirements Br., NASA Ames Rsch. Ctr., Moffett Field, Calif. Home Add.: 1779 Woodland Ave., Palo Alto, Calif. PHYSIOLOGY. b. Chicago, Ill., Oct. 29, 1923. s. Donald Rudolph and Rose Mary (Weiss) Y. Edn.: B.S., Loyola Univ., 1949; M.A., Univ. of Calif., 1951; Ph.D., ibid., 1954. m. Marilynne Burger, 1954. c.: Donna Rae; Ricky. Exp.: Rsch. Physiologist, Poultry Dept., Univ. of Calif., 1953-54; Asst. Prof., Physiol. Dept., Univ. of Calif., 1955; Nutritionist, QMF & CI, Chicago, Ill., 1955-57; Physiologist, ibid., 1957-62; Human Performance Requirements Br., NASA Ames Rsch. Ctr., Moffett Field, Calif., 1962—. Mem.: A.A.A.S.; N. Y. Acad. of Sci.; Assn. of Vitamin Chemists; Sigma Xi. Contbr. to: Am. Jour. Physiol.; Jour. Cell. and Comp. Physiol.; Proc. Soc. Exptl. Biol. and Med.; Am. Jour. Clin. Nutrition; Jour. Applied Physiol.; Jour. Nutrition. Serv. Rec.: U.S.N.R. Areas of Rsch.: Work Physiology; Environmental Physiology; Nutrition During Survival Conditions; Exptl. Animal Nutrition.

YOUNG, James Frederick (Mr.), Gen. Mgr., Electric Utility Engrng. Operation, Gen. Elec. Co., Schenectady, N. Y. Home Add.: 1261 Ruffner Rd., Schenectady 9, N. Y. MANAGEMENT OF RESEARCH AND DEVELOPMENT—ADVANCED TECHNOLOGIES, OPERATIONS AND SYSTEMS RESEARCH, ECONOMETRICS, AND SYSTEMS ENGINEERING. b. Phila., Pa., Jan. 4, 1917. s. William Edwin and Florence May (Sunderland) Y. Edn.: B.S., Lafayette Coll., 1937. m. Rita Marie Shahan, July 16, 1941. c.: Sharon Margaret; James William. Exp.: Consultant, Energy Conversion, Engrng. Servs., Gen. Elec. Co., N.Y.C., 1954-58; Gen. Mgr., Gen. Engrng. Lab., Gen. Elec. Co., Schenectady, N. Y., 1958-60; Gen. Mgr., Electric Utility Engrng. Operation, ibid., 1960—. Hon. Pos.: Organization Comm., Power Dept. Exec. Comm., Metals Engrng. Handbook Bd., Metals Engrng., Production Engrng. Div. Conference, A.S.M.E. Mem.: A.A.A.S.; A.I.E.E.; C.I.G.R.E.; A.M.A.; N.S.P.E.; N.Y.S.S.P.E.; S.G.E.E.A.; Phi Beta Kappa; Tau Beta Pi; Alpha Phi Omega; Jr. C. of C.; F.A.M. Author: Materials and Processes, 1954. Editor: Materials and Processes, 1944. Contbr. to: Mechanical Engrng.; Product Engrng.; Materials and Methods; Industrial Heating and Welding; Sci. Areas of Rsch.: Mgmt. of Engrng. and Rsch.; High Production Design and Manufacture; Thermodynamics; Heat Processes; System Rsch.; Econometrics; Operations Rsch. in Power Systems; Systems Engrng. and Planning.

YOUNG, Francis A(llan) (Ph.D.), Professor, Wash. St. Coll., Pullman, Wash. Home Add.: 224 Webb St., Pullman, Wash. SENSORY PSYCHOLOGY. b. Utica, N. Y., Dec. 29, 1918. s. Frank A. and Julia (McOwen) Y. Edn.: B.S., Univ. of Tampa, 1941; M.A., W. Reserve Univ., 1945; Ph.D., Ohio St. Univ., 1949. m. Judith Wright, Dec. 21, 1945. c.: Francis A., III; Thomas Robert. Exp.: Instr., Dept. of Psychol., State Coll. of Wash., 1948-50; Asst. Prof., ibid., 1950-56; Assoc. Prof., ibid., 1956-61; Prof., ibid., 1961 —.; Natl. Rsch. Coun.-Natl. Acad. Sci. Sr. Postdoctoral Fellow, Physiol. Psychol., 1956-57. Mem.: Am. Psychol. Assn.; W. Psychol. Assn.; Wash. St. Psychol. Assn.; Am. Assn. Adv. Sci.; Am. Acad. Optometry; Assn. Rsch. in Ophthalmol.; Am. Assn. of Univ. Profs.; Sigma Xi; Psi Chi; Alpha Psi Delta. Contbr. to: Am. Jour. Psychol.; Am. Jour. Optometry; Animal Care Panel Proc.; Jour. Expti. Psychol.; Jour. Gen. Psychol.; End. Admins. and Supervis.; Jour. Genetic Psychol. Areas of Rsch.: Vision and Ametropia; Test Construction; Conditioning and Learning.

YOUNG, Leo (Dr. Eng.), Sr. Rsch. Engr., Stanford Rsch. Inst., Menlo Park, Calif. Home Add.: 2539 Greer Rd., Palo Alto, Calif. MICROWAVES. b. Vienna, Austria, Aug. 18, 1926. s. Samuel and Marie (Kessler) Y. Edn.: B.A. (Math.), St. John's Coll., Cambridge Univ., Eng., 1945; B.A. (Physics), ibid., 1947; M.A., ibid., 1950; M.S., Johns Hopkins Univ., 1956; Dr.Engr., ibid., 1959. m. Fay Lilian Merskey, 1953. c.: Philip; Sarah; Joseph. Exp.: Sr. Engr., Decca Radar, Ltd., Surbiton, Surrey, Eng., 1951-53; Advry. Engr., Westinghouse Elect. Corp., Baltimore, Md., 1953-60; Sr. Rsch. Engr., Stanford Rsch. Inst., 1960—. Hon. Pos.: Secy., Balt. Chapt., I.R.E. Profl. Grp. on Microwave Theory, 1959-60; Editorial Bd., I.R.E. Trans., M.T.T. Mem.: Sigma Xi; Inst. of Elect. Engr., London, Eng.; Sr. Mem., Inst. of Radio Engrs.; Am. Inst. of Elect. Engrs.; Am. Assn. Adv. Sci. Contbrng. Author: Encyclopedia of Electronics. Contbr. to: Proc. I.E.E.; Jour. I.E.E.; Trans. I.R.E.; Trans. A.I.E.E.; Quart. of Appl. Maths.; Jour. of the Opt. Soc. of Am.; Jour. of the Acoustical Soc. of Am.; Proc. N.E.C.; Elect. Engrng.; The Microwave Jour. Areas of Rsch.: Microwaves; Optics; Electrical Units; Twelve Patents Granted.

YOUNG, Martin Dunaway (Sc.D.), Associate Director, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Md. Home Add.: 5610 Durbin Road, Bethesda, Md. PARASITOLOGY, ESPECIALLY MALARIA. b. Moreland, Ga., July 4, 1909. s. Joe H. and Jennie Sue (Martin) Y. Edn.: B.S., Emory Univ., 1931; M.S., ibid., 1932; D.Sc., Johns Hopkins Univ., 1937. m. Gedelle Brabham, July, 1938. c.: Martin Brabham; Margaret Cope. Exp.: Prof., Head, Biol. Dept., Jr. Coll. of Augusta, Ga., 1932-34; Tchng. Fellow and Asst. Protozoologist, Schl. of Hygiene and Pub. Health, Johns Hopkins Univ., 1935-37; Visiting Prof., Tenn. E. St. Tchrs. Coll., 1939; Jr. Zoologist, U. S. Pub. Health Serv., 1937-40; Assoc. Zoologist, ibid., 1940-42; Parasitologist, ibid., 1942-43; Sr. Parasitologist, ibid., 1943-44; Sanitarian, ibid., 1944-48; Sr. Scientist, ibid., 1948-50; Scientist Dir., ibid., 1950 —; Dir., Malaria Rsch. Lab., ibid., 1941-50; Head, Sect. on Epidemiol., Lab. of Tropical Diseases, ibid., 1950-59; Lab. of Parasite Chemotherapy, ibid., 1959-60; Asst. Chf., Lab. of Parasite Chemotherapy, Natl. Inst. of Allergy and Infectious Diseases, Natl. Insts. of Health, Bethesda, Md., 1961-62; Assoc. Dir., ibid., 1962—. Hon. Pos.: Pres., Assn. Southeastern Biologists; Pres., S. C. Acad. of Sci.; Pres., Sigma Xi, Univ. of S. C. Chapt.; Councillor, A.A.A.S.; Councillor, Am. Soc. Parasitologists; Secy.-Treas., Natl. Malaria Soc.; Secy-Treas., Vice-Pres., Pres.-elect., Assn. of Sou. Biologists; Pres., Am. Soc. Trop. Med. Hyg.; Mem., Expert Panel on Malaria, World Health Org.; Editor, Am. Jour. Trop. Med. Hyg.; Consultant, Pan Am. Health Org.; Consultant, Int. Coop. Adm.; Consultant, World Health Org. Mem.: A.A.A.S., Fellow; Natl. Soc. of India for Malaria and Othet Mosquito-borne Diseases, Fellow; Am. Acad. of Microbiol., Member; Natl. Malaria Soc.; Am. Soc. of Parasitologists; Am. Soc. of Tropical Med.; Am. Soc. of Profl. Biologists; Am. Pub. Health Assn.; Assn. of Southeastern Biologists; S. C. Acad. of Sci.; Emory Univ. Alumni Assn.; Le Conte Scientific Soc.; Sigma Xi; Gamma Alpha; Phi Sigma; Torch; Le Conte Soc. Contbrng. Author: Manual on Tropical Medicine, 1960. Contbr. to: Am. Journal Tropical Med. Hygiene; Trans. Royal Soc. Tropical Med. Hygiene; Indian Jour. Malariol.; Jour. of A.M.A.; Sou. Med. Jour.; Am. Jour. Hygiene; Jour. Parasitol.; Annals Trop. Med. Parasitol.; Pub. Health Reports; Bull. S. Biologists; Sci.; Jour. Natl. Malaria Soc.; Jour. Infectious Disease; Bulletin, World Health Organization; Proc. Internatl. Congress Tropical Med. and Malaria; Antibiotics and Chemotherapy. Serv. Rec.: U.S.P.H.S., 1937—. Gen. Int.: Recipient of Rockefeller Pub. Serv. Award, 1953; Recipient, Jefferson Award of S. C. Acad. of Sci., 1946, '52, '60. Areas of Rsch.: Malaria Parasitol., Transmission, and Treatment; Parasitic Protozoa, Helminths; Epidemiol. of Parasitic Diseases.

YOUNG, Otis Bigelow (Ph.D.), Dir., Atomic and Capacitor Rsch., So. Ill. Univ., Carbondale, Ill. Home Add.: 1326 So. Thompson St., Carbondale, Ill. PHYSICS ATOMIC AND CAPACITOR RESEARCH, ESPECIALLY COSMIC RAYS. b. Dodge Ctr., Minn., Nov. 17, 1899. s. George Allen and Delia Pearl (Bigelow) Y. Edn.: A.B., Wabash Coll., 1921; A.M., Univ. of Ill., 1923; Ph.D., ibid., 1928. m. Olive Eleanor Patmore, 1929. c.: Ruth; Dorothy. Exp.: Hd., Phys. Dept., McKendree Coll., Lebanon, Ill., 1928-29; Chmn., Dept. of Physics, Sou. Ill. Univ., 1938-53; Dir. of Atomic and Capacitor Rsch., ibid., 1953—. Mem.: Am. Phys. Soc.; Am. Assn. Phys. Tchrs.; Am. Inst. of Phys.; Ill. St. Acad. of Sci.; Fed. Am. Sci.; Epsilon; Kappa Phi Pappa; Pi Kappa Delta; Sigma Pi Sigma; Sigma Xi; Synton Radio Soc.; Am. Legion. Contbr. to: Phys. Rev.; Am. Jour. of Phys.; Il Nuovo Cimento; Trans. Ill. St. Acad. of Sci.; Indust. and Engrng. Chem. Areas of Rsch.: Dielectric Constants and Cosmic Rays.

YOUNG, Raymond Hinchcliffe, Jr. (Ph.D.), Rsch. Chemist, Shawinigan Resins Corp., Springfield, Mass. Home Add.: 100 Fernwood Dr., E. Longmeadow, Mass. ORGANIC CHEMISTRY. b. Pennsauken, N. J., Nov. 22, 1928. s. Raymond H., Sr. and Elizabeth (Hand) Y. Edn.: B.S., Pa. Military Coll., 1953; M.S., Univ. of Me., 1955; Ph.D., ibid., 1961. m. Nancy Totten, June, 1953. c.: Joanne; Raymond H., III; Michael; Janet. Exp.: Grad. Asst. and Res. Asst., Univ. of Me., 1953-55; Instr., Univ. of Me., 1955-60; Rsch. Chemist, Shawinigan Resins Corp., Springfield, Mass., 1960—. Mem.: Am. Chem. Soc.; Am. Inst. of Chemists; A.A.A.S.; Sigma Xi; Phi Kappa Phi. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Chem. Edn. Serv. Rec.: U. S. Marine Corps, 1946-48. Gen. Int.: Sigma Xi Rsch. Award, Univ. of Me., 1955. Areas of Rsch.: Sulfur Cpds, Epoxides, Polymers.

YOUNG, Richard George (Mr.), Sci. Editor, Sci. Rsch. Assocs., Inc., 259 E. Erie St., Chicago, Ill. Home Add.: 940 Pleasant Ave., Highland Park, Ill. SCIENCE EDUCATION (ELEMENTARY AND SECONDARY). b. Brockton, Mass., Apr. 30, 1926. s. Henry M. and Francis (Rusacow) Y. Edn.: B.S., Tufts Univ., 1948; M.A., Boston Univ., 1949. m. Joan S. Pomeranz, June 22, 1952. c.: Wendy Beth; Pamela Sue; Eric Alan. Exp.: Sci. Tchr., The Manlius Schl., Manlius, N. Y., 1950-52; Sci. Tchr., Weston H. S., Weston, Mass., 1953-55; Sci. Editor, Allyn and Bacon, Inc., Boston, Mass., 1955-57; Sci. Editor, Holt, Rinehart and Winston, Inc., N.Y.C., 1957-61; Sci. Editor, Sci. Rsch. Assocs., Inc., Chicago, Ill., 1961 —. Mem.: Am. Assn. for the Adv. of Sci.; Natl. Sci. Tchrs. Assn.; Coun. for Elem. Sci. Internatl.; Natl. Assn. for Rsch. in Sci. Tchng.; Assn. for Supvrn. and Curriculum Devel.; Am. Inst. of Biol. Scis.; Am. Chem. Soc.; Central Assn. of Sci. and Maths. Tchrs.; Alpha Epsilon Pi. Gen. Int.: Editor of the First High Schl. Textbook Ever Published for Use in a Course in Astronomy and Space Science. Areas of Rsch.: Biology and Science Education.

YOUNG, Robert Lyle (Ph.D.), Prof. of Mech. Engrng., Univ. of Tenn., The Grad. Schl., A.E.D.C., Arnold A.F., Stan., Tenn. Home Add.: 706 Stone Blvd., Tullahoma, Tenn. MECHANICAL ENGINEERING. b. Neoga, Ill., Apr. 3, 1925. s. Max D. and Neva J. (Higgins) Y. Edn.: B.S.M.E., Northwestern Univ., 1946; M.S., ibid., 1948; Ph.D., ibid., 1953. m. Phyllis E. Ralston, Aug. 2, 1946. c.: Ronald L.; Scott A. Exp.: Asst. Prof., M.E., Northwestern Univ., Evanston, Ill., 1953-57; Assoc. Prof., M.E., Univ. of Tenn., Knoxville, Tenn., 1957-60; Prof., ibid., 1960—. Mem.: Am. Assn. Adv. Sci.; A.S.M.E.; A.R.S.; A.S.E.E.; Triangle Frat.; Sigma Xi; Tau Beta Pi; Pi Mu Epsilon. Author: Elements of Thermodynamics and Heat Transfer, 1962, Co-Author. Contbr. to: A.S.M.E. Trans. Serv. Rec.: U. S. Navy, 1943-46. Areas of Rsch.: Transport Phenomena, Thermodynamics, Space Technology.

YOUNGGREN, Newell A. (Ph.D.), Assoc. Prof. Biol., Univ. of Ariz., Tucson, Ariz. Home Add.: 5770 Vista Valverde, Tucson, Ariz. GENERAL BIOLOGY, SCIENCE EDUCATION; PHYSIOLOGY OF TRUE SLIME MOLDS. b. River Falls, Wis., Mar. 15, 1915. s. Nels and Nancy (Weberg) Y. Edn.: B.E., Western St. Coll., 1937; M.Ph., Univ. of Wis., 1941; Ph.D., Univ. of Colo., 1956. m. Beth Hoveland, 1941. c.: Stephen; Jeffrey. Exp.: Asst. Prof., Bradley Univ., Peoria, Ill., 1948-55; Asst. Prof., Univ. of Colo., Boulder, Colo., 1955-61; Assoc. Prof., Univ. of Ariz., Tucson, Ariz., 1962 —. Hon. Pos.: Chmn., Dept. of Biol., Univ. of Colo., 1958-61. Mem.: Am. Assn. for the Adv. of Sci.; Phi Sigma; Phi Delta Kappa; Sigma Xi. Co-Author: Manual of General Biology. Contbr. to: Am. Biol. Tchr. Serv. Rec.: U. S. Army Reserve, 1942—. Areas of Rsch.: General Education; General Biology; Physiology of Slime Molds.

YOUNGKEN, Heber W., Jr. (Ph.D.), Dean, Coll. of Pharm., Univ. of Rhode Island, Kingston, R. I. Home Add.: 82 Oakwoods Dr., The Oaks, Peace Dale, R. I. PHARMACOGNOSY. b. Phila., Pa., Aug. 13, 1913. s. Heber W. and Clara (Eastman) Y. Edn.: A.B., Bucknell Univ., 1935; B.S., Mass. Coll. of Pharm., 1938; M.S., Univ. of Minn., 1940; Ph.D., ibid., 1942. m. Daphne Goodwin, Mar. 28, 1942. c.: John Ronald; Richard Charles. Exp.: Asst. Prof., Coll. of Pharm., Univ. of Wash., 1942-49; Assoc. Prof., ibid., 1949-52; Prof., Pharmacognosy, ibid., 1952-57; Dean, Coll. of Pharm., Univ. of R. I., 1957—. Hon. Pos.: U.S.P. Revision Comm., 1950-70. Mem.: Soc. Exptl. Biol. and Med.; Sigma Xi; Phi Kappa Phi; A.A.A.S.; A.Ph.A.; Rho Chi; N. Y. Acad. of Sci.; New England Bot. Club; Phi Kappa Psi; Rotary. Co-Author: Pharmacognosy, 1951, 2nd ed., 1956; Organic Chemistry in Pharmacy, 1949. Contbr. to: Jour. Am. Pharm. Assn.; Am. Jour. of Pharm.; Am. Jour. of Bot.; Am. Jour. of Pharm. Edn. Serv. Rec.: U.S.N.R., 1943-57, Cmdr., 1957—. Gen. Int.: Recd. Edwin Leigh Newcomb Mem. Award for Pharmaceutical Rsch., 1953. Areas of Rsch.: The Plant Chemistry of Naturally Occurring Drug Plant Constituents, Their Biochemical Relationships to the Plant Metabolism and Their Pharmacology; Rsch. in Problems of Pharmaceutical Edn. and Pharmacy.

YU, Paul N. (M.D.), Assoc. Prof. of Med., Head, Cardiopulmonary Unit, Univ. of Rochester, Schl. of Med. and Dent., Rochester 20, N. Y. Home Add.: 651 Claybourne Rd., Rochester, N. Y. INTERNAL MEDICINE-CARDIOLOGY. b. Kiangsi, China, Nov. 7, 1915. s. Y. S. and Lillian (Yang) Y. Edn.: M.D., Natl. Med. Coll. of Shanghai, 1939. Hon. Degr.: D.T.M. and H., London, 1947. m. Iling Tang, June 4, 1944. c.: Pauline Ruth; Diane Carol; Lorraine Margaret; Corrinne Alice. Exp.: Asst. and Instr., Natl. Med. Coll. of Shanghai, 1940-45; Instr. in Med., Univ. of Rochester, 1950-54; Asst. Prof., ibid., 1954-59; Assoc. Prof. of Med., ibid., 1959—. Hon. Pos.: Chmn., Heart Comm., Med. Soc. of Co. of Monroe; Vice-Pres. and Mem. of Exec. Comm. and Med. Advry. Comm., N. Y. Heart Assembly; Mem., Comm. on Profl. Edn., Am. Heart Assn. Mem.: Fellow, Am. Coll. of Physns.; Fellow, Am. Coll. of Chest Physns.; Am. Fed. for Clin. Rsch.; Am. Thoracic Soc.; Am. Assn. of Univ. Cardiolts.; Am. Soc. of Nucl. Med.; Sigma Xi; Alpha Omega Alpha. Contbr. to: Chinese Med. Jour.; Ann. N. Y. Acad. of Sci.; N. Y. St. Jour. Med.; Jour. Med. Sci. Am.; Jour. Clin. Invest.; Arch. Int. Med.; Am. Heart Jour.; Am. Rev. Tub.; Proc. Soc. Exptl. Biol. and Med.; Circul.; Jour. Appl. Physiol.; Am. Jour. Dis. of Child.; Arch. Indust. Hyg. and Occ. Med.; Ann. Int. Med.; New England Jour. Med.; Trans. Assn. Am. Phys. Areas of Rsch.: Hemodynamics; Pulmonary Circulation; Pharmacodynamics.

YUAN, Shao Wen (Ph.D.), Prof. of Aero-Space Engrng., The Univ. of Tex., 16 Peak Rd., Austin 4, Tex. AERONAUTICS. b. Shanghai, China, Apr. 16, 1914. s. Tian and Chieh Huang (Chien) Y. Edn.: B.S., Univ. of Mich., 1936; M.S., Calif. Inst. of Tech., 1937; A.E., Stanford Univ., 1939; Ph.D., Calif. Inst. of Tech., 1941. m. Hui Chih Hu, Nov. 5, 1950. Exp.: Engr., Vultee Aircraft Corp., 1937-38; Engr., N. Am. Avn., Inc., 1938; Chief of Structure, Timm Aircraft Co., 1940-41; Rsch. Engr., Vidal Rsch. Corp., 1941-42; Rsch. Engr., The Glenn Martin Co., 1942-43; Chf. of Rsch. and Vibration, Helicopter Rsch. Div., McDonnell Aircraft Corp., 1943-45; Cons. Edo Aircraft Corp., 1945-46; Tech. Cons., Aerojet Corp., 1951; Rsch. Adviser and Adjunct Prof., Poly. Inst. of Brooklyn, 1945-49; Assoc. Prof., ibid., 1949-54; Prof., ibid., 1954-57; Canadair Prof. of Fluid Mech., Universite Laval, 1957-58; Prof., Aero-Space Engrng., Univ. of Tex., 1958—; Consultant, Oak Ridge Natl. Lab.; Partner, Karman, Yuan & Arnold, 1953—; Assoc. Fellow, Inst. of the Aero. Sci. Mem.: A.A.A.S.; Sigma Xi; Tau Beta Pi; Sigma Gamma Tau; Holder patents on Martin-Yuan low drag airfoil, 1943; Helicopter Rotor Control, 1956; Jet Rotor Control, 1960. Contbr. to: High Speed Aerodynamics and Jet Propulsion Series; Natl. Encyc.; Jour. of Aero. Sci.; Jour. of Appl. Physics; Jour. of Appl. Mech.; Quart. of Appl. Math.; Trans. A.S.M.E.; Chinese Inst. of Engrng.; Reissner Anniv. Vol.; Heat Transfer and Fluid Mech. Inst.; Am. Helicopter Soc.; Internatl. Cong. of Appl. Mech.; Jet Propulsion; Jour. of Math and Physics; Physics of Fluids; Internatl. Heat Transfer Conference; 7th Midwestern Conf. on Fluid Mechanics; Project SQUID. Ph.D. Dissertation: Thin Cylindrical Shell Under Concentrated Loads. Travel: China; Japan; The Philippines; Can.; Belgium; France; Holland; Switzerland; Italy; Germany; Austria; England; Spain; Mexico. Special Int.: Heat Transfer and Boundary Layer; Helicopter Vibration and Rotor Aerodynamics; High Speed Aerodynamics; Magnetogasdynamics. Listed in: A.M.S.; W. W. in the East; W. W. in Engrng.; W. W. in Am. Edn.; W. W. in World Aviation.

YUWILER, Arthur (Ph.D.), Chf., Neurobiochem. Lab., V.A. Ctr., W. Los Angeles, Calif. Home Add.: 1632 Waterloo St., Los Angeles, Calif. BIOCHEMISTRY. b. Mansfield, Ohio, Apr. 4, 1927. s. Max and Esther (Schwarz) Y. Edn.: B.S., Univ. of Calif., L. A., 1950; Ph.D., ibid., 1956. m. Alice Lubin, Dec. 16, 1950. c.: Janice; Michael; Kenneth. Exp.: Neurobiochem., V.A. Ctr., L. A., Calif., 1956-57; Ment. Health Trainee, U.C.L.A., 1957-59; Dir., Biochem., Sect. S. and P. Jnt. Rsch. Proj., Univ. of Mich., Ypsilanti St. Hosp., 1959-60; Assoc. Rsch. Biochem., Ment. Health Rsch. Inst., Univ. of Mich., 1959-60; Dir., Labs., Schiz. and Psychophar. Jnt. Rsch. Proj., 1960-62; Rsch. Biochem., Mental Health Rsch. Inst., Univ. of Mich., 1960-62; Chf., Neurobiochem. Lab., V.A. Ctr., M. Los Angeles, Calif., 1962—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Fellow, Am. Coll. of Neuropsychopharmacol.; Sigma Xi; Phi Lambda Upsilon. Contbr. to: Arch. Biochem. Biophys.; Jour. Neurochem.; Proc. Soc. Exptl. Biol. Med.; Sci.; Arch. Gen. Psychiat.; Jour. Neuropsychiat. Areas of Rsch.: Neurobiochemistry; Bran Amines; Enzymes; Metabolism of Proteins and Amino Acids; Biochemistry Aspects of Mental Illness, esp. Schizophrenia.

ZABIELSKI, Chester Vincent (Mr.), Asst. Prof., Metallurgy Dept., Univ. of Pittsburgh, Pittsburgh, Pa. Home Add.: 1685 Parkline Dr., Pittsburgh 27, Pa. PHYSICAL METALLURGY. b. Schenectady, N. Y., July 19, 1923. s. Walter and Julia (Kochanski) Z. Edn.: B.S., Union Coll., 1947; B.S., Columbia Univ., 1949; M.S., Rensselaer Poly. Inst., 1954; M.S., ibid., 1956. Exp.: Chem. Engr. Chemist, Gen. Aniline and Film Corp., Rensselaer, N. Y., 1950-52; Olin-Mathieson Rsch. Asst., Rensselaer Poly. Inst., 1952-54; Internatl. Nickel Fellow, ibid., 1954-56; Metal. Engr., Westinghouse Electric Corp., Pittsburgh, Pa., 1957-58; Asst. Prof., Metallurgy Dept., Univ. of Pittsburgh, 1958 —. Hon. Pos.: Mem. of Pittsburgh Chapt., Am. Soc. of Metals Edn'l. Comm. Mem.: Am. Soc. for Engrng. Edn.; Am. Ordnance Assn.; Soc. for Applied Spectroscopy; Am. Soc. of Metals; Am. Inst. of Mining and Metallurgical Engrs.; Am. Inst. of Chem. Engrs.; Am. Chem. Soc.; Am. Rocket Soc.; A.A.A.S.; Armed Forces Chem. Assn.; Faculty Club, Univ. of Pittsburgh. Serv. Rec.: U. S. Army, 1943-46. Gen. Int.: Able to Translate German, Polish, Russian Technical Literature. Areas of Rsch.: Physical Metallurgy, Stainless Steels, High Temperature Alloys, High Temperature Reactions, Kinetics, Thrmodynamics, Molten Salt Reactions, Corrosion, Electrochemistry, X-ray Diffraction, Diffusion, Emission Spectroscopy.

ZABOR, John William (Ph.D.), Dir., Rsch. Div., Wyandotte Chems. Corp., Wyandotte, Mich. Home Add.: 9720 Lakewood Dr., Grosse Ile, Mich. PHYSICAL CHEMISTRY. b. Cleveland, Ohio, Jan. 27, 1915. s. John C. and Emma (Baumberger) Z. Edn.: A.B., Hiram Coll., 1936; M.S., Brown Univ., 1938; Ph.D., Univ. of Rochester, 1940. m. Beverly Lewis, June 22, 1940. c.: Barbara Lynne; Stephen Lewis; John Douglas. Exp.: Chem. Instr., Williams Coll., Williamstown, Mass., 1940-42; Asst. to Dir., Central Lab., Natl. Defense Rsch. Comm., Northwestern Univ., Evanston, Ill., 1942-45; Dir. of Rsch. Activated Carbon Div., Pittsburgh Coke and Chem. Co., Pittsburgh, Pa., 1945-48; Dir. of Rsch. and Devel., ibid., 1948-54; Asst. to V.-Pres., Chem. Div., ibid., 1954-56; Dir. of Rsch., Wyandotte Chems. Corp., Wyandotte, Mich., 1956-58; Dir. Rsch. Div., ibid., 1958—. Hon. Pos.: Trustee Hiram Coll.; Dir., Kresge Hooker Sci. Libry. Assocs., Wayne St. Univ. Mem.: Am. Chem. Soc.; Am. Assn. for the Adv. of Sci.; Assn. of Rsch. Dirs.; Indust. Rsch. Inst.; Am. Inst. of Chem. Engrs.; Am. Ord. Assn.; Armed Forces Chem. Assn.; Soc. for the History of Tech.; Soc. of Chem. Industry; Sigma Xi. Areas of Rsch.: Physical Chemistry and Industrial Chemicals.

ZABORSKI, Bogdan (Ph.D.), Prof. and Head, Inst. of Geog., Ottawa Univ., Ottawa, Ont., Can. Home Add.: 100 Strathcona Ave., Ottawa, Ont., Can. HUMAN AND POLITICAL GEOGRAPHY; APPLIED CARTOGRAPHY. b. Warsaw, Poland, Apr. 5, 1901. s. Joseph and Maria (Majewska) Z. Edn.: Ph.D., Warsaw, 1925. m. Maria Plonska, Oct. 17, 1928. c.: George; Eva. Exp.: Asst., Dept. of Geog., Warsaw Univ., 1924-27; Act. Prof., Geog., Cracow Univ., Poland, 1930-33; Prof., Geog., Univ. of Warsaw, 1938-39; Prof., Geog., Polish Univ. Coll., London, Eng., 1946-48; Assoc. Prof., Geog., McGill Univ., 1948-57; Prof., Geog., Chmn., Dept., Ottawa Univ., 1957-62; Head, Inst. of Geog., ibid., 1962—. Mem.: Am. Geog. Soc.; N. Y. Assn. of Am. Geogr.; Assn. of Canadian Geogrs.; Canadian Geog. Soc.; Geog. Soc. of Montreal; Royal Geog. Soc., London, England; Geog. Assn.; Polish Inst. of Arts and Sci.; Assn. of Polish Prof., and many others. Author: Uber Dorfformen in Polen, 1930; Etudes sur la Morphologie Glaciare de la Podlachie, 1927; The Morphometric Analysis of the Relief of Lowland, 1931. Co-Author: Antropogeografia, 1939. Contbr. to: Przeglad Geograficzny; Wiadomosci Sluzby Geograficznej; Czasopismo Geograficzne; Proc. of the Gen. Assemblys of Internatl. Geographical Congresses. War Record: Polish Army, 1939. Areas of Rsch.: Geography of the Soviet Union; Geographical Studies of Rural Settlements; Geographical Aspects of the Pattern of Network of Streets in Newly Built Cities; Erosion in Loess; Geomorphology of Pleistocene Glaciation.

ZACHERT, Virginia (Ph.D.), Rsch. Psychologist and Industrial Consultant, Rt. 2, Norman Park, Ga. INDUSTRIAL PSYCHOLOGY; STATISTICAL ANALYSIS. b. Jacksonville, Ala., Mar. 1, 1920. d. Reinhold Edward and Cora (Massee) Z. Edn.: A.B., Ga. St. Woman Coll., 1940; M.A., Emory Univ., 1947; Ph.D., Purdue Univ., 1949. Exp.: Personnel Rsch. Lab., HRRC, Lackland A.F.B., Tex., 1949-52; Pvt. Consult., Officer Edn. Div., AFP & TRC, Maxwell A.F.B., Ala., 1953-55; Auburn Rsch. Found., Ala. Poly. Inst., 1955-58; Vice-Pres., Sturm & O'Brien, Inc., Auburn, 1958-60; Western Design, Goleta, Calif., 1960-61; Industrial Psychol., Norman Park, Ga., 1952—. Mem.: Am. Psychol. Assn.; Am. Stat. Assn.; Ga. Psychol. Assn.; Ala. Psychol. Assn.; Sigma Xi. Contbr. to: Psychometrika; Jour. of Applied Psychol.; Jour. of Edn'l. and Psychol. Measurement. Serv. Rec.: U. S. Navy, 1944-46; U.S.A.F., 1951-52. Areas of Rsch.: Psychology; Statistics; Weather; Teaching Machines.

ZADEH, Lotfi Asker (Ph.D.), Prof. of Elec. Engrng., Univ. of Calif., Berkeley 4, Calif. Home Add.: 16 Las Piedras, Orinda, Calif. SYSTEM THEORY AND AUTOMATA, INFORMATION THEORY. b. Baku, Russia, Feb. 4, 1921. s. Rahim and Fanny (Koriman) Z. Edn.: B.S.E.E., Univ. of Teheran, 1942; M.S., Mass. Inst. of Tech., 1946; Ph.D., Columbia Univ., 1949. m. Fay Sand, Mar. 21, 1946. c.: Stella; Norman. Exp.: Instr. in Elec. Engrng., Columbia Univ., 1946-50; Asst. Prof., ibid., 1950-53; Assoc. Prof., ibid., 1953-57; Prof., ibid., 1957-59; Prof., Dept. of Elec. Engrng., Univ. of Calif., Berkeley, 1959—. Hon. Pos.: Assoc. Editor, Jour. of Mathematical Analysis and Applications; Editor for Special Papers, I.R.E. Trans. on Information Theory; Mem. of the Editorial Rev. Bd. Proc. of the I.R.E., Chmn., Comm. 6 of U.R.S.I.; Editorial Bd. of Information and Control; Fellow, Inst. of Radio Engrs. Mem.: Am. Inst. of Elec. Engrs.; Am. Math. Soc.; Am. Phys. Soc. for Industl. and Applied Math.; Assoc. for Computing Machinery; Inst. of Math. Stat.; Sigma Xi; Tau Beta Pi; Eta Kappa Nu. Contbr. to: Proc. of the I.R.E.; Jour. of Applied Physics; Trans. of I.R.E.; Jour. of Franklin Inst. Areas of Rsch.: Discrete-State Systems, Variable Systems, Filtering and Prediction, Non-linear Systems.

ZAK, Henry Leon (D.D.S.), Chf. of Oral Surgery, Schofield Bks., Honolulu, Hawaii. Home Add.: 962 Waiiki St., Honolulu 16, Hawaii. ORAL SURGERY. b. Lancaster, N. Y., Sept. 12, 1923. s. Leon and Lottie (Ogrodowicz) Z. Edn.: D.D.S., St. Louis Univ. Schl. of Dentistry, 1946; B.S., Baylor Coll. of Dent., 1960; M.S., ibid., 1960. m. Virginia Boron, Aug. 24, 1949. c.: H. Stephen; Claudia; Christopher Paul. Exp.: Internship, Oral Surg., Cincinnati Gen. Hosp., 1947-48; Post Dental Surgeon, Army Arctic Trng. Ctr., Big Delta, Alaska, 1952-54; Chf. of Oral Surgery, U.S.A., Hosp., Ft. Hood, Tex., 1954-57; Grad. Trng. in Oral Surgery, Baylor Univ., 1957-58; Residency, Oral Surgery, Brooke Gen. Hosp., San Antonio, 1958-60; Chf. of Oral Surgery, Schofield Bks., 1960—. Mem.: Am. Soc. of Oral Surgeons; Natl. Med. and Dental Assn. of Am.; Am. Dental Assn.; N. Y. St. Dental Soc.; Eighth Dist. Dental Soc.; Assn. of Milit. Surgeons of the U. S.; Am. Assn. Adv. Sci.; Am. Dental Soc. of Anesthesiology; Internatl. Acad. of Anesthesiology; Delta Sigma Delta; Omicron Kappa Upsilon; The Kosciuszko Foundation. Serv. Rec.: U. S. Army, 1951-60. Gen. Int.: Diplomate N. Y. St. Bd. of Oral Surgery; Fellow, Arctic Inst. of N. Am. Areas of Rsch.: Effect of Trypsin on Exptl. Bone Healing (Rsch. with Rabbits).

ZADOROZNY, Edward (Mr.), Assoc. Prof. of Vert. Anat. and Comp. Anatomy, Calif. State Coll., Calif., Pa. Home Add.: 805 3rd Street, Calif., Pa. HUMAN BIOLOGY (ANATOMY, PHYSIOLOGY, AND MICROBIOLOGY). b. Pittsburgh, Pa., June 15, 1926. s. Samuel and Bertha (Urasek) Z. Edn.: B.S., Univ. of Pittsburgh, 1949; M.S., ibid., 1952. m. Helen Kurtaneck, June 5, 1954. c.: Edward Alexander. Exp.: Lab. Instr., Univ. of Pittsburgh, Pittsburgh, Pa., 1949-52; Instr., McKeesport H. S., McKeesport, Pa., 1956-58; Instr., Pa. St. Univ., ibid., summers, 1957, '58, '59, '60; Assoc. Prof., St. Coll., Mansfield, Pa., 1958-62; Assoc. Prof., Calif. St. Coll., 1962 . Hon. Pos.: Dir., Dept. of Sci. and Maths., Mansfield St. Coll., Pa.; Treas., P.S.T.A., 1962. Mem.: Sigma Xi; Omicron Delta Kappa; Phi Sigma; Pi Kappa Alpha. Serv. Rec.: U. S. Army Air Corps, 1944-46. Gen. Int.: Introduced First Russian Course at Mansfield St. Coll., Mansfield, Pa. Areas of Rsch.: Science Teacher Education; Nursing Education and Teaching of Science Courses as Part of General Education Programs.

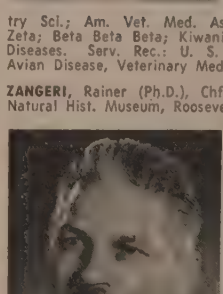
ZAFFORONI, Joe (Ed.D.), Assoc. Prof., The Pa. St. Univ., University Park, Pa. SCIENCE IN ELEMENTARY EDUCATION. b. Cle Elum, Wash., June 14, 1920. s. Charles and Mary (Ghioldi) Z. Edn.: B.A., Central Wash. Coll. of Edn., Ellensburg, 1940; M.A., Colo. St. Coll. of Edn., 1947; Ed.D., Columbia Univ., 1960. m. (div.). c.: Craig L. Exp.: Asst. Prof., Eastern Wash. Coll. of Edn., 1947-52; Assoc. Prof., Univ. of Neb., 1953-61; Assoc. Prof., The Pa. St. Univ., 1961— Hon. Pos.: Past Pres., Coun. for Elem. Sci., Internatl. Mem.: Phi Delta Kappa; Natl. Assn. Rsch. in Sci. Tchng.; Natl. Edn. Assn.; Assn. Childhood Edn., Internatl. Co-Author: Science Today for the Elementary School Teacher, 1960. Contbr. to: Instr. Mag.; Elem. Schl. Sci. Bull.; Safety Edn.; Science Edn. Serv. Rec.: U. S. Army, 1942-45. Gen. Int.: Instr. in Peace Corps; Trained Volunteers for Work as Teacher Aides in Philippines. Areas of Rsch.: Research Study Entitled Spotlight on Excellence in Elementary Science.

ZAMBON, Mary Coryell (Mrs.), Chmn. of Sci. Dept., Xenia H. S., Edison Blvd., Xenia, Ohio. Home Add.: 3477 Far Hills Ave., Dayton, Ohio. PHYSICS; EARTH SCIENCE. b. Champaign, Ill., Mar. 3, 1919. d. Dr. H. Noble Coryell and Sylvia (Sloan) C. Edn.: B.S., Univ. of Vt., 1940; M.S.T., Antioch Coll., 1961. m. Louis B. Zambon, div., 1941. c.: Carl Louis; Elaine Marie. Exp.: Sci. Tchr., Danville H. S., Danville, Vt., 1940-41; Physics Tchr. and Dept. Hd., Xenia H. S., 1955 . Mem.: Am. Assn. for the Adv. of Sci.; Natl. Edn. Assn.; N.S.T.A.; O.E.A.; O.S.T.A.; Ohio Acad.; Xenia Edn. Assn.; Am. Assn. of Univ. Women.

ZALLEN, Harold (Ph.D.), Univ. of Radiological Safety, Auburn Radiological Safety Officer, Office Univ., Auburn, Ala. Home Add.: 735 McKinley Ave., Auburn, Ala. PHARMACEUTICAL CHEMISTRY, RADIOCHEMISTRY, RADIOLOGICAL HEALTH AND CONTROL. b. Chelsea, Boston, Mass., April 7, 1926. s. Joseph and Lillian Lena (Stahl) Z. Edn.: B.S., Northeastern Univ. Schl. of Pharmacy, 1951; Ed.M., Boston Univ., 1954; M.S., Purdue Univ., 1958; Ph.D., ibid., 1960. m. Eugenia Malone, Aug. 23, 1959. Exp.: Asst. Prof., Calvin Coolidge Coll. of Liberal Arts, 1955-56; Visiting Prof., Lowell Gen. Hosp., Lowell, Mass., 1955-56; Sci. Tchr., Natick H. S., Natick, Mass., 1954-56; Grad. Instr., Purdue Univ., 1956; Asst. Radiological Control Officer, ibid., 1957-58; Pharmaceutical Chem., Assoc. Prof., Mercer Univ., 1960-61; Analytical Chemist, U.S.P.H.S., Atlanta, Ga., 1960; Univ. Radiological Safety Officer, Auburn Univ., 1961—. Mem.: A.C.S.; Am. Pharm. Assn.; Health Phys. Soc.; Ga. Acad. of Sci.; Ala. Acad. of Sci.; Phi Lambda Upsilon; Sigma Xi; Sigma Alpha; Beta Phi; Delta Sigma Theta. Author: Problems and Experiments in Organic Chemistry, 1961. Contbr. to: Jour. Am. Pharm. Assn.; Jour. Pharm. Sci.; Bull. Ga. Acad. of Sci.; Jour. Chem. Edn.; Jour. Ala. Acad. of Sci. Serv. Rec.: U.S.A.A.F., W.W. II, U.S.A.R., 1955—. Gen. Int.: Abstractor, Chemical Abstracts. Areas of Rsch.: Chem.; Pharmaceutical Chem.; Nuclear and Radiochem.; Analytical-Phys. Chem.

ZANDER, Donald Victor (Ph.D.), Dir., Rsch. Lab., Heisdorf & Nelson Farms, Inc., Redmond, Wash. Home Add.: 14314 Redmond-Woodinville Rd., Redmond, Wash. VETERINARY MEDICINE, AVIAN DISEASES, POULTRY HUSBANDRY. b. Bellingham, Wash., Feb. 14, 1916. s. A. D., Sr. and Rosa (Mezera) Z. Edn.: B.S., Univ. of Calif., 1941; M.S., Colo. St. Univ., 1945; D.V.M., ibid., 1950; Ph.D., Univ. of Calif., 1953. m. Verna Marie Mace, Aug., 1945. c.: Linda Jo; David Lee; Arnold Alan. Exp.: Rsch. Fellow and Asst., Poultry Husb. Dept. and Vet. Schl., Colo. St. Univ., 1942-45; Lab. Asst., Bacteriol., Colo. St. Univ., 1948; Specialist, Lectr., Asst. Prof. of Vet. Med., Univ. of Calif., Davis, 1950-55; Dir., Rsch. Lab., Heisdorf & Nelson Farms, Inc., Kirkland, Wash., 1955—. Mem.: Sigma Xi; Poultry Sci.; Am. Vet. Med. Assn.; Am. Assn. Avian Path.; Phi Zeta; Beta Beta Beta; Kiwanis. Contbr. to: Poultry Sci.; Avian Diseases. Serv. Rec.: U. S. Army, 1945-47. Areas of Rsch.: Avian Disease, Veterinary Med.; Poultry Husbandry and Nutrition.

ZANGERI, Rainer (Ph.D.), Chf. Curator, Dept. of Geol., Chicago Natural Hist. Museum, Roosevelt Rd. and Lake Shore Dr., Chicago, Ill. Home Add.: 3100 W. Longfellow, Hazel Crest, Ill. VERTEBRATE PALEONTOLOGY, PALEOECOLOGY, COMPARATIVE ANATOMY. b. Winterthur, Switzerland, Nov. 19, 1912. s. Hermann and Hedwig (Widmer) Z. Edn.: Matura, 1931; Ph.D., Univ. of Zurich, Zurich, Switzerland, 1936. m. Anna J. Kurz, Nov. 6, 1937. c.: Carl H. E.; Arthur R. Exp.: Prof. Anatomy, Middlesex Univ., Schl. of Vet. Med., Waltham, Mass., 1938-39; Instr. Zoology, Univ. of Detroit, 1939-43; Asst. Prof., Comparative Ana., Univ. of Notre Dame, 1943-45; Curator of Fossil Reptiles, Chicago, Natural Hist. Museum, Chicago, Ill., 1945-62; Chf. Curator, Dept. Geol., ibid., 1962— Mem.: Schweizerische Palaeontologische Gesellschaft; Soc. of Vertebrate Paleontology; Detroit Academy of Sciences; Fraternitas Vitodurensis, Winterthur, Switzerland. Contbr. to: Fieldiana: Geol. and Fieldiana: Zoology; Am. Midland Naturalist; Annals Carnegie Museum; Evolution; Jahrbuch Vorarlberger Landesmuseumsverein; Science; Memoirs Geol. Soc. of Am.; Proc. Zool. Soc., Calcutta; Schweiz. Pal. Abh.; Bulletin Museum Comparative Zool.; Encycl. Britannica; Schweiz. Monatsschrift fur Zahnheilkunde; Denkschr. d Schweiz. Naturforsch. Gesellsch.; Morphol. Jahrb.; Jour. of Morphology; Papers Mich. Acad. Sci. Arts Letters. Areas of Rsch.: Fossil Reptiles; Marine Paleoecology (Pennsylvanian).

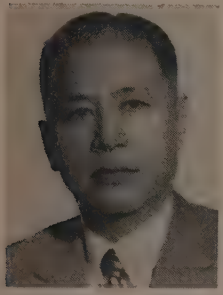


ZANCA, Peter (M.D.), Chf., Radiology Serv., Brooke Gen. Hosp., Ft. Sam Houston, Tex.; Clin. Prof. of Radiology, Baylor Univ. Coll. of Med., Houston, Tex. Home Add.: 1014 Gorgas Circle, Ft. Sam Houston, Tex. RADIOLOGY. b. N.Y.C., Oct. 29, 1908. s. Joseph and Josephine (Calavetta) Z. Edn.: M.D., Univ. of Rome Med. Schl., Italy, 1935. m. Margaret G. Quaid, Dec. 27, 1949. c.: Joseph H.; Peter A.; William S.; John E.; Paul D. Exp.: Res. in Radiol., Am. Oncological Hosp., Phila., Pa., 1937-38; Fellow in Radiation Therapy, Bellevue Hosp., Postgrad. N. Y. Univ. Med. Schl., 1946; Res. in Radiology, Oliver Gen. Hosp. and Letterman Army Hosp., 1950-51; Asst. Radiologist, Ft. Bragg Army Hosp. and Induction Sta., 1942-43; Chf., Radiology Serv., European Theatre Operations, 1944-45; Chf., Radiology Serv., William Beaumont Gen. Hosp., El Paso, Tex., 1947-50; Chf., Radiology Serv., Camp Cooke Army Hosp., Lompoc, Calif., 1951-52; Chf., Radiology Serv., Osaka and Tokyo Army Hosp., Far East Command, 1953-55; Chf., Radiology Serv., Ft. Dix Army Hosp., N. J., 1955-58; Chf., Radiology Serv., Brooke Gen. Hosp., Ft. Sam Houston, Tex., 1958—; Clin. Prof. of Radiology, Baylor Univ. Coll. of Med., 1959—. Hon. Pos.: Past Pres., Sou. Honshu

Med. Soc., Far East Command, 1953-54; Pres., San Antonio Military Radiological Soc., 1961—. Mem.: A.M.A.; W.M.A.; A.C.R., Fellow; R.S.N.A.; A.A.A.S.; Am. Geriatric Soc.; N.Y.A.S.; Certified Am. Bd. of Radiology; and others. Contbr. to: Radiology; Milit. Med.; U. S. Armed Forces Med. Jour.; Southwestern Med.; Lancaster Co. Med. Soc., Pa. Serv. Rec.: U. S. Army Med. Corps, 1st Lt. to Col., 1938—. Gen. Int.: Recd. Lancaster Co. Med. Soc. Internes Award; Consult. in Radiology to 4th U. S. Army; Dir., X-ray Technicians Schl., Ft. Sam Houston, Tex.; Recipient of Am. Defense Serv. Medal; Am. Campaign Medal, Europan Campaign Medal; Natl. Defense Serv. Med., Korean Serv. Medal, U. N. Serv. Medal, Meritorious Unit Emblem, Legion of Merit Medal. Areas of Rsch.: Radiology; Contbrns to the Study of Fractures of Spinous Process and March Fracture of Os Calcis; Studies in Miniature Survey Chest Radiography; Radiation Therapy.

ZAPFFE, Carl Andrew (D.Sc.), Consulting Metallurgist, 6410 Murrary Hill Rd., Baltimore 12, Md. METALLURGY. b. Brainerd, Minn., July 25, 1912. s. Carl Zapffe (dec.) and Ethel Moberg Z. Wiley (dec.). Edn.: B.S., Mich. Coll. Mining and Technol., 1933; M.S., Lehigh Univ., 1934; ScD., Harvard Univ., 1939. Hon. Deg.: D.Eng., Mich. Coll. of Mining and Technol., 1960. m. Denise duPont, May 22, 1937. c.: Denise duPont; Carl Moberg; Jessie Gresham Ball; Carlotta Karen; Barbara Ann; Augusta Camille; Elsie Isabel; Christina Ethel. Exp.: Metallurgist, duPont Exptl. Sta., Wilmington, Del., 1934-36; Rsch. Assoc., Battelle Meml. Inst., Columbus, Ohio, 1938-40; Rsch. Engr., Battelle Meml. Inst., ibid., 1940-43; Asst. Tech. Dir., Rustless Iron Steel Corp., Baltimore, Md., 1943-45; Consult. Metallurgist (self employed), Baltimore, Md., 1945—. Hon. Pos.: Chmn. and Vice-Chmn., Baltimore Chapt., Am. Soc. Metals, 1945-47; Natl. Comm. on Papers and Pubs., ibid., 1947-50 (on Howe Memorial Award 1958, on Handbook Revision, 1958). Mem.: A.A.A.S.; A.C.S.; A. Cer. S.; A.F.S.; A.I.M.E.; Amer. Electroplaters; Amer. Phys. Soc.; A.S.M.; A.S.T.M.; A.W.S.; Cryst. Soc.; Electrochem. Soc.; N.A.C.E.; Wire Assn.; Harvard Engr. Soc.; Baltimore Engr. Soc.; Brit. I. and S. Inst.; Brit. Inst. Metals; Sigma Phi Epsilon; Sigma Xi; Rotary; Boy Scouts of Am. Author: Stainless Steels, 1949. Contbr. to: Nautre; Sheet Metal Industries; Jour. Am. Cer. Soc.; The Progress of Sci. Grolier Soc., Inc.; Trans. Amer. Inst. Mining Met. Engrs.; Jour. Iron Steel Inst.; Trans. Amer. Soc. Metals; Jour. Applied Phys.; Stahl and Eisen; Nucleo; Nucleonics; Metallurgia Italiana; Revue de Metallurgie; Jour. Inst. Metals; Jour. Am. Welding Soc.; Metal Progress; Metals Handbook; etc. Gen. Int.: Proctor Memorial Award, Amer. Electroplaters' Soc., 1940; Cert. of Honorable Mention, Wire Assn., 1949 and 1951; Silver Medal and Cash Award, Am. Electroplater's Soc., 1951; Sauveur Memorial Award, Phila. Chapt., A.S.M., 1958; idem. Boston Chapt., A.S.M., 1958.

ZARA, Gregorio Ynciong (D.Sc.), Vice Chmn., Bd. of Trustees, Feati Univ., Sta. Cruz, Manila, Philippines; Exec. Vice Pres., Dean of Engrng. and Technol., Dean of Sci., Dir. of Rsch. and Dir. of the Grad. Schl., Feati Univ., 352 Quezon Blvd., Quezon City, Philippines. PHYSICS, AERONAUTICS, SOLAR ENERGY, ELECTRONICS AND TELEVISION. b. Lipa, Batangas, Philippines, March 8, 1902. Edn.: B.S. in Mech. Engrng., Mass. Inst. of Technol., 1926; M.S., Univ. of Mich., summa cum laude, 1927; D.Sc., Univ. of Paris, France, summa cum laude, 1930. m. Engracia Laconico, Sept. 1, 1934. c.: Antonio; Pacita; Josefina; Lourdes. Exp.: Tech. Asst. on Aviation Matters, Dept. of Pub. Works and Communications, Manila, Philippines, 1932-33; Aeronautical Engr., Aeronautics Div., Dept. of Pub. Works and Communications, ibid., 1935-36; Chief, ibid., 1936; Asst. Dir. and Chief Aeronautical Engr., Bur. of Aeronautics, Dept. of Natl. Defense, ibid., 1936-37; Dir. of Aeronautics, Dept. of Natl. Defense, ibid., 1945-46; Pres., Feati Enterprises, Inc., ibid., 1946—; Exec. Vice Pres. and Dean of Engrng. and Technol., Feati Univ., 1946—; Pres., Feati Scientific and Mfg. Corp., ibid., 1956; 1st Vice Pres. and Dir., Feati Industries, Inc., ibid., 1956—; Dean, Inst. of Sci., Dir. of Rsch. and Dir., Grad. Schl., ibid., 1959—; Dir., Feati Bank and Trust Co., ibid., 1961—. Hon. Pos.: Vice Chmn., Bd. of Trustees, Feati Univ., 1946—; Mem., Bd. of Dirs., Natl. Shipyards and Steel Corp., ibid., 1950-53; Mem., Civil Aeronautics Bd., ibid., 1950—; Mem., Am. Mgmt. Assn., U.S.A., 1959—; Pres., Philippine Assn. Adv. of Sci., 1961—; Pres., Soc. of Aeronautical Engrs. of Philippines, 1950—; Pres., Philippine Coun. of Sci. and Tech., 1956; Gov., Philippine Coun. of Sci. and Technol., 1956. Mem.: Filipino Inventors Soc.; Philippine Assn. of Mech. and Elec. Engrs.; Philippine Assn. for Technol. Edn.; Knights of Columbus; Feati Univ. Faculty Club. Author: L'Etude du Compas Magnetique a Induction, 1930; Application de la Seismologie a L'Etude de Noyau Central de la terre, 1930. Contbr. to: The Philippine Herald; The Aviation Monthly; The Feati Univ. News. Serv. Rec.: Capt., P.A.F.R. Gen. Int.: Received many awards including the Distinguished Service Medal and Presidential Citation by His Excellency, Carlos P. Garcia, Pres. of the Philippines, as a pioneer worker, scientist, and inventor, for outstanding achievements in solar energy, aeronautics and TV, 1959. Areas of Rsch.: Physics, Aeronautics, Solar Energy, Electronics, Wind Energy, Television.



ZARET, Matthew Elias (Mr.), Dir. Engrng., Dyna Magnetic Devices, Hicksville, N. Y. Home Add.: 67 Hollywood Pl., Huntington, N. Y. PHYSICS. b. N. Y. C., Sept. 13, 1909. s. Elias A. and Fanny (Burgunker) Z. Edn.: B.S., The City Coll., 1931; Sc.M., N. Y. Univ., 1936. m. Lillian Diamond, May, 1937. c.: Peter; Philip; Elias. Exp.: Dir., Engrng., Dyna Magnetic Devices, Hicksville, N. Y., 1960—; Electroacoustic Rsch. Engr., Sonotone Corp., Elmsford, N. Y., 1941-46; Project Engr., Polytechnic Rsch. and Dev. Co., Brooklyn, 1946-47; Asst. Prof., Newark Coll. of Engr., Newark, N. J., 1947-51; Assoc. Prof., The Cooper Union, N. Y. City, 1951-60. Hon. Pos.: Natl. Education Comm. Mem.: Inst. of Radio Engr.; Radio Club of Am.; Acoustical Soc. of Am.; A.A.A.S.; Huntington Symphony Orchestra. Author: Electroacoustics, 1949. Contbr. to: Jour. of the Acoustical Soc. of Am. Areas of Rsch.: Electroacoustics; Electronics.

ZARWYN, Berthold (Ph.D.), Hd. of Research Staff, Am. Bosch-Arma Corp., Garden City, N. Y. Home Add.: 187-36 87 Rd., Jamaica 32, N. Y. NUCLEAR and SOLID STATE PHYSICS, THERMODYNAMICS, FLUID FLOW, INERTIAL SPACE GUIDANCE, UNDERWATER COMMUNICATION. b. Austria, Aug. 22, 1921. s. Joseph and Bronislava (Antman) Z. Edn.: M.E., Gliwice, Poland, 1946; Dr. Ing., Munich Univ., 1947; Ph.D., N. Y. Univ., 1954; Sc.D., Columbia Univ., 1959. Exp.: Asst. Prof. in Mech. Engrng. and Applied Physics, UNRRA Univ. and Internatl. Univ., Munich, Germany, 1946-49; Hd., Engrng. Dept., Condenser Serv. and Engrng. Co., Hoboken, N. J., 1950-52; Project Engr., Curtiss-Wright Corp., Woodridge, N. J., 1952-55; Staff, Columbia Univ., Coll. of Engrng., 1954-55; Sr. Rsch. Engr., Am. Machine and Foundry Co., N. Y., 1955-57; Consultant to Fairchild Engine and Airplane Co., 1955-56; Visiting Physicist, Brookhaven Natl. Lab., 1956-57; Assoc. Prof. of Nuclear Engrng., Univ. of Conn., 1956-57; Prof. of Jet Propulsion, Univ. of Hartford, 1957; Consultant, Bendix Aviation Corp., 1957; Chf. Physicist, Link, Aviation, Binghamton, N. J., 1957-58; Hd. of Rsch. Staff and Dir. of Basic Research, Amer. Bosch-Arma Corp., Arma Div., Garden City, N. Y., 1958—. Hon. Pos.: Editorial Com., Bavarian Soc. of Engrs., Munich, 1948. Mem.: N. Y. Acad. of Sci.; Am. Phys. Soc.; Amer. Soc. of Mech. Engrs.; Assn. of Amer. and Foreign Scholars. Author: New Approaches to the Thermoaerodynamic Problems in Aviational Diesels, 1947; Mach. Reflection of Shock Waves at an Arbitrary Angle of Incidence, 1954; Transient Heat Transfer in Nucleate Boiling, 1959. Contbr. to: Applied Mechnaics Revs.; Translation Panel of Russian Jour. of Applied Mathematics and Mechanics with Pergamon Inst. Listed in: A.M.S. Areas of Rsch.: Nuclear Physics and Engrng., Solid State Physics, Propulsion, Fluid Flow, Heat Transfer, Electronic Simulation and Computation, Kinetic Theory of Liquids; Inertial Space Guid., Antisubmarine Warfare.

ZEBROWSKI, George (Mr.), Chmn. and Prof. of Biological Scis., Wilmington Coll., Wilmington, N. C. Home Add.: Rt. 1, Box 210, Wilmington, N. C. PARASITOLOGY-MYCOLOGY. b. Warsaw, Poland, Nov. 27, 1895. s. Boguslave and Edmunda (Dziankowska) Z. Edn.: B.S., Purdue Univ., 1921; M.S., ibid., 1923; LL.B., Chicago Coll. of Law, 1933; J. D., ibid., 1935. m. Lila V. Furr. c.: Evelyn Mullin. Exp.: Instr., Purdue Univ., 1921-23; Assoc. Prof., Summer Schl., Ind. Univ., 1921-25; Prof., Biol., Villanova Coll., 1924-32; Prof., Biol., Immaculata Coll., 1930-32; Hd., Biol. Dept., Wilmington Coll., 1953-62 (Ret.). Gen. Int.: City Chemist, Hammond, Ind., 1939-41; Licensed Atty. in Ind.; Licensed Atty. in Mo. Mem.: Fellow, A.A.A.S.; Am. Mycol. Soc.; Natl. Assn. of Biol. Tchrs.; A.A.U.P.; Sigma Xi. Contbr. to: Trans. of Amer. Entomol. Soc.; Ann. of Mo. Botanical

Garden; Ind. Acad. of Sci. War Record: U. S. Army, W. W. I. Areas of Rsch.: Law; Mycology; Parasitology.

ZEEDICK, John Francis Ivan (M.D.), Dir., Dept. of Anesthesia, Braddock Gen. Hosp., Braddock, Pa. Home Add.: 329 So. Home Ave., Avalon, Pittsburgh 2, Pa. MEDICINE: ANESTHESIA; MEDICAL ENGINEERING. b. Pittsburgh, Pa., Feb. 21, 1928. s. Peter Ivan and Annette M. (Evers) Z. Edn.: M.D., Univ. of Pittsburgh Schl. of Med., 1954; B.S., ibid., 1950. m. Conelia Alice Williams, May 7, 1960. Exp.: Anesthesiologist, U. S. Army, 1957-59; Assoc. Dir. of Anesthesia, St. Francis Gen. Hosp., Pittsburgh, Pa., 1959-61; Dir. of Anesthesia, Braddock Gen. Hosp., 1961—. Hon. Pos.: Consultant Staff, St. Francis Gen. Hosp.; U. S. Army Berry Plan Res. in Anesthesiol., 1955-57; Diplomate, Am. Bd. Anesthesiol.; Fellow, Am. Coll. of Anesthesiol., Affiliate Mem., Inst. of Radio Engrngs. (Biomed. Group). Mem.: Am. Assn. of Inhalation Theraps.; Am. Ord. Soc.; Pa. Soc. of Anesthesiols.; Pittsburgh Soc. of Anesthesiols.; Internatl. Assn. of Anesthesiols.; Internatl. Anesthesia Rsch. Soc.; Internatl. Medico-Legal Soc.; The N. Y. Acad. of Scis.; Am. Med. Assn.; Pa. Med. Soc.; Allegheny Co. Med. Soc.; Soc. of Biol. Rsch.; The Soc. of Military Anesthesiols.; Am. Assn. for the Adv. of Sci.; Phi Beta Pi; Univ. Catholic Club. Author: Summary of Stages and Signs in Anesthesia, 1960. Contbr. to: Am. Jour. of Med. Sci.; Anesthesiol.; Anesthesia Abstracts; Med. Bull. of the Eighth U. S. Army; Jour. of the Am. Dental Soc. of Anesthesiol. Serv. Rec.: U. S. Army, 1957-59. Gen. Int.: Benhard A. Goldman Award in 1954 from the Univ. of Pittsburgh Schl. of Med. Areas of Rsch.: Clinical and Pharmacological Investigation with Phenylamine Derviatives, Narcotics, Phenothioiazine Derviatives, and Inhalation Anesthestics Agents; Design and Application of Mechanical and Electro-Mechanical Devices to Medicine and Anesthesia; Medical Engineering.

ZELKO, Harold Philip (Mr.), Prof. of Speech, The Pa. St. Univ., University Park, Pa. Home Add.: 325 S. Sparks St., St. Coll., Pa. COMMUNICATION. b. Orange, N. J., Sept. 15, 1908. s. Benjamin H. and Sarah (Weiner) Z. Edn.: LL.B., Ohio St. Univ., 1933; M.A., ibid., 1939. m. Sarah Favish, 1935. c.: Marjorie E.; Karen Joy; Gary W. Exp.: Prof. of Speech, The Pa. St. Univ., 1936—; (On leave of absence) Dir. of Trng., Internal Revenue Serv., U. S. Treasury Dept., Wash., D. C., 1952-53; Dir. of Trng., Office of Price Stabilization, Wash., 1951; Asst. Dir. of Trng., Corps of Engrs., Dept. of the Army, Wash., 1944-47; Prof. of Speech, The Pa. St. Univ., 1951—. Hon. Pos.: Consult., Governor and Pa. Govt. Depts.; Consult. to Am. Tel. and Tel. Co. and E. I. duPont de Nemours and Co.; Former Chmn., Bus. and Profl. Speech Grp., Speech Assn. of Am.; Mem., Comm. on Comm. in Industry, Natl. Soc. for Study of Communications; Comm. on Pub. Relations, Am. Soc. of Trng. Dirs.; Chmn., Comm. on Adult Edn., Speech Assn. of the Eastern States. Mem.: Speech Assn. of Am.; Natl. Soc. for Study of Communication; Speech Assn. of Eastern States, Pa. Speech Assn.; Delta Sigma Rho; Am. Soc. of Trng. Dirs. Author: Communicative Speech, co-author, 1949, '62; Successful Conference and Discussion Techniques, 1957; How to Hold Meetings and Conferences; Are You a Good Listener?, 1955.

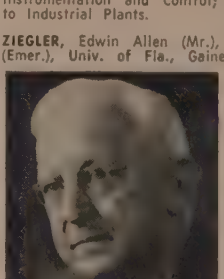
ZEGARELLI (Dr.), Edward Victor, Dr. Edwin S. Robinson Prof. of Dentistry, Columbia Univ. Schl. of Dental and Oral Surgery, 630 W. 168th Street, N. Y. 32, N. Y. Home Add.: 120 Gory Brook Rd., N. Tarrytown, N. Y. DENTISTRY (ORAL DIAGNOSIS AND ORAL PATHOLOGY). b. Utica, N. Y., Sept. 9, 1912. s. Frank A. and Maria G. (Ambroselli) Z. Edn.: A.B., Columbia Univ., 1934; D.D.S., ibid., 1937; M.S., Univ. of Chicago, 1943. m. Irene M. Ceconi, June 17, 1939. c.: Edward V., Jr.; David J.; Philip E.; Peter J. Exp.: Asst. in Dentistry, Columbia, 1937-38; Instr. in Dentistry, ibid., 1938-43; Fellow at Zoller Inst., Univ. of Chicago, 1939-40; Asst. Prof. of Dentistry, ibid., 1945-47; Assoc. Prof., ibid., 1947-57; Chief of Diagnosis and Roentgenol., ibid., 1948-57; Dir., Div. of Stomatology, ibid., 1957—; Prof. of Dentistry, ibid., 1957—; Dr. Edwin S. Prof. of Dentistry, ibid., 1958—. Hon. Pos.: Chmn., Com., of Dental Rsch., Columbia Univ.; Chmn., Coun. of Scientific Rsch., N. Y. State Dental Soc.; Cancer Coordinator, Columbia Univ., Schl. of Dental and Oral Surgery; Secretary-Treasurer, Columbia Chapter, Omicron Kappa Upsilon, 1944-57; Pres., ibid., 1959-60; Postgraduate Edn. Comm. of the N. Y. City Cancer Comm. Mem.: Am. Dental Assn.; Columbia Dental Alumni Assn.; William Jarvie Rsch.; Internatl. Assn. for Dental Rsch.; A.A.A.S.; Sigma Xi; Am. Bd. of Oral Med.; Amer. Coll. of Dentists; Omicron Kappa Upsilon; Psi Omega; Italian-Am. Civic Assn. Contbrng. Author: The Thyroid; Medical Roentgenology. Contbr. to: Am. Jour. of Pathol.; Jour. Am. Dental Assn.; N. Y. State Dental Jour.; Am. Jour. of Digestive Diseases; Am. Jour. of Orthodontics and Oral Surgery. Gen. Int.: Fellow, Am. Coll. of Dentists. Gen. Int.: Awarded D. Austin Sniffen Medal of Honor by 9th District Dental Soc. of N. Y. St., 1960. Areas of Rsch.: Diseases of the Mouth and Jaws.

ZELLNER, Carl Naeher (Ph.D.), Sr. Rsch. Assoc., Celanese Corp., Summit, N. J. Home Add.: 36 Ridge Drive, East, Berkeley Heights, N. J. POLYMER CHEMISTRY. b. New York, N. Y., Mar. 4, 1910. s. Carl P. and Marie (Scharmann) Z. Edn.: A.B., Princeton Univ., 1931; M.A., ibid., 1932; Ph.D., ibid., 1935. m. Velma Wetzel, 1936. c.: Carl W. Exp.: Chemist, Merck and Co., Inc., Rahway, N. J., 1934-37; Group Leader, Tidewater Oil Co., Bayonne, N. J., 1937-55; Section Head, Celanese Corp. Am., 1955-59; Sr. Rsch. Assoc., ibid., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; Phi Beta Kappa; Sigma Xi. Contbr. to: Jour. Am. Chem. Soc.; Industrial Engrng. Chem. Areas of Rsch.: Research in Petrochemical Field; Free Radical Reactions; Catalytic Polymerization.

ZEMP, John Workman, (Mr.), Biochemist, Blood Rsch. Lab., U. S. Naval Hosp., Chelsea, Mass. Home Add.: 18 Princeton St., Danvers, Mass. RED BLOOD CELLS PRESERVATION. b. Camden, S. C., Sept. 28, 1931. s. Charles H. and Elizabeth (Workman) Z. Edn.: B.S., Coll. of Charleston, 1953; M.S., Med. Coll. of S. C., 1954; Graduate Study, Stanford Univ., 1954-56; Harvard Univ., 1960-62. m. Lois DeWitt, Dec. 20, 1958. c.: John Workman, Jr.; Virginia DeWitt. Exp.: Flight Physiologist, U.S.N.A.S., Corpus Christi, Tex., 1956-59; Biochemist, U. S. Naval Hosp., Chelsea, Mass., 1959—. Mem.: Am. Chem. Soc.; A.A.A.S.; Internatl. Soc. of Hematol.; Alpha Tau Omega. Contbr. to: Vox Sanguinis; Jour. of Trauma; Analytical Chem.; Proc. Soc. Exptl. Biol. and Medicine; Fed. Proc.; Proc. VIII Internatl. Congress Hematol.; Proc. Fifth Navy Sci. Symposium. Serv. Rec.:; U. S. Navy, 1956—. Areas of Rsch.: Red Cell Preservation; Alcohol Metabolism; Lead Poisoning.

ZIEBOLZ, Herbert W. (Mr.), Asst. to Vice Pres. of Engrng., General Precision Equipment Corp., Tarrytown, N. Y. Home Add.: 215 E. 68, N. Y. 21, N. Y. AUTOMATIC CONTROLS AND METEROLOGY. b. Breslau, Germany, Aug. 25, 1903. s. Paul and Grete (Littke) Z. Edn.: Diplom Eng., Techniche Hochschule, 1926; Breslau, Germany. Exp.: Mgr., Am. Askania Corp., Chicago, Ill., 1931-35; Vice Pres., Askania Reg. Co., Chicago, Ill., 1935-57; Asst. to Vice Pres. of Engrng., Gen. Precision Eqpt. Corp., 1957—. Mem.: Am. Assn. for the Adv. of Sci.; Co-Chmn. Comm. of Internatl. Relations Instrument Soc. of Am.; Fellow, Instrument Soc. of Am.; Am. Soc. Mech. Engrs. Author: Analysis and Design of Translator Chains, 1946. Contbr. to: A.S.M.E. Jour.; Rev. of Scientific Instruments; Proc. Control Engrng. Gen. Int.: Citation for Contbrn. to Electronics and Submarines, A.S.M.E.; Citation by the Bureau of Ships for Contbrn. to Submarine Simulation and Control. Areas of Rsch.: Industrial Instrumentation and Control; Simulation, Computor Application to Industrial Plants.

ZIEGLER, Edwin Allen (Mr.), Prof. Forest Econs. and Mgmt., (Emer.), Univ. of Fla., Gainesville, Fla. Home Add.: College Park, Lewisburg, Pa. FORESTRY. b. Rebersburg, Pa., Sept. 20, 1880. s. Thomas R. and Lydia A. (Yearick) Z. Edn.: A.B., Franklin and Marshall Coll., 1902; A.M., ibid., 1916. Hon. Degrs.: Sc.D., Franklin and Marshal Coll., 1923. m. Josephine E. Kreider, 1935. c.: Mrs. Elizabeth R. Zweizig; Joanna R.; Miriam M. Exp.: Various, U. S. Forest Serv., Wash., 1902-09; Dir., Penn. Sta. Forest Schl., Montaito, Pa., 1909-29; Sr. Forest Econ., U. S. Forest Serv., Wash., D. C., 1929-32; Chief Rsch. Forester, Pa. Sta. Forest Serv., Harrisburg, Pa., 1932-37; Prof. of Forest Econ. and Mgmt., Univ. of Fla., Gainesville Fla., (emer.), 1937-51. Hon. Pos.: Chmn., Allegheny Soc. Am. Forester; Chmn. Gulf Sect., Soc. Am. Forester; Pres., Pa. Acad. of Sci. Mem.: Fellow, Soc. Am. Foresters; Fellow, Am. Assn. for the Adv. of Sci.; Sigma Xi; Phi Sigma Kappa; Xi Sigma Pi; Rotary; Am. Red Cross. Co-Author: Revised Woodsmans Handbook, 1910. Contbr. to: Jour. of Forestry; U. S. Forest Serv. Serv. Rec.: Major,



U. S. Coast Artillery, First World War. Gen. Int.: Made Mgnt. Plan as Consulting Forester for the 35,000 Acre Satilla Forest, Camden Co., Ga. for the Am. Creosoting Co., 1938-39 and Controlled Cutting for 12 years. Areas of Rsch.: Forest Econs., Mensuration and Management.

ZIEGLER, Barbara (Miss), Lab. Techn., Dept. of Peds., Univ. of Md. Hosp., Balt., Md. Home Add.: 4109 Roland Ave., Balt. 11, Md. LEAD POISONING. b. Phila., Pa., May 18, 1926. s. George Raymond and Rebecca (Leonard) Z. Edn.: A.B., Randolph Macon Woman's Coll., 1949. Exp.: Chem. Techn., Dept. of Med., The Johns Hopkins Hosp., 1949-54; Lab. Techn., Dept. of Peds., Univ. of Md. Hosp., 1954—. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Gamma Phi Beta. Areas of Rsch.: Myasthenia Gravis; Nerve Gas Poisoning; Hypertension; Asthma; Rheumatoid Arthritis; Lead Poisoning.

ZIEGLER, Hans Konrad (Ph.D.), Chief Scientist, U. S. Army Signal Rsch. and Devel. Lab. (USASRDL), Ft. Monmouth, N. J. Home Add.: 213 Perrine Ave., Elberon, N. J. MILITARY ELECTRONICS, COMMUNICATIONS, SATELLITE AND SPACE RESEARCH. b. Munich, Germany, Mar. 1, 1911. s. Konrad Ludwig and Therese (Schnellinger) Z. Edn.: B.S., Technical Univ., Munich, Ger., 1932; M.S., ibid., 1934; Ph.D., ibid., 1936. m. Friederika Groenbold, May 14, 1937. c.: Friederike Therese; Hans Peter; Christine Maria. Exp.: Asst. Prof. in Elec. Engrng., Tech. Univ., Munich, Germany, 1934-36; Chf. of Rsch. and Devel. Dept. of Rosenthal Isolation G.M.B.H., Selb, Germany, 1936-47; Scientific Consultant, U. S. Army Signal Rsch. and Devel. Lab., Ft. Monmouth, N. J., 1947-56; Asst. Dir. of Rsch., ibid., 1956-58; Dir., Astro-Electronics Div., ibid., 1958-59, Chief Scientist, ibid., 1959—. Hon. Pos.: Defense Dept. Mem., Tech. Panel for the Earth Satellite Program of the U. S. Natl. Com. of the I.G.Y., 1957-58; U. S. Delegate to CSAGI Conf., Moscow, U.S.S.R., 1958; Mem., AFCEA, 1960-61, Ft. Monmouth Chpt. Pres. Mem.: Fellow, Inst. of Radio Engrs.; Fellow, Am. Astronautical Soc. Co-author: Scientific Uses of Earth Satellites, 1956. Co-Editor: Handbook of Astronautical Engineering (1961). Contbr. to: ETZ, Archiv fuer Elektrotechnik (Germany); A.I.E.E.; Chemical & Engineering News; Annals of the Internatl. Geophys. Year. Gen. Int.: Directed R. & D. of first Solar Power System ever used in an artificial Earth Satellite (Satellite 1958 beta) and of electronics of Satellites Vanguard II, Tiros I, Score and Courier. Listed in: Who's Who in Am.; Who's Who in the East; Am. Men of Sci. Areas of Rsch.: Energy Sources, Conversion and Transmission Systems, Military Electronics and associated Components and Materials, Communications, Geophysical and Meteorological Rsch., Satelite and Space Sci.

ZIEMNOWICZ, Stanislaw Antoni (M.D.), Asst. Prof., Dir. Neurol. Rsch. Lab., Grad. Schl., Georgetown Univ. Med. Ctr., Wash. 7, D. C. Home Add.: 7704 Holiday Terrace, Bethesda, Wash. 14, D. C. NEUROSURGERY; NEUROLOGY AND SURGERY. b. Saybusch (Zywiec), Austria, March 12, 1913. s. Casimir and Maria de(Miodonski) Z. Edn.: Med. Diploma of Physician Jagellon Univ. Schl. of Med., Cracow, Poland, 1938; M.D., Schl. of Med., Lodz, Poland; Med. License, Maryland. m. Janina D. de Dabrowski, March 12, 1940. c.: George; Christopher. Exp.: Neurosurgeon in Chf., Med. Schl., Gdansk, Poland, 1945-48; Rsch. Assoc., Dept. of Neurosurgery, Stockholm, 1948-49; Neurosurg. in Chf. and Adiunkt, Schl. of Med., Wroclaw, Poland, 1952-57; Rsch. Assoc., Inst. of Brain Rsch., Leipzig, Germany, 1957; Rsch. Fellow, Neurol. Inst., Columbia Univ., N. Y., 1957-58 Visiting Scientist, Neurol. Institute, Natl. Institute of Health, Bethesda, Md., 1958-59; Special Traineeship, Johns Hopkins Univ., Schl. of Medicine, Baltimore, Md., 1959-60; Asst. Prof. of Neurol., Georgetown Univ., 1960—. Mem.: Am. Acad. of Neurol.; Baltimore Neurol. Soc.; Johns Hopkins Med. Soc.; Med. Soc. of the Dist. of C.; Polish Soc. of Neurol. and Neurosurg.; Polish Surg. Assn.; Herbert Olivecrona Neurosurg. Soc.; Biomed. Inf. Proc. Org.; Am. Assn. for the Adv. of Sci.; Microcirculatory Conf.; Am. Epilepsy Soc.; Georgetown Univ. Alumni Assn.; A.M.A. Contbr. to: Sistema Nervoso; Trans. V. Internatl. Neurol. Congr.; Topischermia. Serv. Rec.: Polish Army, 1938-39, 1941-45. Gen. Int.: Internationally Accepted Original Resorptive Operation in Communicating Hydrocephalus (subarachnoideo-Intravertebral Anastomosis); New Operation on Cerebral Cortex (topischemia) and for Craniostenosis (fonticulo-sutural craniectomy); New diagnostic method of rheoophthalmography (R.O.G.). Areas of Rsch.: Research and Clin. Work in Pediatric Neurosurgery and Experimental Neurology and Neurophysiology.

ZIENTY, Ferdinand B. (Ph.D.), Dir. of Advanced Organic Chemicals Rsch., Organic Chemicals Div., Monsanto Chem. Co., 1700 South Second St., St. Louis 77, Mo. Home Add.: 850 Rampart Drive, Warson Woods 22, Mo. ORGANIC CHEMISTRY. b. Chicago, Ill., Mar. 21, 1915. s. Albert F. and Rose (Przypyszny) Z. Edn.: B.S., Univ. of Ill., 1935; M.S., Univ. of Mich., 1936; Ph.D., ibid., 1938. m. Claylain Lorraine Cawiezell, Apr. 14, 1945. c.: Kathleen Ruth; Jane Louise; Donald Ferd. Exp.: Rsch. Chemist, Monsanto Chem. Co., 1938-40; Rsch. Grp. Leader, ibid., 1940-47; Asst. Dir. of Rsch., ibid., 1947-50; Assoc. Dir. of Rsch., ibid., 1950-56; Dir. of Rsch., ibid., 1956-60; Dir. of Advanced Organic Chem. Rsch., ibid., 1960—. Mem.: Am. Chem. Soc.; Am. Inst. of Chem. Engrs.; Am. Pharmaceutical Assn.; Soc. of Chem. Industry, London; Fellow, A.A.A.S.; N. Y. Acad. of Scis.; Phi Lambda Upsilon; Alpha Chi Sigma; Rho Chi; Phi Kappa Phi; Sigma Xi. Contbr. to: Jour. of Am. Chem. Soc.; Jour. of Organic Chem. Areas of Rsch.: Antispasmodics, Ethylenediamine Derivatives, Imidazoles, Sulfa Drugs, Thiophene Derivatives, Organic Heterocycles, Organic Acids and Anhydrides, Nucleophilic Substitutions.

ZIGRANG, Denis Joseph, Prin. Engr., Operations Rsch., Aerospace Div., Martin Marietta Corp., Denver, Colo. Home Add.: 25 Linenwood Dr., Littleton, Colo. AERONAUTICAL ENGINEERING (PROPULSION SYSTEMS). b. Livermore, Ia., May 11, 1926. s. Harry L. and Augustine (Choquette) Z. Edn.: B.S., Ia. State Univ., 1949; B.S., ibid., 1950. m. Mary B. Lamoureux, June, 1948. c.: Lawrence Denis; Mary Kathleen; Patricia Ann. Exp.: Jr. Chemist, Ames Lab. of A.E.C., I.S.U., Ames, Ia., 1948-50; Quality Supv., Minn. Mining and Mfg., St. Paul, Minn., 1951-52; Sr. Engr., North Am. Aviation, Downey, Calif., 1952-58; Prin. Engr., Martin Marietta, Denver, Colo., 1958—; Lectr., Aeronautical Engr., Univ. of Colo., Boulder, Colo., 1959—. Hon. Pos.: Pres., Rocky Mt. Sec., Am. Rocket Soc., 1960-61; Mem., A.A.A.S. Coun., 1961—. Mem.: Am. Rocket Soc.; Combustion Inst.; Nuclear Engr. Div., A.I.C.H.E.; A.A.A.S.; Alpha Chi Sigma; Tau Beta Pi; Phi Lambda Upsilon; Phi Kappa Phi; Gamma Sigma Delta. Contbr. to: Jour. of Aeronautical Sci.; Jour. of Am. Rocket Soc.; Astronautics. Serv. Rec.: U.S.N., 1944-46. Gen. Int.: Received Ia. State Univ., Alpha Chi Sigma Chem. Award, 1947; Technical Paper Award of Rocky Mt. Sec., Am. Rocket Soc., 1959. Areas of Rsch.: Aerothermodynamics and Propulsion; Teaching propulsion systems and Thermodynamics; Nuclear reactor coolant technology; Hydrogen isotope separation.

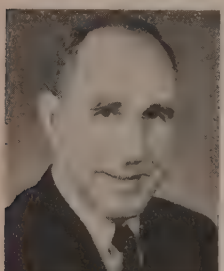
ZIMMACK, Harold Lincoln (Ph.D.), Asst. Prof., Biol. Dept., Eastern Ky. State Coll., Richmond, Ky. Home Add.: 105 Bristol Dr., Richmond, Ky. ENTOMOLOGY, INVERTEBRATE ZOOLOGY. b. Chicago, Ill., Feb. 12, 1925. s. Harold N. and Wanda (Dobbs) Z. Edn.: B.S., Eastern Ill. State Univ., 1951; M.S., Ia. State Univ., 1953; Ph.D., ibid., 1956. m. Barbara Keen, Sept., 1951. c.: Cinda Lou; John Mark; Lissa Carol. Exp.: Rsch. Asst., U.S.D.A., Ankeny, Ia., summers, 1951-56; Grad. Asst., Ia. State Univ., Ames, Ia., 1951-56; Asst. Prof., Eastern Ky. State Coll., Richmond, Ky., 1956—. Mem.: A.A.U.P.; Am. Men of Sci.; A.A.A.S.; Am. Inst. of Biological Scis.; Ky. Edn. Assn.; N.E.A.; Ky. Acad. of Sci.; Sigma Xi; Gamma Sigma Delta; Phi Sigma Epsilon. Contbr. to: Jour. of Economic Entomology. Areas of Rsch.: Insect Pathology.

ZIMMERMAN, Dwane Robert (Ph.D.), Asst. Prof. in Animal Husbandry, Univ. of Neb., Coll. of Agric., Dept. of Animal Husbandry, Lincoln 3, Neb. Home Add.: 6930 Adams St., Lincoln, Neb. PHYSIOLOGY OF REPRODUCTION. b. Fairview, Okla., Nov. 30, 1934. s. Riley David (dec.); Elsiemae (Nelson) Z. Edn.: B.S., Okla. St. Univ., 1956; M.S., Univ. of Wis., 1958; Ph.D., ibid., 1959. m. Mary Margaret Young, Aug. 23, 1953. c.: Kery Lynn; Charles Dwane; Clay Robert. Exp.: Rsch. Asst., Univ. of Wis., Madison, Wis., 1956-59; Asst. Prof., Animal Husb., Univ. of Neb., 1959—. Mem.: Sigma Xi; Am. Soc. of Animal Prodn.; Am. Assn. Adv. Sci.; Phi Kappa Phi; Alpha Zeta. Contbr. to: Jour. of Animal Sci. Areas of Rsch.: Fertility as Affected by Plane of Nutrition; Nutrition-Endocrine Relationships; Endocrine Control of the Estrous Cycle.

ZIMMERMAN, Gustina Barr (Mrs.), Owner-Dir. of Zimmerman Labs., 202 Dryden Bldg., Flint, Mich. Home Add.: 531 S. Lynch St., Flint, Mich. BIOANALYSIS. b. Mich., Aug. 21, 1907. d. Thomas and Edith (Barber) Barr. Edn.: B.S., Mich. State Univ., 1930; M.S., La. State Univ., 1933. m. Clarence P. Moore, 1947. Exp.: Chf. Technologist, Hurley Hosp. Lab., Flint, Mich., 1930-32, 1933-37; Dir.-Owner, Zimmerman Labs., Flint, Mich., 1937—. Mem.: Am. Assn. Bioanalysts; Am. Assn. Clin. Chem.; Soc. of Am. Bact.

ZINK, Norah E. (Ph.D.), Prof., State Coll., Indiana, Pa. Home Add.: 908 School St., Indiana, Pa. GEOGRAPHY, TEACHING OF GEOGRAPHY. b. Richmond, Ind. d. John and Laura Luella (Heiser) Z. Edn.: B.S., Univ. of Utah, 1924; M.A., Columbia Univ., 1926; Ph.D., Univ. of Chicago, 1937. Exp.: Head, Geog. Dtpt., State Normal Schl., New Haven, Conn., 1926-28; Acting Hd., Geog. Dept., State Tchrs. Coll., Indiana, Pa., 1928-29; Rsch. Specialist, State Engineer's Office, Salt Lake City, Utah, 1933-35; Faculty Mem., Univ. of Pittsburgh, 1936; Acting Hd., 1943-46, and Prof., State Coll., Indiana, Pa., 1936—. Mem.: Natl. Coun. Geog. Edn.; Am. Geog. Soc.; Assn. Am. Geog.; Pa. Coun. for Geog. Edn.; Cent. Western Geographers; Geog. Club of Western Pa.; Am. Polar Soc.; African Studies Assn.; Internatl. Geog. Union; N.E.A.; P.S.E.A.; Delta Kappa Gamma; Phi Mu. Author: Dry-Farming Adjustments in Utah, 1937. Contbr. to: Jour. of Geog.; Econ. Geog.; Monthly Weather Rev.; Encyclopedia of Ednl. Rsch.; 32nd Yearbook N.S.S.Ed., Ed. Metho. Areas of Rsch.: Teaching of Geography, Geography of Africa.

ZINN, Justin (Ph.D.), Prof., Dept. of Geol., Mich. State Univ., E. Lansing, Mich. Home Add.: 1551 Sherwood Rd., E. Lansing, Mich. PRE-CAMBRIAN GEOLOGY. b. Bronson, Mich., May 13, 1903. s. Clyde E. and Elizabeth (Heltzel) Z. Edn.: B.S., Univ. of Mich., 1928; M.S., Mich. Coll. of Mining and Tech., 1930; Ph.D., Univ. of Wis., 1933. m. Angela T. Conte, Dec. 4, 1936. c.: Constance K.; Justin J.; Alan C.; Vicki Ann. Exp.: Instr., Geol., Mich. Coll. Mining and Tech., 1929-30; Summer field work, Mich. Geol. Surv., Summers of 1927-28-29-30; Summer field work, Jones Laughlin Ore Co., Crystal Falls, Mich., Summer of 1931; Rsch. Assoc., Geol., Univ. of Wis., 1932-33; Geologist and Edn. Adv., CCC, Fife Lake, Mich., 1933-36; Instr. to Prof., Mich. State Univ., 1937—. Hon. Pos.: Pres., Mich. Geol. Soc., 1955-56. Mem.: Mich. Acad. Sci.; Mich. Geol. Soc.; Geol. Soc. Am.; A.I.M.E.; A.A.A.S.; A.A.P.G.; Sigma Xi; Phi Beta Kappa; Sigma Rho; Sigma Gamma Epsilon; Phi Kappa Phi. Contbr. to: Proc. Mich. Acad. Sci.; Arts and Letters. Areas of Rsch.: Pre-Cambrian Stratigraphy; Metamorphic petrography.



ZINN, Manvel Keeport (dec.), Mem. of Tech. Staff, Bell Tel. Labs., 463 W St., N. Y. 14, N. Y. Home Add.: 154 Rockwood Rd., Manhasset, N. Y. MATHEMATICS, APPLIED TO COMMUNICATION THEORY. b. Logansport, Ind., June 23, 1897. s. Jacob Halleck and Mildred Amelia (Keeport) Z. Edn.: B.S. in E.E., Purdue Univ., 1918. m. Annette Schneider, Mar. 12, 1925. c.: John; Ted. Exp.: Engr., Am. Tel. and Tel. Co., N. Y. C., 1919-34; Mem., Tech. Staff, Bell Tel. Labs., N. Y., 1934-62. Mem.: A.A.A.S.; Pa. Acad. Fine Arts; Tau Beta Pi; Greenwich Village Art Center; Am. Legion; Tel. Pioneers of Am. Contbr. to: Bell System Tech. Jour.; Bell Lab. Record; Rev. of Econ. Statistics, Harvard. Areas of Rsch.: Electric Circuit Theory, Wave Guides, Information Theory, Automatic Control Systems, Satellites for Communication.

ZINNER, Doran D. (D.D.S.), Rsch. Asst. Prof., Univ. of Miami Schl. of Med., Coral Gables, Fla. Home Add.: 2017 Alhambra Circle, Coral Gables, Fla. DENTISTRY, PERIODONTIA, MICROBIOLOGY. b. Akron, Ohio, Dec. 24, 1918. s. Sidney and Henrietta (Gertzman) Z. Edn.: B.A., Ohio State Univ., 1940; D.D.S., ibid., 1944. m. Eve Wernicoff, Sept. 9, 1943. c.: Michael Jeffrey; Karen Lynn; Donald Alan. Exp.: Dir. of Dent. Rsch., Natl. Children's Cardiac Hosp., Miami, Fla., 1952—; State-wide Consult. in Dentistry, United Cerebral Palsy Assn. of Fla., 1955—; Rsch. Asst. Prof., Dept. of Microbiol., Schl. of Med., Univ. of Miami, 1957—; Rsch. Assoc., Dept. of Med. Rsch., 1958—; Consultant, Oral Med. and Periodontia, ibid., 1960—; Rsch Assoc., Variety Children's Rsch Hosp. of Coral Gables, Fla., V.A. Fdtn., Miami, Fla., 1961—; Consultant in Dentistry, Fed. Republic of W. Germany, 1961. Hon. Pos.: First Vice-Pres., State Pres., United Cerebral Palsy Assn. of Fla.; Chmn., Scientific Investigation Comm., Fla. East Coast Dist. Dent. Soc.; Chmn., Rsch. Comm., Dade County Dental Rsch. Clinic; Co-founder and Advisor, Jr. Scientist Rsch. Program, Dade Co. Bd. of Publ. Instrn.; Chmn., Bd. of Dirs., All Miami Youth Symphony Orchestra; Advisor, Coral Gables H. S., Westinghouse Sci. Talent Search; Natl. Exec. Coun., Dental Health Sect., Am. Publ. Health Assn.; Advisor, Phi Sigma Coll. Sci. Scholarship Awards Committee; Fla. Coun. on Aging. Mem.: Fellow, A.A.A.S.; Am. Men of Sci.; Soc. of Am. Bacteriol.; Internatl. Assn. for Dent. Rsch.; Fellow, Am. Pub. Health Assn.; Royal Soc. of Health; Am. Acad. of Dental Med.; Am. Dent. Assn.; N. Y. Acad. for Sci.; Fla. Acad. of Sci.; Am. Acad. of Oral Pathol.; Am. Fedn. for Clin. Rsch.; Fed. Dentaire Internatl.; Internatl. Assn. for Dental Rsch.; Pierre Fauchard Acad.; Am. Dental Soc. for Anesthesiol.; Fla. Publ. Health Assn.; Fla. Fdtn. for Future Scientists; S. Fla. Soc. of Bacteriologists; Am. Acad. of Arts and Scis.; Alpha Omega; Knights of Pythias. Contbr. to: Jour. Am. Dent. Assn.; Jour. Am. Inst. of Ultrasonics in Med.; Jour. Dent. Rsch.; Jour. Dent. for Children; Jour. Dent. Abstracts, World Dent. Literature; Bacteriological Proceedings; Soc. Am. Bacteriologists; Jour. Oral Surg., Oral Med. and Oral Pathol.; Fla. State Dent. Jour.; Jour. Ultraschall in Medizin und Grenzgebeiten; Bacteriol. News. Gen. Int.: Helped Develop Ultrasonic Modality in Periodontia; Microbiologic Hazards in the Altering Dental Injection Techniques; Epidemiologic Studies in Dentistry. Areas of Rsch.: Oral Microbiology, Tissue and Organ Cultures, Oral Congenital Defects, Dental Pharmacology and Epidemiology.

ZINSSER, Hans Handforth (M.D.), Assoc. Prof., Columbia Univ. Schl. of Med., N.Y.C. Home Add.: 242-A E. 62nd St., N.Y.C. UROLOGICAL SURGERY, BIOMEDICAL ENGINEERING. b. N.Y.C., Aug. 3, 1917. s. Hans and Ruby H. (Kunz) Z. Edn.: B.S., Harvard Univ., 1938; M.D., Columbia Univ., 1942. m. Barbara Lewis, 1956. c.: Judith P.; Katherine J. Exp.: Instr., Univ. of Pa., Phila., Pa., 1946-49; Asst. Prof., Univ. of So. Calif., Los Angeles, Calif., 1951-56; Assoc. Prof., Columbia Univ., N.Y.C., 1959—. Mem.: Am. Med. Assn.; N. Y. Acad. of Sci.; A.C.S. Contbr. to: Am. Med. Assn. Jour.; Ann. Surg.; I.R.E. Trans.; Arch. Biochem. and Biophys. Serv. Rec.: A.U.S., 1944-46. Areas of Rsch.: Renal Stones and Infections; Medical Engineering; Programmed Teaching.

ZIONY, Joseph Israel (Mr.), Geologist, U. S. Geol. Survey, Menlo Park, Calif. Home Add.: 10620 Eastborne Ave., Los Angeles 24, Calif. GEOLOGY. b. Los Angeles, Calif., Apr. 6, 1935. s. Aaron and Annie (Mondlin) Z. Edn.: B.A., Univ. of Calif., Los Angeles, 1956; M.A., ibid., 1959. m. Denise Pourroy, Sept. 9, 1961. c.: David. Exp.: Jr. Exploitation Engr., Shell Oil Co., Long Beach, Calif., s.s., 1954; Geologist, Milit. Geol. Br., U. S. Geol. Survey, Wash., D. C., 1957-59; Geologist, Fuels Br., U. S. Geol. Survey, Menlo Park, Calif., 1959-60; Geologist, Southwestern Br., U. S. Geol. Survey, ibid., part-time, 1960—; Grad. Stud., Univ. of Calif., Los Angeles, 1960—. Mem.: Sigma Xi; Am. Assn. of Petrol. Geol.; Geol. Soc. of Wash., D. C.; Eastern Nev. Geol. Soc. Contbr. to: U. S. Geol. Survey Reports and Maps. Serv. Rec.: U. S. Army Reserve, 1959—. Gen. Int.: Ford Fdn. Scholarship, Univ. of Wis., 1951-53; Humble Oil Co. Fellowship, U.C.L.A., 1962-63. Areas of Rsch.: Structural Geology; Regional and Economic Geology of the Great Basin.

ZOLLINGER, Robert M. (M.D.), Prof. & Chmn., Dept. of Surgery, University Hosp., Columbus, Ohio. Home Add.: 83 S. Columbia Ave., Columbus 9, Ohio. SURGERY. b. Millersport, Ohio, Sept. 4, 1903. Edn.: B.S., Ohio State Univ., 1925; M.D., ibid., 1927. m. Louise Kiewit, July 20, 1929. c.: Myra Lou; Robert. Exp.: Intern, Peter Bent Brigham Hosp., Boston, Mass., 1928-29; Asst. Resident and Resident Surgeon, Lakeside Hosp., Cleveland, Ohio, 1929-32; Resident Surgeon, Peter Bent Brigham Hosp., Boston, Mass., 1932-34; Instr. in Surgery, ibid., 1932-34; Asst. Prof. of Surgery, Harvard Univ., 1939-46; Prof. and Chmn., Dept. of Surgery, Ohio State Univ., 1946—. Hon. Pos.: Chmn., Am. Bd. of Surgery, Sept., 1962; Pres., Am. Coll. of Surgeons, 1961; Chmn., Grad. Trng. Comm. of Am. Coll. of Surgeons, 1958-62; Pres., Cent. Surgical Assn., 1956; Chmn., Sect. on Surgery, Gen. and Abdominal, Am. Med. Assn., 1955; Pres., Soc. for Surgery of the Alimentary Tract, 1963. Surgical Test Com., Natl. Bd. of Med. Examiners, 1958. Mem.: Am. Assn. for the Surgery of Trauma; Western Surgical Assn.; Soc. of Med. Consultants in World War II; Assn. of Milit. Surgeons of the U. S.; Am. Cancer Soc.; Soc. Internationale de Chirurgie; Boston Surgical Soc.; Eastern Surgical Soc.; Columbus Surg. Soc.; Am. Med. Assn. Co-author: Atlas of Surgical Operations, 1939; 1949; 1961; Monograph: Surgery of Gallbladder and Extra-Hepatic Ducts, 1940. Medical Talks and Papers, 1961. Contbr. to: Ohio State Med. Jour.; Archives of Surg.; Am. Jour. of the Med. Sciences; Arch. of Neurol. and Psychiatry; The New England Jour. of Med.; The Am. Jour. of Surg.; J.A.M.A.; Arch. of Neurol. and Psychiatry and many others. Serv. Rec.: U. S. Army, 1942-45.

ZIPERMAN, H. Haskell (M.D.), Col., U.S.A.M.C., Chf., Surgery Serv. and Chf., Professional Servs., 97th General Hosp., Frankfurt, Germany. Home Add.: 97th Gen. Hosp., A.P.O. 757, c/o P.M., N. Y., N. Y. GENERAL SURGERY. b. N. Y. C., N. Y., Sept. 24, 1915. s. Samuel and Ida (Gostin) Z. Edn.: A.B., Ind. Univ., Cum Laude, 1937; M.D., ibid., 1941. m. Margaret LeMasters, 1940. c.: Don Bruce. Exp.: Intern, Ind. Univ. Medical Center, 1941-42; Res. Surgery, ibid., 1946-50; Chief of Surgery, USAH, Ft. Dix, N. J., 1950-52; Surgical Consult., 8th U.S.A., Korea, 1952-53; Chief of Surgery, 141 Gen. Hosp., Japan, 1953-54; Dir., Dept. Med. and Surg., Army Med. Serv., Schl., Ft. Sam Houston, Tex., 1954-59; Assoc. Prof. Clin. Surg., Baylor Univ. Med. Schl., 1957-59; Chief Gen. Surg. Serv., Letterman Gen. Hosp., 1959-61; Chief Gen. Surgery Serv., 97th Gen. Hosp., Frankfort, Germany, 1961—. Mem.: Fellow, Am. Coll. of Surgs.; Diplomate, Am. Bd. of Surgery; Am. Assn. for the Adv. of Sci.; Marion Co. Med. Soc.; Am. Med. Assn.; Assn. of Milit. Surgeons; Am. Assn. for Surgery of Trauma; Phi Beta Kappa; Alpha Omega Alpha. Contbr. to: A.M.A. Arch. Surg.; Am. Jour. Surg.; Surg.; U. S. Armed Forces Med. Jour.; Jour. Med. Edn.; J.A.M.A.; A.M.A. Arch. Otol. Areas of Rsch.: Wound Healing, Wound Ballistics; Frostbite, Cardiac Resuscitation.

ZOEBISCH, Oscar C. (Ph.D.), Asst. Dir., Agri. Rsch., Libby, McNeill & Libby, Janesville, Wis. Home Add.: 211 Lathrop Avenue, Madison, Wis. PLANT BREEDING, AGRONOMY. b. Albany, Minn., Dec. 16, 1919. s. Philip and Minna (Johnson) Z. Edn.: B.S., Univ. of Minn., 1946; M.S., ibid., 1950; Ph.D., ibid., 1950. m. Virginia Paulson, Aug. 18, 1945. c.: Ann; Philip; Amy; Eve. Exp.: Asst. Prof., Agronomy, Univ. of Hawaii, Honolulu, 1950-52; Asst. Mgr., Agri. Rsch., Pineapple Div., Libby, McNeill & Libby, 1952-55; Asst. Plantation Mgr., Molokai, Pineapple Div., Hawaii, 1955-56; Asst. Lab. Mgr., Agric. Rsch., Citrus Div., Libby, McNeill & Libby, Clermont, Fla., 1957-58; Mgr., Agric. Rsch., Eastern Div., Libby, McNeill & Libby, Blue Island, Ill., 1958-60; Asst. Dir., Agric. Rsch., Libby Agric. Rsch. Center, Janesville, Wis., 1960—. Mem.: Am. Soc. Agronomy. Serv. Rec.: U. S. Navy, 1943-45.

ZOMZELY, Claire Eleanore (D.Sc.), Rsch. Biochemist, Dept. of Physiological Chem., Univ. of Calif. Med. Ctr., Los Angeles 24, Calif. LIPID AND STEROID BIOCHEMISTRY-NUTRITION. b. Newark, N. J., July 4, 1924. d. Augustin and Irene (Kappell) Z. Edn.: B.S., Columbia Univ., 1950; M.S., Harvard Univ., 1956; D.Sc., ibid., 1958. Exp.: Rsch. Tech., Atherosclerosis Serv., Columbia Univ., N. Y., 1950-53; Rsch. Techn., Dept. of Obs. and Gynec., N. Y. Univ. Med. Schl., N. Y., 1953-54; Predoctoral Rsch., Fellow of the Natl. Heart Inst., Harvard Univ., 1954-58; Fulbright Fellow, Lab. of Comparative Biochemistry, Coll. de France, Paris, 1958-59; Rsch. Assoc., N. Y. Univ. Med. Schl., 1959-60; Rsch. Biochemist, Monsanto Chem. Co., 1960-62; Rsch. Biochemist Dept. of Physiological Chem., Univ. of Calif. Med. Ctr., 1962—. Mem.: Am. Chem. Soc.; A.A.A.S.; Scientific Rsch. Soc. of Am.; League of Women Voters. Contbr. to: Am. Jour. of Physiol.; Endocrinol.; Arch. of Biochem. and Biophysics; Sci.; Nature. Areas of Rsch.: Lipid and Steroid Metabolism in Exptl. Obesities; Atherosclerosis (Cholsterol Metabolism, Lipoproteins), Physiological Nutrition; Vitamin E Metabolism, Amino Acid Metabolism and Nutritional Requirements.

ZOREF, Frederik Viktor (Ph.D.), Dir., Paterson Museum, 268 Summer St., Paterson, N. J. Home Add.: 329 Nineteenth Ave., Paterson 4, N. J. PSYCHOLOGY (BEHAVIOR PATTERNS). b. Vienna, Austria, Aug. 31, 1893. s. Morris and Maria (Loery) Z. Edn.: Ph.D., Univ. of Vienna, Austria, 1919. m. LL.D. Inez Dobay, 1935. c.: Ava Maria Mayes. Exp.: Prof., Austrian Tonfilm Seminar, Vienna, 1931-35; Chmn., Seminar, Dramatic Workshop, Sayville, N. Y., 1941; Dir., Paterson Museum, Paterson, N. J., 1956—; Lecturer, Examiner, Natl. Federation of Hypnotists, N. J., 1957—. Hon. Pos.: Mem., Bd. of Dir., Passaic Co. Heart Assn., 1959; Adv. Bd., Natl. Organization of Mentally Ill Children, 1959; Consultant Psychol., Med. and Surgical Specialists Plan, N. Y.; Assoc., N. J. Psychol. Assn. Mem.: Assn. of Museums, Am.; Soc. of Dirs. of Sci. Museums; AAAS; Fellow, Gerontological Soc. Author: The Rebirth of Harriet Keanford, Vienna, 1925; Information Centers for Adult Education, 1951; Der Arzt der Sobeide, Vienna, 1919; Jeunes Filles en detresse, Paris, Fr., 1939. Contbr. to: The Museologist. Areas of Rsch.: Studies and Rsch. in Behavior Patterns of the Museum Visitor; Neurotic basis of marital failures. The use of music in Hypnotherapy; Clinical Psychologist and Psychotherapist.

ZONDAG, Cornelius Henry (Ph.D.), Div. Chf., U.S.A.I.D. Mission to Peru, U. S. Embassy, Lima, Peru. Home Add.: 3118 Legation St., N.W., Wash. 15, D. C. ECONOMICS, PSYCHOLOGY, INTERNATIONAL LAW. b. Ryswyk, the Netherlands, July 10, 1913. s. Jan Cornelius and Adriana (Schilte) Z. Edn.: M.A., N. Y. Univ., 1949; M.C.L., Geo. Wash. Univ., 1953; Ph.D., Leyden Univ., 1940. Exp.: Asst. to Div. Head, Socony Mobil Oil Co., N.Y.C., 1945-50; Lonn Officer, World Bank, Wash., D. C., 1950-54; Econ. Adviser, Internatl. Coop. Admin., La Paz, Bolivia, Bogota, Colombia, S. Am., 1954-61; Div. Chf., U.S.A.I.D. Mission to Peru, Lima, Peru, 1961—; Visiting Prof., Univ. of San Andres, La Paz, Bolivia, 1954-57; Hon. Prof., Lima Technological Inst., Lima, Peru, 1961. Mem.: Am. Econ. Assn.; Soc. Internatl. Devel.; Am. Polit. Sci. Assn.; Am. Acad. Polit. and Soc. Sci. Author: Study on Air Law, 1940; Problems in the Economic Development of Bolivia, 1957. Contbr. to: World Oil; Petroleo Interamericano. Areas of Rsch.: Problems of Socio-Economic Devel. in Underdeveloped Areas; Internatl. Econs.

ZOOK, Leslie Lewis (D.Sc.), Retired, Agronomist and Supt. North Platte, Nebr. Expt. Sta. Home Add.: 219 Rosewood Ave., Salt Lake City 15, Utah. AGRONOMY-DRY LAND AGRICULTURE. b. Kearney, Nebr., June 21, 1880. s. Levi W. and Emma (Reynolds) Z. Edn.: B.Sc., Nebr. Univ., 1907. Hon. Deg.: D.Sc., Univ. Nebr., 1955. m. Josephine Cobbey, Sept. 15, 1909. c.: Wilhelmina (Mrs. Frank O. Randall). Exp.: Asst. in Agron. (Farm Crops), Univ. of Nebr., 1907-08; Plant Physiologist, B.P.I., Corn Investigations, 1908-14; Agronomist B.P.I. Dry Land Agri. and Nebr. Expt. Sta. Cooperating, 1915-50; Supt. North Platte, Neb. Expt. Station, 1934-46. Mem.: A.A.A.S.; A.S.A.; Alpha Zeta; Sigma Xi; North Platte Nebr. Rotary Club. Contbr. to: Agron. Jour.; Bulls. U.S.D.A. and Neb. Expt. Sta. Areas of Rsch.: Dry Land Agriculture.

ZORBACH, William Werner (Ph.D.), Assoc. Prof., Chem., Georgetown Univ., 37th and "O" Sts., N.W., Washington 7, D. C. Home Add.: 3602 Dupont Ave., Kensington, Md. ORGANIC CHEMISTRY. b. Sandusky, Ohio, June 15, 1916. s. William, Sr. and Helen (Werner) Z. Edn.: B.S., Bowling Green St. Univ., Ohio, 1947; Ph.D., McGill Univ., Can., 1951. m. Betty Canfield, June 28, 1946. c.: Judy. Exp.: Instr. of Chem., Bowling Green State Univ., 1951-52; Asst. Prof. of Chem., Georgetown Univ., D. C., 1952-56; Rsch. Chemist, Natl. Institutes of Hlth., Bethesda, Md., 1957-58; Assoc. Prof. of Chem., Georgetown Univ., 1958—; Acting Chmn., Chemistry Dept., ibid., 1959. Mem.: Am. Chem. Soc.; N. Y. Acad. Scis.; Sigma Xi; Sigma Alpha Epsilon. Contbr. to: Jour. Am. Chem. Soc.; Jour. of Organic Chem.; Liebig's Annalen der Chemie. Serv. Rec.: Army of U. S., 1943-45. Gen. Int.: First synthesis of stable, crystalline acylglycosyl halides of a 2-deoxy sugar; first synthesis of a 2-deoxy cardenolide. Areas of Rsch.: Carbohydrates and Steroids; Partial Synthesis of cardenolides and nucleosides; Specialization in deoxy sugars.

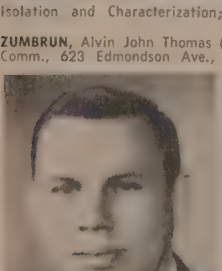
ZOVICKIAN, Anthony (M.D.), 264 Commonwealth St., Boston 16, Mass. Home Add.: 77 Grove St., Winchester, Mass. PLASTIC AND RECONSTRUCTIVE SURGERY. b. Boston, Mass., Oct. 5, 1918. s. H. and H. der (Margossian) Z. Edn.: B.A., Harvard Coll., 1940; M.D., Yale Univ. Schl. of Medicine, 1943. m. Barbara Starr Hurlin, Oct. 28, 1944. c.: William H.; John A. Exp.: Clin. Instr. Surg., Yale Med. Schl., 1950-51; Instr. Surgery, The Johns Hopkins Univ. Schl. of Medicine, 1951-53; Asst. Prof. of Surgery, Boston Univ. Schl. of Medicine, 1960. Mem.: Am. Coll. of Surgeons, Fellow; Am. Soc. of Plastic and Reconstructive Surgery; The Soc. of Head and Neck Surgeons; Alpha Omega Alpha. Contbr. to: Plastic and Reconstructive Surgery; Surgery; Annals of Surgery. Serv. Rec.: U. S. Army, 1944-46. Areas of Rsch.:

Cancer of the Head and Neck; Combining Surgical Treatment with Reconstruction.

ZUBATY, Martin V. (Mr.), Staff Supvr., Engr. Rsch. and Devel., I-T-E-Circuit Breaker Co., Phila., Pa. Home Add.: 56 Winona Ave., Detroit 3, Mich. RESEARCH AND DEVELOPMENT OF ELECTRICAL EQUIPMENT; MOTOR CONTROL; SWITCHING COMPONENTS; CIRCUIT BREAKER LOW AND HIGH VOLTAGE. b. Tasov, Sept. 23, 1917. s. Martin V. and Veronica V. (Stritecky) Z. Edn.: B.S., State Electrical Technol. Col., 1937; M.S., State Electrical Technol. Coll., Prague, 1946. Exp.: Devel. Engr., Bata Co., Zlin, Czech., 1939-40; Chief and Consulting Engr., Kesl-Rsch. and Devel. Inst., Inc., Paris and Prague, 1940-47; Vice Pres. and Co-Owner, Reding Co. Konig Gratz, Feding Co., Beluza, Czech., 1947-48; Rsch. and Devel. Consulting Engr., Felten and Guilleaume, Carlwerk Ag. Collogne, 1949-53; Chief Engr. Rsch. and Devel., ibid., A. G. Nordenham, West Germany, 1953-56; Supvr., Engr. Rsch. and Devel., Square D. Co., Detroit, 1956-59; Staff Supvr., Engr. Rsch. and Devel., I-T-E-Circuit Breaker Co., 1959—. Mem.: Prof. Consulting Engr. Assn., Inc.; Am. Rocket Soc., Inc.; German Rocket Soc., Inc.; Internatl. Inst., Inc.; W.B.F.A. Insurance Assn., Inc. Contbr. to: Bulletin; Electrical Obzor; Cooper; R.G.E. Serv. Rec.: CSR Radio Signal Corps, 1938-39. Gen. Int.: Industrial and Commercial Control Problems; Miniaturization of Electrical Components for Automation. Areas of Rsch.: Miniaturization of Electrical Mechanical Control and Protective Devices for Electrical Equipment, Motor Control, Circuit Breaker, Special Electrical and Mechanical Components of Business Machines.

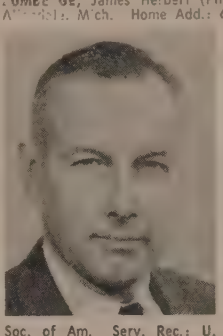
ZUCKERMAN, Leo (Mr.), Mgr., Ortho Pharml. Corp., Raritan, N. J. Home Add.: 609 Betsy Ross Pl., Bound Brook, N. J. BIOCHEMISTRY. b. Brooklyn, N. Y., July 3, 1917. s. Benjamin and Goldie (Barness) Z. Edn.: B.A., Brooklyn Coll., 1942. m. Anne Bernstein, Jan. 24, 1942. c.: Barry; Elliot; Diana. Exp.: Rsch. Asst., E. R. Squibb and Sons, New Brunswick, N. J., 1942-52; Rsch. Assoc., Ortho Rsch. Fdtn., Raritan, N. J., 1952-58; Supvr., Biols., Ortho Pharml. Corp., Raritan, N. J., 1958-62; Mgr., Biols. Ortho Pharml. Corp., Raritan, N. J., 1962—. Hon. Pos.: Chmn., Rsch. Comm., N. J. Assn. for Retarded Children; Pres., Somerset Co. Guid. Ctr. Mem.: Am. Chem. Soc.; Am. Assn. Adv. Sci.; Am. Assn. of Clin. Chemists. Areas of Rsch.: Immunology; Serology; Coagulation; Enzymes; Protein; Chromatography; Electrophoresis.

ZUMBRUN, Alvin John Thomas (Mr.), Exec. Dir., Md. Crime Invest. Comm., 623 Edmondson Ave., Catonsville 28, Md. Home Add.: 31 Melvin Ave., Catonsville 28, Md. CRIMINOLOGY. b. Baltimore, Md., Aug. 9, 1926. s. Orrell S. T. and Mary Kathryn (Sprinkle) Z. Edn.: B.A., Univ. of Md., 1952; M.A., ibid., 1956. m. Marianne Nolan, Aug. 26, 1950. c.: Mary Susan; Alvin J. T., Jr.; Steven Mark; Diane Lynn; Mary Ann. Exp.: Probation Officer, Juvenile Court, Baltimore, Md., 1952-53; Budget and Program Dir., Community Chest, ibdi., 1954-56; Mgng. Dir., Baltimore Criminal Justice Commn., ibid., 1956-59; Exec. Dir., Md. Crime Invest. Comm., 1959—. Hon. Pos.: Ret. Police Assn. of N. Am., Md. Chap.; Md. Law Enforcement Officers Assn., Hon. Mem. Mem.: Am. Soc. of Criminol.; Natl. Coun. on Crime and Delinquency; Natl. Assn. for the Adv. of Sci.; Natl. Jail Assn.; Vice Cmdr., Vet. of Foreign Wars; Catonsville Bus. Assn. Author: Budgeting in a Community Chest, 1956; Maryland Crime Manual, 1961. Contbr. to: Police; Am. Soc. of Criminol. Reports. Serv. Rec.: U. S. Navy, 1943-46. Gen. Int.: Grad., Police Community Relations Inst., Mich. Univ. in 1956; Have Corrected Forty-Six Cases of Injustices after They Had Passed the Criminal Indictment Point. Areas of Rsch.: Probation and Parole, Police; Magistrates and Criminal Courts; Prosecutors Offices; Jails and Prisons; Communications, Budgeting and Programming in Private Agencies, and Public Administration.

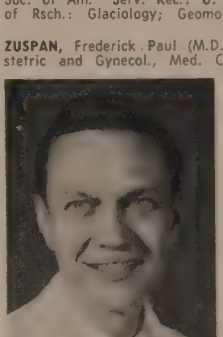


ZWEIFACH, Benjamin William (Ph.D.), Prof., Pathol., N. Y. Univ., 550 First Ave., N. Y. City, N. Y. Home Add.: 7 Old Mtn. Rd., Upper Nyack, N. Y. EXPERIMENTAL PHYSIOLOGY. b. N.Y.C., Nov. 27, 1910. s. Max and Pearl (Zucker) Z. Edn.: B.S., City Coll. of N. Y., 1931; M.S., N. Y. Univ., 1933; Ph.D., ibid., 1936. m. Beatrice Brustein, June 18, 1938. c.: Paula; Marilyn; Mark. Exp.: Asst. Prof., Physiol., Cornell Med. Schl., N.Y.C., 1945-52; Assoc. Prof., Biol., N. Y. Univ., 1952-55; Prof., Pathol., ibid., 1955—. Hon. Pos.: Chmn., Microcirucl. Conf., 1961; Editor Macy Confs. on Factors Regulating Blood Flow. Mem.: Am. Physiol. Soc.; Am. Assn. Adv. Sci.; Harvey Soc.; Am. Assn. of Anats.; Soc. of Exptl. Biol. and Med.; Sigma Xi; Gereontol. Soc. Author: Functional Behavior of Microcirculation, 1961; The Microcirculation, co-author, 1960. Contbr. to: Jour. of Exptl. Med.; Physiol. Revs.; Am. Jour. of Anat.; Am. Jour. of Physiol.; Am. Jour. of Pathol.; Circul.; Sci.; Jour. of Histochem.; Am. Jour. Med.; Jour. Am. Med. Assn.; Procs. Soc. Exptl. Biol. and Med.; Angiol. Areas of Rsch.: Physiology of Microcirculation, Experimental Shock; Hypertension; Tissue Injury.

ZUMBERGE, James Herbert (Ph.D.), Pres., Grand Valley St. Coll., Allendale, Mich. Home Add.: 658 Cambridge Blvd., Grand Rapids, Mich. GEOLOGY. b. Mpls., Minn., Dec. 27, 1923. s. Herbert S. and Helen (Reich) Z. Edn.: B.A., Univ. of Minn., 1946; Ph.D., ibid., 1950. m. Marilyn Edwards, June 21, 1947. c.: John; Jo-Ellen; James; Mark. Exp.: Instr., Duke Univ., Durham, N. C., 1946-47; Prof., Univ. of Mich., Ann Arbor, Mich., 1950-62; Pres., Grand Valley St. Coll., 1962—. Hon. Pos.: Chmn., Univ. Comm. on Polar Rsch., Natl. Acad. of Sci. Mem.: Geol. Soc. of Am., Soc. of Econ. Geolts.; Glacial Soc.; Am. Assn. Adv. Sci.; Am. Geophys. Union; Phi Delta Theta; Rotary. Author: Elements of Geology, 1958. Contbr. to: Jour. of Geol.; Am. Jour. Sci.; Jour. of Geophys. Rsch.; Bull. of Geol. Soc. of Am. Serv. Rec.: U. S. Marine Corps, 1943-45. Areas of Rsch.: Glaciology; Geomorphology.



ZUSPAN, Frederick Paul (M.D.), Chmn. and Prof., Dept. of Obstetric and Gynecol., Med. Coll. of Ga., Augusta, Ga. Home Add.: 2638 Walton Way, Augusta, Ga. OBSTETRICS AND GYNECOLOGY (MEDICINE). b. Richwood, Ohio, Jan. 20, 1922. s. Irl Goff and Kathryn (Speyer) Z. Edn.: B.A., Ohio St. Univ., 1947; M.D., ibid., 1951. m. Mary Jane Cox, Nov. 23, 1943. c.: Mark; Bethany; Kathryn. Exp.: Chf. of Clin. Servs., McDowell Meml. Hosp., McDowell, Ky., 1956-58; Ogelbay Fellow, Western Reserve Univ., 1958-60; Asst. Prof., ibid., 1959-60; Chmn. and Prof., Dept. of Gynecol. and Obst., Med. Coll. of Ga., 1960—. Hon. Pos.: Chmn., Rsch. Comm. for Soc. for Clin. and Exptl. Hypnosis. Mem.: A.-M.A.; A.U.P.; A.S.C.H.; A.S.C.-E.H.; A.C.O.G.; Alpha Kappa Kappa; Alpha Omicron Alpha; Rotary; Mason. Contbrng. Author: Current Therapy, 1962; Commerce Clearing House Ob-Gyn. Text, 1963. Contbr. to: Obstetrics and Gynecology; Am. Jour. of Obstetrics and Gynecol.; Southern Medica Jour.; La. Med. Assn. Jour. Serv. Rec.: U.S.N.R., 1942-43; U.S.M.C.R., 1943-45; U.S.P.H.S. (R) inactive, 1950—. Areas of Rsch.: Reproductive Physiology.



ZWINCK, Carl Herman (Mr.), Free-Lance Writer, Ann Arbor, Mich. Home Add.: 904 Packard St., Ann Arbor, Mich. PHYSICS b. Fowlerville, Mich., Sept. 24, 1927 s. Erwin O. and Mary Ethel (Burkhart) Z. Edn.: B.S.E., Univ. of Mich., 1948; M.A., ibid., 1952; M.S., ibid., 1956. Lab. Sci. Tchr., Northville H. S., Northville, Mich., 1949-52; Trng. Dir., Gen. Elec. Co., Phila., Pa., 1955-58; Evening Coll. Instr., Drexel Inst. of Technol., 1955-58; Physics Tchr., Birmingham Pub. Schls., Mich., 1958-60; Physics Instr., Newman Schl., New Orleans, La., 1960-61; Free-Lance Writer, 1962—. Hon. Pos.: Program Chmn., Opportunities Unlimited, Guidance in Sci., 1957. Mem.: AAIAN; CASMET; Am. Assn. Adv. Sci.; Am. Inst. of Physics; Am. Assn. of Physics Tchrs.; Natl. Sci. Tchrs. Assn.; La. Acad. of Scis.; La. Sci. Tchrs. Assn.; Assn. Adv. of Instn. about Alcohol and Narcotics; Central Assn. of Sci. and Math. Tchrs., Inc. Author: Guidance Programs on Review, 1949. Contbr. to: Schl. Sci. and Math.; Assn. Adv. of Instn. about Alcohol and Narcotics Bull.; Sci. Tchr. Serv. Rec.: U. S. Army Security Agency, 1952-55. Gen. Int.: Developed Information, Education, Testing, and Counseling Center for the U. S. Army Security Agency, Fort Bragg, N. C. Areas of Rsch.: Nuclear Physics, Educational Guidance, Technical Training.

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